

PT-9000 APPLICATION MANUAL

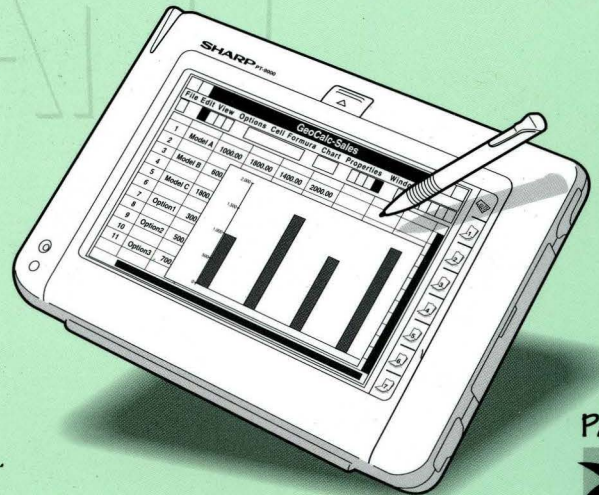
SHARP[®]

PERSONAL INFORMATION ASSISTANT

PT-9000

APPLICATION MANUAL

PERSONAL INFORMATION ASSISTANT



SHARP[®]



GEOWORKS[®]



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About This Book

This book covers the applications found on the unit — including those by both Palm Computing and GeoWorks.

The first chapter covers basic topics that apply to all of the applications covered in this book; the second chapter covers the Palm applications (PalmAddress, PalmSchedule, PalmNotes, and World Clock); and the third chapter covers general topics pertinent to all the GeoWorks applications. If you have never used a GEOS application before, you should look in these chapters.

The rest of the book is devoted to the details of using the following applications:

- **Calculator.** An on-screen calculator.
- **Text File Editor.** An application for editing DOS text files.
- **Scrapbook.** An electronic scrapbook for storing pictures and text.
- **Preferences.** An application that allows you to customize the unit.
- **GeoComm.** A telecommunications application.
- **GeoWrite.** A What-You-See-Is-What-You-Get word processor.
- **GeoCalc.** A powerful spreadsheet with built-in charting.
- **GeoFile.** A flat-file database with powerful page layout features.
- **GeoManager.** An easy-to-use file and folder manager.

TYPOGRAPHICAL CONVENTIONS USED IN THIS BOOK

The following printing conventions are used throughout this book:

- *Italic* type is used to introduce a new term.
- **Boldface** is used for the names of keys on the keyboard, such as **Enter** or **Insert**.
- When you see two key names with a + symbol between them, press both keys at the same time. For example, when you see **Ctrl+Esc**, you should hold down the **Ctrl** key while you press the **Esc** key.

CONVENTIONS FOR PROCEDURES

Procedures are step-by-step instructions that tell you how to perform tasks in applications. Procedures in this book always have an italic heading beginning with the word “to.” Each step in a procedure first has you perform an action, which is followed by an explanation of the application’s reaction. When you can do a task in more than one way, you will see the word “or” on its own line, and then an alternate method of completing the step.

Some procedures consist of one step, while others have multiple steps.

Single-Step Procedures

Single-step procedures have a square, black bullet (■) beside the instruction telling you what to do. The following example shows a single-step procedure with two alternative ways to do the task.

To start GeoWrite (All Levels)

- Locate the GeoWrite icon and double-tap it.
- or*
- Choose GeoWrite from the Express menu.

Multi-Step Procedures

Multi-step procedures have sequentially numbered steps that you should follow in a specific order. The following example shows three steps from a multi-step procedure.

To select a day and view its events (All Levels)

1. If the Calendar window isn't showing, choose Calendar from the View menu. The Calendar window appears.
2. Tap to select a day in the Calendar window. The day highlights.
3. The events for the selected day appear in the Events window. If the Events window isn't showing, choose Events from the View menu. The Events window appears.

USER LEVEL NOTATION

Every procedure head is followed by a parenthetical note specifying at which user levels the task can normally be accomplished. The following are two examples of procedures found in this book:

To start GeoWrite (All Levels)

To show empty days (Level 3)

ALL LEVELS

In addition, sections are marked with text similar to the one shown in the margin at left. This text, because it says "All Levels," indicates that the section applies to *all levels* in the application. If it had said "Level 2," it would indicate that the section only applied to Level 2 of the application.

For more information about user levels in applications, see "About User Levels" in Chapter 3.

Using the Touch Pen

The touch pen is the tool you use to start applications and perform most of your work within applications. The pen allows you to point to items on the screen and perform actions on those items. It also allows you to write or draw directly on the screen. You can choose to have the unit recognize your writing as text and translate it into typewritten characters. This is called handwriting recognition. Handwriting recognition is described in this chapter. Here are some basic pen actions you will use as you work with applications:

Tap. Touch the pen to the screen and then lift it off. Tap when you want to select an application, icon, menu, or command. You can cancel a selection by tapping elsewhere on the screen.

Double-tap. Tap the pen twice. Double-tap to open an application, or to select a word of text.

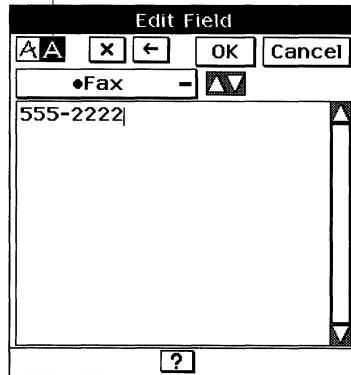
Drag. Touch the pen to the screen, then keep the pen on the screen as you move the pen. Drag to select text, an area on a sketch page, or icons in GeoManager. To select text, touch the pen to the text and hold it down for a second or two. Then move the pen across the text, lifting the pen off the screen at the end of the selection. To select an area on a sketch page, drag the pen diagonally on the screen to form a rectangular selection box.

Handwriting recognition. Using the pen, print characters directly on the screen. As soon as you print a character, the unit converts it to a typed character.

HANDWRITING RECOGNITION

Use handwriting recognition when you want to store and display what you print as typed characters.

Tap the Text tool to tell the unit to recognize your printing, then print with the pen. Your ink is converted to text.



NOTE

If you are using Palm applications, you can use the PowerInk feature when you want to write or draw with the pen and you want to keep what you enter as you have written it, rather than as typed characters.

Handwriting Recognition Tips

The unit recognizes handwritten, printed letters and numbers. You can enter hand-printed characters in text fields or on a sketch page. When you use hand-printed characters in a field or on a sketch page while the Text tool is active, your hand-printed characters are converted into typed characters.

The following tips will help the unit to recognize your handwriting:

- Print each letter or number clearly. Each character needs to be clear enough to be recognized. You can use uppercase or lowercase letters.
- Keep your letters upright. Try not to write letters with a slant.
- Use as few strokes as possible in writing a letter.

- Make sure you keep the pen on the screen as you write — you don't need to press down hard, but you don't want to hold the pen so lightly that it doesn't make solid contact with the screen.
- Don't write too slowly.
- Print large characters. You can use the whole screen as long as you begin writing in the dialog box.
- If the position in which the ink appears on the screen doesn't match the position of the pen, you need to recalibrate the pen.
- To write several words, write one below another so that the unit inserts spaces between the words correctly.
- Write the letter Z with a slash through it to distinguish it from the number 2.
- Write the letter 5 in two strokes instead of one to distinguish it from the letter S.
- Write the number 0 in two strokes with a slash through it to distinguish it from the letter O.
- Write the number 1 with a line across the bottom (it should look like an upside-down T) to distinguish it from other characters such as an I or L.
- Write the letter l like a script l (it should look like a loop) to distinguish it from other characters such as the letter I or the number 1.
- Dot a lowercase i to identify it as an i.

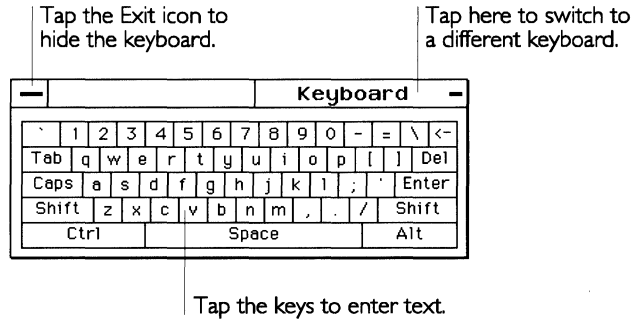
USING THE FLOATING KEYBOARD

The unit provides a floating keyboard that appears to “float” on top of an application window. You use the floating keyboard just as you would any other keyboard, except that you tap the keys with the pen.

Displaying and Using the Floating Keyboard

To display the floating keyboard, tap the floating keyboard hard icon. The keyboard also appears automatically when an application or dialog box requires text entry.

You cannot use keyboard accelerators or mnemonics from the floating keyboard.



NOTE

If the keyboard appears gray, you cannot use it to enter text. This occurs when you need to tap the pen in a text area to indicate where you want to enter the text, or when you are in PowerInk mode (in which handwriting is not converted to text).

Switching Keyboards

In Preferences (see Chapter 4), you can select the language of the keyboard you want to use. Also, within any language, you can choose from six different keyboard layouts.

When the keyboard is available (not dimmed), you can switch to another keyboard layout. Tap the upper right corner of the keyboard to select from a drop-down list of layouts. The default layout is the Keyboard layout, which looks just like a standard keyboard.

These are the available keyboards:

Keyboard. Provides the standard qwerty (typewriter-like) keyboard in the current language set in Preferences.

Alphabetic. Displays the letters of the alphabet in alphabetical order, starting at the top left of the keyboard.

Symbols. Provides common symbols such as the bullet, copyright, percent, dollar sign, and so on.

International. Provides characters with accents, umlauts, tildes, and so on.

Math Symbols. Provides numbers and mathematical symbols such as plus, minus, equals, square root, and so on.

Writing Grid. Gives you the ability to convert each character you write into letters on the screen.

USING THE WRITING GRID

When you select the writing grid keyboard, you write each character in a box and the unit converts it into a letter on the screen. Blank boxes between letters translate as spaces between typed letters or words.

You use the arrow controls to display boxes for additional characters and to move along the writing grid.



Tap this control to move to the beginning of the boxes.



Tap this control to move the boxes back one screen.



Tap this control to move back one box.



Tap this control to move forward one box.



Tap this control to move forward one screen.



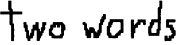






Tap this control to move to the end of the boxes.



Tap this button to go into insert mode. The box will darken in insert mode. Tap it again to get out of insert mode. The characters you type in insert mode will insert a character in front of the character you write on top of. When you are not in insert mode, the characters you type will write over existing characters.

Understanding Pen Gestures

When you write or edit with the pen, certain gestures have special meanings. The following table explains these gestures.

To	Do This	EXAMPLE
Enter a space as you're writing	Leave a space between words as you write, or if using handwriting recognition, write a "space character" (b with a slash through it).	space 
Select a word with the pen	Quickly tap the word twice.	selected 
Select more than one word	Hold down the pen (pause for a moment) and drag it across the words.	more than one 
Erase a selected word or words	Draw a vertical line up through the selected text and put a loop or pigtail at the end (called the pigtail gesture).	delete a word 
Insert text within existing text	Tap the pen in the desired location of the text. Then write the character or word somewhere in the text field or screen.	insert a character 
Insert text in a text field after existing text	Write the next characters; what you enter gets added at the end of existing text.	add characters to the 
Insert a new line	Tap the pen in the desired location of the line. Then write the new-line gesture.	add a new line 

USING AN EXTERNAL KEYBOARD

In addition to the floating keyboard, you can attach an IBM-XT compatible keyboard to the unit. The external keyboard is the only way you can enter data in the DOS environment.

*Keyboard
accelerators only
work with an
external keyboard.*

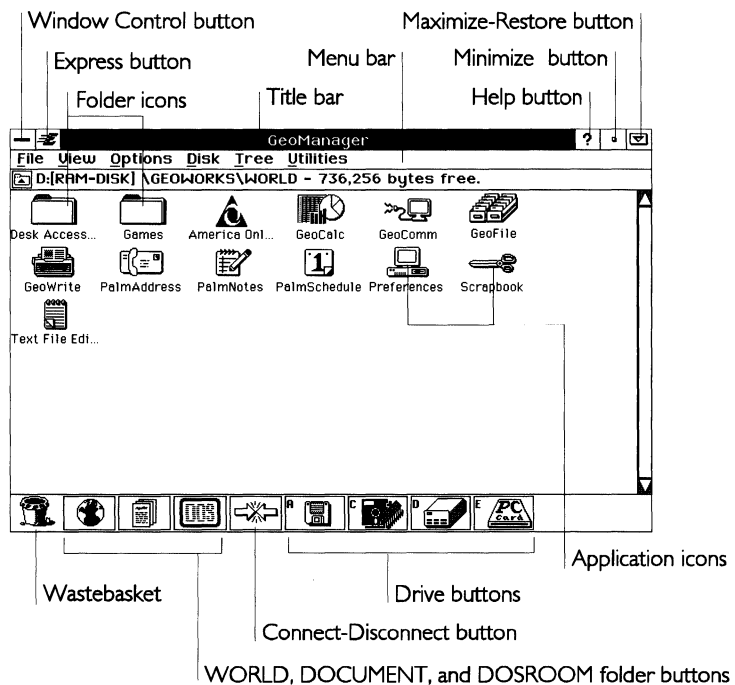
The external keyboard can work in conjunction with the floating keyboard. However, each keyboard works independently of the other when you enter special characters, such as bullets and em dashes. You enter these characters by using keystroke combinations, so you cannot enter the first keystroke from the external keyboard and the second keystroke from the floating keyboard.

NOTE

You will not be able to exit to DOS unless you have an external keyboard attached to the unit.

Exploring the Basics

The first application you see when you start the unit is GeoManager. Typically, the GeoManager window is always open, although it will close automatically whenever you start large applications such as GeoWrite or GeoFile. For more information about GeoManager, see Chapter 9.



Window Control button. This button opens the Window Control menu, a special menu for performing tasks such as closing, minimizing, or maximizing the window. Double-tap to close both the window and application.

Express button. This button opens the Express menu, a special menu for quickly performing common operations. You can start an application, switch between applications, check your printing job, or exit directly to DOS.

Title bar. This bar across the top of the window shows the names of the application and the currently opened document.

Menu bar. This bar contains all the drop-down menus for the application. Tap one of the names to open the menu.

Help button. This button opens the Online Help window.

Minimize button. This button removes the window from the screen temporarily. The application appears as an icon at the bottom of the screen. Double-tap the icon to restore the window to its previous size and position.

Maximize-Restore button. This button enlarges a window to fill the screen completely. When a window is full-size, it cannot be moved or resized. Tap it again to restore the window to its original size and position.

Application icons. These represent GEOS and DOS applications. You can double-tap an application icon to start the application.

Document icons. Each type of document has a unique icon. This icon usually contains the icon of the application used to create the document. If you double-tap the icon, the application starts and automatically opens the document. For more information, see “Opening and Closing Applications and Documents” in this chapter; also see Chapter 9.

Folder icons. Folder icons in the folder window represent directories. The terms “folder” and “directory” are often used interchangeably, in much the same way as “file” and “document” are. To open a folder, double-tap its icon.

Wastebasket. Drag items to the wastebasket to delete them. Items are immediately deleted and unretrievable.

WARNING

You cannot recover or retrieve items from the Wastebasket. When you place an item in the Wastebasket or use Delete, the item is permanently removed from the unit. Be careful to delete only those files you know you will not need later. You can set up warnings

(through the Options menu) to appear before you delete or throw away an item. For more information, see Chapter 9.

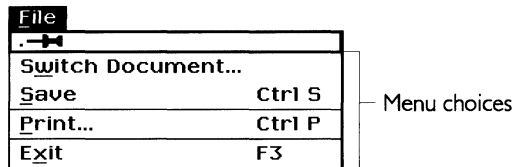
WORLD, DOCUMENT, and DOSROOM folder buttons. Tap these buttons to open their respective folders. You can also copy and move documents and folders to these folders by dragging their icons onto the appropriate button. For more information about these folders, see Chapter 9.

Connect/Disconnect button. Tap this button to connect to or disconnect from a computer that is running GeoHost. The icon on the button changes depending on the connection status — it is a connect button when there is no connection, and a disconnect button when the unit is connected to another computer. For more information about connecting and transferring files to another computer, see Appendix C.

MENUS

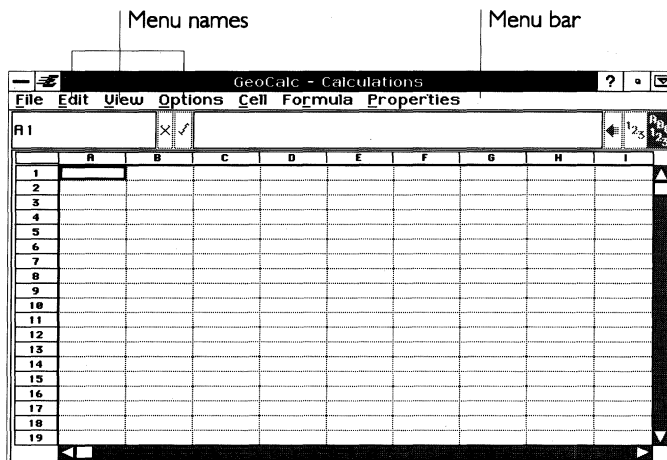
An application *menu*, like a restaurant menu, contains a list of choices. When you select a choice from a menu, the application initiates a corresponding action. For example, to print a document, you choose Print from the File menu.

This is an example of a typical menu:



Every GEOS application has its own set of menus. The names of all the menus appear on the menu bar. For example, you will see the following menu names in GeoCalc:

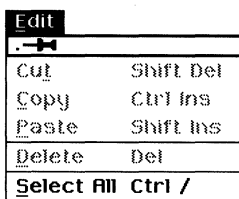
- File
- Edit
- View
- Options
- Cell
- Formula
- Properties



You do not see the menu itself until you tap on the menu name. This is called *opening* a menu.

Many GEOS applications share basic features such as opening, saving, copying, and printing documents. Applications often have similar menus because shared features work the same way in each application. Almost every GEOS application has a File, Edit, View, and Options menu. Once you know how to use choices from these menus in one application, you know how to use them in other GEOS applications.

When you open a menu, it appears on your screen so you can make selections from it. Menu choices that are not currently available appear dimmed; if you select a dimmed menu choice, nothing happens. For example, in GeoFile, the Cut, Copy, and Delete choices in the Edit menu are dimmed if you do not have anything selected.



To choose from a menu, tap the name of a menu on the menu bar and its menu appears. Tap the choice you want. As long as you select an undimmed choice, a corresponding action is initiated and the menu closes.

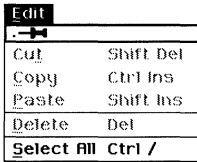
Selecting Menu Choices With Check Boxes

Some menu choices can be turned either on or off. When one of these choices is turned on, a small button next to the choice is darkened. When a choice is turned off, the button is not darkened. There are two types of buttons that can appear in a menu: check boxes and radio buttons. Radio buttons come in groups of two or more, and only one button in the group can be on at any given time. Check boxes can come in any number, and any number can be on at a given time. For more about check boxes and radio buttons, see “Responding to a Dialog Box” in this chapter.

Pinning Menus

If you want to make several selections from the same menu, you can *pin* it to keep it from closing after you make the first choice. Pinning a menu is a lot like pinning a piece of paper to a wall. A pinned menu stays open until you close it.

To pin and un-pin a menu



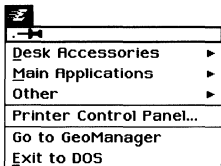
1. Tap the menu name. The menu appears.
2. To pin a menu, tap the pin icon. The menu changes to a window with a title bar and Window Control button. You can move the menu by dragging the title bar.
3. To un-pin a menu, double-tap the Window Control button.

THE EXPRESS MENU



The *Express menu* is a special menu that lets you quickly start an application, switch between applications, check your printing, or exit directly to DOS. The Express menu works just like any other menu in GEOS. But to see it, instead of tapping a menu name, you tap the Express button, which is located in the upper left corner of the active window. Once the Express menu is open, you can then make your choice.

Here are the items you have to choose from in the Express menu:



Desk Accessories. This displays the names of any applications that you have put in the Desk Accessories folder. For more about using the Desk Accessories folder, see “Desk Accessories” in this chapter, “World Clock” in Chapter 2, and “Calculator” in Chapter 4.

Main Applications. This displays a submenu from which you can start any GEOS application in the WORLD folder. For more information about the WORLD folder, see Chapter 9.

Other. This displays a submenu of other folders in the WORLD folder.

Printer Control Panel. This opens the Printer Control Panel dialog box, where you can see the documents you are currently printing or waiting to print. You can also cancel printing a document. For more information about printing, see “Printing” in this chapter.

Go to GeoManager. This brings the GeoManager window to the front, making it the active window. For more information about GeoManager, see Chapter 9.

Exit to DOS. This shuts down GEOS and returns you to the DOS prompt.

NOTE

You will not be able to exit to DOS unless you have an external keyboard attached to the unit.

WINDOWS

This section provides information about working with windows, including how to scroll, resize, and move them.

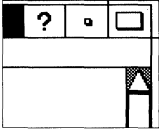
Changing the Size of a Window

You can change the size of a window in different ways. You can maximize a window, restore it, minimize it, or make it larger or smaller by dragging its edges. You can use these features to do the following:

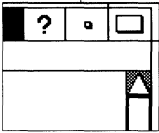
- See a window or document more clearly.
- Reduce clutter on your screen.
- Move something out of the way temporarily.

Not all windows can be resized in the same ways. Some windows can only be resized by dragging their edges, but cannot be maximized. Other windows, such as those for the World Clock and Calculator, cannot be resized at all.

Maximize-Restore
button



Minimize
button



To *maximize* a window means to make it full-screen. You use the Maximize-Restore button, which is shown on the left, to maximize a window, or to *restore* it to its original size once it has been maximized. The Maximize-Restore button's appearance changes depending on whether or not the window is maximized. You can also use the Maximize and Restore choices on the Window Control menu to maximize and then restore a window.

To *minimize* a window means to reduce it to an icon, which is then placed at the bottom of the screen. You use the Minimize button, which is shown on the left. To restore a minimized window, double-tap the icon.

You can resize a window to the exact size you want. You can make a window larger or smaller by dragging its borders or its corners. Maximized windows cannot be resized.

To make a window larger or smaller, drag a border or corner of the window in the desired direction until the window becomes the size you want. If you drag a border, the window size changes only on the side of the border you drag. If you drag a corner, the two adjoining sides that form the corner move at the same time.

NOTE

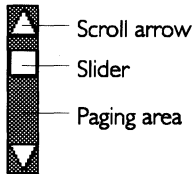
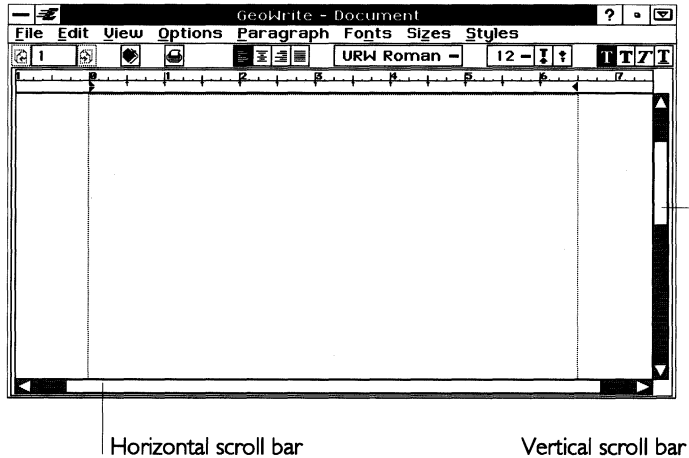
Each window has a minimum allowable size. If you try to make a window smaller than it can be, it will automatically resize itself to its minimum size.

Moving a Window

You can move most GEOS windows. Typically, you move a window because it is obscuring all or part of another window you need to see. You cannot move a maximized (full-screen) window. To move a window, drag its title bar to another location on the screen.

Scrolling Through a Window

Sometimes a document has more information than can fit in its window. Scroll bars on both the right side and the bottom of a window allow you to view more of its contents. Using these scroll bars is called *scrolling*. The vertical scroll bar on the right side of a window lets you scroll to portions of a document above and below the displayed contents. The horizontal scroll bar across the bottom of a window lets you scroll to portions of a document to the right and left of the displayed contents.



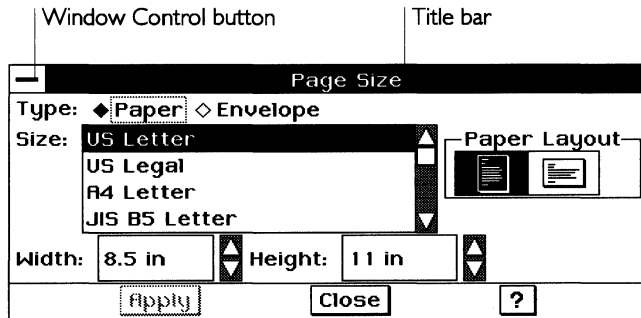
A scroll bar includes *scroll arrows*, *paging areas*, and a *slider*, which are shown in the illustration on the left. Using these elements, you can view the entire contents of a window in several different ways.

DIALOG BOXES

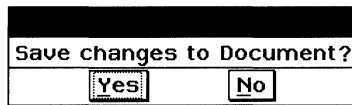
When an application needs more information from you or needs to alert you to something, a *dialog box* appears. There are two major types of dialog boxes.

The first type of dialog box functions like other windows. This type has a title bar, which you can use to move the dialog box, a Window Control button, and a Window Control menu. You can keep this type of dialog box open and switch between it and other windows. An example of this type of dialog box is the dialog box

that appears after you choose Page Size from the File menu in GeoWrite:



The second type of dialog box requires a response from you before you can continue. These dialog boxes have a thick solid border. An example of this type of dialog box is the one that appears after you close a document that you have not saved. You cannot take any other action until you respond to this type of dialog box.



Responding to a Dialog Box

There are various ways for you to enter information and make choices in dialog boxes. These are described below.

To respond to a dialog box, you select options and type text in text entry boxes. When you have finished, tap one of the buttons at the bottom of the dialog box to apply what you have set or chosen and continue.

Radio buttons appear in groups of two or more. As with the buttons on an old car radio, one — and only one — button in a group of radio buttons can be selected. Tapping one radio button turns on that button and turns off any other buttons in the group. When you tap a radio button, it darkens to show that it is selected.

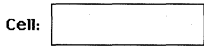
A *check box* allows you to select and deselect an option. When a check box is darkened, the item is selected and on; otherwise it is deselected and off. Check boxes are like light switches; tapping a check box switches the box from on to off or from off to on.

Unlike radio buttons, you can select more than one check box in a

- ◆ Inches
- ◇ Centimeters
- ◇ Points
- ◇ Picas

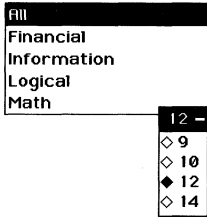
- Move
- Resize
- Rotate
- Skew
- Edit
- Delete

group. When you tap an empty check box, it darkens to show that the item is selected.



A *text entry box* allows you to enter text. For information about working with text, see “Working With Text” in this chapter.

A *value selector* has up arrow and down arrow buttons for moving through options or increasing or decreasing a value (a number). Tap the up arrow button to move to the preceding item or increase the value. Tap the down arrow button to move to the next item or decrease the value. You can also enter the value directly into the text field part of the value selector.



In dialog boxes, you often need to select an item from a list. There are two types of lists in dialog boxes: scrolling lists and drop-down lists. A *scrolling list* is already open when the dialog box appears.

A *drop-down list* looks like a regular button with a horizontal mark on the right side of the button. The current selection in the list is shown on the button. To choose a new selection, tap the button to see the list.



Every dialog box has buttons that initiate actions when you tap them. If a button label is followed by an ellipsis (...), tapping it leads to another dialog box. Common dialog box buttons include the following:

Apply. Applies the current settings, but leaves the dialog box open so you can continue to adjust the settings.

Close. Closes the dialog box. The current settings are applied only if you have previously used the Apply button.

Reset. Resets the box to its original settings, undoing any changes you have made.

OK. Applies the current settings and closes the dialog box.

Cancel. Closes the dialog box without applying your changes.

Stop. Ends the task in progress at the next possible stopping place.

Yes. Answers yes to the question in the dialog box. The dialog box closes.

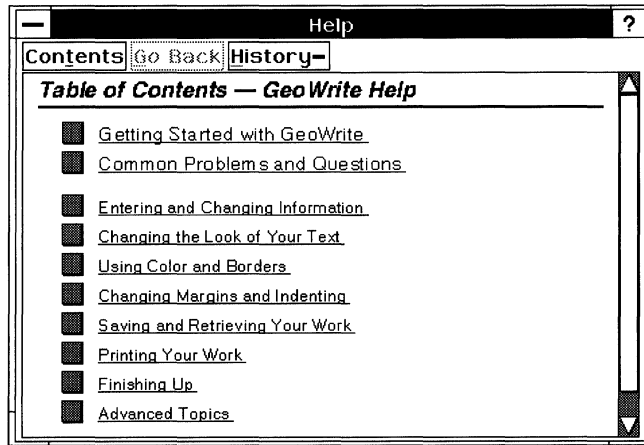
No. Answers no to the question in the dialog box. The dialog box closes.

ONLINE HELP



One way to get quick answers to your questions about the unit is to use the online help. Help is often just a single tap away — just tap a Help button, like the one pictured on the left. When you are in a dialog box, you will see a button like this one. When you tap it, you will see help text about that particular dialog box.

When you are using an application, there is a Help button at the top of the application window. Tap this button to see help about the application. The Help window appears:



When the Help window is open, it remains in the foreground until you exit Help. Nevertheless, even with the Help window open, you can perform actions in other windows and dialog boxes by tapping them. If the Help window is obscuring something you want to see, move the Help window out of the way by dragging its title bar. You can also uncover other screen items by reducing the size of the Help window. See “Changing the Size of a Window” in this chapter for more about resizing windows.

Often, not all the help text for a topic fits in the Help window. To see more help text, scroll through the text using the scroll bars in the Help window. You can also increase the size of the Help window to see more help text.

Help screens are organized by topic. Most of the topics are centered around common questions about the unit. Online help is not an online manual. It is not designed to be read from beginning to end, like a novel. It is designed so that you can easily jump from topic to topic. This way you can quickly find answers to your

questions. The buttons at the top of the Help window help you move easily between topics.

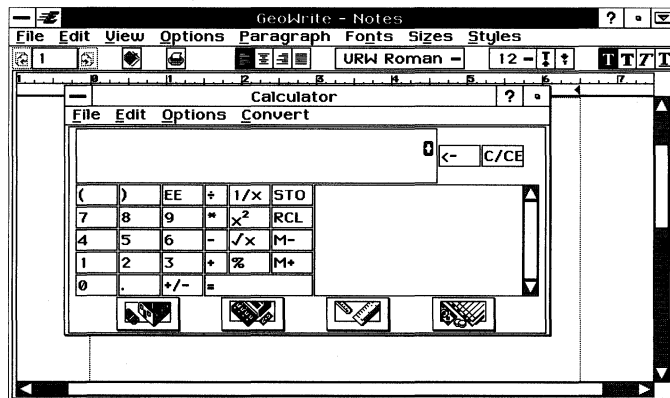
DESK ACCESSORIES

GeoManager has a folder called Desk Accessories. The desk accessories are the World Clock and the Calculator.

A desk accessory works exactly like an application, except for one difference: A desk accessory's window always remains in front of other windows, even if you tap another window to make it active. Normally, an application's window disappears behind any other application window that you tap. (However, if you tap the window of another desk accessory, it will appear on top of the first desk accessory window.)

The behavior of a desk accessory is useful if you want an application to remain visible on the screen at all times.

The illustration below shows how a desk accessory stays in front of an active application.



You can make any application a desk accessory. Just drag it to the Desk Accessories folder (in the WORLD folder).

Opening and Closing Applications and Documents

There are two ways to start an application: You can start an application by opening it directly, or you can start an application by opening a document that was created with the application. When you start an application, its window appears, ready for use. When you are finished using an application, you exit it. Closing an application closes its window and frees up system resources. If you reopen an application, it is brought to the foreground.

OPENING AN APPLICATION

The icons for the GEOS applications are available in the WORLD folder in GeoManager.

From GeoManager, you can open an application by doing one of the following:

- Double-tap the application icon.
- Double-tap the icon of a document created by the application you want to open.
- Select the icon for the application, then choose Open from the File menu.
- Select the icon for a document created in the application, then choose Open from the File menu.

From anywhere else in the system, you can open an application by doing one of the following:

- Tap the hard icon for the application. For more information on using hard icons, see Chapter 9. For information on changing the applications assigned to hard icons, see “Preferences” in Chapter 4. The default hard icon assignments are as follows:

Keyboard

1. GeoWrite
2. GeoCalc
3. GeoFile
4. Calculator
5. PalmAddress
6. PalmSchedule
7. PalmNotes

- Choose the application from the Express menu.

CREATING AND OPENING DOCUMENTS

Whenever you want to create a new document or open an existing one, you see a variation of the New/Open dialog box. The New/Open dialog box lets you create and open documents from within an application. Each application may have a different New/Open dialog box, but in every application it functions in a similar way.

If you open an application that does not already have an opened document, the New/Open dialog box appears so that you can open a document.

If you’re working on an open document and want to use another document within the same application, you can switch documents by choosing Switch from the File menu. When you choose Switch, the New/Open dialog box is displayed.

The New/Open dialog box can have some or all of the following buttons:

The particular buttons that appear in the New/Open dialog box depend on the application you are using and its current user level.

New. Allows you to create a new, empty document.

Open. Allows you to locate and open a document that already exists. For more information about opening documents, see the GEOS application chapters, including Chapter 5, Chapter 6, Chapter 7, and Chapter 9.

Template. Allows you to use a predesigned template to create a new document.

Import. Allows you to create a new document by reading in information from another application, such as a DOS word processor.

Change User Level. Allows you to change the application user level. This is the same as choosing Change User Level from the Options menu. By changing user levels, you specify how simple or complex you want the application to be. For more information, see Chapter 3.

Exit or Cancel. Exit allows you to exit the application, provided there is no document open in the application. If there is a document open, then this button becomes Cancel.

NAMING DOCUMENTS

The first time you open a document, you have to give it a name. The best way to name a document is to describe its contents so that you'll recognize it easily.

Some applications, such as Text File Editor, can create DOS documents; these documents must have DOS file names. If you need to use a DOS file name, the application you are using will specify this. However, most documents use GEOS document names, which are more flexible.

Naming a GEOS Document

There are some rules to follow when you name a GEOS document. The name can be up to 32 characters long and may contain both uppercase and lowercase characters. For example, you can name a document "Seva's Birthday Card" or "Financial Report 6/14". Each space you enter counts as one character.

Colons (:) and backslashes (\) are not permitted in the names of GEOS documents.

Naming a DOS File

To name a DOS file, you must use DOS file-naming conventions. These are described in Appendix D.

CLOSING DOCUMENTS AND EXITING APPLICATIONS

When you close a document, you also exit the application. You can exit an application at any time, but it is a good idea to save any open documents before you do. If you exit without first saving, the application gives you the opportunity to save your document.

There are three ways to exit an application:

- Choose Exit from the File menu.
- Double-tap the Window Control button.
- Choose Close from the Window Control menu.

NOTE

There may be times when an application is closed transparently. This happens when you already have one or more applications open and you open another. If there are insufficient resources to keep all the applications open at the same time, one (or more) is closed automatically. This occurs transparently — you don't see it. When you reopen the closed application, it will be in the state you left it in.

When you exit the last open application, GeoManager is restarted automatically. You will never see an empty screen.

SAVING DOCUMENTS

To save your document at any time, choose Save from the File menu. If you switch documents and have not saved, a confirmation message appears, allowing you to save the first document before switching to the second document.

STANDARD FILE SELECTORS

A standard file selector is a special type of dialog box that appears whenever an application needs to know where to store a file you want to save, copy, or move, or where to find a file. Although different file selectors contain slightly different text, depending on what you are doing, they generally look and operate the same way. Common standard file selectors appear when you want to select an existing document to open, when you want to save a

new document (or save an existing document under a new name), or when you want to create a copy of a document.

There are two ways to store documents, a simple way and a more complex way. These are described below.

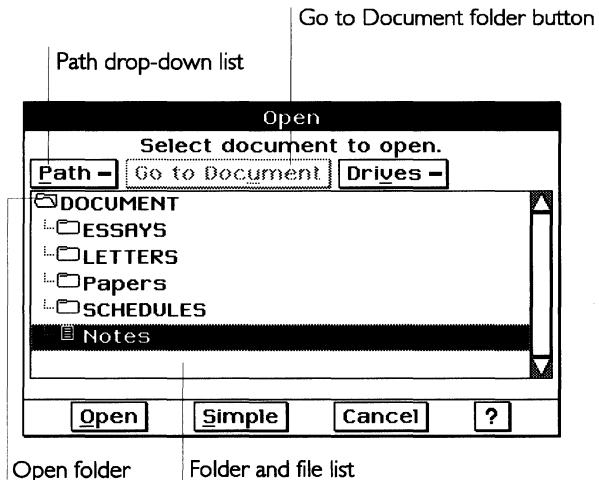
Storing and Retrieving Documents the Simple Way

Since the DOCUMENT folder is where GEOS assumes you are storing and retrieving documents, it's easiest to store documents in your DOCUMENT folder. By doing so, you avoid the trouble of changing folders and drives.

The simple standard file selector displays only the contents of the DOCUMENT folder. You can retrieve a document from this folder or store a document in it. The Advanced button appears at the bottom of this dialog box to allow you to switch to the advanced file selector.

Storing and Retrieving Documents the Advanced Way

If you need to store or retrieve documents on another drive or in a folder other than your DOCUMENT folder, you can use the advanced standard file selector to open and close folders and select files on any drive or directory you have access to. The following illustration is an example of an advanced standard file selector:



The folder at the top of the list is the open folder and its contents appear beneath it.

These buttons appear in an advanced standard file selector:

Path drop-down list. Tap this button to display the Path drop-down list. The folder at the bottom of the drop-down list is the current folder. Use this list to open, close, and change to other folders.

Go to Document folder button. Use this button to move immediately to your DOCUMENT folder.

Drives drop-down list. Tap this button to change from one disk drive to another.

Simple button. Tap this button to switch to the simple file selector.

Working With Text

When you use most GEOS applications, you enter text. The techniques for working with text are the same no matter which application you use. Once you have entered text, you can make changes to it.

ENTERING AND EDITING TEXT

If there is no text in the text area, you cannot move the insertion point.

Positioning the Insertion Point

The *insertion point* is the blinking vertical line that indicates where the characters you type appear on the screen. You can move the insertion point anywhere in the text by tapping the desired location.

Selecting and Replacing Text

When you want to make changes to text, first you must select the text you want to change. Selected text appears highlighted.

To select text, quickly tap the appropriate number of times as follows:

- 2 taps Selects a word, but not the space after the word
- 3 taps Selects a line
- 4 taps Selects a paragraph
- 5 taps Selects the entire document

The text you want to delete, replace, or change is selected.

If you change your mind after making a selection, you can cancel the selection by tapping anywhere in the text area.

The fastest way to replace text is to select it and then type the new entry.

Cutting, Copying, and Pasting

GEOS lets you move text around within your document, as if you were cutting and pasting with scissors and glue.

When you select text, you can cut it to move it elsewhere, or copy it to paste a replica of it in another place. The selection you copy or cut is placed on the *clipboard*, an electronic holding space.

When you choose Paste from the Edit menu, the contents of the clipboard are pasted into the active document. The active document can be the document that contains the original selection, another document in the same application, or another document in another application.

When you copy or cut a selection to the clipboard, it replaces whatever is currently on the clipboard.

To move or copy a selection

1. Select the item or text you want to move or copy.
2. Choose Cut or Copy from the Edit menu.

When you cut something, the item is removed from your document and placed on the clipboard, replacing any item previously copied or cut to the clipboard.

When you copy something, the item remains in your document and also goes to the clipboard, replacing any other item previously copied or cut there.

3. Move the insertion point to the desired location.
4. Choose Paste from the Edit menu. The contents of the clipboard are inserted into the document.

NOTE

When you paste an item into a document from the clipboard, the item also remains on the clipboard unless you replace it.

Therefore, you can continue to paste the same item from the clipboard to multiple locations in your document.

Deleting Text

You can delete text from any document. Select the text you want to delete and tap the **Backspace** or **Delete** key on the floating keyboard. Or choose Cut from the Edit menu after you have selected the text.

NOTE

Those methods that delete items by cutting place the selection on the clipboard. You can paste the selection from the clipboard to another location as long as you have not cut or copied another item to the clipboard.

Moving and Copying Text Using a Mouse

If you have an external mouse attached to the unit, you can use the following method to quickly move or copy a selection without using the clipboard.

To move or copy a selection using a mouse

1. Select the text you want to move or copy.
2. Position the mouse pointer over the selected text, then press and hold down the right mouse button. The pointer changes to the drag and drop pointer (shown at left).
3. Drag to the new location, and release the mouse button. The selected text is moved or copied to the new location.

As you drag, the square at the tail end of the pointer indicates whether the drag and drop will be a move or a copy: If the square is hollow, it will be a move; if the square is filled, it will be a copy.

You can override the GEOS decision by using the **Ctrl** key (which forces a copy) or the **Alt** key (which forces a move) on the floating keyboard. To do this, tap the appropriate key on the floating keyboard to highlight the key before dragging and dropping.

Using Undo

Sometimes you may delete some text, or change the way it looks, and immediately decide this is not what you wanted to do. If you have not done anything else, in some applications you can choose

Since this method does not use the clipboard, the contents of the clipboard remain intact.



Undo from the Edit menu to restore the text to its previous condition. Undo “undoes” the last editing change you made.

Once you choose Undo, its name on the Edit menu changes to Redo so that you can undo what was undone. Not all applications include Undo, and not all operations can be undone.

NOTE

Undo does not restore any changes made to the clipboard.

Working in Insert or Overstrike Mode

The method for entering text described in this manual is called *insert mode*. That is, the characters you type appear at the insertion point, pushing all existing characters to the right to make room for the new characters. You can use the Look & Feel options in Preferences to enable *overstrike mode*, in which the characters you type replace the characters to the right of the insertion point. This feature is normally disabled, but if you enable it in Preferences, you can use the Insert key to switch between insert and overstrike modes.

For more information on enabling the Insert key to switch between insert and overstrike modes, see “Preferences” in Chapter 4.

Typing Special Characters

You can type special characters, such as a bullet (•) or an em dash (—), with special key sequences. You can also type letters with accents, such as é. To include special characters, use the international keyboard.

FORMATTING TEXT

*A font is a typeface,
the design of the
individual
alphabetic and
numeric characters.*

You can use the same techniques to enter text and change its characteristics in every application.

Changing the Font

There are two ways to change a font: from the Style tool bar and from a menu.

To change the font using the Style tool bar, select the text you want to change and tap the Fonts drop-down list button on the Style tool bar. (The Fonts drop-down list button has the name of the currently selected font on it.) Choose the font you want from the drop-down list.

To change the font from a menu, select the text you want to change and choose Fonts from the Character menu. (In some applications, use the Properties menu or Fonts menu.) Choose the font you want, then tap Apply.

Viewing a Font

If you want to see how a font looks, you can use the Font Viewer option. If you like the design of the font, you can apply it to the selected text.

To view a font, select the text, then choose Fonts from the Character menu. Choose Font Viewer from the Fonts submenu. Select the font you want to see. The font is displayed at the bottom of the Font Viewer dialog box.

If you want to change the selection to the font you specified, tap Apply, then close the dialog box.

Changing the Text Size

Text size is usually measured in *points*, a measurement used in the printing industry. A point is approximately 1/72 of an inch. Therefore, 72-point text is one inch tall, and 12-point text is 1/6 of an inch tall. Most books and magazines are printed with 10- or 12-point text.

You can make text any size from 4 to 792 points. There are a limited number of preset text sizes available from the Sizes menu. If you want a size that is not listed, you can select a custom size.

You can change the text size from the Style tool bar or from the Sizes menu.

To change the text size using the Style tool bar, select the text you want to change, then tap the Sizes drop-down list button on the Style tool bar. (The Sizes drop-down list button shows the currently selected size.) Choose the text size you want.

To change the text size from a menu, select the text you want to change, then choose Sizes from the Character menu. (In some applications, use the Properties menu.) Choose the size you want from the list.

You can quickly make text the next larger or smaller predefined size. Select the text and tap the Larger or Smaller button on the Style tool bar. You can also choose Sizes from the Character menu. (In some applications, use the Properties menu.) Then choose Larger or Smaller from the Sizes submenu.

Changing the Text Style

Text can appear plain, like the text in this sentence, or you can change text to any of the following styles:

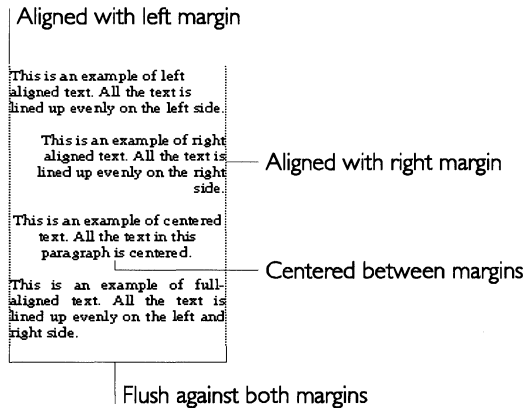
- **Bold**
- *Italic*
- Underline
- ~~Strike-Thru~~
- Superscript
- Sub_{script}

To change the text style from the Style tool bar, select the text you want to change. Then tap the text style you want to use.

You can also change the text style by choosing the style from the Styles submenu in the Character menu. (In GeoCalc and GeoFile, use the Properties menu.)

Changing the Text Alignment

The alignment, or *justification*, of text determines where the text lines up along a margin. For example, when text is left-aligned, the rows of text line up along the left margin (excluding specified indentation) and the right ends of the lines are ragged. When text is full-aligned, both the left and right sides of the text line up evenly along the left and right margins. See the illustration below for examples of the available alignments.



You can change the text justification from the Style tool bar or from a menu.

To change the text justification using the Style tool bar, make sure the insertion point is in the paragraph you want to change. Tap the justification button you want on the Style tool bar.

To change the text justification from a menu, make sure the insertion point is in the paragraph you want to change. Choose the type of justification from the Paragraph menu. (In GeoCalc and GeoFile, use the Properties menu.)

Printing

Typically, you print documents from within an application by choosing Print from the File menu. This section describes many common printing features and functions. However, the specific printing options you see will depend on the application and the printer you are using.

SETTING UP A PRINTER

Before you can print anything, first you must let GEOS know what printer you have attached to the unit. Use Printer Options in the Preferences application to set up your printer. For more information, see “Preferences” in Chapter 4.

PRINTING WITH STANDARD SETTINGS

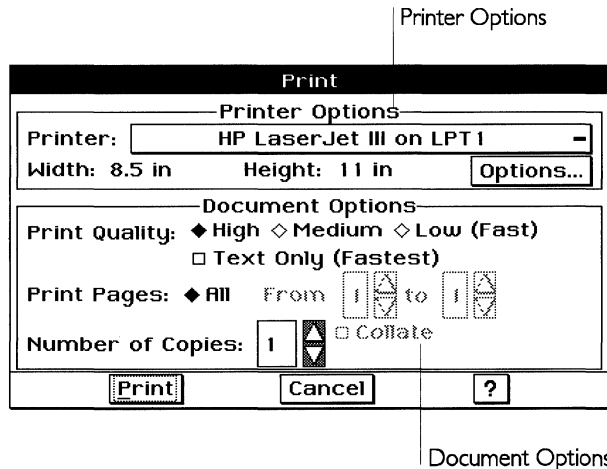
The Print dialog box comes with standard settings that work well to print most documents. The standard settings assume you want to print one copy of an entire document on 8.5" x 11" paper. If the standard settings do not meet your needs, see “Printing With Customized Settings” in this chapter. If you are using a color printer, you may also want to review “Tips for Users of Color Printers” in this chapter.

To print a document with standard settings

1. Choose Print from the File menu. The Print dialog box appears.
2. Tap the Print button at the bottom of the dialog box. A message appears, informing you that your document is printing. The document prints with the standard settings.

PRINTING WITH CUSTOMIZED SETTINGS

The Print dialog box allows you to set various printing options before you print a document. The available settings vary by application and by printer. A typical Print dialog box with some common options is shown here:



The Print dialog box is typically divided into two sections: Printer Options and Document Options. Depending on your application and printer, your Print dialog box may also have other sections.

Printer Options. Includes items such as the selected printer, paper width and height, paper source, and advanced printer options.

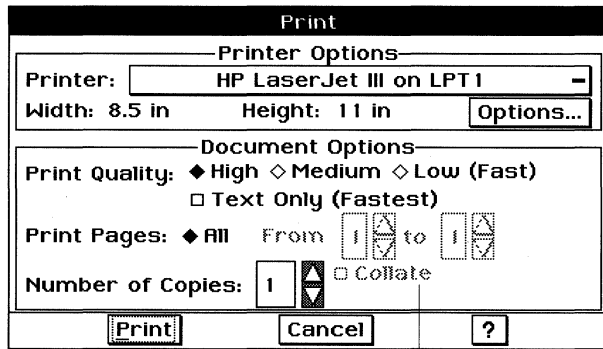
Document Options. Includes items such as Print Quality and Number of Copies.

Changing Document Options

The following procedure describes how to change the most common Document Options. The printer and application you are using determine which of these options are available to you.

To change Document Options

1. Choose Print from the File menu. The Print dialog box appears.
2. Fill in the dialog box, selecting from the Document Options section as follows:



Document Options

When printing on a color printer, you may get the best results by using the medium-quality setting.

Print Quality. Tap the radio button that represents the print quality you want to use. High quality produces the most professional-looking documents, but it takes longer to print than if you use low quality. Low quality prints much more quickly, but produces draft-quality documents. Typically, you would want to print at low quality when you are working on drafts and printing speed is important. Select high quality to print final documents.

Text Only. Text Only is the fastest way to print a draft because it uses an approximation of the fonts you see on screen and does not print any graphic images. Select the Text Only option if you want to get a printout of a document quickly.

Print Pages. Select All to print all the pages in the document, or specify a range of pages to print by using the up or down arrows.

Number of Copies. If you want to print more than one copy, change the number of copies by tapping the arrow buttons or typing a number in the Number of Copies box.

Collate. If you are printing multiple copies of multiple-page documents and you want them collated, check Collate. When you collate copies of a document, one copy of the entire document is

printed before the second copy is printed. Collating a document may require more time than not collating it. If you do not collate multiple copies, all copies of page 1 print before all copies of page 2, and so on.

3. Tap Print when you are ready to print the document with the new settings. If you want to change Printer Options before you print, see “Changing Printer Options” in this chapter.

Changing Printer Options

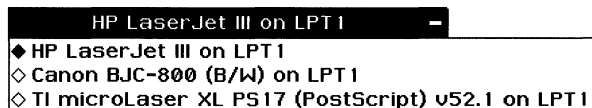
You are not likely to need to change Printer Options very often. Typically, you only change Printer Options, including size, type, and layout, if you change the paper in your printer.

Printer Options must always reflect the actual physical setup of your printer. That is, regardless of the size of your document on screen, if your printer is set up with 8.5" x 11" paper, the paper size in Printer Options must be 8.5" x 11". You can use the Page Size choice from the File menu to specify the size of your spreadsheet.

The following procedures describe how to print to a different printer, change paper options, change the paper source, and print to a file.

To print to a different printer

1. Choose Print from the File menu. The Print dialog box appears.
2. In the Printer Options section of the dialog box, locate the Printer option. Make sure the printer you want to use is selected. If it is not, use the drop-down list to select it.

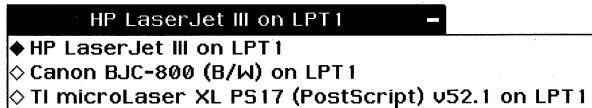


You need to have previously added this printer to your list using Preferences. For more information about Preferences, see “Preferences” in Chapter 4.

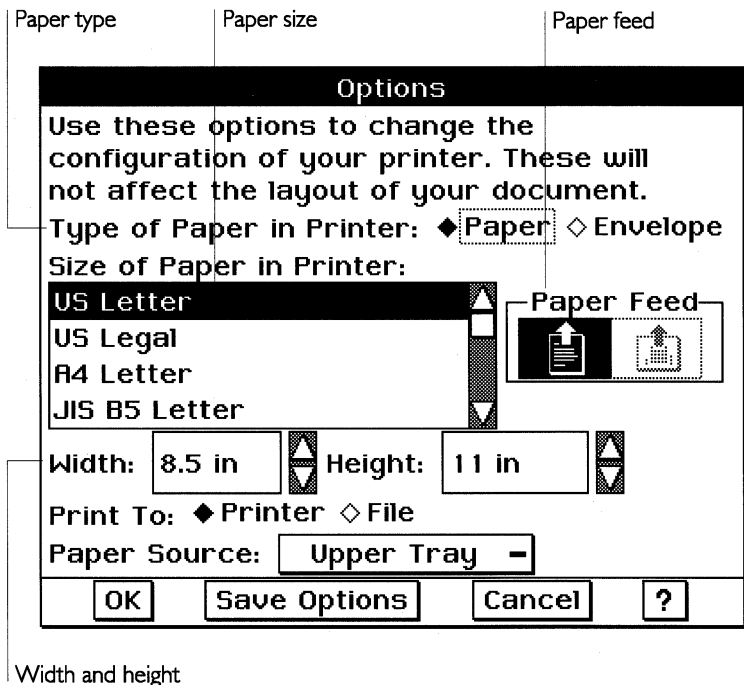
3. Tap Print when you are ready to print the document to the current printer. If you want to change paper options, change the paper source, or print to a file, see the following procedures. If your Print dialog box includes other options, see the chapters that describe the particular application you are using.

To change paper options

1. Choose Print from the File menu. The Print dialog box appears.
2. Make sure the printer you want to use is selected. If it is not, use the drop-down list to select it.



3. Tap the Options button that is below and to the right of the printer selection. The Options dialog box appears. It will look similar to the following, though it will vary depending on the printer you selected:



The settings in the Options dialog box must match the size and orientation of the paper in your printer.

4. Fill in the dialog box, changing the options you want, as follows:

Type of Paper in Printer. Change the paper type if it is incorrect.

Size of Paper in Printer. If the selected paper size is not the size of the paper in your printer, select the correct size from the paper size list.

Width and **Height.** If you want to use a custom paper size that is not included in the paper size list, use the Width and Height value selectors to enter the width and height of the paper you want to use.

Portrait Layout



Landscape Layout



Paper Feed. Select either portrait or landscape paper feed, *depending on the direction of the paper in the paper tray* — not on the layout that you have selected in the application. (In other words, if you set up your document with a landscape orientation, you do *not* need to alter the Paper Feed option; this option should *only* be changed if the paper feeds into the printer in an unusual manner.) *Portrait* layout is a page printed so that, as you read it, the width of the page is less than its height. A horizontal layout is called *landscape*.

5. Tap OK if you want the changes you have made to remain in effect for the current session.

or

Tap Save Options and then tap OK if you want the changes to remain in effect every time you print on this printer from now on. You can, of course, return to the Options dialog box whenever you want and change any of these options again.

You return to the Print dialog box.

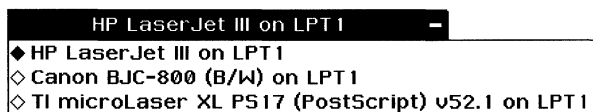
6. Tap Print when you are ready to print the document with the new settings. If you want to print to a file or change the paper source, see the following procedure. If your Print dialog box includes other options, see the chapter that describes the particular application you are using.

NOTE

You should only change the printer settings in the Options dialog box when they do not match the physical settings on your printer.

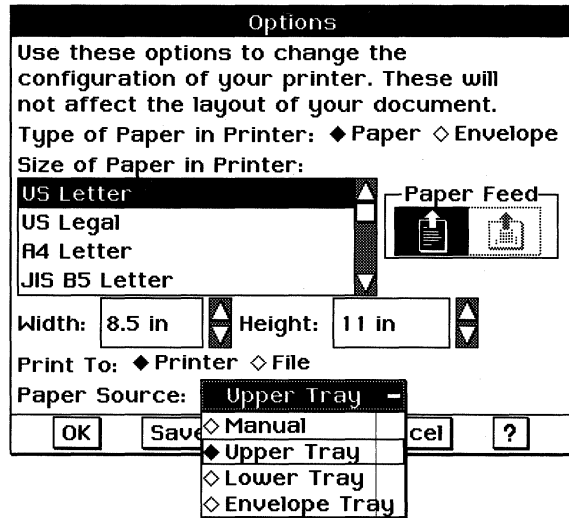
To change the paper source

1. Choose Print from the File menu. The Print dialog box appears.
2. Make sure the printer you want to use is selected. If it is not, use the drop-down list to select it.



3. Tap the Options button that is below and to the right of the Printer selection. The Options dialog box appears. It will look similar to

the following, though it will vary depending on the printer you selected:



Select the paper source from the drop-down list.

With some printers, the Paper Source options appear as radio buttons.

4. Use the Paper Source drop-down list to select the location of the paper you want to use. The available options depend on the printer you are using.
5. Tap OK if you want the change you have made to remain in effect for the current session.

or

Tap Save Options and then tap OK if you want the change to remain in effect every time you print on this printer from now on. You can, of course, return to the Options dialog box whenever you want and change the paper source again.

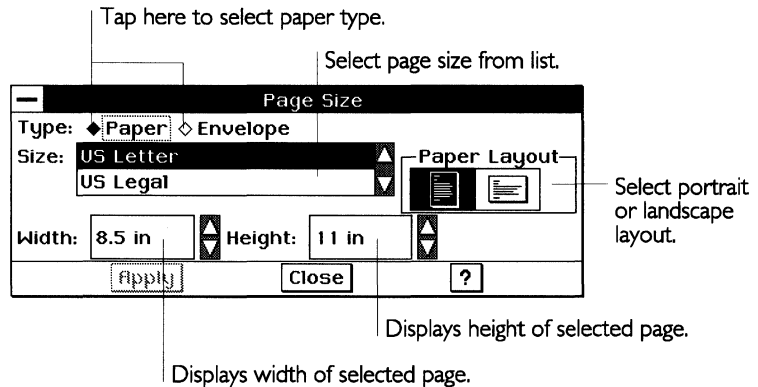
You return to the Print dialog box.

6. Tap Print when you are ready to print the document with the new settings. If you want to print to a file, see the following procedure. If your Print dialog box includes other options, see the chapter that describes the particular application you are using.

SETTING THE PAGE SIZE FOR PRINTING

The Page Size dialog box allows you to set various page size options before you print a document.

1. Choose Page Size from the File menu. The Page Size dialog box appears:



2. Fill in the dialog box, changing the options you want, as follows:
Type. Select Paper if the document is to be printed on a regular sheet of paper. Choose envelope if the document is for an envelope.
Size. Select the size from the paper size list.
Width and **Height.** If you want to use a custom paper size that is not included in the paper size list, use the Width and Height value selectors to enter the width and height of the paper you want to use.
Paper Layout. Select either portrait or landscape. *Portrait* layout is a page printed so that, as you read it, the width of the page is smaller than its height. A horizontal layout is called *landscape*.
3. Tap Apply to accept the changes you have made to the document. The changes are displayed on the screen, and the dialog box stays open to allow you to make more changes.
4. When you have completed making the changes you want to, tap Close.

PRINTING TO A FILE

Printing a document to a file creates a DOS file with all of the information that would have been sent to the printer, including all printer and graphic codes. This is especially useful when you want to have a document printed by a service bureau, such as when you want to create a PostScript file for a high-resolution phototypesetter. Printing to a file usually creates an extremely large file unless you are printing a PostScript file or are printing with the Text Only setting.

NOTE

One page of a complicated document can require over 1 MB of disk space. Make sure you have sufficient space before you print a document to a file.

To print to a file

1. Choose Print from the File menu. The Print dialog box appears.
2. Make sure the printer for which you want to create a file is selected. If it is not, use the drop-down list to select it.
You need to have previously added this printer to your list using Preferences. For instance, if you want to create a file for a PostScript printer, you will first need to install a PostScript printer selection using Preferences even if you do not have that printer physically attached to the unit. For more information on Preferences, see “Preferences” in Chapter 4.
3. Tap the Options button that is below and to the right of the Printer selection. The Options dialog box appears.
4. Tap the Print To: File radio button.

Print To: Printer File

Select to print to a printer or file.

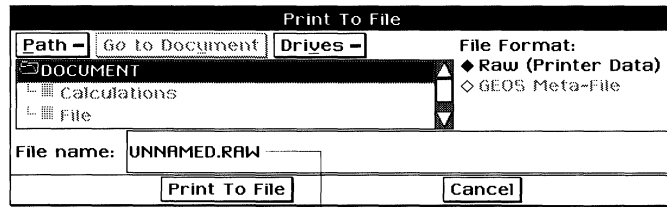
5. Tap OK if you want the change you have made to remain in effect for the current session.

or

Tap Save Options and then tap OK if you want the change to remain in effect every time you print on this printer from now on. You can, of course, return to the Options dialog box whenever you want and change printing to a printer again.

You return to the Print dialog box.

6. Tap the Print to File button at the bottom of the Print dialog box. The Print to File dialog box appears:



Enter DOS file name here.

When the Print to File option is set, the Print button becomes Print to File to remind you of the change.

7. Use the file selector to select the folder you want to store your file in. For more information, see “Opening and Closing Applications and Documents” in this chapter.
8. Enter the name of the file in the text entry box. You must use a DOS file name. For more information, see “Opening and Closing Applications and Documents” in this chapter.
9. Tap Print to File. The document is printed.

CHECKING AND CANCELING PRINTING DOCUMENTS

If you want to check the list of your print jobs or cancel a print job, choose Printer Control Panel from the Express menu.

GEOS keeps track of all the requests you make to print documents in a list called the *print queue*. Documents that you send to the printer are called *jobs*. You can send as many jobs to a printer as you like. You do not need to wait for one job to finish printing before you send another.

You can easily check the status of files in the print queue. To see a list of files being sent to a printer, use the Printer Control Panel, which you select from the Express menu.

To move a document to a different place in the print queue

You can move a document to the front or to the end of the print queue.

1. Choose Printer Control Panel from the Express menu. The Printer Control Panel list appears.
2. Select the document you want to print after any documents that are currently printing.

3. Tap either Make Next or Make Last. The document you selected moves to the appropriate position in the queue.

To remove a document from the print queue

If you decide you do not want a document to print after you have sent it to the print queue, it is easy to remove it from the queue.

Choose Printer Control Panel from the Express menu, then select the document you want to remove from the Printer Control Panel list. Tap Cancel Document. If it is not already printing, the document you selected is removed from the list.

TIPS FOR USERS OF COLOR PRINTERS

None of the applications in this manual support color printing, although other GEOS applications do, which is why all the color printing options are preserved. If you have a color printer that you are using with the unit, and you have configured it to print in color using Preferences, you may want to install the black-and-white printer selection for that printer using Preferences.

You can tell that a printer is configured for color by looking at the name that appears on the Printer drop-down list in the Printer Options section of the Print dialog box. If it has the word "color" in parentheses at the end of its name, then it is a color printer configured to print in color. If it has "b/w" in parentheses, then it is a color printer configured to print in black and white. If it has neither, then it is not recognized as a color printer.

You can set up both the b/w and color versions of the printer selection and simply choose the one you want from the drop-down list. When printing black-and-white documents, it is much faster to use the b/w version of the printer selection.

For more information on selecting and installing printers, see "Preferences" in Chapter 4.

Palm Application Basics

STARTING AND EXITING PALM APPLICATIONS

All of the Palm applications are available through GeoManager. PalmAddress, PalmSchedule, and PalmNotes are in the World folder; World Clock is in the Desk Accessories folder.

To start any of the Palm applications, double-tap the corresponding icon.



To exit a Palm application, double-tap the Exit icon. Any changes you have made are saved automatically.

SPECIAL PALM TOOLS

There are five tools that are specific to the Palm applications. They are:






Ink tool button

Allows you to use the pen and PowerInk™ to write directly on the screen.



Text tool button

Allows you to use one of the three text options: handwriting recognition (which translates what you write with the pen into typed text), the floating keyboard, or an optional external keyboard.

	Clear button	Allows you to clear the entry or page.
	Backspace button	Allows you to backspace and delete text character by character. In ink mode, tap this button to delete the last ink stroke.
	Show/Hide Sketch Tools button	Allows you to display the Sketch tools. You use these tools to draw and edit text and ink on the Sketch page.

The Ink tool, the Text tool, and PowerInk are described below. Handwriting recognition is described in Chapter 1.

POWERINK



PowerInk allows you to write or draw with the pen. The actual lines, circles, curves, and other images you create on the screen are called PowerInk, or ink for short. When you use the pen, the graphic images (letters, numbers, drawings) are stored exactly as you handwrite or draw them. You can use the pen on Sketch pages and in fields.

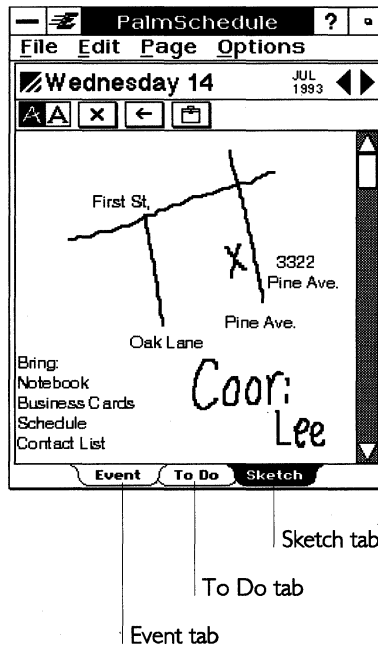
You can also convert your handwriting to typed characters (text) at any time through the use of handwriting recognition. (For more information on handwriting recognition, see Chapter 1.)

CAUTION

Text written with the pen takes up to 10 times more memory to store than text entered with handwriting recognition or with a keyboard.

THE SKETCH PAGE

In PalmAddress, PalmSchedule, and PalmNotes, you use a Sketch page to draw, make handwritten notes, enter text, or combine all three. In PalmSchedule, for example, you could use a Sketch page to draw a map showing the route to a conference, handwrite the conference coordinator's name, and type a list of items to bring.



On the Sketch page, you use the Ink tool to draw and write with the pen and the Text tool to enter text with handwriting recognition, with the floating keyboard, or with an optional external keyboard. You can also write, draw, and edit text and ink on the Sketch page with the *Sketch tools*. These are an additional set of Sketch tools that are displayed when you tap the Tool box. (See “Sketch Tools” in this chapter for information on using these tools.)

To use the Sketch page

1. From the PalmNotes table of contents, tap the page you want to use. In PalmSchedule, display the day view and tap the Sketch tab. In PalmAddress, display the entry page and tap the Sketch tab.
2. To enter ink, tap the Ink tool, then draw ink.
3. To enter text, tap the Text tool.









After tapping the Text tool, you can use the floating keyboard, the optional external keyboard, or handwriting recognition to enter text. When you use handwriting recognition, whatever you print with the pen is converted to text.

4. Tap Backspace to erase the last letter or ink segment you entered.

THE SKETCH TOOLS

This section provides detailed instructions on using the Sketch tools. You may want to skip this section until you need to use a Palm application that allows you to use the Sketch tools.

The Sketch tools allow you to draw, write, and edit text and ink on the Sketch page. They are grouped together in the Tool box and are displayed on a drop-down list when you tap the Tool box. The following table describes the Sketch tools:

TAP	To	NAME
	Write or draw in ink with the pen	Sketch pen
	Erase by hand (as if using a pencil eraser)	Eraser
	Select a portion of the Sketch page (drag the pen to select)	Select tool
	Cut the selected portion of ink or selected text	Cut icon
	Copy the selected portion of ink or selected text	Copy icon
	Paste the cut or copied portion of ink or selected text (must cut or copy something first)	Paste icon
	Zoom in on the selected portion	Magnify In
	Return to normal-size view	Magnify Out

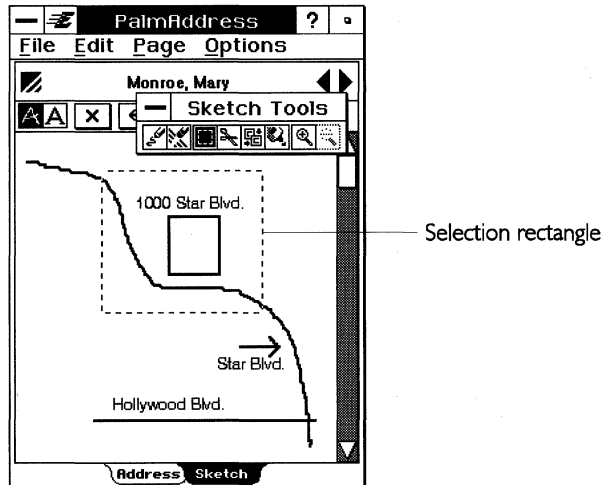
Using the Sketch Tools

You can cut or copy an item, and then paste it somewhere else on a Sketch page. You can also magnify an area for editing or adding details.

To cut or copy and paste an ink item

1. Tap the Ink tool.
2. Tap the Select tool.
3. Drag the pen diagonally to draw a boundary around the ink you want to edit.

Imagine a rectangle for the area you want to select. Start at one corner of this imaginary rectangle. Drag the pen on the screen diagonally until the rectangle is the size you want.



4. Tap the Cut tool to remove the item, or tap the Copy tool to copy the item.
5. Display the Sketch page where you want the item to go.
6. Tap the Paste tool.
7. Tap the place where you want the item to go.

To cut or copy and paste a text item

1. Tap to select the Text tool.
2. Hold down the pen and drag it across the text you want to edit.
3. Tap the Cut tool to remove the item, or tap the Copy tool to copy the item.
4. Display the Sketch page where you want the item to go.
5. Tap the place where you want the text to go.

To paste the text within existing text, tap the place where you want the text to start. The text will be pasted after the insertion point.

6. Tap the Paste tool.

To magnify an area

1. Tap the Select tool and drag the pen diagonally to draw a boundary around the area you want to magnify.

2. Tap the Zoom In tool to magnify the selected area.
You can add text or ink in the magnified area.
3. Tap the Zoom Out tool to return to normal magnification.

Copying or Cutting a Whole Sketch Page

You can copy or cut everything on a Sketch page (including all text and ink) at once. Then you can paste the whole page on another Sketch page in PalmSchedule, PalmNotes, or PalmAddress.

NOTE

Pasting a whole page onto another Sketch page replaces the contents of the destination Sketch page.

To copy or cut a whole Sketch page

1. Display the Sketch page that you want to copy or cut.
2. Choose Copy All or Clear All from the Edit menu.
If you choose Clear All, you see a message asking you to confirm the deletion.
3. Display the Sketch page where you want the information to go.
4. Choose Paste All from the Edit menu.
If something is already present on the Sketch page, you see a message warning you that the contents of the Sketch page will be replaced. Select Yes to replace or No to cancel.

SENDING AND RECEIVING PAGES

This section provides detailed information on sending and receiving pages. You may want to skip this section until you are familiar with the Sketch Page and you need to use a Palm application that allows you to send and receive pages.

You can send pages to another unit and receive pages from another unit by using Send and Receive from the Page menu. In PalmSchedule and PalmNotes, you can send and receive Sketch pages only. In PalmAddress, you can send and receive both Address pages and Sketch pages.

Before you can transfer information, you need to do the following:

- Verify that both machines are running Palm applications.

- Set the page send/receive options and attach the two machines with a serial cable. For information about setting the send/receive options, see “Preferences” in Chapter 4.

CAUTION

When you receive a Sketch page from another unit, your current Sketch page is automatically replaced with the Sketch page from the other unit. To save your current Sketch page, you should add a new blank Sketch page. This will prevent any received pages from overwriting your current page.

To send or receive pages

1. Connect the two units with a serial cable.
2. On the sending unit, open the application and display the Sketch page or Address page you want to send.
3. On the receiving unit, display a blank Sketch page or Address page for the information.
4. On the sending unit, choose Send from the Page menu. A dialog box appears.
5. On the receiving unit, choose Receive from the Page menu. A dialog box appears.
6. Tap Send in the Send dialog box.
7. Tap Receive in the Receive dialog box.

PRINTING

You can print the following from the Palm applications:

- An Address page, a Sketch page, or a range of pages from PalmAddress.
- An Event page, a To Do page, or a Sketch page for a single day or a series of days from PalmSchedule.
- A Sketch page or a range of pages from PalmNotes.

First install a printer, then connect the unit to the printer. (For more information, see “Preferences” in Chapter 4.)

To print a page from PalmAddress, PalmSchedule, or PalmNotes

1. Go to the page you want to print.
2. Choose Print from the File menu. The Print dialog box appears.

3. Choose the print quality: High, Medium, or Low. High quality generally takes longer to print than low quality.
4. To print all the pages in PalmAddress and PalmNotes, choose All.
or
To print a range of pages, select the starting and ending page numbers (PalmAddress, PalmNotes) or the starting and ending dates (PalmSchedule).
or
To print just one page, make the starting and ending page numbers the same (PalmAddress, PalmNotes) or the starting and ending dates the same (PalmSchedule).
5. Choose the type of page you want to print:
Address or Sketch (PalmAddress)
or
Event, To Do, or Sketch (PalmSchedule).
6. Tap Print.

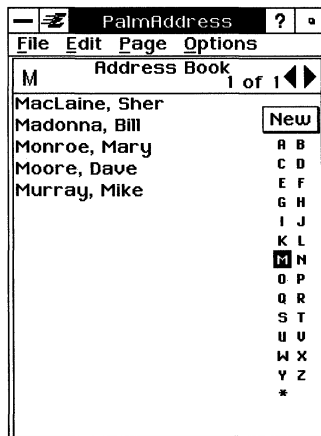
PalmAddress

PalmAddress is like an office card file to help you keep track of the names and addresses of your contacts and other information about them.

VIEWING PALMADDRESS

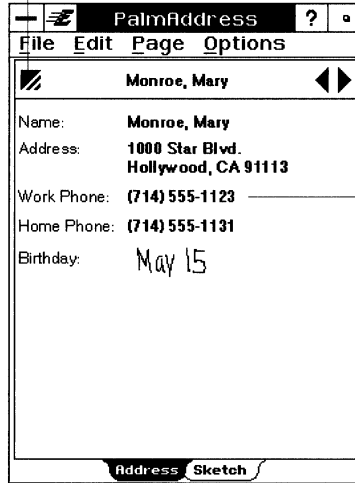
PalmAddress has two views: an index of address book entries and the address book entry view.

You use the index view to display a list of names in your address book.



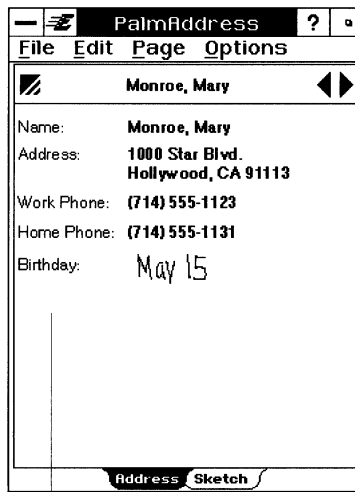
You use the address book entry view to store contact information:

Tap the change view icon to return to the address book index.

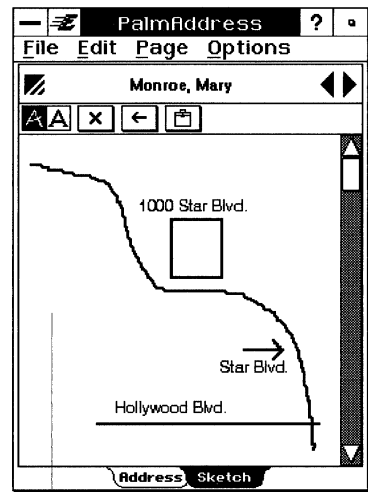


Tap a field to enter information.

Each PalmAddress entry also has a Sketch page:



Use the address page to enter information on a contact.



Use the sketch page to take notes for the contact or draw a map.

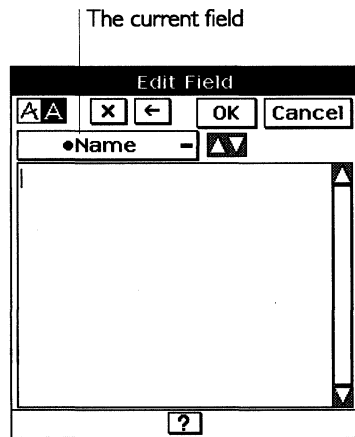
See “Sketch Page” and “Sketch Tools” in this chapter for a description of the Sketch page and information on using the Sketch tools.

ADDING A PALMADDRESS ENTRY

The Address page displays place holders (called fields) for address information. To add a new entry, enter information in the fields.

To add a new entry

1. Tap the New button above the letters in the index view, or if you are on the Address page or the Sketch page, choose New Entry from the Page menu. You do not have to be in the letter that matches the name of your entry. PalmAddress alphabetizes the entries for you. The Edit Field dialog box appears:



2. Enter the information into the current field.
The current field is the Name field. Address entries are alphabetized by the Name field for each entry. Enter the last name in the Name field, or enter the last name and the first name, separated by a comma. You must enter something in the Name field or PalmAddress cannot save the entry.
3. To add information to another field in this entry, select the field from the list of fields.
When you tap the current field, a pop-up list of fields appears. In the list of fields, the current field is marked with a circle next to it. Fields marked with a circle are displayed on the Address page. Fields not marked with a circle are not displayed, though any data you enter into them is saved. You can change which fields are displayed. See “Changing How Fields are Displayed” in this chapter.
4. When you finish, tap OK.

NOTE

If you enter a name with the pen without handwriting recognition, PalmAddress cannot alphabetize the entry. When you exit the Edit Field dialog box, a dialog box appears in which you can specify under which letter the entry should be alphabetized. See the steps for moving an entry in “Editing an Entry” in this chapter.

To add information to the Sketch page for an entry

1. Tap the Sketch tab to display the Sketch page for the current entry.
2. Enter ink or text on the Sketch page.

See “Sketch Page” and “Sketch Tools” in this chapter for a description of the Sketch page and information on using the Sketch tools.

Editing a PalmAddress Entry

You can change the information in an existing entry, delete an entry from your address book, or move an entry’s position in the index.

To change an existing entry

1. Display the entry you want to change.
2. Tap the field you want to change. The Edit Field dialog box appears. To use handwriting recognition to convert your ink to text, tap the Text tool.
3. Make any changes you want, then tap OK.

To delete an entry

1. Display the entry you want to delete.
2. Choose Delete Entry from the Page menu. A confirmation message appears.
3. Tap Yes to delete, or tap No to cancel the deletion.

To move an entry

You can only move entries with ink names. You cannot move text entries entered with handwriting recognition, with the optional external keyboard, or with the floating keyboard.

1. Display the entry you want to move.
2. Choose Move Entry from the Page menu. The Move Entry dialog box appears.
3. Tap the letter.

4. Tap OK. PalmAddress places the entry as the last entry on the specified index page.

Duplicating a PalmAddress Entry

You can duplicate a PalmAddress entry. For example, you may have several contacts at the same company. You can duplicate one entry and make the appropriate changes to the next entry to save time.

To duplicate an entry

1. Display the address entry you want to duplicate.
2. Choose Duplicate Entry from the Page menu. A new Address page with the duplicate entry already entered is displayed, and the Edit Field dialog box appears.
3. Make any changes you want, then tap OK.

CUSTOMIZING FIELDS

PalmAddress contains four customizable fields. Changing the names of the fields changes the names of the corresponding fields on all PalmAddress entries. Information already in the fields is not lost; only the field names are changed.

You can also choose to show or hide fields that do not have any information in them, and change the way fields are displayed.

Changing Customized Field Names

To change a field name

1. Choose Edit Custom Field Labels from the Options menu. The Edit Custom Field Labels dialog box appears:

Custom Label: Custom 1
 Custom 2
 Custom 3
 Custom 4

Birthday

OK Cancel ?

Select the custom field you want to change.

2. Tap the custom field whose name you want to change.
3. Backspace over the label in the field to enter a new label.

or

Use the pen to print a new label (your handwriting is automatically converted to text).

Hiding Empty Fields

If you use only certain fields on the Address page, you can hide the ones you do not use to save screen space.

To hide fields

1. Choose Show Empty Fields from the Options menu. The box next to the menu item clears, which means the Show Empty Fields option is deselected. Now all the empty fields for the entry are hidden. Only those fields that contain information are displayed.
2. Choose Show Empty Fields again to redisplay the empty fields (the box is now black).

HINT

Fields that contain information but are not displayed do not appear on the Address page. To display only fields containing information, select all the fields in the Display Fields dialog box, then deselect Show Empty Fields from the Options menu.

Changing How Fields are Displayed

You can change which fields are displayed in PalmAddress. The PalmAddress page is preset to display Name, First Name, Address, Work Phone, Home Phone, and Fax. For example, instead of displaying the address field and entering the entire address in that one field, you can display several fields — address, city, state, and zip — and enter part of the address in each field.

NOTE

You can enter information in a field that is not displayed. The information exists; it just does not appear on the page.

To select which fields to display

1. Choose Display Fields from the Options menu. The Display Fields dialog box appears, listing all the fields in the address book. PalmAddress displays the fields that have the black boxes next to them.

Display Fields	
<input checked="" type="checkbox"/> Name	<input checked="" type="checkbox"/> Home Phone
<input checked="" type="checkbox"/> First Name	<input type="checkbox"/> Other Phone
<input checked="" type="checkbox"/> Address	<input checked="" type="checkbox"/> Fax
<input type="checkbox"/> City	<input type="checkbox"/> Email
<input type="checkbox"/> State	<input type="checkbox"/> AOL Email
<input type="checkbox"/> Zip	<input type="checkbox"/> Notes
<input type="checkbox"/> Country	<input checked="" type="checkbox"/> Birthday
<input type="checkbox"/> Title	<input type="checkbox"/> Custom 2
<input type="checkbox"/> Company	<input type="checkbox"/> Custom 3
<input checked="" type="checkbox"/> Work Phone	<input type="checkbox"/> Custom 4
<input type="button" value="OK"/>	<input type="button" value="Cancel"/> <input type="button" value="?"/>

Selected fields (those with a black box) are displayed on the address page.

2. To display a field, tap it so the box is black.
3. To remove a field from the page, tap it so that the box is empty. You do not lose the information in the field; it just does not appear on the page.
4. Tap OK.

CREATING A NEW PALMADDRESS DOCUMENT

When you first start PalmAddress, an address book document, called Address Book, is automatically created for you. You can have more than one PalmAddress document — for example, one for business contacts and another for personal contacts.

To create a new PalmAddress document

1. Choose Switch Document from the File menu.
2. Tap the New icon.
3. Give the new document a name, then tap Create New Document. The new document becomes the current one.

SWITCHING TO A DIFFERENT PALMADDRESS DOCUMENT

Another way to switch is to tap the document name at the top of the index page.

To switch to another PalmAddress document

1. Choose Switch Document from the File menu.
2. Tap Open. A list of PalmAddress documents you have created appears.
3. Tap the document name you want to use.
4. Tap Open.

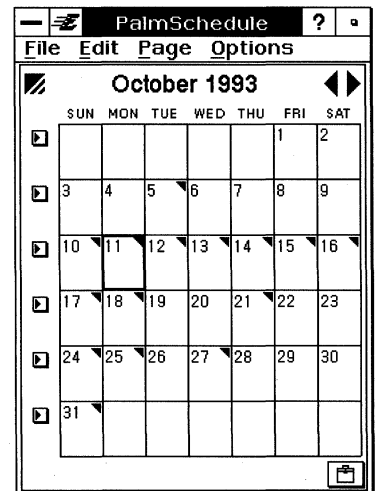
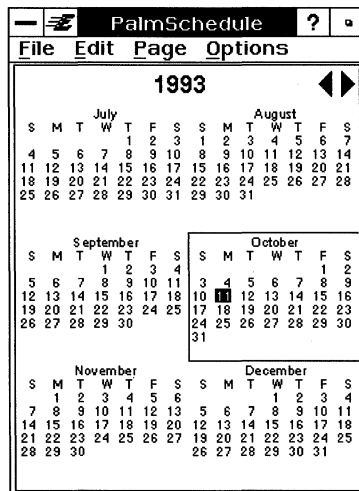
PalmSchedule

PalmSchedule works like a desk calendar and an appointment book. You can schedule meetings and have PalmSchedule remind you about them. You can schedule recurring events, such as birthdays or weekly meetings. You can also keep track of important To Do items.

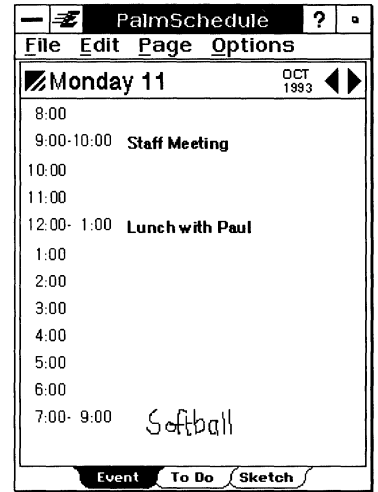
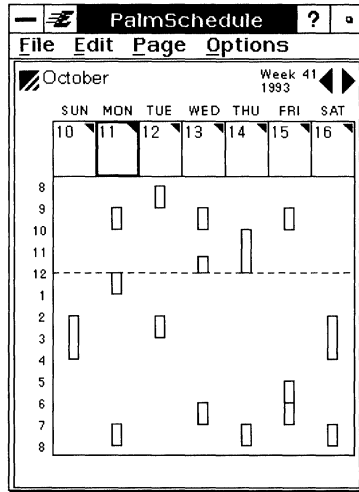
VIEWING PALMSCHEDULE

PalmSchedule has four views: six-month, month, week, and day. You can quickly move among the views by tapping with the pen.

The Six-month View and the Month View

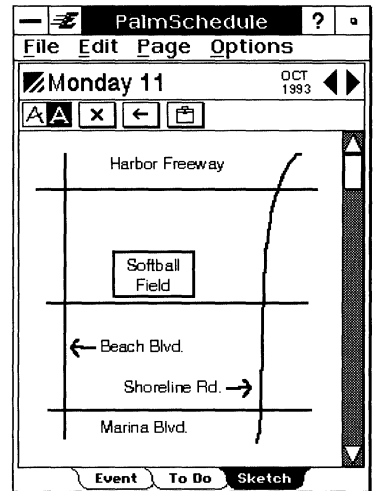
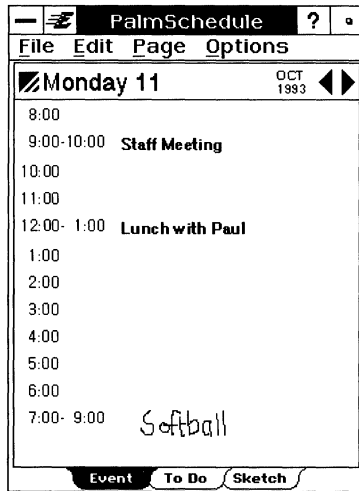


The Week View and the Day View

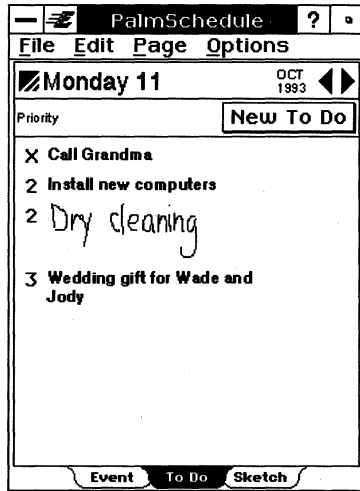


Each day view has three pages: an Event page, a To Do page, and a Sketch page.

Use the Event page to plan your day.
Use the Sketch page to take notes for the day or draw a map to a meeting.



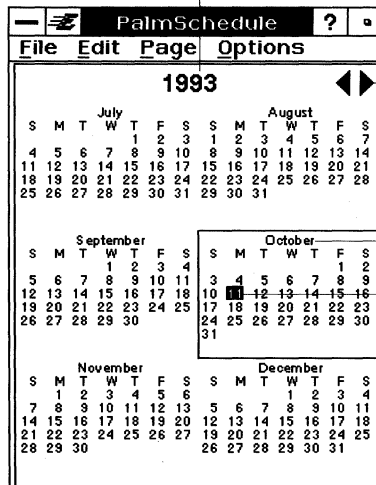
Use the To Do page to make a list of To Do items for the day.



The Six-Month View

PalmSchedule outlines the current month with a box and highlights the current day.

Tap the date at the top to quickly go to a specific date.



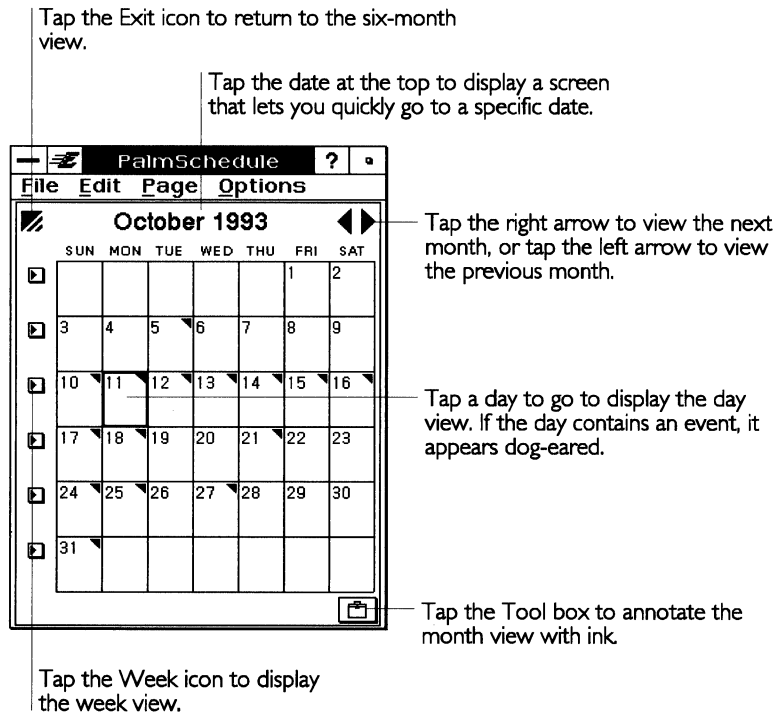
Tap the right arrow to view the next six months, or tap the left arrow to view the previous six months.

Tap a month to go to the month view. The current month is outlined with a box.

Current date is highlighted (shown in reverse).

The Month View

PalmSchedule outlines the current day with a box. Use the month view as an index to the days. Tap a day to go to that day.



In the month view, you can use the pen and the special Sketch tools to write or draw sketches. See “Sketch Page” and “Sketch Tools” in this chapter for information on using the Sketch tools.

The Week View

PalmSchedule outlines the current day with a box. Use the week view as an index to the days. Tap a day to go to that day. You can also see a visual representation of your time schedule.

Tap the Exit icon to return to the month view.

Tap the right arrow to view the next week, or tap the left arrow to view the previous week.

The current day is outlined with a box.

Time usage bars show times where you've scheduled events.

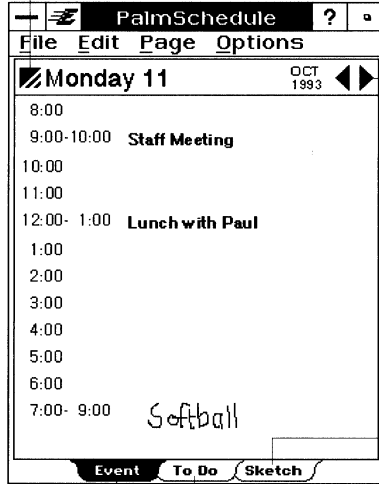
Overlapping events

If the day contains an event or information, it appears dog-eared. The week view shows the durations of the events scheduled for each day. Dark areas in the time bars indicate overlapping events.

The Day View

PalmSchedule displays the Event page for the selected day.

Tap the Exit icon to return to the month view or week view.



Tap the right arrow to view the next day, or tap the left arrow to view the previous day.

Tap the Sketch tab to view the sketch pages.

Tap the To Do tab to view the to do page.

Tap the Event tab to return to the event page from the to do or sketch pages.

Each day has an Event page, a To Do page, and a Sketch page.

Going to a Specific Date

You can quickly display a specific day by choosing Go To Day. This is often quicker than moving among the PalmSchedule views.

To go to a specific date

1. Tap the date at the top of any of the PalmSchedule views.

or

Choose Go To Day from the Options menu.

A dialog box appears:

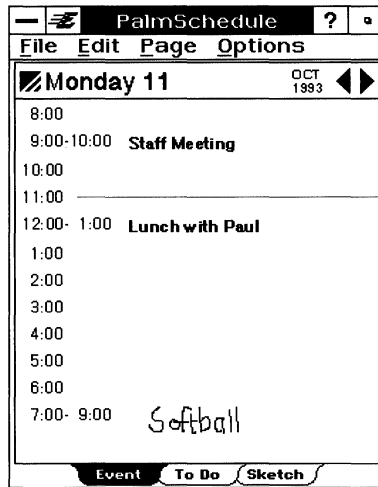
Tap the up or down arrow to change the month and year.



2. Select the month and year you want by tapping the up arrows to move to following months or years, or the down arrows to move to previous months or years.
Tap Today if you are viewing another date and want to go to today's date.
3. When the month and year are correct, tap the day of the month.
4. Tap OK. PalmSchedule displays the day view for the date.

USING THE EVENT PAGE

The Event page lists your schedule for the day:



Tap a time period to enter an event for that time.

Adding an Event

On the PalmSchedule Event page, you can:

- Schedule a one-time event
- Schedule a repeating event
- Set an alarm for an event

You can also change the starting and ending times of the day and the durations of the time slots. For information, see “Setting PalmSchedule Preferences” in this chapter.

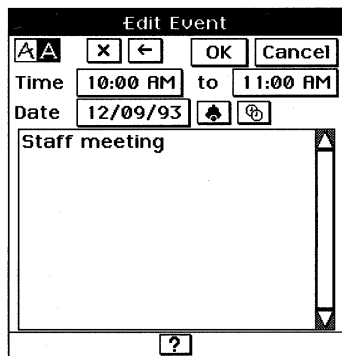
To schedule an event







1. Tap the time slot you want to schedule.

or


Choose New Event from the Page menu.

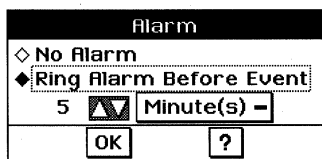
The Edit Event dialog box appears:



-  Ink tool
-  Text tool
-  Clear
-  Backspace
-  Set an alarm for the event
-  Repeat the event

PalmSchedule automatically enters the beginning and ending times for the event based on the time slot you selected. You can change the times to make them more precise or move the event to a different time.

2. Enter a description for the event using one of the following methods:
 - Tap the Ink tool and then use the pen. Information is stored as you wrote it.
 - Tap the Text tool and then use handwriting recognition, the floating keyboard, or the optional external keyboard. (For more information, see Chapter 1.)
3. To change the starting time for the event, tap the starting time button, then select the time in the dialog box that appears. Tap OK.
You can indicate that an event has no starting time by tapping None.
4. To change the ending time for the event, tap the ending time button, then select the time in the dialog box that appears. Tap OK.
You can indicate that an event has no ending time by tapping None.
-  5. To enter an alarm for the event, tap the Alarm icon. A dialog box appears:



6. Tap Ring Alarm Before Event to set the alarm.
If you select No Alarm, the alarm does not sound.
7. Set the amount of time prior to the event that you want the alarm to ring by tapping the up or down arrow.
You can change time prior to the event that you want the alarm to ring in minutes to hours or days. Tap Minutes. A drop-down list appears. Select Hours or Days.
8. Tap OK to accept your changes.
If an alarm is set for an event, you see a black triangle in the right corner of the alarm icon.
9. Tap OK to return to the day view Event page.

Adding a Repeating Event

You can add an event that occurs on a regular basis, such as a weekly staff meeting, a monthly company meeting, or a birthday. You only need to add the event once. You can add the following periodic events:

- Daily (for example, every day at 2:00).
- Weekly (for example, every Friday).
- Monthly by date (for example, the 15th of every month).
- Monthly by day (for example, the second Saturday of each month).
- Yearly (for example, every year on July 18).

To add a repeating event

1. On the Event page, tap a time slot. A dialog box appears.
2. Tap the Repeat icon. A dialog box appears:



Repeating Event

Every	1	▲▼	Week(s)	-
Starting	10/14/93			
◇ Until	10/14/93			
◇ For	10/14/93			
◆ Forever	1	▲▼	Day(s)	-

OK
?

Frequency pop-up menus

3. To change the frequency, tap the Frequency drop-down list to select Days, Weeks, Month/Date, Month/Day, or Years.
4. Select the event frequency by tapping the up or down arrow to increase or decrease the number after Every.

5. Next, select one of the following: ending date, time interval, or forever.

To select an ending date, tap Until. Then tap the date and select a new date.

To select a time interval, tap For. Then select the number of Days (or select Weeks, Months, or Years from the drop-down list).

Select Forever to repeat the event forever.

NOTE

If the starting and ending dates are the same, the event does not repeat. If you select a time interval less than the repeat interval, the event does not repeat.

6. Tap OK. If the event repeats, you see a black triangle in the repeat icon.
7. Tap OK to return to the day view Event page. The repeating event appears in the Event pages.

HINT

To enter an event that occurs yearly on a specific day (such as a holiday), use the Month/Day event and have it repeat every 12 months.

Editing an Event

You can change the information about an existing event or delete an event from your schedule.

To delete an event

1. On the Event page, tap the event you want to delete.
2. Tap the Clear icon, then tap OK.

To change an existing event

1. On the Event page, tap the event you want to change. A dialog box appears. To convert your ink into text, tap the Text icon.
2. Make any changes you want, then tap OK.

To change a repeating event

1. On the Event page, tap the repeating event you want to change. A dialog box appears.

or

Choose Repeating Events from the Options menu. A list of repeating events appears. Tap the event you want to change.

2. Make any changes, then tap OK.

Showing and Hiding Empty Events

The Event page lists all time slots in the day, even if you have not scheduled an event for each time slot. To save space on the screen, you can choose to show only those time slots that contain a scheduled event.

Show Empty Times on the Options menu allows you to display or hide empty time slots.

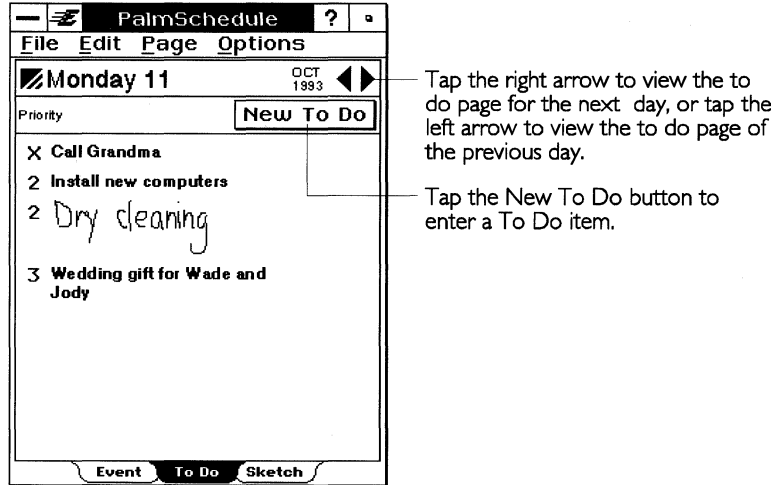
Showing Event Duration

The Event page time slots list the starting time for the events. You can choose to show the duration for scheduled events — for example, 11:00-12:30.

Show Event Duration on the Options menu allows you to display or hide Event duration.

USING THE TO DO PAGE

The To Do page lets you write a list of To Do items for the day. To Do items appear on each subsequent day until you mark them as complete.



Adding a To Do Item

On the PalmSchedule To Do page, you can make a list of items to remember or accomplish. You can also set a priority for each item.

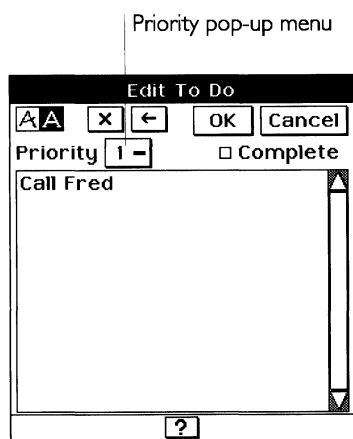
To add a To Do item

1. Tap the New To Do button.

or

Choose New To Do from the Page menu.

A dialog box appears:



2. Enter a description for the To Do item using one of the following methods:
 - Tap the Ink tool to write with the pen and leave it just as you wrote it.
 - Tap the Text tool and then use handwriting recognition, the floating keyboard, or the optional external keyboard. (For more information, see Chapter 1.)
3. Tap the Priority drop-down list and assign a priority to the item. Priority 1 is the highest; priority 3 the lowest. Items are listed in order sorted by priority, and then the date entered.
4. Tap OK.

Editing a To Do Item

You can change the information about an existing To Do item, delete the item from your list, or mark an item as complete.

To change or delete an existing To Do item

1. On the To Do page, tap the item you want to change or delete. A dialog box appears.
2. Make any changes you wish to edit the item, or tap the Clear icon to delete the item. Then tap OK.

To mark an item as completed

1. On the To Do page, tap the item you want to mark as complete. A dialog box appears.
2. Tap Complete to mark the item as complete, then tap OK.
If the check box is empty, the item is not complete; if it is solid, the item is complete. If completed, the item remains on the To Do page on the day it was completed, marked with an X.

Showing All To Do Items

The To Do page lists the To Do items for the current day. You can choose to show all the To Do items in PalmSchedule on the To Do page, even those that start in the future, or you can display only today's items.

The To Do items are listed by priority, and then by date entered. Show All To Do's on the Options menu allows you to display all To Do items or only today's.

SETTING PALMSCHEDULE PREFERENCES

You can set these options for PalmSchedule:

- The duration of each time slot
- The starting time for each day
- The ending time for each day
- The amount of time before an event that the alarm rings
- The starting day for each week

The preferences you set apply to the entire PalmSchedule, not a specific day. These settings are *defaults* — preset values PalmSchedule uses on the Event page unless you change them for a specific event in the Edit Event dialog box.

To change PalmSchedule preferences

1. Choose Preferences from the Options menu. A dialog box appears:

PalmSchedule Preferences	
Event Duration	1 ▾ Hour(s)
Day Start Time	8:00 AM
Day End Time	8:00 PM
Alarm Advance	5 ▾ Minute(s) ▾
Week Start Day	Sunday ▾
OK Cancel ?	

2. Change these settings to customize your PalmSchedule:

Event Duration. Tap the up or down arrow to increase or decrease the time slot in the day view by one hour.

Day Start Time. Tap Time to choose the start time for the Event page. Choose hours, minutes, and AM or PM from the dialog box.

Day End Time. Tap Time to choose the end time for the Event page. Choose hours, minutes, and AM or PM from the dialog box.

Alarm Advance. Tap the up or down arrow to increase or decrease the alarm advance time by one minute. Tap the Minutes drop-down list to select Hours or Days.

Week Start Day. Choose a day of the week from the drop-down list. The weeks in the week, month, and year views will start on this day.

NOTE

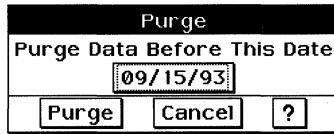
Events that start before the day starts or end after the ending time appear on the day view, but may not show up on the week view.

PURGING PALMSCHEDULE

You can remove outdated PalmSchedule items or items up to the date you specify. This is useful when you need more memory space for other documents.

To purge PalmSchedule

1. Choose Purge from the File menu. A dialog box appears:



2. If you want to change the date listed, tap Date, then set the purge date you want. (PalmSchedule initially displays a purge date one month prior to the current date.)
3. Tap Purge.
PalmSchedule removes all PalmSchedule items (Sketch pages, Events, and completed To Do's) that occurred before the purge date. Repeating events that repeat after the purge date are not removed.

CREATING A NEW PALMSCHEDULE DOCUMENT

When you first start PalmSchedule, a date book document, called Date Book, is automatically created for you. You can have more than one PalmSchedule document — for example, one for business events and another for personal events.

To create a new PalmSchedule document

1. Choose Switch Document from the File menu.
2. Tap the New button.
3. Give the new document a name, then tap Create New Document. The six-month view in the new document appears.

Switching to a Different PalmSchedule Document

You can switch among your PalmSchedule documents whenever you want.

To change PalmSchedule documents

1. Choose Switch Document from the File menu.
2. Tap Open. A list of your documents appears.
3. Tap the document you want to use, then tap Open.

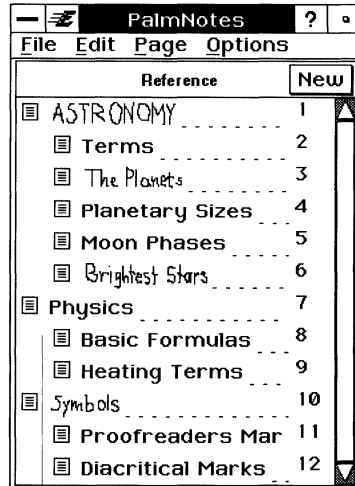
PalmNotes

PalmNotes is a place to write notes, make lists, draw sketches, or store information.

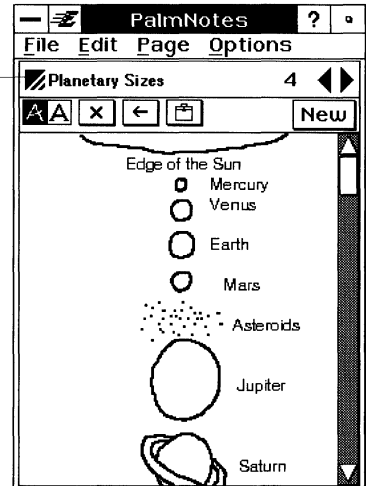
VIEWING PALMNOTES

PalmNotes has two views: a table of contents and a Sketch page. You can quickly move between the views with a tap of the pen.

The table of contents of pages and the Sketch page view in PalmNotes.



Tap a page number or page name to see the page.



Tap the Exit icon to return to the table of contents.

You can organize your notebook pages into topics by grouping several pages under a main topic page. You can then use the table of contents view to display a list of pages or topics in your PalmNotes document.

NOTE

To move to a page from the table of contents, tap the page number or title once with the pen. Holding down the pen on the page number or title does not display the page.

ADDING A PALMNOTES PAGE

There are several ways to add a new page to your PalmNotes document.

To add a new page from the table of contents

1. Tap the New button at the top of the table of contents page.

or

Choose New Page At End from the Page menu.

The new page appears at the end of the PalmNotes document.

2. Tap the page number to display the new page.

To add a new page from a Sketch page

- Tap the New button at the top of a Sketch page.

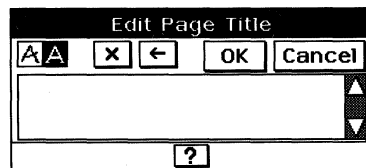
or

Choose New Page Here from the Page menu.

The new page appears after the current page.

To enter information on the page

1. To give the page a title, tap the title area. A dialog box appears in which you enter the title:



This title appears in the table of contents. (A note title is optional, but it is a good idea to use one so that you can look up the note in the table of contents.)

2. Enter text or ink on the PalmNotes page. See “Sketch Page” and “Sketch Tools” in this chapter for a description of the Sketch page and information on using the Sketch tools.

CREATING GROUPS OF PAGES

You may want to keep several PalmNotes pages together. You group pages by indenting them under the first page. You can show or hide the grouped pages in the table of contents.

To group the new pages under the first page

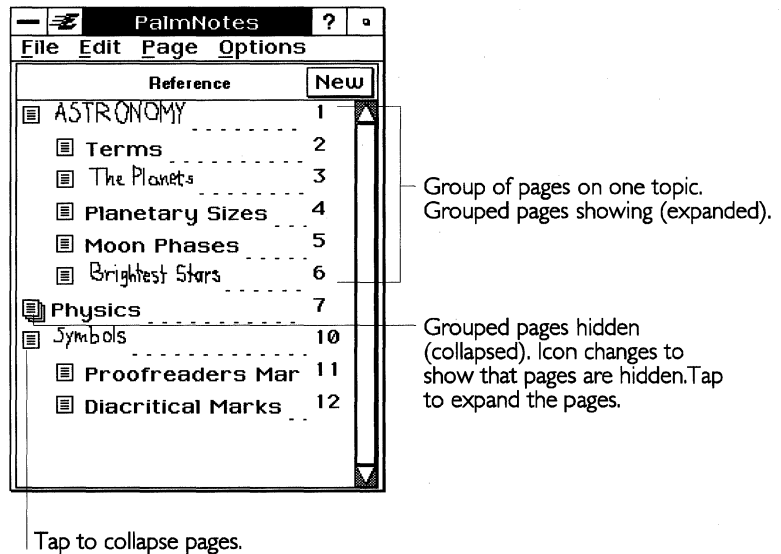
1. Create the pages you want grouped together. Make sure that the first page of the topic is the first page in the group.
2. If you are on the Sketch page, tap the Change View icon to return to the table of contents.
3. Drag the name of a page you want to indent to the right.
Drag the name of a page to the left to return the page to the top level.

NOTE

The table of contents displays all the pages in a PalmNotes document, even those pages grouped under another page. You can choose to display only the main page without its grouped pages, by “collapsing” the group.

EXPANDING AND COLLAPSING THE TABLE OF CONTENTS

You can show or hide grouped pages in the table of contents.



To hide the grouped pages in a topic

1. Display the table of contents.
2. Tap the single-page icon for the main page that has visible grouped pages. This hides all the grouped pages. The page icon changes to show that the main page has hidden grouped pages.

NOTE

You can hide all the grouped pages in the table of contents by choosing Collapse All Pages from the Options menu.

To show the grouped pages in a topic

- Tap the multi-page icon for the main page that has hidden grouped pages. This shows all the grouped pages for that main page.

NOTE

You can show all grouped pages in the table of contents by choosing Expand All Pages from the Options menu.

MOVING A PAGE IN THE TABLE OF CONTENTS

You can move a page to a new location in the table of contents by dragging the name of the page to a new location.

HINT

If you want to move grouped pages as a group, first collapse the group, then move it.

DELETING A PALMNOTES PAGE

Once you delete a PalmNotes page, you cannot recover it.

To delete a PalmNotes page

1. Display the PalmNotes page you want to delete.
2. Choose Remove Page from the Page menu.

CREATING A NEW PALMNOTES DOCUMENT

When you first start PalmNotes, a notebook document, called Note Book, is automatically created for you.

To create a new PalmNotes document

1. Choose Switch Document from the File menu.
2. Tap the New icon.
3. Give the new document a name, then tap Create New Document.
The new document is now the current one.

Switching to a Different PalmNotes Document

To change PalmNotes documents

- Tap the name of the new document at the top of the table of contents.

or

1. Choose Switch Document from the File menu.

2. Tap Open. A list of other PalmNotes documents you have created appears.
3. Tap the document name you want to use, then tap Open.

World Clock

World Clock is a desk accessory.

World Clock displays the current date and time for two cities: home and destination. The clock also shows time zones and the location of the destination city. The daylight bar across the top shows where it is daytime and where it is nighttime (the darker bar indicates nighttime).



Tap an area on the map to display its time zone and check the time there.

Tap the Home button to change the home city.

Tap the Destination button to change the destination city.

NOTE

To set the time and date for World Clock, use the Date & Time option in Preferences. See "Preferences" in Chapter 4 for more information.

CHANGING THE HOME CITY OR DESTINATION CITY

You can easily change the home city or destination city.

To change the home city or destination city

1. Tap the Home button or the Destination button, as appropriate. You see a list of country and city names in alphabetical order.
2. Tap the country and then the city you want to select as the home city or destination city.
3. Tap OK.

SELECTING BY COUNTRY OR CITY

After you tap Home or Destination, a list of countries and cities appears. You can display this list in two different formats. In one case, the countries appear in a list on the left and the cities in a selected country appear in a list on the right. Alternatively, only one list of cities, followed by its country, appears. You can switch between the two displays by tapping Select by City.

ADDING YOUR OWN HOME TOWN

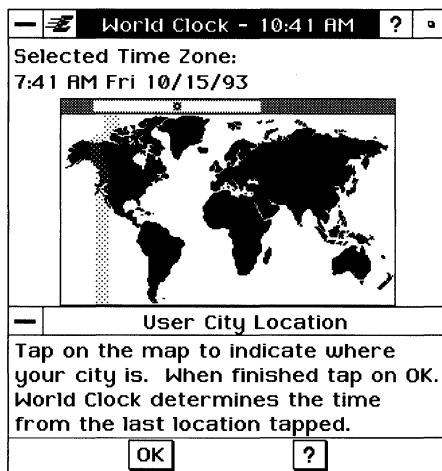
If your home town does not appear on the list of names, you can add it and indicate its location.

To add your home town

1. Tap Set Clock Options. A dialog box appears:

Set Clock Options		
Clock:	Daylight Savings:	
◆ Home	□ Home	
◇ Destination	□ Destination	
User City Name:		
San Jose		
Set Location		
OK	Cancel	?

2. Enter your home town name in the User City Name entry box, using handwriting recognition, the floating keyboard, or the optional external keyboard.
3. Tap Set Location. A dialog box appears:



4. On the map, tap the location of your home city.
5. Tap OK twice to return to World Clock.
6. Tap Home.
7. Select Use <your city name> at the bottom of the dialog box and then tap OK to close the dialog box.

CHECKING THE TIME

To check the time in a specific time zone

- Tap the map in the desired location.
The time zone displayed above the map as the Selected Time Zone changes to show the date and time in the selected time zone.

CHANGING TO DAYLIGHT SAVINGS TIME

You can indicate that a home city or a destination city or both observe daylight savings time.

To set Daylight Savings Time

1. Tap Set Clock Options.
2. Under the heading Daylight Savings, tap Home or Destination (or both) to indicate that one or both of these cities currently observe daylight savings time.

NOTE

Daylight Savings is set for a specific city, not a time zone. The time displayed for the city might not match the time displayed for the selected time zone.

CHANGING THE SYSTEM CLOCK

Normally, you set the unit's system clock using Preferences. The unit uses the system date and time for PalmSchedule, for other applications, and for date-stamping files. In World Clock, you can quickly change the system clock to the time and date of the home or destination city. The current system time appears at the top of the world map.

To change the system date and time to those of the destination city

1. Tap Set Clock Options.
2. Under the heading Clock:, tap Destination.
3. Tap OK. A dialog box appears asking you to confirm your decision. If you tap Yes, the unit's system clock is set to the date and time of the destination city.

To reset the system clock to the home city's date and time, follow the above procedure, but tap Home instead of Destination in step 2.

NOTE

City names and time differences are based on information available as of February 1993. Some of the city and country names are abbreviated.

Using GeoWorks Applications

This chapter describes functionality that is common to the GeoWorks applications. It includes information about the various user levels available in each application and explains how to copy and back up documents as well as how to work with templates, annotations, and tool bars. Additional information about working with GeoWorks applications and documents is provided in Chapter 1.

Working With User Levels

You can make many of the GEOS applications as simple or as sophisticated as you want. Typically, the more functions an application has, the more difficult it is to learn. GEOS allows you to start using an application with only a few functions so that it is simple and easy to use. As you gain experience, you can add more functions to an application. Altering the number of functions available to you is called changing the *user level*.

Each GEOS application has a number of user levels appropriate to its size. GeoWrite has four levels; simpler applications, such as the Scrapbook, have two levels. Applications used for a specific task, like GeoComm, have no user levels at all.

The following is a general description of each user level:

Level 1, Introductory Level. Level 1 is for first-time users. It includes the application's simplest features. Use Level 1 to learn the basic operation of the application.

Level 2, Beginner Level. Level 2 is for users who are comfortable with Level 1 and want to use more of the application's capabilities. Level 2 is also designed for infrequent users or those with simple requirements. If these are your needs, you may not need to move beyond Level 2.

Level 3, Intermediate Level. Level 3 is for users familiar with basic operations who want to learn complex functions and procedures. Level 3 includes as much functionality as possible without appearing to be overwhelming.

Level 4, Advanced Level. Level 4 is for users of complex functions and procedures. Level 4 includes all the functionality of an application.

The first time you start an application with multiple user levels, the application will start at Level 1. For information about changing your user level, see “Verifying, Changing, and Saving Your User Level” in this chapter.

If you are using an application with fewer than four user levels, the highest level of that application may include a task that is available only at a higher level in another application. For example, a task available at Level 3 in GeoWrite may be available at Level 2 in Scrapbook because Scrapbook only has two levels.

DIFFERENCES FROM LEVEL TO LEVEL

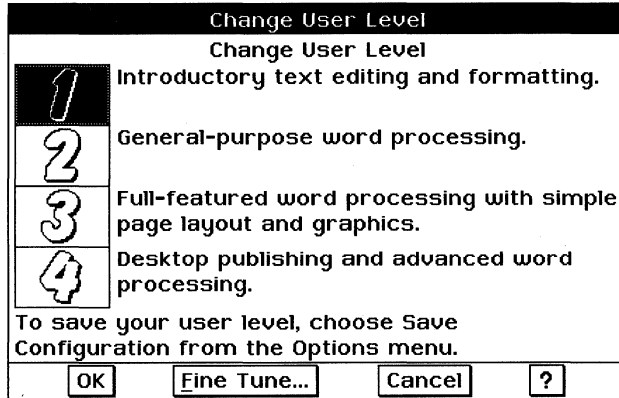
Within an application, each user level builds on the previous level. For example, Level 2 has all the features of Level 1 plus some new features. The menu bar displays the functions that are available at the selected user level. When you move from one level to the next, the menu bar is rearranged to accommodate the features of the new level. All the features from the previous level are still available, but they may be organized differently across the menu bar.

VERIFYING, CHANGING, AND SAVING YOUR USER LEVEL

You can change or verify your user level while you’re working in an application or when the New/Open dialog box is displayed.

To verify or change your user level

1. If the New/Open dialog box is displayed, tap the User Level button. Otherwise, choose Change User Level from the Options menu. The Change User Level dialog box appears. The highlighted button indicates the level at which you are currently working.



2. If you want to change user levels, tap a button for a different level; then tap OK. Your user level is changed for the current session unless you change it again.

or

Tap Cancel if the current level is the one you want to work at. Your user level is unchanged.

If you always want the application to start at the user level you have just selected, choose Save Configurations from the Options menu. (If the New/Open dialog box is displayed, you will need to close it before you can choose from the Options menu.)

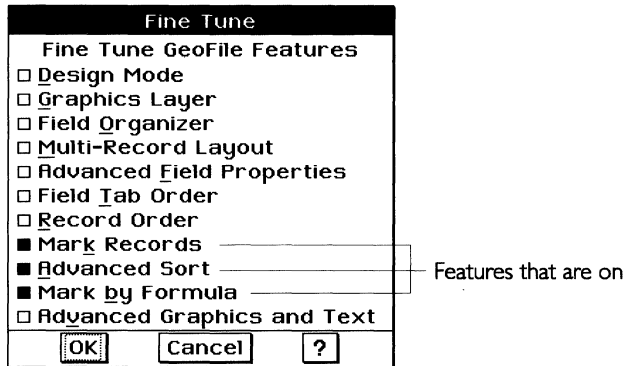
When you save the configuration of an application, your user level and other options are remembered after you exit the application. For more information about saving your configuration, see “Customizing Applications” in this chapter.

FINE TUNING YOUR USER LEVEL

Instead of using the preset user levels, you can create your own customized user level. Each application has a set of features that you can turn on or off. Typically, Level 1 has the fewest features turned on; Level 4 has the most features turned on. The features you can fine tune vary from application to application.

To fine tune a user level

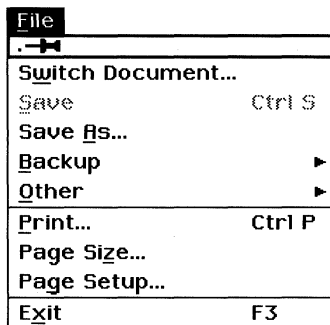
1. If the New/Open dialog box is displayed, tap the User Level button. Otherwise, choose Change User Level from the Options menu. The Change User Level dialog box appears.
2. To see which features make up a user level, tap that user level and then tap Fine Tune. The Fine Tune dialog box appears. The combination of features that are turned on and off defines the user level you selected.



3. To change the available features, tap any feature to turn it on or off. Selected features have a darkened check box.
4. When you finish selecting and deselecting features, tap OK. The Change User Level dialog box reappears. If the changes you made coincide with a predefined user level, its button is highlighted. If the changes you made do not coincide with a predefined user level, none of the user level buttons is highlighted.
5. Tap OK to return to the document at the user level you have defined.

Working With Documents

An application's File menu allows you to create and work with documents. Most applications have a File menu with some or all of the following choices:



Switch Document. Displays the New/Open dialog box, from which you can create a new document, edit an existing document, use a template, or import data from a DOS application.

Save. Replaces the old document with the new, changed version.

Save As. Saves the current document under a different name. The original document is unchanged. The new document is open for editing. For more information, see “Saving a Document Using Save As” in this chapter.

Backup. Displays the Backup submenu which allows you to back up and retrieve documents. For more information, see “Backing Up and Restoring a Document” in this chapter.

Other. Displays the Other submenu which includes functions such as copying, exporting, and renaming documents. For more information, see “Other Submenu Choices” in this chapter.

Print. Allows you to set various printing options and print the document. For more information, see Chapter 1.

Page Size. Allows you to set various page size and layout options. For more information, see Chapter 1.

Page Setup. Allows you to specify various page attributes. Since Page Setup offers different options depending on the application you are using, see the chapter for that application for more information.

Exit. Closes the currently opened document and exits the application.

SAVING A DOCUMENT USING SAVE AS

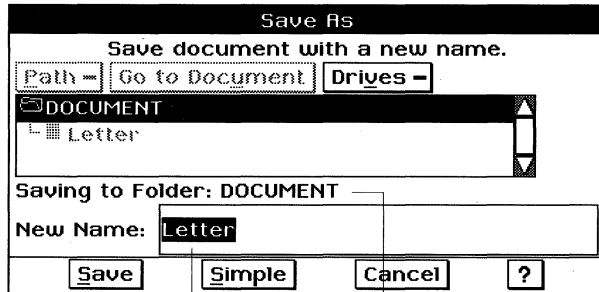
LEVELS 3-4

You can save a document under a different name using the Save As choice on the File menu. When you choose Save As, you create a copy of the document and give it a new name.

Save As serves many useful purposes. For example, suppose you wrote a resume last year and named it “Resume 1992.” This year you want to revise it, but you also want to keep the original intact so you can refer to it. You can open “Resume 1992” and immediately save it as “Resume 1993.” The original document, “Resume 1992,” is preserved on disk and “Resume 1993” appears in the document window so that you can edit it to account for changes in the past year.

To save a document using Save As

1. Choose Save As from the File menu. A standard file selector appears with the current name of the document in the New Name text entry box:



Your document will be saved in the folder listed here.

Type the new name here.

For more information about standard file selectors, see “Opening and Closing Applications and Documents” in Chapter 1.

2. Type the new name, which replaces the current name of the document. The new name appears in the text entry box.
3. Tap Save to save the document using its new name. The original document is closed and remains as you last saved it. Any recent, unsaved changes are saved to the new version only, which appears in the window ready for editing. If you continue editing the version in the open window, you are editing the new document.

BACKING UP AND RESTORING A DOCUMENT

LEVELS 2-4

When you back up a document, you make a quick copy of the document in its current state. When you restore a document, you replace the current document with its most recent backup.

You can make backup copies of documents manually by using the copy function in GeoManager, but it is much easier to use the backup features found on the Backup menu.

Backing up is like freezing a copy of a document in time. When you save a document, any changes you’ve made are saved to disk,

but the changes are only saved to the current version, not to the backup copy. This way, if you restore from a backup copy, the document reverts to the state it was in when you backed it up, even if you have saved your document many times since then.

Backing Up a Document

Each time you select Make Backup, you create a backup of the current version of the document, which overwrites the previous backup.

Backing up is particularly useful if you are about to make a significant change to a document. It lets you keep a copy of the current version to protect you if you regret the change. The backup feature makes a copy of the current version of a document. Each backup you save replaces your most recent backup.

To make a backup of a document, choose Backup from the File menu, then choose Make Backup from the submenu.

Restoring From a Backup

When you restore from a backup, it replaces your current document, so be sure this is what you want to do.

Restore From Backup recovers the most recent backup copy of a document created by using Make Backup. This choice is available only if you have created a backup by choosing Backup from the File menu. When you restore from a backup, the previously backed up version of the document overwrites the current version of the document.

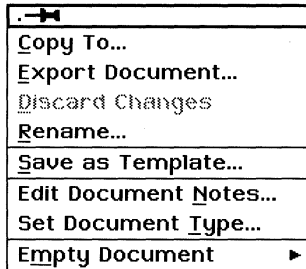
To restore from a backup, first make sure the document you want to restore to is open, then choose Backup from the File menu and Restore From Backup from the submenu.

NOTE

You can recover a backup even if all original copies of the document have been destroyed. Backup copies of your documents are stored in the GEOWORKS\USERDATA\BACKUP folder.

OTHER SUBMENU CHOICES

The choices on the Other submenu of the File menu are described in this section.



Copying a Document

LEVELS 2-4

To create a copy of a document that is currently open, you can use Copy To from the Other submenu. When you choose Copy To, the standard file selector appears so that you can create a copy of the current version of a document and give it a new name. The copy of the document with the new name is saved and closed, while the original document is left open so that you can continue editing it. This is in contrast to Save As, which saves the current version of your document with a new name and leaves it open, while closing the original document without saving any changes to it. For more information about standard file selectors, see “Opening and Closing Applications and Documents” in Chapter 1.

Exporting a Document

LEVELS 2-4

Export Document allows you to export a document to another application. For detailed information on exporting, see the chapters for those applications with exporting capabilities.

Discarding Changes

LEVELS 2-4

Occasionally, you may make changes to your document that you do not like. Use Discard Changes on the Other submenu to undo changes you wish you had not made. Discard Changes restores a document to its last saved version, eliminating any changes you have made since you last saved it.

You can put this feature to good use when you want to experiment. For example, if you want to rearrange your address book, you can save it before you begin the experiment, then if you do not like the new layout, you can use Discard Changes to go back to the original.

If Discard Changes is dimmed, you have not made any changes since the last time you saved.

Renaming a Document

LEVELS 2-4

When you rename a document, you change its name. You may want to rename a document so that its name more closely identifies its contents or purpose. You may also want to rename a document if you want to use its original name for another document.

If the Rename choice is dimmed, the document is probably a read-only document. For more information about read-only documents, see Chapter 9.

Saving a Document as a Template

LEVEL 4

Save as Template allows you to save a document as a template when you create a new template or when you modify a template you have previously created. For detailed information, see “Templates” in this chapter.

Editing Document Notes

LEVELS 2-4

You can add document notes to any document. Document notes consist of important information you might want to record about your document. For example, you can use document notes to keep a revision history of a document. If someone else modifies the document, they can read your notes and add their own.

You cannot add document notes to an untitled document. You first must save the document and give it a name.

Notes accompany a document, but they are not an integral part of the body of the document. You can see a document’s notes in the Notes box of a standard file selector whenever you open an existing document. You cannot add document notes to DOS data files, including DOS text files edited with Text File Editor.

Customizing the Empty Document Settings

When you open a new document in any application, an *empty document* appears. This “empty document” actually contains GEOS-defined settings, such as the font and margins. These settings are called the *default* settings. The following are common items that have default settings:

- Page size
- Margin size
- Font
- Text style
- Text size
- Tab settings
- Number format (GeoCalc)
- Column width (GeoCalc)
- Field size (GeoFile)

If you typically use settings in your document that are different from the GEOS-defined default settings, you can change the default settings for your empty document.

To change the default settings for an empty document (Levels 2-4)

1. Create a new document and set the document characteristics as you want.
2. Choose Other from the File menu. A submenu appears.
3. Choose Empty Document from the Other submenu. A submenu appears.
4. Choose Set Empty Document from the Empty Document submenu. A confirmation message appears.
5. Tap Set Empty Document. Subsequent new documents will have the settings you saved, as well as any information that was in the document when you saved it.

NOTE

Changing and saving the empty document does *not* change existing documents. If you want to change the settings of existing documents, you must do so individually.

To revert to the original GEOS-defined default settings (Levels 2-4)

1. In any open document, choose Other from the File menu. A submenu appears.

2. Choose Empty Document from the Other submenu. A submenu appears.
3. Choose Reset Empty Document from the Empty Document submenu. (If this choice is dimmed, either the empty document's original default settings have not been changed or they have already been reset to the original settings.) A confirmation message appears.
4. Tap Clear Empty Document. Subsequent new documents will have the original GEOS-defined default settings.

TEMPLATES

Most GEOS applications include *templates*, ready-made documents that can save you time because all the layout work is done for you. Templates help you create new documents faster and more easily and also help maintain a consistent look among documents. In addition to the templates provided with the applications, you can design your own templates.

An application's templates are saved in a folder named Templates: GeoWrite Templates, GeoCalc Templates, and so on. A template contains the text, graphics, formatting, and special layouts common to documents of a particular type. For example, if you want to write a business letter, you can open the business letter template in the GeoWrite Templates folder.

Using a Template

When you use a template to create a document, the application creates a new document by copying the information from the template to a new document. When the new document appears in the document window, you simply fill in any missing information and change the place holder text. *Place holders* are text that define the type of entry in a location, such as "ZIP CODE". When you use a template, you replace the place holders with actual information. Changes you make to the new document do not affect the original template.

To create a new document by using a template (All Levels)

1. If the New/Open dialog box is not visible, choose Switch Document from the File menu. The New/Open dialog box appears.

2. Tap the Template button. A standard file selector appears, listing the available templates.
3. Scroll through the template list. A description of the highlighted template, if available, appears in the Notes box.
4. Tap the name of the template you want to use, then tap the Use Template button. A dialog box appears asking you to name the new document.
5. Type a name for the new document and tap Create New Document. A new document, based on the selected template, appears in the document window.
6. Fill in any missing information, replace the place holders, and edit the document as appropriate.

NOTE

When you open a document based on a template, the original template is unchanged. Changes you make to the new document do not affect the template.

Creating a Template

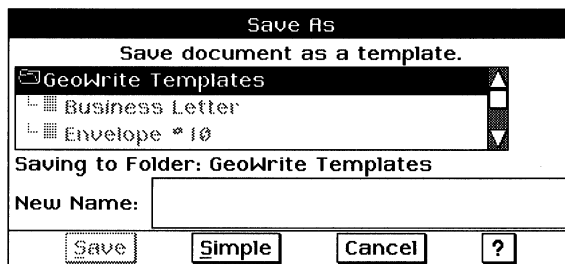
LEVEL 4

In addition to using the GEOS-defined templates, you can design and use your own templates.

To create a template (Level 4)

1. Open a new or existing document.
2. Specify the settings you want to use. For example, in GeoWrite, you might want to define the following:
 - Page size
 - Margins
 - Text specifications, such as font, size, and style
3. Add appropriate text and text place holders (such as “City”, “State”, and “Zip Code”).
4. Add any graphics you want to include (such as a logo).
5. Choose Other from the File menu. A submenu appears.

6. Choose Save as Template from the Other submenu. A standard file selector appears:



7. Enter the name of the new template in the New Name text entry box, then tap Save.
8. A confirmation message appears, reminding you that the document is now a template and any changes you make will be saved to the template. Tap OK.
9. If you want to add a document note to describe the template, you can use Edit Document Notes from the Other submenu. For more information about document notes, see “Editing Document Notes” in this chapter.
10. If you make any additional changes to the template, choose Save from the File menu to save your changes.

Modifying a Template

LEVEL 4

You cannot modify the built-in templates, but you can modify the templates that you create.

You can change any template you have created so that it meets your particular needs. You may also want to modify the same template in different ways for different situations (such as documents for different clients or organizations).

To change a template you have created (Level 4)

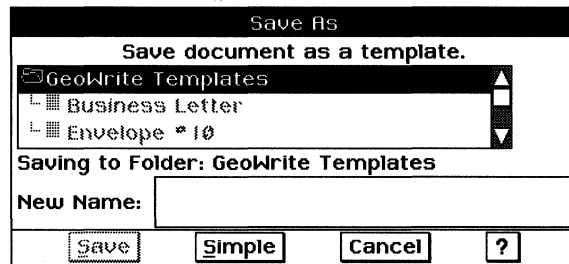
1. If the New/Open dialog box is not visible, choose Switch Document from the File menu. The New/Open dialog box appears.
2. Tap the Template button. A standard file selector appears, listing the available templates.
3. Scroll through the template list. A description of the highlighted template, if available, appears in the Notes box.
4. Tap the name of the template you want to change.
5. Select the For Editing option in the dialog box, then tap the Use Template button. The template appears in the document window.

If the For Editing check box is disabled, you cannot change the template.

6. Edit the template until it appears the way you want.
7. Choose Save from the File menu.

To create a new template based on an existing template (Level 4)

1. If the New/Open dialog box is not visible, choose Switch Document from the File menu. The New/Open dialog box appears.
2. Tap the Template button. A standard file selector appears, listing the available templates.
3. Scroll through the template list. A description of the highlighted template, if available, appears in the Notes box.
4. Tap the name of the template you want to use as the basis for a new template, and then tap the Use Template button. A dialog box appears, asking you to name the new document.
5. Type a name for the new document and tap Create New Document. The template document appears in the document window.
6. Make the changes you want to create a new template.
7. Choose Save as Template from the Other submenu. A dialog box similar to the following appears:



9. Enter the name of the new template in the New Name text entry box.
10. Tap the Save button.
11. A confirmation message appears, reminding you that the document is now a template and any changes you make will be saved to the template. Tap OK.
12. If you want to add a document note to describe the template, you can use Edit Document Notes from the Other submenu. For more

information about document notes, see “Editing Document Notes” in this chapter.

13. If you make any additional changes to the template, choose Save from the File menu to save your changes.

Removing a Template

Templates are stored in GEOWORKS\USERDATA\TEMPLATES. You can delete templates from this folder the same way you delete any other document.

NOTE

You cannot remove the built-in templates because they are stored in Read-Only Memory (ROM). You can only remove the templates you have created.

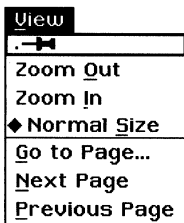
Changing a Document's View

You can use the View menu to change the way you view a document in a window.

If you change the view of your window and then choose Save Configuration from the Options menu, your settings will be saved.

ZOOM OUT, ZOOM IN, AND NORMAL SIZE

When you open a document, it appears at normal size — the size of the document when it is printed. Sometimes you will want to make the document smaller on screen, so that you can see more of it at once. This is called *zooming out*. Zooming out is much like getting a bird's-eye view of the document.



Sometimes you will want to make your document look larger, so that you can see details more clearly. This is called *zooming in*. Zooming in is like putting a magnifying glass over a small portion of the document.

To reduce the size of a page so that you can see more of it, choose Zoom Out from the View menu. Each time you zoom out, you reduce the size by 25%. You can reduce the page to 25% of its normal size.

To enlarge the size of a page so that you can see more details, choose Zoom In from the View menu. Each time you zoom in, you enlarge the size by 25%. You can enlarge the page up to 200% of its normal size.

To quickly return to normal size, choose Normal Size from the View menu. Normal size is 100% of the size of the document when it is printed.

VIEW AT %

LEVELS 3-4

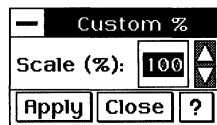
View at % allows you to choose the percentage of magnification of a page. You can choose from any of the preset Zoom Out and Zoom In options, or you can set your own percentage.

To use View at % (Levels 3-4)

1. Choose View at % from the View menu. A submenu lists the standard size reductions and enlargements, plus options for normal size, scale to fit, and custom percentage.
2. To choose one of the standard sizes (including Normal Size and Scale to Fit), tap the choice you want. The menu closes and the page appears at the selected size.

or

To specify a custom percentage between 25% and 200%, choose Custom %. The Custom % dialog box appears:



Enter a number or use the arrow buttons to change the value in the Scale (%) box. Tap Apply. The percentage you specify is applied to the document, and the Custom % dialog box remains open so that you can experiment with other values. When you have selected the value you want, tap Close to close the dialog box.

SCALE TO FIT

LEVELS 2-4

Use Scale to Fit when you want to see an entire page of your document in the window without scrolling. If you choose Scale to Fit, the application automatically sizes the document so that as much of it as possible shows in the window.

When you choose Scale to Fit from the View menu (or the View at % submenu), the view percentage changes, shrinking the document so that an entire page fits in the window at once, if it can.

As long as the Scale to Fit option is checked, the document will change its size to fit in the window if you change the size of the window. This makes it easy to enlarge or reduce your view on the page by resizing the window.

To disable Scale to Fit, you can choose Normal Size from the View menu (or the View at percentage submenu) or you can choose a percentage from the View at % submenu.

CHANGING VIEW OPTIONS

LEVELS 3-4

The View Options choice gives you another way to change the way your document appears on the screen by allowing you to hide or display the scroll bars.

When Show Horizontal Scroll Bar is not checked, the document window will not display a horizontal scroll bar. Since the scroll bar takes up space in your document window, you can hide it to increase the available vertical space in which to display the document.

When Show Vertical Scroll Bar is not checked, the document window will not display its vertical scroll bar, thereby increasing the available horizontal space in which to display the document.

REDRAWING THE SCREEN

LEVELS 2-4

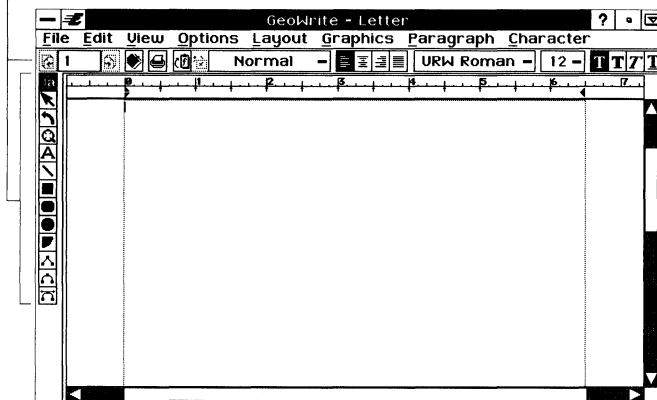
When working with a complicated document, you may want to use the Redraw choice from the View menu to see an updated view of your page. Complicated documents include those with many graphic images or customized line spacing. Because it takes a long time to redraw a complicated page with complete accuracy, GEOS applications opt for speed over accuracy in these situations. If you need complete accuracy, use the Redraw choice to accurately redraw your complicated page.

Working With Tool Bars

Tool bars provide quick access to menu choices and features in the applications. They appear either under the menu bar or to the left of the application window. The tool bars contain buttons with pictures (icons) representing functions of the application. Some tools on the tool bar are buttons that you tap. Others take the form of a drop-down list. Tapping a tool is similar to opening a menu and selecting a choice.

The following illustration shows an example of tool bars in an application:

These are the tool bars you can see in GeoWrite Level 4.



Applications can have as many as five tool bars at different levels. For example, Level 1 of GeoCalc has no tool bars and Level 1 of GeoWrite has only the Style tool bar.

Some tool bars contain tools that are unique to an application; for example, the Insert Row tool appears only in GeoCalc. Application-specific tools are explained in the documentation for that application.

The following are the standard tool bars:

Style tool bar. Contains tools for changing the format of text.

Function tool bar. Contains tools for working with documents (opening, closing, saving), using the clipboard (cutting, copying, and pasting), and performing other functions.

Drawing tool bar. Contains the drawing tools for drawing objects on the page.

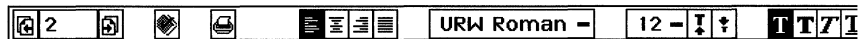
Bitmap tool bar. Contains the bitmap drawing tools for working with bitmap objects.

Graphic tool bar. Contains tools for changing the color, shading, and thickness of graphic objects and text. Also contains tools for manipulating graphic objects, including duplicating, flipping, shuffling, grouping, and ungrouping objects.

The remainder of this section provides a broad overview of the tool bars. For an explanation of individual tools on the tool bars, see Appendix A and the chapters for the individual applications you are using.

THE STYLE TOOL BAR

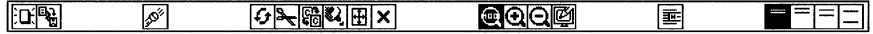
You can use the Style tool bar to change text characteristics: font, text size, and style. In addition, you can use the tools on the Style tool bar as shortcuts to perform common word processing functions. The following illustration shows the Style tool bar for GeoWrite at level 1:



The Style tool bar appears at all levels in GeoWrite and at Levels 2 through 4 in GeoCalc. Text formatting tools from the Style bar appear Levels 3 and 4 of GeoFile when you are using Design Mode.

THE FUNCTION TOOL BAR

The Function tool bar contains tools to perform file functions, such as opening, closing, and saving files. It also contains editing tools (cut, copy, paste, and undo) and zooming tools. The tools available on the Function tool bar vary depending on the application.



The Function tool bar is available at Levels 2 through 4 of GeoWrite and GeoCalc, though it is not normally shown. Portions of the Function tool bar appear at Levels 3 and 4 of GeoFile.

TOOL BARS FOR DRAWING AND GRAPHICS

The tools for drawing can be found in one of three tool bars: the drawing tool bar, the bitmap tool bar, and the graphic tool bar. Because many of the applications support drawing, you will find many drawing tools in various applications.

The Drawing Tool Bar



The Drawing tool bar contains the tools for creating graphic objects, including lines, circles, and rectangles.

The Drawing tool bar is available in GeoWrite at Levels 2 through 4. In GeoCalc and GeoFile the Drawing tool bar is available at Levels 3 and 4.

The Bitmap Tool Bar

The Bitmap tool bar contains the tools for creating bitmap objects:



The Bitmap tool bar is available in GeoWrite and GeoCalc at Levels 3 and 4. It is not available in GeoFile.

The Graphic Tool Bar

The first part of the Graphic tool bar contains tools for setting the color and other attributes (such as line thickness and shading) for graphics and text:



The second part of the Graphic tool bar provides tools for manipulating graphic objects, including tools for duplicating, flipping, shuffling, grouping, and ungrouping objects:



The Graphic tool bar is available in GeoWrite and GeoCalc at Levels 3 and 4. It is not available in GeoFile.

DISPLAYING TOOL BARS

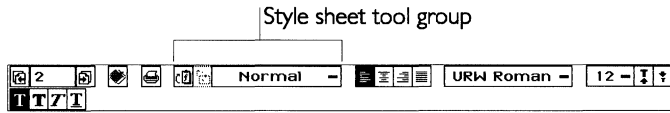
Different tool bars are available at different user levels; however, the availability of a tool bar does not mean that it is automatically displayed. For example, at Level 2 of GeoCalc, the Style and Function tool bars are available, but only the Style tool bar appears by default.

You can use the Options menu to turn on and off the display of available tool bars. To display a tool bar, choose Show Tools from the Options menu. Select the tool bar whose display you want to change. If the tool bar was showing, it is now hidden. If it was hidden, it is now showing. If you want to set the display of tool bars for work sessions, choose Save Configuration from the Options menu.

CUSTOMIZING TOOL BARS

LEVELS 3-4

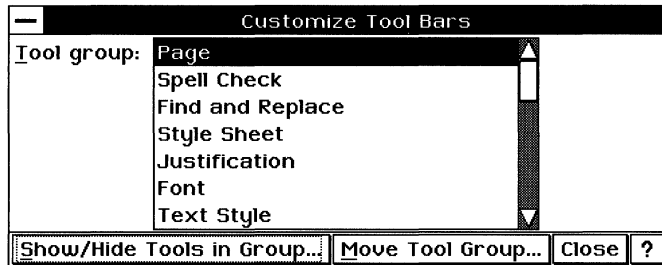
You can change the tool bars to fit your needs, choosing to hide or display certain tools and to move the tool bars to new locations. Tools are organized into groups. The following illustration shows the Style Sheet tool group on the Style tool bar in GeoWrite:



You can show or hide individual tools within a group and you can move a group of tools as a unit into any position on any tool bar. For instance, you can move the document control tools (which include Open and Close) from the Function Bar to the Style Bar in an application.

To Hide or Display a Tool (GeoWrite Levels 3-4, GeoCalc Level 4)

1. Display any tool bars you want to work with.
2. Choose Customize Tool Bars from the Options menu. The following dialog box appears:



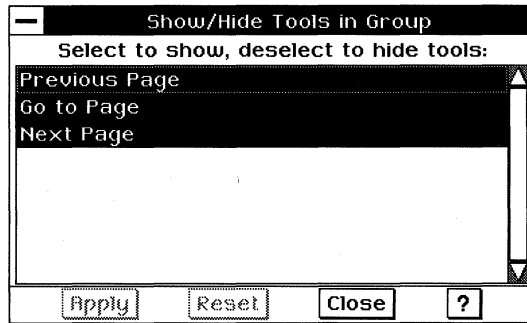
On the tool bars themselves, each individual tool group is highlighted with a thick border.

3. From the list of tool groups, select the name of a tool group.

or

Tap a tool on the tool bar. The name of that tool group becomes selected in the list.

4. Tap Show/Hide Tools in Group. The following dialog box appears, showing all the tools in the group:

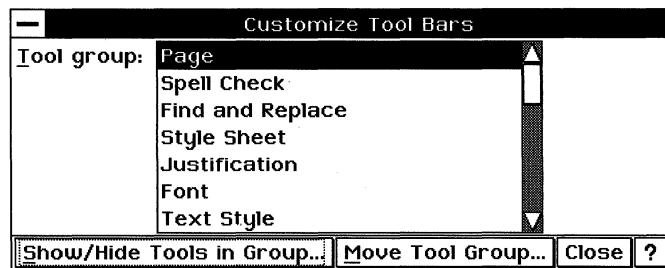


Any items that are not highlighted are currently hidden.

5. Tap to toggle the selections on or off. If you want to return to the previous display of tools, tap Reset before tapping Apply.
6. Tap Apply. The tool bars are redrawn according to the selections you made.
7. If you want to show and hide additional tools, you can repeat steps 3 through 6 as many times as you like. The dialog boxes stay open and you can freely tap in either of them.
8. When you are finished, tap Close to close the dialog boxes.
9. If you want to save your customization, choose Save Configuration from the Options menu.

To Move a Tool Group

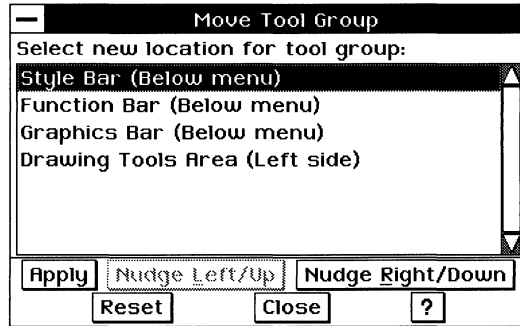
1. Display any tool bars you want to work with.
2. Choose Customize Tool Bars from the Options menu. The following dialog box appears:



3. In the list of tool groups, tap to select the name of a tool group.
or

Tap any visible tool on the tool bar to select that group.

4. Tap Move Tool Group. The following dialog box appears:



The name of the tool bar where the tool is currently located is highlighted.

If you want to return to the previous display of tools, tap Reset before tapping Apply.

5. If you want to move the tool group to a different tool bar, select the name of the destination tool bar from the list in the dialog box, then tap Apply.

or

If you want to move the tool group within the tool bar, tap one of the Nudge buttons to move the group in the direction you want. Each time you tap one of the Nudge buttons, the tool group moves in the direction specified.

6. If you want to move additional tools, you can repeat steps 3 through 5 as many times as you like. The dialog boxes stay open and you can tap in the tool bars on the window, the Customize Tool Bars dialog box, and the Move Tool Group box.
7. When done, tap Close to close the dialog boxes.
8. If you want to save your customization, choose Save Configuration from the Options menu.

Customizing Applications

You can customize certain common features in Geoworks applications, to fit better with the way you like to work.

ANNOTATIONS

LEVELS 3-4

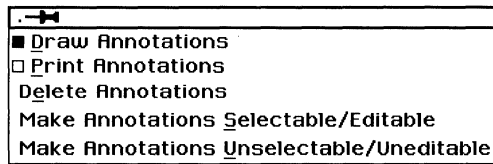
Any graphic object can be made an annotation. For more information, see "Advanced Graphics" in Chapter 8.

Annotations are special text and graphic objects that appear on your screen but usually do not print. For example, an envelope template might show the outline of an envelope so that you can see the placement of the addresses. Through the use of annotations, the envelope diagram can appear on screen without affecting the printout. You can turn these annotations on and off.

Normally, annotations are set to appear on screen, but not to print. By choosing Annotations from the Options menu, you can change how annotations behave, such as whether they appear on screen and whether or not they print. You can even delete them altogether.

Any changes you make to the Annotations settings are saved as part of the document so that you can make your preferred settings part of a template.

Here is an example of the Annotations submenu:



If the options on the Annotations submenu are dimmed, then you are probably not working with a graphics tool.

Draw Annotations. Displays all annotations on the screen. This option is normally checked. Deselect this option to hide all annotations.

Print Annotations. Prints all annotations. Normally this option is unchecked so that annotations do not print.

Delete Annotations. Deletes all annotations.

Make Annotations Selectable/Editable. Makes all annotations selectable so that you can edit them.

Make Annotations Unselectable/Uneditable. Makes all annotations unselectable so that they cannot be edited.

RULERS

Most applications use rulers to provide visual measurements. Depending on the application, you use rulers to set margins and tabs, to work with rows and columns, or to format paragraphs.

You can change various ruler settings, such as showing or hiding the rulers and changing the ruler type and measuring unit: inches, centimeters, points, picas, and the system default setting. You set the default measurement unit in Preferences. For more information, see “Preferences” in Chapter 4.

DOCUMENT SAFEGUARDING

You can safeguard your documents by turning on the Safeguard feature. When you turn on this feature, GEOS periodically takes a “snapshot” of the documents you have open so that they are protected in the event of a mishap, such as a power outage. GEOS saves a temporary copy of the document automatically so that when you restart the unit, the safeguarded copy of the document appears.

To retrieve your work, you simply open the document you were working on. If there were unsaved changes, and document safeguarding was able to protect them, a dialog box appears to let you know that. Respond to the dialog box and choose Save from the File menu to make the changes permanent.

The document safeguarding feature is different from the “Auto Save” feature found in many DOS applications, which actually overwrites the document (even if you do not want the changes saved permanently).

You can change how often your documents are safeguarded or turn off document safeguarding by using the Look & Feel options in Preferences. For more information, see “Preferences” in Chapter 4.

SETTING OPTIONS AND SAVING YOUR CONFIGURATION

ALL LEVELS

You can change an application so that it works the way you want, with the tools you like to use and the options set the way you like. When you choose these settings, you are configuring the application to suit your particular needs. You can change the following settings and save them so that they are in effect the next time you start the application:

- Set or fine tune the user level.
- Adjust the view percentage and view options on the View menu.
- Display and set the ruler.
- Display and customize the tool bars.
- Change other options on the Options menu.

If you want to keep the configuration you have set so that it is in effect each time you start the application, save the configuration by choosing Save Configuration from the Options menu.

You can also reset the application so that all options, tool bars, and user levels revert to their original settings. To do this, choose Reset Configuration from the Options menu.

Calculator

The Calculator application puts a powerful and versatile calculator in your hands. With the Calculator, you can perform simple and complex calculations.

WHAT IS THE CALCULATOR?



Calculator

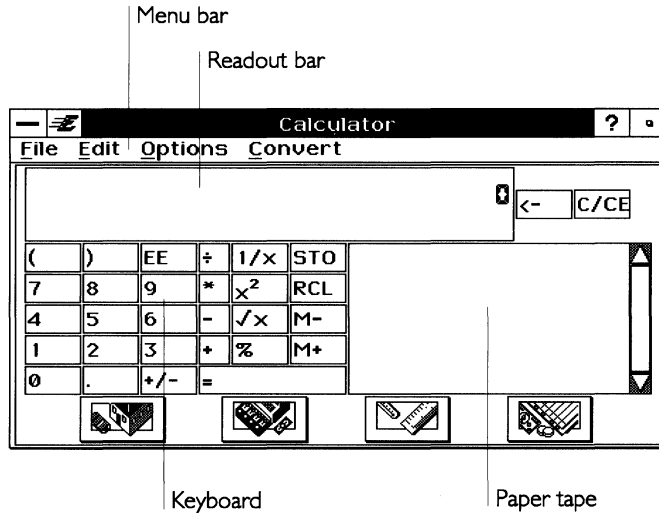
The Calculator is a GEOS application. You start the Calculator by double-tapping the Calculator icon, which looks like the example at the left.

With the Calculator, you can perform simple tasks such as adding, subtracting, multiplying, dividing, and computing percentages. You also can perform more complex tasks such as currency and metric to English conversions and trigonometric functions. You can store results in the Calculator's memory or paste them into other applications, such as GeoComm. You can use worksheets for common calculations, such as interest and loan payments. In addition, you can customize the Calculator to your liking.

THE CALCULATOR WINDOW

The Calculator is a desk accessory.

When you start the Calculator, the Calculator window appears. This window looks like a standard desktop or hand-held calculator:



The Calculator window includes a menu bar, buttons, readout bar, paper tape, and worksheet icons. The window itself is not resizable, although items such as the paper tape can be hidden to provide more room for calculations.

The Calculator buttons work like a real calculator's keys. The readout bar displays numbers you enter and the results of calculations. The white area to the right of the buttons works like a desktop calculator's paper tape as you enter a transaction, it appears on the "paper." The four icons at the bottom of the Calculator window allow you to display the various worksheets that are provided with the Calculator for performing common calculations. The Calculator supports handwriting recognition in the readout bar and other input fields.

BASIC CALCULATOR FUNCTIONS

You can do the following basic calculations with the Calculator: addition, subtraction, multiplication, division, percentage, square root, numbers squared, and inversion. You can also store numbers

in memory, make measurement conversions, perform complex trigonometric functions, and customize the look of the Calculator, as described in this chapter.

The Calculator has two *modes* you can use: *standard* or *RPN* (Reverse Polish Notation). Standard mode, sometimes referred to as Infix, provides the basic format found on most calculators; you use straightforward procedures to enter your calculations. RPN mode, also referred to as Hewlett-Packard® style, offers an efficient way to enter complex equations, but requires different entry procedures from those for a standard calculator. For more information on calculator modes, see “Using RPN Mode” in this chapter.

Using the Calculator’s Buttons and Keys

Before performing a calculation, familiarize yourself with the buttons that appear in the Calculator window. Some of the Calculator’s buttons have keyboard equivalents. Keys on the floating keyboard or on an optional external keyboard that you use to perform the same action as tapping a button with the pen. The tables below describe each calculator button and show the keyboard equivalents.

DELETE AND CLEAR BUTTONS

The following buttons are used to delete or clear your entry. They are located just to the right of the readout bar.

BUTTON	KEYBOARD KEY	FUNCTION
C/CE	Ctrl+C	Tap once to reset the current number to zero; tap again to reset any operations in progress and clear the operations from memory.
Backspace (←)	Backspace (←)	Tap the Backspace button or press the Backspace key to erase the number to the left of the cursor. Press the Delete key to erase the number to the right of the cursor. Press either key or tap the Backspace button to erase any digits you have selected.

CALCULATION BUTTONS

The following buttons are used to enter calculations:

BUTTON	KEYBOARD KEY	FUNCTION
0 through 9	0 through 9	Digits used to create numbers needed for a calculation
÷	/	Divide
*	*	Multiply
–	–	Subtract
+	+	Add
=	= or Enter	Equals (for standard mode only)
()	()	Parentheses (for standard mode only)
EE	E	Enter E (for entering numbers in scientific notation)
1/x	Ctrl+1	Reciprocal
x ²	Shift+2	Number squared
√x	Ctrl+2	Square root
%	%	Percent
.	.	Decimal
+/-	Ctrl+-	Change Sign (If the number has an E in it, the sign of the exponent is changed.)

MEMORY BUTTONS

The following buttons are used with the Calculator's active memory function. For more information on active memory, see "Using Memory" in this chapter.

BUTTON	KEYBOARD KEY	FUNCTION
STO	[	Store in memory.
RCL	]	Recall from memory.
M+	M	Add the number displayed in the readout bar to the number stored in active memory. The sum of these two numbers is now stored in active memory.

M-	Ctrl+M	Subtract the number displayed in the readout bar from the number stored in active memory. The resulting number is now stored in active memory.
----	---------------	--

Performing Calculations

You enter both *numbers* and *operators* for each mathematical task you perform with the Calculator. The numbers you enter are the figures to be computed. The operators are symbols (such as + for addition) that are used to request a particular type of calculation.

An *operation* refers to the combination of an operator with numbers. For example, $100 + 200$ is an operation. A simple calculation consists of only one operation. However, a calculation can consist of as many operations as you need. For example, you may need to know the result of $100 + 200 \times 5$. This calculation consists of several operations (addition and multiplication). In calculations with multiple operations, you can tell the Calculator explicitly which operation to do first. For an explanation of how to do this, see “Understanding the Hierarchy of Operations” in this chapter.

NOTE

The following procedures describe how to perform a calculation with a standard calculator. If you use an RPN (or HP style) calculator, see “Customizing Your Calculator” in this chapter.

To do a calculation

1. Enter all numbers and operators of your calculation.

For example: 1200×160

$2.5 \times 16 + 22$

$14 - 12 \times (8.5 - 2.2)$

2. Tap the = button or press **Enter**. The result appears in the readout bar.

NOTE

Press the **Enter** key only once. If you press twice and a previous operation is stored in memory, the Calculator will apply this operation to your result. Only operations that apply one number to another, such as +, −, ×, and ÷, are stored and repeated in this way.

USING THE PEN

You can use the pen in the Calculator to tap buttons and select menu items. You can also use it in combination with the Backspace button or the **Delete** key to edit the numbers in the readout bar. For example, if you entered the number 124 by mistake instead of 14, you could select the 2 with the pen or move the insertion point between the 2 and the 4 and then tap the Backspace button to delete the number 2.

USING THE KEYBOARD

You may find it easier to use the floating keyboard or an optional external keyboard for entering numbers. If you are using the numeric keypad on an external keyboard, be sure that the **Num Lock** key is on (the Num Lock light is lit).

USING COPY AND PASTE

You can copy calculation results to other GEOS applications. You can also select and copy numbers from another document and paste them into the Calculator's readout bar. For more information on working with text (including numbers), see Chapter 1.

Understanding the Hierarchy of Operations

When you enter calculations that include more than one operation, the Calculator performs the operations in the following sequence:

- First, any numbers or expressions enclosed in parentheses
- Second, multiplication and division
- Third, addition and subtraction

If you enter arithmetic functions that have the same precedence (such as $2 + 5 - 1$), the operations are performed from left to right. The final result of your calculation will always reflect the above sequence. For example, if you enter $3 + 4 \times 6$, the result is 27 (*not* 42). This result is based on $3 + 24$ (the Calculator performed the multiplication before it performed the addition).

Parentheses can be used to ensure that a particular operation is performed first. For example, you could enter $(3 + 4) \times 6$. The parenthetical operation is performed first: $3 + 4 = 7$. After that, the multiplication operation is performed: $7 \times 6 = 42$.

NOTE

If you do calculations that include a number of operations, you may want to learn about RPN (Reverse Polish Notation) mode. When the Calculator is in RPN mode, no parentheses are needed, simplifying complex calculations. For information about this type of calculator, see “Using RPN Mode” in this chapter.

Handling Error Conditions

When the Calculator cannot perform a calculation, the word Overflow (or Error) appears in the readout bar. This can happen if you try to perform a function not allowed by the Calculator, such as dividing by zero. When Overflow is displayed, you can clear it by tapping the C/CE button. This clears the number and the error.

USING MEMORY

You can save the results of your calculation using the Calculator’s built-in memory. The memory function allows you to temporarily store numbers during the current work session.

There are two types of memory: *active* and *register*. Active memory is used to store the number displayed in the readout bar. You can add to, subtract from, or recall a number stored in active memory. For example, active memory is a convenient way to keep track of your current bank balance as you write checks. Simply store your balance in active memory, then deduct the amount of each check from the balance.

If you need to store more than one figure in memory, you can use register memory. Registers allow you to store up to seven additional numbers in the Calculator’s memory. The registers have default names: Register1, Register2, Register3, and so on. You can change the names to describe the type of value you are entering into the registers. For example, you can rename Register1 “Savings Account” and Register2 “Money Market Account.” (For more information on register names, see “Using Register Memory” in this chapter.)

Active and register numbers can be viewed in the Calculator's Memory box, which is under Options. The Memory box consists of eight rows in which to store numbers. The first row is reserved for active memory; the seven rows that follow are used for register memory:

Use to store number in register memory.

Use to send number to Calculator.

Tap STO button to copy number from readout bar to here.

Memory	Value	STO	STO
Active Memory	375.68	STO	STO
Register 1	23.45	STO	STO
Register 2	34.56	STO	STO
Register 3	158.45	STO	STO
Register 4		STO	STO
Register 5		STO	STO
Register 6		STO	STO
Register 7		STO	STO

Additional numbers can be stored in registers.

You can leave the Memory box open while you work with the Calculator. Drag its title bar to move it out of the way if necessary.

The following table summarizes how to use active memory and register memory.

TYPE OF MEMORY	FUNCTION
Active	<p>The number displayed in the readout bar can be copied directly to active memory.</p> <p>Only one number can be stored at a time.</p> <p>The stored number can be added to or subtracted from using the M-/M+ (subtract/add keys).</p> <p>The register name (Active Memory) cannot be changed.</p>
Register	<p>Numbers can only be edited using the Memory box.</p> <p>Numbers can be entered directly or by using Quick Copy. For more information about working with text, see Chapter 1.</p> <p>Up to seven numbers can be stored.</p> <p>Register names (e.g., Register1) can be changed and saved for the next work session.</p>

Using Active Memory

You use active memory as quick, temporary storage for numbers copied directly from the readout bar. The following procedures describe how to store, update, and recall numbers from active memory.

To store a number in active memory

1. Display a number in the readout bar.
2. Tap the STO button to store the displayed number in active memory.

Example: If 100 is displayed and you tap STO, the Calculator stores the number 100 in active memory.

To add to or subtract from a number stored in active memory

1. Store the number you want to update in active memory. (To do this, follow the steps described in the previous procedure.)
2. Display the amount you want to add or subtract in the readout bar. You can enter the number directly or display it as the result of a operation.

3. Tap M+ to add or M- to subtract the amount from the number stored in active memory.

Example: 100 is currently stored in active memory and you want to add 50 to it. To do this, enter 50 in the readout bar and tap M+; the Calculator changes the number stored in active memory to 150.

Example: 150 is currently stored in active memory and you want to subtract 20 from it. To do this, enter 20 in the readout bar and tap M- ; the Calculator changes the number in active memory to 130.

To recall numbers from active memory

- Tap RCL. The number in active memory is copied to the readout bar.

Using Register Memory

Registers provide storage for up to seven numbers in the Memory box. You can store, update, and recall register numbers. You can also work with the Memory box while using the Calculator, opening and closing it at your convenience.

To work with the Memory box while using the Calculator

1. Choose Memory from the Options menu. The Memory box appears.
2. Follow the steps in other procedures described in this section to store a number in a register, recall a number stored in a register, or rename a register.
3. If you want to work with the Calculator window, move the Memory box out of the way by dragging its title bar.
4. You can keep the Memory box around to continue working with it.

or

Tap Close to close the Memory box.

To copy a number from the readout bar and store it in a register

1. Use the Calculator to display the number that you want to store. You can enter the number directly in the readout bar, or display the number as the result of a calculation.
2. In the Memory box, tap the Get from Calculator button (pictured at left) located next to the register that you want to use for storage. The number is copied from the readout bar to the register.



The number is stored in the register until you exit the Calculator, or until you store a different number in that register.

To type a number into a register

- In the Memory box, select one of the register boxes; then type a new number or edit the number that is already there.

The number is stored in the register until you exit the Calculator, or until you store a different number in that register.

To change the name of a register

Double-tap or drag in the name box to select the name and edit it quickly.

1. In the Memory box, select the name of the register you want to change and edit the text shown in the box. For example, you may want to change the name of Register1 to “Savings Account” or “Car Payment”.
2. To make your changes permanent, choose Save Options from the Options menu. The names (but not the numbers) are saved for later work sessions. The next time you open the Calculator application, the names you have saved will be displayed in the Memory box. For more information on saving options, see “Customizing Your Calculator” in this chapter.

To recall a number stored in a register



- In the Memory box window, tap the Send to Calculator button (pictured at the left) located next to the register with the number you wish to recall. The number is copied from the register to the readout bar.

CUSTOMIZING YOUR CALCULATOR

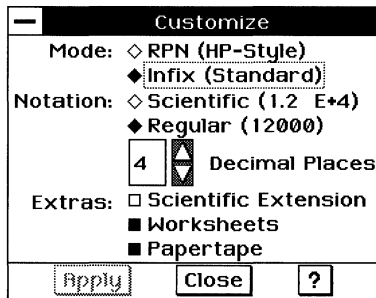
You can change the look and feel of the Calculator to match your particular needs. This section describes how to do the following:

- Switch between calculator modes and use RPN calculator mode.
- Choose between regular and scientific notation.
- Specify the number of decimal places that are displayed.
- Select the scientific extension to include trigonometric functions.
- Use the worksheets.
- Hide the paper tape.
- Save customized settings.

Once you've customized the Calculator, you can save your settings for the next time you start the Calculator. For instance, you may prefer to hide the paper tape to make the Calculator window smaller so that it takes up less space on your screen; or you may wish to have the scientific extension buttons always showing so that you can perform trigonometric calculations at any time. When you've found settings you like, use Save Options from the Options menu to save them for your next session.

To customize the Calculator

1. Choose Customize from the Options menu. The Customize dialog box appears:



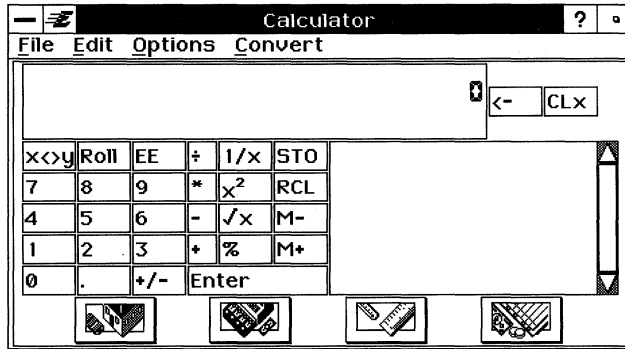
2. Select options in the dialog box, then tap Apply. The Calculator changes to reflect your settings.
3. Tap Close to close the dialog box.
4. To keep your settings *for the current work session only*, continue using the Calculator as you normally would. When you exit the Calculator, the settings are restored to their previous state.

or

To save your settings *for future work sessions*, choose Save Options from the Options menu at any time before you exit the Calculator. Your settings are saved for the next time you open the Calculator.

Using RPN Mode

Calculator mode refers to the keyboard layout and how calculations are entered. Two different modes are available with the Calculator: standard (Infix) and RPN (Reverse Polish Notation or Hewlett-Packard style). Standard mode is described and illustrated in “Basic Calculator Functions” in this chapter. RPN mode is shown below.



RPN mode offers an efficient way to enter complex calculations using a method similar to that found on many Hewlett-Packard calculators, especially those models targeted at the mathematics and scientific community. In RPN calculations, you enter the numbers first, and then you perform an operation. For instance, if you want to add two numbers, such as 8 and 5, you first enter 8, then enter 5, and then perform the addition operation. As you enter numbers they are “pushed” onto a *stack*; they are later “popped” off the stack and used in operations. For more information, see “Understanding the Hierarchy of Operations” in this chapter.

The buttons available in RPN mode are basically the same as those available on a standard calculator, with the following differences:

BUTTON	KEYBOARD KEY	FUNCTION
Enter	= or Enter	Place or “push” the number on the readout bar onto the stack. You perform calculations by typing the first number, tapping Enter, typing the second number, and then tapping an arithmetic function.
x<>y	X	Exchange the number in the readout bar with the top number on the stack. This is useful in switching the order of numbers to be subtracted or divided.

Roll	R	Roll the numbers up the stack by one place. The top number goes to the bottom of the stack. This is useful for seeing what numbers are in the stack.
CLx	Ctrl+C	Tap once to erase the number you are currently entering. Tap twice to clear the entire stack.

You otherwise use the same keys on the keyboard and tap the same buttons in the Calculator window to activate RPN mode.

To switch between standard and RPN calculator modes, choose Customize from the Options menu. When the dialog box is displayed, select the mode button that identifies the type of calculator you want. Apply this change and close the dialog box. The calculator buttons change to represent the calculator mode you chose.

To perform an RPN calculation

1. Enter the first number, as you would for a standard calculator.
2. Tap Enter to “push” the number onto the stack.
3. Enter the second number. Do not tap Enter this time.
4. Tap the arithmetic function you want. The result shows in the readout bar. You can use this result as the first number in another calculation.

NOTE

Do not tap Enter after typing the second number. This will both store the number on the stack *and* leave it on the display. If you tap an operation, the operation will use the number on the display and the top number on the stack — the same number.

EXAMPLES OF RPN CALCULATIONS

To get a feel for how RPN calculations work, it helps to look through some examples. Notice that in each of these calculations, the approach is to enter values first (pushing them onto the stack) and then to perform operations in order of precedence, from highest precedence (innermost parentheses) to lowest precedence. Also notice that Enter is only pressed between successive numbers. When the last number in a group is reached, the operator button is pressed instead of the Enter button. (For more information on the order of operations and precedence, see “Understanding the Hierarchy of Operations” in this chapter.)

Example: Calculate $1032 \div (15 - 12 \times (9 + 3))$

BUTTON PRESSES	DISPLAY
1032, Enter	1032
15, Enter	15
12, Enter	12
9, Enter	9
3, +	12
×	144
-	-129
÷	-8

Choosing Regular or Scientific Notation

Two different notation styles are available: *regular* (for standard calculations) and *scientific* (for extremely large or small numbers). Use the regular style if you want to enter numbers in the standard way. For example, if you enter 0.2×0.2 in the regular style, the result is .04. Use the scientific style when you require a numerical shorthand for very large or small numbers that would be difficult to view on the display bar. For example, if you enter 0.2×0.2 with scientific style selected, the result is 4.0000E-02 (or 4×10 to the power of -2).

To choose a notation style, choose Customize from the Options menu. When the dialog box is displayed, select the notation button that identifies the notation style you want. Apply this change and close the dialog box. The calculator will display the results of new calculations in the notation you have specified.

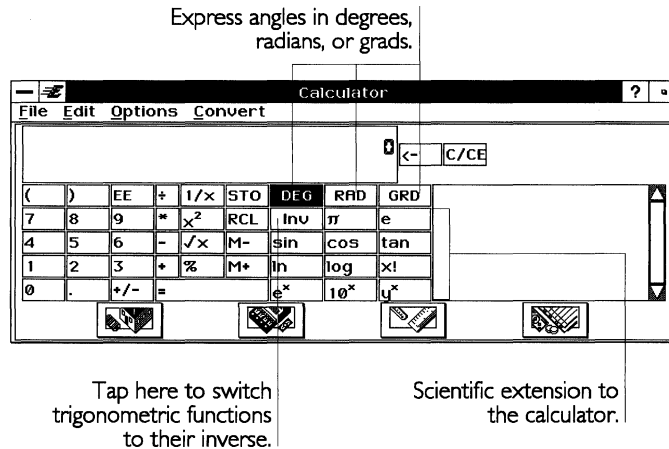
Changing the Decimal Places Displayed

The Calculator stores 12 decimal places internally for each number, but displays only the number of decimal places that are currently set in the Customize dialog box. In this dialog box, you can specify the exact number of decimal places to be displayed in your calculations, from 1 to 12. For example, if you are working with dollars and cents, you may want to set the number of decimal places to 2. All values will then be rounded to two decimal places when displayed.

To change the number of displayed decimal places, choose Customize from the Options menu. When the dialog box is displayed, tap the arrow buttons in the Decimal Places field to select the number of decimal places displayed for calculations. (If you select a value of zero, the Calculator displays all significant digits.) Apply this change and close the dialog box. The calculator will display the results of new calculations with the precision you have specified.

Using the Scientific Extension

You can expand the Calculator (in both RPN and standard mode) to include scientific functions by choosing the scientific extension option. This option provides additional buttons that enable you to do trigonometric calculations, exponents, factorials, and logarithms.



At the top of the scientific extension area are the following options that affect trigonometric calculations:

OPTION	KEYBOARD KEY	FUNCTION
DEG	Ctrl+D	Select from this group of buttons to specify whether trigonometric angles are expressed in degrees, radians, or grads.
RAD	Ctrl+R	
GRD	Ctrl+G	

Inv **i**

Select this option to switch the trigonometric buttons to their inverse. For instance, when this option is on, the sine (sin) function becomes an inverse sine (\sin^{-1}).

To show the scientific extension option, choose Customize from the Options menu. When the dialog box is displayed, tap Scientific Extension so that the check box is darkened. Apply this change and close the dialog box. The calculator buttons change to show the scientific extension. To remove the scientific extension, follow these steps again, but this time tap the Scientific Extension option so that the check box is off.

To calculate the sine, cosine, or tangent of an angle

The sin, cos, and tan buttons calculate the sine, cosine, or tangent of the supplied angle.

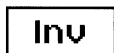


1. Select the unit of measurement for the angle: DEG, RAD, or GRD.
2. Enter a value for the angle.
3. Tap one of the trigonometric buttons: sin, cos, or tan.
4. The result appears in the readout bar.

To calculate the inverse sine, cosine, or tangent of an angle

When the Inv option is checked, the sin, cos, and tan buttons become their inverse: \sin^{-1} , \cos^{-1} , and \tan^{-1} . These buttons now calculate the inverse sine, inverse cosine, or inverse tangent. The result is expressed as an angle.

The inverse sine, cosine, and tangent are sometimes referred to as the arcsine, arccosine, and arctangent.



1. Select the unit of measurement for the result: DEG, RAD, or GRD.
2. Enter the value you want to use in the calculation.
3. Tap the Inv check box. The sin, cos, and tan buttons change to show their inverse functions (\sin^{-1} , \cos^{-1} , and \tan^{-1}).
4. Tap one of the inverse trigonometric buttons.
5. The result appears in the readout bar, expressed in the unit of measurement specified in step 1.

To raise one number to the power of another

You can use the y^x button to raise one number to the power of another.

1. Enter the first number and tap the y^x button. For instance, if you wanted to calculate 10^5 , you would enter 10 in the readout bar.

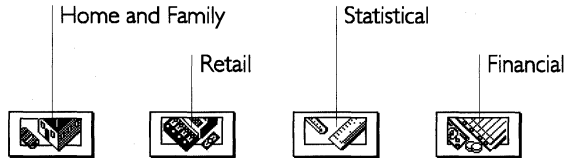
2. Enter the exponent, the power to which you wish to raise the first number.
3. Tap the = button. The result appears in the readout bar.

The following buttons are available with the scientific extension:

BUTTON	KEYBOARD KEY	FUNCTION
π	p	Recall the value for the mathematical constant pi.
e	e	Recall the value for the mathematical constant e (Euler's constant).
\sin or \sin^{-1}	s	Calculate the sine of the number in the readout bar. Or, when inverse sin is available, calculate the inverse sin.
\cos or \cos^{-1}	c	Calculate the cosine of the number in the readout bar. Or, when inverse cos is available, calculate the inverse sin.
\tan or \tan^{-1}	t	Calculate the tangent of the number in the readout bar. Or, when inverse tan is available, calculate the inverse tan.
\ln	n	Calculate the natural logarithm of the number in the readout bar.
\log	l	Calculate the logarithm (base 10) of the number in the readout bar.
$x!$	! (Shift+1)	Calculate the factorial of the number in the readout bar.
e^x	N	Raise the constant e to the power shown in the readout bar. This is the inverse natural logarithm.
10^x	L	Raise 10 to the power shown in the readout bar. This is the inverse logarithm.
y^x	^ (Shift+6)	Raise the value in the readout display to the power of the next value entered. (Enter the first value, tap y^x ; enter the second value, tap =.)

Using the Worksheets

Worksheets are templates provided with the Calculator for performing common calculations such as loan interest and depreciation. There are four types of worksheets: home and family, retail, statistical, and financial.



When you tap a worksheet button, a dialog box is displayed that lists all the worksheets for that type. You can then choose a worksheet by double-tapping the name of the worksheet you wish to use.

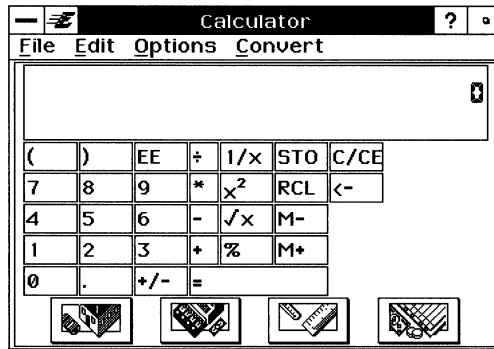
Loan (total interest)	
Calculate the total of interest payments over the life of a loan.	
Monthly payment:	<input type="text" value="1000"/> \$
Interest rate:	<input type="text" value="8"/> %/year
Loan term:	<input type="text" value="5"/> years
Total interest paid:	
<input type="text" value="?"/>	
<input type="button" value="Calculate"/>	<input type="button" value="Close"/> <input type="button" value="?"/>

To hide the worksheet buttons

1. To hide the worksheet buttons, choose Customize from the Options menu.
2. When the dialog box is displayed, tap Worksheets to turn off this option.
3. Apply this change and close the dialog box. The worksheet buttons disappear.

Hiding the Paper Tape

You can hide the paper tape to make your Calculator window smaller so that it takes up less space on your screen:



To hide the paper tape, choose **Customize** from the **Options** menu. When the dialog box is displayed, tap **Paper Tape** to turn it off. Apply this change and close the dialog box. The paper tape disappears. To redisplay the paper tape, follow these same steps, but this time tap the **Paper Tape** option so that the check box is darkened again.

Saving Your Customized Settings

To use the settings you have selected *for the current work session only*, continue using the Calculator as you normally would. When you exit the Calculator, the settings are restored to their previous state.

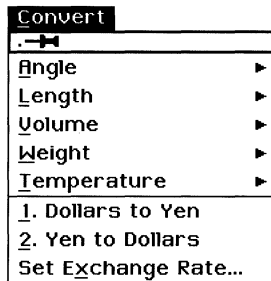
To save your settings *for future work sessions*, choose **Save Options** from the **Options** menu at any time before you exit the Calculator. Your settings are saved for the next time you open the Calculator.

CONVERTING MEASUREMENTS

The Calculator provides a handy way to convert one unit of measurement, such as gallons, to another unit, such as liters. You can convert angles, length, volume, height, temperature, and currency, and also set the exchange rate for currency conversions.

To perform a conversion

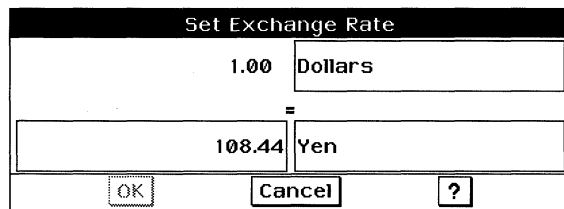
1. Enter the number you want to convert in the readout bar.
2. Choose the conversion from the Convert menu.



If a submenu appears, choose the appropriate conversion from it. The conversion is applied and displayed on the readout bar.

To change currency conversion names and exchange rates

1. To change the names of the currency conversions and the rates for those conversions, choose Set Exchange Rate from the Convert menu. The Set Exchange Rate dialog box appears:



2. Enter your changes in the appropriate fields. To change the name of a currency, tap in the name field and enter the new name; to change an exchange rate, tap in the rate field and enter the new rate. Tap OK.

The Convert menu changes to reflect any currency name changes. If the currency names are Dollars and Yen, and you change Dollars to Francs, the Convert menu commands, Dollars to Yen and Yen to Dollars, would change to Francs to Yen and Yen to Francs.

Text File Editor

You can use Text File Editor to make quick notes, to view the “readme” files that often come with applications, and to read documentation that comes with public-domain software.

NOTE

Text File Editor does not support handwriting recognition. Although you can use the on-screen keyboard to type and edit Text File Editor documents, it is strongly recommended that you use an optional external keyboard.

Text File Editor is simple to use. However, it is not a full-featured word processing program. You will want to use a word processing application, such as GeoWrite, if you need the following features:

- Adjustable margins and tab stops
- Variable text styles and fonts, line spacing, and justification
- Page break control
- Graphics in your document
- Document safeguarding

This chapter assumes you are familiar with the information presented in Chapter 1, which provides an overview of the skills you need to use any GEOS application.

Text File Editor has no user levels.

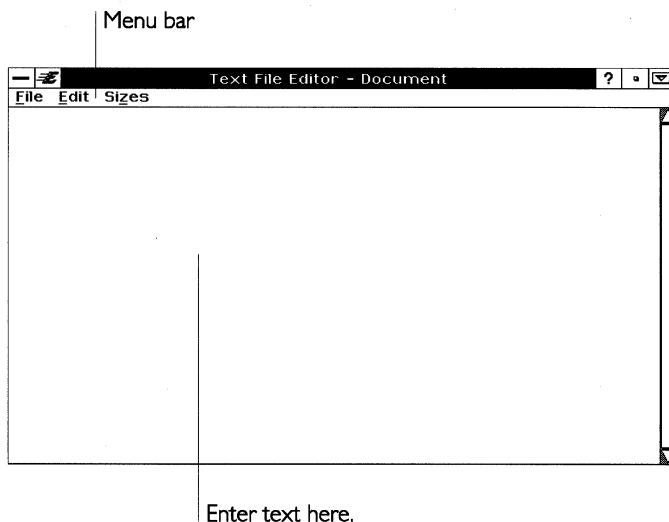
THE TEXT FILE EDITOR WINDOW



Text File Edi...

The Text File Editor icon appears in the WORLD directory and looks like the example at the left. You can use the Text File Editor icon to start Text File Editor. For more information about starting GEOS applications, see Chapter 1.

After you start Text File Editor, a document window appears. You enter and edit text in the document window.



USING TEXT FILE EDITOR

In Text File Editor, you enter and edit text just as you would in any GEOS application. For detailed information on entering and editing text, see Chapter 1.

NOTE

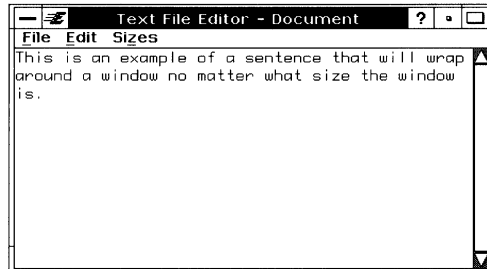
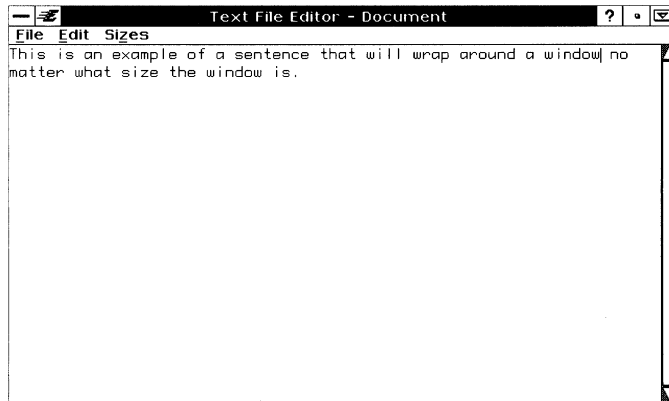
Text File Editor cannot paste text that contain special characters. If you use another application, such as GeoWrite, to copy some text to the clipboard that includes some special characters — such as smart quotes, for example — and then switch to Text File Editor, the Paste menu choice will be dimmed and unavailable.

Word Wrap and Line Endings

When your text reaches the right edge of the window, it wraps automatically to the next line. This feature is called *word wrap*. Word wrap means that you do not have to press the **Enter** key (the Return key on a typewriter) to start a new line of text. This keeps the lines and sentences together in the same paragraph. When you are ready to begin a new paragraph, you press the **Enter** key.

If you change the width of the window, text wraps at the new window edge. If there is more text than can fit in the window, use the scroll bar to see different parts of the document.

In Text File Editor, the length of the line changes with the width of the window.



NOTE

DOS text files are often *line-oriented*, which means each line is kept apart from the others by pressing **Enter** at the end of each line, instead of pressing **Enter** only at the end of each paragraph. An example of a line-oriented text file is a DOS batch file, in which each line is a separate DOS command. You may find it easier to edit one of these files by resizing the Text File Editor window so that it is as wide as possible. This way you can see where lines actually end because **Enter** has been pressed, and you need not be confused by where Text File Editor is wrapping them.

CHANGING THE TEXT SIZE

Text size is measured in typographical units called points; 9-point is 1/8" high.

You can change the size of the text displayed in any Text File Editor document. Text File Editor provides three sizes of text:

- 9 point
- 12 point
- 14 point

Text File Editor displays all the text in a document at the same size. If you choose a different size, all the text in the document changes to the size you select. The size setting stays in effect even if you close one document and open another. Regardless of the text size you choose, Text File Editor *always* prints documents using the built-in fonts in your printer.

To change the text size

- Choose a new size from the Sizes menu. All text in the document changes to the new size.

CHECKING YOUR SPELLING

Text File Editor includes a spelling checker that helps you find and correct misspelled words in your documents. You can check the spelling of a single word, or of the whole document.

The spelling checker tries to match each word in your document to its exact duplicate in an extensive electronic dictionary. If the spelling checker does not find an exact match, it flags the word as misspelled. Some uncommon words, such as names or technical terms, may not be in the standard dictionary. You can prevent the spelling checker from flagging uncommon words by adding them to the user dictionary. For more about checking your spelling and adding words to the user dictionary, see "Formatting GeoWrite Documents" in Chapter 5.

FINDING AND REPLACING TEXT

You can use Find and Replace to quickly find a word or phrase in your document and, optionally, to replace it with a different word or phrase. You can also replace all occurrences of a word or

phrase in a document. For more information about finding and replacing text, see “Formatting GeoWrite Documents” in Chapter 5.

PRINTING A DOS TEXT FILE

In Text File Editor, you choose Print from the File menu to print a document, just as you would in any GEOS application. However, you should be aware of the following two differences when printing Text File Editor documents:

Line Length. The length of a line in the printed document is not always the same as the length of the same line shown in the Text File Editor window. In the Text File Editor window, text wraps at the right edge of the window. When you print, however, text wraps at the right edge of the page. (However, if you end a line by pressing **Enter**, this line ending is preserved when you print the document.)

This difference in line length occurs because Text File Editor always prints documents using the printer’s built-in fonts. Although a built-in font may be a different size from the font in your document, documents printed using built-in fonts print very quickly.

Text Size. The size of printed text may be different from the size of the text displayed in the Text File Editor window. Regardless of the text size you choose from the Sizes menu, Text File Editor *always* prints documents using the built-in fonts in your printer.

For more information about printing in GEOS applications, see Chapter 1.

WORKING WITH DOS TEXT FILES

Working with DOS text files in the Text File Editor is similar to working with documents in other GEOS applications. However, there are some differences you should be aware of:

Document Safeguarding. Document safeguarding works only with GEOS files, not with DOS files. Since Text File Editor documents are DOS files, they are not protected by document

safeguarding. Be sure to save your Text File Editor documents often.

DOS File Names. All documents you create with Text File Editor are DOS text files. Therefore, when you save them, you must give them names that follow the DOS rules for naming files. DOS file names can be up to eight characters long, optionally followed by a period and three more characters. You may want to use TXT following the period to indicate that your file is a text file. You cannot include spaces in a DOS file name. For more information about DOS file names, see Appendix D.

Creating a DOS Text File

It is easy to create a new Text File Editor document from within Text File Editor. For more information about creating a new DOS text file, see Chapter 1.

Scrapbook

The Scrapbook application gives you a place to store graphics and bits of text so that they are available at a moment's notice. The notes, pictures, and other items that you store in the scrapbook are called *scraps*.

The advantage of a GEOS scrapbook over a real scrapbook is that you can quickly copy items from a GEOS scrapbook to other GEOS documents.

This chapter assumes you are familiar with the information presented in Chapter 1, which provides an overview of the skills you need to use any GEOS application.

USER LEVELS IN SCRAPBOOK

ALL LEVELS

There are two user levels in Scrapbook:

- Level 1 is the easiest to use and includes most features that you will need to store and retrieve items in a scrapbook.
- Level 2 allows you to import items from non-GEOS applications, go to a specific page in a scrapbook, and paste items at the end of a scrapbook document.

For more information about changing and saving user levels, see Chapter 3.

THE SCRAPBOOK WINDOW

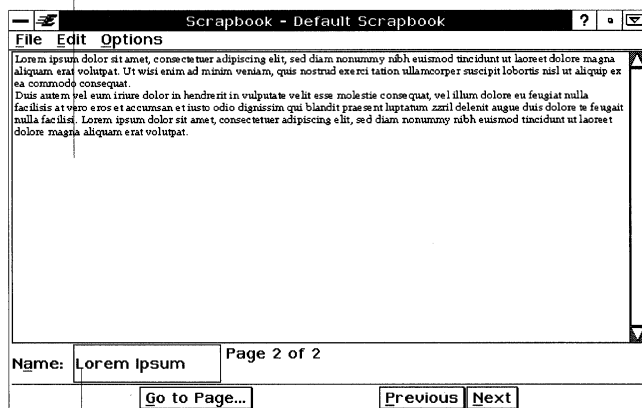
ALL LEVELS



Scrapbook

When you start Scrapbook, you automatically open the *default scrapbook*. If you have not copied any scraps into the default scrapbook, the document is empty. If you have already entered scraps, the contents of the first page are displayed in the View box.

This area is the View box. It shows pages in the scrapbook.



Tap to go to a specific page in the scrapbook.

Tap to go to the previous or the next page in the scrapbook.

The name of the page appears here.

If you want to start storing scraps now, you can use the default scrapbook. If you plan to keep a large collection of scraps, you may want to create new scrapbooks. For more information about working with scraps, see “Working with Scraps” in this chapter. For more information about creating new scrapbooks, see “Creating a New Scrapbook Document” in this chapter.

WORKING WITH SCRAPS

You can copy scraps from most GEOS applications to your scrapbook. For example, you can use the drawing tools in GeoWrite to design a letterhead, then copy it to your scrapbook so that it is easily available when you want to use it again. At Level 2, you can also import scraps from non-GEOS applications. For more information about importing, see “Importing a Scrap From a DOS Application” in this chapter.

Adding Scraps to a Scrapbook

Each time you paste an item from another application to your scrapbook, you automatically add a new page to the scrapbook.

To add a scrap to a scrapbook (All Levels)

1. Within an application, copy the item to the clipboard. For more information about how to copy items, see Chapter 1.
2. Choose Scrapbook from the Express menu.
3. Choose Paste from the Edit menu. The scrap appears on a new page *in front of* the current page. This pushes all subsequent scraps back one page.

or, at Level 2:

Choose Paste at End from the Edit menu. The scrap is pasted on the last page of the scrapbook.

NOTE

If you want to insert the scrap on another page, use the Previous or Next button to go to the page that you want to *follow* the new scrap. For example, if you want to add a scrap to page 3 of the scrapbook, go to page 3. When you paste in the scrap, the new page becomes page 3 and the old page becomes page 4.

Copying a Scrap to Other Applications

You can copy any item from a scrapbook to another application that allows you to paste something from the clipboard. For example, you can copy a letterhead from Scrapbook into GeoWrite, and then type your correspondence.

To copy from Scrapbook to other applications (All Levels)

1. Go to the scrapbook page that has the scrap you want to copy.
2. Choose Copy or Cut from the Edit menu.
 - The Copy choice copies the scrap to the clipboard and leaves a copy of it in the scrapbook.
 - The Cut choice places the scrap on the clipboard and *deletes* it from the scrapbook.
3. Open the document in the application to which you are copying the scrap.
4. Place the insertion point where you want to paste the scrap on the page.

5. Choose Paste from the application's Edit menu. The scrap is pasted into the document.

Deleting a Page

ALL LEVELS

You can easily delete a page that you no longer need. A deleted page is not stored on the clipboard.

To delete a page from a scrapbook (All Levels)

1. Go to the page that you want to delete.
2. Choose Delete from the Edit menu. The page is deleted from the scrapbook.

Naming a Page

ALL LEVELS

You can assign a name to each page in a scrapbook. Using page names to describe the type of scrap stored on the page can be helpful when you want to locate particular items in a large scrapbook. Page names are shown in the Name box at the bottom of the Scrapbook window; the names are also listed in the Go to Page dialog box.

To name a page (All Levels)

1. Locate the page that you want to name.
2. Tap the Name box, and enter a descriptive name for the page.

Importing a Scrap from a DOS Application

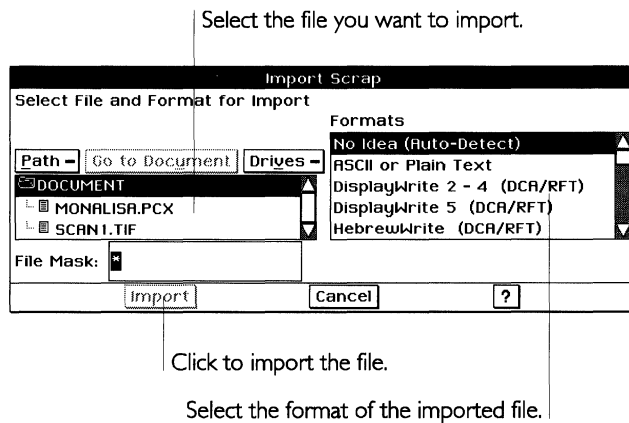
LEVEL 2

You can import images from other DOS applications to a scrapbook. An item is *imported* when it is transferred from a non-GEOS application to a GEOS application. For example, you can import text or images that are in a variety of formats to your scrapbook.

To import an item from another application (Level 2)

1. Open the scrapbook in which you want to place the image.
2. Locate the page that you want to follow the imported page.

3. Choose Import Scrap from the File menu. A dialog box appears:



4. Select the format (TIFF, PCX, and so on) of the image you are importing. All files matching the format you selected are listed above the formats.
5. Locate the name of the file you want to import. Use the file selector to change disk drives and folders as needed.
6. Double-tap the name of the file you want to import. It may take several seconds for the image or text to be imported and placed in the scrapbook. You cannot interrupt this process.

WORKING WITH DOCUMENTS

ALL LEVELS

Scrapbook provides a standard document called “Default Scrapbook” in your DOCUMENT folder. Whenever you start Scrapbook, this document opens automatically, making it easy to keep all of your scraps in one place. If you only need one scrapbook document, you should use this document.

However, you may want to keep additional scrapbook documents. For instance, you may find it easier to keep your scraps organized by project. Simply create a scrapbook for each project.

Creating a New Scrapbook Document

ALL LEVELS

It is easy to create a new scrapbook document from within Scrapbook. For more information about creating a new document, see Chapter 1.

Setting Another Startup Document

When you start Scrapbook, the default scrapbook from the DOCUMENT folder opens. In Level 2 of Scrapbook you can set another scrapbook document to use as your empty startup document. For more information, see “Working With Documents” in Chapter 3.

PAGING THROUGH A SCRAPBOOK

ALL LEVELS

You can quickly flip through the pages of a scrapbook to scan its contents. At Level 2, you can go directly to a specific page.

To jump one page at a time (All Levels)

- Tap Next to go to the next page, or Previous to go the previous page. If you are on the last page, the Next button takes you to the first page. If you are on the first page, the Previous button takes you to the last page.

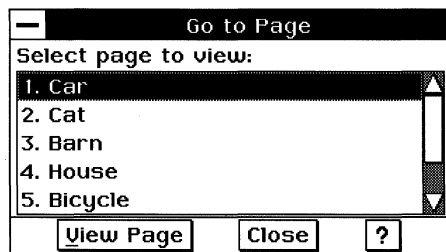
Previous Next

Go to Page...

In Level 2, you can use the Go to Page button to jump to a specific page in a scrapbook.

To jump to a specific page (Level 2)

1. Tap the Go to Page button. The Go to Page dialog box appears:



2. Tap the page number or page name that you want to view. Then tap View Page to display the page in the Scrapbook window.

or

Double-tap the page number or page name to display the page immediately in the Scrapbook window.

3. Tap Close when you are finished. (You can also drag the dialog box to the corner of the screen so you can refer to it later.)

Preferences

This section explains how to change various options on the unit so that each time you use GEOS applications, these options are automatically set.

WHAT IS PREFERENCES?

Preferences is a GEOS application that allows you to tailor the unit to meet your specific needs and likes. For example, you can use Preferences to turn sound on and off, to install a new printer, or to change your password.

Preferences is made up of sixteen groups of options: text, modem, printer, connections to other devices, date and time, hard icon assignments, hardware, international formats, keyboard, look and feel, memory allocation, optional mouse, password security, pen, port assignments, and power management.

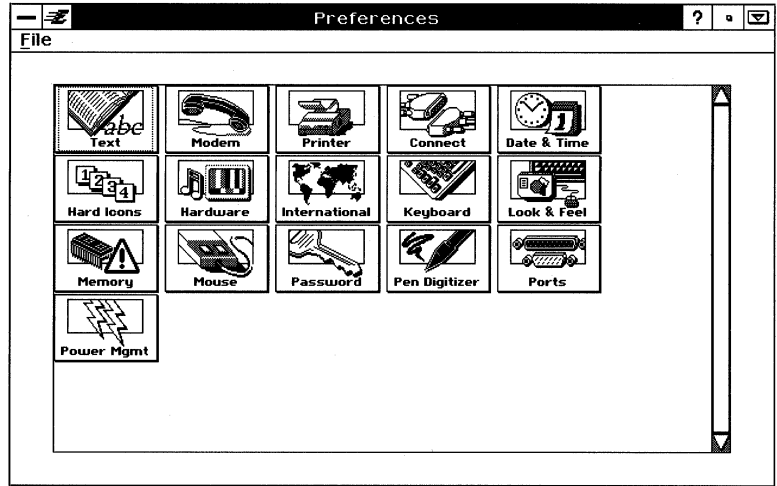


Preferences

You start Preferences by double-tapping the Preferences icon, which looks like the example at the left. For more information about starting GEOS applications, see Chapter 1.

THE PREFERENCES WINDOW

When you start Preferences, the Preferences window appears:



CHANGING YOUR PREFERENCES

This procedure explains how to change options.

To change Preferences options

1. Open Preferences. The Preferences window appears.
2. Tap the button for the group of options you wish to set or change. A dialog box for that set of options appears.
3. Tap the appropriate radio buttons, enter information, select items from list boxes, or tap arrows to set or change the option(s) you want.
4. You can set or change some option(s) in one dialog box. To set or change other options, you may need to enter (or edit) information or select settings in several dialog boxes. If necessary, tap the appropriate button to go to another dialog box and then set or change the option(s) you want.
5. Tap OK or Close to apply your new settings and exit the dialog box.

or

Tap Reset to reset the options to their original settings and then tap Close to exit the dialog box.

or

Tap Cancel to cancel any changes and exit the dialog box.

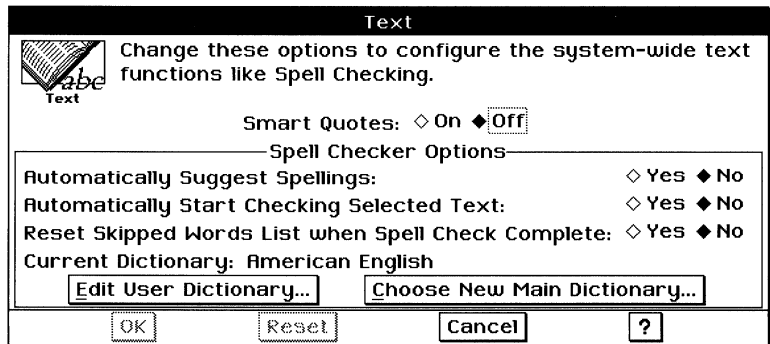
You will need to repeat this step for each dialog box you have selected until you return to the Preferences window.

If you change some options, such as international, keyboard, or mouse options, a dialog box appears requesting you to restart the unit so that the change can take effect immediately. Tap Yes to restart the unit, or tap No to delay your changes until the next time you restart the unit.

TEXT OPTIONS

Use the Text options if you want to change spell-checking options, edit the user dictionary, or choose a new main dictionary. You can also turn smart quotes on or off in this dialog box. Unless you specify otherwise, unit applications use straight quotation marks (" or '). When you turn *smart quotes* on, typographer's quotation marks appear (“ ” or ‘ ’). However, be aware that any quotation marks you have already typed as straight quotation marks will not change when you turn smart quotes on.

When you tap the Text button, the following dialog box appears:



To change smart quotes and spell-checking options, use the following options as necessary:

Smart Quotes. Turn on typographer's quotation marks for text.

Automatically Suggest Spellings. Let the Spelling Checker suggest corrections for spelling errors.

Automatically Start Checking Selected Text. Let the Spelling Checker automatically start checking text you have selected.

Reset Skipped Words List When Spell Check Complete. Let the Spelling Checker skip all occurrences of misspelled words for one spell-checking operation. You must also tap Skip All in the Spelling Checker in order for this option to work.

Dictionaries

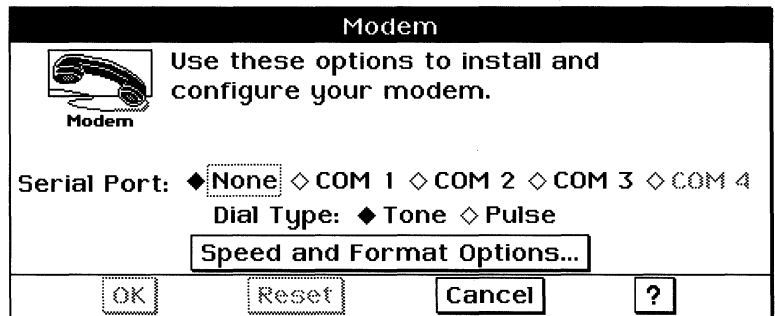
To change the user dictionary, tap the Edit User Dictionary button. Your *user dictionary* is a dictionary that contains words you add to it. These words typically do not appear in the main dictionary for the Spelling Checker; rather, you add them to the user dictionary to expedite spell checking. To add a new word, type the new word in the box, then tap Add New Word. To remove a word from your user dictionary, select the word from the list, then tap Delete Selected Word.

To choose another main dictionary, tap the Choose New Main Dictionary button. After you select a new dictionary from the list, tap Use This Dictionary.

MODEM OPTIONS

Use the Modem options if you want to change your modem settings. Before you can use your modem, you need to be sure to identify the communication port and port speed. Refer to your modem manual for more information.

When you tap the Modem button, the following dialog box appears:



You can change the serial port or dial type from this dialog box.

Speed and Format Options

To change the modem speed and format options, tap Speed and Format Options. Change the following options as necessary:

Baud Rate. The speed at which data is transmitted between your unit and the remote system.

Parity. Used for error checking during transmission.

Word Length. The number of bits used to convey each character transmitted. (The term *data bits* is sometimes used to refer to the word length.)

Stop Bits. Used to indicate the end of each character as it is transmitted.

Handshake. Used to enable unit communications software, such as GeoComm, to control the flow of information in and out of the unit. When hardware handshaking is enabled, you can set these options:

Stop Remote. Lets you select the appropriate method to start data flowing out of your unit.

Stop Local. Lets you select the appropriate method to start data flowing into your unit.

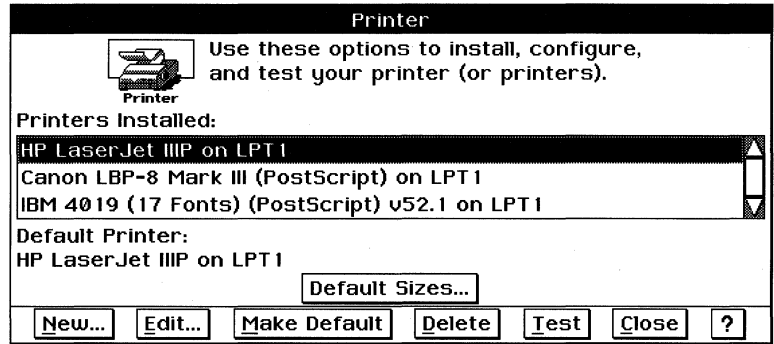
PRINTER OPTIONS

Use the Printer options if you want to install a different printer, make changes to the current printer options, or test your connected printers. You can also set up a printer to format your text the way that best meets your printing needs. This is especially convenient if you print envelopes and labels, or use a number of different paper sizes.

NOTE

Connect a printer through the printer port on the rear panel of the unit.

When you tap the Printer button, the Printer dialog box appears:



Use the buttons in the Printer dialog box as follows:

Default Sizes. Tap to set the paper size and layout for printing. For more information, see “Default Sizes” in this chapter.

New. Tap to add a new printer. The New Printer dialog box appears in which you can set the type and options for the new printer. For more information, see “Installing a New Printer or Editing an Existing One” in this chapter.

Edit. Tap to edit the settings for the selected printer. The Edit Printer dialog box appears. This dialog box is identical in all but name to the New Printer dialog box. For more information, see “Installing a New Printer or Editing an Existing One” in this chapter.

Make Default. If you have more than one printer installed, tap this button to make the selected printer the one used by default.

Delete. Select a printer in the list and tap this button to delete it from the list.

WARNING

Use the Delete button with extreme care. When you tap the Delete button, the selected printer is immediately removed from the list without any confirmation.

Test. Select a printer and tap this button. A test page prints from the printer. You will need to connect a printer to the unit before you can test it.

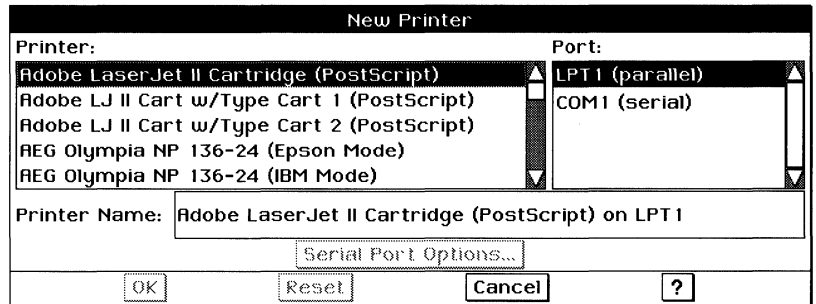
Installing a New Printer or Editing an Existing One

To use a printer, you must attach it to the unit. In addition to simply attaching the printer, you must tell GEOS what kind of

printer it is — you need to install it. This section describes how to install a new printer or change the settings of one you have already installed.

To install or edit a printer

1. To install a new printer, tap New in the Printer dialog box. To edit an existing printer, select the printer, then tap Edit. The following dialog box appears:



Printer. Select the type of printer you are adding. If you have a keyboard attached to the unit, type a letter to scroll immediately to the first printer name that begins with that letter. The selected printer name appears in the Printer Name box.

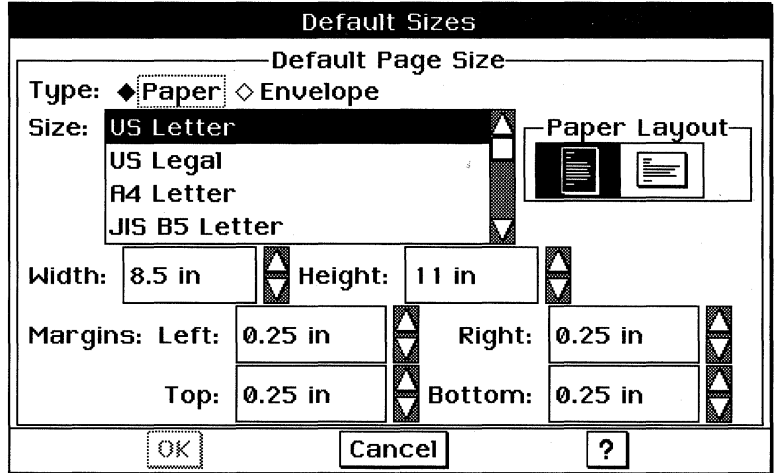
Port. Select a port for the new device. If you select a serial port, you can set the serial port options using the Serial Port Options button.

Serial Port Options. You can choose Serial Port options to set the baud rate, parity, word length, stop bits handshake, stop remote, and stop local.

2. When you are satisfied with the settings, tap OK. The Printer dialog box reappears, where you can test the printer, make it the default, or add and edit other printers.

Default Sizes

Default sizes include the type of paper you are printing to, the size of the paper, the paper layout, and the margins of the paper. To change the default paper size, tap Default Sizes. A dialog box appears:



Type. Choose the type of paper you plan to print to: Envelope or Paper.

Size. Choose the paper size from the scrolling list.

Paper Layout. Choose the orientation of the paper in the printer.

Width. Use the up and down arrows to select a custom paper width. This field is automatically filled in when you choose a size from the Size list.

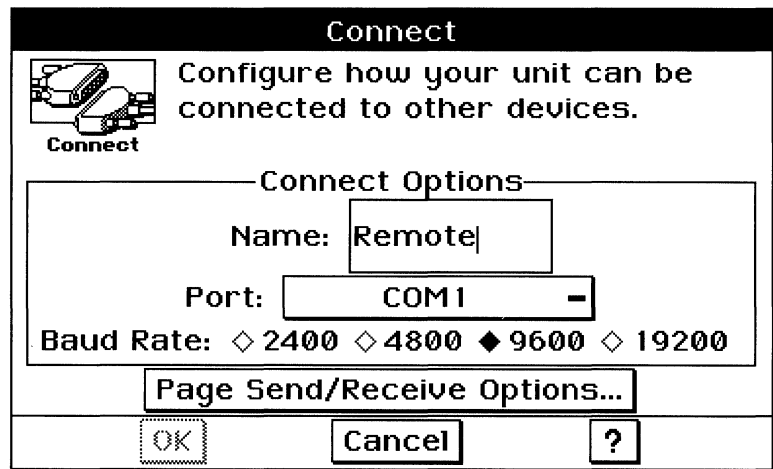
Height. Use the up and down arrows to select a custom paper height. This field is also filled in when you choose a size from the Size list.

Margins. Set the margins for the paper in the printer. These margins provide unprintable boundaries on the page.

CONNECT OPTIONS

Use the Connect module to set the options for connecting to another computer that is running GeoHost, or the Palm page Send and Receive options. These options include the name of the device to which you are connecting (up to 32 characters), the

communications port, and the connect speed (baud rate). For more information about GeoHost and transferring files between a desktop computer and the unit, see Appendix C. For more information about the Palm page Send and Receive, see Chapter 2. When you tap the Connect button, the following dialog box appears:



Change the following options as necessary:

Name. Set the name of the device to which you are connecting.

Port. Set the communications port you are using for the connection.

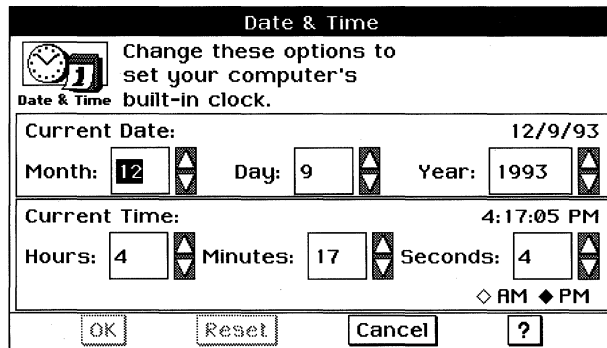
Baud Rate. Set the connection speed between the unit and the other device.

Page Send/Receive Options. Tap to set the serial port and baud rate you would like to use for sending and receiving sketch pages. For more information about sending and receiving sketch pages, see Chapter 2.

DATE & TIME OPTIONS

Use the Date & Time options if you want to change the date or time that you currently see on your unit. If you have changed the date and time format in International options, you must enter your new date and time in the correct format.

When you tap the Date & Time button, the following dialog box appears:

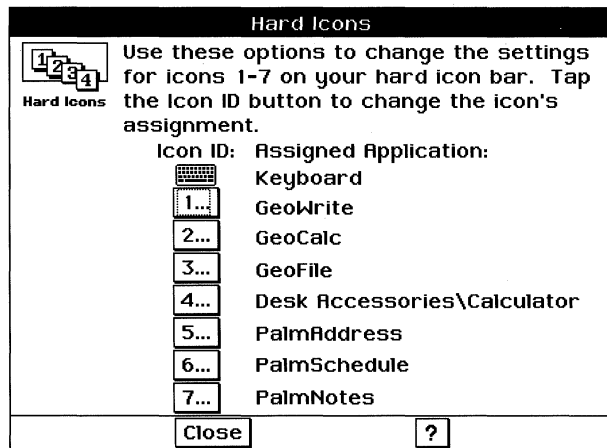


The dialog box shows the current date, the current time, and whether the time of day is AM or PM. To change a setting, use the up and down arrows next to the option item.

HARD ICONS OPTIONS

Use the Hard Icons options if you want to change the application programs that are assigned to the hard icons. You can assign a hard icon to any GEOS application.

When you tap the Hard Icons button, the following dialog box appears:

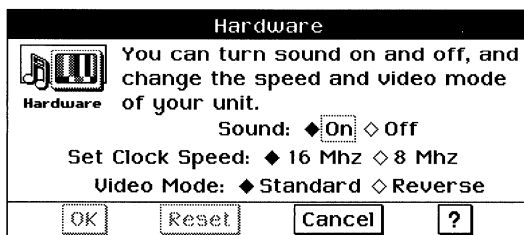


To change a hard icon assignment, tap the button for the hard icon. A file selector appears from which you can select the application you want to assign to the button. (Only GEOS applications appear in the list. For DOS applications, you should first create a DOS application launcher for each application you want; then you can assign a hard icon to the application launcher. For information on creating a DOS application launcher, see Chapter 9.)

HARDWARE OPTIONS

Use the Hardware options to turn off sound for the various errors and alarms and to change the video display mode.

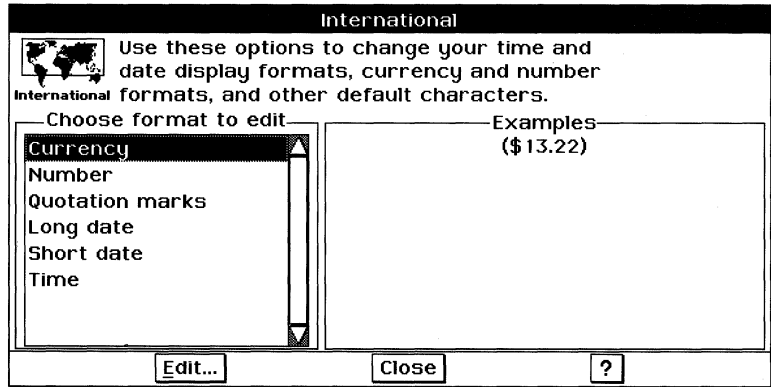
NOTE: The unit will always run at 16 Mhz even if the Set Clock Speed is set to 8 Mhz by Preferences.



INTERNATIONAL OPTIONS

Use the International options if you want to change the standard formats for currency, numbers, date, quotation marks, and time for a country other than the United States. You can also edit the long or short date formats.

When you tap the International button, the following dialog box appears:



Currency

To change the currency format, select Currency from the list, and then tap Edit. Change the following options as necessary:

Symbol and Negative Placement. Change the placement of the currency symbol and negative sign. Tap the button to the right of “Symbol & Negative Placement” to display a drop-down list. Select the appropriate choice from the list.

Space Around Symbol. Set the distance between the symbol and the value. Tap the button to the right of “Space Around Symbol” to display a drop-down list. Select the appropriate choice from the list.

Symbol. Set a new currency symbol by highlighting the existing symbol and entering a new symbol.

Leading Zero. Add a zero before the currency format. Tap the button to the right of “Leading Zero” to display a drop-down list. Select the appropriate choice from the list.

Decimal Digits. Set the standard number of decimal places by tapping the up and down arrows.

Number

To change the numbers format, select Number from the list, and then tap Edit. Change the following options as necessary:

1000 Separator. Type a character that is used to separate thousands (for example, the use of commas in 1,000,000).

Decimal Separator. Type a character that is used as a decimal point.

Decimal Digits. Change the number of decimal places.

Leading Zero. Turn the leading zero on or off. Tap the button to the right of “Leading Zero” to display a drop-down list. Select the appropriate choice from the list.

List Separator. Type a character that you see as the separator in a series of numbers (for example, the use of commas in “1, 2, 3”).

Measurement System. Change the measurement system to Metric or English. Tap the button to the right of “Measurement System” to display a drop-down list. Select the appropriate choice from the list.

Quotation Marks

To change the quotation marks format, select Quotation Marks from the list, then tap Edit. Type the symbol you want to use for the first single quotation mark, the last single quotation mark, the first double quotation mark, and the last double quotation mark.

Long Date

The long date format shows the day of the week, month, year, and date. To change the long date format, select Long Date from the list, then tap Edit. Change the Format Elements options as necessary. With each option, tap the button for the item you want to change to display a drop-down list. Select the appropriate choice from the list.

In each of the separator boxes, type a character you want to appear as the separator between the elements (for example, the use of slashes in Mon/01/01/93).

Short Date

The short date format shows only the month, day, and year. To edit the short date format, select Short Date from the list, then tap Edit. Change the Format Elements options as necessary. With each option, tap the button for the item you want to change. A drop-down list appears. Select the appropriate choice from the list.

In each of the separator boxes, type a character you want to appear as the separator between the elements (for example, the use of slashes in 01/01/93).

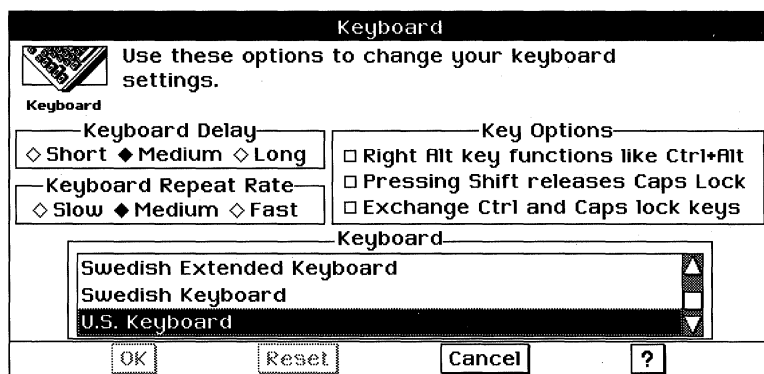
Time

To edit the time format, select Time from the list, then tap Edit. Change the Format Elements options as necessary. With each option, tap the button for the item you want to change to display a drop-down list. Select the appropriate choice from the list.

In each of the separator boxes, type a character you want to appear as the separator between the hours, minutes, and seconds (for example, the use of colons in 12:35:30).

KEYBOARD OPTIONS

Use the Keyboard options to change the keyboard delay, the keyboard repeat rate, and the type of keyboard you are using. When you tap the Keyboard button, the following dialog box appears:



Change the following options as necessary:

Keyboard Delay. Set the amount of time you can hold down a key before the character is repeated. This option applies only to an optional external keyboard.

Keyboard Repeat Rate. Set how fast a character or space is repeated while you hold down a key. This option applies only to an optional external keyboard.

Key Options. Redefine various key combinations.

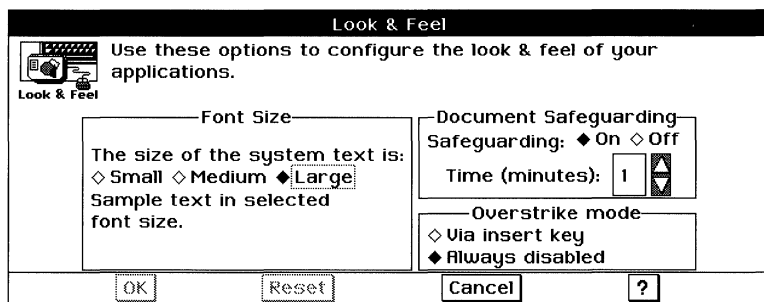
Keyboard. Select the type of keyboard and its language from the list. The floating keyboard will change to reflect the new setting. This option applies to both the floating keyboard and an optional external keyboard.

NOTE

The only options in this dialog box that apply to the floating keyboard are the **Alt** and **Ctrl** key options and the Keyboard type. All other settings apply only to an optional external keyboard.

LOOK & FEEL OPTIONS

When you tap the Look & Feel button, the following dialog box appears:



Change these options as necessary:

Font Size. Set the size that you see in menus, menu bars, window title bars, and dialog boxes.

Document Safeguarding. When document safeguarding is on, the unit automatically saves the current version of your document as often as you specify. For more information on document safeguarding, see Chapter 3.

Time. Specify the number of minutes you want between saves.

Overstrike Mode. Overstrike mode determines whether or not you can toggle between overstrike and insert modes. Tap Via Insert Key to allow toggling between overstrike and insert mode; use the **Insert** key on an external keyboard. Or tap Always Disabled to use insert mode all of the time.

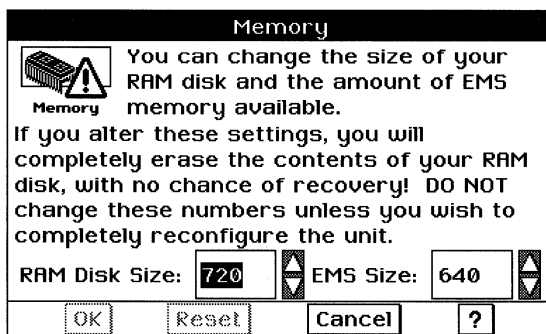
MEMORY OPTIONS

Use the Memory options if you want to change the size of the RAM disk and the amount of EMS memory.

CAUTION

Changing Memory settings completely erases any data that you have stored in the RAM disk. Do not use these options unless you have additional memory or you want to completely reconfigure the unit.

When you tap the Memory button, the following dialog box appears:



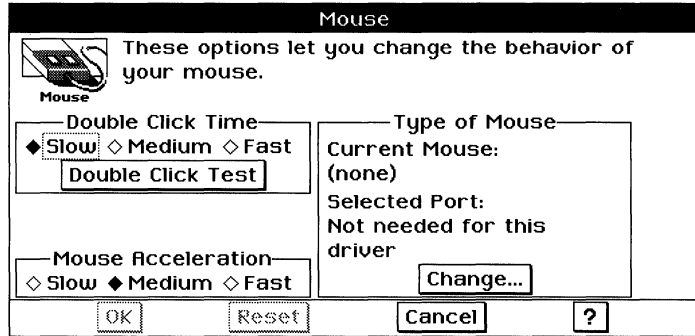
Use the up and down arrows to adjust the memory values in 16K increments. If you use the pen or a keyboard to enter the numbers, you can enter amounts only in multiples of 16K. If you enter a number that is not a multiple of 16, the unit rounds the number to the nearest multiple of 16. The minimum EMS size is 640K.

The RAM Disk Size and EMS Size fields interact to maintain a constant total; as the number in the RAM disk field is increased, the number in the EMS field is decreased an equivalent amount.

MOUSE OPTIONS

Use Mouse options if you want to change the acceleration or double-click time for an optional mouse. In addition, you can change the type of mouse you have. If you are not sure what type of mouse you are using, check the documentation you received with your mouse.

When you tap the Mouse button, the following dialog box appears:



To change double-click time and mouse acceleration, set the following options as necessary:

Double Click Time. Determines how fast you need to double-click to initiate an action. After you select the double-click interval, you can test how fast or slow you need to double-click with the Double Click Test button. When you double-click the button at the correct speed, the button flashes and your unit beeps.

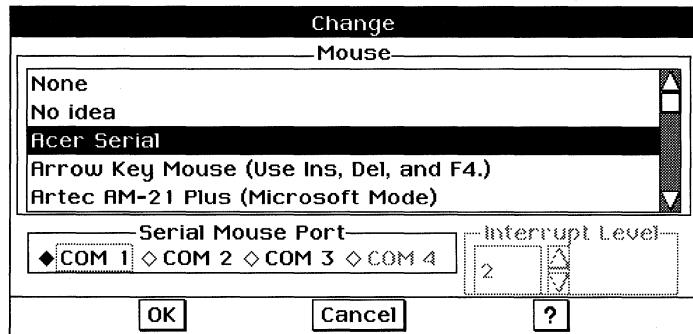
Mouse Acceleration. Mouse acceleration determines how far the mouse pointer moves when you quickly move your mouse. Select the mouse acceleration speed you want. A slow setting moves the pointer the same distance as the mouse. With a fast setting, the mouse pointer moves further when you quickly move your mouse.

Installing a Mouse

If you would like to use a mouse with the unit, you must attach it to the unit and then tell GEOS what type of mouse you have.

To install or change the type of mouse

1. Tap the Change button. The Change dialog box appears:



2. Change the options as necessary:
 - Mouse.** Select a mouse from the list.
 - Serial Mouse Port.** Select a serial mouse port for your mouse when one is required. This option is dimmed if it does not apply to the kind of mouse you have selected.
 - Interrupt Level.** Set an interrupt level. If the Interrupt Level box is dimmed, you are using a mouse that does not require you to specify an interrupt level.
3. Tap OK. A dialog box appears, asking you to test your mouse.
4. Click the Click here to test button. The button will flash and the unit will beep if you have set up your mouse correctly. If the mouse does not react to your movements or you are not able to click the button, tap the button with the pen, tap Cancel, and try changing the settings.
5. Tap or click OK. The Mouse dialog box disappears.

PASSWORD OPTIONS

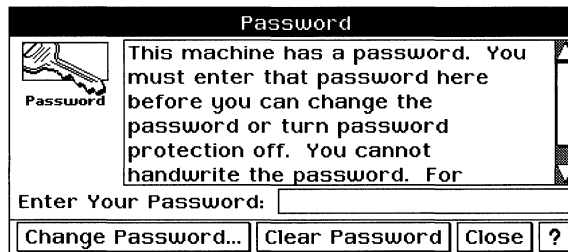
Use the Password options if you want to set a new password, or change or remove your existing password. Your password can be up to eight characters long and is case-sensitive.

When you tap the Password button, the following dialog box appears:



To set a password when there is no existing password, enter your password in the Enter New Password entry box and then in the Verify New Password entry box. You must enter the password twice, to prevent typing mistakes. To prevent someone from reading your password over your shoulder, only asterisks are displayed as you type your password, so type carefully.

If the unit already has a password, you must enter it first before you can remove the password or set a new one. The following dialog box appears if you already have a password:



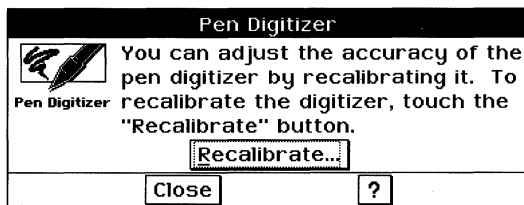
Change Password. Tap to change your password. A dialog box appears in which you can enter a new password.

Clear Password. Tap to turn off password protection.

PEN DIGITIZER OPTIONS

Use the Pen Digitizer options to recalibrate the tablet if you feel that it is not accurate. This option displays the calibration screen seen during the startup program. If a mouse driver (other than "none") is loaded, the mouse pointer appears during the calibration process, but it does not affect pen calibration.

When you tap the Pen Digitizer button, the following dialog box appears:

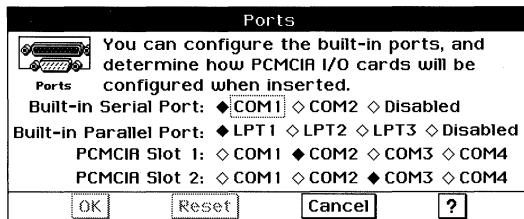


To recalibrate the pen digitizer, tap the Recalibrate button. A Pen Calibration screen appears, with flashing crosses in each corner of the screen. Touch the pen to each flashing cross until it stops flashing.

PORTS OPTIONS

Use the Ports options if you want to change serial and parallel port assignments. The Ports options also allow you to enable or disable the built-in serial and parallel ports.

When you tap the Ports button, the following dialog box appears:



The built-in serial port can be COM1 or COM2. Optional ports can be COM1, COM2, COM3, or COM4.

The unit can have as many as three serial ports active at one time: the built-in serial port and two PCMCIA serial port cards.

The built-in parallel port can be LPT1, LPT2, or LPT3.

POWER MANAGEMENT OPTIONS

Use the Power Management options if you want to change how long the unit will wait (from 1 to 15 minutes) before shutting down

when it is not in use. You can also set the unit to resume if the modem rings while the unit is suspended.

When you tap the Power Management button, the following dialog box appears:

Power Mgmt

Use these options to control your unit's power management.

Power Mgmt

Global Power Management: ♦ Enabled ◇ Disabled

Wake on Modem Ring: ♦ Enabled ◇ Disabled

Automatic Power-Off: ♦ Enabled ◇ Disabled

Automatic Power-Off Goes Into Effect After: 3 Minutes

OK Reset Cancel ?

Change the following options as necessary:

Global Power Management. Choose Enabled if you want the unit to “doze” during periods of inactivity to conserve power. Doze mode slows down the processor, but it does not turn off the unit. Doze mode takes effect only when you are in DOS; for power management in GEOS, enable both Global Power Management and Automatic Power-Off. If you disable Global Power Management, Automatic Power-Off will also be disabled.

Wake on Modem Ring. Choose Enabled if you want the unit to wake up when the modem rings. Choose Disabled if you do not want the unit to wake up when the modem rings. To conserve the most battery power, choose Disabled. This mode takes effect only when you are in GEOS.

Automatic Power-Off. Choose Enabled if you want the unit to turn itself off during periods of inactivity to conserve power. Choose Disabled if you don't want the unit to turn itself off automatically.

The unit will not automatically power-off in the following situations:

- The unit is running under AC power.
- A serial port is open. This is the case when you are using a mouse, a modem, or a serial printer, or GeoComm is open.
- A parallel port is open. This is the case when you are printing to a parallel printer.

Automatic Power-Off Goes Into Effect After. Enter the number of minutes the unit must remain idle before powering down automatically. You can enter the number by tapping the up and down arrows or by entering it directly.

GeoComm

If you have a modem attached to the unit, you can use GeoComm, the communications application, to communicate with other computers, online services, bulletin board systems, and mainframe computers at colleges and corporations.

WHAT IS GEOCOMM?

GeoComm is an application that allows the unit to communicate with another computer or with an online service over standard telephone lines by means of a *modem*. A modem is a hardware device that translates the various telephone and computer signals that enable the unit to “talk” to another computer.

NOTE

While GeoComm is running, the battery-saving features of Advanced Power Management are disabled, and the unit may not be turned off until the GeoComm application is closed.

STARTING GEOCOMM

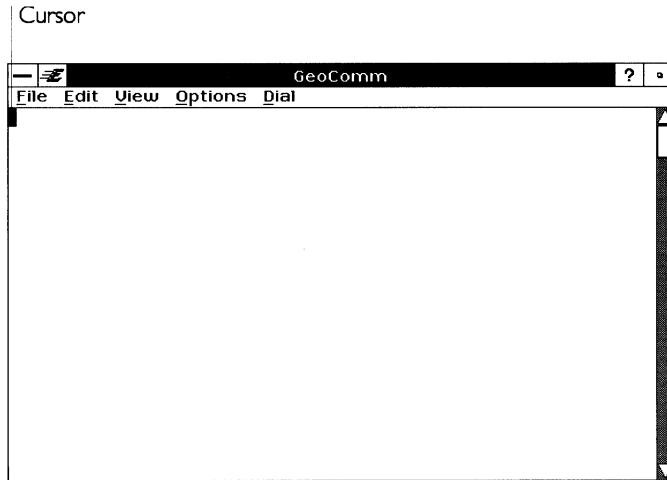


GeoComm

In GeoManager, the GeoComm icon looks like the example at the left.

To start GeoComm

- Locate the GeoComm icon and double-tap it.
The GeoComm window appears:



The GeoComm window is where you send and receive messages. After you connect to another computer, any text you enter using the floating keyboard or an external keyboard is sent to the other computer. Any messages sent to you by the other computer also appear in the GeoComm window.

When you first open the GeoComm window, the cursor, a rectangular box, is displayed in the top left corner. At this point, it is hollow. The cursor changes from hollow to solid, depending on what tasks are taking place.



When the cursor is solid, generally it means that text you enter is displayed in the GeoComm window and is sent to the computer you are connected to.



When the cursor is hollow, generally it means that text you enter is *not* sent to the other computer. You could be filling in a dialog box or receiving information from another computer.

NOTE

GeoComm does not support handwriting recognition.

CHOOSING THE PROTOCOL SETTINGS

When you first open GeoComm, the Protocol Options dialog box appears automatically. *Protocol* is a set of rules established between two devices that allow and govern the orderly exchange of information. You use this dialog box to select the protocol *settings* for your modem. The modem's protocol settings tell your modem such things as how fast to transmit information, which communications port to use on your unit, and what type of phone line you have.

Protocol

Modem Port: Com1 Com2 Com3 Com4

Baud Rate: 300 1200 2400 4800 9600 19200

Data Bits: 5 6 7 8

Parity: None Odd Even Mark Space

Stop Bits: 1 1.5 2

Handshake: Hardware Software (XON/XOFF) None

Hardware Handshaking Options:

Stop Remote: DTR RTS

Stop Local: CTS DCD DSR

Apply Reset Close ?

The settings you see displayed in the Protocol Options dialog box are the *default* settings; that is, every new GeoComm application starts with these settings. GeoComm obtains the default settings from the Modem settings, located in the Preferences application. For more information about the Preferences application, see “Preferences” in this chapter.

The protocol settings you choose must match those of the computer to which you want to connect, so find out what settings that computer is using.

To choose the protocol settings

1. Fill in the dialog box, changing the settings as necessary.

Modem Port. The modem port is the serial port on your unit used by your modem (for example, COM1).

Baud Rate. The baud rate is the rate of speed at which your modem can send and receive information. Examples of baud rates are: 300, 1200, 2400, 9600 and 19200. The most commonly used baud rates are 1200, 2400, and 9600. In most cases, you can just set the maximum rate for your modem, and the other system will match that rate.

Data Bits. Data bits are the number of bits that form a character. The most common setting is 8.

Parity. Parity is an error-checking mechanism used to ensure error-free transmission of information. The most common setting is None.

Stop Bits. Stop bits are used to indicate the end of each character as it is transmitted. The most common setting is 1.

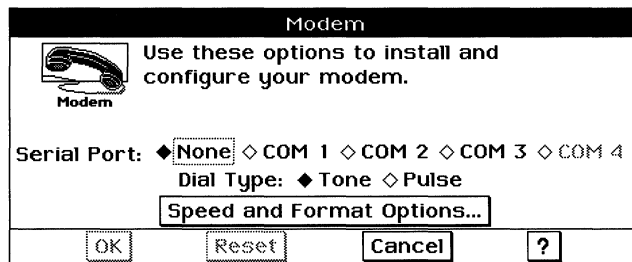
Handshake. Choose Software (XON/XOFF), and GeoComm will monitor the flow of information from the other computer. This ensures that you receive all the information sent to you by the other computer.

2. Tap Apply to save your settings.
3. Tap Close to close the dialog box.

To change the default protocol settings

Each time you open GeoComm, the Protocol dialog box is displayed so you can change the settings to suit your particular needs. If you want the settings you choose to be permanent, change them using the Preferences application. When you open GeoComm any time after doing this, the Protocol dialog box is not displayed.

1. Locate the Preferences icon and double-tap it.
2. Tap the Modem icon to open it. The Modem Options dialog box appears:



3. Fill in the dialog box, changing the settings to match those you made in the Protocol Options dialog box in GeoComm.
4. Tap OK to save your changes. The dialog box closes.
5. Tap Close to close the Preferences application.
6. Tap the GeoComm window to activate it again..

CHOOSING THE TERMINAL SETTINGS

You can make your copy of GeoComm *emulate* (or act like) many other *terminals*. A terminal is a computer that does not do its own computing — another computer does the work. Often, terminals are not computers in themselves. They are merely a keyboard and a monitor (and sometimes a mouse) that are connected to a central computer. The central computer provides the processing capabilities for that terminal and many others.

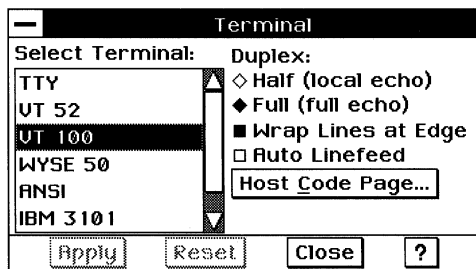
There are several standard types of terminals — TTY, VT52, VT100, WYSE50, and ANSI — that GeoComm can emulate. The emulation, however, is not complete. You may find that some features do not work as you would expect with a particular type of terminal. Despite this, the terminal emulation should be adequate for most situations.

The value of being able to emulate another terminal is that a great many online services that you may want to talk to are written to support these terminals rather than your unit. When you sign up to use these services, they will tell you if you need to emulate a specific terminal in order to use the service.

The Terminal Options dialog box contains special choices that allow you to specify the behavior of your terminal.

To establish the terminal settings

1. Choose Terminal from the Options menu. A dialog box appears:



2. Fill in the dialog box, changing the settings as necessary.

Select Terminal. Select the type of terminal you need from the list.

Duplex. The Duplex setting controls the way information flows between two computers. At full duplex, information can flow between two computers at the same time. At half duplex, information can flow only in one direction at any given time.

If you do not know whether you need full or half duplex, simply type a few characters on your screen. If what you type appears twice on your screen, you need full duplex, so choose Full (full echo). Otherwise, choose Half (local echo).

You must be actively connected to another computer to test the duplex setting. For more information about connecting to another computer, see “Dialing and Hanging Up” in this chapter.

Wrap Lines at Edge. This setting allows you to display all the text you are receiving. If you have this option selected, long lines of text will break at the edge of your screen and continue on the next line. If you do not select this option, lines of text that go beyond your screen’s edge is not displayed. However, if you capture this text to a DOS file, you capture all the text, even the text that did not fit on your screen.

Auto Linefeed. This setting converts each incoming carriage return (end of line) to a carriage return and new line. Otherwise, each new line of incoming text might overwrite the last line. If all your incoming lines display as double-spaced text, do not choose Auto Linefeed (unless you prefer double spacing).

Host Code Page. This setting allows you to choose a language for your text. When you select this option, a dialog box with a list of languages appears. Choose the appropriate language from the list.

3. Tap OK to save your terminal settings.

or

Tap Close to close the dialog box without making any changes.

The dialog box closes and you are returned to the GeoComm window.

CONFIGURING YOUR MODEM

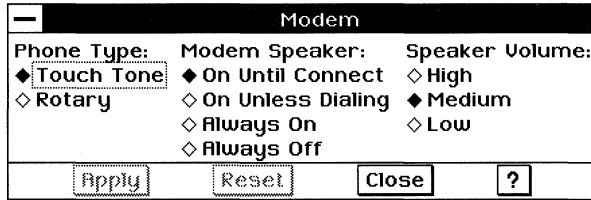
Before you can use your modem, you need to set up, or *configure*, your modem to work with your telephone equipment and your unit. The Modem settings work only with Hayes®-compatible modems. Hayes is a popular modem that is recognized as an industry standard.

NOTE

If your modem is not Hayes-compatible, see your modem manual for the proper settings.

To configure your modem

1. Choose Modem from the Options menu. A dialog box appears:



2. Fill in the dialog box, changing the settings as necessary.

Phone Type. This setting identifies your phone line as being either Touch Tone or Rotary. If you have a push-button phone, you probably have Touch Tone service. If you have a rotary-dial phone, you probably have Rotary service.

Modem Speaker. This setting controls whether or not you hear signals your modem is processing. Select one of the Modem Speaker settings:

- *On Until Connect.* This setting allows you to make sure your modem is successfully dialing and connecting to the computer you are calling. You will be able to hear the dial tone, the phone number being dialed, and the connection being made. After the connection is made, the speaker is off.
- *On Unless Dialing.* The setting allows you to hear your modem except when it is dialing.
- *Always On.* This setting allows you to have your speaker on at all times.
- *Always Off.* This setting allows you to have your speaker off at all times.

Speaker Volume. This setting allows you to control the modem speaker volume. Choose High, Medium, or Low.

3. Tap OK to save your modem settings.

or

Tap Close to close the dialog box without making any changes.

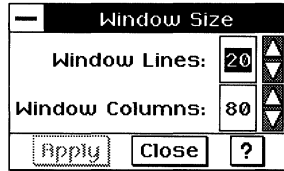
The dialog box closes and you are returned to the GeoComm window.

CHANGING LINE AND COLUMN SETTINGS

You can change the number of lines and columns that are displayed in the GeoComm window.

To change the number of lines or columns in the GeoComm window

1. Choose the Window Size option from the View menu. A dialog box appears:



2. Choose the number of lines or columns you want to appear in the window.
3. Tap Apply to save your changes.
GeoComm resizes the window according to your settings.
4. Tap Close to close the dialog box.

DIALING AND HANGING UP

Once you have chosen your protocol, terminal, and modem settings, you are ready to communicate with another computer. This section describes how to dial the phone number as well as how to hang up when you are finished with your communication session.

Eventually, you may want to automate certain tasks that you need to perform to set up for and initiate a communication session. For example, you may want to have the phone number dialed automatically, or you may want to have your unit hang up automatically. This section introduces the basics of creating and running a *script*, a file you create that performs these tasks for you. For more information about writing scripts, see “Using the GeoComm Scripting Language” in this chapter.

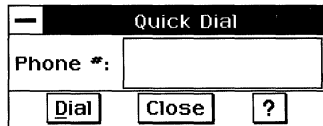
Using Quick Dial

The Quick Dial option makes it easy to dial the phone number of another computer.

To use Quick Dial

Before you dial, make sure you have made any necessary changes to the protocol, terminal, and modem settings as discussed in this chapter.

1. Choose Quick Dial from the Dial menu. The following dialog box appears:



2. Enter the number you want to dial, then tap Dial. Depending on how you have your modem speaker set, you may hear your modem dialing and making the connection to the other computer. For more information about the modem speaker, see "Configuring Your Modem" in this chapter.

If you need to access an outside phone line (for example, by dialing "9"), you need to tell the modem to pause for a moment before it dials the phone number. This is indicated with a comma in the phone number. For example, "9,5551212" tells the modem to dial 9 first to get an outside line, then pause, and then to dial 5551212.

When the connection has been made, "CONNECTED" is displayed in the GeoComm window.

3. Once your unit is connected to the other computer, tap Close to close the Quick Dial dialog box.

Hanging Up

When you are finished communicating with another computer, you need to hang up.

To hang up

If you dial into a computer system that requires you to log in (such as a bulletin board or online service), you often must log out before you hang up. If you don't log out first, you may continue to be billed for your online time.

1. Choose Hang Up from the Dial menu. A confirmation message appears.
2. Tap Yes to hang up.

Using Scripts

GeoComm allows you to automate many of the commands that you otherwise have to type manually to communicate with another computer.

For example, you can write a *script* that instructs your unit to dial a phone number, provide the necessary configuration information to establish a connection, and log you into an online service.

Scripts are useful if you subscribe to several communications services, each of which may require different settings to your modem. Instead of reestablishing your modem settings each time, you just *run* the script.

Scripts eliminate typing errors and are faster than commands you enter from the keyboard.

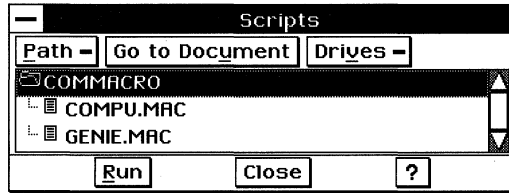
GeoComm comes with several sample scripts that you can use to see how a script works. You can also modify these sample scripts to suit your particular communication needs. The sample scripts are in the folder \GEOWORKS\USERDATA\COMMACRO.

To create a script

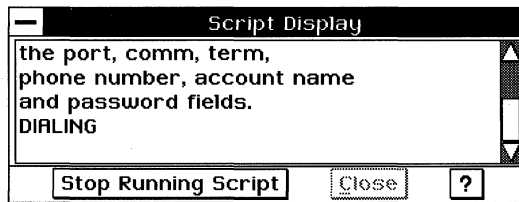
1. Use Text File Editor to create a text file containing your script commands. For more information about Text File Editor, see “Text File Editor” in this chapter. For a list of the script commands, see “Using the GeoComm Scripting Language” in this chapter.
2. Save the file with a valid DOS file name with the extension .MAC. For example, MYSCRIPT.MAC is a valid script name.
3. Place this file in \GEOWORKS\USERDATA\COMMACRO. You are now ready to run the script.

To run a script

1. Choose Scripts from the Dial menu. The following file selector appears:



2. Select the script you want to run.
3. Tap Run. The Script Display window appears and displays each line of the script as your unit executes it. This gives you a progress report on your script.



NOTE

If your script stops abruptly, it may be because you made an error in the script.

To stop a script

- Tap Stop Running Script to stop the script and return to the GeoComm window.

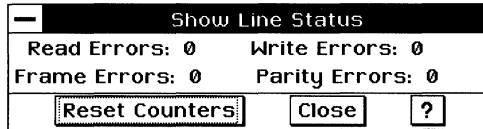
SHOWING LINE STATUS

The Show Line Status option allows you to monitor the quality of your connection. In other words, Show Line Status allows you to “see” how good the connection is. Data communication is similar to a regular phone call in that sometimes the connection is “bad” — there is a lot of noise on the line. Usually, you just need to hang up and redial to correct the situation. Based on information provided from Show Line Status, you may decide that

the quality of the connection is poor. In that case, you can hang up and try again later.

To monitor the line connection quality

- Choose Show Line Status from the Options menu. The following status window appears:



The line status errors monitored by GeoComm are the number of errors in reading the message being received or writing the message being sent. Specifically, GeoComm checks the parity bit (see “Choosing the Protocol Settings” in this chapter) for transmission errors in each block (or frame) of information received or sent.

GeoComm automatically tracks and counts these errors during your communication sessions. It is normal to have a small number of errors. However, if you see hundreds of errors encountered during a session, consider hanging up and retrying your connection.

To reset the counters to zero errors

It is a good idea to reset the counters every time you start a communication session. Otherwise, the error count for the current session will be added to any existing values. This results in an inaccurate count of the number of errors in the current session.

1. Tap Reset Counters. The counters are all reset to zero values.
2. Tap Close to close the window and return to the GeoComm window.

SENDING A BREAK SIGNAL

At some point during send or receive operations at your terminal, you may want to send a *break signal*. A break signal interrupts some command you’ve entered or some process taking place, perhaps because it is taking too long. A break signal takes effect immediately.

To send a break signal

- During an operation in GeoComm that you want to interrupt, choose Send Break Signal from the Dial menu. Whatever is displaying in the window is stopped.

NOTE

A break signal does not work if your terminal is set to half duplex.

SENDING INFORMATION

GeoComm allows you to send various types of information to another computer, from brief messages to the receiving computer that you type on your keyboard to complex computer applications or text files that you have stored in memory.

There are four ways to send information to another computer:

- Typing and sending a message using the Message choice on the Edit menu. Use this method when your messages are brief and spontaneous, and when you want to send them to the other computer immediately.
- Sending text that you have copied into the clipboard. Use this method when you have a file that you've created in a GEOS application, and you want to send information from that file to the other computer.
- Sending a DOS text file. Use this method when you want to send a DOS text file.
- Sending files using XMODEM. Use this method when you are sending entire files, large amounts of information, or applications to another computer. It provides error checking to ensure that your files or applications arrive intact.

Sending Brief Messages

The Message option on the Edit menu allows you to create brief messages either offline (meaning you are not connected to another computer) or while you are connected to another computer. It gives you time to compose and edit your message before sending it.

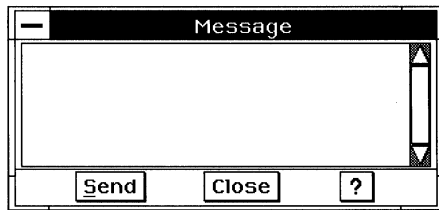
The Message choice does not perform error checking. In other words, using Message does not guarantee that all your characters are reaching the other computer. This is usually not a problem for

short text files messages like “Hello, how are you?” If a message this brief gets corrupted by a poor connection and arrives “Hello, how are ?ou” the receiving party can probably still decipher it.

However, it is not acceptable for sending long files and large amounts of information. Suppose you are sending your income tax figures to your accountant and the number that represents your gross income is corrupted. What started out as “35,000.00” may have arrived as “\$&5*#00.00.” Your accountant is not likely to figure this out. To send long files, use the XMODEM protocol, discussed in “Sending Text Files Using XMODEM” in this chapter.

To compose and send a brief text message

1. Select Message from the Edit menu. The following dialog box appears:



2. Enter your message in the dialog box as you would any text.
3. Edit the text as needed.
4. Tap Send when you are ready to send your message. GeoComm both displays the message in your window and sends it to the receiving computer, where it displays in that computer's window.
5. Tap Close to return to the GeoComm window.

Sending Text Using the Clipboard

You can copy text from other GEOS applications and send it to another computer. For example, suppose you have an announcement that you have written using Text File Editor. You can open the appropriate Text File Editor file and copy the message to the clipboard. Then you can paste the contents of the clipboard into the GeoComm window. When you do this, GeoComm sends the text to the other computer just as if you had entered it directly into GeoComm.

NOTE

This method of sending text works with GEOS applications, but not with regular DOS applications.

To send the contents of your clipboard

1. Open the file containing the text you want to send.
2. Select the text you want to send.
3. Choose Copy from the Edit menu to copy the text to your clipboard.
4. Close the file and open the GeoComm application.
5. Choose Paste from the Edit menu. GeoComm pastes the contents of your clipboard into the GeoComm window and sends it to the other computer.

Sending DOS Text Files

This option allows you to send entire DOS text files that you have saved in memory or perhaps on a diskette. This method does not perform error checking, so there is no guarantee that the information will arrive error-free.

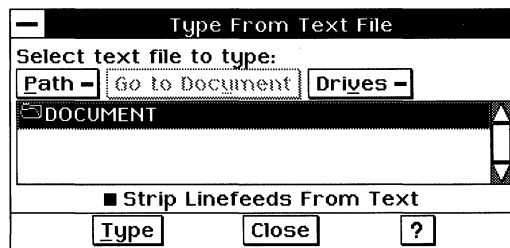
NOTE

This method of sending text is for files created in DOS applications, as well as in Text File Editor.

To send an existing DOS text file

Before sending an existing DOS text file, it is good practice to verify whether or not the receiving computer requires *linefeeds*. Linefeeds prevent text from being typed over preceding text.

1. Choose Type From Text File from the File menu. The following file selector appears:



2. Locate and select the DOS file you want to use.
3. Select Strip Linefeeds From Text if the computer you are sending to does not need linefeeds after carriage returns. Most computers need linefeeds, so you normally will not need to select this option.
4. Tap Type when you are ready to send the DOS file.

GeoComm displays a status window to show how your file transfer is proceeding. When the file transfer is completed, GeoComm returns to the GeoComm window.

Sending Text Files Using XMODEM

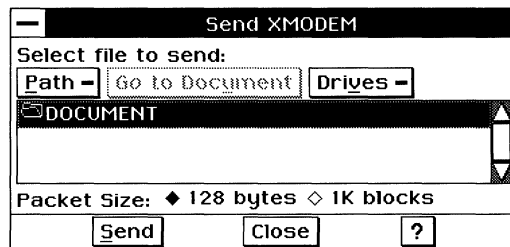
The XMODEM protocol is a method of transmission that you can use to send entire files and large amounts of information to another computer. The advantage of using XMODEM is that it detects a transmission failure, and it resends the information.

NOTE

Before you can use XMODEM to transfer files, verify that the other computer is set up to receive an XMODEM transfer. Do this by calling before you establish your connection or, once you are connected, by sending a message to the receiving computer indicating that you want to use XMODEM.

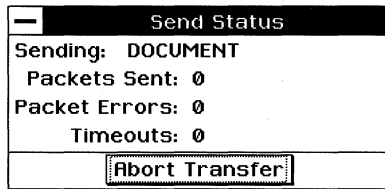
To send a file using XMODEM

1. Establish the connection with the computer to which you want to send a file using XMODEM.
2. If necessary, make sure the receiving computer is ready to receive a file using the XMODEM protocol.
3. Choose Send XMODEM from the File menu. The Send XMODEM file selector appears:



4. Locate and select the file you want to use.
5. Select the size of the data packet. Large files are broken up into small *data packets* to facilitate transferring them to another computer. The recommended selection is 128 bytes.
6. Tap Send. The Send Status window appears and shows the progress of the transfer, reporting any errors. XMODEM automatically resends those portions of the transmission that have errors. However, if the error count increases suddenly, you

probably have a problem in the phone line and may want to retry the transmission later.



RECEIVING INFORMATION

This section describes how to receive information sent to you from a remote computer during a communication session. You can receive the types of messages and files discussed in “Sending Information” in this chapter.

You should always disable call waiting when using the phone line for data communication. Failure to do so may cause the other computer to disconnect if someone else tries to call while you're connected. To find out how to disable call waiting, consult your local telephone company.

Before you receive information, it is a good idea to determine what you intend to do with it. Depending on the type and volume of information, there are various ways to accept, store, and save it, including the following:

- Scrolling through the text as it arrives without saving it.
- Copying the text to a file's clipboard.
- Saving the text in a text file.

Scrolling Through the Text Displayed in the Window

As the text arrives at your unit and is displayed in the window, the first part of the text may scroll off the screen. If the message is longer than 175 lines, consider copying it to the clipboard. See “Copying Text to the Clipboard” in this chapter.

To scroll through the text in your window

- Tap the up or down arrow on the scroll bar.

Copying Text to the Clipboard

If you want to save small amounts of text that appear in your window, use the Copy and Paste commands to paste the text into another GEOS application file, such as a Text File Editor file. You can copy and paste information a screenful at a time, or you can wait until the entire message has arrived, as long as the message does not exceed 175 lines of text.

NOTE

Only the last 175 lines of text received are saved. If the message exceeds 175 lines, newly arriving text is written over the text that has already arrived. For a method of capturing more than 175 lines of text, see "Saving Text in a File" in this chapter.

To copy text from your clipboard to a file

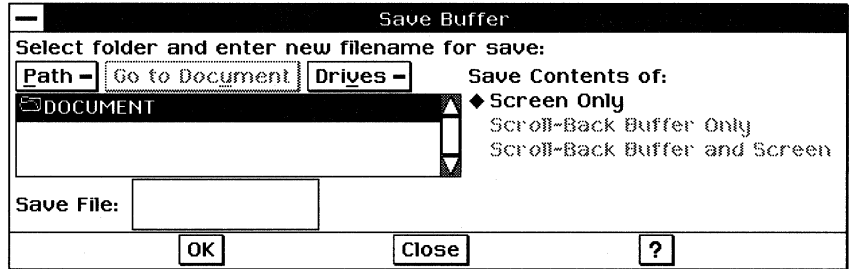
1. Select the text in the GeoComm window that you want to copy. You can select text using the pen, the same way you would select text in Text File Editor, for example. For more information about selecting text, see Chapter 1.
2. Choose Copy from the Edit menu.
3. Open the desired file and place the insertion point where you want to insert the text.
4. Choose Paste from the Edit menu. The text is pasted into the file.

Saving Screen and Scroll-Back Buffer Text to a File

GeoComm saves the last 175 lines of text in the *scroll-back buffer*. This is an area that stores the text that scrolls off the screen out of view. GeoComm stores the information in the scroll-back buffer so that you can redisplay it by scrolling back through the window. Otherwise, all the text that scrolls off your screen would be lost. By saving text in a file, you can prevent the loss of incoming text.

To save the contents of your screen and scroll-back buffer

1. Choose Save Buffer from the File menu. The Save Buffer file selector appears:



2. Locate and select the directory you want.
3. Enter a DOS file name (a DOS file name contains up to eight letters or numbers, optionally followed by a period, then a three-letter extension). For more information about DOS file names, see Chapter 1.
4. Select Screen Only to save only what you see on your screen.
or
Select Scroll-Back Buffer Only to save only what is hidden in the scroll-back buffer.
or
Select Scroll-Back Buffer and Screen to save both.
5. Tap OK to save the text to the file you have specified.

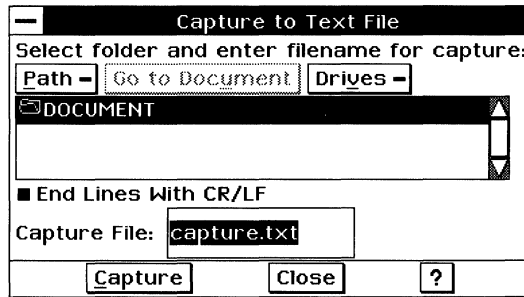
Saving Text in a File

You can “capture” all incoming text as it arrives and have it placed in a file immediately. Since GeoComm usually saves only the most recently received 175 lines of text that displays in the window, this method of saving text ensures that all the text is saved in the file you specify. It is also faster than using the Copy and Paste method.

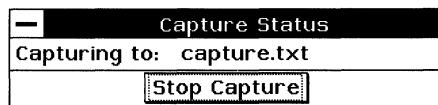
To save all incoming text to a file

You need to be set up before you can start capturing incoming text to a file.

1. Before text you want to save starts arriving in the window, choose Capture to Text File from the File menu. A file selector appears:



2. Locate and select the directory you want.
3. Type a DOS file name (a DOS file name contains up to eight letters or numbers, optionally followed by a period, then a three-letter extension). For more information about DOS file names, see Chapter 1.
4. Select End Lines with CR/LF if you want the end of each line to contain a carriage return and linefeed. If you are unsure, it is a good idea to select it.
5. Tap Capture to start saving screen text. GeoComm displays a status window to report this activity while you are online:



6. Tap Done in the Capture Status window when you are finished capturing text.

Saving Text Files Using XMODEM

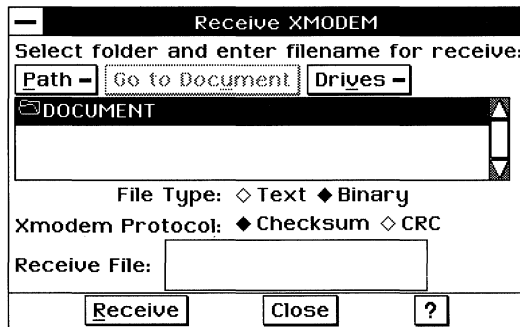
You can receive text files and be assured that they arrive without transmission errors. The other available choices for receiving files do not provide error checking or correction.

NOTE

Before you can use XMODEM to receive files, verify that the other computer is set up to send files using XMODEM. Do this by calling before you establish your connection or, after connecting, by sending a message to the sending computer indicating that you want to use XMODEM. Also, find out what error-checking mechanism is supported, Checksum or CRC.

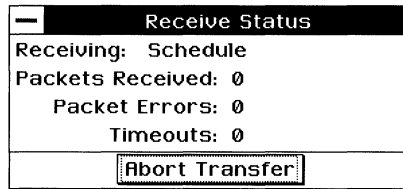
To receive a file using XMODEM

1. Establish the connection with the computer from which you want to receive a file using XMODEM.
2. If necessary, send a message telling the sending computer that you want to use the XMODEM protocol.
3. Choose Receive XMODEM from the File menu. The Receive XMODEM file selector appears:



4. Locate and select the directory you want.
5. Select the type of file you are receiving. You have the following two choices:
 - **Text.** Select this if the file you are receiving is a basic DOS text file (straight ASCII).
 - **Binary.** Select this if the file you are receiving is more complex, like a word processor file, or a graphic file (not straight ASCII).
6. Select the type of error checking to be performed by XMODEM. There are two choices, each of which ensures error-free file transfer:
 - **Checksum.** This is a simple method of checking for file corruption during sending and receiving.
 - **CRC (Cyclic Redundancy Check).** CRC is more sophisticated than Checksum. It is a good idea to select it if the sending computer supports it.
7. Enter the name of the file you want the text saved to. The name should be appropriate for the type of file you are expecting. (For example, a DOS text file would have a .TXT extension.)

8. Tap Receive. The Receive Status window appears:



The Receive XMODEM Status window shows you the progress of the transfer. If errors increase dramatically, you may have a poor line connection. In that case, consider canceling the transfer and trying again later.

USING THE GEOCOMM SCRIPTING LANGUAGE

You can package a series of commands into one file, called a script. You then use this file to instruct GeoComm to perform a series of tasks. This means that you do not need to respond to prompts or worry about mistyping information.

For example, suppose you use your GeoComm application to connect to a subscription service to receive a file that lists statistical information. Every day, you open GeoComm, select the Quick Dial option, enter the same phone number, and respond to requests for the same information.

You can simplify this process by writing a script that automatically dials the phone number, logs into the service, receives the file, and places it in the proper directory in your unit's memory, then logs out and hangs up. You don't need to wait around to respond to prompts or to log out.

This section introduces the script language commands. In many cases, each command is the equivalent of a menu choice.

For more information about how to create and run a script, see "Using Scripts" in this chapter.

Script Syntax Guidelines

All GeoComm scripts must follow specific guidelines for *syntax* (the "grammar" for the commands) and treatment of text. These guidelines are:

- All GeoComm commands must be in uppercase; for example, CLEAR, DIAL, END.
- All commands are case-sensitive (if a capital A is required, you cannot use a lowercase a).
- Words shown enclosed in angle brackets (< >) are place holders for the actual words you need to type; for example, where you see <baud>, you type the actual baud rate, such as 2400. Do not include the angle brackets.
- A line that starts with a colon is treated as a label or comment. This means that GeoComm displays that line of text, but it does not attempt to process or execute anything.

Script Commands

The script commands are listed below in alphabetical order. If available, the equivalent menu choice or other function is provided to help you visualize what happens when you use a command.

You will see a few examples of how these commands are actually used. It is good practice to start with a simple script, then build on it by adding more commands. Try to see if you can build a script that performs an entire communications session from dialup to hangup without requiring your intervention. For more information about running your scripts, see “Using Scripts” in this chapter.

:<LABEL>

Any line beginning with a colon is treated as a label (although the colon isn't actually part of the label). Use the GOTO command to jump to a label line. Labels can be in upper- or lower-case, but you must be consistent. If you have a label defined as “:GoHere”, you must refer to it exactly the same way in GOTO statements (“GOTO GoHere”). Here is a sample label line:

```
:JumpToThisLabel
```

ABORT

GeoComm goes to this special label when you tap Stop in the Script Display window. The word “ABORT” must be all uppercase. This is how the abort label should appear in your scripts:

```
:ABORT
```

BELL

This command sounds a beep. Use this in your script to alert you to an activity that is taking place or one that has been completed. For example:

```
BELL
```

CLEAR

This command clears the Script Display window. For example:

```
CLEAR
```

COMM <BAUD-DATABITS-PARITY-STOPBITS-DUPLEX>

This command allows you to specify the baud rate, data bit value, parity setting, stop bit value, and duplex settings all on one line.

This command is the equivalent of specifying Baud Rate, Data Bits, Parity, and Stop Bits in the Protocol dialog box and of specifying Duplex in the Terminal Options dialog box. For more information, see “Choosing the Protocol Settings” and “Choosing the Terminal Settings” in this chapter.

For example, if you’re using a 2400-baud line with eight data bits, no parity, and one stop bit, you would put this command in your script (put dashes between settings):

```
COMM 2400-8-N-1-FULL
```

DIAL “<NUMBER>”

This command dials the phone number you specify after DIAL. The phone number must be enclosed in quotation marks. Use commas to make GeoComm pause in the dialing. For more information, see “Dialing and Hanging Up” in this chapter.

To dial 9 (for an outside line), a pause, and then 555-1212, you would put the following line into your script:

```
DIAL "9,555-1212"
```

END

This command stops the script and returns control to you. It does not jump to the :ABORT label. Use this command to continue manually what the script has started for you.

This is useful for beginning script users as a way to implement a basic script to see how one works. For example:

```
DIAL "9,555-1212"  
END
```

This script dials the phone number, 9,555-1212, then returns the GeoComm window back to you just as if you had used the Quick Dial option on the Dial menu.

GOTO <LABEL>

This command instructs GeoComm to go to the line specified by the label. You can use the GOTO command to jump to specified label lines (lines that begin with a colon). You must enter the GOTO label commands exactly the way you entered the label (be sure to leave off the colon, though). For example, the following line:

```
:JumpToThisLabel
```

must be referred to in a GOTO command as:

```
GOTO JumpToThisLabel
```

MATCH <TEXT> GOTO <LABEL>

PROMPT <NUMBER>

The MATCH and PROMPT commands work together to make GeoComm perform some action based on text received from another computer.

First, the MATCH command makes GeoComm look for <text> in the text that is transmitted by the other computer. You can specify many MATCH commands but after them all, you must include a PROMPT command.

The text for the MATCH commands must be entered inside quotation marks (" ").

The PROMPT command specifies the amount of time your unit waits for the sending computer to supply the MATCHing text. PROMPT time values are in sixtieths of a second. (That is, 3600 sixtieths is a minute.) If the MATCH command is satisfied within the time specified in the PROMPT command, the script goes to the given label. Otherwise, GeoComm goes to the next line in the script. For example:

```
MATCH "password?" GOTO DoPass
MATCH "System is down" GOTO SystemDown
PROMPT 3600
PRINT "No Response"
```

The first MATCH command looks for the text “password?” from the remote computer. If the text is sent, the script goes to the label “DoPass”; otherwise, it continues with the next MATCH statement. If the second MATCH is made, the script goes to the label “SystemDown.” If neither condition is met in the allotted minute (PROMPT 3600), the script prints “No Response” in the Script Display window.

PAUSE <NUMBER>

This command causes GeoComm to pause for the amount of time specified. The number value is in sixtieths of a second. The default is 60, or one second. To have your script pause for one minute, use the following line:

```
PAUSE 3600
```

PORT <PORT>

This command instructs GeoComm to use the COM port specified. (This is a serial port on your unit where your modem is connected.)

This command is the equivalent of specifying Modem Port in the Protocol dialog box. For more information, see “Choosing the Protocol Settings” in this chapter. The following command tells GeoComm to use COM port 2:

```
PORT 2
```

PRINT “<TEXT>”

This command instructs GeoComm to print <text> in your Script Display window. This message is not sent to the other computer. Use this command as an indication of what the script is doing. You can have as many PRINT statements in your scripts as you want.

To force carriage returns after the text display, enter “,CR” at the end of each line, or add another print command:

```
PRINT CR
```

For example:

```
PRINT "Enter Password Now" ,CR  
PRINT "Password:"
```

This displays on your screen as:

```
Enter Password Now  
Password:
```

PULSE TONE

These commands cause GeoComm to use pulse or tone dialing when it dials a phone number. Otherwise GeoComm uses whatever you have set in your Modem settings. For more information, see “Configuring Your Modem” in this chapter. To force your script to use pulse dialing, use the following command:

```
PULSE
```

SEND "<TEXT>"

This command sends the specified text to the other computer. Use a “,CR” at the end of the text if you want to insert a carriage return after the text. For example, to send the word “password” followed by a carriage return to the other computer, you would put the following line in your script:

```
SEND "password" ,CR
```

TERM <TERMINAL TYPE>

This command instructs GeoComm to emulate the type of terminal specified.

This command is the equivalent of specifying Select Terminal in the Terminal Options dialog box. For more information, see “Choosing the Terminal Settings” in this chapter. For example, to make GeoComm emulate a standard TTY terminal, you would put this command in your script:

```
TERM TTY
```


GeoWrite Basics

This section describes the Level 1 functions of GeoWrite. You can use every feature of this basic set at all levels of GeoWrite. When you know these basic skills, you can compose memos, letters, and reports with ease using the power of GeoWrite.

This chapter assumes you are familiar with the information covered in Chapter 1 and Chapter 3, which give an overview of the skills you need to use any GEOS application.

WHAT IS GEOWRITE?



GeoWrite is a word processing program. It lets you put words on a page — and it lets you change them easily and quickly!

When you type, GeoWrite moves the text to accommodate your adding and deleting words, paragraphs, or whole chapters. You can make changes throughout an entire document with a few simple keystrokes. For example, you can change every occurrence of the word *problem* to the word *opportunity*. You can improve any document without tedious retyping.

NOTE

GeoWrite does not support handwriting recognition. Although you can use the floating keyboard to type and edit, we strongly recommend that you use an optional external keyboard.

USER LEVELS IN GEOWRITE

To accommodate your experience and needs, GeoWrite has four user levels. Typically, you begin using an application at Level 1, which is the simplest and most basic level. As you gain experience and comfort with GeoWrite, you can add more functions by increasing your user level. For more information about changing and saving user levels, see Chapter 3.

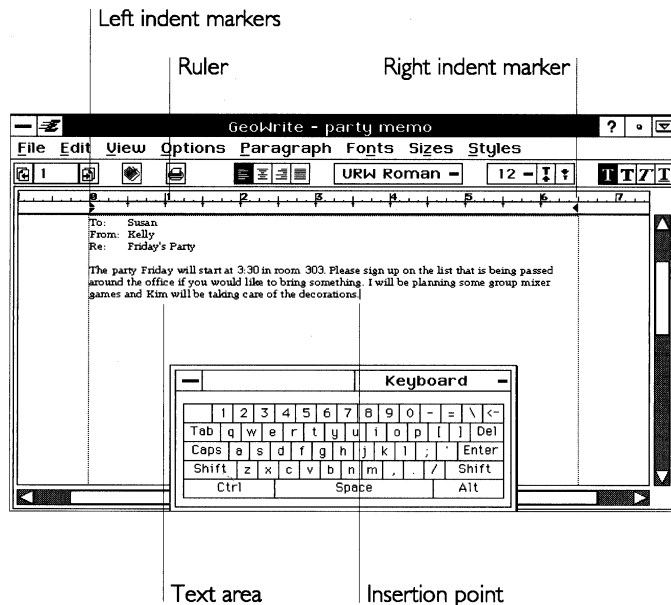
GeoWrite Level 1. Level 1 includes the basics of manipulating text, using the Style bar, moving around in a document, using templates, and checking spelling. This section of Chapter 5 describes the features available at Level 1.

GeoWrite Level 2. Level 2 introduces ways to enhance a document by adding headers, footers, and a title page. You can format text and use color to change the way text looks. This level makes it easy to use styles to give your documents a consistent look.

GeoWrite Levels 3 and 4. Levels 3 and 4 introduce advanced techniques for creating documents using graphics, sections, and page layout features. At these levels, you can create documents with multiple columns, insert special characters (such as page breaks), and create templates and tables of contents. You can even merge data from other applications into your GeoWrite document.

THE GEOWRITE WINDOW

The GeoWrite window looks like this:



The *ruler* shows you the size of the page and the locations of *margins* and tab settings. You can change these settings by tapping and dragging the symbols on the ruler. When you start a new document, these settings are automatically set for 1-inch margins, giving you a 6-1/2 inch wide text area on an 8-1/2 inch wide page.

Left Indent Marker. The two-part left indent marker enables you to set the *indentation* of the first line and of all succeeding lines.

Right Indent Marker. The right indent marker allows you to set the right indentation.

Tab. Tab stops appear automatically every 1/2 inch, as shown by the tiny T symbols on the ruler. You can add or delete tab stops where you need them.

The *text area* is the area inside the margins of GeoWrite. Characters you enter using an external or floating keyboard appear in this area.

NOTE

You cannot use the pen to write by hand directly in the text area.

The *insertion point*, the blinking vertical line, indicates where the characters you enter appear in the document.

You can change the way a document appears on the screen by zooming in and out. You can zoom in to make a document appear larger or zoom out to make it appear smaller. For more information, see Chapter 3.

ENTERING TEXT

ALL LEVELS

When you type on the external keyboard or tap characters on the floating keyboard, the words appear in the text area. As the words reach the end of a line, they automatically wrap down and continue on the next line. This feature is called *word wrap*. Word wrap means that you do not have to tap **Enter** on the floating keyboard to start a new line of text. This keeps the lines and sentences together in the same paragraph. When you are ready to begin a new paragraph, tap **Enter** on the floating keyboard.

Positioning the Insertion Point

The *insertion point* is the blinking vertical line that indicates where the characters you enter appear on the screen. On a blank page, the insertion point appears in the upper left corner. As you enter characters, the insertion point moves to the right, appearing after the last word. When you need to make changes to text you have already entered, you can move the insertion point.

To move the insertion point (All Levels)

- You can use the pen or an external keyboard to move the insertion point.
 - Use the pen to tap the text area where you want to start the insertion. The insertion point moves to the new location.
 - If you are using an external keyboard, you can use its keys to move the insertion point without moving or changing the text. The following table shows the key combinations for moving the insertion point with the external keyboard:

KEY COMBINATION	MOVEMENT
Home	To the beginning of the current line.
Ctrl+Home	To the beginning of the document.

End	To the end of the current line.
Ctrl+End	To the end of the document.
Arrow Keys	One character or line in the direction of the arrow.
Ctrl+Left Arrow	To the beginning of the current word or, if it is already there, to the end of the previous word.
Ctrl+Right Arrow	To the end of the current word or, if it is already there, to the beginning of the next word.

Inserting Text

Once you position the insertion point, anything you type is inserted into the document at that location. Any text to the right of the insertion point moves over to accommodate the inserted text.

CORRECTING AS YOU ENTER TEXT

If you make a mistake entering text and notice it immediately, you can tap the **Backspace** key on the floating keyboard to erase characters to the left of the insertion point. Tapping the **Delete** key on the floating keyboard erases characters to the right of the insertion point.

STARTING A NEW PARAGRAPH

When you want to start a new paragraph, tap **Enter** on the floating keyboard. The insertion point moves to the left margin of the next line. If you want to split an existing paragraph into two paragraphs, position the insertion point where you want to split the paragraph and tap **Enter** on the floating keyboard.

Entering Numbers

Numbers you enter appear in the text area. You can enter numbers using the alphanumeric section at the top of the floating or external keyboard, the numeric keypad on the external keyboard, or the numeric keypad on the Math Symbols floating keyboard.

MOVING AROUND IN YOUR DOCUMENT

ALL LEVELS

As a document gets larger and you cannot see all of it on the screen, you will need to move through it in various ways. Here are some methods you can use to display other parts of the document:

Scrolling. Tap the scroll bars to look at different areas of your document. Scrolling does not move the insertion point. See Chapter 1 for more information about scrolling.

KEY COMBINATION	MOVEMENT
Page Up	To scroll the screen back toward the beginning of the document.
Page Down	To scroll the screen forward toward the end of the document.
Ctrl+Page Up	To scroll the screen right.
Ctrl+Page Down	To scroll the screen left.

Leafing Through Pages. The Next Page and Previous Page choices on the View menu move the document forward and back one page at a time.

Go to Page. You can go directly to a specified page in a long document.

To go to the next or previous page in a document (All Levels)



- Tap the Next Page or Previous Page button on the Style bar.
or

Choose Next Page or Previous Page from the View menu.

To go to a specific page (All Levels)

1. Choose Go to Page from the View menu. A dialog box appears.
2. Enter the page number you want.
3. Tap Go to Page in the dialog box. The page you specified appears.

SELECTING TEXT

ALL LEVELS

When you want to make changes, such as rewording a sentence or moving a paragraph, first you must select the text you want to change. Selected text appears highlighted. Once you select text, you can manipulate it in many ways, including the following:

- Delete or replace a selection.

- Cut, copy, and paste text using the clipboard.
- Change the font, text size, or text style.
- Change the space between lines.
- Change the paragraph alignment.

You can use either the pen or an external keyboard to select text.

Using a Pen

To select text using a pen, you can choose between two selection methods. You can drag the pen from the beginning of the text you want to select to the end of the text, or you can quickly tap the pen the appropriate number of times:

2 taps. Selects a word, but not the space after the word.

3 taps. Selects a line.

4 taps. Selects a paragraph.

5 taps. Selects the entire document.

If you change your mind after making a selection, you can cancel the selection by tapping anywhere in the text area.

Using an External Keyboard

You can also use the external keyboard to select text. The table below shows how to select text and reduce or extend selections by using two or more keys at the same time.

KEY COMBINATION	SELECTION
Shift +Right Arrow or Shift +Left Arrow	Selects one character in the direction of the arrow; reduces or extends the selection a character at a time in the same way.
Ctrl +Spacebar	Selects the current word; the insertion point must be within the word.
Ctrl + Shift +Right Arrow	Selects to the end of the current word. If already at the end of a word, selects to the beginning of the next word; extends or reduces the selection in the same way.
Ctrl + Shift +Left Arrow	Selects to the beginning of the current word. If already at the beginning of a word, selects to the end of the previous word; extends or reduces the selection in the same way.
Shift +Up Arrow or Shift +Down Arrow	Selects from the insertion point one line up or down in the direction of the arrow; extends or reduces the selection in the same way.

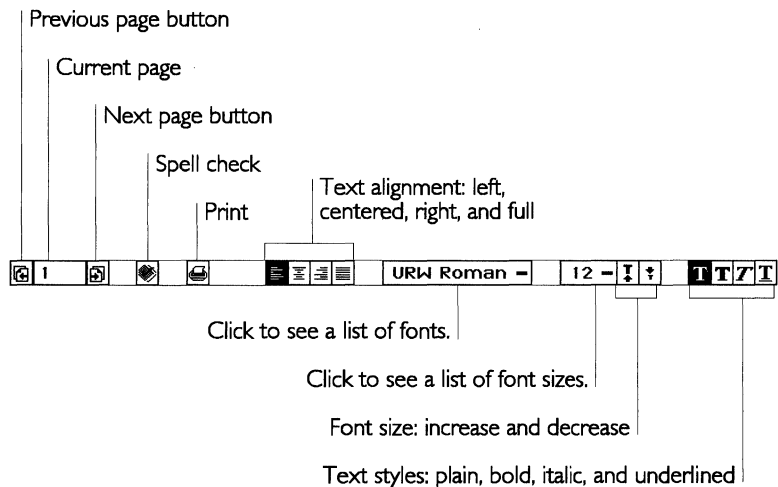
Shift+Home	Selects from the insertion point to the beginning of the line; extends or reduces the selection a line at a time toward the beginning of the document.
Shift+End	Selects from the insertion point to the end of the line; extends or reduces the selection a line at a time toward the end of the document.
Ctrl+Shift+Up Arrow or Ctrl+Shift+Down Arrow	Selects to the beginning or end of a paragraph in the direction of the arrow; extends or reduces the selection in the same way.
Ctrl+Shift+Home	Selects from the insertion point to the beginning of the document.
Ctrl+Shift+End	Selects from the insertion point to the end of the document.
Ctrl+/	Selects the entire document (the same as choosing Select All from the Edit menu).

For more information about selecting text, see Chapter 1.

USING THE STYLE BAR

ALL LEVELS

The Style bar appears above a GeoWrite document. Its tools allow you to move from page to page of your document and to change text characteristics of selections: font, text size, and text style. The Style bar provides an easy way to select choices that can also be found on menus.



See Appendix A for complete information about the buttons on the Style bar.

To use a tool on the Style bar (All Levels)

- After selecting the text you want to change, tap the appropriate tool button. The selected text changes.

EDITING TEXT

ALL LEVELS

Once you have selected text, you can edit it. You can replace it with different text, delete it, move it somewhere else, or make a copy of it. You will often use the clipboard to edit text by cutting or copying text to the clipboard and then pasting that text into your document. If you make a basic change and immediately decide that it is not what you want, you can undo the change. For more information about editing text, see Chapter 1.

CHANGING THE WAY TEXT LOOKS

ALL LEVELS

GeoWrite has many options for creating attractive, easy-to-read text that conveys your ideas visually. You can change the appearance of the characters you use, as well as the alignment, indentation, and spacing of lines in a paragraph.

The way a character looks on screen and when printed is determined by its font, size, style, and other *attributes*. You can apply character attributes in two ways:

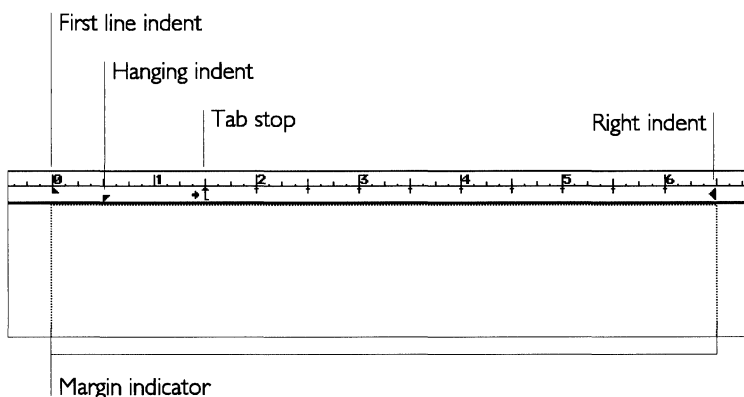
- Select the text you want to change, then choose the attribute you want.
- Select the attributes you want, then enter new text. GeoWrite applies the current attribute settings to any new text you enter.

In GeoWrite, the location of the attribute menu choices for changing a font, size, or style varies slightly depending on your user level. At Level 1, you select the Fonts, Sizes, or Styles menu directly from the menu bar. At Levels 2-4, you choose Fonts, Sizes, or Styles from the Character menu. You can also select font, size, and style attributes by tapping the appropriate button on the Style bar. For more information about text attributes, see Chapter 1.

Using the Ruler

When you open a new document, the margins are set for a 6-1/2 inch text area and the tab stops are 1/2 inch apart. You can use the ruler to change left and right indentations and to insert different tab stops.

The indentations and tab stops you see on the ruler affect the paragraph containing the insertion point. If you want to change the setting for the whole document, you must first select the document by choosing Select All from the Edit menu or by quickly tapping the pen five times.



NOTE

Levels 2 and above include additional options for changing paragraph indentation and setting tab stops. For more information, see “Formatting GeoWrite Documents” in this chapter.

At Level 2 and above, you can change headers and footers. However, ruler changes do not affect header and footer text. For more information, see “Formatting GeoWrite Documents” in this chapter.

INDENTATIONS

The text of each paragraph wraps within the indentation setting, which you can change using the indentation markers on the ruler.

The right indent marker is a single triangle that you can drag to a new location to specify the right edge of the text.

The left indent marker includes two triangular markers:

- The upper triangle sets the indentation of the first line of the paragraph.

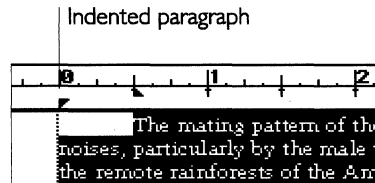
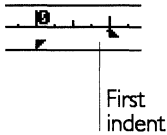
- The lower triangle sets the indentation for the remaining lines of the paragraph (the hanging indent).

If both of the left indent triangles are together, all lines in the paragraph align beneath the markers. If the top triangle is to the right of the bottom triangle, the paragraph indents in the standard way, with the first line indented.

If you want to specify a hanging indent to create a special indentation for a list with numbers or bullets, move the lower triangle to the right. The upper triangle shows the indentation of the first line in a paragraph, and the lower triangle shows the indentation of all subsequent lines of the paragraph.

To indent the first line of a paragraph (All Levels)

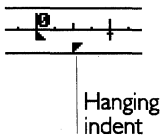
1. Select all of the paragraphs you want to indent. If you want to indent only a single paragraph, simply move the insertion point into that paragraph.
2. Drag the first indent marker (the upper triangle) the distance you want for the indentation. The existing text or the text you enter will be indented as specified, as shown in the following example:

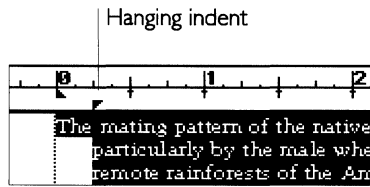


To create a hanging indent (All Levels)

Hanging indents allow you to align the text when you use bullets or numbered lists.

1. Select the paragraphs for which you want a hanging indent, or move the insertion point to the location where your hanging indent will begin.
2. Drag the hanging indent marker (the lower triangle) to the location where you want the second and subsequent lines to align, as shown in the following example:

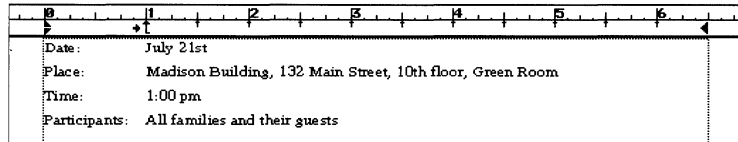




TAB STOPS

Tab stops are the locations where the insertion point stops when you tap Tab on the floating keyboard. Automatic tab stops appear every 1/2 inch, and you can add your own by tapping the ruler.

At Level 2 and above, you can set tab stops with more precision and use more options, such as decimal tabs and tab leaders. For more information, see “Formatting GeoWrite Documents” in this chapter.



To create tab stops (All Levels)

1. Select the paragraphs for which you want to create tab stops. If you want to add a tab stop to a single paragraph, move the insertion point into that paragraph.
2. Tap the ruler at the location where you want the new tab stop to appear. The new tab marker appears and the automatic tab markers disappear to the left of the new tab marker.
If the tab marker is not exactly where you want it, drag the marker to the correct location.
3. Continue tapping and dragging, if necessary, until you have placed all the tab markers you need.

When you tap Tab on the floating keyboard while entering text in the paragraphs you selected, the text aligns under the tab markers.

NOTE

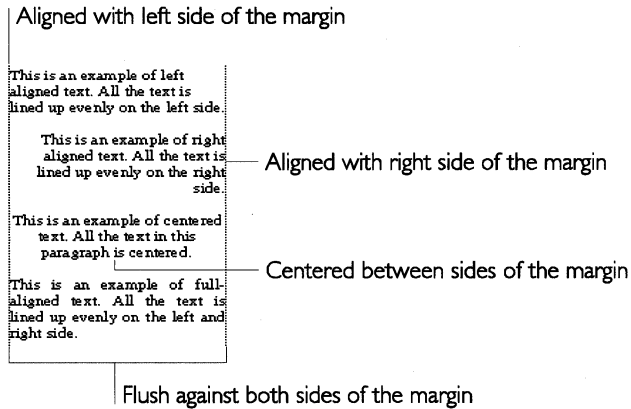
With your document set at normal size, you can place tabs at 1/4-inch intervals. To place tabs with more precision, zoom to a higher percentage.

To clear a tab stop (All Levels)

- Drag any tab marker off the ruler to remove it.





Aligning Text

You can decide how text lines up along a margin: left aligned, centered, right aligned, or full left *and* right aligned. Alignment is also called *justification*. For example, when text is left aligned, the rows of text line up along the left margin (excluding any specified indentation) and the right ends of the lines are ragged.



To change text alignment (All Levels)

1. Select the text or move the insertion point into the paragraph you want to align.
2. Tap one of these buttons on the Style bar:

BUTTON	ALIGNMENT
	Left
	Center
	Right
	Full

or

At Level 1, choose the text alignment you want from the Paragraph menu. At Levels 2 and above, choose Justification from the Paragraph menu. A submenu appears from which you choose Left, Center, Right, or Full alignment.

Changing Line Spacing

Line spacing is the spacing between lines in a paragraph, also called *leading*.

You may want to add more space between the lines of text in a paragraph. You can choose from the following line spacings:

Single. This is normal spacing. There is no extra line space between each row of text.

One and a Half. There is a half line space between each row of text.

Double. There is a whole line space between each row of text.

At Levels 3 and 4, you can specify custom line spacing. For more information, see “Formatting GeoWrite Documents” in this chapter.

To specify line spacing (Level 1)

- After selecting the text or moving the insertion point into the appropriate paragraph, choose Single, One and a Half, or Double from the Paragraph menu.

To specify line spacing (Levels 2-4)

1. After selecting the text or moving the insertion point into the appropriate paragraph, choose Line Spacing from the Paragraph menu. A submenu appears.
2. Select an option from the submenu.

CHECKING YOUR SPELLING

LEVEL 1

Using a spell checker is a good way to find misspelled words and typographical errors. GeoWrite has an electronic dictionary that it checks for spelling errors. When the spell checker finds a word in your document that is not in its dictionary, it displays it in the Check Spelling dialog box and lets you decide what to do.

At Level 2 and above, you can add special words to a user dictionary. For more information, see “Formatting GeoWrite Documents” in this chapter.

To check spelling (All Levels)



1. Tap the Check Spelling button on the Style bar.

or

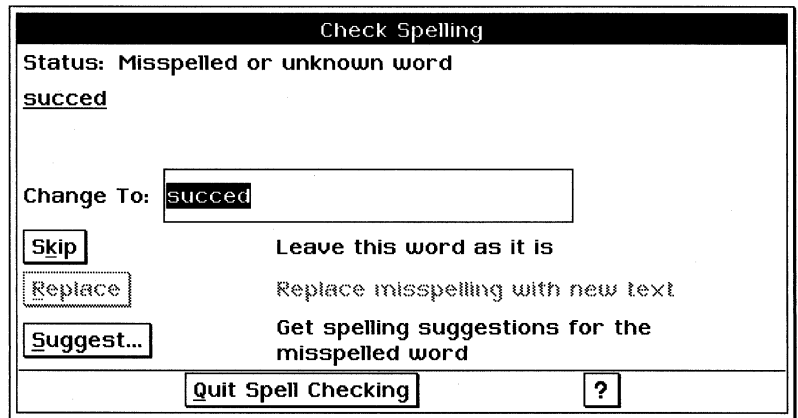
Choose Check Spelling from the Edit menu.

or

If you are using an external keyboard, press **F7**.

A dialog box appears. The first misspelled word (or word that is not in the GeoWrite dictionary) appears in the Change To: entry box.

The Check Spelling dialog box at Level 1.



2. Perform one of the following actions, as appropriate:
 - Type or write by hand the correct word and tap the Replace button. The spell checker replaces the word with the new spelling and continues checking with the next word.

NOTE

If you write a word by hand, please check the translation carefully.

- Tap the Skip button. Use this for special words that appear in your document that do not appear in the dictionary. The spell checker skips the current word and proceeds with its checking.
- Tap the Suggest button. The spell checker then looks in its dictionary for similarly spelled words. When the suggestions appear, tap the one you want to use and then tap Replace.

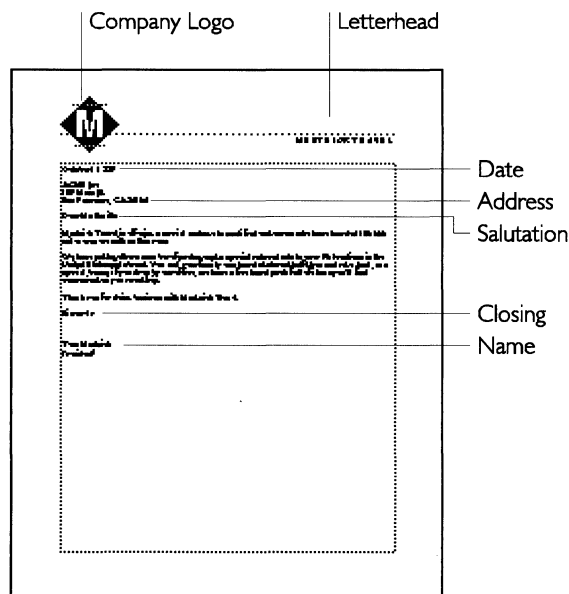
If no suggestion is appropriate, then enter the word correctly in the Change To: box and tap Replace. The spell checker replaces the word with the new spelling and proceeds with its checking.

- Tap the Quit Spell Checking button to stop.
3. When you finish checking the spelling of a selection or of an entire document, a message window appears. Tap OK to return to GeoWrite.

USING PREDEFINED TEMPLATES

ALL LEVELS

A *template* is a special document that you use as a model to create similar documents. It contains the text, graphics, formatting, and special layouts common to all documents of a particular type. For example, a letter template might contain the following elements:



GeoWrite comes with several predefined templates that you can use to simplify your page layout tasks. All the layout is already done — you just need to add your own text. For more information about creating and changing templates, see Chapter 3.

To use a template (All Levels)

1. After choosing Switch Document from the File menu, tap the Template button. A dialog box appears that lists the available templates.
2. Tap the name of the template you want to use. The name is highlighted and its description, if available, appears in the Notes box. Tap Use Template to use the highlighted template.

or

Double-tap the name of the template you want to use.

The original template document is unchanged. Changes you make to the new document do not affect the template.

GeoWrite makes a copy of the template and asks you to enter a name for the new document. This copy contains everything from the template: text, graphics, formatting, styles, special layouts, and so on. You can also use the styles from a template without using its text. For more information, see “Formatting GeoWrite Documents” in this chapter.

Formatting GeoWrite Documents

This section describes the features that help you create formatted documents quickly and easily. All features described in this section are available at Level 2 and above.

CHANGING THE TEXT FORMAT

LEVELS 2-4

This section shows you how to use many of GeoWrite's advanced text and paragraph formatting features. For an introduction to formatting text and paragraphs, see "GeoWrite Basics" in this chapter.

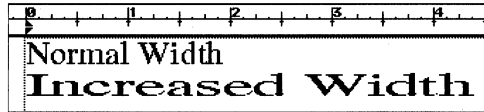
Setting a Custom Text Size

LEVELS 2-4

At Level 2 and above, you can set a custom size for selected text. GeoWrite allows you to set custom sizes from 4 to 792 points. For more information, see Chapter 1.

Changing Character Width and Weight

At Levels 3 and 4, you can fine-tune the appearance of a character by changing its *weight* (thinner or thicker), its *width* (expanded or condensed), and the distance between characters. The following example shows what happens when you increase the character width:



To change character attributes (Levels 3-4)

1. After selecting the text you want to change, choose Character Attributes from the Character menu. A dialog box appears.
2. Complete the dialog box, selecting the attributes you want:
 - Character Weight (%)**. Select a weight from 75 to 125.
 - Character Width (%)**. Select a width from 25 to 200.
 - Character Spacing**. Select spacing from -150 to 500.
3. Tap Apply to apply your changes to the highlighted text. Then close the dialog box.

Formatting Paragraphs

You can control paragraph formatting such as alignment, custom line spacing, paragraph spacing, line and column breaks, borders, and hyphenation. For information about using the ruler to change paragraph alignment, line spacing, margins, indents, and tab stops, see “GeoWrite Basics” in this chapter.

To format a paragraph, you must first select it by highlighting or by putting the insertion point in the paragraph. You do not need to highlight all the text in the paragraph. For more information, see “GeoWrite Basics” in this chapter.

SETTING CUSTOM LINE SPACING

At Level 3 and above, you can set custom line spacing for selected text.

To set custom line spacing (Levels 3-4)

1. After selecting the paragraphs you want to change, choose Line Spacing from the Paragraph menu. A submenu appears.

2. Choose Custom Spacing. A dialog box appears.
3. Select Automatic for line spacing that depends on the size of the characters, or select Manual for more precise control. Then make the following adjustments, as appropriate:
 - Line Spacing.** If Automatic is selected, set Line Spacing the way you want.
 - Manual Leading.** If Manual is selected, set Manual Leading to a point size for the precise leading you want.
4. Tap Apply to apply your changes to the selected paragraphs. Then close the dialog box.

SETTING PARAGRAPH SPACING

Paragraph spacing is the space between paragraphs.

To change paragraph spacing (Levels 3-4)

1. After selecting the paragraphs you want to change, choose Paragraph Spacing from the Paragraph menu. A dialog box appears.
2. Complete the dialog box, selecting the options you want:
 - Space on Top.** Select the space you want to appear before a paragraph.
 - Space on Bottom.** Select the space you want to appear after a paragraph.
3. Tap Apply to apply your changes to the selected paragraphs. Then close the dialog box.

SETTING INDENTATION

Indentation is the distance between the text and the page margin. You set the page margin in the Page Setup dialog box, and it affects every paragraph in the document. The indentation affects only individual paragraphs.

You can change the left and right margins of a paragraph, as well as the first line indentation. When you open a document, paragraph margins are initially set to zero (0), which means that they are the same as the page margins. You can also use the ruler to change paragraph indents. For more information, see “GeoWrite Basics” in this chapter.

You indent a paragraph to set it off from other paragraphs:

This is a paragraph with indented margins and no indent in the first line. This format makes the paragraph stand out in the flow of text.

A *first line indent* means the first line starts farther from the left edge of the page than the rest of the paragraph:

This is a paragraph with an indented first line. This format saves you from tapping the **Tab** key on the floating keyboard at the start of every new paragraph.

A *hanging indent* means the first line starts closer to the left margin than the rest of the paragraph:

This is a paragraph with a hanging indent. Notice that the first line is closer to the left edge of the page than the rest of the paragraph.

- A hanging indent is used for numbered or bulleted paragraphs. Notice that the bullet (or number) is the hanging element of the paragraph. This layout makes it easier for the reader to scan paragraphs.

You can also use the ruler to change paragraph margins. For more information, see “GeoWrite Basics” in this chapter.

To set paragraph indents (Levels 2-4)

1. After selecting the paragraphs you want to change, choose Indents from the Paragraph menu. A dialog box appears.
2. Complete the dialog box, selecting the options you want.

Left Indent of First Line. Select the distance of the first line from the left margin of the page.

Hanging Left Indent. Select the distance of the remaining lines in the paragraph from the left margin of the page.

Right Indent. Select the distance of all the lines in the paragraph from the right margin of the page.

3. Tap Apply to apply your changes to the selected paragraphs. Then close the dialog box.

NOTE

If you wish to create an indented paragraph with no first-line indent, you must set *both* the Left Indent of First Line and the Hanging Left Indent to the same value.

SETTING TAB STOPS

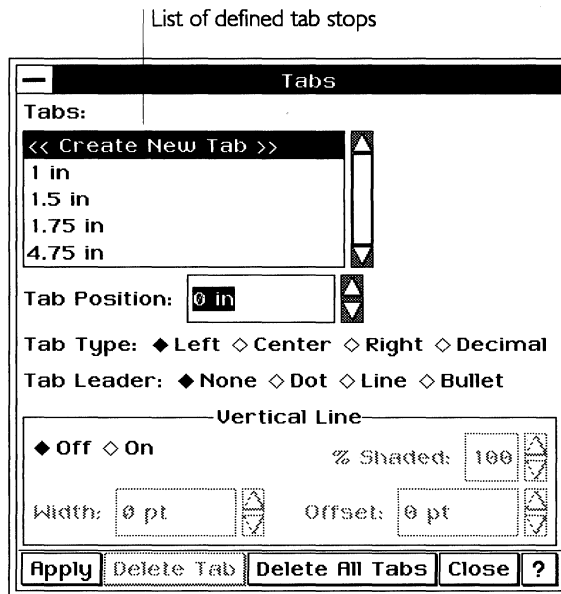
A *tab stop* is the location the insertion point moves to when you tap Tab on the floating keyboard. You can use tab stops to create

aligned columns, such as a table of contents or columns of numbers.

A document initially has automatic tab stops at regular intervals (usually every half inch). You can redefine this distance, and you can add tab stops anywhere in between. You can also set tab stops using the ruler. For more information, see “GeoWrite Basics” in this chapter.

To create a new tab stop (Levels 2-4)

1. After selecting the paragraphs you want to change, choose Tabs from the Paragraph menu. A dialog box appears:



2. Complete the dialog box, selecting the options you want.

Tabs List. Select <<Create New Tab>> in the Tabs list.

Tab Position. Select the distance of the tab stop from the page margin.

Tab Type. Select the alignment of the text at the tab stop (Left, Center, Right, or Decimal). For example, you would use a decimal tab to align columns of numbers along the decimal point.

Tab Leader. Select the character that precedes the tab stop (None, Dot, Line, or Bullet). For example, in a table of contents, each page number might have a tab with a dot leader, as shown here:

Chapter 5: GeoWrite..... 5.1

Vertical Line. This option, when selected, puts a vertical line at the tab position that spans the height of the paragraph. You can set the shading, line width, and line spacing.

3. Tap Apply to create the tab stop. The tab stop is applied to the selected paragraphs. Then close the dialog box.

To change a tab stop (Levels 2-4)

1. After selecting the paragraphs you want to change, choose Tabs from the Paragraph menu. The Tabs dialog box appears.
2. Select the tab you want to change in the Tabs list.
3. Fill in the rest of the dialog box, selecting the options you want.
4. Tap Apply to save your changes to the selected tab stop and to apply them to selected paragraphs. Then close the dialog box.

To delete one or all tab stops (Levels 2-4)

1. Choose Tabs from the Paragraph menu. The Tabs dialog box appears. If you want to delete one tab stop, select it in the Tabs list.
2. Perform one of the following actions, as appropriate:
 - To delete one tab stop, tap Delete Tab in the dialog box. GeoWrite deletes the tab stop and shifts the text to the next tab stop.
 - To delete all tab stops, tap Delete All Tabs in the dialog box. GeoWrite deletes all tab stops, restores the default tab stops for selected paragraphs, and adjusts the text if necessary.

To set the default tab stops (Levels 3-4)

1. After selecting the paragraphs you want to change, choose Default Tabs from the Paragraph menu. A dialog box appears.
2. Select a default tab (None, Centimeter, Half Inch, or One Inch).

or

Set a custom default tab.
3. Tap Apply to apply your changes to the selected paragraphs. Then close the dialog box.

CONTROLLING LINE AND PARAGRAPH BREAKS

You can control whether or not GeoWrite allows automatic line breaks within words and automatic column breaks within paragraphs. In documents with only one column, column breaks have the same effect as page breaks.

For example, you might want to make sure that a headline appears in the same column as the article to which it belongs. Similarly, you might want to keep an entire paragraph together on the same page rather than have GeoWrite split it in the middle, possibly leaving widows and orphans. A *widow* occurs when a single line of text is separated from the paragraph it belongs to and is left stranded at the bottom of a page. An *orphan* occurs when a single line of text is separated from the paragraph it belongs to and is left stranded at the top of a page.

Word wrap, column breaks, and keeping paragraphs together are considered *paragraph attributes*.

To change paragraph attributes (Levels 3-4)

1. After selecting the paragraphs you want to change, choose Paragraph Attributes from the Paragraph menu. A dialog box appears.
2. Complete the dialog box, selecting the attributes you want.
 - Disable Word Wrap.** Disable automatic word wrap and permit line breaks in the middle of words.
 - Page/Column Break Before.** Put a column break ahead of the paragraph so that the paragraph appears at the top of the next column.
 - Keep with Next Paragraph.** Keep the current paragraph with the next paragraph on the same page, preventing GeoWrite from inserting a column break or page break between them.
 - Keep Paragraph Together.** Keep the entire paragraph on the same page, preventing GeoWrite from separating the lines of the paragraph with a page break or column break.
 - Widow and Orphan Control.** Permit column breaks within a paragraph and specify how many lines to keep together in a column.
 - At Paragraph Top.** If Widow and Orphan Control is selected, select the number of lines allowed for widows.
 - At Paragraph Bottom.** If Widow and Orphan Control is selected, select the number of lines allowed for orphans.
3. Tap Apply to apply your changes to the selected paragraphs. Then close the dialog box.

SETTING BORDERS

You can put a border (lines or a box) around a paragraph to add emphasis and make it stand out, as in the following example:

This is an example of a paragraph with a single-line border around it.

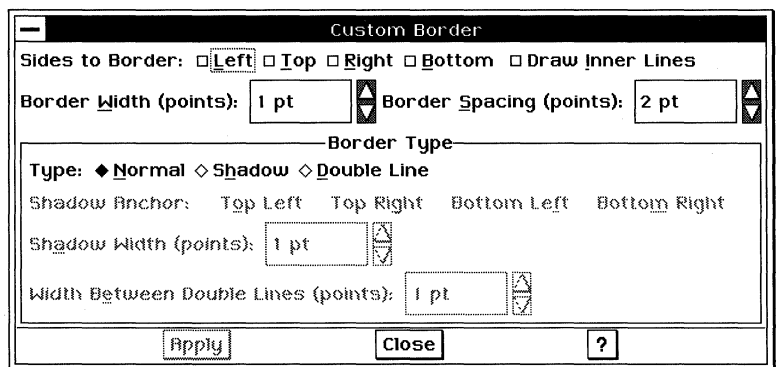
The border width extends to the edge of the left and right indentation marker. You can also set the border color to set it apart from other text.

To make a simple border (Levels 3-4)

1. After selecting the paragraphs you want to have a border, choose Borders from the Paragraph menu. A submenu appears.
2. Select the border option you want (None, Thin, Thick, Double-Line, or Shadowed).

To make a custom border (Levels 3-4)

1. After selecting the paragraphs you want to have a custom border, choose Borders from the Paragraph menu. A submenu appears.
2. Choose Custom Border. A dialog box appears:



3. Complete the dialog box, selecting the options you want:
Sides to Border. Set the location of the border (Left, Top, Right, and Bottom). Select all four to put a box around the text. Select Draw Inner Lines to draw lines at paragraph breaks that fall within your selection.

The following example shows a paragraph with a top and bottom border only:

This is an example of a paragraph with a top and bottom border.

Border Width (points). Select the border width in points.

Border Spacing (points). Select the border spacing in points.

Border Type. Select the type of border (Normal, Shadow, or Double Line).

Shadow Anchor. If a shadow border is selected, select the anchor for the “light source” that creates the shadow (Top Left, Top Right, Bottom Left, or Bottom Right).

Shadow Width (points). If a shadow border is selected, select the width of the shadow in points.

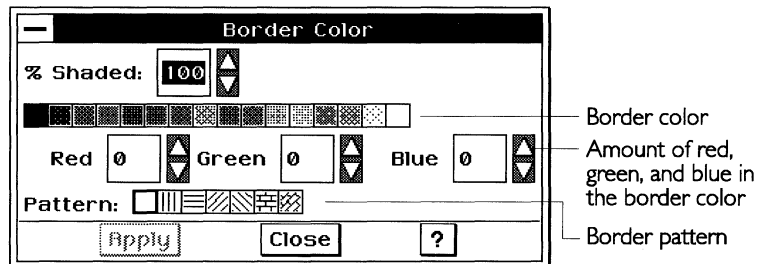
Width Between Double Lines (points). If a double line border is selected, select the space between the lines in points.

4. Tap Apply to apply your changes to the selected paragraphs. Then close the dialog box.

To change the border color (Levels 3-4)

For more information about using color, see “Using Color” in this section.

1. After selecting the paragraphs you want to have a color border, choose Borders from the Paragraph menu. A submenu appears.
2. Choose Border Color. A dialog box appears:



3. Complete the dialog box, selecting the options you want.

% Shaded. Select the percent shading for the border color. The lower the number, the lighter the color. When set to zero (0), the border disappears. By default, this setting is 100.

Color tools. Select the border color from the color palette. You can also fine tune the color blend by setting the amounts of red, green, and blue in the border color. For more information about using color, see “Using Color” in this section.

Pattern. Select the pattern for the border color. By default, the pattern is solid. A pattern can be transparent.

4. Tap Apply to apply your changes to the selected text. Continue to make changes as desired until you are satisfied with the way the border looks. Then close the dialog box.

HYPHENATION

You can turn on hyphenation for any paragraph or paragraphs within your document. Once you apply hyphenation to a paragraph, hyphenation changes to accommodate changes you make to the paragraph. You can turn off hyphenation in a paragraph at any time.

GeoWrite provides default hyphenation settings that you can change as desired. Note that some hyphenation can make a document easier to read, while too much hyphenation can make it more difficult by breaking continuity and looking cluttered.

NOTE

GeoWrite hyphenates only those words that appear in its dictionary.

To use hyphenation (Levels 3-4)

1. After selecting the paragraphs with the hyphenation you want to change, choose Hyphenation from the Paragraph menu. A dialog box appears.

2. Complete the dialog box, selecting the options you want.

On or Off. Select On to allow automatic-hyphenation and to set other options in the dialog box.

Maximum consecutive lines to hyphenate. Too many hyphenated lines in a row can clutter a document. Use this setting to restrict the total number of lines that can be hyphenated in a row.

Shortest word to hyphenate. Too many hyphenated words, particularly if they are short, can clutter a document. Use this setting to limit the hyphenation to words of a certain length.

Shortest prefix. Use this setting to establish the length of the shortest prefix to hyphenate, such as *pre* in *prefix*.

Shortest suffix. Use this setting to set the length of the shortest suffix to hyphenate, such as *ing* in *hyphenating*.

3. Tap Apply to apply your changes to the selected text. Then close the dialog box.

USING COLOR

LEVELS 2-4

Color can add emphasis and appeal to text. Although the display of the unit is black and white, you can define colors for selected

text or for entire paragraphs. Then if you move a file to a machine with a color monitor, the colors you defined appear on screen. Similarly, if you have a color printer, the colors you defined appear on the printed copy of your document.

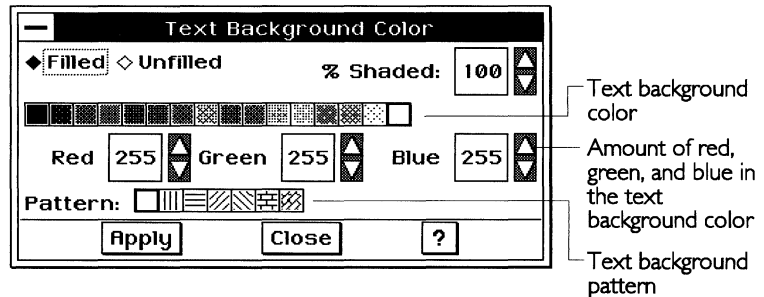
You can select colors even if you do not have a color monitor or printer — you just cannot see them on screen or in printed documents. Instead, colors appear in different shades of gray, which provides contrast to a lesser degree.

Text color is the color of the text. *Background color* is the color of the background on which the text appears. When using colors, it is best to use contrasting colors for text and background so that the text is easy to read. If the colors are identical, then the text “disappears” into the background. By default, text color is black and background color is white. *Paragraph color* is the background color for an entire paragraph.

Although GEOS applications have a standard palette of colors, you can create your own variations by adjusting the amount of each primary color (red, green, blue) in the color selected from the palette. You can also increase or decrease the percentage of shading to reduce or sharpen the color intensity.

You can also choose different patterns to create a different texture in the background.

When you select or change color, a dialog box, similar to the following, appears:



To change the text color (Levels 2-4)

1. After selecting the text you want to change, choose Text Color from the Character menu. A dialog box appears.
2. Complete the dialog box, selecting the attributes you want.
% Shaded. Select the percent shading for the text color. The lower the number, the lighter the color. A setting of zero (0) causes the text to disappear. By default, this setting is 100.
Color tools. Select the text color from the color palette. You can also fine tune the color blend by setting the amounts of red, green, and blue in the text color; the default values depend on the selected color.
3. Tap Apply to apply your changes to the selected text. You can continue to make changes as desired. Then close the dialog box.

To change the text background or paragraph color (Levels 2-4)

1. After selecting the text you want to change, choose Text Background Color from the Character menu or Paragraph Color from the Paragraph menu, as appropriate. A dialog box appears.
2. Complete the dialog box, selecting the attributes you want:
Filled or Unfilled. Select Filled to set other options in this dialog box. By default, the color is unfilled.
% Shaded. Select the percent shading for the color. The lower the number, the lighter the color. If the setting is zero (0), the background disappears. By default, this setting is 100.
Color tools. Select the color from the color palette. You can also fine tune the color blend by setting the amounts of red, green, and blue in the color you have selected.
Pattern. Select the pattern for the color. By default, this setting is solid. A pattern can also be transparent.
3. Tap Apply to apply your changes. Continue to make changes as desired until you are satisfied with the color. Then close the dialog box.

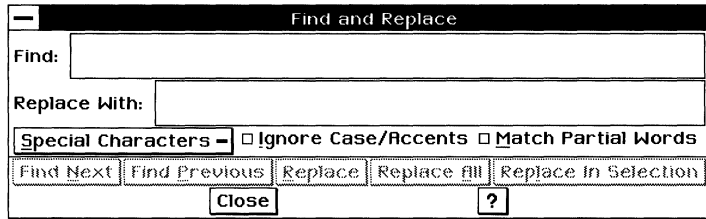
FINDING AND REPLACING TEXT

LEVELS 2-4

You can use Find and Replace to quickly find a word or phrase in your document and, if desired, to replace it with a different word or phrase. You can also replace all occurrences of a word or phrase in a document.

To find and replace text (Level 2)

1. Choose Find and Replace from the Edit menu. A dialog box appears:



2. Complete the dialog box, selecting the options you want.

Find. Enter the text you want to find. You can search for any combination of numbers, letters, spaces, and other printable characters (such as punctuation marks).

Replace With. Enter the text that will replace the search text.

Find Next. When you tap this button, the search starts from the insertion point forward. If the application reaches the end of the document, it starts searching again from the beginning. If the application cannot find the search text, a message appears to that effect. If the application finds a match, it highlights the text in the document.

Replace. Tap this button to replace one occurrence of the search text. You can stop the search here, or you can tap Find Next again to resume the search for another match.

Replace All. Tap this button to replace all occurrences of the search text with the replacement text.

3. Tap Close to close the dialog box.

To find and replace text (Levels 3-4)

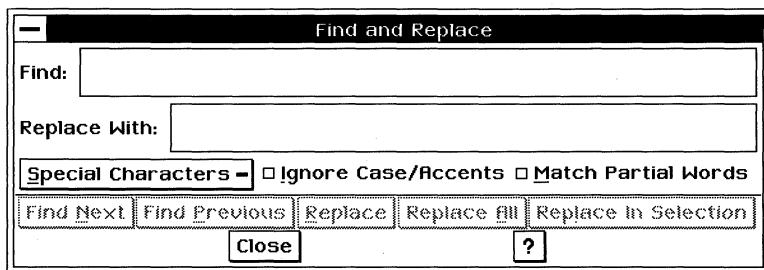
1. Choose Find and Replace from the Edit menu.

or



Tap the Find and Replace tool on the Function Bar.

A dialog box appears:



2. Complete the dialog box, selecting the options you want.

Find. Enter the text you want to find. You can search for any combination of numbers, letters, spaces, and other printable characters (such as punctuation marks).

Replace With. Enter the text that will replace the search text.

Special Characters. Tap this button when you want to use special characters (such as tabs) and wild cards in your search and replace operation. A *wild card* is a symbol that substitutes for a single character (?) or a series of characters (*). You can use wild cards to search for words or phrases that are similar or have slightly different spellings. When you tap this button, a drop-down list appears with the following choices:

- *Match Multiple Characters* adds the Multiple Character wild card to the text in the Find box. It allows you to match text where the beginning or end of the text might vary (such as “professor” and “professional”).
- *Match Any Character* adds an Any Character wild card to the text in the Find box. It allows you to match text where one or more characters might vary (such as “arise” and “arose”).
- *Graphic or Special Text* adds a character to search for any graphic object or any special text character (dates, times, numbers, and so on) to the text in the Find box.
- *Tab* adds a tab character to the text in the Find or Replace With box.
- *Carriage Return* adds a carriage return character to the text in the Find or Replace With box.
- *Page Break* adds a page break character to the text in the Find or Replace With box.

Ignore Case/Accent. Tap this box to find every occurrence of the search text, ignoring uppercase, lowercase, and accent marks. For example, if the search string is “Dog”, the application could find matches for “Dog” and “dog”.

Match Partial Words. Tap this box to find a portion of a word. For example, if the search string is “print”, the application could find matches for “print,” “sprinter,” “reprint,” and so on.

Find Next/Find Previous. When you tap Find Next, the search starts from the insertion point forward. When you tap Find Previous, the search starts from the insertion point backward. For forward searches, if the application reaches the end of the document, it starts searching from the beginning. For backward searches, if the application reaches the beginning of the document, it starts searching from the end. If the application cannot find the search text, a message appears to that effect. If the application finds a match, it highlights the text in the document.

Replace. Tap this button to replace one occurrence of the search text. You can stop the search here, or you can tap Find Next again to resume the search for another match.

Replace All. Tap this button to replace all occurrences of the search text with the replacement text.

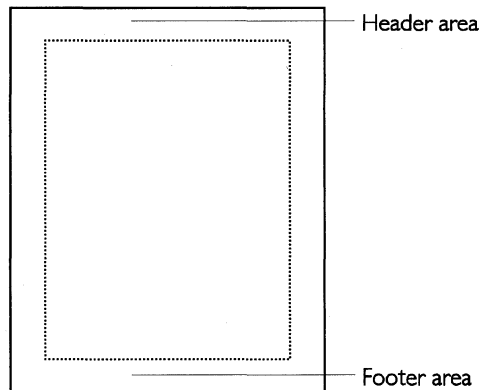
Replace in Selection. Tap this button to replace all occurrences only within text that you have selected.

3. Tap Close to close the dialog box.

USING HEADERS AND FOOTERS

LEVELS 2-4

A *header* contains anything (text, graphics, or both) that you want to appear at the top of every page. Likewise, a *footer* contains anything you want to appear at the bottom of each page. Header information appears at the top of the page in the top margin. Footer information appears at the bottom of the page in the bottom margin.



Headers and footers are optional. Normally, you use them in documents with multiple pages. They can contain text formatting (such as bold or italicized text) and multiple lines of text.

You can use a different header or footer on the first page of each chapter; for more information, see “Designing GeoWrite Documents” in this chapter. Similarly, you can use different headers and footers on odd and even pages, thereby putting the page number near the outside edge of each page.

By default, every document has a Header and a Footer style that you can format as desired.

NOTE

If you set tabs and margins for the Header or the Footer style, the settings are relative to the left edge of the page, not the left edge of the ruler.

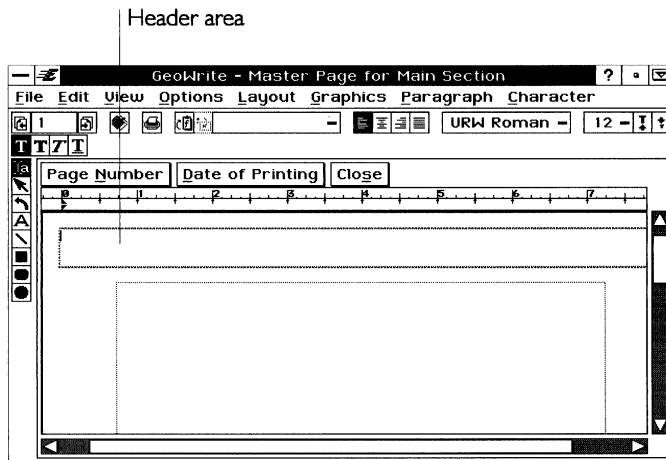
Setting Up a Header or Footer

The menus for setting up a header or footer at Level 4 vary slightly from those at Levels 2 and 3.

To set up a header or footer (Levels 2-4)

1. Choose Edit Header or Edit Footer from the Layout menu. At Level 4, choose Header or Footer from the Layout menu, and then choose Edit Header or Edit Footer from the submenu.

A page appears with the insertion point in the upper left corner of the header or footer area, as shown in the following illustration:



This is a special type of page that you use for organizing the layout of documents, not for entering the body of text. For more information, see “Designing GeoWrite Documents” in this chapter.

2. Enter the header or footer information. You can also use the following buttons, located at the top of the header or footer window, to insert standard information that gets updated automatically:

Page Number button. Tap to put the page number at the insertion point.

Date of Printing button. Tap to put the date of printing at the insertion point.

3. Tap Close to close the special page.

USING A TITLE PAGE

LEVELS 2-4

The *title page* is typically the first page of a document. It can be the cover of a report, test, essay, or book. The title page usually

contains descriptive information such as the title of the document, the author's name, and the date of printing.

Page numbering of your document remains the same when you add a title page to the front of your document. The first numbered page occurs after the title page.

The menus for adding, moving to, and deleting a title page at Level 4 vary slightly from those at Levels 2 and 3.

To add a title page to a document (Levels 2-4)

1. Choose Create Title Page from the Layout menu. At Level 4, choose Title Page from the Layout menu, then choose Create Title Page from the submenu. A dialog box appears asking if you want to continue.
2. Tap Yes to create the title page. GeoWrite creates a new section called Title Page at the beginning of the document. An empty title page appears, with the insertion point in the upper left corner of the text area. If your document has headers or footers, they will not appear on the title page.
3. Design your title page as desired.
4. Return to the body of your document by scrolling downward or tapping the Next Page tool.

To go to the title page (Levels 2-4)

- Choose Go to Title Page from the Layout menu. At Level 4, choose Title Page from the Layout menu, then choose Go to Title Page from the submenu. The title page appears.

To delete the title page (Levels 2-4)

1. At Levels 2 and 3, choose Delete Title Page from the Layout menu. At Level 4, choose Title Page from the Layout menu, then choose Delete Title Page from the submenu. A dialog box appears asking if you are sure you want to delete the title page.
2. Tap Yes to delete the title page. GeoWrite deletes the entire Title Page section.

CHECKING YOUR SPELLING

LEVELS 2-4

At Level 1, you can check the spelling in a document. For more information, see “GeoWrite Basics” in this chapter. At Level 2 and

above, you can also add words to a user dictionary. You can use this feature when your document contains correctly spelled words not found in the dictionary, such as proper names or special terminology.

To check the spelling of a word or block of text (Levels 2-4)

You can check the spelling of a single word, a block of text, or the text in the entire document. To check the entire document, start with step 2.

1. Select the word or block of text you want to check.

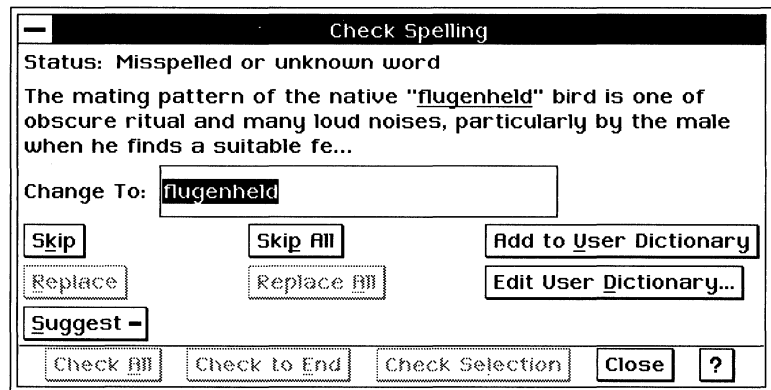


2. Tap the Check Spelling button on the Style bar.

or

Choose Check Spelling from the Edit menu.

A dialog box appears:



3. Select the amount of text you want to spell check:

Check All. Tap to check all the text in the document.

Check to End. Tap to check the text from the insertion point to the end of document.

Check Selection. Tap to check only selected text.

The first misspelled word (or word that is not in the dictionary) appears in the Change To: entry box.

4. Select the action you want to take on this word.

Skip. Tap to ignore this occurrence of the spelling.

Skip All. Tap to ignore all occurrences of the spelling.

Replace. Enter the word correctly in the Change To: box, then tap this button to replace the misspelled word with the new spelling.

Replace All. Enter the word correctly in the Change To: box, then tap this button to replace all occurrences of the misspelled word with the new spelling.

Suggest. Tap to display a menu of alternative spellings for the misspelled word. Tap the spelling you want to use, then tap the Use This Suggestion button. If no suggestion is appropriate, tap Cancel, then enter the word correctly in the Change To: box. The spell checker replaces the word with the new spelling and proceeds with its checking.

Add to User Dictionary. Tap to add the word to the user dictionary. From this point forward, the spell checker will accept this spelling in this and other documents.

Edit User Dictionary. Tap to edit the user dictionary. For instructions, see the next procedure.

5. When you are finished checking the spelling, a message window appears. Tap OK to return to GeoWrite.

To edit the user dictionary (Levels 2-4)

You can add and delete words in the user dictionary.



1. Tap the Check Spelling button on the Style bar.

or

Choose Check Spelling from the Edit menu.

A dialog box appears.

2. Tap Edit User Dictionary. A dialog box appears.
3. Complete the dialog box, selecting the options you want.

Words in User Dictionary. This lists the words in the user dictionary.

Delete Selected Word. To delete a word, select it from the list, then tap this button.

New Word. To add a new word, enter it here, then tap Add New Word. If you attempt to add a word that already exists, a message dialog box appears; tap OK and resume.

4. Tap Close to close the Edit User Dictionary dialog box. Then close the Check Spelling dialog box.

USING TEXT STYLE SHEETS

LEVELS 2-4

A *style* is a collection of text and paragraph formats under a common name. A *text style sheet* is the set of all the named text styles used in a document.

You can use a style to apply all the text and paragraph attributes to an object at the same time. You can record the following attributes in a text style:

- Text attributes, including character font, text size, text style, text color, and character width and height
- Paragraph attributes, including alignment, spacing, line spacing, indentations, tab stops, paragraph color, and paragraph spacing

For more information about setting these attributes, see “GeoWrite Basics” in this chapter and “Changing the Text Format” in this section.

Styles make it easy for you to apply a group of attributes to text all at once. This saves you the effort of setting the same attributes for different sections of text. For example, you might want a Title style to automatically center title text and display it in a large, bold font. You could define the character and paragraph formatting for each Title paragraph individually, which might be time-consuming, or you could simply apply the Title style to each paragraph and save time.

When you create a style, you give it a name. Styles help ensure a consistent look for your text. They also make it easier to reformat a document, because changing a style automatically updates paragraphs in that style as well as any styles that are based on that style.

You can save styles in a template so that you can use them over and over. For more information, see “Designing GeoWrite Documents” in this chapter.

Using Default Styles

GeoWrite provides a set of three commonly used styles. You can use them as is, or as a starting point for creating your own custom styles.

Normal. The base style that comes with GeoWrite.

Header. A standard style for a header of a document.

Footer. A standard style for a footer of a document.

Applying a Style

You can change the format of a paragraph simply by applying a style from the style sheet.

To apply a style to a paragraph (Levels 2-4)

1. After selecting the paragraphs you want to change, choose Text Style Sheets from the Paragraph menu. A submenu appears.
2. Choose Apply Style from the submenu. A dialog box appears.
3. Select the style you want, scrolling the list if necessary. GeoWrite applies the style formatting to the selected paragraphs.

To apply a style more quickly (Levels 2-4)

1. After selecting the paragraphs you want to change, tap the Styles drop-down list button on the Style bar. A list of styles appears.
2. Select the style you want. GeoWrite applies the style formatting to the selected paragraphs.

Storing and Recalling Text Attributes Temporarily

You can temporarily store the text and paragraph attributes from one paragraph and then apply them to another without first creating a named style. To do so, you use the Store Style choice. While named styles are saved with your document, styles that you record with the Store Style choice are not saved when you exit GeoWrite.

To store the text attributes (Levels 2-4)

1. Select a paragraph with the attributes you want to store.
2. Tap the Store Style button on the Style bar.



or

Choose Text Style Sheets from the Paragraph menu, and choose Store Style from the submenu.

GeoWrite remembers the attributes of the selected paragraph.

To recall the text attributes (Levels 2-4)

1. Select the paragraphs to which you want to apply the stored attributes.
2. Tap the Recall Style button on the Style bar.

or

Choose Text Style Sheets from the Paragraph menu, and choose Recall Style from the submenu.

GeoWrite applies the saved attributes to the selected text.

Defining a New Style

LEVELS 3-4

You can add a new style to a style sheet by giving it a name and defining its attributes. A *base style* is a style on which other styles depend; new styles are variations on a base style. If you change an attribute in the base style, all dependent styles will change except those that define the attribute uniquely.

For example, suppose you define a style called “Head Level 2” using another style, “Head Level 1,” as its base style. If you add bold to “Head Level 1,” the text in “Head Level 2” also becomes bold. GeoWrite updates all text in both styles with the new attributes.

Alternatively, you can define a style so that its unique attributes change *relative* to changes in the base style. For example, if you set margins in “Indent Level 2” relative to “Indent Level 1,” its base style, and you increase the left margin in “Indent Level 1” by 0.25 inch, GeoWrite increases the left margin in “Indent Level 2” by 0.25 inch as well.

You can also define a new style without using a base style. GeoWrite uses the default attributes or the attributes of selected text as the starting point instead.

To define a new style (Levels 3-4)

1. Select a paragraph with attributes identical or similar to the style you want to create. GeoWrite uses the attributes in the selected (or base) style to define the initial attributes of the new style. You can also start from scratch, with no text selected, using the default text and paragraph attributes.
2. Choose Text Style Sheets from the Paragraph menu. A submenu appears.
3. Choose Define New Style from the submenu. A dialog box appears.
4. Complete the dialog box, selecting the options you want:
Description. Displays a description of the selected style, which changes when you define text and character attributes. The base style appears first, then any changes you have made to character and paragraph formatting.

Display in Tool Bar Drop-Down List. Select whether the style appears in the Styles drop-down list.

Apply to Selection Only (Character Style). Select whether you want to apply the style attributes to selected text only or to the entire paragraph.

Point Size Relative. Select to make point size relative to point size of the base style. Changing the point size in the base style changes the point size in the current style by the same amount.

Margins Relative. Select to make margins relative to margins of the base style. Changing the margins in the base style changes the margins in the current style by the same amount.

Leading Relative. Select to make leading (or line spacing) relative to leading of the base style. Changing the leading in the base style changes the leading in the current style by the same amount.

Name. Enter a new style name. You can use letters, numbers, and spaces. Choose a name that indicates what the style does. For example, you could call a style that contains the name of a chapter “Chapter Name.”

5. Tap Define New Style. GeoWrite applies the new style to the selected text or paragraph. Then close the dialog box.

Changing Styles

LEVELS 3-4

You can change a style in two ways. You can change its visual attributes (text size, paragraph spacing, and so on) or its style attributes (point size relative, margins relative, and so on). If the style serves as the base style for other styles, changes can affect those dependent styles as well.

CHANGING VISUAL ATTRIBUTES

You can change the visual attributes (text and paragraph attributes) of an existing style. Doing so updates all text in the changed style with the attributes you selected.

To change the visual attributes of an existing style (Levels 3-4)

1. After selecting a paragraph in the style you want to change, set any character and paragraph attributes you want for this style. For instructions on how to do this, see “Changing the Text Format” and “Using Color” in this section.
2. Choose Text Style Sheets from the Paragraph menu. A submenu appears.

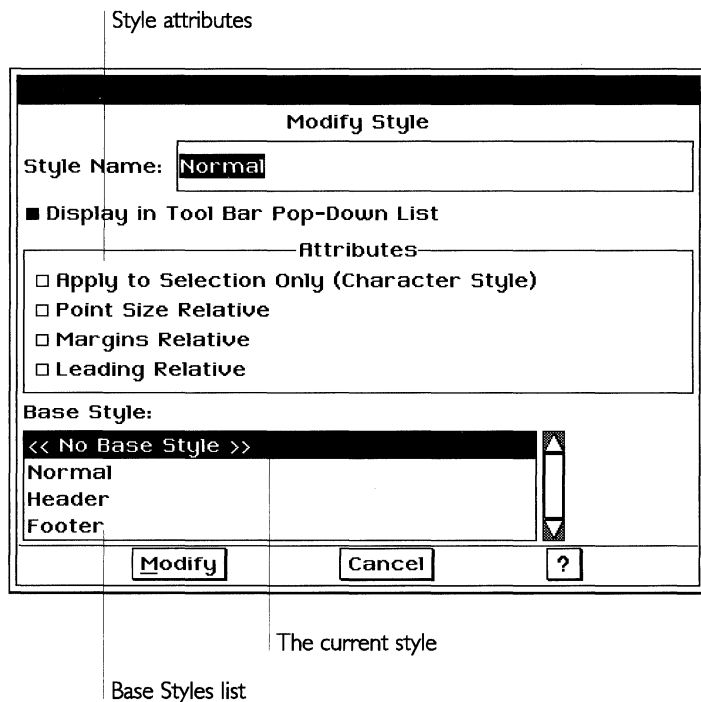
3. Choose Redefine Style from the submenu. GeoWrite updates the style with the formatting in the selected paragraph.

CHANGING STYLE ATTRIBUTES

You can change the style attributes of an existing style. If the style serves as the base style for other styles, changes can affect those styles as well.

To change the style attributes of an existing style (Levels 3-4)

1. Choose Text Style Sheets from the Paragraph menu. A submenu appears.
2. Choose Manage Styles from the submenu. A dialog box appears and the current style is highlighted.
3. Find the style you want to change, scrolling the list if necessary, and then select it. The text in the Description box changes to show the style you have selected.
4. Tap Modify. A dialog box appears:



5. Complete the dialog box, selecting the options you want.
For a description of these options, see “Defining a New Style” in this section.
6. You can change the base style if you want by selecting it in the list. If you do not want a base style, choose <<No Base Style>>.
7. Tap Modify to change the style definition. The Modify Styles dialog box disappears.
8. Tap Apply. GeoWrite applies your changes to the selected text. Then close the dialog box.

Deleting a Style

LEVELS 3-4

You can delete a style you no longer need. This eliminates clutter in the style sheet. Once you delete a style, you cannot recover it.

NOTE

You cannot delete the Normal, Header, or Footer style.

To delete a style (Levels 3-4)

1. Choose Text Style Sheets from the Paragraph menu. A submenu appears.
2. Choose Manage Styles from the submenu. A dialog box appears.
3. Select the style you want to delete from the list. If the selected style has a base style, the name of the base style appears in the style description box.
4. Tap Delete. GeoWrite deletes the selected style. GeoWrite attaches the base style to any paragraphs in the style you just deleted. However, GeoWrite does not apply the attributes of the base style. The selected paragraphs maintain their current attributes.

or

Tap Delete and Revert. GeoWrite deletes the selected style, attaches the base style to any paragraphs in the style you just deleted, and overrides the current attributes of those paragraphs with the attributes in the base style.

5. Tap Close to close the dialog box.

Reverting to a Base Style

LEVELS 3-4

If you select a paragraph, you can change its attributes from those of the current style to those of the base style of the current style.

To revert to the base style (Levels 3-4)

1. After selecting the text you want to change, choose Text Style Sheets from the Paragraph menu. A submenu appears.
2. Choose Revert to Base Style from the submenu. GeoWrite applies the base style to selected paragraphs, overriding the current attributes of selected paragraphs with the attributes of the base style.

Using Style Sheets from Other Documents

LEVELS 2-4

You can copy style sheets from another document or template into a document you are working on. That way, you do not need to define the same styles all over again.

To get styles from another document (Levels 2-4)

1. Choose Text Style Sheets from the Paragraph menu. A submenu appears.
2. Choose Bring in Style Sheet from the submenu. A dialog box appears.
3. Select a document or template from the list.
4. Tap Load Style Sheet. GeoWrite imports the styles from the template you selected. If two styles with the same name appear in the template and the document, GeoWrite uses the template style. Then close the dialog box.

IMPORTING AND EXPORTING DOCUMENTS

ALL LEVELS

You can convert documents from other word processors into GeoWrite documents. This is called *importing* a document. The process works in reverse as well: you can also convert an entire GeoWrite document into the format for another word processor. This is known as *exporting* a document.

NOTE

GeoWrite does not import or export headers and footers. Depending on the format you select, other components of the document — such as character and paragraph formatting — may be lost as well.

To import a document from another word processor (Levels 2-4)

1. Choose Switch Document from the File menu. The New/Open dialog box appears.
2. Tap Import. A dialog box appears.
3. Complete the dialog box, selecting the options you want.

Select File and Format for Import. Use the standard file selector controls to select the file you want to import. For more information about file selectors, see Chapter 1.

Formats. If you know the format of the file you want to import, select it from the Formats list. Then only files with that extension will be displayed. If you do not know the format of the file, select No Idea (Auto-Detect) in the Formats box.

File Mask. This box displays the file extension for the selected format. For example, if you select Microsoft Word 4.0, .DOC appears as the extension, and only files with that extension will appear.

NOTE

When importing an ASCII text file, you should select ASCII or Plain Text from the Formats list. If you choose No Idea (Auto-Detect), it may not correctly identify your file as an ASCII file.

4. Tap Import. The dialog box disappears, and a status box appears while the bit map is being imported. It may take a while to convert the document to GeoWrite format and open it. You cannot interrupt this process.

When the document has been completely converted, it appears in a new GeoWrite window.

To export your document to another word processor (Levels 2-4)

1. Open the GeoWrite document that you want to export.
2. Choose Other from the File menu, then choose Export Document from the submenu. A dialog box appears.
3. Complete the dialog box, changing the options you want.

Select Folder and Format for Export. Use the standard file selector controls to select the file you want to export. For more information about file selectors, see Chapter 1.

Formats. Choose the format for the exported file in the Formats box. This should match a format supported by the other word processor.

New File Name. Enter a name for the exported file. The correct extension already appears in this box, so you do not need to enter

- it. Be sure to enter a standard DOS file name. For more information about DOS file names, see Chapter 1.
4. Tap Export. An export progress box appears while GeoWrite saves the converted document under the new name. If the document is large, this process may take several minutes. You cannot interrupt the process.

Designing GeoWrite Documents

This section describes the advanced features that help you create documents using templates, sections, graphics, and page layout in GeoWrite's DTP (desktop publishing) mode. Some features described in "Designing GeoWrite Documents" become available at Level 2, but most become available at Levels 3 and 4, or at Level 4 only.

MANAGING TEMPLATES

LEVEL 4

A *template* is a special document that you use as a model to create similar documents. It contains the text, graphics, formatting, and special layouts common to all documents of a particular type. For information about creating, changing, and deleting templates, see Chapter 3.

USING SECTIONS

LEVELS 2-4

A *section* is a portion of a document with custom formatting for any of the following characteristics:

- Headers and footers
- Page margins (top, bottom, left, and right)
- Multiple columns with spaces and rulers
- Left and right pages

- Starting page number
- Text and graphics that appear on every page

Variations in these characteristics can distinguish one section from the next.

Each document has at least one section. When you create a new document, GeoWrite creates a section called Main Section. Thereafter, you can add as many sections as you want.

For example, when you create a title page, GeoWrite automatically creates a section called Title Page. Similarly, for a document with several chapters, you can create a separate section for each chapter. That way, you can put a different chapter title in the header or footer of each section.

At Level 2 and above, you can format the section using the Page Setup function and Master Pages. At Level 4, you can add, rename, and delete sections in a document.

Planning a Document with Sections

LEVEL 4

Sections typically appear in more complex documents, such as books or reports, rather than in simple ones, such as short memos or letters. Before creating a complex document, think about how to divide it into distinct sections and what kind of page formatting and layout will be similar for all sections.

For example, a lab report for a science experiment might have four separate sections: the introduction, a description of the experiment, the results of the experiment, and conclusions about the results. All sections in the report might have the report title in the header, the page number in the footer, and a very wide margin. The header might also contain the section name, which varies from section to section.

When you have a general idea of how you want to organize and format your document, you create it and make any formatting and layout changes to the Main Section (such as modifying the page setup and the Master Page). Then you create all the other sections in the document. GeoWrite copies the section formatting automatically to each new section you create, saving you formatting and layout time.

In the lab report example, you would first create the new document, then change the headers, footers, and margins in the Main Section. Then you would create the other three sections. Finally, you would add the section name to the header of each section.

Managing Sections

LEVEL 4

You can add, rename, and delete sections in a document.

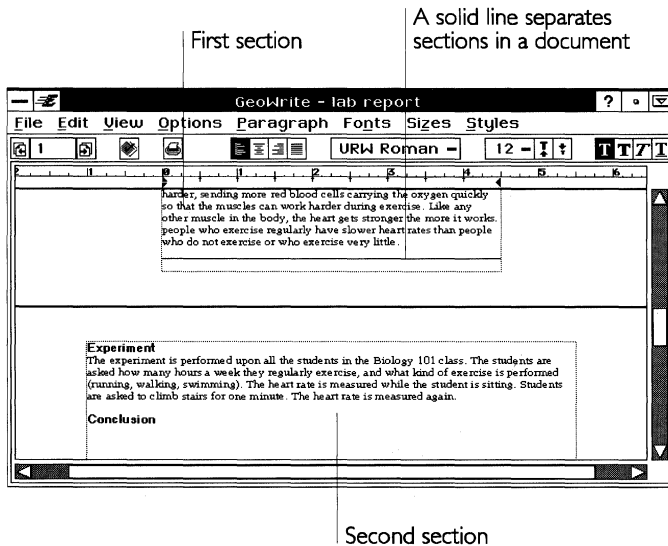
ADDING A SECTION

You add a new section to a document by either inserting or appending it.

- *Inserting* puts the new section in front of an existing section. This is useful for adding the first section to a document.
- *Appending* puts the new section after an existing section. This is useful for adding the last section to a document.

To put a new section between existing sections, you can use either method.

When you add a section, GeoWrite adds a blank page with a section break. In the Page display mode, you can see how a section break separates sections in a document:



You also add a section when you create a new title page. For more information, see "Formatting GeoWrite Documents" in this chapter.

To insert or append a new section (Level 4)

1. Choose Section from the Layout menu. A submenu appears.

2. Choose Insert Section or Append Section from the submenu. A dialog box appears, containing a list of all current sections.
3. If you are inserting a new section, select the section ahead of which you want to insert the new section.
If you are appending a new section, select the section after which you want to insert the new section.
4. Enter a name in the New Section Name box. You can use letters, numbers, and spaces. The name should indicate what the section contains. For example, a logical name for a section that contains introductory text would be “Introduction.”
5. Tap Insert Section or Append Section. GeoWrite adds the new section to the document.

RENAMING AND DELETING A SECTION

You can change the name of any section in a document, including the Main Section and the Title Page section, to make the section name more descriptive or consistent with other section names. You can also delete a section you no longer need. Deleting a section deletes all the information it contains.

To rename or delete a section (Level 4)

1. Choose Section from the Layout menu. A submenu appears.
2. Choose Rename Section or Delete Section from the submenu. A dialog box appears.
3. In the sections list, select the section you want to rename or delete.

If you are renaming a section, enter a name in the New Section Name box. You can use letters, numbers, and spaces. The name should indicate what the section contains. For example, a logical name for a section that contains the lab results in a report would be “Lab Results.”

4. Tap Rename or Delete.

NOTE

You cannot delete a section if it is the only section in a document.

SELECTING A SECTION

To format a section, you must first select it.

To select a section (Level 4)

- Tap the pen anywhere in the section you want to format.

DISPLAYING THE SECTION NAME

The section name can appear in the upper left corner of the document to remind you where you are. This is for display purposes only; it does not appear on the printed page when you print a document.

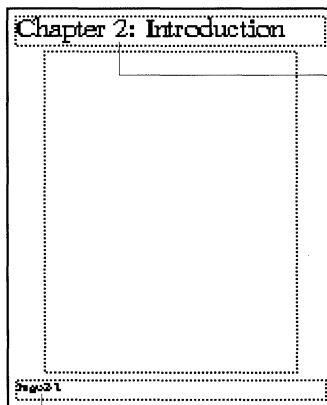
To display the section name (Level 4)

1. Choose Other Settings from the Options menu.
2. Select Display Section Name. The section name appears in the upper left corner of the document.

SETTING THE STARTING SECTION NUMBER

Sections are numbered sequentially starting with the first section in a document. You can use this internal numbering feature to display the section numbers for parts of a document or for page numbering that includes the section number. By setting the starting section number, you can control the number that appears for a section. By default, the starting section number is 1.

Suppose, for example, that a report has three separate chapters (Chapters 1, 2, and 3) that are individual sections. By setting the starting section number to 1 and inserting the special character called Section Number in the chapter title and footer, you can display the section number automatically.



Using the special character Section Number, the section number for the second section of the document appears in the chapter title.

It also appears in the footer.

If this document has two other sections ahead of the first chapter, such as a title page and a table of contents, you can still achieve the same result. Simply set the starting section number to -2.

To set the starting section number (Level 4)

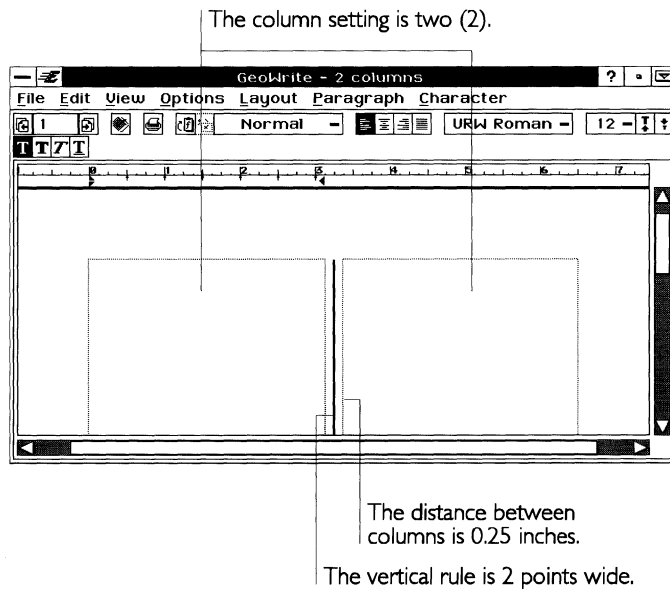
1. Choose Section from the Layout menu. A submenu appears.
2. Choose Set Starting Section # from the submenu. A dialog box appears.
3. Select the starting section number.
4. Tap Apply to apply your changes. Then close the dialog box.

Using Page Setup

LEVELS 2-4

You can use the Page Setup option on the File menu to set the page margins, columns, left and right pages, and the starting page number in one section at a time.

For example, the following sample document shows the result of setting the column characteristics:



Do not confuse Page Setup with Page Size on the File menu. Page Size applies page formatting (type, size, layout, width, and height) to the *entire* document, including all sections. Page Setup applies

to one section. If a document has only one section, then it applies to the whole document.

To change the page setup for a section (Levels 2-4)

1. Tap the pen anywhere in the section where you want to change the page setup.
2. Choose Page Setup from the File menu. A dialog box appears.
3. Complete the dialog box, changing the options you want.

Section to Change Page Setup For. Indicates the section to which the settings apply.

Starting Page Number. Select the starting page number for the section. Use it instead of Follow Last Section to set the page number regardless of any numbering in previous sections. For example, if a document has a Title Page section and a Main Section, you might want to set the starting page number in the Main Section to 1.

Follow Last Section. Select to continue page numbering from the previous section. Use it instead of Starting Page Number.

Columns. Select the number of columns in the section.

Spacing. If you have multiple columns in the section, select the distance between them (as well as the relative column width). Spacing is the same between all columns. By default, this setting is 0.125 inch.

Rule Width. If you have multiple columns in the section, select the width of a vertical rule. By default, this setting is zero (0) points, or no vertical rule.

Master Pages. Select whether you want a single page or left (even) and right (odd) pages that look like mirror images of each other. You would select Two, for example, if you wanted the page number or section name to always appear on the outside margin of a page: the left margin on a left page and the right margin on a right page. By default, this setting is one Master Page.

Margins. Select the left, right, top, and bottom margins. By default, these settings are one inch each.

4. Tap Apply to apply your changes to the selected section. Then close the dialog box.

Using Master Pages

You can specify the kind of information that repeats on each page of a section. For example, you might want a logo to appear on

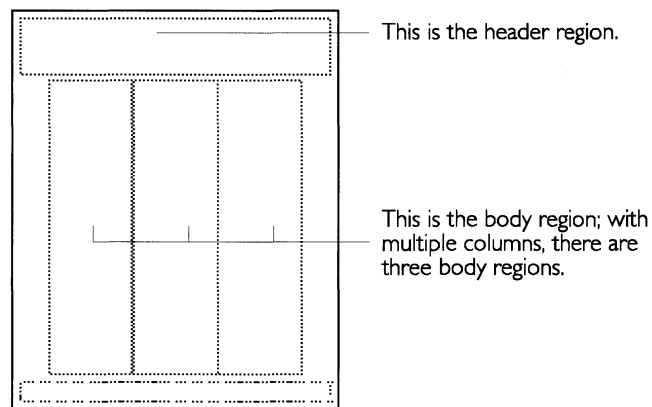
every page, or you might want to make the header bigger than the body text on every page.

WHAT IS A MASTER PAGE?

The Master Page is a *prototype* of the way text and graphics appear on every page in a section. The Master Page defines the section's header and footer, the area where the body text appears on a page, and graphics (such as a logo) that repeat on every page.

When you add a page to a section, GeoWrite uses the layout and information in the Master Page to create the new page. Once it is created, you can modify the document to suit your needs without affecting the Master Page.

Each section has either one or two Master Pages, depending on the Master Pages setting in Page Setup. By default, each section has one Master Page. The following illustration shows a typical Master Page designed with three columns:



CHANGING THE MASTER PAGE

There are several ways to change the Master Page:

- You can change the header and footer. For more information, see “Formatting GeoWrite Documents” in this chapter.
- You can change the column settings, Master Page settings, or margins in Page Setup. For more information, see “Using Page Setup” in this chapter.
- You can edit the Master Page directly, which gives you more precise control over its contents.

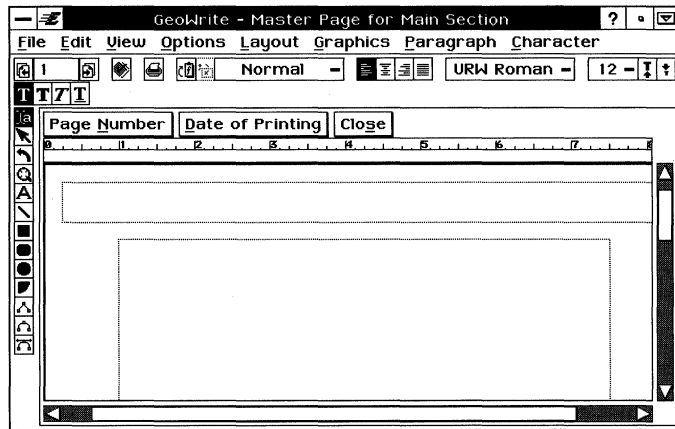
When you edit the Master Page, GeoWrite updates the pages in the document with any changes you have made. For example, if you

change the footer on the Master Page, GeoWrite applies that change to the footer on every page in the section.

To edit the Master Page for a section (Level 4)

1. Select the section for which you want to change the Master Page by positioning the insertion point anywhere in that section.
2. Choose Edit Master Page from the Layout menu.
3. If the document has left and right Master Pages (that is, Master Pages is set to Two in the Page Setup dialog box), a dialog box appears, letting you choose which Master Page you want to edit. Tap the appropriate button to edit either the left or the right Master Page.

The Master Page appears:



Change the elements on the Master Page to your liking.

Page Number button. Tap this button to put the page number at the insertion point.

Date of Printing button. Tap this button to put the date of printing at the insertion point.

4. Make your changes to the Master Page by doing one of the following:

Add text or graphics you want to the header or footer.

or

Resize or move the text region for the header, footer, or body text (including columns). For more information, see the next section, "Changing Text Regions on the Master Page."

5. When you are finished, tap Close. GeoWrite updates all affected pages in the section with any changes you have made.

CHANGING TEXT REGIONS ON THE MASTER PAGE

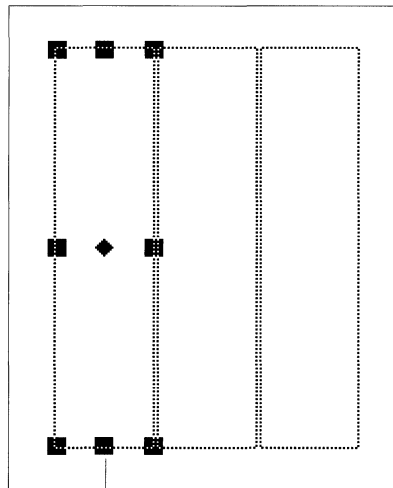
The *text region* defines where text flows on the page. You can move and resize the text region for the header, footer, and body text on a Master Page.

You might want to do this, for example, if you wanted to set a custom width for columns on a page. When you set the number of columns in Page Setup, GeoWrite calculates the column width for you. You can adjust the width or position of these columns by editing the Master Page.

To select a text region (Levels 2-4)



1. Tap the Pointer tool on the Drawing tool bar.
2. Tap the pen on a border of the text region (header, footer, or body text). Handles appear along the border of the text region to indicate that it is selected.



Handles show that the text region is selected. Selecting a text regions allows you to move it or resize it.

To deselect a text region (Levels 2-4)

- Tap anywhere outside or inside the border of the text region. The handles disappear.

To change the size of a text region (Levels 2-4)

- After selecting the text region you want to resize, drag any handle until the text region becomes the size you want.

To move a text region (Levels 2-4)

- After selecting the text region you want to move, drag the move handle to move the text region where you want it to appear. For more information on the move handle, see “Using a Graphic Frame” in this chapter.

To copy and paste a text region (Levels 2-4)

1. Select the text region you want to copy.
2. Choose Copy from the Edit menu.

or



At Levels 3-4, tap the Copy tool on the Function bar. GeoWrite copies the text region to the clipboard.

3. Tap the insertion point where you want to paste the text region.
4. Choose Paste from the Edit menu.

or



At Levels 3-4, tap the Paste tool on the Function bar. GeoWrite pastes the text region to the document.

To delete a text region (Levels 2-4)

1. Select the text region you want to delete.
2. Choose Delete from the Edit menu.

or



At Levels 3-4, tap the Cut tool on the Function bar to cut the text frame and copy it to the clipboard. That way, you can paste the frame into another location.

REAPPLYING THE MASTER PAGE TO A SECTION

You can make custom changes to individual pages in a document. For example, you can move a column on one page without affecting the corresponding column position on other pages in the same section.

When you edit the Master Page, you can decide whether or not GeoWrite applies your edits on the Master Page to all pages in the section, overwriting any custom formatting on individual pages. If you select Automatic Layout Recalc from Other Settings in the

Options menu, GeoWrite automatically updates all pages in the section with your changes to the Master Page. If you deselect this option, GeoWrite does not override individual page formatting automatically.

You can also abandon any changes you make to the Master Page before applying them to the pages in the section. For example, suppose you change the column widths on the Master Page, but later decide that you want to undo those changes because it will affect the formatting on specific pages. You can undo them before GeoWrite updates pages in the section.

To apply the Master Page to all pages in a section (Level 4)

1. After positioning the insertion point in the section whose Master Page you want to change, choose Section from the Layout menu. A submenu appears.
2. Choose Reapply Master Page from the submenu. A dialog box appears.
3. Select from the choices in the dialog box:

Reset, Then Reapply. Tap this button to reset the Master Page before reapplying your changes to all pages in this section.

Reapply Existing. Tap this button to reapply the Master Page without resetting it.

USING GRAPHICS IN A DOCUMENT

LEVELS 2-4

This section shows you how you can use graphics in a GeoWrite document. It discusses some, but not all, of the graphics features available in GeoWrite. For more information on drawing and graphics, see Chapter 8.

A picture is worth a thousand words. Adding graphics to your document can enhance what you are trying to say by illustrating a point, clarifying a discussion, or providing more information about a topic.

You can use any graphic image that you can paste from the clipboard. For example, you could create a graph in GeoCalc, copy it to the clipboard, and paste it directly into a GeoWrite report that discusses the graph.

At Level 2 and above, you can add a graphic frame — a rectangle with a simple border around it — anywhere on a page. You can paste graphics directly onto a graphic frame, change its

appearance, and control the way it fits into the text in a document. You can also paste graphics directly into a document without using a graphic frame.

At Levels 3 and 4, you can even create a graphic image within GeoWrite using the tools on the Drawing tool bar. That way, you can create a drawing without leaving your document. Level 3 offers many basic drawing tools, and Level 4 offers more advanced drawing features.

Using a Graphic Frame

LEVELS 2-4

A *graphic frame* is a rectangle you can use to put a frame around text or graphics in a document. You can fill a graphic frame with color and patterns, change the color and thickness of its border, and make text wrap around it, wrap inside it, or even flow right through it.

ADDING A GRAPHIC FRAME

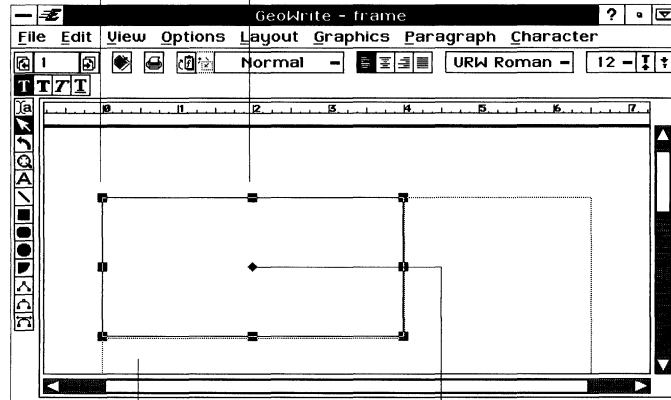
To use a graphic frame, you must first add it to your GeoWrite document.

To add a graphic frame (Levels 2-4)

1. Choose Create Graphic Frame from the Layout menu.
At Level 2, if this is the first graphic frame you have added during your GeoWrite session, a dialog box appears explaining that graphics tools are available. Tap OK.
2. Tap the pen where you want to anchor the upper left corner of the graphic frame and drag down and to the right until the graphic frame is the size you want. An outline shows the borders of the graphic frame as you drag it.

When you lift the pen, the graphic frame appears with handles along its borders, as shown in the following illustration:

The handles along the borders of the graphics frame indicate that it's selected. To resize the graphics frame, drag a handle.



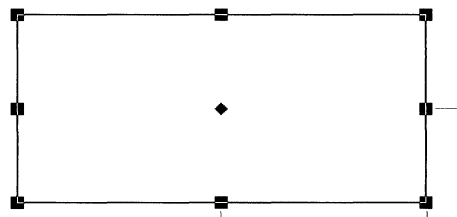
The text region shows where the text goes.

To move the graphics frame, drag the move handle.

CHANGING A GRAPHIC FRAME

You can resize, move, and delete a graphic frame. To change a graphic frame, you must select it. When you add a new graphic frame, it is selected automatically. The border of a graphic frame has handles when it is selected.

You select a graphic frame the same way you select a text region. Selecting a graphic frame makes it the target for subsequent operations.



The handles along the borders of the graphics frame indicate that it is selected.

You also deselect, resize, move, copy, paste, and delete a graphic frame the same way you perform these procedures with a text region.

SETTING ATTRIBUTES

Color and patterns can add emphasis and appeal to a graphic frame. You can define colors and patterns for the inside fill (*area attributes*) and border (*line attributes*) of a graphic frame. You can fill the space inside with color or patterns, or you can leave it empty (unfilled).

Although the unit display is black and white, you can define colors for selected graphic frames. Then if you move a GEOS file to a machine with a color monitor, the colors you defined appear on screen. Similarly, if you have a color printer, the colors you defined appear on the printed copy of your document.

When using color and patterns in a graphic frame, consider their impact on text, background, and graphics. Do they also have colors and patterns? In combination, do the colors and patterns help communicate what you are trying to convey? You might need to adjust the colors and patterns for any of these objects to clarify any point or message you may be making.

For more information about setting area and line attributes for a graphic frame, see “Using the Drawing Tools” in Chapter 8.

Pasting Graphics Into a Document

LEVELS 2-4

You can paste any graphic from the clipboard into a GeoWrite document. You can paste it into a graphic frame, if you want, or directly into the text.

To copy and paste a graphic object (Levels 2-4)

1. In the application you are using to draw the graphic (GeoCalc or even GeoWrite itself), select the graphic object you want to copy. You can select and copy more than one graphic object at a time.
2. Choose Copy from the Edit menu.

or



At Levels 3-4, tap the Copy tool on the Function bar.

GeoWrite copies the selected graphic object to the clipboard.

3. Open the GeoWrite document into which you want to paste the graphic object.
4. Tap the location where you want the graphic object to appear.

- Choose Paste from the Edit menu.

or



At Levels 3-4, tap the Paste tool on the Function bar. GeoWrite pastes the graphic object from the clipboard.

- Resize or move the graphic object as desired.

To change the size of a graphic object (Levels 2-4)

- After selecting the graphic object you want to resize, drag any handle until the graphic object is the size you want.

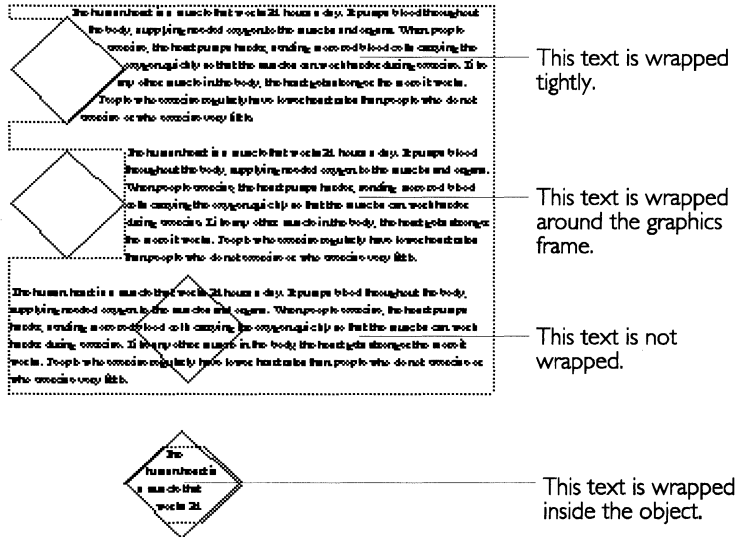
To move a graphic object (Levels 2-4)

- After selecting the graphic object you want to move, drag the move handle to move the object to another location.

Wrapping Text

LEVEL 4

Wrapping text determines how a graphic fits in with the text. Text can go outside or inside the borders of a graphic object or it can flow right through the graphic object. The following illustration shows examples of each option:



To set text wrapping (Level 4)

- After selecting the graphic frame you want to use, choose Wrap Type from the Graphics menu. A submenu appears.

2. Select an option from the submenu:

Wrap Tightly. This option wraps text tightly around the borders of the selected graphic object.

Wrap Around Rectangle. This option wraps text around a rectangular area that completely encloses the selected graphic object.

Wrap Inside Object. This option wraps text inside the border of the selected graphic object.

Don't Wrap. This option suppresses text wrapping. The text goes right through the object.

USING DESKTOP PUBLISHING MODE

LEVEL 4

GeoWrite has a DTP (desktop publishing) mode that you can use for page layout tasks. This section describes when and how to use DTP mode to create a GeoWrite document.

Generally, you use DTP mode for shorter documents that have a mixture of graphics and text, lots of layout work on each page, and a limited page length. For example, DTP mode would be ideal if you wanted to create a four-page brochure with graphs and drawings. For short memos, long reports, or books (documents with pages of text only), DTP mode may not be necessary.

When you use GeoWrite as a page layout tool, it gives you more direct control over pagination in a document. DTP mode focuses more on the design of individual pages than on the flow of text through a document. If adding text causes the text to “spill” past the end of a page, GeoWrite automatically creates an additional page. On the other hand, if deleting text removes all the text on a page, GeoWrite does not automatically delete the page. This is where DTP mode makes things easy for you.

For example, suppose you lay out a six-page newsletter with graphics on every page, and you want to insert two pages between the fourth and fifth pages without disturbing the other pages. In DTP mode, you simply insert the pages; GeoWrite moves the fifth and sixth pages down, including graphics.

Working with Documents in DTP Mode

When you activate DTP mode, you can insert, append, and delete individual pages in a document.

ACTIVATING DTP MODE

You can activate DTP mode so that GeoWrite does not delete pages automatically and unexpectedly alter your page count. You can do this whenever you want, even after you have started editing a document.

To activate DTP mode (Level 4)

- After choosing Other Settings from the Options menu, select DTP Mode.

ADDING PAGES

You can add a page to a document by inserting or appending it. Inserting puts the new page before the current page (the page where the insertion point is). Appending puts the new page after the current page. When you add a page, the text flows onto the new page. In DTP mode, you can create the number of pages you need first, before filling them with information.

To insert or append a new page (Level 4)

1. To insert or append a new page, perform one of the following actions as appropriate:
 - To insert a new page, tap the pen on the page before which you want to insert the new page.
 - To append a new page, tap the pen on the page after which you want to append the new page.
2. Choose Page Layouts from the Layout menu. A submenu appears.
3. Choose Insert Page (Before This One) or Append Page (After This One) from the submenu. A confirmation message appears.
4. Tap Yes. GeoWrite adds the new page to your document.

DELETING PAGES

You can delete a page you no longer need. Deleting a page deletes all the information on the page. However, you can prevent GEOS from deleting a page that contains graphics.

NOTE

You cannot delete a page if it is the only page in a document.

To keep pages with graphics from being deleted (Level 4)

- After choosing Other Settings from the Options menu, select Do Not Delete Pages With Graphics.

To delete an existing page (Level 4)

1. Tap the pen on the page you want to delete.
2. Choose Page Layouts from the Layout menu. A submenu appears.
3. Choose Delete Page from the submenu. A dialog box appears, asking you to confirm that you want to delete the current page.
4. Tap Yes. GeoWrite deletes the current page.

Additional GeoWrite Features

This section describes the additional features of GeoWrite that let you view documents in different ways, insert special characters, work with multiple columns and footnotes, and merge data with other GEOS applications. Some features described in “Additional GeoWrite Features” are available at Level 2, but most are available at Levels 3 and 4, or at Level 4 only.

VIEWING YOUR DOCUMENT

LEVELS 3-4

This section shows you how to change the way GeoWrite displays a document so that you can see what you have created from different perspectives. It also describes how to show invisible characters (such as tabs, paragraph marks, and page breaks) in a document when you need to know where they are.

You can also change the way a document appears on screen by zooming, scaling, viewing percentages, and using other view options. For more information on zooming and scaling, see Chapter 3.

Changing Display Modes

A *display mode* determines the amount of information in a document that appears on screen. Depending on the display mode you have set, GeoWrite displays or hides such elements as graphics, text formatting, page layout (multiple columns and margins), headers, footers, and so on.

GeoWrite has five display modes from which to choose:

Page. This mode displays all the information on the screen. The document appears the way it would look if printed.

Condensed. This mode displays text and text formatting in a single continuous column. Graphics do not appear, but the space they occupy appears as white space.

Galley. This mode is the same as Condensed except that it removes any white space that results from page breaks.

Draft With Styles. This mode displays text and text formatting in a single wide column. Graphics are completely hidden.

Draft Without Styles. This mode displays text in a single font and in a single wide column. Graphics are completely hidden.

You can switch display modes depending on what you want to look at and work with in a document. For example, if you want to edit text without being concerned about special formatting, page layout, graphics, and so on, you can choose the simplest display mode (Draft Without Styles). On the other hand, to fine tune the way everything looks in a document before printing it, you can choose the most complex display mode (Page).

The simpler display modes are generally faster to work in than the more complex ones because GeoWrite does not need to perform as many calculations to display a document. Also, the simpler the display mode, the less “busy” the screen appears.

The display mode applies to the way the entire document appears, not just to individual sections or pages. Changing the display mode does not change the information in a document, nor does it change the way the document prints; it merely changes the way the document appears on screen.

To change the display mode (Levels 3-4)

1. Choose Display Modes from the View menu. A submenu appears.
2. Select the display mode you want. GeoWrite refreshes the screen and displays the document in the display mode you selected.

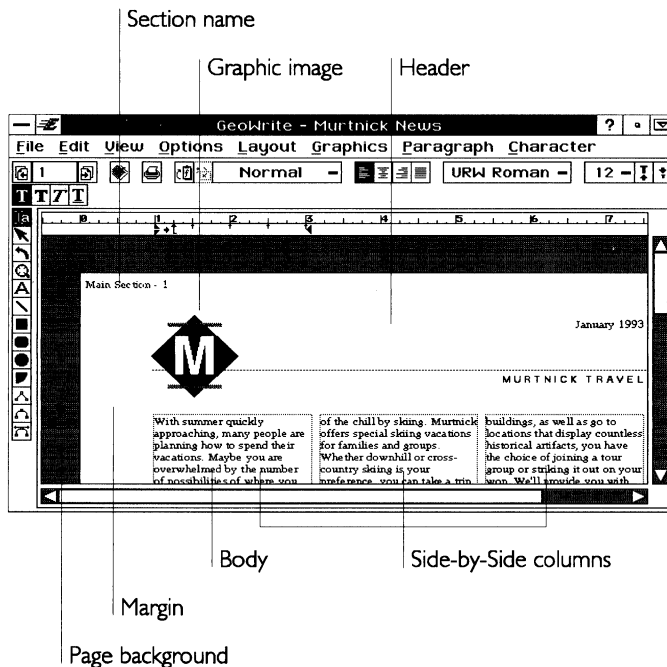
NOTE

Refreshing the screen can take time when you are changing display modes, particularly for complex documents that have both text and graphics.

PAGE DISPLAY MODE

The Page display mode, GeoWrite's default mode, shows you most completely what a document would look like when printed. It shows you everything in the document, including text formatting, page layout (side-by-side columns and margins), graphics, headers, and footers. GeoWrite also displays the section name if you have selected Display Section Name in Other Settings under the Options menu.

If you have switched to another display mode, you may want to switch back to Page display mode to fine tune document formatting before printing. Page display mode is the only mode in which you can see your page exactly as it will print. It is also the only mode in which you can manipulate graphic images, adding, deleting, drawing, moving, and resizing them as desired.

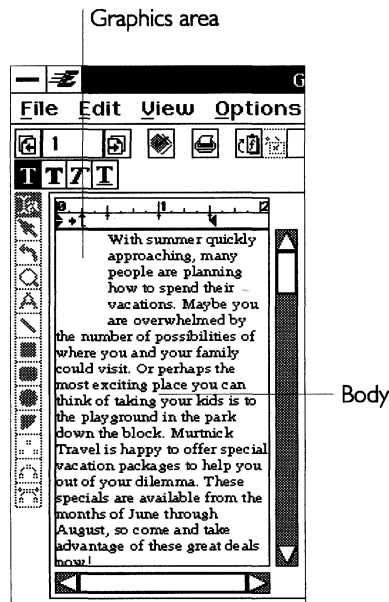


GALLEY AND CONDENSED DISPLAY MODES

The Galley display mode shows all text formatting but displays only one continuous column of text. It hides headers and footers, page layout (side-by-side columns and margins), and the section name. It simplifies the display by putting white space where a

graphic would appear; however, you cannot manipulate the graphic.

Use the Galley display mode when you want to see and work with text and text formatting but not graphics and page layout. For instance, you might need to know *where* graphics appear in the text, but not the details of what they look like.

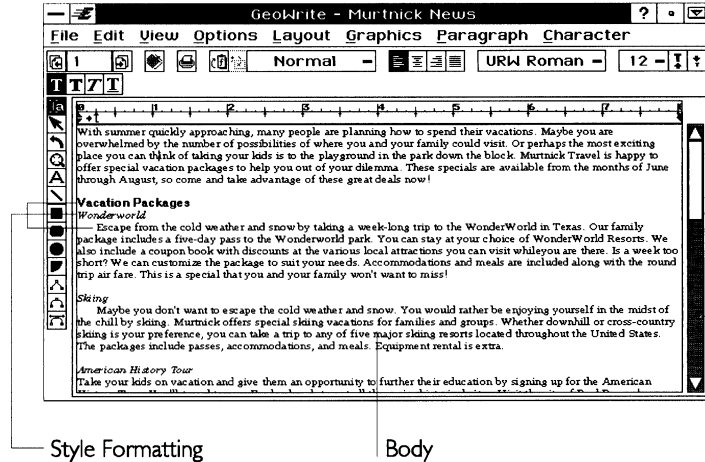


The Condensed display mode is the same as Galley mode, except that it displays any white space resulting from column or page breaks.

DRAFT WITH STYLES AND DRAFT WITHOUT STYLES DISPLAY MODES

The Draft With Styles display mode shows you text formatting, but displays only one column of text across the entire screen. It differs from Galley and Condensed in that it hides the page layout, graphics, headers, footers, and section name.

Use the Draft With Styles display mode to work with text and text formatting, but not with graphics and page layout. Because it fills an entire screen, this mode is especially useful for editing text in sections with multiple columns. You can focus on what you are writing, not on how it looks on the page.

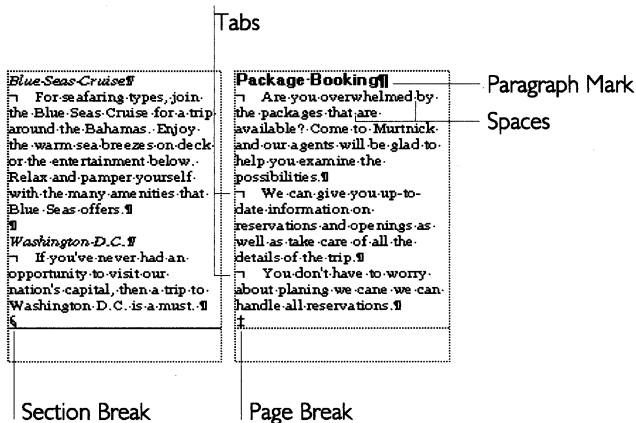


You may have an initial delay when switching to or from this display mode, because GeoWrite needs to recalculate before it can display the information properly on screen.

Draft Without Styles is the same as Draft With Styles, except that it makes text formatting homogenous, displaying all text in a plain font instead of the underlying text formatting. This is the fastest way to edit text, because GeoWrite does not need to perform as many calculations to display text on screen as you scroll the document. To ensure fast performance, you cannot zoom the document or choose other view options in this display mode.

Displaying Invisible Characters

Invisible characters are non printing characters that you enter but do not normally see on screen, such as spaces, tabs, paragraph marks (carriage returns), page and column break marks, and section break marks.



You can display invisible characters to see what you have entered and to edit them. For example, you might want to know whether you have entered unwanted extra spaces in your document. The following table shows the on-screen symbols that represent invisible characters:

SYMBOL	CHARACTER REPRESENTED
¶	Paragraph mark (carriage return)
↵	Tab
·	Space
§	Section break
‡	Page break

To display invisible characters (Levels 3-4)

1. Choose Other Settings from the Options menu. A submenu appears.
2. Select Show Invisibles. GeoWrite displays the invisible characters.

DISPLAYING COUNTS

LEVELS 2-4

GeoWrite counts the number of characters, words, lines, and paragraphs in a document. You can use this information when your document needs to be a minimum or maximum size, as when a report must be 250 to 300 words long, or an article that cannot exceed 30 lines.

To view document counts (Levels 2-4)

1. Choose Counts from the Edit menu. A dialog box appears.
2. Tap Close to close the dialog box.

NOTE

You can make changes to the text while the dialog box is visible, then recalculate the counts if you want to see the impact of a change to the document.

To recalculate document counts (Levels 2-4)

1. Choose Counts from the Edit menu. A dialog box appears.
2. Make any changes that affect the number of characters, words, lines, or paragraphs in the document.
3. Tap Count Again. Close the dialog box.

INSERTING SPECIAL CHARACTERS

LEVELS 2-4

You can insert special characters in a document that display dates, times, and numbers. Special characters are useful because they save you from entering and calculating information. For example, if you want the current date in a letter template to be updated each day, use a special character instead of re-entering the date every day. Some special characters that are available at Levels 3 and 4 are not available at Level 2.

A page break is another kind of special character. For more information, see “Controlling Pagination” in this chapter.

You can search a document for these special characters. For more information, see “Formatting GeoWrite Documents” in this chapter.

Inserting the Current Date or Time

You can insert the current date in a document. You might do this to put a date at the top of a letter or in a memo. You can specify either of two formats: longhand or numeric. Alternatively, you can insert special date characters to add the current date in a different format. For more information, see “Inserting Special Dates and Times” in this chapter.

You can also insert the current time in a document. You might do this to “time-stamp” a fax or journal entry. The time appears in the HH:MM:SS format (hours:minutes:seconds). Alternatively, you can insert special time characters to add the current time in a different format. For more information, see “Inserting Special Dates and Times” in this chapter.

To insert the current date or time (Levels 2-4)

1. After moving the insertion point to the place where you want to insert the current date or time, choose Insert Special from the Edit menu. A submenu appears.
2. Select an option from the submenu:

Longhand Date. Longhand date inserts the current date in a longhand format (for example, Friday, December 31, 1993).

Numeric Date. Numeric date inserts the current date in a numeric format (for example, 12/15/93).

Current Time. This inserts the current time in the HH:MM:SS format (for example, 12:45:59 PM).

The date or time is entered just as if you had entered it yourself so that you can change it later.

Inserting a Number (Counter)

GeoWrite keeps track of certain information in a document automatically, such as the current page number in the current section or document, the number of pages in the current section or document, the current section number, and the total number of sections. To display any of these numbers, you insert the appropriate special number character in your document in the format you want.

For example, you might use special numbers in a footer to display page numbers that restart in every section; page numbers in the first section might be 1-1, 1-2, 1-3, and so on, while page numbers in the second section might be 2-1, 2-2, 2-3, and so on.

NOTE

Once you insert special numbers, you cannot change their values; their values depend on internal GeoWrite calculations.

To insert a special number (Levels 3-4)

1. After moving the insertion point to the place where you want to insert the number, choose Insert Special from the Edit menu. A submenu appears.
2. Choose Number from the submenu. A dialog box appears.
3. Select the number type from the Type list:
 - Page Number.** Displays the current page number in the document. You can set the starting page number for a document.
 - Page Number in Section.** Displays the current page number in the current section. You can set the starting page number for a section.
 - Number of Pages.** Displays the total number of pages in the document.
 - Number of Pages in Section.** Displays the total number of pages in the current section.
 - Section Number.** Displays the current section number. The value of this number depends on the starting section number. For more information, see “Designing GeoWrite Documents” in this chapter.
 - Number of Sections.** Displays the total number of sections in the document.
4. Select the format from the Format list: Number, Uppercase Letter, Lowercase Letter, Uppercase Roman, or Lowercase Roman.
5. Tap Insert in the dialog box. GeoWrite inserts the number from the list in the format you specified.

For information about setting the starting page number, see “Designing GeoWrite Documents” in this chapter.

Inserting Special Dates and Times

GeoWrite keeps track of certain date and time information automatically, such as the current date and time as well as the date and time a document was created, revised, or printed. To display any of these dates or times, you insert the appropriate special date or time character in your document, in the format you want.

For example, you might use special dates or times in a footer to display the date or time when you last printed or revised a document.

NOTE

Once you insert special dates or times, you cannot change their values; their values depend on internal GeoWrite calculations. However, you can change the value when you insert the current date or time. For more information, see “Inserting the Current Date or Time” in this chapter.

To insert a special date or time (Levels 3-4)

1. After moving the insertion point to the place where you want to insert the date or time, choose Insert Special from the Edit menu. A submenu appears.
2. Choose Special Date or Special Time from the submenu. A dialog box appears.
3. Select the date or time type from the Type list:
 - Today’s Date (Won’t Change)** or **Now (Won’t Change)**. This date or time shows the system date or time (the date or time that the unit maintains automatically) when you inserted the character. It does not change when the system time changes.
 - Date Document Created** or **Time Document Created**. This date or time shows when the document was created.
 - Date of Last Revision** or **Time of Last Revision**. This date or time shows when the document was last saved.
 - Date of Printing** or **Time of Printing**. This date or time is updated when you print the document. The updated date or time appears in the printout of your document but not on screen.
4. Select the date or time format from the Format list. A sample of the selected date or time format appears in the dialog box.
5. Tap Insert in the dialog box. GeoWrite inserts the special date or time from the list in the format you specified.

CONTROLLING PAGINATION

LEVELS 2-4

GeoWrite treats the text in a document as one continuous flow of information. Whenever you insert or delete text or graphics in a document, GeoWrite automatically calculates the locations of page breaks and column breaks and places them accordingly. This process is called *automatic pagination*, and the calculated page breaks are called *soft page breaks* because their locations change depending on the amount of information in a document.

You can force a page break manually by inserting a *hard page break*. You do this whenever you want to start a new page in a specific location, such as a bibliography page or an index.

If you have multiple columns in your document, a page break is the same as a column break. A page break in the last (rightmost) column on a page moves subsequent text to the next page. A page break in other columns moves text to the next column on the same page.

GeoWrite inserts a hard page break whenever you add a new section. The hard page break occurs at the section break. For more information, see “Designing GeoWrite Documents” in this chapter.

Inserting a Hard Page Break

You can insert a hard page break by using a menu or by pressing a key combination on the external keyboard.

To insert a page break (Levels 2-4)

- After moving the insertion point to the place where you want the page break, do one of the following:
 - Choose Insert Special from the Edit menu. A submenu appears, from which you choose Insert Page Break.
 - If you are using an external keyboard, press **Ctrl+Enter**.

If Show Invisibles is selected, the page break marker appears as a double-dagger (‡) on screen. For more information, see “Displaying Invisible Characters” in this chapter.

Deleting a Hard Page Break

You can delete a hard page break you no longer need. You delete it as you would any other character. After you delete a hard page break, the insertion point moves to the bottom of the page, in front of the page break marker. GeoWrite removes the page break, recalculates pagination, and refreshes the screen.

MANAGING COLUMNS

You can have multiple columns of text in a document, just like those you see in a newspaper or a magazine. Multiple columns

can add visual appeal to a document and make the text easier to read.

By default, a GeoWrite document has just one column of text. When you specify multiple columns, text flows from the bottom of one column to the top of the next in a snake-like fashion. In the Page display mode, multiple columns appear side by side on screen.

Setting Multiple Columns

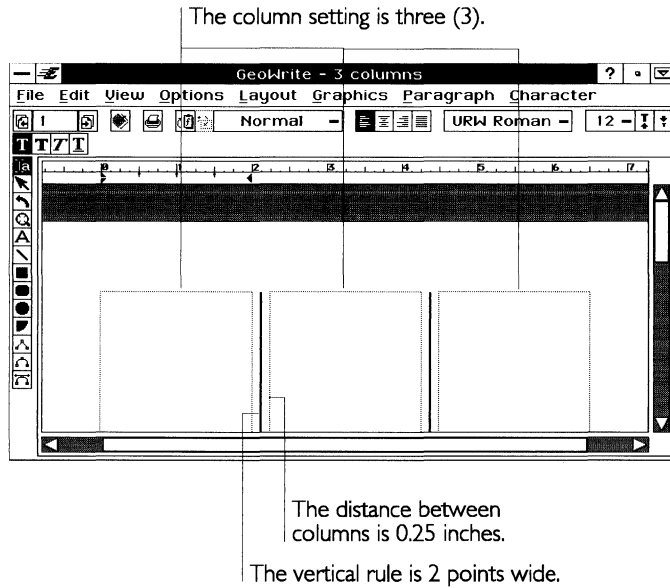
LEVELS 2-4

To set up multiple columns, you specify column options in the Page Setup dialog box. These settings apply to the current section only or, if a document has only one section, to the entire document. For information on Page Setup, see “Designing GeoWrite Documents” in this chapter.

If your document will have multiple columns throughout (as in a newsletter), you can save time by setting up columns in the first section before adding other sections to the document. That way, GeoWrite will carry your column settings over to subsequent sections.

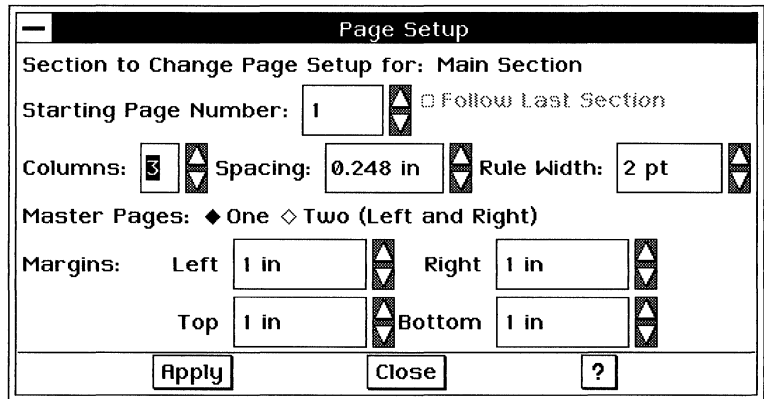
When you set multiple columns, you specify the number of columns, the *gutter* (or spacing) between columns, and the width of any vertical rules (the lines between the columns). GeoWrite initially calculates a uniform column width for all columns, based on the number of columns, the spacing between columns, the size of the page, the page orientation, and the page margins. Later, you can change column widths if you want. For more information, see “Changing Columns” in this chapter.

The following sample document shows the result of setting the column characteristics:



To change the columns for a section (Levels 2-4)

1. After moving the insertion point to the section for which you want to change the page setup, choose Page Setup from the File menu. A dialog box appears:



2. Complete the dialog box, selecting the column options you want: **Columns**. Select the number of columns in the section.

Spacing. If you have multiple columns in the section, select the distance between columns (as well as the relative column width). Spacing is the same between all columns. By default, this setting is 0.125 inch; you can increase it up to 1 inch.

Rule Width. If you have multiple columns in the section and you want a vertical rule, select the width of the vertical rule. By default, this setting is zero (0) points, or no vertical rule; you can increase this up to 9 points.

3. Tap Apply to apply your changes to the selected section. Then close the dialog box.

Changing Columns

Even if you have established columns in your document, you can change the number of columns, the distance between columns, and the width of the vertical rules, in the Page Setup dialog box. GeoWrite simply recalculates the column width and redisplay the document with your changes.

In most cases, you will not need to do anything else. However, you can set a custom size and position for each column by editing the Master Page. You can also customize columns on a page-by-page basis. For more information, see “Designing GeoWrite Documents” in this chapter.

Using Column Breaks

You can insert a column break to force GeoWrite to move subsequent text to the top of the next column. A column break is the same as a page break. For more information, see “Inserting a Hard Page Break” in this chapter.

USING MAIL MERGE

LEVELS 2-4

When you print a GeoWrite document, you have the option of *merging* (combining) information from other GEOS applications. Merging allows you to print form letters, envelopes, mailing labels, reports, and other types of documents using data you have already entered in another application; you do not need to enter them again in GeoWrite.

Merging involves two documents: the *data document* and the *merge document*. The data document is a GeoCalc or GeoFile document that contains data stored in a consistent format. For example, a GeoCalc data document might contain monthly budget figures, and a GeoFile data document might contain a list of all the books you own.

The information in the data document gets inserted into the merge document. The merge document is a GeoWrite document that contains the text, graphics, layout, and formatting that will appear in each printed copy of the document. It also contains *merge fields* that mark the places where GeoWrite puts the data from the data document when you print the document.

The easiest way to use GeoWrite's merge feature is to follow this general sequence of tasks:

1. Create the merge data in the format you want (in GeoCalc or GeoFile).
2. Create the GeoWrite merge document and position the merge fields where you want them.
3. Copy the information you want to merge from the GeoCalc or GeoFile data document to the clipboard.
4. Merge the information from the clipboard into the GeoWrite document.

This section describes these steps in detail.

NOTE

This section assumes you know how to use at least GeoCalc, GeoFile, or both.

Creating and Copying Merge Information

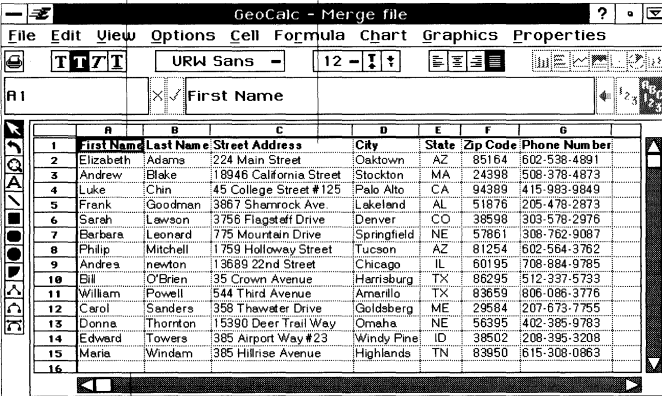
You can create and store merge data in GeoCalc and GeoFile.

USING GEOCALC TO STORE MAIL MERGE DATA

You can use GeoCalc to store the information you will merge into your GeoWrite document. To do so, you must arrange the information in the GeoCalc document in a single table. This enables GeoCalc to copy the information to the clipboard in a standard format that GeoWrite can understand.

Field names appear in the first row. Each column is a different field. Field names are consecutive.

Field Name



	A	B	C	D	E	F	G
1	First Name	Last Name	Street Address	City	State	Zip Code	Phone Number
2	Elizabeth	Adams	224 Main Street	Oaktown	AZ	85164	602-538-4891
3	Andrew	Blake	18946 California Street	Stockton	MA	24398	508-378-4873
4	Luke	Chin	45 College Street #125	Palo Alto	CA	94389	415-983-9849
5	Frank	Goodman	3867 Shamrock Ave	Lakeland	AL	51876	205-478-2873
6	Sarah	Lawson	3756 Flagstaff Drive	Denver	CO	38598	303-578-2976
7	Barbara	Leonard	175 Mountain Drive	Springfield	NE	57861	308-362-9087
8	Philip	Mitchell	1759 Holloway Street	Tucson	AZ	81254	602-564-3762
9	Andrea	Newton	13689 22nd Street	Chicago	IL	60195	708-884-9783
10	Bill	O'Brien	95 Crown Avenue	Harrisburg	TX	86295	512-337-5733
11	William	Powell	544 Third Avenue	Amarillo	TX	83659	806-086-3776
12	Carol	Sanders	358 Thawater Drive	Goldsberg	ME	29584	207-673-7755
13	Donna	Thornton	15390 Deer Trail Way	Omaha	NE	56395	402-385-9783
14	Edward	Towers	385 Airport Way #23	Windy Pine	ID	38502	208-395-3208
15	Maria	Windam	385 Hillrise Avenue	Highlands	TN	83950	615-308-0863
16							

Entries appear in the rows below. Each row is a different entry.

You can design a GeoCalc document like this one from scratch or you can simply rearrange the information in an existing document. The following instructions assume that you know how to use GeoCalc. For more information about GeoCalc, see Chapter 6.

To design a GeoCalc data document (All Levels)

1. Add field names to the first row in the merge table, starting with the first cell (such as A1) and proceeding to the right (such as cell B1, cell C1, and so on) until you have defined a name for each field.
 - A field name can be any combination of letters, numbers, spaces, and punctuation. You can use any field name you want, as long as it matches the name of the merge field in the

GeoWrite document. A field name usually describes the information it contains, such as Customer ID or Fax Number.

- Field names must be contiguous. You cannot have an empty cell between field names.
2. Fill in the rows beneath the field names. Each row will be used, one at a time, to create an individual document when merging.

To copy the merge data to the clipboard (All Levels)

1. If you want, change the order of the rows so that the rows at the top are the ones you want to merge. For example, at Level 4 of GeoCalc, you can sort rows so that the entries appear in alphabetical order.
2. Select the first row (with field names) and any subsequent rows you want to merge.
3. Choose Copy from the Edit menu. GeoCalc copies the field names and entries to the clipboard and prepares them for merging.

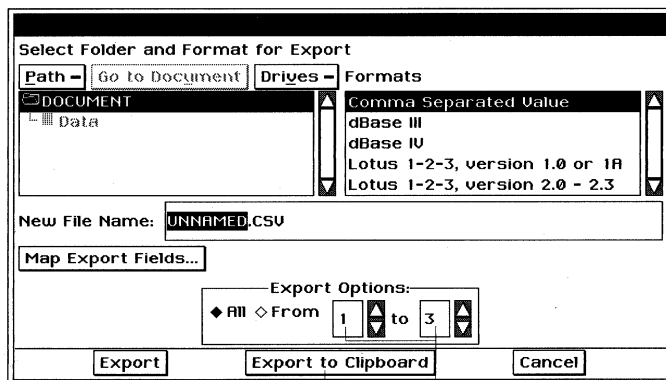
USING GEOFILE TO STORE MAIL MERGE DATA

You can use GeoFile to store the information you will merge into your GeoWrite document. You can copy one record, marked records, or all records in the GeoFile data document to the clipboard. You can take advantage of the data management features in GeoFile to store and maintain your data. The following instructions assume that you know how to use GeoFile. For more information about GeoFile, see Chapter 7.

To copy records to the clipboard (Levels 2-4)

1. If you want to copy only marked records to the clipboard, mark the records you want to copy.
2. Choose Other from the File menu. A submenu appears.

3. Choose Export Document. A dialog box appears:



Tap to copy addresses to the clipboard.

Specify the starting and ending record number.

4. Complete the dialog box, selecting the options you want:
Export All. This option exports all records in the database.
Export Records From/To. This option exports a range of consecutive records; you specify the starting and ending record numbers.

NOTE

Do not use Map Export Fields when merging data. The field names in the source database must be identical to the names of the merge fields.

5. Tap Export to Clipboard. GeoFile copies the records you specified to the clipboard and prepares the data for merging.

Setting Up the GeoWrite Merge Document

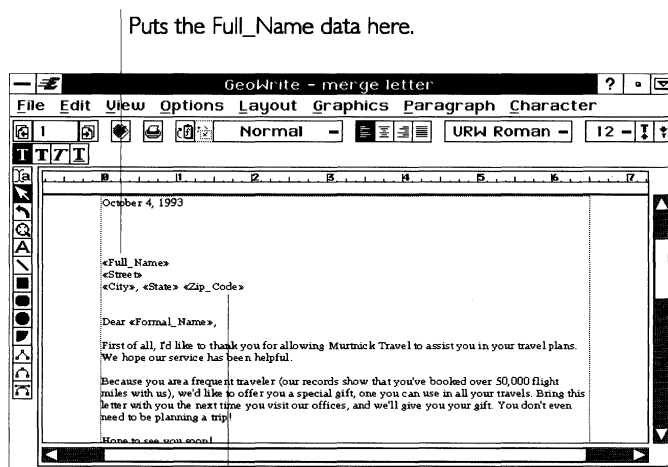
The GeoWrite merge document contains the text, graphics, formatting, and page layout of the information you want to print. It also contains merge fields that correspond to the data in the clipboard.

The field names used in the merge fields must match exactly the field names used in the source data document. These fields are case-sensitive; that is, they must match uppercase and lowercase exactly. For example, a merge field with the name "HomeAddress" will not match "Home Address", "Home_Address", or "homeAddress".

To add merge fields in a GeoWrite document (Levels 2-4)

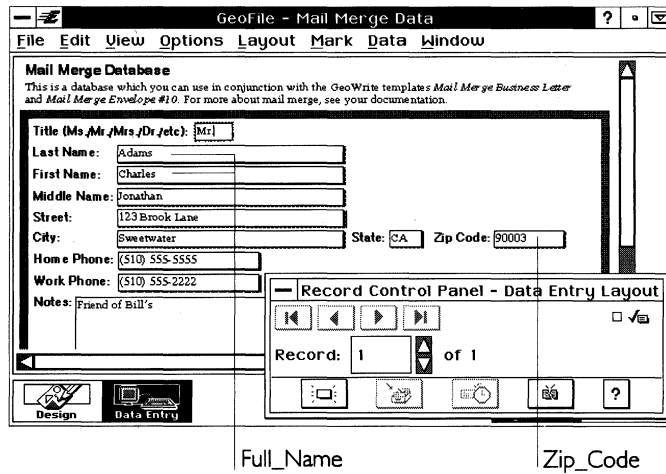
1. Move the insertion point to the location where you want the merge field to appear. It can appear on a line by itself or embedded in other text.
2. Using the floating keyboard, tap **Ctrl+Alt+\<**. A double left chevron appears (<<). This identifies the start of the merge field.
3. Enter the field name. Remember that the field name you enter must be identical to the field name in the source GeoCalc or GeoFile document.
4. Using the floating keyboard, tap **Ctrl+Alt+Shift+\<**. A double right chevron appears (>>). This identifies the end of the merge field.
5. If you want, specify the character formatting (such as style, size, and so on) for the field.

Repeat this procedure for each merge field in the merge document. When you are finished, your merge document can have any number of merge fields, as shown in the following example:



Puts the Zip_Code data here.

These fields correspond to the following fields in GeoFile:



Printing the Merge Document

Once you have set up your GeoWrite merge document, you can merge and print it.

To print a merge document (Levels 2-4)

1. Copy the merge information from the source GeoCalc or GeoFile document. For instructions, see the appropriate procedure in this section.
2. In GeoWrite, choose Print from the File menu. A dialog box appears.
3. Select a merge option:
 - No Merge.** Prevents merging. If you print a merge document without merging, GeoWrite prints the merge fields instead.
 - Merge One.** Merges the first entry in the clipboard. Use it to test the merge document to make sure it works properly before printing all entries.
 - Merge All.** Merges all merge entries in the clipboard.
4. Tap Print in the dialog box. GeoWrite merges one or all of the entries in the clipboard with the GeoWrite merge document. For each merge entry, GeoWrite merges the fields and prints a copy of the document.

If a field appears in the clipboard but not in the merge document, GeoWrite skips it. If a field appears in the document but not in the clipboard, GeoWrite prints the merge field instead: the <<field>> text will appear in your document.

NOTE

If you see <<field>> in a printed document, make sure that you selected either Merge One or Merge All. Next, make sure that the name of the field in the data document matches the name of the merge field in the merge document.

CREATING A TABLE OF CONTENTS

LEVELS 3-4

You can use GeoWrite styles to create a table of contents easily. A typical table of contents looks like this:

<i>Contents</i>	
<i>Introduction</i>	8
Part I Freedom of Conscience and Expression	16
Part II Judicial Power and Equality Under the Constitution	30
Part III Rights of the Accused	86
Part IV Governing A Nation	110
Part V The Constitution - Past, Present and Future	142
Bibliography	162
Index	170

Right Tab Type Dot Tab Leader

For each heading level in your document, create a style with the following characteristics:

- A right tab type with a dot leader. For more information, see “Formatting GeoWrite Documents” in this chapter.
- Indented paragraphs for each heading level. For more information, see “Formatting GeoWrite Documents” in this chapter.

Once you have created the styles, you can simply enter the heading text, tap **Tab** on the floating keyboard, enter the page number, then apply the style appropriate to the heading level.

GeoCalc Basics

This section describes the Level 1 functions of GeoCalc. You can use every feature of this basic set at all levels of GeoCalc.

This section assumes you are familiar with Chapters 1 and 3, which give an overview of the skills you need to use any GEOS application.

WHAT IS A SPREADSHEET?



GeoCalc is a spreadsheet application. *Spreadsheets* make light work of data crunching, because GeoCalc does all the calculation for you.

A spreadsheet looks a lot like a general ledger and works on some of the same principles. You place data, numbers or labels, in spreadsheet cells. Cells can also contain formulas that depend on the data in other cells. If you change data in your spreadsheet, formulas based on that data will change automatically.

Because of this, spreadsheets are ideally suited for budgets, reports, and playing “What if?” — what if you change the interest rate on a loan, what happens to your household budget if you eat out every night?

Spreadsheets can do much more than this. The best way to find out what GeoCalc can do is to try creating all sorts of spreadsheets. At first it takes a little time, but with practice, you will become proficient at turning complicated tasks into easy-to-use spreadsheets.

USER LEVELS IN GEOCALC

GeoCalc has four user levels, as follows:

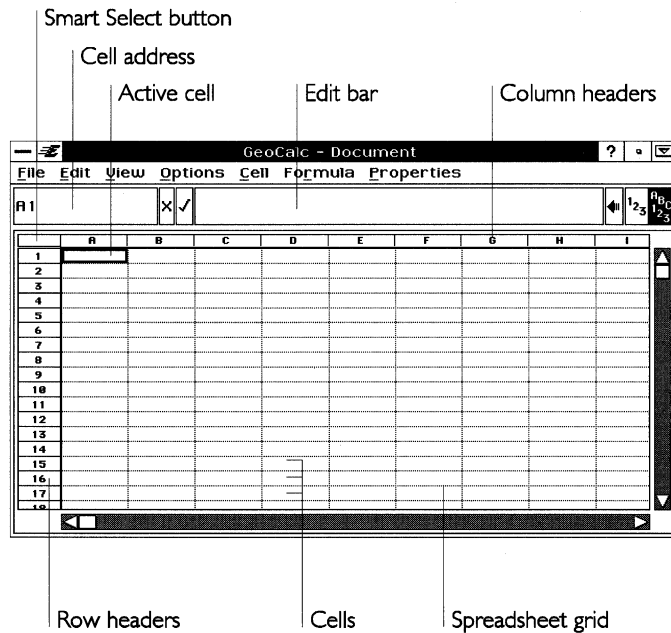
- Level 1 provides the basic features you need to work with a spreadsheet. You can enter text, numbers, and formulas. This section describes all of the Level 1 features.
- Level 2 adds the Style bar and Function bar so that you can quickly choose actions and set characteristics. In addition, you can copy formulas by “filling,” show formulas in cells, and add charts.
- Level 3 adds the Drawing tool bar, Graphics tool bar, and Bitmap tool bar. At Level 3, you can set printing options, display different rulers, add headers and footers, define names, add notes, and add text color. Level 3 also gives you more options for working with charts.
- Level 4 allows you to specify calculation criteria, sort information, set the row height, and add bitmap graphics and splines.

You can change your user level at any time. For more information about changing your user level, see Chapter 3.

This section describes the basic features of GeoCalc at Level 1, though you can use most of the same techniques at Levels 2 through 4. Once you have mastered the general concepts for spreadsheets described in this section, you may want to learn more. To have more control over your spreadsheets, set the user level to Level 2 and read “Formatting GeoCalc Spreadsheets” in this chapter.

THE GEOCALC WINDOW

The GeoCalc window looks like this:



You see the following elements in a GeoCalc document:

The spreadsheet grid. The grid you see in a GeoCalc document is like a giant piece of accounting paper comprising *cells* in a table of numbered rows and lettered columns. The grid is your spreadsheet. You enter numbers, text, and formulas into the individual cells in the grid.

Row and column headers. The numbers down the left side that label each row are called *row headers*. The letters across the top that label each column are called *column headers*. Tap these headers to select an entire row or column.

Smart Select button. This button is located at the intersection of the row headers and column headers; it is not labeled. Tap this button to select all cells in the spreadsheet that have entries (including all the empty cells in between).

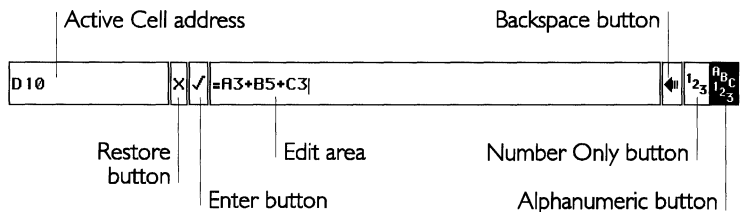
Cells. Each cell can hold a piece of information, such as text, numeric values, or formulas for calculations. The text and numeric values you enter appear in the cells of your spreadsheet. If you enter a formula, though, the result of the formula appears in the

cell (not the formula itself). At Level 2, you can display the formulas instead of the results.

Cell addresses. Each cell has an *address*, like a pair of map coordinates, denoting its position in a given row and column. The address consists of a row header and a column header. For example, B3 means the cell in row 3 of column B.

The active cell. Your entries in a spreadsheet go into the *active cell*. When you tap a cell to select it, it becomes the active cell. The active cell always appears highlighted with a border around it. The cell address for the active cell always appears in the Edit bar.

The Edit bar. The Edit bar displays information about the active cell. The Edit bar is where you enter and edit the text, numeric value, or formula you want to enter in the active cell. The Edit bar includes the following elements:



- *Active cell address.* This is the cell address of the active cell. For example, C10 means the cell in the tenth row of column C.
- *Restore button.* Tap this button to cancel the changes you are currently entering in the edit area. The value in the cell reverts to the original entry.
- *Enter button.* Tap this button when you want to enter the contents of the edit area into the active cell.
- *Edit area.* This area shows the contents of the active cell. You can make changes here, and then tap the Enter button to enter the changes into the active cell. This is also the area where you create formulas or specify functions from the Formula menu (as described in this chapter).
- *Backspace button.* Tap this button when you want to back up to erase information you've entered in the edit area.
- *Number only button.* Tap this button when you want to enter numbers (and symbols) only. When you tap this button, the Edit bar will accept only numeric and symbol input. This helps boost the accuracy of handwriting recognition.

- *Alphanumeric button.* Tap this button when you want to enter both letters and numbers. When you tap this button, the Edit bar will accept all characters.

MOVING AROUND IN A SPREADSHEET

ALL LEVELS

A spreadsheet can contain as many as 8192 rows by 256 columns. You can scroll through a spreadsheet in much the same way as you scroll through any document using the scroll bars.

SELECTING CELLS AND RANGES

January	February
\$35.98	\$38.24
\$22.47	\$26.40
\$129.82	\$168.93
\$9.36	\$20.45

Highlighted cell

When you want to enter information in a cell or make changes to it, you must first select it to make it the active cell. The active cell appears highlighted with a black border around it, as shown in the illustration to the left.

When you want to work with a group of cells, you select the entire group. A group of cells is called a *range*. When you select a range of cells, all selected cells appear highlighted. One cell within the range is the active cell, and it appears with a border around it, as shown in the following illustration:

	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Selected range

Like individual cells, ranges have addresses. A range address consists of the address of the first cell, followed by a colon (:), followed by the address of the last cell. In the illustration above, the address for the selected range is B3:D10.

To deselect the selection, simply select something else.

To select a cell (All Levels)

- Tap the cell you want to select.
or
Use the arrow keys on the external keyboard to move the highlighting to the cell you want to select.
or
Double-tap the cell address that appears in the Edit bar. The Go to Cell dialog box appears. Enter the address of the cell you want to select, tap Go To, and close the dialog box.
or
Choose Go to Cell from the View menu, enter the address of the cell you want to select, tap Go To, and close the dialog box.

To select a range of cells (All Levels)

- Drag from the first cell to the last cell of the range you want to select.

To select an entire row or column (All Levels)

- Tap the row or column header.

To select multiple rows or columns (All Levels)

- Drag from the first row or column header to the last row or column header. GeoCalc highlights the rows or columns as you drag.

To select a range including every cell that has an entry (All Levels)

- Tap the Smart Select button.
GeoCalc selects a range that includes all cells that have entries (and all the empty cells in between).

To select every cell in the spreadsheet (All Levels)

- If you want to perform some action that would affect every cell, such as changing the font for all current and future entries, you can select all cells in the spreadsheet.
- Choose Select All from the Edit menu.

WORKING WITH VALUES AND LABELS

ALL LEVELS

You build a spreadsheet by entering *values*, *labels*, and *formulas*.

- *Values* are numbers, such as sales figures for the past four quarters.
- *Labels* are the titles or descriptive text you enter to describe the contents of rows and columns, such as “First Quarter,” “Second Quarter,” “Third Quarter,” and “Fourth Quarter.”
- *Formulas* describe the calculations you want to perform, such as totaling the sales for all four quarters.

This section explains how to enter values and labels in a spreadsheet. For more information about formulas, see “Working with Formulas” in this chapter.

Entering Values and Labels

The procedures for entering values and labels are the same. However, some special considerations apply to each. If you want to enter dates in a spreadsheet, see “Entering Dates” in this chapter.

To enter values or labels (All Levels)

1. Select the cell in which you want the entry to appear.
2. Enter the numbers or words that you want to appear in the cell. If you make a mistake, tap the Backspace button in the Edit bar to erase characters to the left of the insertion point in the edit area.

*If you are using the numeric keypad on an external keyboard to enter numbers, be sure the **Num Lock** key is on.*

- To complete your entry, tap the Enter button in the Edit bar. In this case, the highlighting does not move.

or

Use the following keys on an optional external keyboard to complete the entry:

KEY	RESULT
Enter	Moves the highlighting down one cell.
Shift+Enter	Moves the highlighting up one cell.
Tab	Moves the highlighting to the right one cell.
Shift+Tab	Moves the highlighting to the left one cell.
Left and Right Arrow Keys	If the insertion point is at the beginning (for Left Arrow) or the end (for Right Arrow) of the Edit bar, moves the highlighting one cell in the direction of the arrow.
Up and Down Arrow Keys	Moves the highlighting one cell in the direction of the arrow.
Ctrl+Enter	Keeps the highlighting in the current cell; the active cell does not change.

For more about selecting ranges, see "Selecting Cells and Ranges" in this chapter.

Entering Information in a Selected Range

You can save time by selecting the range of cells in which you want to enter data before you start. Then, if you tap **Enter** in the bottom row of the selection, the active cell automatically moves to the top of the next column in the selection. If you tap **Tab** in the rightmost column of the selection, the active cell automatically moves to the beginning of the next row in the selection.

	A	B	C	D
1				
2				
3				
4				
5				
6				
7				

Moving through the selected range using the **Enter** key.

	A	B	C	D
1				
2				
3				
4				
5				
6				
7				

Moving through the selected range using the **Tab** key.

X	✓	456123878954
B	C	D
The Last Minute Predictions		

ENTERING LABELS

If you enter a label that is wider than the cell, the label spills over into the next cell to the right as long as that cell is empty. If the cell to the right is full, the text appears cut off. The complete text of the label is stored in the cell, but you cannot see it unless you make the column wider. For more information about changing the column width, see “Formatting GeoCalc Spreadsheets” in this chapter.

If you want to enter a number as a label or if you need to enter a label that begins with an equal sign (=), start by entering an apostrophe (') or a double quotation mark ("). When you start an entry with a double quotation mark, the entry appears left-justified and the double quotation mark does not appear. For example, to enter **1993** as a label, you enter "**1993**. To enter **=National Average** as a label, you enter "**=National Average**.

X	✓	456123878954
B	C	D
The Last Minute Predictions		
	###	

ENTERING VALUES

If a cell is not wide enough for a value you enter (or for the result of a formula), you see the symbol ### in the cell, as shown in the illustration to the left. The value *is* stored in the cell, but you will not be able to see it unless you make the column wider. For more information about changing the column width, see “Formatting GeoCalc Spreadsheets” in this chapter.

You can enter values between 10^{-4932} and 10^{+4932} . All numbers and calculations are accurate to 15 decimal places. Even when GeoCalc rounds a number to fewer than 15 decimal places, it uses all 15 decimal places in calculations.

Do not enter commas when you enter values, although you can specify a format that adds commas automatically. (See “Changing the Format for Values” in this chapter.)

You can use any of the following characters in the values you enter:

1 2 3 4 5 6 7 8 9 0 + - E e .

Use **E** or **e** to specify scientific notation. For example, to enter 3.75×10^{15} , you can enter either **3.75e15** or **3.75E15**.

Entering Dates

You can enter dates in your spreadsheet in two ways: as labels, or as formulas.

ENTERING DATES AS LABELS

When you enter a date as a label, GeoCalc stores it just as you entered it. If you want to change the format, you must reenter the date in the format you want.

To enter a date as a label (All Levels)

- Enter the date just as you would any other label. Enter the date exactly as you want it to appear.

For example, you could enter any of the following:

- Jan 15, 1993
- January 15, 1993
- 1/15/93
- 93-01-15

ENTERING DATES AS FORMULAS

You can also enter a date as a formula, using a special date function. When you do this, GeoCalc stores the date as a serial number representing the number of days since January 1, 1900. January 1, 1900 is stored by GeoCalc as serial number 1. January 1, 1993 is stored as serial number 33969.

When a date is stored as a serial number, you can use GeoCalc to change its format automatically, and you can use the date in formulas. For example, you can change Jan 15, 1993 to 1/15/93 without retyping; also you can “subtract” May 3, 1990 from June 15, 1991 to determine the number of days between the two dates (408). To take advantage of these features, you first enter your date as a formula using the built-in DATE function.

To enter a date as a formula (All Levels)

1. Select the cell in which you want to enter a date.
2. Enter **=DATE**. The characters appear in the edit area.

3. Enter an open parenthesis, followed by numbers representing the year, month, and day of the date you want to enter. Then enter a close parenthesis. Be sure to enter the year, month, and day in that order, with commas between them. For example, the entire entry for February 17, 1993 is as follows:

=DATE(1993,2,17)

4. Tap the Enter button or tap the **Enter** key. The serial number for the date appears in the cell. For example, if you specify February 17, 1993, GeoCalc displays **34016**.

Unless you want the date to appear in your spreadsheet as a serial number, you will probably want to change the date format. The next section explains how to do this.

NOTE

You can also enter time values (hours, minutes, and seconds) using a similar technique. Instead of the DATE function, you use the TIME function; instead of entering the year, month, and day, you enter the hours, minutes, and seconds.

Changing the Format for Values

Each number, date, or time value in a spreadsheet is displayed in a particular format. When you enter one of these values, GeoCalc automatically displays it in a standard format; however, you can change the format to suit your needs. The following table shows the available number formats.

FORMAT	IF YOU ENTER	GEOCALC DISPLAYS
General	1234567	1234567
Fixed (two decimal places)	123.4567	123.46
Fixed with Commas	1234.567	1,234.57
Fixed Integer (rounded to a whole number)	1234.567	1235
Currency	1234.567	\$1234.57
Currency with Commas	1234.56	\$1,234.57
Currency Integer (rounded to nearest dollar)	1234.567	\$1235
Percentage (times 100)	.085	8.5%
Percentage Integer (times 100, rounded to whole percent)	.4275	43%
Thousands (divided by 1000 and rounded)	1234567	1234.57

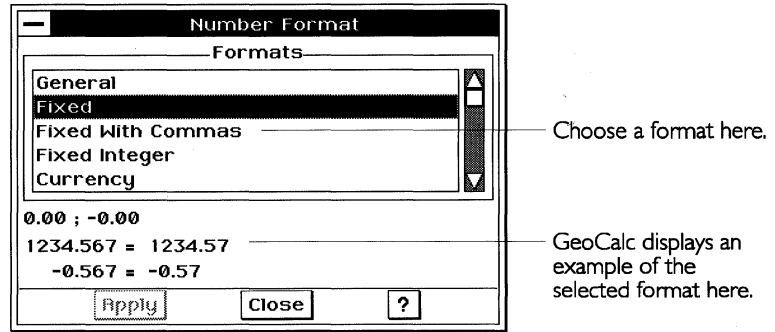
Millions (divided by one million and rounded)	123456789	123.46
Scientific	1234.5678	1.23E+03

The following table shows the available date and time formats.

FORMAT	EXAMPLE
Date - Long	23456 = Saturday, March 21st, 1964
Date - Long, Condensed	23456 = Sat, Mar 21, 1964
Date - Long, No Weekday	23456 = March 21, 1964
Date - Long, Condensed, No Weekday	23456 = Mar 21, 1964
Date - Short	23456 = 3/21/64
Date - Short, Zero Padded	23456 = 03/21/64
Date - Long, Month & Day	23456 = Saturday, March 21st
Date - Long, Month & Day, No Weekday	23456 = March 21st
Date - Short, Month & Day	23456 = 3/21
Date - Short, Month & Year	23456 = 3/64
Date - Year	23456 = 1964
Date - Month	23456 = March
Date - Day	23456 = 21st
Date - Weekday	23456 = Saturday
Time - Hour Min Sec	1234.567 = 1:36:29PM
Time - Hour Min	1234.567 = 1:36 PM
Time - Hour	1234.567 = 1 PM
Time - Min Sec	1234.567 = 36:29

To change the format of values (All Levels)

1. Select the cells containing the values whose format you want to change, and choose Number Format from the Properties menu. The following dialog box appears:



2. Select the format you want from the Formats list. An example of the format appears in the dialog box.
3. Tap Apply, then close the dialog box. GeoCalc changes the format of the selected cells.

WORKING WITH FORMULAS

ALL LEVELS

Formulas describe calculations you want GeoCalc to perform. When you start to use formulas, you see the power of a spreadsheet. Each time you change the contents of a cell anywhere in your spreadsheet, GeoCalc automatically recalculates *every* formula in the spreadsheet.

Formulas are made up of the following elements:

- *References* to particular cells or ranges, such as A1 or B12:C18
- *Operators* such as + and - for addition and subtraction
- *Values* such as 5, 100, and 0.25
- *Built-in functions* such as DATE, SUM, and AVG

The following sections explain how to combine these elements in a formula that performs a specific calculation.

CAUTION

GeoCalc uses floating-point math. While floating-point calculations have advantages such as speed, they are inherently inaccurate. All spreadsheets based on floating-point math produce errors in the 17th or 18th significant digit. While this is often not detectable, the

errors become apparent in some calculations, especially when you use financial functions such as IRR and NPV. GeoCalc adheres to the IEEE 754 standards for floating-point calculations. However, you should consult a financial specialist before you invest significant sums of money based on floating-point calculations from any source.

Entering Formulas

You begin a formula by typing = (an equal sign). Then you use references, values, operators, and built-in functions to describe the calculation you want to perform. The following illustration shows how you might use a formula to add the expenses for an evening on the town:

		A	B	C	D
1	Dinner		25.00		
2	Tickets		15.00		
3	Parking		5.00		
4	Total		45.00		
5					

Cell B4 contains the following formula:

=B1+B2+B3

This formula tells GeoCalc to add the values in cells B1, B2, and B3 and to display the result in cell B4. Here are the elements of this formula:

- The equal sign (=) indicates a formula. All formulas must start with an equal sign.
- B1, B2, and B3 are references.
- The plus signs (+) are operators.

To enter a formula (All Levels)

1. Select the cell in which you want to enter the formula.
2. Enter = to begin the formula. The equal sign appears in the edit area.
3. Enter the reference for the first cell you want to use in the calculation.
4. Enter the operator you want to use. For example, enter + for addition.
5. Enter the reference for the next cell you want to use.

6. Continue typing operators and cell addresses until the formula in the Edit bar appears as you want it.
7. Tap the **Enter** key. The result of the formula appears in the cell.

Using References in Formulas

If you are not sure whether to use an absolute or a relative reference, it is usually safer to use an absolute reference.

A *reference* identifies a cell or a range of cells. The reference tells GeoCalc where to look to find the values you want to use in a formula. Most formulas include at least one reference.

You can use two types of references in the formulas you create: *relative references* and *absolute references*. Your choice depends on how you want GeoCalc to treat the references when you copy or move the formula from one cell to another.

RELATIVE REFERENCES

A relative reference tells GeoCalc how to find a particular cell starting from the cell containing the formula. For instance, from this cell, go two rows up and one column to the right. Relative references are like telling someone how get to your house from theirs: go three blocks east and then four blocks south.

When you copy a formula that contains relative references from one location to another, GeoCalc adjusts the references in the formula relative to the new position of the formula. For example, in an annual budget spreadsheet, you could use a formula with relative references to add the numbers in the January column; then, when you copy the formula to the columns for February through December, GeoCalc adjusts the relative references so that each formula totals the numbers for the column in which it appears.

Relative references look just like cell addresses. The following are examples of relative references: B4, D8, A1, B2:F8.

ABSOLUTE REFERENCES

An absolute reference tells GeoCalc the specific address of a cell. Whereas relative references depend on the starting point, absolute references always reference the same cell, regardless of the starting point. An absolute reference is like telling someone your exact address: 3628 Sixteenth Avenue.

When you copy a formula from one location to another, GeoCalc does not adjust absolute references. Use an absolute reference when you want to refer to the same cell, regardless of where you may copy the formula in the spreadsheet.

For example, if you are calculating loan payments, you might want to refer to a cell containing the interest rate used in the PMT function. In the following example, when you want to copy the formula, the reference to B3 must not change. Otherwise each calculation would be based on a different interest rate. To ensure that all copies of the formula use the value in B3, you enter the absolute reference **\$B\$3**.

B6		X ✓		=PMT(A6, \$B\$3,B5)	
	A	B	C	D	
1					
2					
3	Interest Rate	0.08			
4		5 Years	10 Years	15 Years	
5	Principal	60.00	12.00	180.00	
6	5000.00				
7	10000.00				
8	15000.00				

To enter an absolute reference, enter the address with dollar signs before the column and row indicators. B3 is a relative reference. \$B\$3 is an absolute reference. You can create hybrid references, making either the column or row absolute and the other relative, as shown in the following table:

REFERENCE	TYPE
B3	Relative reference
\$B\$3	Absolute reference
B\$3	Relative column, absolute row
\$B3	Absolute column, relative row

Using Operators in Formulas

Operators describe the type of calculation you want to perform, such as addition or subtraction. The following table shows the operators you can use in formulas.

OPERATOR	DESCRIPTION	EXAMPLE
%	Percentage	A14*22%
^	Exponentiation	13^3
* and /	Multiplication and division	A14*B12, A14/B12
+ and -	Addition and subtraction	A14+B12, A14-B12
&	Concatenation	"Rate "&A1&"%

When you use more than one operator in a formula, GeoCalc performs the calculations in the order shown in the table — percentages first, exponents second, and so forth. If you use more than one operator with the same priority (such as + and -), GeoCalc performs those calculations from left to right.

You can alter the order of calculations by enclosing within parentheses those expressions you want calculated first. GeoCalc evaluates expressions enclosed in parentheses first, and then uses those results to calculate the rest of the formula. The following table shows some examples:

FORMULA	RESULT
50+100/2	100
(50+100)/2	75

Using Built-in Functions in Formulas

Built-in functions perform common calculations automatically. You use them in formulas to simplify your work. For example, the SUM function totals a group of numbers; the AVG function computes the average of a group of numbers; and the NPV function computes the net present value of an investment.

GeoCalc provides functions you can use to perform the following types of calculations:

- Financial
- Information
- Logical
- Math
- Print
- Statistical
- String
- Time & date
- Trigonometric

This section gives the general procedures for using built-in functions. Detailed descriptions of all the built-in functions are included in Appendix B.

KEYWORDS AND ARGUMENTS

Each built-in function includes a keyword such as SUM or AVG. Most functions also require that you specify arguments. *Arguments* are the data that functions use in a calculation. For example, if you are summing a group of numbers, the arguments for the SUM function are the numbers you want to total. An argument can be a value, text string, reference, function, or formula. The arguments determine the result of the function.

For example, the financial function PMT calculates the payment required for a loan. The arguments for the PMT function are the principal amount, interest rate, and term of the loan. The following illustration shows how you might use the PMT function to compute a loan payment:

A1		=PMT(10000, 8.75%/12, 48)				
	A	B	C	D	E	F
1	247.67					
2						

Cell A1 contains the following formula:

=PMT(10000,8.75%/12,48)

This formula uses the PMT function to tell GeoCalc to compute the monthly loan payment for a 48-month loan of \$10,000 at an interest rate of 8.75% per year.

PLACEHOLDER ARGUMENTS

When you insert a function in a cell, you can automatically insert placeholders for the arguments. For example, when you insert the PMT function, the placeholders remind you to enter the principal amount, interest rate, and term of the loan, as shown in the following illustration:

A1		=PMT(principal, interest, term)				
	A	B	C	D	E	F
1	247.67					
2						

Since each function has different arguments, the placeholders can help you remember what arguments to enter for a particular function.

After inserting the function, you replace the placeholders with the actual arguments you want to use, as shown in the following illustration:

A1		✕ ✓		=PMT(10000, 8.75%/12, 48)			
	A	B	C	D	E	F	
1	247.67						
2							

If you are pasting a function into the edit area, you must replace the placeholder arguments with the values or cell addresses you want to use in the calculation. If you want to use a fixed value, replace the placeholder with the value. For instance, to enter a fixed value for the term of a loan replace **TERM** with a value in months.

It is important to enter the arguments in the specific order shown in the dialog box and in Appendix B. Inserting placeholders will help you to remember the order in which to enter arguments.

ENTERING BUILT-IN FUNCTIONS

To include a built-in function in a formula, you can either enter the function and all of its arguments, or insert the function using the Insert Function choice on the Formula menu. When you use the Insert Function choice, you have the additional option of inserting placeholder arguments.

To insert a function using the Formula menu (All Levels)

1. Select the cell in which you want the result of the calculation to appear.
2. Enter = to begin the formula. The equal sign appears in the edit area.
3. Choose Insert Function from the Formula menu. A dialog box appears.
4. Select the function you want to use from the Functions list on the right. Optionally, you can select a function type from the list on the left so that the Functions list shows only functions of the type you select.
5. Select the Paste Arguments option (the default) if you want to insert placeholder arguments with the function. Deselect the

Entering = is optional.

option if you simply want the function to appear in the Edit bar, without placeholder arguments.

6. Tap Paste, and close the dialog box. The function appears in the edit area. If you selected Paste Arguments, the arguments also appear in the edit area.
7. In the edit area, double-tap the first argument to select it.
8. Enter the text, value, formula, or cell reference you want to use for the argument. Your entry replaces the placeholder argument.
9. Continue replacing arguments as needed. For specific information about each argument, see Appendix B.
10. Tap the Enter button or tap the **Enter** key.

When the calculation is complete, the result appears in the spreadsheet. If the calculated result is not what you expect, make sure that you entered the formula correctly.

To insert a function by typing (All Levels)

1. Select the cell in which you want the result of the calculation to appear.
2. Enter = to begin the formula. The equal sign appears in the edit area.
3. Enter the function name.
4. Enter the arguments, enclosed in parentheses. Be sure to include commas between arguments.
5. Tap the Enter button or tap the **Enter** key.

When the calculation is complete, the result appears in the spreadsheet.

To use a function within a function (All Levels)

You can embed one function within another. For example, to sum a range of values and get its integer value, you could enter **=INT(SUM(A3:A9))**.

1. Insert the first function.
2. In the edit area, select the argument you want to replace with a function.
3. Insert the second function.
4. Continue in this manner until the formula is complete.
5. Tap the Enter button or tap the **Enter** key.

NOTE

When you embed one function within another, it is easy to lose track of where the parentheses belong. If you insert the function with placeholder arguments, GeoCalc inserts the parentheses accurately.

EDITING THE SPREADSHEET**ALL LEVELS**

After you have created a spreadsheet, you may want to make some changes. You may want to delete information or insert rows or columns to make room for new information; you may want to copy or move information to a new location; or you may need to correct an error you made.

Editing the Contents of a Cell

Often you will need to modify entries you have made in a spreadsheet. To do this, you select a cell to make it active so that you can change its contents. Then you can enter new information, delete it, move it, or copy it. You can delete information permanently, or you can transfer it to the clipboard so you can move the information to another location. For more information about editing text, see Chapter 1.

Copying and Moving Information

As you work with GeoCalc, you may find it convenient to copy and move information in a spreadsheet. There are two ways to copy and move information in GeoCalc:

- You can use the Fill choices on the Cell menu to copy the contents of the active cell across a row or down a column.
- You can use the Cut, Copy, and Paste choices on the Edit menu to copy or move information to any other location in a spreadsheet. Alternatively, at Level 2 and above, you can tap the clipboard tools on the Function bar, if it is displayed.

In either case, the result depends on what kind of information you are copying or moving. When you copy or move values and labels from one location to another, they appear the same in both locations. When you copy or move formulas, however, GeoCalc automatically adjusts relative references for the new position of the formula. You can override this automatic adjustment by using

absolute references. For more information about relative and absolute references, see “Using References in Formulas” in this chapter.

COPYING TO ADJACENT CELLS

The Fill Right and Fill Down choices provide a handy shortcut when you want to copy the contents of the active cell across a row or down a column. This is particularly useful when you copy formulas. In a budget spreadsheet, for example, you can enter a formula to calculate the total for the January column, and then copy the formula to the columns for February through December, as shown in the following illustration:

B 11		=SUM(B4:B9)					
	A	B	C	D	E	F	G
1		January	February	March	April	May	June
2	Income	1600.00	1600.00	1600.00	1600.00	1600.00	1600.00
3	Expenses						
4	Rent	545.00	545.00	545.00	545.00	545.00	545.00
5	Car	250.00	250.00	250.00	250.00	250.00	250.00
6	Food	375.00	375.00	375.00	375.00	375.00	375.00
7	Entertainment	80.00	80.00	80.00	80.00	80.00	80.00
8	Utilities	115.00	115.00	115.00	115.00	115.00	115.00
9	Miscellaneous	50.00	50.00	50.00	50.00	50.00	50.00
10							
11	Total Expenses	1415.00	1415.00	1415.00	1415.00	1415.00	1415.00
12							
13							

You enter the formula in this cell.

Then, you copy the formula to these cells.

When you copy the formula, GeoCalc automatically adjusts the relative references so that the total is correct for each month.

To copy a formula to adjacent cells (All Levels)

1. Select a range of cells starting with the cell containing the formula you want to copy and ending with the last cell to which you want to copy the formula, as shown in the following example:

	A	B	C	D
1		January	February	March
2	Income	1600.00	1600.00	1600.00
3	Expenses			
4	Rent	545.00	545.00	545.00
5	Car	250.00	250.00	250.00
6	Food	375.00	375.00	375.00
7	Entertainment	80.00	80.00	80.00
8	Utilities	115.00	115.00	115.00
9	Miscellaneous	50.00	50.00	50.00
10				
11	Total Expenses	=sum(b4:b9)		
12				

Formula

You can copy the formula into the range to the right.

2. Choose Fill Down from the Cell menu to copy the formula to the selected cells beneath it.

or

Choose Fill Right from the Cell menu to copy the formula to the selected cells to its right. The formula appears in the new locations.

USING CUT, COPY, AND PASTE

Using these menu choices, you can copy or move a single cell or a range of cells to any other location in a spreadsheet. Cut, Copy, and Paste work the same way in GeoCalc they do in other GEOS applications. Cut and Copy place the selected cells on the clipboard; Paste retrieves any previously cut or copied information from the clipboard. For more information about the clipboard or about using these menu choices, see Chapter 1.

Inserting and Deleting Rows and Columns

After you have created a spreadsheet, you may need to add a row or column to accommodate additional information. When information becomes obsolete, you will want to delete a row or column.

To insert a row or column (All Levels)

At Level 2 and above, if the Function bar is displayed, you can use tools to insert a row or column quickly. Rows are inserted *above* the active cell, columns to the *left* of the active cell.

1. Select a cell, and choose Insert Row/Column from the Edit menu. (To insert multiple rows or columns, first select the rows or columns that you want to insert and then choose Insert Row/Column.) A dialog box appears.
2. Select either Row or Column in the dialog box, and tap Insert.

To delete a row or column (All Levels)

At Level 2 and above, if the Function bar is displayed, you can use tools to delete a row or column quickly.

1. Select a cell in the row or column, and choose Delete Row/Column from the Edit menu. (To delete multiple rows or columns, first select the rows or columns that you want to delete and then choose Delete Row/Column.) A dialog box appears.
2. Select either Row or Column in the dialog box, and tap Delete.

Filling a Range of Cells with Incremental Values

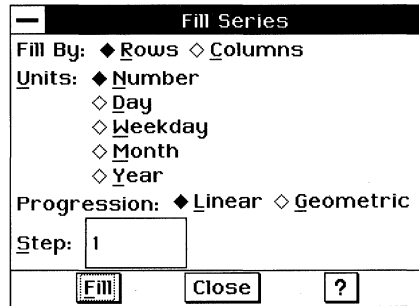
Using the Fill Series choice on the Cell menu, you can automatically fill a range of cells with a series of incremental values. You select the range of cells and specify the starting value and the increment. GeoCalc does the rest.

If the first cell in a series contains a 1, the next cell will contain 2, the following 3, and so on. If the first cell contains a date, Fill Series increments the date; Monday increments to Tuesday, Wednesday, Thursday, and so on. Time increments from 1:00 to 2:00, 3:00, and so on.

To fill a range with incremental values (All Levels)

1. Enter the value or date you want to increment.
2. Select the range of cells you want to fill, starting with the cell where you entered the value or date you want to increment.

3. Choose Fill Series from the Cell menu. A dialog box appears:



4. Complete the dialog box, specifying the fill options you want:

Fill By. Select whether to fill rows or columns.

Units. Select the type of units for the fill: Number, Day, Weekday, Month, or Year.

Progression. Select the progression you want GeoCalc to use: Linear or Geometric. A linear series is additive; each step adds a constant to the previous number. For example, a linear progression starting at 1 and incrementing by 1 is 1, 2, 3, 4, 5. A geometric series progresses by a specific multiplier at each step. For example, a geometric series starting at 1 with 3 as the multiplier is 1, 3, 9, 27, 81, 243.

Step value. For a linear progression of numbers, enter the increment you want for each value. For a geometric progression of numbers, enter the multiplier you want to use for each value. For a progression of dates, enter the number of units (days, weekdays, months, or years) by which you want to increase each value.

5. Tap Fill. The range is filled as you specified.

NOTE

If you select Day, Weekday, Month, or Year in the Fill Series dialog box, GeoCalc creates the series differently depending on how you originally entered the date.

If you entered the date as a label, GeoCalc creates additional dates as labels. If you entered the date as a serial number, GeoCalc creates additional dates as serial numbers; however, the cell must have a date format. To fill date information as text (such as "Sunday" or "January"), enter the first value as text. For numbers, such as a year value, to fill in a progressive series of years, enter the year as a text value ("1990), not a number. For more information, see "Entering Dates" in this chapter.

Formatting GeoCalc Spreadsheets

None of the features described in this section are available Level 1 of GeoCalc.

You can use a number of options to change the appearance of your spreadsheet. These options do not affect calculations; they simply make the spreadsheet more attractive and allow you to highlight information to show its importance. You will find these visual enhancements particularly helpful if you want to make presentations.

SHOWING GRID LINES

LEVELS 2-4

A *grid* is the matrix of horizontal and vertical lines dividing the spreadsheet into rows and columns. Each individual line is a *grid line*. You can show grid lines on screen and print your spreadsheet with or without the grid lines. The default setting for grid lines is to display them; however, you can create interesting effects by turning off the grid lines and adding cell borders as described in the next section.

To show or hide grid lines (Levels 2-4)

- Select Draw Grid Lines from the Options menu to show grid lines.
or

Deselect Draw Grid Lines from the Options menu to hide grid lines.

At Levels 3 and 4, you can print grid lines whether they are visible on screen or not. To do so, however, you must use Page Setup on

the File menu to specify printing grid lines. For more information, see “Additional GeoCalc Features” in this chapter.

SHOWING CELL BORDERS

LEVELS 3–4

To create an interesting visual display of your numeric information, you can display borders for cells in various configurations, as in this example:

BUS SCHEDULE

Morning Schedule

<i>Street</i>	<i>G Bus</i>	<i>H Bus</i>	<i>R Bus</i>	<i>V Bus</i>	<i>Y Bus</i>
12th Street	8:30	8:45	8:25	8:35	8:40
23rd Street	8:40	.....	8:35	8:45	8:50
West Avenue	9:12	.....	9:07	.....	9:22
Washington Square	9:45	9:30	9:40	.....	9:55
Adison Avenue	10:05	9:50	10:00	10:08	10:15
Marian Plaza	10:30	.....	10:25	10:33	10:40
Seaside Drive	10:35	.....	10:30	10:38	10:45
Main Street	10:42	10:20	10:37	.....	10:52
103rd Street	11:00	10:38	10:55	.....	11:10
205th Street	11:08	10:46	11:03	11:10	11:18
Turner Place	11:20	.....	11:15	11:22	11:30
Willinger Avenue	11:56	10:15	11:51	11:56	12:06

To display cell borders (Levels 3–4)

1. Select the cells you want borders for, and choose Cell Borders from the Properties menu. A dialog box appears.
2. Select the borders you want. The Outline option displays a border around the selection and deselects Left, Top, Right, and Bottom.
3. Tap Apply to apply your changes, and close the dialog box.

ADJUSTING ROWS AND COLUMNS

GeoCalc sets each column to a standard width when you create a spreadsheet. As you enter data, GeoCalc automatically adjusts the row height to accommodate the text size you use. You can manually change both the row height and the column width to suit your needs.

Adjusting Column Width

LEVELS 1–4

GeoCalc provides several ways to change the width of a column. You can drag the column marker with the touch pen or use the Column choices (Narrower, Wider, and Best Fit) on the Cell menu. Alternatively, you can set an exact column width with the Column Width choice on the Cell menu.

To set a column width exactly (Levels 3–4)

1. Select the column for which you want to set the width. To do so, you can either tap the column header or select a cell in the column.
2. Choose Column Width from the Cell menu. A dialog box appears.
3. Enter the number of points you want to use for the column width.
4. Tap Apply to apply your changes. The dialog box remains on the screen until you close it, so that you can keep adjusting the width.

A standard column is 64 points wide. A point is 1/72 of an inch.

Adjusting Row Height

LEVEL 4

Normally the height of each row adjusts automatically to accommodate the text size you use. However, you can manually change the row height if you want to use a different setting.

To set a row height manually (Level 4)

1. Select the row for which you want to set the height. You can either tap the row header or select a cell in the row.
2. Choose Row Height from the Cell menu. A dialog box appears.
3. Enter the number of points you want to use for the row height.
4. Tap Apply to apply your changes.

USING HEADERS AND FOOTERS

LEVELS 3–4

Headers and *footers* are the text that prints at the top or bottom of each page (headers appear at the top, and footers at the bottom). They can be as simple as the page number, or they can include more descriptive information, such as the following:

- Date the document was created or printed
- Name of the document
- Your name or the name of your department, business, or school

- Graphics, such as a logo or drawing

To create a header or footer (Levels 3–4)

You can specify that GeoCalc use text you have entered in a cell as the header or footer of the spreadsheet when it is printed. The text appears in the cell and as the header or footer.

1. Enter the header or footer text in a cell or range of cells.

NOTE

It is a good idea to enter the text for headers and footers in cells that are not part of the main information in your spreadsheet. Then, when you print the spreadsheet, select a print range that excludes the cells containing the header and footer text.

2. Select the cell or range.
3. Choose Header/Footer from the Cell menu. A submenu appears.
4. Choose either Set Header or Set Footer from the submenu. The selected information will print at the top or bottom of the page, as you have indicated.

To number pages consecutively (Levels 3–4)

- Use the PAGE function in the header or footer cell. For more information about the PAGE function, see Appendix B.

USING COLOR

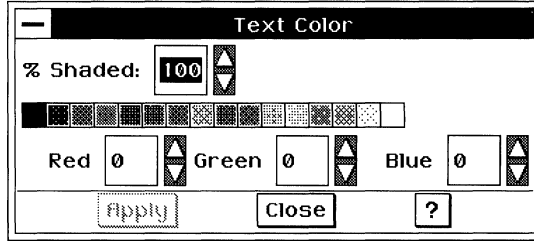
LEVELS 2–4

If you do not have a color printer, the colors print as gray tones.

Although the unit uses only black, white, and shades of gray in its display, you can use color to highlight your spreadsheets when you print worksheets on a color printer. You can use color for the following elements in a spreadsheet:

- Text
- Background
- Cell borders

In each of these cases, the dialog box you choose colors from is similar. It looks like this:



You can refer to this illustration as you read the procedures for choosing colors, described below.

To change the color of text (Levels 2–4)

1. Select the cells that contain the text you want to color.
2. Choose Text Color from the Properties menu. A dialog box appears.
3. Complete the dialog box, selecting the options you want:
 - % Shaded.** Select the percent shading for the text color. The lower the number, the lighter the color. By default, this setting is 100.
 - Color tools.** Select the text color from the color palette. You can also fine tune the color blend by setting the amounts of red, green, and blue in the text color; the default values depend on the selected color.
4. Tap Apply to apply your changes.

To change the color of the background (Levels 2–4)

The background is the cell itself. If you set the background color to blue and the text color to black, the cell entries will appear as black text on a blue background when printed on a color printer. In the unit display, the background color will appear as a shade of gray.

1. Select the cells for which you want to change the background color.
2. Choose Text Background Color from the Properties menu. A dialog box appears.
3. Complete the dialog box, selecting the options you want:
 - Filled or Unfilled.** Select Filled to set other options in this dialog box. By default, the text background color is unfilled.

% Shaded. Select the percent shading for the text background color. The lower the number, the lighter the color. A setting of zero (0) causes the background color to disappear. By default, this setting is 100.

Color tools. Select the text background color from the color palette. You can also fine tune the color blend by setting the amounts of red, green, and blue in the text background color; the default values depend on the selected color.

4. Tap Apply to apply your changes.

To change the color of cell borders (Levels 3–4)

If you have added cell borders, you can change the color of those borders.

1. Select the cells for which you want borders.
2. Choose Border Color from the Properties menu. A dialog box appears.
3. Complete the dialog box, selecting the options you want:

% Shaded. Select the percent shading for the text color. The lower the number, the lighter the color. By default, this setting is 100.

Color tools. Select the text color from the color palette. You can also fine tune the color blend by setting the amounts of red, green, and blue in the border color; the default values depend on the selected color.

4. Tap Apply to apply your changes.

USING NOTES

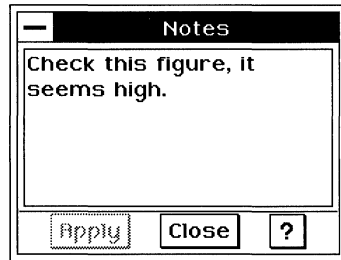
LEVELS 3–4

You can add notes that provide additional information about the contents of your spreadsheet. They can be a reminder to check a reference, a note about the logic you used for a formula, or a message to a reviewer of the spreadsheet information.

For example, if you want to check a value that seems too high, you can attach a note to the cell containing the questionable value. The cell displays a special note indicator so that you know there is a note attached:

Vanilla	231.00	
Strawberry	231.00	Note indicator
Pecan Brickle	154.00	

The note does not appear *in* the document; instead, it appears in a special box that you can print with the spreadsheet if you want.



To attach a note (Levels 3–4)

1. Select the cell you want to attach a note to.
2. Choose Notes from the Cell menu. A dialog box appears so that you can enter the note.
3. Enter the note text in the dialog box.
4. Tap Apply when you are finished entering the note text, and close the dialog box. A small square appears in the upper-right corner of the cell to indicate that a note is attached. This is the note indicator.

If you want to check notes frequently, you can keep the Notes dialog box displayed on screen so that you can see the notes easily.

To show or hide the note indicators (Levels 3–4)

1. Choose Other Settings from the Options menu. A submenu appears.
2. Select Show Notes to display the note indicators in cells that have attached notes.

or

Deselect Show Notes to hide them.

To print notes (Levels 3–4)

When you print the spreadsheet, you can also print the attached notes.

1. Choose Print from the File menu. A dialog box appears.
2. Select Print Cell Notes.
3. Tap Print. GeoCalc prints the spreadsheet with the notes attached.

Advanced GeoCalc Formulas

“GeoCalc Basics” describes how to create formulas and use functions to make complex formulas easy. In this chapter you will also learn to show and hide formulas, assign names to cells and ranges so you can use the names in formulas, turn automatic recalculation on and off, use circular references and iteration in calculations, and use advanced functions.

SHOWING AND HIDING FORMULAS

LEVELS 2-4

In order to see a formula in a single cell, you can select the cell and look at the formula in the Edit bar. If you want, you can display all of the formulas in the spreadsheet cells. This can be helpful if you have entered several formulas and want to see them all at once.

SALES		
Equipment	3000.00	
Services	2500.00	
Products	1800.00	
Total	=SUM(C5:C7)	
Tax	=C9*0.0725	
Grand Total	=C9+C10	

When you show all formulas, formulas appear in cells as if they were labels. That is, if a formula is too long for a cell, it may spill over into the next cell if that cell is empty. If the adjacent cell is not empty, the formula appears cut off.

To show or hide all formulas (Level 2)

- Select Show Formulas from the Options menu to show all formulas.

or

Deselect Show Formulas from the Options menu to hide all formulas.

To show or hide all formulas (Levels 3-4)

1. Select Other Settings from the Options menu. A submenu appears.
2. Select Show Formulas from the submenu to show all formulas.

or

Deselect Show Formulas from the submenu to hide all formulas.

NAMING CELLS AND RANGES

LEVELS 3-4

When you create a formula, you normally include references to the cells and ranges you want to use in the calculation. Although you can refer to a cell or a cell range by its address, it is sometimes easier to *name* the cell or range and then use the name in formulas. For example, the formula

`=B4=B2+B3`

is easier to read if you name the cells, like this:

`INCOME=SALARY+TIPS`

Cell names can be up to 40 characters long and can include letters and the underscore (`_`) symbol. Cell names cannot contain numbers, spaces, or other characters. If you enter a space, GeoCalc inserts an underscore. Cell names are not case-sensitive; for example, to GeoCalc, the name “Expenses” is the same as “EXPENSES” or “expenses.”

Defining a Name

You define a name that refers to a specific cell or range. For example, you might define RATE as A3; then, when entering formulas, you can enter **RATE** instead of entering **A3**.

You can use both absolute and relative references when you define a name, but it is easier to use absolute references.

The names you define are saved with your spreadsheet. You can copy formulas that use named cells from one spreadsheet to another; however, the names are replaced by addresses in the second spreadsheet.

To define a name (Levels 3–4)

1. Choose Define Name from the Formulas menu. A dialog box appears, listing any names you have previously defined.
2. Tap New. A dialog box appears.
3. Complete the dialog box, specifying the name and reference you want to use:

Name. Enter the name for the cell or range of cells.

Definition. Enter the reference for the cell or range you want to name. You can use relative and absolute references.

4. Tap OK and close the dialog box. The name appears in the list in the Define Name dialog box.

Use absolute cell addresses unless you want the named range to reflect a relative position.

To insert a name in a formula (Levels 3–4)

Once you have defined a name, you can use it in any formulas you create. To do so, you simply enter the name in the formula. If you prefer, you can also select the name from a list in a dialog box, as explained in the following procedure.

1. Select a cell and begin entering a formula.
2. When the insertion point in the Edit bar is in the position for the name you want to use, choose Insert Name from the Formula menu. A dialog box appears.
3. Select the name you want to insert.
4. Tap Paste, and close the dialog box. The name appears in the Edit bar.

Modifying a Name

You can rename a named cell, change the definition of a name, and delete a name. The procedures for each of these are similar, starting with choosing Define Name from the Formula menu.

If you change the definition of a name, the reference changes in existing formulas that contain that name. For example, if you have a range called Expenses that includes B5:B17 and you extend the range to B5:B24, all formulas using the name “Expenses” will be recalculated automatically to include the seven additional cells in the range.

To rename a cell or change the definition of a name (Levels 3–4)

1. Choose Define Name from the Formula menu. A dialog box appears.
2. Select the name you want to modify.
3. Tap Change.
4. Do one of the following:
 - To rename a named cell, enter the new name in the Name box.
 - To change the definition of a name, change the cell or range specification to suit your needs.
5. Tap OK, and close the dialog box. All formulas are updated to reflect the change.

To delete a name (Levels 3–4)

1. Choose Define Name from the Formulas menu. A dialog box appears.
2. Select the name you want to delete.
3. Tap Delete. A confirmation message appears.
4. Tap Yes to delete the selected name. GeoCalc deletes the name and, for formulas using the deleted name, replaces the name with the cell or range address it referenced.

CONTROLLING AUTOMATIC RECALCULATION

LEVEL 4

GeoCalc normally recalculates every formula in your spreadsheet every time you make a change. If your spreadsheet is large or contains many complex formulas, this recalculation can be time-consuming. In that case, you may want to turn automatic calculation off. When automatic recalculation is off, you recalculate the spreadsheet manually whenever you want to.

To turn automatic recalculation on or off (Level 4)

1. Choose Calculation from the Options menu. A dialog box appears.
2. Select Automatic or Manual to specify the type of calculation you want.
3. Tap Apply to apply your changes, and close the dialog box.

To recalculate manually (Level 4)

When automatic recalculation is off, you must recalculate the spreadsheet manually in order to see the effects of any changes you make.



- Tap the Calculate button on the Function bar.

or

Choose Calculate Now from the Options menu.

USING ITERATION AND CIRCULAR REFERENCES

LEVEL 4

Occasionally, you may want to create a formula in which a calculation depends on its own result. This is called a *circular reference*. Consider the following example: to calculate gross profit, you subtract expenses from income. If one of the expenses is based on a percentage of the profit — commission, for instance — the formula has to rely on the outcome of the calculation.

	A	B
1		
2	Income	1000.00
3	Fixed Expenses	750.00
4	Commission	=B6*0.33
5	Total Expenses	=B3 + B4
6	Profit	=B2-B3
7		

If you calculate this formula in B5 more than once, each successive calculation results in a smaller value. This is called *iteration*. Iteration is the process of recalculating a circular reference repeatedly, until *convergence* occurs, when the difference in the result of each successive calculation is no longer significant.

The following table shows the results of another simple iterative calculation so that you can see how the calculation converges:

ITERATION	A3 =A4+A5	A4 =.5*A3	A5 =100
1	0	0	100
2	100	50	100
3	150	75	100
4	175	87.5	100
5	187.5	93.75	100

6	193.75	96.875	100
7	196.875	98.4375	100
8	198.4375	99.21875	100
9	199.21875	99.609375	100
10	199.609375	99.8046875	100

Notice, in the table that the value in A3 approaches 200 and the value in A4 approaches 100. GeoCalc stops the iteration when the results of a circular reference converge on a single value. If convergence does not happen within the number of recalculations you specify in the Calculations dialog box, GeoCalc automatically stops the iteration. You can specify the limit for the convergence with Maximum Change in the dialog box. If you specify zero for the maximum change, iteration will not stop until it converges (or reaches the maximum number of iterations).

Before using circular references, you must turn on iteration, using the Calculation choice on the Options menu. If you enter a formula with a circular reference but have not specified that you want to use iteration, the result of the formula appears as #CIRC#.

To specify iteration (Level 4)

1. Choose Calculation from the Options menu. A dialog box appears.
2. Complete the dialog box, specifying the options you want:
 - Allow Iteration.** Select the Allow Iteration option if you are going to use iteration in your spreadsheet.
 - Maximum Iterations.** Enter the maximum number of iterations you want.
 - Maximum Change.** Enter the maximum change you want to allow.
3. Tap Apply, and close the dialog box.
4. Create the formula with a circular reference. GeoCalc recalculates the formula the specified number of times or stops when the stated value for maximum change is calculated.

ADVANCED FUNCTIONS

ALL LEVELS

The “GeoCalc Basics” section of this chapter explains how to use basic functions and enter the arguments for functions. Complex functions involve the following capabilities:

See Appendix B for brief descriptions of the functions organized by function type, and an alphabetical listing of functions with a complete description and syntax for each.

- Conditional statements
- Text strings
- Arrays
- Lookup

GeoCalc includes the following types of functions: strings, time and date, financial, mathematical, statistical, trigonometric, information, logical, lookup, and print.

Logical functions and lookup functions are described in more detail below.

You can use a list of values, separated by commas and enclosed in parentheses, as arguments for many functions. If the function uses a list for its arguments, then each item in the list is evaluated. For example, the following two functions are equivalent:

SUM(A1:A4)

SUM(A1,A2,A3,A4)

NOTE

Named cells and ranges are particularly useful as arguments for functions. For more information on how to name ranges, see “Naming Cells and Ranges” in this chapter.

Using Logical Functions

A logical function says, “If this is true, then do that.” For example, “If the value of B12 is larger than 10,000, then display 50 in this cell.” To create conditional statements, you use the IF function.

The logical functions evaluate relationships and return “true” or “false” results. For example, the IF function looks at a condition, such as whether the contents of B13 = 500, and returns a true or false result.

USING THE IF FUNCTION

IF statements consist of the following three components:

- The condition you want to test
- The result you want if the condition is true
- The result you want if the condition is false

For example, you might want to calculate escalating bonuses for a sales team based on a percentage of the sale. For sales under \$10,000, the bonus is 2%. For sales over \$10,000, the bonus is 4%. The formula for such an IF statement is as follows:

BONUS = IF(SALES<10000,.02*SALES,.04*SALES)

In this example, SALES<10000 is the condition you want to test; .02*SALES is the result you want if the condition is true, and .04*SALES is the result you want if the condition is false. Therefore, if the SALES figure is \$15,000, the IF statement returns false, and GeoCalc computes the formula in the following way:

BONUS = .04*SALES

BONUS = \$600.00

If, on the other hand, the SALES figure is \$7,500, the IF statement returns true, and GeoCalc computes the formula as follows:

BONUS = .02*SALES

BONUS = \$150.00

USING LOGICAL OPERATORS

You can also use conditional operators that result in a value of 0 if false or 1 if true. These operators are used with IF functions.

SYMBOL	OPERATION	EXAMPLE
=	Equals	A14=B12
>	Greater than	A14>B12
<	Less than	A14<B12
≥ (Ctrl+Alt+<)	Greater than or equal to	100≥A14
≤ (Ctrl+Alt+>)	Less than or equal to	100≤A14
≠ (Ctrl+Alt+=)	Not equal	A14≠B12

USING THE AND AND OR FUNCTIONS

By combining IF with the AND and OR functions, you can create even more complex conditional statements. Consider the following example:

IF(AND(A1>100,B1>100,C1>100),5,0)

The result of this formula is 5 only if the values in A1, B1, and C1 are all greater than 100. Otherwise, the result is 0. You can apply the same principle using the OR function, as shown in the following example:

IF(OR(A1>100,B1>100),50,0)

The result of this formula is 50 if either A1 or B1 is greater than 100; otherwise, the result is 0.

The index entries must be sorted in ascending order. For HLOOKUP, the index is the first row in the selection. For VLOOKUP, the index is the first column.

Using Lookup Functions

Lookup functions create a table within a spreadsheet that acts like a database. You can enter values in the table and then extract information from the table depending on your specifications.

Lookup tables are good for discounts, tax rates, and commission percentages. For example, the following table shows a discount (row 4) that increases with the number of units sold (row 3):

	A	B	C	D	E	F	
1	# Sold	1257.00					
2							
3	# Units	0.00	100.00	500.00	1000.00	10000.00	
4	Discount	0%	2%	5%	10%	15%	
5							
6	Discount	10%					
7							

You can create a formula that looks up the correct discount if you give it the number of units sold. For example, if you enter the number of units sold (1257) into B1, and you insert the following formula into B6:

`HLOOKUP(B1, B3:F4, 1)`

the formula returns 10%, as shown above.

You can extract values horizontally (from rows) with HLOOKUP and vertically (from columns) with VLOOKUP.

Charting in GeoCalc

GeoCalc lets you use your spreadsheet data to create a variety of charts that visually represent numeric trends or results. You can include a chart as a part of your spreadsheet, or after creating a chart, you can copy it to the clipboard and use it in other GEOS applications such as GeoWrite.

WHAT IS A CHART?

A *chart* is a graphic representation of numeric data. For example, you can create a chart to show the value of the consumer price index over a period of years, the total revenue for a company broken down by region, or the average age of people by country.

Charts show the relationships among a *series* of *values* broken down into *categories*. For example, in a chart of monthly expenses, the series would include January, February, March, and so forth; the categories would include items such as Rent, Food, and Utilities; and the values would be the actual expenditures incurred.

TYPES OF CHARTS

GeoCalc lets you create the following types of charts:

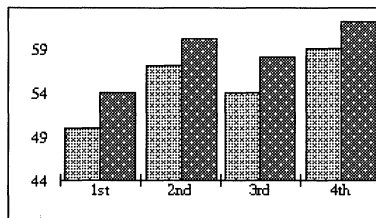
- Column

- Bar
- Line
- Area
- X-Y plot
- Pie
- High/Low

All but the High/Low chart offer variations you can choose once you have created the chart. Each of the seven standard charts is illustrated in the following sections.

Column Chart

A *column chart* (or a vertical bar chart) plots each category in a series as a vertical bar. The height of the bar corresponds to the value of that category. The following illustration shows a typical column chart:



Variations on the standard column chart include the following:

Overlapped. The columns within each category overlap each other slightly.

Stacked. The columns within each category are stacked vertically on top of each other. The height of the stacked column is the sum of the values in the category.

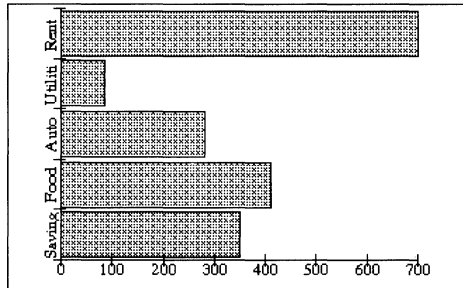
Stacked Percentage. The columns in each category are stacked so that the total height represents 100%. The height of each value is shown as that value's percentage of the whole category. This is like a vertical pie chart.

One Color with Values. Columns all have the same color or shade and are labeled with their numeric values.

One Color with No Space Between Categories. Columns all have the same color or shade, and the last column in category 1 abuts the first column in category 2 with no space between them.

Bar Chart

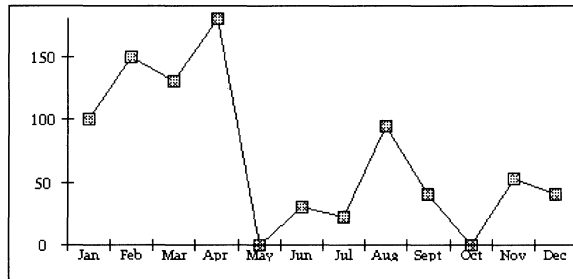
A *bar chart* is like a column chart with the bars plotted horizontally rather than vertically.



The same variations are available for bar charts and for column charts.

Line Chart

A *line chart* plots a point indicator for each value on one axis in relation to the text label on the other axis, and connects the points in each series with straight lines. This type of chart is useful for showing how a value changes over time. The following illustration shows a typical line chart:



Variations on the standard line chart include the following:

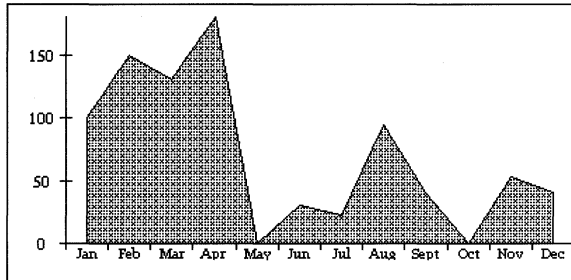
Lines Only. Draws only the lines connecting the points in each series; does not draw the markers for each point.

Markers Only. Draws only the markers for each point; does not connect the markers with lines.

Drop Lines. Draws the markers for each point, and then connects the points in each category with a vertical line; does not draw lines connecting the values.

Area Chart

An *area chart* is a line chart in which the area below the line is filled with a pattern or solid color. The following illustration shows a typical area chart:



Variations on the standard area chart include the following:

Stacked Percentage. Like the column stacked percentage chart, this area chart shows the areas for each category stacked to a constant height representing 100%, and the values are shown as percentages.

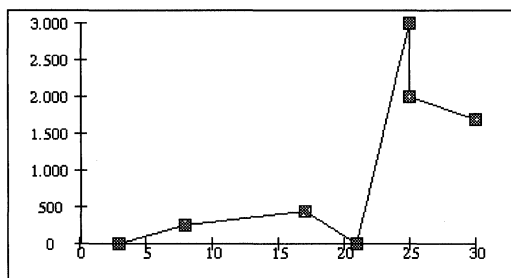
Drop Lines. Draws a vertical line to connect the points in each category.

Series Name. Prints the name of each series in the center of its filled area.

X-Y Plot Chart

An *X-Y plot chart*, sometimes called a *scatter plot*, looks similar to a line chart, but there is a significant difference between the two. Line charts plot a value against a label (see the preceding line chart illustration), whereas X-Y plot charts plot one value against another. X-Y plot charts are unique in that they take categories two rows at a time and plot them against each other.

The following illustration shows a typical X-Y plot chart:



Another difference between X-Y plot charts and line charts is that on an X-Y plot chart, the tick marks along each axis (X is the horizontal axis, Y is the vertical) are spaced according to their values, which may not always be at regular intervals because of the potentially random nature of the data. On a line chart, one axis always contains text labels, which are usually evenly spaced for visual clarity.

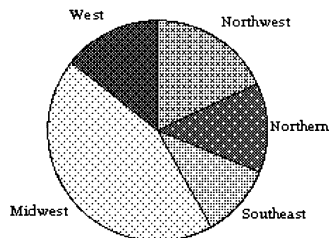
Variations on the standard X-Y plot chart include the following:

Lines Only. Draws only the lines connecting the points in each series; does not draw the markers for each point.

Markers Only. Draws only the markers for each point; does not connect the markers with lines. This choice makes an X-Y plot that looks like a traditional scatter plot.

Pie Chart

A pie chart is a circular chart in which the size of each “slice” is proportional to its percentage of the whole. Pie charts are unique in that they draw only one category of data. The illustration below shows a typical pie chart:



Variations on the standard pie chart include the following:

Category Titles. Inserts the category titles into the chart.

One Color with Category Titles. Shows all the wedges of the pie in one color, with category titles.

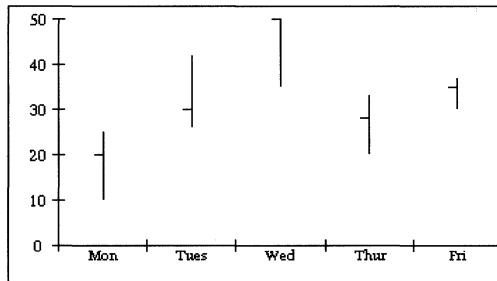
First Wedge Exploded. Pulls the wedge that starts near the 12 o'clock position out slightly from the rest of the pie.

All Exploded. Pulls all the wedges apart slightly.

With Percentages. Shows the percentage of the whole pie that each wedge represents.

High/Low Chart

A *high/low chart* is useful for tracking pairs of data that mark a high and low or a start and end value, for things such as the price of stocks or the day's temperature range. Each pair of data points is plotted as a single vertical line. You can also show a third or fourth relative value along with each pair, such as the stock's daily closing price or the average temperature. High/low charts require two categories of data, and may show up to four categories. The third category places tick marks to the left; the fourth category places tick marks to the right.



No variations are available for high/low charts.

CREATING CHARTS

LEVELS 2-4

To create a chart you must first define the data that is to appear in the chart. You can select a portion of an existing spreadsheet, or use a blank spreadsheet in which you enter just the data you wish to chart. For example, the data in the sample line chart that appears in this chapter are one row of data from a larger budget spreadsheet. The spreadsheet shown in the following procedure was developed specifically to generate a chart.

The following illustration shows the general format for data on which you base a chart and an example of how this format translates to a column chart:

	A	B	C	D	E
1	Chart Title	Series Name	Series Name	Series Name	Series Name
2	Category Name	value	value	value	value
3	Category Name	value	value	value	value
4	Category Name	value	value	value	value
5	Category Name	value	value	value	value
6					

You use the following elements in typical chart data:

Chart Title. The title of the chart. This label is optional. If you do not place any text in this cell, the chart will not be titled. You can title it later using the Titles and Legends choice on the Chart menu.

Series Name. The series names are the labels of the spreadsheet columns. For a definition of *series*, see “What is a Chart?” in this chapter.

Category Name. The category names are the labels of the spreadsheet rows. For a definition of *category*, see “What is a Chart?” in this chapter.

Value. The numeric data values that GeoCalc charts. Each category you wish to chart should have at least one value for each series. Empty cells in your spreadsheet will be interpreted as zeros in your chart.

NOTE

Do *not* use numbers for the chart title, series names, or category names. For example, instead of naming categories **1**, **2**, and **3**, use something like **Day 1**, **Day 2**, and **Day 3**. If you must use numbers, such as 1993 and 1994, place a quotation mark (“) before each number so GeoCalc will interpret it as text.

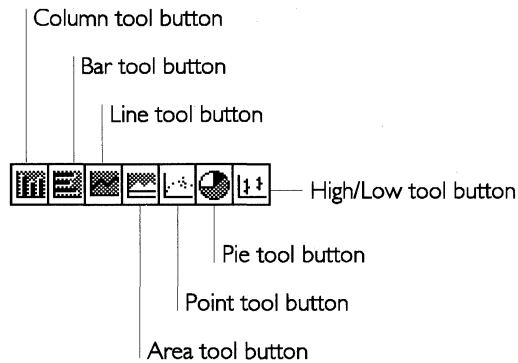
To create a chart (Levels 2–4)

Once your labels and data are in place on the spreadsheet, you create charts using either the Charts menu or the charting buttons on the Style bar.

1. Open the spreadsheet that contains the data you want to chart.
or
Open a new spreadsheet and enter the data you want to chart.
2. Select the cells that contain the data you want to chart.

	A	B	C
1	Quarterly Sales in Thousands	Sales figures, 1991	Sales figures, 1992
2	1st	50.00	54.00
3	2nd	57.00	60.00
4	3rd	54.00	58.00
5	4th	59.00	62.00
6			

When you select cells, GeoCalc activates the Chart Menu and Chart buttons on the Style bar.



3. Decide which type of chart will best depict the data. Remember that a pie chart can only represent one category, X-Y plots compare two or more categories, and high/low charts require from two to four categories of data. Use pie charts for percentages, line charts for trends, bar charts for comparing amounts for fixed time intervals, and X-Y plots to show cause and effect.
4. Select the desired type of chart on the Style bar.

or

Open the Chart menu and select the basic type of chart from the Create submenu. The chart appears as a *graphic object* in the lower right corner of the GeoCalc window. For more information about charts as graphic objects, see “Manipulating Charts” in this chapter.

CHANGING THE TYPE OF CHART

LEVELS 2-4

You can choose a different type of chart to get a different view of your information. To do so, simply tap the appropriate chart button.

Once you have created a chart, GeoCalc activates additional commands on the Chart menu. Use the Change Type choice on the Chart menu to change the basic type or to change the chart to one of its type variations. Alternatively, if you want to change just the type, not the variations, you can use the Chart buttons on the Style bar instead.

To change the type of chart (Levels 2–4)

1. Select Change Type from the Chart menu. A dialog box appears.
2. Select the type of chart or variation you want.
3. Tap Apply, and close the dialog box. GeoCalc changes the chart.

MANIPULATING CHARTS

LEVELS 2–4

When you create a chart, it appears in your spreadsheet as a graphic object with small filled boxes around its perimeter, and a diamond-shaped spot in the center. These *handles* indicate that the chart is the currently selected object.

You can use the handles to manipulate your chart just as you would manipulate any graphic object. The diamond-shaped handle in the center is the *move handle*. You use the move handle to move the chart, and you use the other handles to resize it.

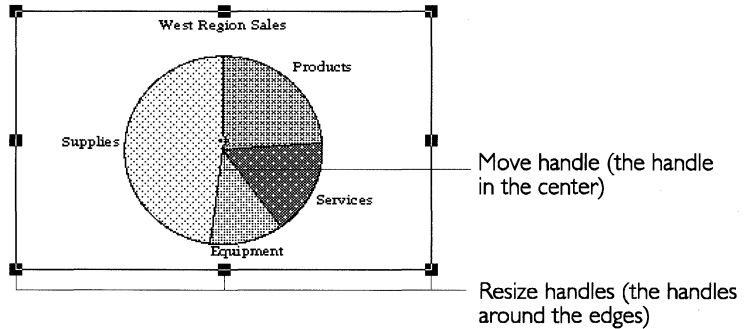
The procedures in this section explain how to perform basic operations with graphic objects. For more information about working with graphic objects, see Chapter 8.

Moving a Chart

You can move the chart to any location in your spreadsheet. The general procedures for moving graphic objects are described in Chapter 8.

To move a chart (Levels 2–4)

1. If the chart is not selected, tap the edge of the chart to select it. Handles appear around the chart frame and the move handle appears in the center.



2. Drag the chart to the position you want. The chart appears in the new position.

Resizing a Chart

You can make a chart larger or smaller by using the handles to resize it.

*If you are using an optional external keyboard, you can maintain the chart's aspect ratio by holding down the **Shift** key while dragging.*

To resize a chart (Levels 2–4)

- Place the pen over one of the handles that surround the chart, then drag the chart. Dragging toward the center of the chart reduces it, while dragging away from the center enlarges it.

Changing Chart Properties and Attributes

Attributes are visual elements such as color, line thickness, and fill pattern. If you select a chart and then tap one part of it, such as a wedge of a pie chart, you can change the attributes of that part of the chart.

To change text properties in a chart (Levels 2–4)

1. Select the chart by tapping it. Handles appear around the chart.
2. Select the text item within the chart that you want to change by tapping on it. (If you are using an optional external keyboard, you can select multiple text items by holding down the **Ctrl** key as you tap.) Handles appear on the item to indicate that it is selected. You

cannot move any labels that the chart has generated, though you can edit text labels using the Text tool.

3. Choose the text property (font, style, size, or color) you want to change from the Properties menu or the Style bar.
4. GeoCalc applies the change to the selected text.

To change an attribute of an element in a chart (Levels 3–4)

1. Select the chart by tapping it. Handles appear around the chart.
2. Select the object within the chart that you want to change by tapping on it. Handles appear on that object to indicate that it is selected. You cannot move the component parts of the chart or any labels that the chart has generated, though you can edit text labels using the Text tool.
3. Choose the attribute you want to change from the Graphics menu. Many of these choices have dialog boxes. For information specific to the choices on this menu, see Chapter 8.
4. Tap Apply to apply your changes, and close the dialog box.

Deleting a Chart

You can delete a chart you no longer need.

To delete a chart (Levels 2–4)

1. If the chart is not selected, tap the edge of the chart to select it. Handles appear around the chart frame, and the move handle appears in the center.
2. Choose Delete from the Edit menu.

or

Tap **Delete**. GeoCalc deletes the selected chart.

Using a Chart in Another Application

You can copy a chart to a document you create with another GEOS application. For example, you may want to use a chart in a report you have created in GeoWrite, or in an illustration you have created using the drawing tools.

To copy a chart to another application (Levels 2–4)

1. Select the chart you want to copy by tapping it. Handles appear around the chart.

2. Choose Copy from the Edit menu.
3. Go to the other application and choose Paste from the Edit menu. The chart appears.

ADDING TITLES AND A LEGEND

LEVELS 2-4

A picture is worth a thousand words, but sometimes you need to add a few words of explanation, especially for a chart.

To add titles and a legend to a chart (Levels 2-4)



1. Tap the pointer tool to select the chart.
2. Choose Titles & Legend from the Chart menu. A dialog box appears.
3. Complete the dialog box, selecting the options you want:

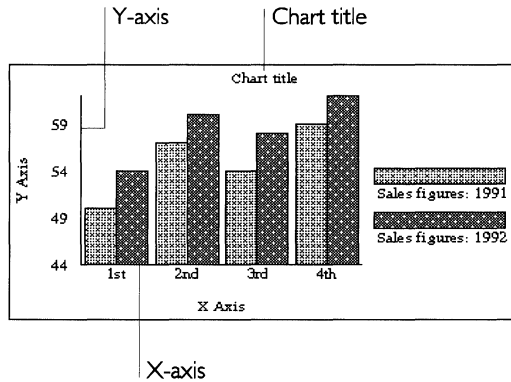
Chart Title. Select this option to add a title to the chart. GeoCalc looks for title text in the upper left of the selected chart range. If it cannot find any text, a text object with the words “Chart Title” appears at the top of your chart. You can change the title later.

X-Axis Title. Select this option, if applicable, to add a title to the chart along the X-axis.

Y-Axis Title. Select this option, if applicable, to add a title to the chart along the Y-axis.

Legend. Select this option if your chart shows more than one category and you want to define the colors or patterns GeoCalc uses to differentiate between categories. You can also select its position on the chart: Horizontal (below chart) and Vertical (at right of chart).

4. Tap Apply to apply your changes, and close the dialog box. GeoCalc adds the items you selected to your chart, as shown in the following example:



To change text in the chart title or axis titles (Levels 3–4)

1. Select the Text tool from the Drawing tool bar.
2. Tap the text object you want to change. The text object is outlined and a vertical bar indicates the insertion point for text.
3. Use the **Backspace** and **Delete** keys to remove text you do not want, or highlight the unwanted text and choose Delete from the Edit menu.
4. Enter the new text.
5. When you are finished with the Text tool, select the pointer tool from the Drawing Tool Box and tap an empty area of the chart to remove the outline around the text (so that further changes are not accidentally made to the text).

You can apply a variety of style features to the text. For more information about using text features, see Chapter 1. For more information about using text in graphics, see Chapter 8.

CHANGING MARKINGS

LEVELS 2-4

There are three different types of chart markings you can change: axis markings, grid markings, and the marker shapes that indicate values on a chart.

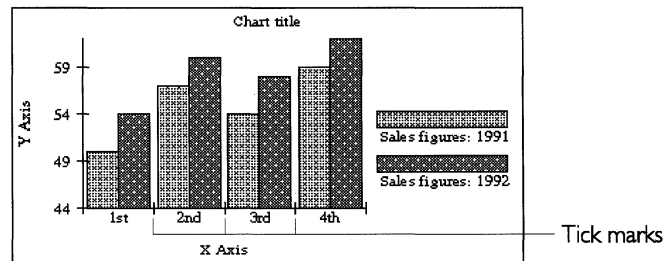
Setting Axis and Grid Markings

Axis markings and *grid markings* are useful visual aids that can help people understand your chart. Axis markings are the tick marks that divide the axis lines. Grid markings are vertical and horizontal lines that can cover the chart area between the axes.

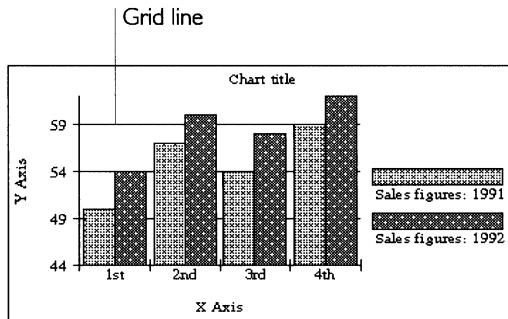
To add axis and grid markings to a chart (Levels 2-4)

1. Select the chart.
2. Choose Axis from the Chart menu. The Axis dialog box appears.
or
Choose Grid Lines from the Chart menu. The Grid Lines dialog box appears.
3. Select the type of axis markings you want, and tap Apply.
or
Select the axis from which you wish the grid lines to originate, and tap Apply.
4. Tap Close to close the dialog box.

The following illustration shows a chart with tick marks along the X-axis:



The following example shows the grid lines in a chart:



Changing Marker Shapes

Markers are the points in line charts and X-Y plot charts. Changing the shape of the markers in one or more categories can help make the chart easier to read.

To change the marker shape (Levels 2–4)

1. Select the markers you want to change by tapping one of them in your chart. The markers in that category are surrounded by outlines to indicate that they are selected.
2. Open the Charts menu and choose Marker Shape. The Marker Shape dialog box appears.
3. Tap the marker shape you want and tap Apply, then close the dialog box. The selected markers change shape as specified.

Additional GeoCalc Features

GeoCalc has many additional features to help you create accurate and attractive spreadsheets.

TOOL BARS IN GEOCALC

LEVELS 2-4

At Level 1 in GeoCalc, no tool bars are available. At Level 2 and above, you can use the Style and Function bars. For general information about using tool bars, see Chapter 3.

Using the Style Bar

The Style bar appears when you open GeoCalc at Level 2. It allows you to change the text format of values and labels. In addition, you can use the tools on the Style bar to add and delete rows and columns and to create charts from the spreadsheet data.

The Style bar also contains charting tools that are unique to GeoCalc. For more information about working with charts, see “Charting in GeoCalc” in this chapter.








For a complete list of tool bars, see Appendix A.

Using the Function Bar

The Function bar contains tools for performing file functions such as opening, closing, and saving files, as well as tools for editing and for zooming in and out. You must display these tools before

you can use them; for more information, see Chapter 3. For a list of the standard tools on the Function bar, see Appendix A.

The following tools are unique to GeoCalc:

	TOOL NAME	DESCRIPTION
	Insert Row	Adds one row above the current row. If you have selected multiple rows, Add Row adds the same number of rows above the selection.
	Delete Row	Deletes the current row. If you have selected multiple rows, Delete Row deletes the rows containing the selected cells.
	Insert Column	Adds one column to the right of the current column. If you have selected multiple columns, Add Column adds the same number of columns to the right of the selection.
	Delete Column	Deletes the current column. If you have selected multiple columns, Delete Column deletes the columns containing the selected cells.
	Sort Forward	Sorts the selected cells in alphabetic or numeric order.
	Sort Backward	Sorts the selected cells in reverse alphabetic or numeric order.
	Calculate	If you have specified manual calculation using Calculate on the Options menu, you can tap this button to make GeoCalc calculate all formulas in the spreadsheet.

NOTE

Not every tool shown in the table above is available at every level.

For more information on manipulating rows and columns, see “GeoCalc Basics” in this chapter.

For more information about sorting cells, see “Sorting” in this chapter.

For more information on recalculating formulas, see “Advanced GeoCalc Formulas” in this chapter.

PRINTING

ALL LEVELS

At Levels 1 and 2, you can print your spreadsheet but you cannot specify any special printing options. This section describes the additional printing features that are available at Levels 3 and 4.

For general information about printing, see Chapter 1.

Printing Spreadsheets

LEVELS 3–4

At Levels 3 and 4, you can set various printing options using the Page Setup choice on the File menu. For more information, see “Setting Page Setup Options” in this chapter. After setting any special printing options, you are ready to print your spreadsheet.

NOTE

At Level 4, you can specify manual calculation prior to printing. If you specified manual calculation, be sure to recalculate your spreadsheet before printing it. For more information about calculation, see “Advanced GeoCalc Formulas” in this chapter.

Setting Page Setup Options

LEVELS 3–4

Before you print, you can set print options with the Page Setup choice on the File menu.

To set print options (Levels 3–4)

1. Choose Page Setup from the File menu. A dialog box appears.
2. Complete the dialog box, changing the options you want:

Starting Page Number. The default starting number is 1, but you can specify a different starting number for your spreadsheet. Either tap the up and down arrows or enter a new number. The page number appears when you use the PAGE() function in a cell and designate that cell as a header or footer. This option does not affect the number of pages printed.

Print Sideways. Normally, the spreadsheet is printed as a standard upright page. Select this option if you want to print it sideways.

Scale to Fit on One Page. Select this option if you want to enlarge or reduce your spreadsheet to fit on a single page. If your spreadsheet is too large, it may be reduced so much that you cannot read it.

Continuous Printing. Use this option if you want your spreadsheet printed as one long continuous page. This is particularly effective for dot matrix printers that use continuous-form, fan-folded paper. If you print on single sheets, you can tape the sheets together.

Center Horizontally. Use this option to center the printed spreadsheet horizontally on the page.

Center Vertically. Use this option to center the printed spreadsheet vertically on the page.

Print Grid Lines. Select this option if you want grid lines to appear on your printed spreadsheet. (To get an idea of how the spreadsheet looks with and without grid lines, choose Draw Grid Lines from the Options menu.)

Print Row & Column Titles. Use this option if you want the row and column references to be printed on each page of your spreadsheet.

Print Header. Use this option if you want to have headers printed on the pages of your spreadsheet. You can specify headers using the Header/Footer choice on the Cell menu.

Print Footer. Use this option if you want to have footers printed on the pages of your spreadsheet. You can specify footers using the Header/Footer choice on the Cell menu.

3. Tap Apply, and close the dialog box. GeoCalc records the settings you selected.

If you specify a header or footer but do not check these print options, your printed spreadsheet will not have headers or footers.

SORTING

LEVEL 4

You can sort information in a row, column, or range of cells in either alphabetical (A-Z) or numeric (1-9) order. In addition, you can sort in either ascending (A-Z and 1-9) or descending (Z-A and 9-1) order. A range is sorted by the row or column containing the active cell.

For example, you may be keeping track of the payments of a group of piano students. As shown in the illustration below, you can alphabetize the list of names. Select the range of cells containing all the names and the payment information, making sure that the list you want to alphabetize is the leftmost column in the selection. Then, when you sort the list, the names (and the payments for each student) are shown in alphabetical order.

UNSORTED

Susie Jones	\$25.00	No Payment
Izuki Iwamai	No Payment	\$25.00
Sean O'Gara	\$25.00	\$25.00

SORTED

Izuki Iwamai	No Payment	\$25.00
Sean O’Gara	\$25.00	\$25.00
Susie Jones	\$25.00	No Payment

NOTE

Be sure to save your work before you perform a sort. Then, if the results of the sort are not what you expected, you can choose Other from the File menu and then choose Discard Changes from the Other submenu.

To sort information in a spreadsheet (Level 4)

1. Select the cells containing the information you want to sort. Be sure to select all the cells you want to sort.
2. GeoCalc will sort all selected cells by the row or column containing the active cell.
3. Choose Sort from the Edit menu. A dialog box appears.
4. Complete the dialog box, specifying the sort criteria you want to use:

Sort By. You can sort either rows or columns.

Sort Order. You can sort in either ascending or descending order — for example, A, B, C, D or Z, Y, X, W.

Sort Options. You can specify the following sort options:

- *Ignore Case/Accent.* You can have the sort ignore any differences in uppercase and lowercase, and ignore accents on letters, in alphabetical sorts.
 - *Ignore Spaces/Punctuation.* You can have the sort ignore spaces between words and punctuation marks (such as the period in *Mr.*) in alphabetical sorts, such as in a phone book.
4. Tap Sort. GeoCalc sorts the selected cells.

To perform a simple sort more quickly (Level 4)

1. Select the range of cells you want to sort.
2. Tap the Sort Forward tool on the Function bar to sort the rows in ascending order.



or



Tap the Sort Backward tool on the Function bar to sort the rows in descending order.

GeoCalc sorts the range in the order you selected.

CREATING NUMBER FORMATS

LEVELS 3–4

GeoCalc offers a wide variety of standard number and date formats. While the date formats are fixed and cannot be changed, you can create additional number formats to suit your needs. For example, if you want to show values with six decimal places, you can create a special number format.

To create or edit a number format (Levels 3–4)

1. Choose Number Format from the Properties menu. A dialog box appears.
2. Select a format on which you can base the new format, or one you want to edit. For example, if you want to create a format for displaying numbers with six decimal places, you might choose Fixed and specify six decimal places.

NOTE

You cannot create new date formats or edit existing ones.

3. Tap Create to create a new format, or tap Edit to edit an existing one. A dialog box appears.
4. Complete the dialog box, selecting the options you want. Refer to the examples in the dialog box as you set your specifications.

Name of Format. Enter a name for the new format.

Places. Enter the number of decimal places, up to 15.

Offset. Enter the number of offset places. Negative numbers move the decimal point to the left and positive ones move it to the right.

Options. Select format options from the Options drop-down list: commas, percent sign, leading and trailing zeros, and the position of the sign (+ or –) relative to the header or trailer. For example, if the sign follows the header, then a negative dollar amount would be formatted as \$–100 (rather than –\$100).

Fixed or Scientific. Select either fixed notation or scientific notation.

Leading. Enter the numbers or characters you want to appear in front of each value you enter, like a prefix. You can specify a prefix for Positive, Negative, or All Numbers. For example, if you enter **DM** in the All box, every value using this format will begin with **DM**; if you enter **345**, it will appear as **DM345** in the active cell.

Trailing. Enter the numbers or characters you want to appear at the end of each value you enter, like a suffix. For example, if you

enter **DM** in the All box, **DM** will appear at the end of every value using this format; if you enter **345**, it will appear as **345DM** in the active cell.

5. Tap OK. The new format is saved with the spreadsheet.

NOTE

At Level 4, if you want to create number formats that you will use in most of your work, you can create them in a new document and save them as the default empty document. For more information about changing the default empty document, see Chapter 3.

USING RULERS

LEVELS 2-4

The rulers for a spreadsheet are normally the row numbers and column letters. You can turn off the row and column headers or select alternate rulers.

In GeoCalc, you can choose the same types of rulers that are available in other GEOS applications: Inches, Centimeters, Points, Picas, and System Default. After you choose one of these rulers, you will see it instead of the spreadsheet column and row headers. This is especially useful if you want to see where a page breaks or when you are working with graphics.

ADDING GRAPHICS

LEVELS 3-4

You can include charts and drawings in the spreadsheets you create with GeoCalc. Charting lets you build graphs and pie charts based on data you enter in a spreadsheet. For more information about working with charts, see “Charting in GeoCalc” in this chapter.

In addition to charts, at Levels 3 and 4, you can use the Drawing tool bar and the Graphics tool bar to create drawings right in your spreadsheet. If you prefer, you can also create drawings in GeoWrite and then paste them into a GeoCalc document.

Graphics that you add to a GeoCalc document actually appear on a transparent “drawing layer” on top of the spreadsheet. If you fill objects with transparent fill patterns, you can see the spreadsheet information through the objects. For more information about

working with fill patterns, see “Using the Drawing Tools” in Chapter 8.

If you are using GeoCalc information for a report or presentation, you can create the visual effects right in GeoCalc using the drawing tools, charting capabilities, and cell borders.

If you are already familiar with using drawing tools, you already know how to create drawings in your spreadsheet. If not, you may want to read Chapter 8, which describes drawing tools and techniques.

USING GEOCALC WITH OTHER GEOS APPLICATIONS

LEVELS 2–4

You can use information from your spreadsheet in other GEOS applications. For example, you can copy a range of cells to a GeoWrite document. Once you have pasted your information, you can add borders and other visual enhancements with the graphics tools.

Information you paste into other applications is not automatically updated if you make changes to your original spreadsheet. Therefore, if you change the spreadsheet, you must recopy it into the GeoWrite document if you want to keep the information in both documents the same.

To use spreadsheet data in another application (Levels 2–4)

1. Create the spreadsheet data you want to use.
2. Select the range that you want to paste into another application.
3. Choose Copy from the Edit menu to copy the selection. The selection is copied to the clipboard.
4. Open the application and the document into which you want to paste the information.
5. Move the insertion point to the location where you want to paste the spreadsheet information.
6. Choose Paste from the Edit menu. The information is pasted into your document, with tabs inserted between the columns and with each row starting a new line. Borders are not copied.

EXPORTING AND IMPORTING GEOCALC INFORMATION

LEVELS 2-4

You can export information from GeoCalc in order to use it with DOS applications. Similarly, you can also import information from DOS applications into GeoCalc.

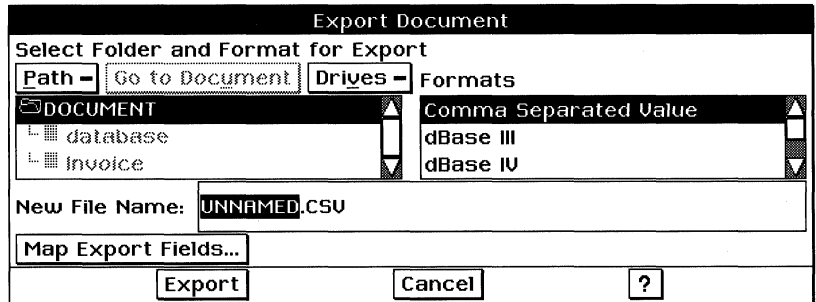
With GeoCalc, you can import and export spreadsheet information in several formats: *Lotus 1-2-3*, *dBASE*, and *Comma Separated Value (CSV)*. *Comma Separated Value* is a format that many applications can open or import. In a CSV file, each row of your spreadsheet is stored as a line of text, with the values in each column separated by commas.

Exporting

You can export information in Lotus, dBASE, or CSV format. When you export a spreadsheet in dBASE or CSV format, you can leave the columns in their original order or you can change the order to match the requirements of the application with which you plan to use the exported file.

To export a spreadsheet

1. Choose Other from the File menu.
2. Choose Export Document from the Other submenu. A dialog box appears:



3. Complete the dialog box, changing the export options to suit your needs:

Select Folder and Format for Export. Using the standard file selector controls, select the folder where you want to save the exported file. For more information about file selectors, see Chapter 1.

Formats. Choose the application in which you want to use the exported information, or choose Comma Separated Values to export information in CSV format.

New File Name. Enter a name for the exported file. The correct extension already appears in this box, so you do not need to enter it. Be sure to enter a standard DOS file name, no more than eight characters long. For more information about DOS file names, see Chapter 1.

4. Tap Export. GeoCalc creates a file using the specified format.

To change the order of columns when exporting

When you export in dBASE or CSV format, GeoCalc creates field names (Field 1, Field 2, Field 3, and so on) so that you can *map* the information you are exporting in a different order, if you choose. Mapping is available only when you export in these formats.

HINT

If you prefer, you can rearrange the columns in your spreadsheet so they appear in the order you want. If there are a small number of columns, this may be faster than mapping the information you are exporting.

1. Create the spreadsheet as usual.
2. Choose Other from the File menu.
3. Choose Export Document from the Other submenu. The Export Document dialog box appears.
4. Complete the dialog box, selecting the appropriate format from the Formats list. The Map Export Fields button is activated.
5. Tap Map Export Fields. A dialog box appears with Column A, Column B, and so on listed in the Source List box; the columns that appear here correspond to the occupied columns in the spreadsheet. The Destination List consists of a number of field names (Field 1, Field 2, Field 3, and so on) equal to the number of occupied columns in the spreadsheet.
6. Tap Field 1 in the Destination List.
7. Tap the column in the Source List that you want to be Field 1 in the export database. The selected name will be the field name associated with Field 1.
8. Tap Map. The field pair appears in the Map List. To break the link between a mapped pair of fields, you can select the pair in the Map list and then tap Unmap.

If the lists in the dialog box are empty, make sure the spreadsheet contains data.

9. Continue designating pairs until you have specified all the fields you want to map. If you leave any source field unpaired, that field will not be exported.
10. Tap Done to close the dialog box.
11. Tap Export. GeoCalc exports your spreadsheet information in the format you specified.

Importing

You can import information from files in Lotus, dBASE, or CSV format. Many applications can export information in these formats, so you do not necessarily have to be using Lotus or dBASE in order to import information into GeoCalc. When you import dBASE and CSV files, you can change the order of the columns when you import.

NOTE

Once you begin importing a file, you cannot interrupt the operation. You may need to wait when importing a very large file. Make sure you select the correct file to import.

To import spreadsheet, CSV, or database data

1. Choose Switch Document from the File menu. The following dialog box appears:
2. Tap Import. The following dialog box appears:
3. Select the application from which you are importing from the Formats list.
4. Using the file selector, select the name of the file you want to import.
5. Tap Import. The information from the import file appears in a GeoCalc window. You can edit the information and save the file as a GeoCalc file.

To change the order of columns when importing

When you import a dBASE or CSV file, GeoCalc enters data in the order in which it appears in the database. You can map this information in a different order if you choose.

HINT

If you prefer, you can rearrange the columns in your spreadsheet after importing the file. If there are a small number of columns, this may be faster than mapping the information you are importing.

1. Choose Switch Document from the File menu. The New/Open dialog box appears.
2. Tap Import. A dialog box appears.
3. From the Formats list, select the application from which you are importing.
4. Using the standard file selector controls, select the file you want to import. For more information about file selectors, see Chapter 1.
5. Tap Map Import Fields. A dialog box appears.
The Source List shows the field names of the incoming file. The Destination List shows the names of the fields (Column A, Column B, Column C, and so on).
6. Tap Field 1 in the Source List.
7. Tap the field name you want for Field 1 in the Destination List.
8. Tap Map. The field pair appears in the Map List.
9. Continue designating pairs until you have specified all the fields you want to map. If you leave any source field unpaired, it will not be imported from the database.
10. Tap Done to close the dialog box.
11. Tap Import. The information appears in a GeoCalc window in the order you specified.

If the lists in the dialog box are empty, make sure you selected a file in step 4.

Select a field pair in the Map List and tap Unmap to break the link between mapped pairs.

GeoFile Basics

This section includes a description of what a database is and explains how to do the following:

- Create a database by copying a standard GeoFile template.
- Enter, modify, and delete data.
- Search for data.
- Perform simple sorts.
- Change data layouts and layout viewing options.

As with the GeoWrite application, you will need to use either the on-screen keyboard or an external keyboard to enter data.

This section assumes you are familiar with the information covered in Chapter 1 and Chapter 3, which provide an overview of the skills you need to use any GEOS application.

WHAT IS A DATABASE?



GeoFile

GeoFile stores the information you enter in a structure called a *database*. Each GeoFile database is a table, in which a row, or *record*, represents a set of related data, and each column or *field* contains a particular type of data.

For example, if you decided to keep track of the results of your spring flower bulb plantings, your database could contain the following information.

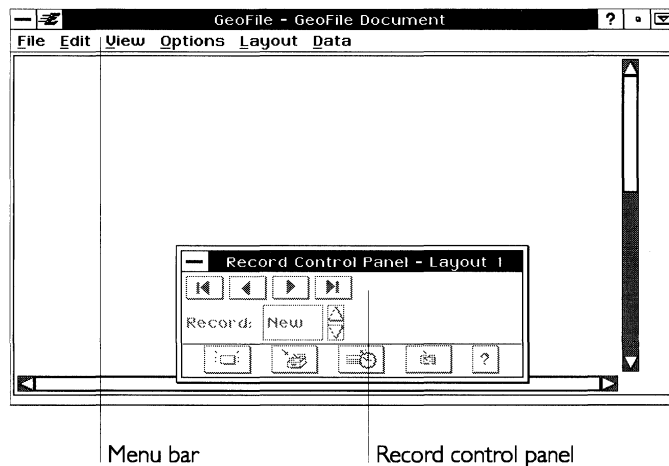
FLOWER	COLOR	PLANTED	RESULTS	NOTES
Freesia	Yellow	11/24	Excellent	
Crocus	Violet	11/24	Disastrous	Rabbits ate them.

Each set of entries for a particular flower is a record. Each type of information about a flower (for example, its color) is a field. In order for you to be able to refer to a field, each field has a name, such as RESULTS.

A GeoFile database can hold up to 16,384 records. To make it easy for you to work with such potentially large quantities of data, GeoFile provides tools for building forms, or *layouts*, for entering data and for printing it out in attractive reports. You also can use GeoFile to sort the information you enter and to find specific data quickly.

THE GEOFILE WINDOW

When you first start GeoFile, the application opens at Level 1, and the GeoFile window looks like this:



The appearance of the GeoFile window changes at each user level. The user levels are described below. "GeoFile Basics" describes basic concepts that you need to understand at all user

levels. “Using a GeoFile Database” and “Creating a GeoFile Database” describe the GeoFile features available at Levels 2-4, and include illustrations of the GeoFile window at each user level.

USER LEVELS IN GEOFILE

GeoFile has four user levels, as described below. For more information about changing and saving user levels, see Chapter 3.

GeoFile Level 1. Level 1 allows you to use the most basic features of GeoFile. At Level 1, you can enter, modify, and retrieve data using an existing database or one that you create yourself by saving a copy of a GeoFile template. “GeoFile Basics” in this chapter describes the features available at Level 1.

GeoFile Level 2. Level 2 allows you to use more advanced data entry features, including marking records, performing multilevel sorts, and exporting and importing data. You can also control more aspects of printed reports. These features are described in “Using a GeoFile Database” in this chapter.

GeoFile Level 3. Level 3 allows you to use all of GeoFile’s data entry features and to customize your database organization and layouts. Level 3 provides basic drawing tools that allow you to manipulate graphic objects and to change the text font, style, and size. At Level 3, you can change patterns, select line thickness, and scale graphic objects. For information about how to use the drawing features available at Levels 3 and 4, see Chapter 8. For information about using GeoFile to create new fields and layouts, see “Creating a GeoFile Database” in this chapter.

GeoFile Level 4. Level 4 allows you the most complete control of your database and layouts. Level 4 provides advanced design features for both single- and multi-record layouts, including the use of splines, custom duplicate functions, and style sheets for both graphics and text. For information about the design features, see Chapter 8. For information about style sheets for text, see Chapter 5.

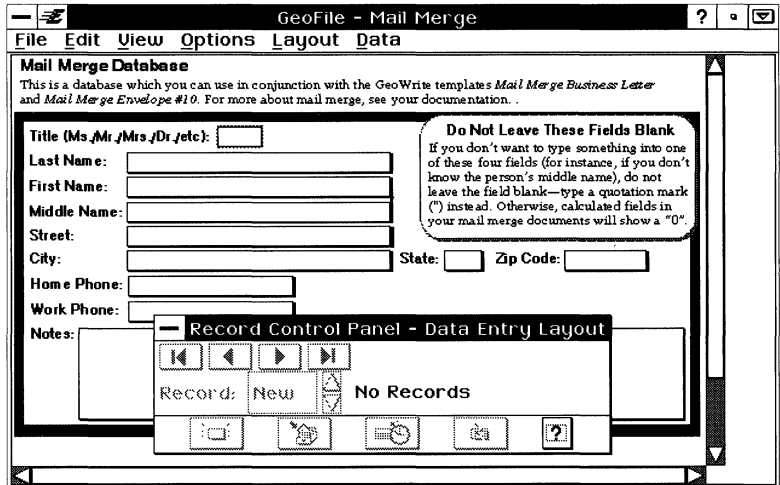
OPENING AN EXISTING DATABASE

ALL LEVELS

At Level 1, you can only work with data in an existing database template. You must advance to Levels 2-4 to create a database without using a template.

Using A Template to Create a Database

Templates are predesigned documents that you can use to create your own databases. Templates provide a set of ready-to-use fields and layouts that are designed to perform particular tasks. GeoFile provides a template for creating a Mail Merge database of names and addresses that you can use with GeoWrite to send individually addressed form letters. For information about Mail Merge, see Chapter 5.

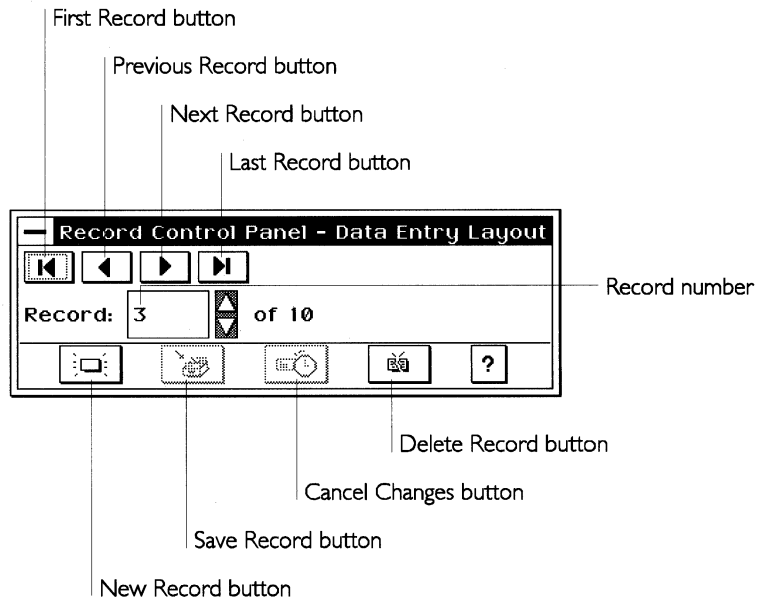


Choose Switch Document from the File menu to select the template. When you open a template, GeoFile makes an untitled copy of the template for your use. This copy is a new database, in which you can store and retrieve data. When you save the database, you can give it a name of your choice. The template itself remains unchanged, and you can use it to create another GeoFile database.

USING THE RECORD CONTROL PANEL

ALL LEVELS

The Record Control Panel is a dialog box that appears in the GeoFile window when you open a copy of a template or a database that already exists. You use the Record Control Panel to navigate through the records in a database, and to perform special functions, such as saving or deleting a record.



The buttons on the Record Control Panel perform the following operations:

First Record. Use this button to move to the first record in the database.

Previous Record. Use this button to move to the previous record.

Next Record. Use this button to move to the next record.

Last Record. Use this button to move to the last record in the database.

Record Number. Use the arrow buttons to select the number of the record you want to use. The number of the current record appears in the box to the left.

New Record. Use this button to create a new record.

Save Record. Use this button to save the current record.

Cancel Changes. Use this button to cancel any changes you have made to the current record since it was last saved.

Delete Record. Use this button to delete the current record.

ENTERING DATA

ALL LEVELS

You add records to a database by entering information in fields. A *field* holds a specific piece of information, such as a person's name. Fields in the template for Mail Merge include the name, street address, city, state, zip code, and phone numbers. When you enter information into fields, you are creating a *record*.

To add records to a database (All Levels)

1. Open the database or a copy of a template that you want to use. The database appears, along with the Record Control Panel.
2. If this is a new database, you need not do this step for the first record. Tap the New Record button on the Record Control Panel. Empty fields appear on the screen. The insertion point is in the first field and a dotted box appears around the first field.
3. Enter information in the field, then tap in the next field.

or

Tap **Tab** or **Enter** on the floating keyboard.

The insertion point appears in the next field, and the dotted box appears around it.

4. Repeat step 3 as many times as necessary to enter information in all the fields in the record. If you want to change the data in a field, tap in the field to place the insertion point. You can then edit the text in the field using standard GEOS editing techniques.
5. Tap the New Record button on the Record Control Panel.

or

Tap **Ctrl+Enter**.

GeoFile saves the record you just entered and displays empty fields on the screen in preparation for a new record.

GeoFile places each new record that you enter at the end of the database. Use GeoFile's sort feature if you want to list the records in a different order. For more information, see "Sorting Records" in this chapter.

*You can also move back through the fields by tapping **Shift+Tab** or **Shift+Enter** on the floating keyboard.*

MODIFYING DATA

ALL LEVELS

You can easily change information in GeoFile records. You can select, copy, cut, and delete information using the same edit features that you use in any GEOS document. You can also cancel changes that have not yet been saved in the database.

To modify a record (All Levels)

1. Locate and display the record you want to modify. You can do this by using the Record Control Panel or by using GeoFile's search options.
2. Tap in the field that contains the data you want to modify. The text insertion point appears in the field and a dotted box appears around the field.
3. Edit the text in the field using standard GEOS text editing techniques. For more information on modifying text, see Chapter 1.

or



You can use the Cancel Changes button in the Record Control Panel to cancel any current changes you have made to a record. GeoFile restores the record to its condition before you changed any information.

DELETING RECORDS

ALL LEVELS

When you no longer need the information a record contains, you can delete that record from the database.

To delete a record (All Levels)

1. Locate and display the record that you want to delete.
2. Tap the Delete Record button in the Record Control Panel. A confirmation message appears.
3. Tap Yes. GeoFile deletes the record from the database.



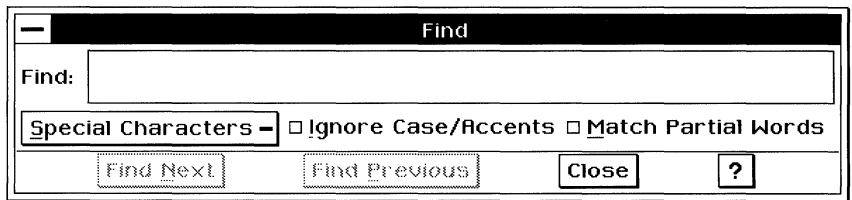
SEARCHING FOR RECORDS

ALL LEVELS

In addition to using the Record Control Panel to move through records in a database, you can search for records that contain a bit of text or a particular piece of information. The text you search for is called a *text string*. A text string can be any series of characters, numbers, or words that you want to locate. For example, if you want to locate all records in a mailing list that include addresses located in San Francisco, use “San Francisco” as your text string.

To search for a particular record (All Levels)

1. Choose Find from the Data menu. A dialog box appears:



2. Complete the dialog box, using the options you want.

Find. Use this box to enter your text string. For example, if you want to search for a tax rate of 37%, enter **37**.

Special Characters. Tap this button to select a *wild card*. A wild card is a symbol used to represent any character or number. GeoFile has two wild cards: an asterisk (*) indicates any series of characters or numbers; a question mark (?) indicates one character or number. For example, if you want to list all records for employees whose last names begin with J, enter **J** and choose Match Multiple Characters from the Special Character drop-down list. All records for employees whose last names begin with J are displayed. If you want to search the records for employees with three-letter last names that begin with B, type **B** and choose the Match Any Character option twice from the Special Character drop-down list.

Ignore Case/Accents. Select this option if you want GeoFile to ignore the difference between uppercase and lowercase letters, or letters with and without accents while making a search.

Match Partial Words. Select this option if you want GeoFile to match your search string to all occurrences of the text string, even within a word. For example, if you choose this option and enter **rate** as your search string, GeoFile will locate such words as rates and berated.

3. Tap Find Next. The first record that matches your search string appears.
4. Tap Find Next again until you have displayed all records that match your search string, or tap Close if you want GeoFile to stop searching.

At Level 2 and above, you can also make a search by marking particular records for display. For information about how to mark records, see “Using a GeoFile Database” in this chapter.

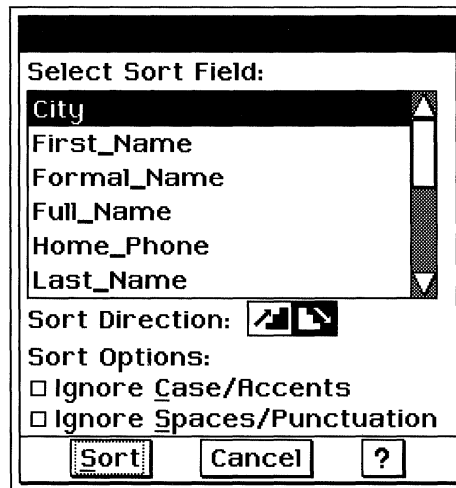
SORTING RECORDS

ALL LEVELS

GeoFile automatically stores each new record at the end of the database. Therefore, the records may not be arranged the way you want them. Using GeoFile’s sort feature, you can sort your records by the contents of a certain field. For example, you could sort your database by its City field if you wanted to sort records by city name.

To sort records in a document (All Levels)

1. Choose Sort from the Data menu. A dialog box appears:



2. Complete the dialog box, selecting the options you want.

For information about sorting on more than one field, see “Using a GeoFile Database” in this chapter.

Select Sort Field. This option lists all fields in your database. Use the scroll bar to move through the list and tap the field that you want to use for your sort.

Sort Direction. This option specifies whether you want to list your records in ascending or descending order. If you choose the Up button, GeoFile lists all records in ascending order; if you choose the Down button, GeoFile lists all records in descending order. For example, to sort employees by descending zip code, tap the Down button.

Sort Options. This option further defines the way GeoFile sorts a database. You use it to request that GeoFile ignore differences between uppercase and lowercase letters, accent marks, spaces, or punctuation marks when sorting.

3. Tap Sort. The dialog box disappears. When GeoFile completes the sort, the records appear on the screen in the order you requested. GeoFile provides additional sort functions if you are working at Level 2 or above. For information about additional sort functions, see “Using a GeoFile Database” in this chapter.

USING LAYOUTS

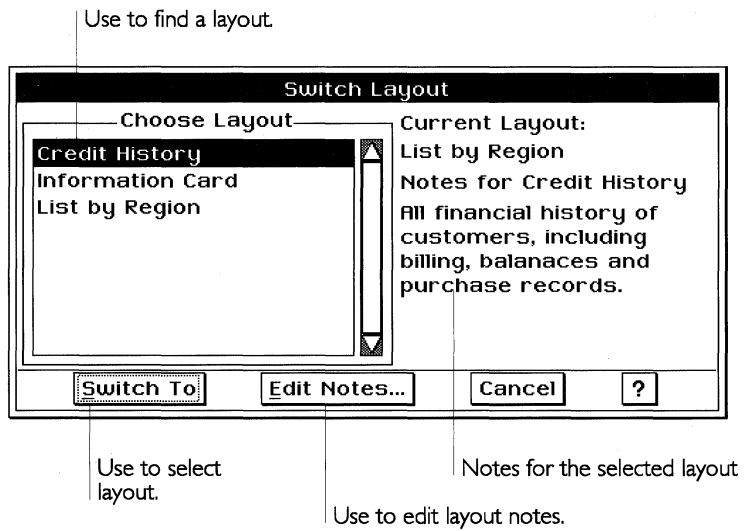
ALL LEVELS

You use layouts to organize and present the information stored in your GeoFile database. A *layout* is the visual presentation of your data. The style and the fields you use in a layout depend on the purpose of the layout. You can group appropriate fields together and use various styles of type (and colors, if you have a color printer) to present the data in a format that is both attractive and easy to follow.

A database can have more than one layout. When you use a template to create a new database, GeoFile copies the template’s layout into the new database. You can make a copy of that database and layout, and change the layout to meet your needs.

To choose a layout (All Levels)

1. Select Switch Layout from the Layout menu. A dialog box appears:



2. Select the layout that you want to use.
3. Tap the Switch To button. The new layout appears in the GeoFile window.

At Levels 3 and 4, you can create your own layouts. In fact, you can create up to 255 layouts to meet the needs of a particular database.

Using a GeoFile Database

This section describes the additional data entry features that are available in GeoFile at Levels 2-4. These features include the following:

- Record marking to create subsets of your database
- Advanced sorting capabilities
- Importing and exporting capabilities
- Multi-record data entry (Level 4 only)

At Levels 3 and 4, you have the choice of working in *data entry mode* or in *design mode*. In data entry mode, you enter, modify, and manipulate the data in a database. This section and “GeoFile Basics” describe the functionality available as you work in data entry mode. In design mode, you can modify the structure and layout of an existing database or design a new database from scratch. “Creating a GeoFile Database” describes the capabilities available in design mode.

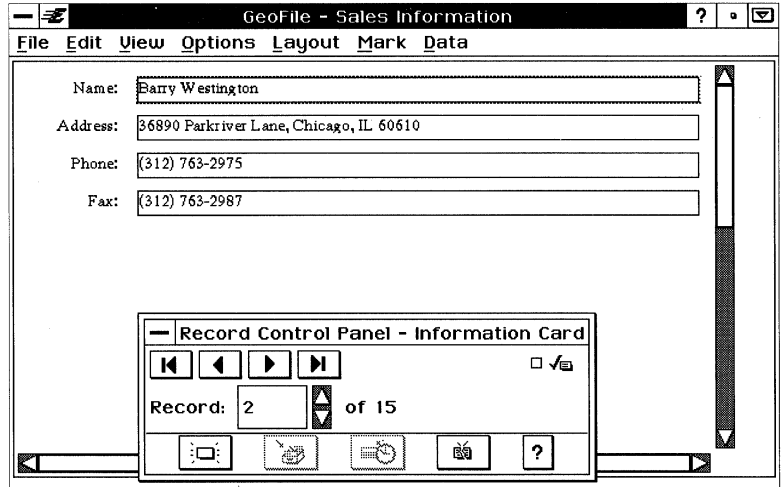
You should be familiar with the information in “GeoFile Basics” before using the techniques described in this section (“Using a GeoFile Database”).

ADVANCING TO LEVEL 2

LEVEL 2

When you advance your user level, GeoFile provides additional options for working with your database.

When you advance to Level 2, you have access to all the advanced data entry features described in this section (“Using a GeoFile Database”), with the exception of multi-record capabilities. The advanced data entry features appear on GeoFile menus, so GeoFile looks almost the same at Level 2 as it does at Level 1. At Level 2, GeoFile looks like this:



WORKING IN DATA ENTRY MODE

LEVELS 3-4

At Levels 3 and 4, you use the Data Entry and Design buttons to choose between working in data entry mode and in design mode.

To work in data entry mode (Levels 3-4)

- Tap Data Entry to work with the data in a database. After you tap Data Entry, GeoFile is in data entry mode.

“Using a GeoFile Database” describes advanced features available in data entry mode. For information about working in design mode, see “Creating a GeoFile Database” in this chapter.

WORKING WITH MARKED RECORDS

LEVELS 2-4

GeoFile's marking features enable you to define a group of records and work with that group separately from the rest of your database. Once you have marked a group of records, GeoFile can quickly retrieve that group so that you can do any of the following:

- View just a portion of a database.
- Update a selected group of records.
- Print records containing specific types of data.
- Export a subset of a database.

GeoFile uses *marks* that look like check marks to indicate each member of the group. These marks appear in the upper right corner of the Record Control Panel when the current record is marked.

Showing Marked Records or All Records

By default, GeoFile displays all the records in a database. When you have marked records, you can choose to have GeoFile display either marked records only or the entire database.

To show only marked records (Levels 2-4)

- Choose Show Only Marked from the Mark menu. GeoFile displays only marked records.

To show all records (Levels 2-4)

- Choose Show All from the Mark menu. GeoFile displays all records in the database, both marked and unmarked.

Marking Records

GeoFile provides several methods for marking records:

- You can mark records individually.
- You can specify a search string for GeoFile to use to select and mark a group. This is the simplest way to mark a group of records.
- You can specify a logical expression that GeoFile evaluates for each record in order to select and mark a group. This enables you to specify more complex criteria for GeoFile to use in selecting and marking records.

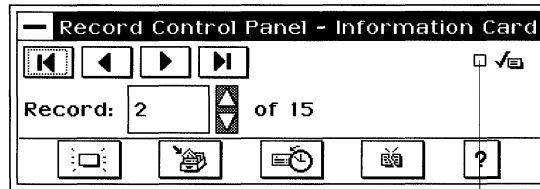
- You can mark every record in a database.
- You can change the status of all marked records to unmarked, and vice versa.

MARKING A RECORD

You use the Record Control Panel to mark a particular record. This method is useful, for example, when you have just added a new record and you want to mark it for later reference.

To mark a record using the Record Control Panel (Levels 2-4)

1. Locate and display the record that you want to mark.
2. Tap the check box in the upper right corner of the Record Control Panel. The check box darkens, indicating that the record is marked.



Tap box to mark the current record.

USING THE MARK RECORDS OPTION

You use the Mark Records option on the Mark menu to mark a group of records that share similar information. For example, you may want to group all records that have "San Francisco" in the City field, or that have "February" in the Month field. Mark Records searches for the text you specify in a field you choose, and it marks the records where it finds a match.

To use Mark Records (Levels 2-4)

1. Choose Mark Records from the Mark menu. A dialog box appears:



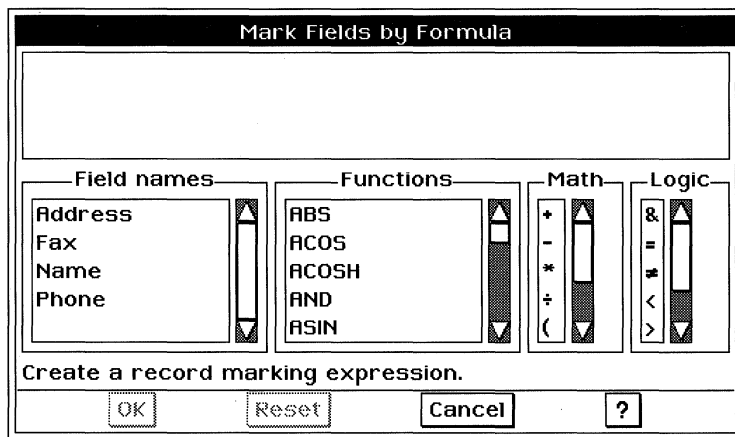
2. Complete the dialog box, selecting the options you want:
Select Mark Field. Select the field containing the information you want GeoFile to find.
Ignore Case. Select this option if you want GeoFile to treat uppercase text and lowercase text the same way.
Match Only at Start of Field. Select this option if you want GeoFile to mark records only where it matches the string with characters at the beginning of the specified field.
Text to Match. Enter the text you want GeoFile to use as the basis for marking records. For example, to mark all records for people whose last name is Smith, select Last Name as the mark field and enter **Smith** in the Text to Match box.
3. Tap Mark. GeoFile marks the records that match your search criteria. GeoFile also creates a formula based on these search criteria and uses it as the default expression in Mark by Formula (discussed in the next section).

MARKING RECORDS BY FORMULA

GeoFile can use formulas that reference and combine the information stored in your database as the criteria for marking records. For example, you could enter **income > 30000 and (state="CA", city="Sacramento")** to select and mark the group of records for employees in Sacramento, California with incomes over \$30,000.

To mark records by formula (Levels 2-4)

1. Select Mark by Formula from the Mark menu. The following dialog box appears:



For more information about using this dialog box to enter formulas, see "Creating a GeoFile Database" in this chapter.

2. Complete the dialog box, selecting the options you want.
 - Field Names.** This option lists all the field names in the GeoFile database. Selecting a field name pastes it at the insertion point in the Expression box at the top of the dialog box.
 - Functions.** This option lists all the GeoFile functions you can use. Selecting a function pastes it at the insertion point in the Expression box.
 - Math.** This option lists all the GeoFile math operators you can use. Selecting an operator pastes it at the insertion point in the Expression box.
 - Logic.** This option lists all the GeoFile logical operators you can use. Selecting an operator pastes it at the insertion point in the Expression box.
3. Tap OK to mark the records. GeoFile checks the syntax of the expression you have typed. If the syntax passes, GeoFile carries out the search and marks each record that meets the criteria set by the specified formula.

If GeoFile detects a syntax error, it displays an error box and highlights a problem in the Expression Box. Tap OK and resume editing the formula until the syntax is accepted. The dialog box closes.

MARKING ALL RECORDS

Sometimes it is easiest to start a search with every record in the database marked, and then unmark specific records by hand. You can mark all records in a simple one-step procedure.

To mark all records (Levels 2-4)

- Choose Mark All from the Mark menu. All records in the database are marked.

SWITCHING MARKED RECORDS

Sometimes you may want to switch between working with your marked and unmarked records. An easy way to do this is to mark one set of records and then use GeoFile's Switch All Marks option to switch the marks from one group to the other as needed.

To switch all marks (Levels 2-4)

- Choose Switch All Marks from the Mark menu. GeoFile switches the status of all marked records to unmarked, and that of all unmarked records to marked.

Unmarking Records

When you want to remove marks from records, you can either remove the marks individually, using the Record Control Panel, or remove them from the entire database using Unmark All.

To unmark a record using the Record Control Panel (Levels 2-4)

1. Locate and display the record that you want to unmark.
2. Tap the check box in the upper right corner of the Record Control Panel. The check box changes to indicate that the record is unmarked.

To unmark all records (Levels 2-4)

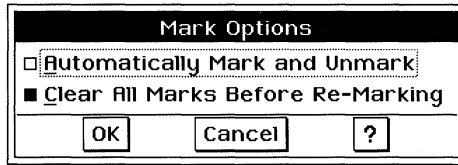
- Choose Unmark All from the Mark menu. GeoFile removes the marks from all records in the database.

Setting Mark Options

You can set options to control whether and when GeoFile should automatically retain or remove marks from records.

To set mark options (Levels 2-4)

1. Choose Mark Options from the Mark menu. A dialog box appears:



2. Complete the dialog box, selecting the options you want.

Automatically Mark and Unmark. Select this option to have GeoFile mark every record that matches the last specified Mark Record or Mark by Formula search criteria. With this setting selected as you update your database, GeoFile automatically marks any record that you add or change that matches the last marking search criteria, and unmarks any record that you change in a way that no longer matches the search criteria. By default, GeoFile operates with this option off.

Clear All Marks Before Re-Marking. Select this option to have GeoFile unmark all records before performing a Mark Record or Mark by Formula search. Deselect this option if you want to use Mark Records or Mark by Formula to add records matching new search criteria to an already existing marked group. By default, GeoFile operates with this option on.

3. Tap OK to set your options.

ADVANCED SORTING

LEVELS 2-4

Each field you sort on is called a sort key.

At Level 1, you can sort records in a database by the contents of a single field, and you can specify the order of the sort. For information about the basic sort feature, see “GeoFile Basics” in this chapter.

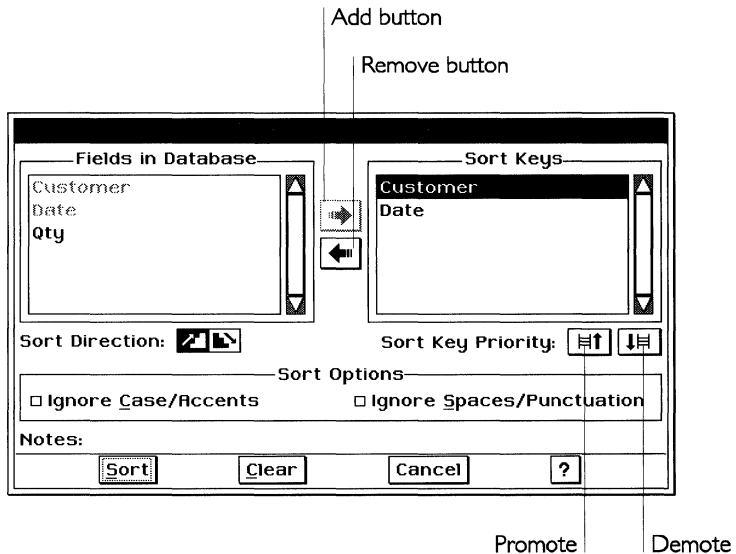
At Levels 2-4, you can use up to six different fields to sort records in your database and specify the order of the sort for each field. For example, you can sort records first in ascending order by customer name and then in descending order by date.

The following example shows a list sorted in ascending order by customer name and in ascending order by date:

Date:	12/15/92	Name:	ABC Company	Qty:	5
Date:	12/16/92	Name:	ABC Company	Qty:	5
Date:	1/2/93	Name:	Al's Burgers	Qty:	35
Date:	12/18/92	Name:	CommTech	Qty:	20
Date:	12/17/92	Name:	Records Mania	Qty:	25
Date:	12/21/92	Name:	Records Mania	Qty:	50
Date:	12/22/92	Name:	US Express	Qty:	11

To use advanced sorting features (Levels 2-4)

1. Choose Advanced Sort from the Data menu. A dialog box appears:



2. Complete the dialog box, selecting the options you want:

Fields in Database. Select the field you want GeoFile to use as a sort key from this alphabetical list of all the fields in the database. If necessary, use the scroll bar to move quickly through the list.

Add button. Use this button to add the selected field in the Fields in Database list to the Sort Keys list. Once a field appears on the Sort Keys list, you can no longer select it from the Fields in Database list.

Remove button. Use this button to remove the selected field from the Sort Key list. The field becomes available again for selection from the Fields in Database list.

Sort Keys. This lists all the fields that you have selected as sort keys, in order of priority. Select a field from this list of sort keys in order to remove it from the list or to change its priority. If necessary, use the scroll bar to move through the list.

Sort Key Priority. This option lets you move a selected field up or down in the sort order. If you tap the Up button (arrow pointing up), GeoFile moves the selected field in the Sort Keys list up one position in the sort order. If you tap the Down button (arrow pointing down), GeoFile moves the selected field in the Sort Keys list down one position in the sort order.

Sort Direction. This option specifies whether you want to list your records in ascending or descending order. If you tap the Up button (arrow pointing up), GeoFile sorts all records in ascending order; if you tap the Down button (arrow pointing down), GeoFile sorts all records in descending order. For example, if you want to sort cities alphabetically beginning with A, tap the Up button.

Sort Options. This option further defines the way GeoFile sorts a database. You use it to request that GeoFile ignore differences between uppercase and lowercase letters, accent marks, spaces, or punctuation marks when sorting.

Notes. This displays any information that was entered about the selected field when it was created. For more information about field notes, see “Creating a GeoFile Database” in this chapter.

Clear. Use Clear to remove all sort keys from the Sort Keys list. Clear also resets the default sort options and sort directions, and selects the first field in the Fields in Database list.

3. Tap Sort. GeoFile sorts your records based on the sort keys and options you specify.

EXPORTING AND IMPORTING DATA

LEVELS 2-4

You can use GeoFile to exchange data with many other applications. You can also export GeoFile data to GeoWrite for use in Mail Merge documents. For more information about Mail Merge documents, see Chapter 5.

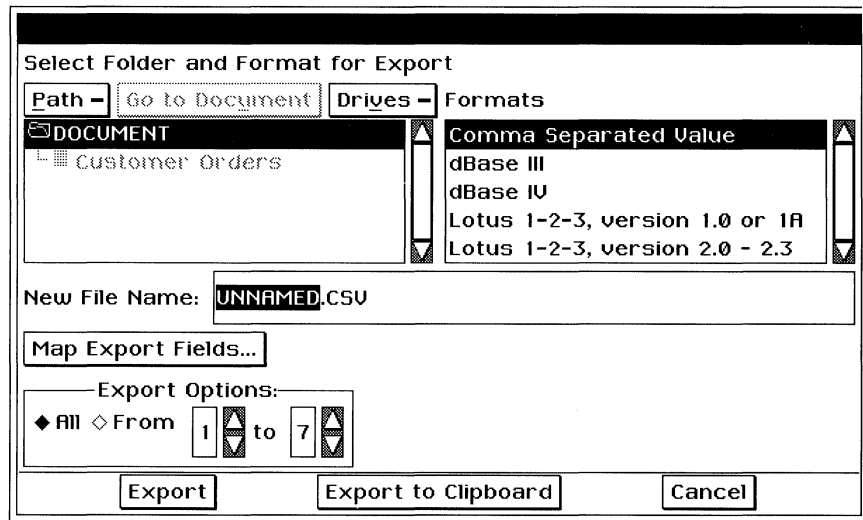
Large files can take a while to export.

Exporting GeoFile Data to Another Application

You can export all or specified portions of a GeoFile database. In either case, GeoFile copies the data into a new document that matches the internal format you specify.

To export portions of a database (Levels 2-4)

1. Open the GeoFile database that contains the data you want to export.
2. Select Show Only Marked from the Mark menu if you want to export the currently marked group of records only.
3. Choose Other from the File menu. A submenu appears.
4. Choose Export Document from the Other submenu. A dialog box appears:



5. Use the file selector to find the file to which you want to export. Also, you can change any of the following options:

Formats. Choose the application in which you want to use the exported information, or choose Comma Separated Values to export information in CSV format.

New File Name. Enter a name for the exported file. The correct extension already appears in this box, so you do not need to enter it. Be sure to enter a standard DOS file name, no more than eight characters long. For more information about DOS file names, see Chapter 1.

Export Options. Tap From, and then use the arrow keys if you want to specify a numeric range of records to export. For example, if you want to export the first 10 records in your database, tap From, then use the first set of arrow keys to select 1 and the second set of arrow keys to select 10. If you have chosen Show Only Marked, GeoFile then exports the first 10 marked records.

Map Export Fields. The Map Export Fields option appears only when you have selected specific export types. Use this button to specify the order and number of exported fields.

6. Tap Export to copy the data to a new document.

or

Tap Export to Clipboard to copy records to the clipboard. GeoFile uses data on the clipboard in Mail Merge.

A message appears to indicate that exporting is in progress. When GeoFile finishes exporting data, the message disappears.

Importing Data from Another Application

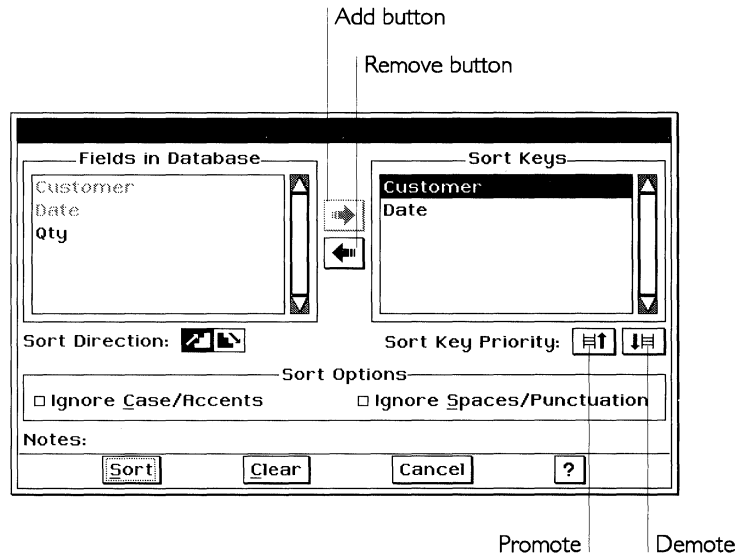
Large files can take a while to import.

You can import data from fields in Lotus, dBASE, or CSV format. Many applications can export information in these formats, so you do not necessarily have to be using Lotus or dBASE in order to import information into GeoFile. When you import dBASE and CSV files, you can change the order of the columns that you import.

To import from another application (Levels 2-4)

1. Choose Switch Document from the File menu. A dialog box appears.

2. Tap Import. Another dialog box appears:



For information about using the standard file selector options, see Chapter 1.

3. Use the file selector to find the file you want to import. Also, you can change any of the following options:

Formats. Select the format of the document that you want to import.

File Mask. This box displays the file extension for the selected format. For example, if you select dBASE, .DBF appears as the extension, and only files with that extension will appear.

Map Import Fields. Use this button to specify the order and number of imported fields.

4. Tap Import. A message informs you that importing is in progress. When the process is complete, GeoFile opens an untitled document containing the fields and data that you have imported. You can name and save this document for later use.

To map fields for importing (Levels 2-4)

When you import data in dBASE or CSV format, GeoFile imports data in the order in which they appear in the source file. You can map the fields you are importing to change their order, if you choose.

1. Choose Switch Document from the File menu. A dialog box appears.

Mapping slows down the import procedure considerably, so it may not be convenient to use when importing large files.

2. Tap Import in the New/Open dialog box. Another dialog box appears.
3. Select CSV, dBASE II, or dBASE IV from the Formats list. The Map Import Fields button activates.
4. Select a file using the file selector.

Creating a GeoFile Database

This section describes how to use the design and layout features at Levels 3 and 4 to create a new GeoFile database. It covers the process and tasks involved in designing, rather than entering data into a GeoFile database. For more information about entering and retrieving data using a GeoFile database, see “GeoFile Basics” and “Using a GeoFile Database” in this chapter.

ADVANCING TO LEVELS 3 AND 4

Advancing to Levels 3 and 4 gives you the tools you need to create a new GeoFile database and customize it by adding fields, layouts, graphics, and formatting.

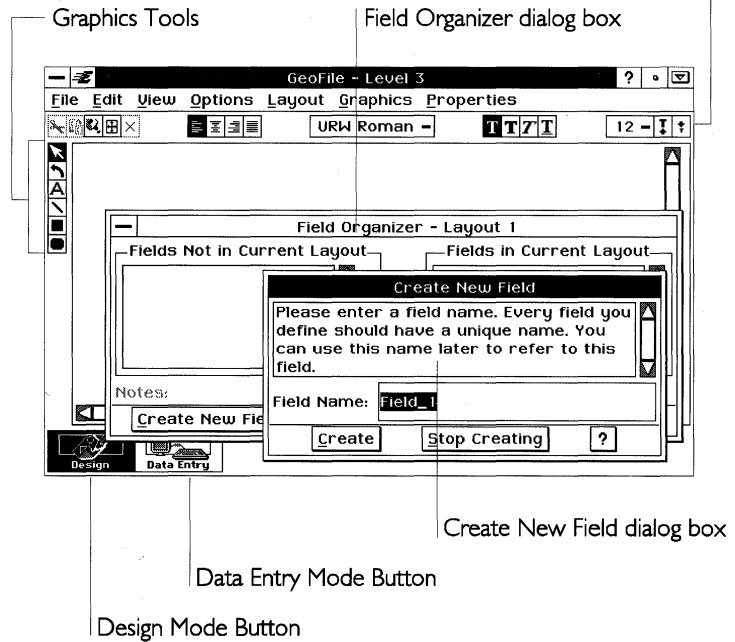
What You Get at Level 3



If you choose to create a new empty document (as indicated by the icon shown at left) from the New/Open dialog box, GeoFile asks you first to name the document. Then GeoFile automatically puts you into design mode and prompts you to create a new field.

At Level 3, in design mode, GeoFile looks like this:

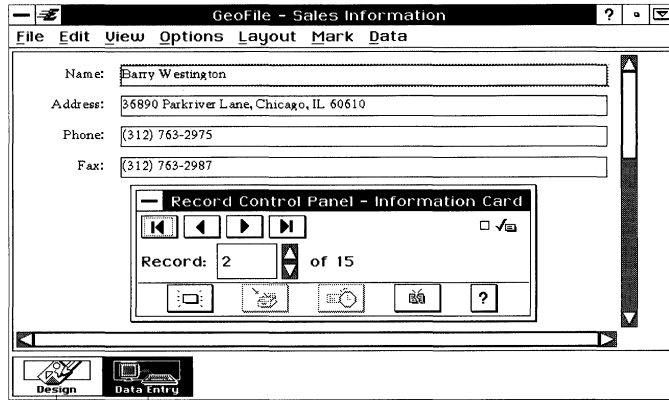
Tool Bar: Clipboard Tools and Text Tools



In design mode at Level 3, you can create new layouts to display information in a different form; for more information, see “Creating Additional Layouts” in this chapter. You can use the graphics tools to add text and graphic objects to a layout; for more information, see “Using Graphics” in this chapter. You can use the text attributes tools to change the way text looks on the layout; for more information, see “Formatting Text” in this chapter.

In data entry mode, you have access to all the advanced data entry features described in this chapter, with the exception of multi-record capabilities.

At Level 3, in data entry mode, GeoFile looks like this:



Tap this button to store and retrieve data.

Tap this button to use database design tools.

What You Get at Level 4

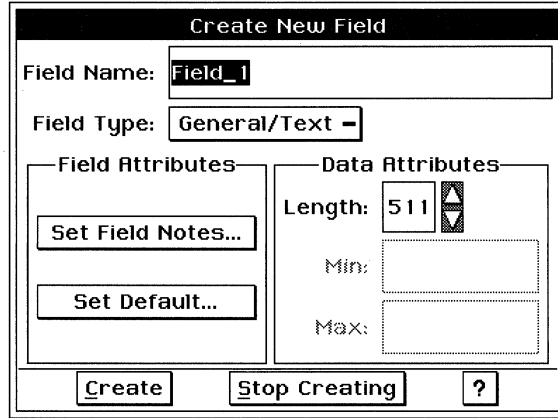
The GeoFile window at Level 4 appears the same as at Level 3, with the addition of the Single-Record and Multi-Record buttons.

The Multi-Record button changes GeoFile to multi-record mode so that you can put multiple records on a layout. For more information, see “Using Multiple Records on a Layout” in this chapter.

In addition, you can use graphic styles and text styles to format graphic and text objects, respectively. For more information, see “Formatting Text” and “Using Graphics” in this chapter.



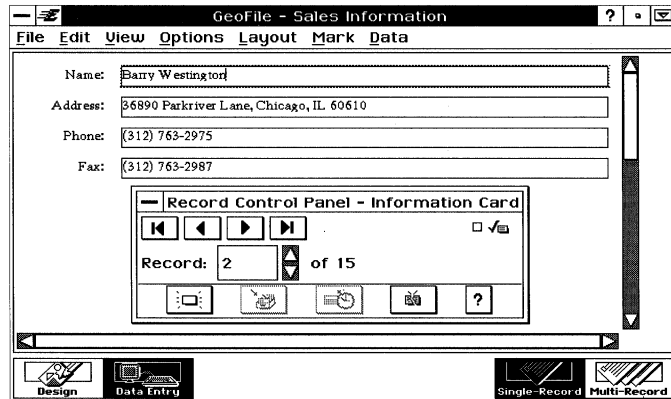
At Level 4, the Create New Field dialog box has additional options:



You can specify the data type for a field. You can also define field and data attributes, including field notes, default values or expressions, the field length for text fields, and minimum or maximum values for number fields.

In data entry mode, you have access to all the advanced data entry features described in “Using a GeoFile Database.”

At Level 4, in data entry mode, GeoFile looks like this:



Tap this button to display one record at a time.

Tap this button to display multiple records on a screen and on a printed page.

CHOOSING A WORK MODE

LEVELS 3-4

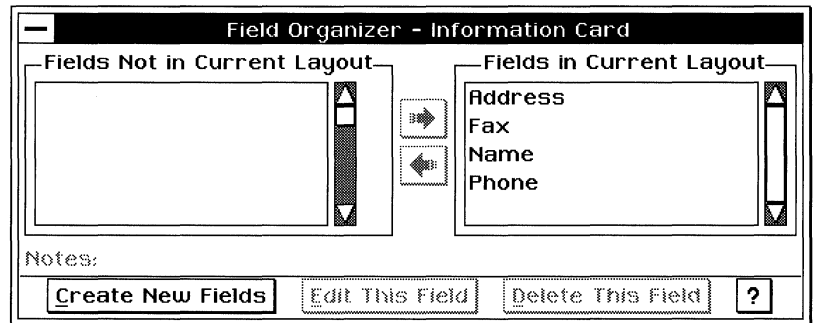
GeoFile has two modes at Levels 3 and 4. In *design mode*, you can design a GeoFile database. In *data entry mode*, you can add, modify, and search for records in a GeoFile database. You can switch between modes easily.

If you create a new GeoFile database, GeoFile goes into design mode automatically and prompts you to create a new field. If you open an existing GeoFile database, GeoFile goes into the mode you were using when you last saved the file.

To switch to design mode (Levels 3-4)



- Tap the Design button. GeoFile switches to design mode and displays the Field Organizer, which is the command center for managing fields in a database and on a layout:



If no fields appear in the database, GeoFile automatically prompts you to create new fields. For more information, see “Using the Field Organizer” in this chapter.

To switch to data entry mode (Levels 3-4)



- Tap the Data Entry button. GeoFile switches to data entry mode and displays the Record Control Panel.

For more information about working in data entry mode, see “GeoFile Basics” and “Using a GeoFile Database” in this chapter. For more information about the Record Control Panel, see “GeoFile Basics” in this chapter.

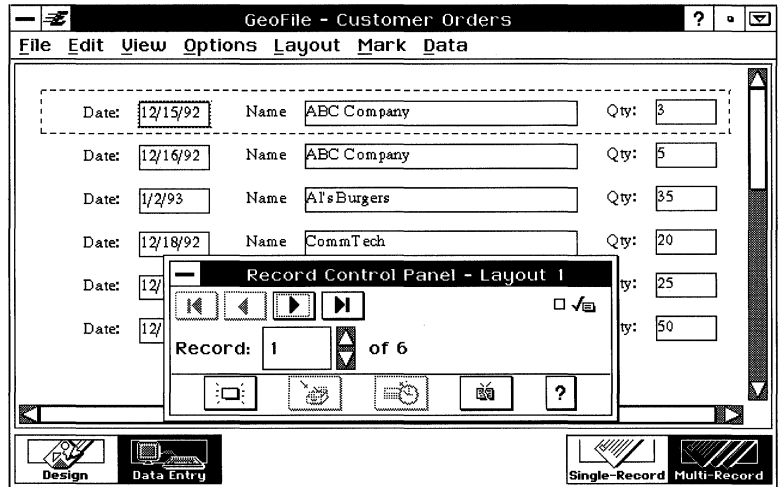
WORKING IN MULTI-RECORD MODE

LEVEL 4

At Level 4, you have the choice of working in single-record mode or in multi-record mode. In single-record mode, GeoFile displays one record at a time on your screen, just as it does at Levels 1-3, and prints one record on every page. In multi-record mode, GeoFile displays as many records as can fit on the current layout, and prints as many records as can fit on the current layout on every page.

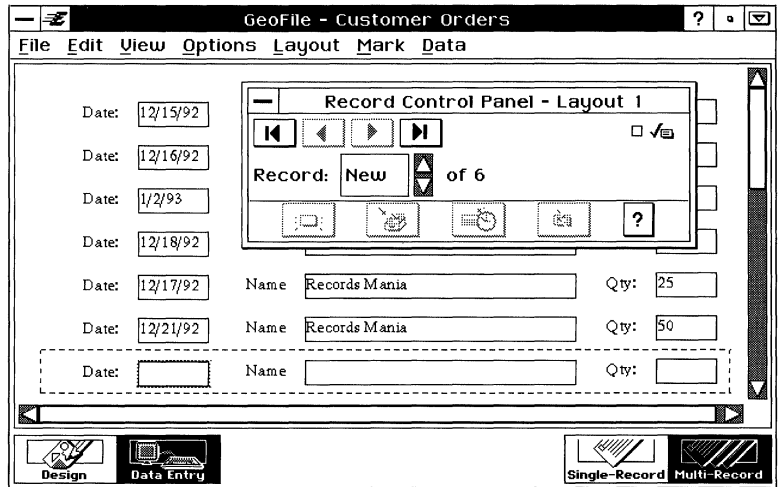
To work in multi-record mode (Level 4)

- Tap Multi-Record to display as many records as possible on the current layout. This action puts GeoFile in multi-record mode.

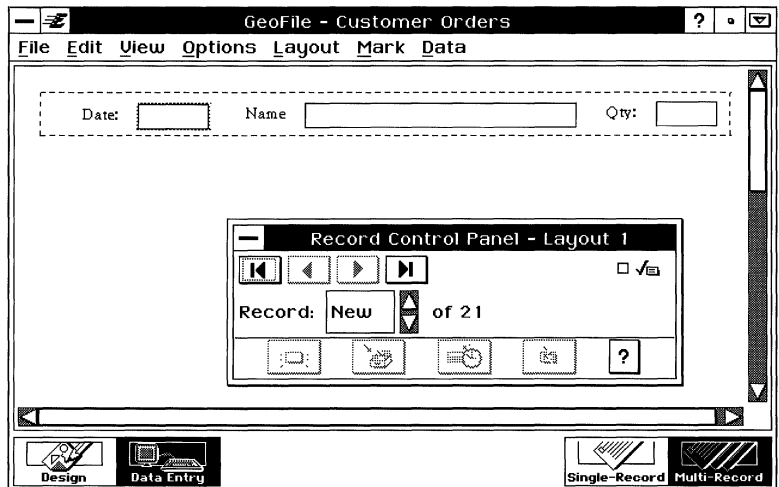


When you work in multi-record mode, you can edit data in any of the records appearing on your screen. Select the field that contains the data you want to modify, and use any of the standard GEOS editing techniques to change the data.

When you use the New Record button to add a new record to the database, GeoFile displays a set of blank fields to receive your data in the position of the next record on the current layout.



If the current layout is full, a new and empty layout page appears. You enter data in the position of the first record on the empty layout.



All of the standard GeoFile data entry features operate normally in both single- and multi-record modes.

For information about designing multi-record layouts, see “Using Multiple Records on a Layout” in this chapter. For information about switching layouts, see “Switching Layouts” in this chapter.

PLANNING A DATABASE

LEVELS 3-4

Before you design a database, you should understand basic database concepts and design principles. For an introduction to database concepts, see “GeoFile Basics” in this chapter.

When planning a database, you should think about the nature of the information you want to track. Consider the following questions:

- What is the scope of the information? For example, to keep track of customers, you would include pertinent data about each customer, such as address, phone number, contact person, and so on.
- Within this scope, what are the entries involved? For example, in a customer database, each customer is a separate entry (or record) in the database.
- What do you need to know about each entity or activity? List the pieces of information (or *fields*) you want to use. For example, for each customer you could include the following facts: customer identification code, address, main phone number, the names of people you work with in the company, account number, and sales to date.
- Is there an existing GeoFile template or database that you could use instead of starting from scratch? If so, you can save design and layout time.

At Level 4, you should consider the following additional questions:

- Do you need to use the same information for different purposes? Will you need to create additional layouts? For example, in a customer database, you might want to have different layouts for entering data, retrieving a phone list, and printing mailing labels.
- Which field type should you use? For example, a street address is probably a text field, while the customer identification number is likely an integer field, and sales to date a real number field.

- Will any field contain special default data? For example, if most or all of the customers reside in the same state, you could make that state the default.
- Will text fields have a maximum length? For example, a state abbreviation field requires no more than two characters.
- Will number fields have a minimum or maximum value? For example, you might rank your customers on a scale from 1 to 10.
- What calculations will you need in computed fields? For example, if you want to calculate the average sales revenue per sale, you divide the sales to date by the number of sales.

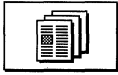
When you are finished, you might end up with a schematic like this:

FIELD NAME	TYPE	ADDITIONAL PROPERTIES
Customer_ID	Text	
Customer_Name	Text	
Address	Text	
City	Text	
State	Text	Size is 2; default value is CA
Zip	Text	Size is 10
Account_Number	Text	
Contact	Text	
Phone	Text	
Sales_to_Date	Real Number	
Number_of_Sales	Integer	
Average_Per_Sale	Computed	Formula is Sales_to_Date / Number_of_Sales
Create_Date	Date	
Create_Time	Time	
Customer_Rating	Integer	Min = 1, Max = 10

Once you have planned the database, you can create it in GeoFile.

CREATING A GEOFILE DATABASE

LEVELS 3-4



To create a new GeoFile database, you have three options:

- You can start from scratch using a blank document with no fields; you must create the fields and any additional layouts yourself. To do this, tap the New Document icon in the New/Open dialog box. For more information, see Chapter 1.
- You can use a GeoFile template as a starting point to save time creating, laying out, and formatting the database. To do this, tap the Template Document icon in the New/Open dialog box. For more information about using a template, see “GeoFile Basics” in this chapter.
- You can use an existing document and save it under a different name. This also saves time creating, laying out, and formatting the database, although you might need to delete any existing data in the database. To do this, tap the Open Document icon in the New/Open dialog box. For more information on using an existing document, see “GeoFile Basics” in this chapter.

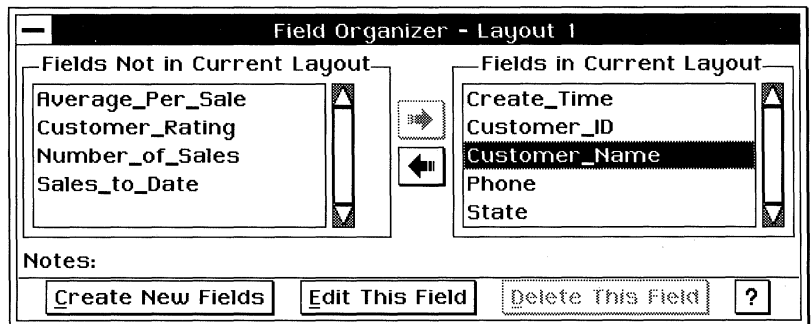
USING THE FIELD ORGANIZER

LEVELS 3-4

In design mode, GeoFile displays the Field Organizer, which is the central command center for designing fields in a database. You can use it to add fields to and remove fields from the database as well as the current layout.

What the Field Organizer Contains

Here is an example of a Field Organizer:



The Field Organizer contains the following elements:

Fields Not in Current Layout. This list contains the fields that do not appear on the current layout. A field can appear on other layouts, however. For more information, see “Arranging Fields” in this chapter.

Fields in Current Layout. This list contains the fields that appear on the current layout. A field can appear only once on a layout, though it can appear on more than one layout.

Add button. Tap this button to add a selected field from the Fields Not in Current Layout list to the current layout.

Remove button. Tap this button to remove a selected field from the Fields in Current Layout list.

Notes. This box displays the notes for the selected field. For more information, see “Changing Field Notes” in this chapter.

Create New Fields button. Tap to create a new field in the database.

Edit This Field button. Tap this button to edit a field definition in the database.

Delete This Field button. Tap this button to delete a field from the database and remove it from any layouts on which it appears. For more information on the Create New Fields, Edit This Field, and Delete This Field buttons, see “Managing Fields in a Database” in this chapter. For more information about the Add and Remove buttons, see “Adding and Removing Fields on a Layout” in this chapter.

Moving the Field Organizer

The Field Organizer may cover up fields on the layout page that you want to work with. You can move the field organizer by dragging it with the pen, so that you can see the entire layout page.

Closing the Field Organizer

When in design mode, you cannot close the Field Organizer. GeoFile closes it automatically when you switch to data entry mode. For more information, see “Choosing a Work Mode” in this chapter.

MANAGING FIELDS IN A DATABASE

LEVELS 3-4

This section describes how to create, change, and delete fields in a database using the Field Organizer.

For information about adding and removing fields on a layout, see “Adding and Removing Fields on a Layout” in this chapter.

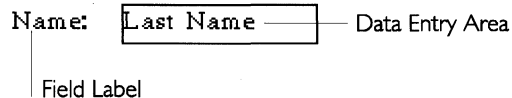
Creating a Field

You can create new fields in a database. At Level 3, you can define field names. At Level 4, you can also define field types, field attributes, and data attributes.

Once you have added a field, you can change its number formatting; for more information, see “Using Field Number Formats” in this chapter. You can also change a field’s text formatting and location on a layout; for more information, see “Formatting a Layout” in this chapter.

PARTS OF A FIELD

A field has two parts. The *data entry area* is where, in data entry mode, the user enters and sees the contents of the field for a particular record. The *field label* appears next to the data entry area and describes the field to the user. The following example shows these two parts of a field:



The field edges define the boundaries of the data entry area; for more information, see “Showing and Hiding Field Edges” in this chapter.

When you add a field, GeoFile uses the field name for both the field label and the data entry area. The field name does not appear in the data entry area in data entry mode. Instead, the field label identifies the contents of the field to the user.

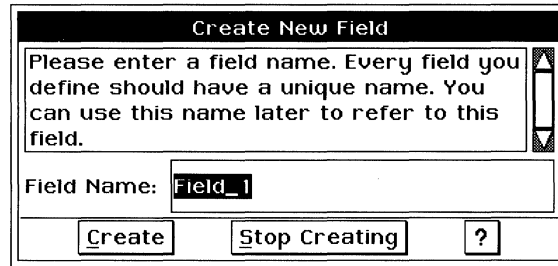
In the previous example, the designer has changed the field label to make the name more descriptive. The field label is optional descriptive text that you can delete if you want. For more information, see “Changing Field Labels” in this chapter.

CREATING A FIELD AT LEVEL 3

At Level 3, you can add new fields to a layout.

To create a new field (Level 3)

1. Tap Create New Fields in the Field Organizer dialog box. A dialog box appears. When you create a new blank database with no fields, GeoFile displays this dialog box automatically.



2. Enter a field name. A field name can consist of any combination of letters, numbers, and underscores, up to 40 characters. GeoFile does not permit spaces in field names; if you enter a space, GeoFile converts it to underscore automatically.

The name you use must be unique in a database; you cannot have the same name for two different fields. Names are not case-sensitive; for example, "Social_Security_Number" and "social_security_number" are the same name to GeoFile.

The name of a field should describe its contents; for example, you could use "Employee_Salary" to name a field that contains the salary of an employee.

3. Tap Create. GeoFile creates the field in the database and adds the field and its field label to the current layout page, as in the following example. The field label is optional; you can change or delete it as necessary.

Employee_Salary: — Data Entry Area
|
Field Label

GeoFile places the new field below the previous field, if any, on the layout page. If the number of fields on the layout exceeds the length of the page, GeoFile increases the page size automatically.

4. Tap Stop Creating when you finish adding all the fields on the layout. The Create New Field dialog box closes.

CREATING A FIELD AT LEVEL 4

At Level 4, you can define additional field attributes, such as field type, field notes, default values, expressions, field length, and minimum and maximum values.

When defining fields, you can use any of the following GeoFile field types:

General/Text. This field type can contain any combination of keyboard characters: letters, numbers, punctuation, spaces, and so on (such as “123 Main Street”). By default, general/text values can be as large as 511 characters.

Integer. This field type can contain numbers, such as 7, 12, 365, and so on, but does not display fractional portions (numbers to the right of the decimal point).

Real Number. This field type can contain numbers with fractional portions (including currency values), such as 98.6, 2.17182, 3.14159, and so on.

Date. This field type can contain date values, ranging from Jan 1, 1900 through Dec 31, 2099.

Time. This field type can contain time values, ranging from 12:00:00 AM to 11:59:59 PM, within the valid date range.

Computed. This field type can contain an expression that GeoFile computes during data entry when a user adds or edits a record, such as “Sales_to_Date ÷ Number_of_Sales.”

In general, use the integer or real number field type for numbers involving mathematical calculations. For example, a Number_of_Sales field and a Sales_to_Date field would be integer or real number fields, so you can use them to calculate the Average_Per_Sale field. Integer and real number fields can contain values between 10^{-4932} and 10^{+4932} . All numbers and calculations are accurate to 15 decimal places. Even when GeoFile rounds off a number to less than 15 decimal places, it uses all 15 decimal places in calculations.

You can use general/text fields for numbers that are not used in calculations, including numbers that contain other characters (such as phone numbers).

The following procedure describes the basic steps for creating and defining a field at Level 4.

To create a new field (Level 4)

1. Tap Create New Fields in the Field Organizer dialog box. A dialog box appears:

The screenshot shows a dialog box titled "Create New Field". At the top, there is a text input field for "Field Name" containing "Field_1". Below it is a dropdown menu for "Field Type" set to "General/Text". The dialog is divided into two main sections: "Field Attributes" on the left and "Data Attributes" on the right. The "Field Attributes" section contains two buttons: "Set Field Notes..." and "Set Default...". The "Data Attributes" section contains a "Length" field set to "511", and two empty fields labeled "Min:" and "Max:". At the bottom of the dialog are three buttons: "Create", "Stop Creating", and a question mark icon.

When you create a new blank database with no fields, GeoFile displays this dialog box automatically.

2. Complete the dialog box, selecting the options you want.

Field Name. Type a field name. A field name can be any combination of letters, numbers, and underscores, up to 40 characters.

When you enter a space, GeoFile inserts an underscore automatically.

The name you use must be unique in a database; you cannot have the same name for two different fields. Names are not case-sensitive; for example, "Address" and "address" are the same name to GeoFile.

The name of a field should describe its contents; for example, you could use "Employee_Salary" to name a field that contains the salary of an employee.

Field Type. This option sets the field type. Select a field type from the list.

Set Field Notes. This field attribute sets the notes associated with the field. You can enter up to 256 characters in this field. For example, you might enter something like this: "This field is a real number that contains the employee's salary information and currency formatting." For instructions on setting Field Notes, see "Changing Field Notes" in this chapter.

Set Default (or **Set Expression** for computed fields). This field attribute sets the default or the expression for the field. For

instructions on setting the default or expression, see “Using Field Expressions” in this chapter.

Length. This data attribute sets the length of a general/text field. By default, the length is 511 characters, the maximum length for a general/text field. Reduce this setting if you do not want the text field to exceed a certain length (such as a zip code field or a state abbreviation field). All other field types have no default length.

If a user enters data that are out of range, an error message appears.

Min. This data attribute sets the minimum allowable value for a real number, integer, date, or time field.

Max. This data attribute sets the maximum allowable value for a real number, integer, date, or time field.

3. Tap Create to create the field using the options you have selected. GeoFile creates the field in the database and adds the field and its field label to the current layout page.

GeoFile places the new field below the previous field, if any, on the layout page. If the number of fields on the layout exceeds the length of the page, GeoFile increases the page size automatically.

4. Tap Stop Creating when you finish adding all the fields on the form. The Create New Field dialog box closes.

Changing Field Notes

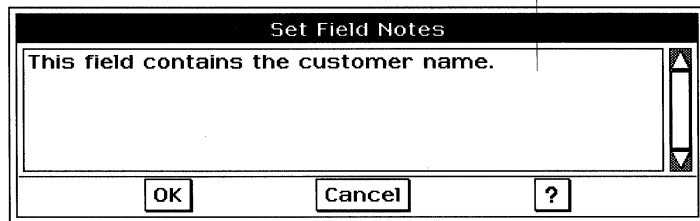
LEVEL 4

You can add notes to a field as a reminder of what the field contains when you select it in the Field Organizer. For example, you could describe the purpose of a field by entering, “This field contains the customer name.”

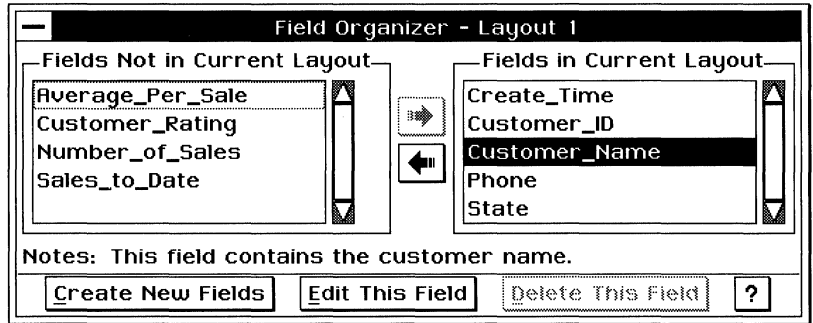
To change field notes (Level 4)

1. Select the field you want to change from the Field Organizer.
2. Tap Edit This Field in the Field Organizer. A dialog box appears.
3. Tap Set Field Notes. A dialog box appears:

Enter or edit the field notes in the Notes box.



4. Enter or edit the field notes in the Notes box. You can enter up to 255 characters.
5. Tap OK. The dialog box closes. GeoFile saves your changes. You will see these notes the next time you select the field in the Field Organizer dialog box, as in this example:



Changing a Field Definition

LEVELS 3-4

Once you have added a field, you can go back and change its definition. At Level 3, you can change its field name; at Level 4, you can change its field type, field length, field attributes, and data attributes.

When you change a field definition, the changes affect the field wherever it appears in the GeoFile database; if the field appears in multiple layouts, GeoFile updates your changes on every layout on which the field appears.

CHANGING FIELDS AT LEVEL 3

You can change the name of a field. You may want to make it more descriptive of the information the field will contain, or you may want to make it more consistent with other field names.

To change the name of a field (Level 3)

1. Select a field from the Field Organizer. You can select a field whether it appears on the current layout or not.

2. Tap Edit This Field on the Field Organizer. A dialog box appears:

3. Enter a new name in the Field Name box.
4. Tap Apply. GeoFile assigns the new name to the selected field and to its field label.
5. Tap Close to close the dialog box.

CHANGING FIELDS AT LEVEL 4

At Level 4, you can change additional field attributes such as the field type, field length, field notes, minimum and maximum values, defaults, and expressions. This procedure describes the basic steps for changing a field at Level 4.

To change the field definition (Level 4)

1. Select a field from the Field Organizer. You can select a field whether it appears on the current layout or not.
2. Tap Edit This Field in the Field Organizer. A dialog box appears:

3. Complete the dialog box, selecting the options you want.

WARNING

If you change the field type in a database that has existing data, a warning message appears indicating that GeoFile will convert the data if possible, but that if conversion fails, GeoFile will erase the

data. If you tap OK, GeoFile attempts to convert the data to the new data type. However, certain kinds of information may not convert. For example, if you change a general/text field to an Integer field, data with alphabetic characters do not convert; GeoFile erases the data and puts an error in the field instead.

4. Tap Apply. GeoFile applies the changes to the selected field.
5. Tap Close to close the dialog box.

Deleting a Field

LEVELS 3-4

You can delete a field you no longer need from the database. Deleting a field from the database removes it from the database, including any layout on which it appears, and erases any data that it contains.

Deleting a field from the database differs from removing a field from the current layout. For more information, see “Adding and Removing Fields on a Layout” in this chapter.

NOTE

You cannot delete a field while an expression in another field refers to it. For example, if the expression in a Monthly_Salary field depends on the Salary field for data, GeoFile will not let you delete the Salary field until you have removed the reference to it in the Monthly_Salary field.

Similarly, you cannot delete a field if it appears on the current layout. You must first remove it from the current layout. Select the field you want to delete, then tap the Remove button in the Field Organizer to remove it from the current layout.

To delete a field (Levels 3-4)

1. Select a field from the Fields Not in Current Layout list in the Field Organizer. You cannot select a field that appears on the current layout.
2. Tap Delete This Field in the Field Organizer. A confirmation message appears.

WARNING

Once you delete a field, you cannot recover any data that it contains. The only way to regain the data is to revert to the last saved version of the database by choosing Discard Changes from the Other choice on the File menu. For more information, see Chapter 3.

3. Tap Yes. GeoFile deletes the selected field from any layout on which it appears. Doing this eliminates any data stored in this field.

USING FIELD NUMBER FORMATS

LEVELS 3-4

GeoFile provides many ways to display numbers, dates, and times. For example, you can display a number with commas (98,765), without commas (9876), as currency (\$98.77), or as a percent (98.8%). You can also create custom formats for special needs. The format you use depends on the way you want to display information.

You can set date and time formats as well. Dates are actually stored as serial numbers representing the number of days since January 1, 1900. Therefore, January 1, 1993 equals 33969. Time values are the fractional portion of date serial numbers; for example, a date value of 33969.25 is actually January 1, 1993, at 6:00 AM (the fractional portion represents a percentage of the 24-hour clock). However, in data entry mode, the user enters dates and times in the usual manner, such as "Jan 12, 1994" or "12:35 PM".

You can use these formats for any field including (at Level 4) general/text fields. At Level 4, each format works for all field types, although you might want to use a format that applies to the field type you have defined: number formats for integer and real number fields, date formats for date fields, and time formats for time fields. For computed fields, use the format that corresponds to the result; for example, if the result of a computed field is an integer, use a number format.

Available Formats

GeoFile provides a variety of number, date, and time formats. These formats are the same as those available in GeoCalc. For more information, see Chapter 6 for tables showing number, date, and time formats and for procedures used for changing field number formats and creating custom field number formats.

USING FIELD EXPRESSIONS

LEVEL 4

You can use field expressions to calculate defaults and current values for fields in a layout.

An expression is a formula that can include field names, functions, math operators, logical operators, numbers, and strings. For example, the following expression contains fields, math operators (+ and ÷), and a function (TRUNC):

```
Field_1 + TRUNC(Field_2 ÷ Field_3)
```

In general, for computed fields, avoid using date and time fields (stored as serial numbers) in combination with other data types. However, you can still perform basic operations on date or time values, such as subtracting one date from each another or calculating times.

You can add default values and expressions to fields. For more information about expressions, see “Using Field Expressions” in this chapter, and see Appendix B.

In GeoCalc, you normally precede an expression with an equal sign (=); you do not do this in GeoFile.

GeoFile uses many of the same functions and operators that GeoCalc uses. However, not all GeoCalc functions apply to GeoFile. GeoFile supports all GeoCalc functions except the following: COLS, FILENAME, HLOOKUP, INDEX, IRR, N, NPV, PAGE, PAGES, ROWS, and VLOOKUP. Avoid using unsupported functions in GeoFile.

Because GeoCalc supports all the GeoFile functions, you can use GeoCalc to test your formulas before putting them in a GeoFile database. Doing this can save time as you verify your formulas.

GeoFile evaluates field expressions according to the alphabetical order of field names. Therefore, in your expression, you can refer only to field names that precede the current field name alphabetically.

Using Default Values

GeoFile calculates a *default value* when it creates a new record in the database in data entry mode. For example, you can have GeoFile put the default area code 510 in a Phone_Number field using the following simple expression: 510. Similarly, you could have a Date_Created field using the function TODAY to save the record creation date in the record.

For default values, you can even rely on the default value of another field in the new record. For example, you can calculate a Date_Payment_Due field using the following expression:

Date_Ordered + 30

NOTE

The expression in the previous example works because Date_Ordered comes before Date_Payment_Due in alphabetical order. Referring to a field named Date_Shipped, however, would not work; you would need to rename the field to use it in the formula.

Using Computed Values

GeoFile calculates a *computed value* field whenever it creates a new record in the database or when an element in the expression changes in data entry mode.

For example, you can specify the following formula in a field called Average_Per_Sale:

Sales_to_Date ÷ Number_of_Sales

GeoFile recalculates Average_Per_Sale whenever the value changes in the Sales_to_Date field or in the Number_of_Sales field.

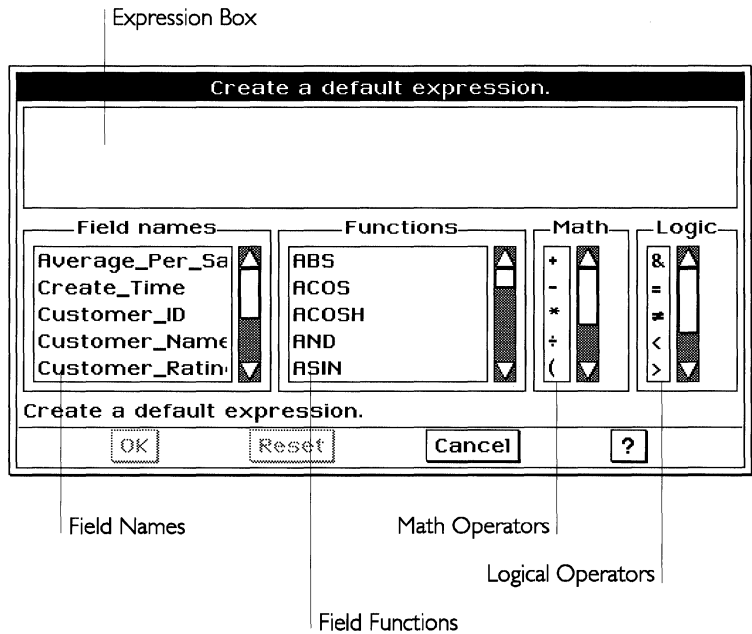
Changing Defaults and Field Expressions

Use the following procedure to change a field's default or field expression.

To change defaults and field expressions (Level 4)

1. Select a field from the Field Organizer.
2. Tap Edit This Field in the Field Organizer. A dialog box appears.

3. Tap Set Default. A dialog box appears:



4. Complete the dialog box, selecting the options you want.

Field Names. This option lists all the field names in the GeoFile database. Selecting a field name pastes it at the insertion point in the Expression box.

Functions. This option lists all the GeoFile functions you can use. Selecting a function pastes it at the insertion point in the Expression box.

Math. This option lists all the GeoFile math operators you can use. Selecting an operator pastes it at the insertion point in the Expression box.

Logic. This option lists all the GeoFile logical operators you can use. Selecting an operator pastes it at the insertion point in the Expression box.

For a list of GeoFile functions, math operators, and logical operators, see Appendix B.

5. Tap OK. GeoFile checks the syntax of the expression you have entered. If the syntax passes, the dialog box closes.

If GeoFile detects a syntax error, it displays an error box and highlights a problem in the Expression box. Tap OK and resume

editing the expression until the syntax passes. The dialog box closes.

FORMATTING A LAYOUT

LEVELS 3-4

The way you format a layout can affect how easily you or others can enter, search for, or print information. This section describes general design principles for creating a layout, and then explains how to use GeoFile's text and graphics features to make your layout more visually appealing and useful.

Planning a Layout

Designing a layout page is an art that relies on how well you understand the nature of the information in the database, how you plan to use the information, and what you think is visually attractive. Basic design principles can help you design a better layout. You might want to start by sketching your ideas on paper.

You can create a layout from scratch, or you can start with a template or another document and adapt it as necessary. For more information, see "GeoFile Basics." You can use the clipboard to copy fields and other objects between layouts in a database. However, you cannot copy fields between databases; each database is a separate file, and field definitions differ between files.

You can organize fields into groups or categories. Consider the nature of the information in a database. Which fields belong together in a group? Which fields or groups should be distinct from each other? For example, in a customer database, you might put address information, contact information, and financial information into separate groups.

Your design should enhance the way you plan to use the layout. For example, if you are designing a data entry layout, you might consider ways to make it easier and faster to enter the data: arranging the fields in the order in which they appear on paper, putting the fields most likely to contain data ahead of those most likely to remain empty, and so on. Remember that your eye normally travels across a sheet of paper or a screen from left to right and from top to bottom.

How much information do you really need on this layout? Can you eliminate fields that are not necessary? For example, if you are

designing a layout for finding customer phone numbers, you might include names and phone numbers but omit addresses and financial information to reduce clutter.

How can you use graphics and text formatting to enhance the similarities and contrasts among fields and groups of fields? For example, you might put a box around each group of fields, put lines between groups, make groups different colors (if you have a color printer), use white space, and so on.

Do you want to make a field or a group of fields stand out? You can use colors (if you have a color printer) for highlighting, or you can place the field or group in a prominent position on the layout. You can also increase the font size of the text, or even put in a line with an arrowhead pointing to a particular field.

Aligning fields can make it easy to scan the information on a layout. Similarly, distributing fields evenly across the layout, rather than clustering them in a small area, can give the layout a sense of balance and proportion.

Remember that you want to use visual cues to enhance the clarity of the data on the layout, but not to overwhelm the reader with too much information. You must use your judgment to determine what looks best. Incorporating these aesthetic touches may seem subtle on the surface, but their value and importance increase every time anyone uses a layout you have designed.

Distinct groups contrast with each other.

The field order makes it easy to enter data.

Fields are aligned vertically.

Related fields appear visually as a group.

Graphics and text enhance similarity and contrast.

Changing Field Labels

LEVELS 3-4

A field has two parts: the field label and the data entry area. You can change the text of a field label, or you can delete a field label altogether. Field labels are text objects that you can manipulate as you would any text object. For more information on working with text objects, see Chapter 8.

CHANGING THE TEXT

When you add a field to a database, GeoFile automatically uses the name of the field as its field label. You might want to give it a different field label, however, to make it more descriptive or more visually appealing. For example, if a field is named `Work_Phone`, you might want to make the field label "Work Phone" instead.

To change the font, size, or other character attributes of a text label, see “Formatting Text” in this chapter.

To change the text of a field label (Levels 3-4)



1. Select the Text tool from the tool bar.
2. Tap to select the field label you want to change. An outline appears around the field label, and the insertion point appears inside the outline.
3. Edit the text of the field label.

DELETING A FIELD LABEL

You might want to remove the field label altogether if it clutters your layout. For example, you might not want individual field labels for First_Name, Middle_Initial, and Last_Name fields; you might instead want to have just one label, “Name,” for all three fields.

To delete a field label (Levels 3-4)



1. Select the Arrow tool from the tool bar, if it is not already selected.
2. Tap the field label you want to delete. Handles appear around the field.
3. Choose Delete from the Edit menu.

or

Press the **Delete** key.

Either way, GeoFile deletes the field label you selected.

COPYING, CUTTING, AND PASTING USING THE CLIPBOARD

You can also cut, copy, and paste field labels using the clipboard. For more information, see Chapter 1.

Arranging Fields

LEVELS 3-4

Like a text or graphic object, any field on a layout can be moved and resized. You can also align or distribute fields to add proportion and balance to your layout.

SELECTING, MOVING OR RESIZING A FIELD

To move or resize a field, you must first select it using the Arrow tool. For more information about procedures for using the

Graphics menu and Graphics tools, see Chapter 8 and “Designing GeoWrite Documents” in Chapter 5.

When you resize a field, you can change the positions of field edges so that the field fits better on a layout. Changing the field edges does not change the amount of information that the field can contain; it only changes the way the information appears on the layout.

ALIGNING AND DISTRIBUTING FIELDS

You can arrange fields so that they line up with each other (aligning) or so that they are equidistant from each other (distributing). Doing so makes your layout more readable and more visually appealing. You can align and distribute fields along their top, bottom, left, or right edges; by width or height; or along their vertical or horizontal axes.

For more information, see Chapter 8. Note that in GeoFile, the Arrange option appears as a submenu under the Graphics menu.

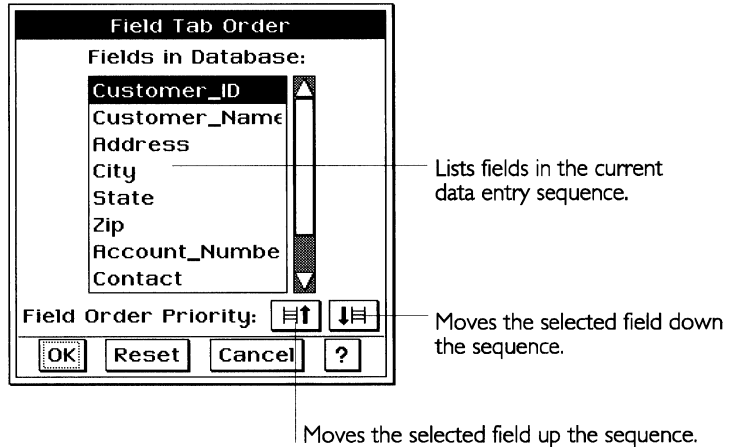
Setting the Field Order

For data entry layouts, you can set the sequence by which you can move from field to field (after pressing **Tab** or **Enter**). By default, GeoFile uses the order in which you created the fields. You might want to change this if a more natural data entry sequence emerges as you use the database.

LEVELS 3-4

To set the field tab order (Levels 3-4)

1. Choose Set Field Tab Order from the Layout menu. A dialog box appears:

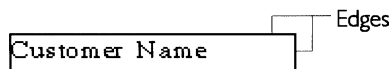


2. Select the field you want to move from the Fields in Database list.
3. Tap the Up button. GeoFile moves the selected field up one field in the sequence.
or
Tap the Down button. GeoFile moves the selected field down one field in the sequence.
4. Repeat Steps 2 and 3 for each field you want to move in the list.
5. Tap OK. GeoFile saves the field tab order you selected.

Showing and Hiding Field Edges

LEVEL 4

By default, when you add a new field to a layout, GeoFile puts a border around the edges of the field's data entry area, as shown in the following illustration:



These edges indicate the outer boundaries of the field in which you are entering data. However, you can hide any or all of these edges to enhance your layout design.

To show or hide field edges (Level 4)

1. Select the field you want to change.
2. Choose Field Edges from the Properties menu. A submenu appears.
3. Select the field edges you want to appear.

or

Deselect the field edges you want to hide.

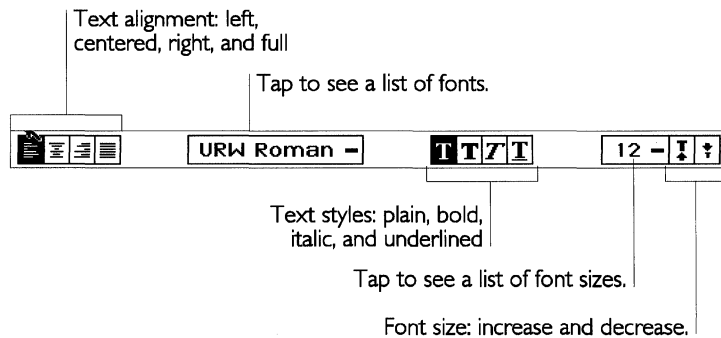
Formatting Text

LEVELS 3-4

You can format text on a layout to give it more emphasis, to increase its similarity to other objects, or to provide contrast with other text objects. You can also format the data entry area of any field so that GeoFile uses the formatting to display any text it contains. GeoFile offers many of the text formatting features available in GeoWrite.

In GeoFile, you can use the text formatting choices on the Properties menu to change the font, size, and character attributes of selected text. You can use the Paragraph choice on the Properties menu to change the line spacing, paragraph spacing, indents, tabs, borders, and other attributes of text paragraphs. You can even create and use text style sheets.

At Levels 3 and 4, GeoFile also provides tools on the Function tool bar that you can tap to use some of these features:



For more information about these features, see Chapter 5 and Appendix A.

NOTE

When using a procedure from the GeoWrite chapter for GeoFile, remember that GeoFile and GeoWrite have different menu structures. For example, to get to the Paragraph menu, you choose

it from the Properties menu in GeoFile, but you choose it from the main menu in GeoWrite. Similarly, the text formatting features appear on the Properties menu in GeoFile, but in GeoWrite they appear on the Character menu.

Using Graphics

LEVELS 3-4

You can add graphics to a layout to help group or contrast fields, to clarify the way the information is organized, or to emphasize certain information. GeoFile offers the same graphics tools that are available in GeoWrite. GeoFile provides tools on the Drawing tool bar that you can use to add and manipulate objects on a layout. For more information, see Chapter 8.

At Level 3 in GeoFile, you can use the graphic formatting choices on the Graphics menu to create, transform, and arrange graphic objects, to set their line and area attributes, and to create and use graphic style sheets. At Level 4, you get additional editing features, and you can set additional graphic attributes.

For more information about each of these features, see Chapter 8.

DEFINING AND MANAGING LAYOUTS

LEVELS 3-4

Layouts give you different ways to display and print the information in your GeoFile database. At Levels 3 and 4, you can create additional layouts for specialized ways to work with data in the database: entering data, displaying information, printing a report, and so on.

For example, in a customer database, you might have one layout for entering data from business cards; another for displaying company names, contact names, and phone numbers; one for printing mailing labels; and yet another for printing an address book. Each layout displays the data in the database in a different way to suit a particular purpose.

Switching Layouts

To work with a layout you have added, you first need to make it the current layout. For an introduction to layouts, see “GeoFile Basics” in this chapter.

To switch to another layout (Levels 1-4)

1. Choose Switch Layout from the Layout menu. A dialog box appears.
2. Select the layout you want from the Choose Layout list.
3. Tap Switch To. GeoFile displays the layout you selected.

Creating Additional Layouts

You can create up to 255 layouts in a GeoFile database.

To create a new layout (Levels 3-4)

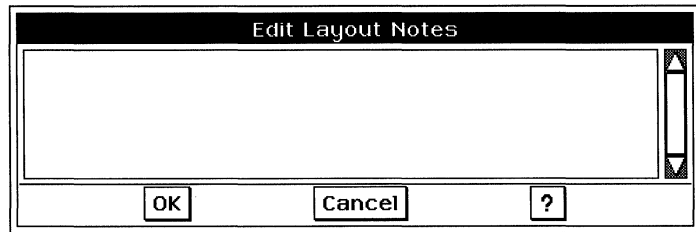
- Choose Create New Layout from the Layout menu. GeoFile creates the new layout, assigns it a name (such as Layout 2), and makes it the current layout in the Field Organizer.

Adding Layout Notes

You can add notes to a layout as a reminder of what the layout contains when you switch to it. For example, you can describe the purpose of a data entry layout by entering, "Use this layout to enter customer data."

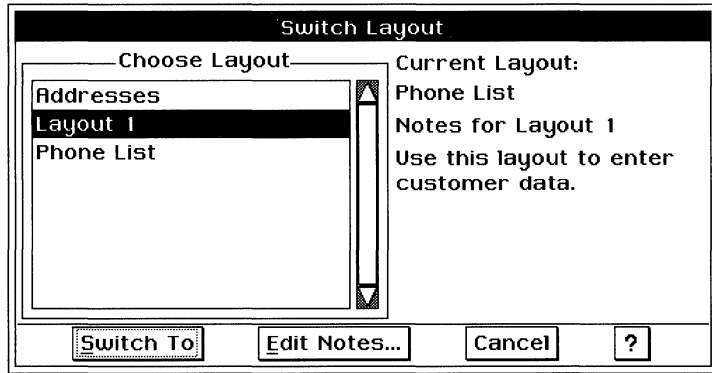
To add layout notes (Levels 3-4)

1. Choose Switch Layout from the Layout menu. A dialog box appears.
2. Select the layout you want from the Choose Layout list.
3. Tap Edit Notes. A dialog box appears:



4. Enter or edit the layout notes in the Notes box. You can enter up to 256 characters.

5. Tap OK. The dialog box closes. GeoFile saves your changes. These notes will appear the next time you select the layout in the Switch Layout dialog box, as shown in this example:

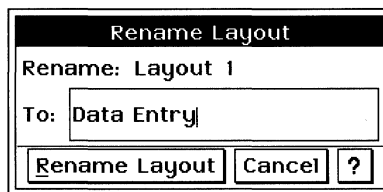


Renaming a Layout

You can change the name of a layout to make it more descriptive than the name GeoFile assigns when you create the layout. For example, you might want to rename Layout 1 something like “Data Entry Form.”

To rename a layout (Levels 3-4)

1. Switch to the layout you want if it is not the current layout.
2. Choose Rename Layout from the Layout menu. A dialog box appears:



3. Enter a new layout name. You can use any combination of letters, numbers, spaces, and punctuation. The name you use should describe the purpose of the layout. For example, if your layout is for printing mailing labels, you might call the layout “Mailing Labels.”
4. Tap Rename Layout. GeoFile changes the name of the layout to the name you entered.

Deleting a Layout

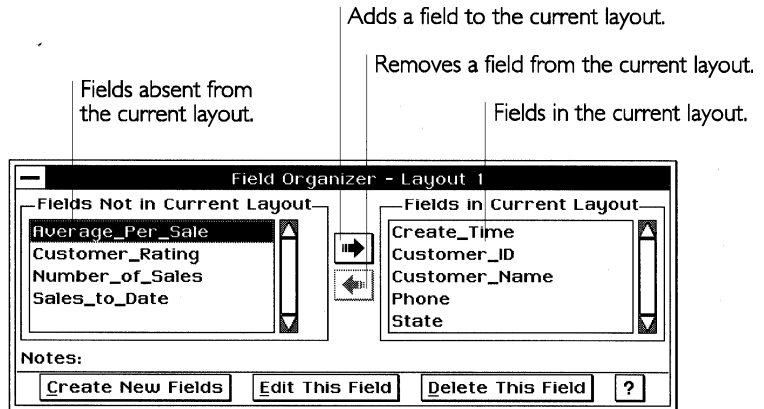
You can delete a layout you no longer need.

To delete a layout (Levels 3-4)

1. Switch to the layout you want if it is not the current layout.
2. Choose Delete Layout from the Layout menu. A confirmation message appears.
3. Tap Yes. GeoFile deletes the current layout and switches to another layout.

Adding and Removing Fields on a Layout

A layout can contain some or all of the fields in a database. The same field can appear on more than one layout. You use the Field Organizer to add and remove fields on a layout.



ADDING A FIELD

You can add a field to a layout so that it appears when you select the layout.

To add a field to a layout (Levels 3-4)

1. Switch to the layout you want if it is not the current layout.
2. Select the field you want to add to the layout from the Fields Not in Current Layout list.
3. Tap the Add button. GeoFile adds the field to the layout.

REMOVING A FIELD

You can remove a field you no longer need from a layout.

You cannot delete a field if it appears on the current layout.

Removing a field does not delete it from the database; the field remains until you delete it from the database using the Delete This Field button on the Field Organizer.

To remove a field from a layout (Levels 3-4)

1. Switch to the layout you want if it is not the current layout.
2. Select the field you want to remove from the layout from the Fields in Current Layout list.
3. Tap the Remove button. GeoFile removes the selected field from the layout.

Copying Objects Between Layouts

You can cut, copy, and paste objects between layouts of the same database using the clipboard. Doing this can save design and layout time. For more information, see Chapter 1.

WARNING

You cannot copy fields between different *databases* using the clipboard because databases have different field definitions. Attempting to do this can cause unexpected results.

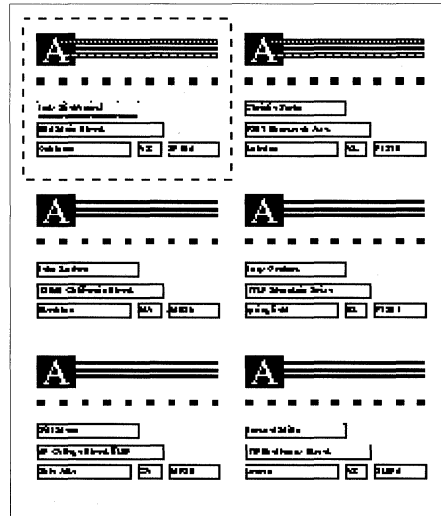
USING MULTIPLE RECORDS ON A LAYOUT

LEVELS 4

GeoFile has two record modes at Level 4. In *single-record mode*, you can put one record on a layout at a time. In *multi-record mode*, you can add multiple records to the same layout. For example, you might do this to display rows of records on screen, such as a phone list.

Service Express	Judy Rickbaum	(555) 555-1111
ABC Company	John Enders	(555) 555-2222
Comm Tech	Bill Moss	(555) 555-3333
Test Inc.	Christie Parks	(555) 555-4444
New Tools Co.	Suzy Graham	(555) 555-5555
Williams and Sons	Samuel Mills	(555) 555-6666

You might also use this mode to print mailing labels or an address book, as shown in this example:

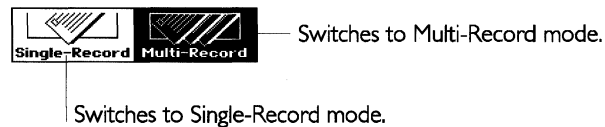


By default, every layout page contains a single record. To format a layout with multiple records, you must switch to multi-record mode and change the page size options.

Switching Between Single- and Multi-Record Modes

LEVEL 4

You can switch between modes by tapping the appropriate button. The buttons are shown here:



Fitting Records on a Page

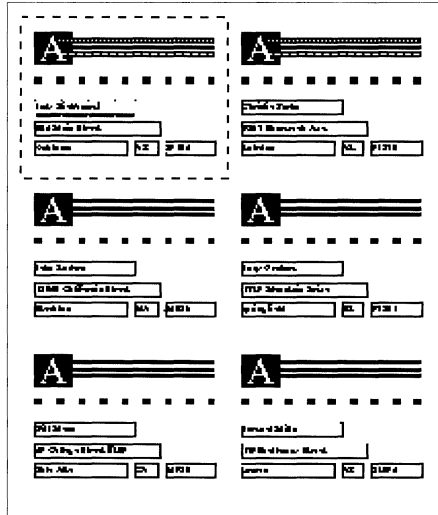
LEVEL 4

Once you have entered multi-record mode, you must change the page size options so that multiple records can fit on the layout. For an introduction to page size options, see Chapter 1.

For the Single Record Size option, the default width is the width of the page minus the combined left and right margins. Similarly, its default height is the height of the page minus the top and bottom margins. By default, a single record fits on a layout page. To fit

multiple records on a page, you need to reduce the single record size in proportion to the number of records you want to fit on a layout page.

For example, suppose you want to print mailing labels that fit six on a page in two columns, as shown here:



To calculate the record height, use the following formula:

$$\text{Record Height} = \frac{\text{Page Height} - (\text{Top Margin} + \text{Bottom Margin})}{\text{Number of Records per Column}}$$

If the page height is 11 inches and the top and bottom margins are 0.25 inches each, you would want to reduce the single record height to 3.5 inches.

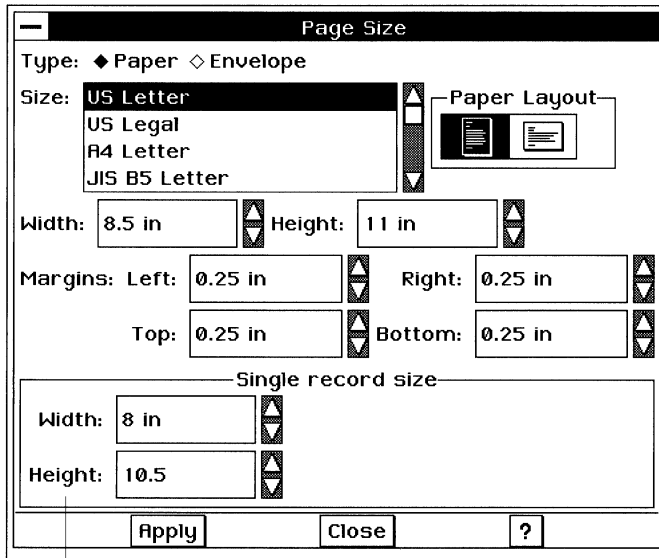
To calculate the record width, use the following formula:

$$\text{Record Width} = \frac{\text{Page Width} - (\text{Right Margin} + \text{Left Margin})}{\text{Number of Records per Row}}$$

If the page width is 8.5 inches and the right and left margins are 0.25 inches each, you would want to reduce the single record width to 4 inches.

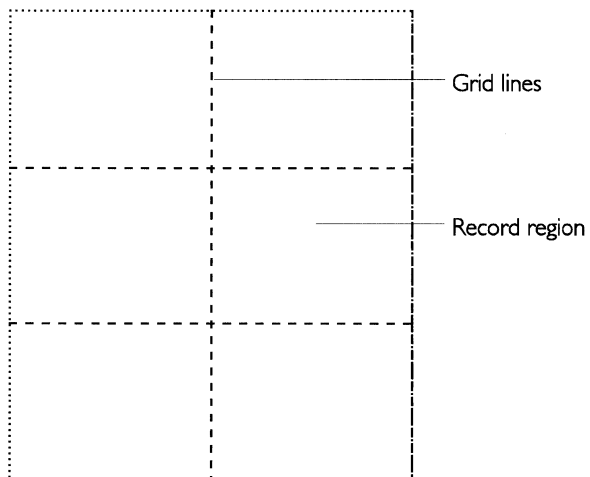
To set the page size options for multiple records (Level 4)

1. Choose Page Size from the File menu. A dialog box appears:



Single record size

2. Reduce the single record size in proportion to the number of records you want to fit on a layout page.
3. Tap Apply. GeoFile displays dotted grid lines on the layout page indicating where records appear, as shown in the following example:



You can zoom out to see how records appear on the entire layout page. If necessary, you can continue to adjust the page size options until you achieve the result you want.

4. Tap Close to close the dialog box.

Once you have the page size you want, you might need to change the position of fields on the layout so that they will fit.

Fitting Fields into the Record Region

LEVEL 4

Once you have determined the record size, you might need to adjust the position, size, or formatting of fields on the layout page so that the data in the database will fit in the record region.

For example, suppose you have set the single record width to 2 inches but some of the data, when displayed, is more than 2 inches long. If you do nothing, GeoFile will not display or print any text that extends beyond the right margin of the record region. However, if you reduce the length of the field or reduce the text size, more information can appear.

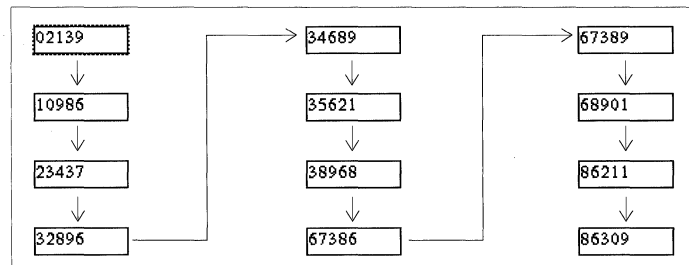
Alternatively, you can move fields closer together so that there is less space between them, or you can move them closer to the upper left corner. Use single-record mode to adjust field position.

Changing the Record Order

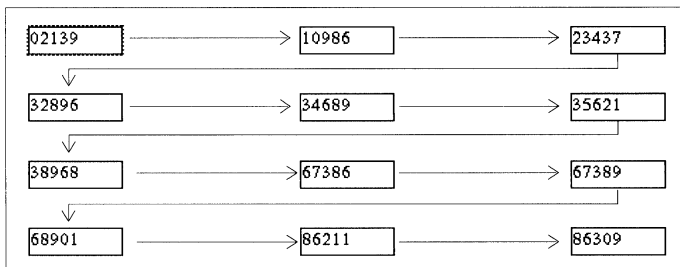
LEVELS 3-4

For layouts with multiple records appearing in multiple rows and columns, you can decide the order in which GeoFile organizes the records on a page.

In the following example, GeoFile organizes addresses by zip code in a vertical manner (the default):

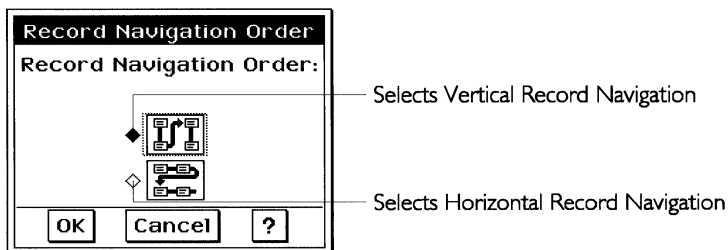


In the following example, GeoFile organizes addresses by zip code in a horizontal manner:



To change the record navigation order (Levels 3-4)

1. Choose Set Record Order from the Layout menu. A dialog box appears:



2. Select the record navigation order you want.
3. Tap OK. GeoFile changes to the record navigation order you selected.

Using the Drawing Tools

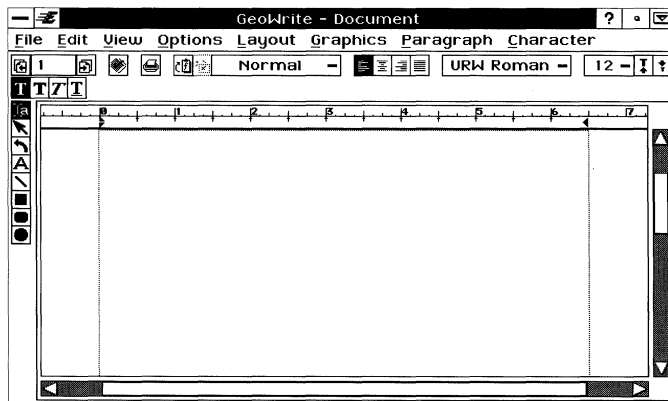
This section describes the drawing tools available at Level 3; the “Advanced Graphics” section of this chapter covers the advanced features available at Level 4.

This section assumes you are using the pen to input characters and make menu selections. You may also use an optional mouse.

DRAWING TOOLS AT LEVEL 3

LEVEL 3

When you set your user level to Level 3 in GeoWrite, GeoCalc, or GeoFile, the drawing tools and Graphics menu appear in the application window. The GeoWrite Level 3 window is shown below:



What Are Drawing Tools?

Drawing tools help you create and manipulate *graphic objects*. A graphic object can be a shape, a line, or a block of text. One advantage of using graphic objects is that you can easily select, edit, and manipulate individual objects separately from the other objects in your document.

You select a drawing tool by tapping it. The following are descriptions of the drawing tools available at Level 3:



Pointer Tool. Use the Pointer tool to select, move, and resize objects.



Rotate Tool. The Rotate tool lets you rotate an object around its center point. You also can use this tool to select and move objects, just as you would with the Pointer tool.



Text Tool. Use the Text tool when you want to place text inside a graphic object.



Line Tool. Use the Line tool to draw straight lines. You can change the color and the thickness of the line using the Line Attributes choice on the Graphics menu, described in this chapter. At Level 4 you can make connected straight lines and curved lines using the Polyline tools, described in the “Advanced Graphics” section of this chapter.



Rectangle Tool. Use the Rectangle tool to draw both rectangles and squares.



Rounded Rectangle tool. A rounded rectangle is a rectangle with rounded corners. You can use this tool just as you use the Rectangle tool.



Ellipse Tool. Use the Ellipse tool to draw ellipses and circles.

NOTE

In GeoCalc and GeoFile, the Ellipse tool is available at Level 4 only.

Drawing Pointers

Drawing pointers indicate the type and current location of the selected drawing tool; these pointers appear only if you are using an optional external mouse, attached through the RS-232 port. If you are using an external mouse, when you move the mouse into the document area, the pointer for the mouse changes to indicate the type of drawing tool you are using. If you are using the pen only, no pointer is shown.

Here are descriptions of the different types of pointers you will see when you use drawing tools with a mouse:



Arrow. If you select the pointer tool, the pointer does not change as you move it around the screen—it is always the arrow pointer.



Cross hairs. If you select the Line, Rectangle, or Ellipse drawing tool, the pointer changes to cross hairs when you move it over the document area. The center of the cross hairs shows where the shape will begin as you draw.



I-Beam. If you select the Text tool and move the pointer over a text object, the pointer changes to an I-beam pointer. Use the I-beam pointer to select text and move the insertion point.



Crossed I-Beams. If you select the Text tool and move the pointer into the document area, the pointer changes to crossed I-beams. (If you move the pointer over a text object, the pointer becomes a regular I-beam pointer.) The intersection of the I-beams shows where text will begin if you tap in the document area to define a text object and then enter text characters.

The pointer always becomes an arrow pointer when you move it outside the document area and onto the tool bar or the menu area.

CREATING BASIC OBJECTS

LEVELS 3-4

There are two ways to create objects. You can use the Create choice on the Edit submenu on the Graphics menu to quickly create a shape, or you can use the drawing tools.

Drawing Basic Objects with the Drawing Tools

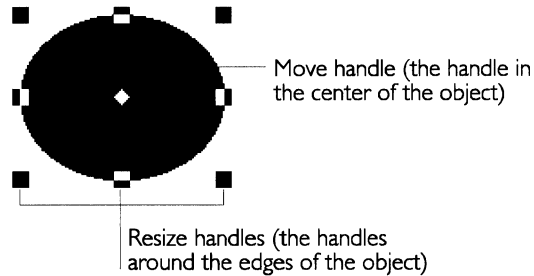
You can create a shape in virtually any size by selecting the appropriately shaped tool, tapping where you want the shape to start, dragging the pen to enlarge the object, and then lifting the pen when the object is the size you want.

To draw a line, rectangle, rounded rectangle, or ellipse (Levels 3 and 4)



1. Tap either the line, rectangle, rounded rectangle, or ellipse tool button. These tools function similarly. The tool button is selected.
2. Move the pen to the document area.
3. Touch the pen to the screen where you want your shape to start. (You do not have to move it to *exactly* the right place now; you can rearrange it later.) Drag diagonally until the shape is the size you want (or the line is the length you want), as indicated by the outlines that appear in the document area.
4. Lift the pen. The object appears as a solid shape or line.

After you create an object, *resize handles* appear around the object, and a *move handle* appears in the center of the object. You can use these handles to move and resize the object. Handles also indicate that an object is selected.



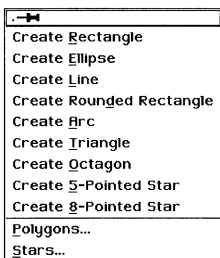
To remove the handles from an object (deselect it), create another object or tap any place in the document area that is not occupied by an object. For more information about selecting objects, see “Selecting Objects” in this chapter.

Adding Objects with the Create Submenu

The Create submenu, located on the Graphics menu, lists shapes you can use in your drawings. When you add an object using the Create submenu, the object appears at a standard size in the center of the drawing area. Objects you add with the Create submenu behave just like objects you create using drawing tools, and you can manipulate them as described in this chapter.

Using the Create submenu, you can add the following types of objects to your drawings:

- Rectangles
- Ellipses



- Lines
- Rounded rectangles
- Arcs
- Triangles
- Octagons
- five-pointed stars
- eight-pointed stars
- Polygons and stars with variable numbers of sides or points

Each time you select an object from the Create submenu, that object appears in the center of the document area. Unless you want to create a stack of objects, you will want to move each object away from the center point before you add another object with the Create submenu. You move objects by selecting and dragging them, as described in “Manipulating Objects” in this chapter.

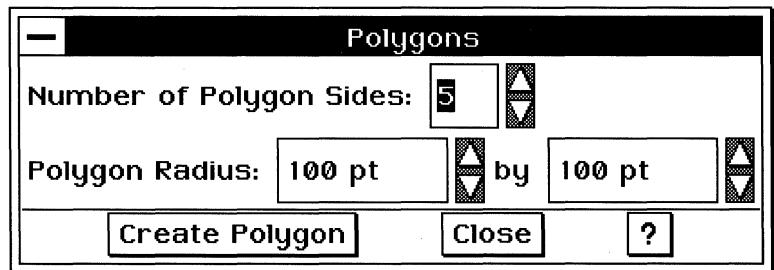
Drawing Polygons and Stars

Using the Create choice on the Edit submenu on the Graphics menu, you can quickly create polygons or stars with up to 100 sides. These are some examples of polygons you can create:



To create a polygon (Levels 3–4)

1. Choose Create from the Edit submenu on the Graphics menu. A submenu appears.
2. Choose Polygons from the Create submenu. A dialog box appears:



3. Tap the up and down arrow buttons to select the number of polygon sides you want.
4. Select the polygon's horizontal radius and vertical radius. The default is 100 points (about 1.4 inches); the minimum size is 1 point (1/72 of an inch), and the maximum size is 576 points (8 inches).
5. Tap Create Polygon. The polygon appears in the document.
6. Tap Close. The dialog box disappears. The polygon is selected, so you can reposition it in your document using any of the drawing tools.

Drawing Stars

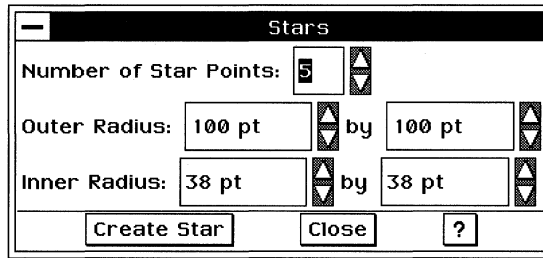
Using the Create choice on the Edit submenu on the Graphics menu, you can quickly create stars with up to 100 points. These are some examples of the stars you can create:



To create a star (Levels 3–4)

1. Choose Create from the Edit submenu on the Graphics menu. A submenu appears.
2. Choose Stars from the submenu. A dialog box appears.
3. Complete the dialog box, changing the options you want:
 - Number of Star Points.** Select the number of points you want your star to have. The default is 5 points; the maximum number is 100. (Star points are the points of the star, not the point increments of measure that you use to specify width and height.)
 - Outer Radius.** The outer radii of the star represent the radii of an ellipse that touches each of the star's points. The star's horizontal radius (left box) and vertical radius (right box) are measured in point increments. The minimum size is 1 point (1/72 of an inch); the maximum size is 288 points (4 inches). The default is 100 points (about 1.4 inches).
 - Inner Radius.** The inner radii of the star represent the radii of an ellipse that touches each of the star's inverted angles. The left box specifies the horizontal measure and the right box specifies the vertical measure, in point increments. The minimum size is 1 point

(about 1/72 of an inch); the maximum size is 288 points (4 inches). The default is 38 points (0.53 inches).



4. Tap Create Star. The star appears in the document.
5. Tap Close. The dialog box disappears. The star is selected, so you can reposition it in your document using any of the drawing tools.

MANIPULATING OBJECTS

LEVELS 3-4

All drawings are composed of combinations of shapes and lines. You can modify and combine these objects in a variety of ways. This section describes how you can manipulate objects.

Selecting Objects

To select an unfilled object, you must tap a line or curve on the object.

You can select objects by tapping them with the pen after you have selected any of the drawing tools. When you have selected an object, any changes you make affect that object. You can tell which object is selected because handles appear around it.

To select an object (Levels 3-4)

- Using one of the drawing tools, tap the object you want to select. Handles appear around the object.

To deselect an object (Levels 3-4)

- Tap in any part of the document area where there is no object. Handles disappear.

or

Select another object.

To select multiple objects (Levels 3–4)

1. Select the pointer tool.
2. Drag the pen diagonally across the area containing the objects. A box with a dotted line appears. As you continue to drag and stretch the box over the objects you want to select, handles appear around each object.

NOTE

If you are using an external keyboard, you can use **Ctrl** to select multiple non-adjacent objects.

Moving Objects

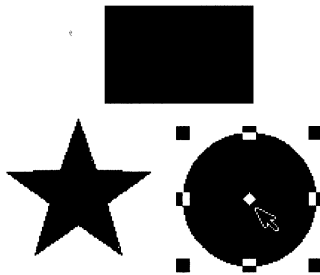
When you create an object, it is not permanently attached to the spot where you create it. You can move it around your document window as you like. This section describes how to move objects in a drawing.

NOTE

Objects that you place outside the *print border* (the dotted line near the perimeter of the document area) will not appear when you print.

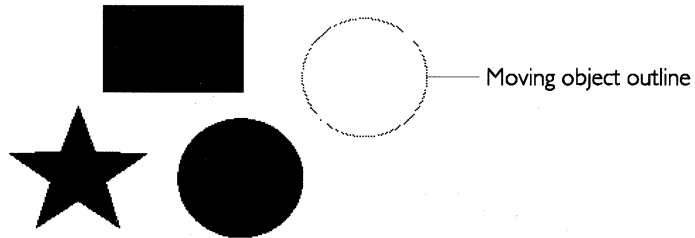
To move an object (Levels 3–4)

1. Select the object you want to move. Handles appear around the object:



2. Touch the pen to the diamond-shaped move handle in the center of the object.

3. Drag the object to the position you want. As you move the pen, an outline of the object follows your motion, indicating where the object will be placed when you lift the pen:



To move multiple objects (Levels 3–4)

1. Select the objects you want to move. Handles appear around the objects.
2. Touch the pen to the move handle on one of the objects, and drag the object to the position you want. Moving one object moves all the selected objects. As you move the pen, outlines of the object follow your motion, indicating where the object will be placed when you lift the pen.

MOVING OBJECTS WITH THE GRAPHICS MENU

You can use the Move choice on the Arrange submenu on the Graphics menu to move graphic objects. The Move menu choice presents you with two options: Nudge and Custom Move.

To nudge objects (Levels 3–4)

To *nudge* an object means to move it just a tiny bit. Sometimes using a move handle to reposition an object or group does not give you the fine degree of control you need. When you nudge objects, you move them up, down, left, or right one *pixel* at a time. Pixels are the small dots that make up the images you see on the screen.

1. Select the object you want to nudge.
2. Choose the direction in which you want to move the object from the Move submenu on the Arrange submenu on the Graphics menu. The menu disappears and the object is nudged in the chosen direction.

To custom move objects (Levels 3–4)

The Custom Move dialog box allows you to choose the increments in which you wish to move objects. Select Inches, Centimeters, Points, or Picas, and specify the number of increments vertically and horizontally.

1. Select the object you want to custom move.
2. Choose Custom Move from the Move submenu on the Arrange submenu on the Graphics menu.
3. Choose the increment type and the number of vertical and horizontal increments you want to move the object.
4. Tap Move. The object is moved as specified. The dialog box remains open so you can continue to perform the move operation until the object is positioned as you want it.
5. Tap Close. The dialog box disappears.

Resizing Objects

LEVELS 3–4

Just as objects are not fixed in their original positions, they are not fixed at their original sizes. You can enlarge and reduce an object by dragging any of its resize handles.

To resize an object (Levels 3–4)

1. Select the object you want to resize. Resize handles appear around the object.
2. Drag one of the resize handles (but not the move handle in the center of the object). Dragging toward the center of the object reduces it, while dragging away from the center enlarges it. As you drag, an outline shows the changing size of the object.
3. When the object is the size you want, lift the pen. The object appears in place, at its new size.

NOTE

Resizing line objects is a little different: you can only extend the length of the line as you drag one of the handles. You cannot resize a line to make it thicker. You can change line thickness using the Line Attributes choice on the Graphics menu. Setting line attributes is described in “Setting Attributes” this chapter.

Duplicating Objects

It is often useful to duplicate an object instead of recreating it. For example, if you are drawing a floor plan of the layout of six desks,

you can save time by drawing the first desk and then duplicating it five times.

To duplicate an object (Levels 3–4)

1. Select the object you want to duplicate. Handles appear around the object.
2. Choose Duplicate from the Edit submenu on the Graphics menu. The duplicate appears with handles around it in the center of the screen. You can use the move handle on the duplicate object to move it to the position you want.

You can also choose Duplicate In Place; and the duplicate object will appear on top of the original object.

You can also choose Multi-Duplicate. This choice opens a dialog box in which you may specify the number of duplicates, and any rotation or horizontal or vertical direction in which to arrange the pattern of duplicates.

NOTE:

The Edit submenu at Level 3 in GeoFile contains some additional choices that are not available in GeoWrite or GeoCalc until Level 4. These choices are documented in the “Advanced Graphics” section in this chapter.

Deleting Objects

You can delete objects from your drawing at any time.

To delete an object (Levels 3–4)

1. Select the object you want to delete. Handles appear around the object.
2. Choose Delete from the Edit menu.

Grouping and Ungrouping Objects

You can *group* distinct objects together so that you can work with them as if they were a single object. For example, after grouping three rectangles, you could do any of the following:

- Change the area attributes for all three rectangles at once.
- Rotate the rectangles around a common center.
- Move the rectangles as a group without changing their positions relative to one another.

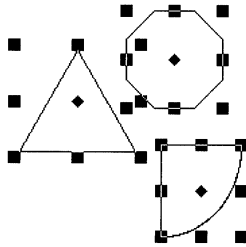
- Resize the rectangles as a group while maintaining their relative scale.

After you have made the changes you want to a group of objects, you can ungroup them to make each component a separate object again.

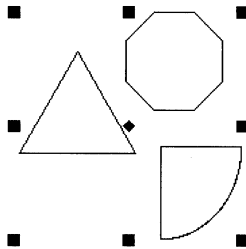
A group can contain any object, including another group.

To group objects (Levels 3–4)

1. Select the graphic objects you want to group. A set of handles appears around each object:



2. Choose Group from the Arrange submenu on the Graphics menu. A single set of handles appears around the group, indicating that it is now a single object:



To ungroup objects (Levels 3–4)

1. Select the group you want to ungroup.
2. Choose Ungroup from the Arrange menu. Handles appear around the individual objects.

Rotating Objects

You can rotate a selected object by using the Rotate tool or by choosing Rotate from the Transform menu, as described in the next section. Using the Transform menu, you can rotate an object a

specific number of degrees. The selected object rotates around its center point. You can also select multiple objects, and they will rotate around their respective center points. If you want multiple objects to rotate around a common center point, you must first group them; for more information, see “Grouping and Ungrouping Objects” in this chapter.

To rotate an object with the Rotate tool (Levels 3–4)

Using the Rotate tool, you can drag an object around its center point until it appears in the position you want.



1. Select the Rotate tool.
2. Select the object you want to rotate. Handles appear around the object.
3. Touch the pen to one of the handles surrounding the selected object.
4. Drag the Rotate tool clockwise or counterclockwise until the object is in the position you want. A dotted outline shows the position of the object as you rotate it.
5. Lift the pen. The object appears in its new position, with handles around it.



Transforming Objects

You can *transform* an object to give it special visual effects such as scaling, skewing (slanting), and rotating. You can also undo any transformation you make.

NOTE:

At Level 3 in GeoFile, some additional choices are available on the Transform submenu. These choices are described in the “Advanced Graphics” section in this chapter.

FLIPPING OBJECTS

You also can use the Transform menu to turn objects over, or “flip” them left to right or top to bottom. This is useful for creating interesting effects with text objects and for building complex designs out of component objects. The following illustration shows some text that has been flipped:

This text is flipped left to right	This text is flipped top to bottom
--	--

To flip an object (Levels 3–4)

1. Select the object you want to flip. Handles appear around the object.
2. From the Flip submenu on the Transform submenu on the Graphics menu, choose Flip Left to Right or Flip Top to Bottom. The object flips in the direction you chose.

SCALING OBJECTS

You can *scale* an object to resize it in a precise manner, shrinking or stretching its dimensions as desired. You can scale its vertical and horizontal dimensions independently or together.

For example, suppose you had a rectangle that was 2 inches long and 1 inch wide. You could make the rectangle half as long by changing its width to a 50% scale. You could make it twice as tall by changing its height to a 200% scale.

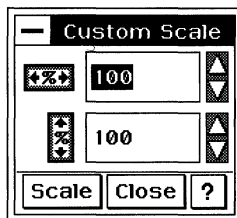
You can use scaling to elongate or shorten a text object without first converting it to a graphic.

To change the scale using standard scale sizes (Levels 3–4)

1. Select the object that you want to scale.
2. Choose Scale from the Transform menu. A submenu appears.
3. Select Half Width, Half Height, Double Width, or Double Height from the submenu. The selected objects reappear scaled according to the setting you chose.

To change the scale using a custom scale size (Levels 3–4)

1. Select the object that you want to scale.
2. Choose Scale from the Transform menu. A submenu appears.
3. Choose Custom Scale. A dialog box appears:



4. Complete the dialog box, changing the options you want:

Width. Select the custom scale percentage to increase or decrease the width. You can change the width of an object from 1 to 1000 percent.

Height. Select the custom scale percentage to increase or decrease the height. You can change the height of an object from 1 to 1000 percent.

5. Tap Scale to apply your changes.

You can tap Scale repeatedly, if you want, to apply different scaling percentages until you achieve the desired effect. For example, if you are trying to scale a rectangle between two other objects, you may need to apply scaling several times to get the exact size and shape you want.

6. Tap Close to close the dialog box.

ROTATING OBJECTS

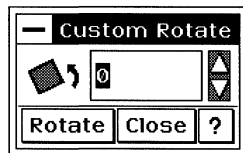
Rotating an object involves turning it in a clockwise or counterclockwise direction around its center. You can rotate objects using the Rotate tool, as described above, or you can use the Transform menu to choose a standard or a custom rotation angle for an object.

To rotate objects using standard rotation (Levels 3-4)

1. Select the objects that you want to rotate.
2. Choose Rotate from the Transform menu. A submenu appears.
3. Choose the rotation you want from the submenu. The object is rotated around its center point; if you selected multiple objects, each object rotates around its own center point.

To rotate objects using custom rotation (Levels 3-4)

1. Select the objects that you want to rotate.
2. Choose Rotate from the Transform menu. A submenu appears.
3. Choose Custom Rotate from the submenu. The following dialog box appears:



4. Select the rotation angle you want. You can set rotation from -359 to 359 degrees.
5. Tap Rotate. The object is rotated around its center point; if you selected multiple objects, each object is rotated around its center point. You can continue to tap Rotate to rotate the objects repeatedly until you achieve the visual effect you want.
6. Tap Close to close the dialog box.

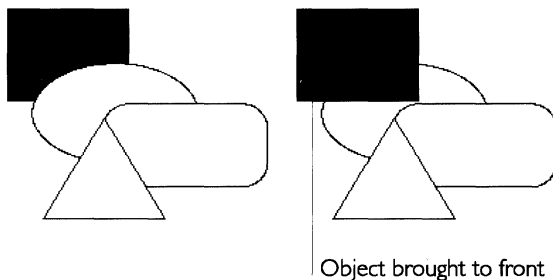
Changing the Stacking Order of Objects

When two objects in a drawing overlap each other, one appears to be in front of the other. In fact, all objects in your drawing are “stacked” one in front of the other, like a deck of cards. Each time you create an object, you are adding a layer to the stack. However, the layers are only apparent, though, when objects overlap.

The object in front is on top of the stack; that is, it is not covered by any other object. The object at the back of a stack can be covered by one or more objects. It is often useful to change the order in which objects are stacked — for example, to move an object to the front when other objects are stacked on top of it.

BRINGING AN OBJECT TO THE FRONT OR SENDING IT TO THE BACK

The Bring to Front and Send to Back choices on the Arrange submenu on the Graphics menu move the selected object directly to the front or back of a stack, regardless of the object’s original position.

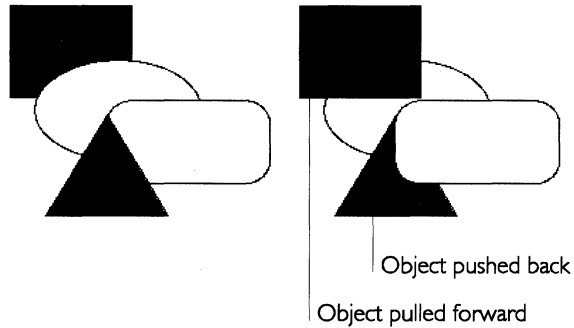


To move an object to the front or back of a stack (Levels 3–4)

1. Select the object you want to move to the front or back of the stack. Handles appear around the object.
2. From the Arrange menu, choose either Bring to Front or Send to Back. The stack is rearranged accordingly.

PULLING AN OBJECT FORWARD OR PUSHING IT BACK

The Pull Forward and Push Back choices on the Arrange menu move the selected object one level forward or back in the stack, relative to the object's original position.



To push or pull an object back or forward in a stack (Levels 3–4)

This technique is useful when you cannot see objects in the layers of a stack. You can select an object that is visible and move it back one layer at a time, each time revealing the object that was immediately behind it.

1. Select the object you want to pull forward or push back in the stack. Handles appear around the object.
2. From the Arrange menu, choose either Pull Forward or Push Back. The stack is rearranged accordingly.

SETTING ATTRIBUTES

LEVEL 3

At Level 3, you can set area and line attributes using the Graphics menu. You can also choose to display the Graphics bar in your document window by selecting it from the Show Tools submenu on the Options menu. The Graphics bar allows you to set area, line, and text attributes using drop-down menus rather than dialog boxes.

Setting Area Attributes

Area attributes apply to the areas inside graphic objects other than lines and text objects. You can set any of the following area attributes:

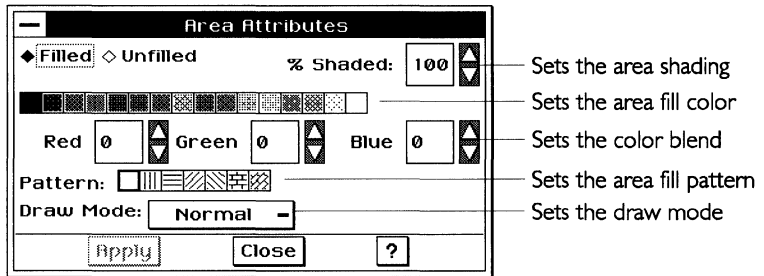
- Fill color
- Color shading
- Pattern
- Drawing mode

USING THE AREA ATTRIBUTES DIALOG BOX

You can set the area attributes of an object using the options in the Area Attributes dialog box. This section describes each attribute in detail.

To set area attributes for a graphic object (Levels 3-4)

1. Select the graphic object you want to change.
2. Choose Area Attributes from the Graphics menu. A dialog box appears:



3. Complete the dialog box, changing the attributes you want:

Unless you select Filled, many of the other line attributes will not be available.

Filled or Unfilled. Select Filled to fill the enclosed area of the graphic object and to make available the other options in this dialog box. By default, the area of the graphic object is unfilled.

% Shaded. Select the percent shading for the fill color. The lower the number, the lighter the color. By default, this setting is 100. If Unfilled is selected, this attribute is set to zero (0).

Color tools. Select the area fill color from the color palette. You can also fine tune the color blend by setting the amounts of red, green, and blue in the area fill color; the default values depend on the selected color.

Pattern. Select the fill pattern. By default, this setting is solid.

Draw Mode. Select the draw mode (Normal, Inverse, AND, XOR, or OR) to set the prevailing display color for overlapping objects. For more information, see "Using Draw Modes" in this chapter.

4. Tap Apply to apply your changes to selected graphic objects. Continue to make changes as desired until you are satisfied with the way the graphic object looks.
5. Tap Close to close the dialog box.

The draw mode control is only available through the Area Attributes dialog box.

USING DRAW MODES

The *draw mode* controls the prevailing display color (shade of gray) for *overlapping* objects.

NOTE

This is an advanced feature that you can *experiment* with for special graphic effects. It is hard to predict the results you will get when you use draw modes other than Normal.

To use the draw modes control (Level 3-4)

1. Select the objects you want to be affected by a draw mode change.
2. Choose Area Attributes from the Graphics menu.
3. Choose a draw mode from the Draw Mode drop-down list.



Normal displays the top object (including the overlap area) in its original color.



Inverse displays the top object in the inverse of the background color and, where two objects overlap, combines the colors of the top and bottom objects to form a third color.



AND displays the top object in its original color and, where the objects overlap, combines the color of the top object and the underlying object to create a third color.



XOR combines the original color of the top object with the color of the underlying object or background to create other colors.



OR displays the top object only where it overlaps. It displays the overlap area in a different color.

The application uses the draw mode to calculate, on a pixel-by-pixel basis, the color that appears.

Setting Line Attributes

Line attributes apply to line objects, to the lines that make up polyline objects (described in “Advanced Graphics” in this section of this chapter), and to the border lines around ellipses, rectangles, rounded rectangles, and arcs (arcs are available at Level 4).

Line attributes include:

- Color

- Line width
- Line style
- Arrowhead style and direction

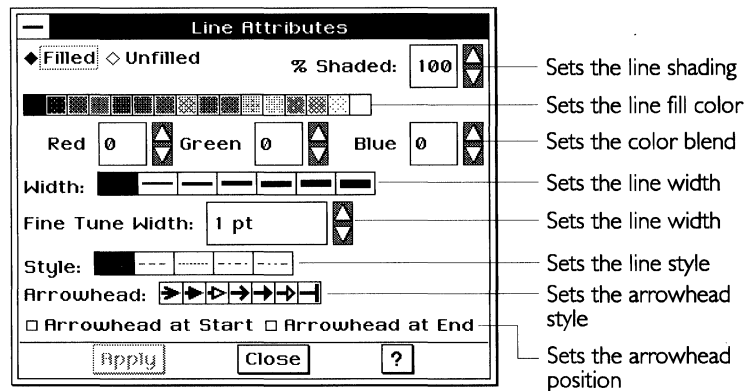
You can set these attributes using the Line Attributes choice on the Graphics menu.

USING THE LINE ATTRIBUTES DIALOG BOX

You can set the line attributes of an object using the options in the Line Attributes dialog box. This section describes each attribute in detail.

To set the line attributes (Levels 3-4)

1. Select the graphic objects that you want to change.
2. Choose Line Attributes from the Graphics menu. A dialog box appears:



3. Complete the dialog box, changing the attributes you want:

Unless you select Filled, many of the other line attributes will not be available.

Filled or Unfilled. Select Filled to fill the line or border of the graphic object (which makes it visible) and to make available the other options in this dialog box. Select Unfilled if you want the line or border to be invisible. By default, the line is Filled.

% Shaded. Select the percent shading for the line color. The lower the number, the lighter the color. By default, this setting is 100. A zero (0) setting is the same as an unfilled line or border.

Color Tools. Select the line color from the color palette. You can also fine tune the color blend by setting the amounts of red, green, and blue in the line color; default values depend on the selected color.

Width. Select the thickness of the border line using a set of standard widths. By default, this setting is one (1) point. You can also fine tune the width by selecting a custom thickness; a setting of zero (0) is the same as a hairline width, which makes it the thinnest line that can appear on your display or that your printer can print.

Style. Select the style of the border line. By default, this setting is a solid line.

Arrowhead. For lines and unclosed objects such as open polylines and open splines (described in the “Advanced Graphics” section in this chapter), you can select an arrowhead style. By default, no arrowhead style is selected. You also can select an arrowhead location (at the start or the end of the line).

4. Tap Apply to apply your changes to selected graphic objects.
5. Tap Close to close the dialog box.

The Graphics Bar

You can use tools on the Graphics bar to set the attributes for graphic and text objects. The Edit, Transform, and Arrange menu functions are also available through tools on this tool bar. Select the Graphics bar from the Show Tools submenu on the Options menu. The tools are shown and explained below.

USING THE AREA ATTRIBUTES TOOLS

You can also use the tools on the Attribute tool bar to change the fill color, shading, and fill pattern of an object. For more information about each attribute, see “Using the Area Attributes Dialog Box” in this chapter.

To use the Area Fill Color tool (Levels 3-4)

1. Select the graphic objects you want to fill.
2. Tap the Area Fill Color tool. A vertical menu appears.
3. Select the area fill color you want to apply to the selected objects.



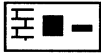
To use the Area Shading tool (Levels 3-4)

1. Select the graphic objects you want to shade.
2. Tap the Area Shading tool. A vertical menu appears. The option at the top is 100% shading; the option at the bottom is 0%, the same as an unfilled object.



3. Select the area shading you want to apply to the selected objects.

To use the Area Pattern tool (Levels 3-4)



1. Select the graphic objects you want to fill with a pattern.
2. Tap the Area Pattern tool. A vertical menu appears.
3. Select the area pattern you want to apply to the selected objects.

USING THE LINE ATTRIBUTES TOOLS

You can use the tools on the Graphics tool bar to set or change the color, shading, and thickness of a line or border.

To use the Line Color tool (Levels 3-4)



1. Select the graphic objects that you want to change.
2. Tap the Line Color tool. A vertical menu appears.
3. Select the color you want to apply the line color to the selected graphic objects.

To use the Line Shading tool (Levels 3-4)



1. Select the graphic objects that you want to shade.
2. Tap the Line Shading tool. A vertical menu appears. The option at the top is 100% shading; the option at the bottom is 0%.
3. Select the shading you want to apply the line shading to the selected graphic objects.

To use the Line Width tool (Levels 3-4)



1. Select the graphic objects that you want to change.
2. Tap the Line Width tool. A vertical menu appears.
3. Select the width you want to apply the line width to the selected graphic objects.

Setting Text Attributes

You can format text in a drawing to give it more emphasis, to increase its similarity to other objects, or to contrast it with other text objects. For more information about text objects, see “Adding Text To Drawings” in this chapter.

To use the Text Color tool (Levels 3-4)

1. To change text within a text object, use the Text tool to select the text you want to change.

or

To change all the text in a text object, use the pen to select one or more text objects you want to change.



2. Tap the Text Color tool. A vertical menu appears.
3. Select the color (gray scale) you want to apply the color to the selected text or text objects.

To use the Text Shading tool (Levels 3-4)

1. To change text within a text object, use the Text tool to select the text you want to change.

or

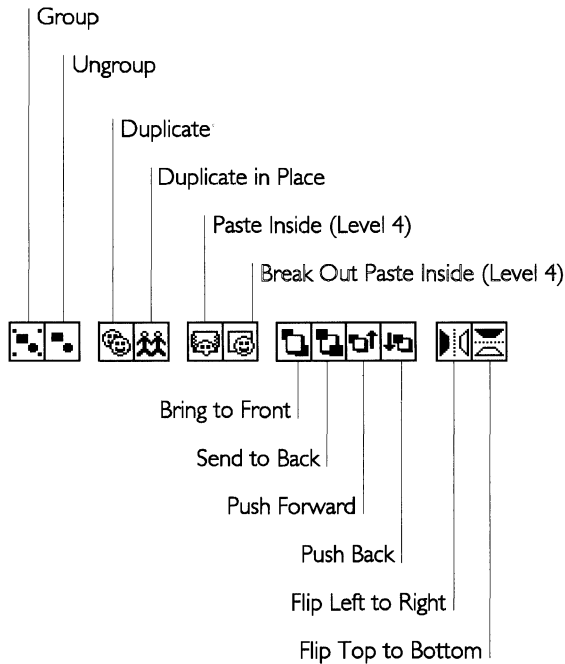
To change all the text in a text object, use the pen to select one or more text objects you want to change.



2. Tap the Text Shading tool. A vertical menu appears. The option at the top is 100% shading; the option at the bottom is 0%.
3. Select the shading you want to apply the shading to the selected text or text objects.

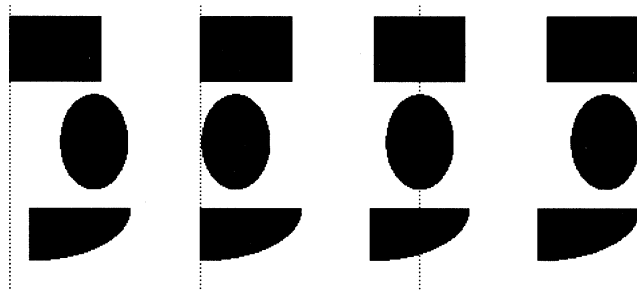
Edit, Transform, and Align Tools

Many of the functions available on the Edit, Transform, and Arrange submenus are also available as tools on the Graphics bar. The tools are identified in the illustration below. They work exactly as described in the sections explaining the menu selections. For more information, see the function description in this chapter.



ALIGNING AND DISTRIBUTING OBJECTS

Sometimes you want objects to line up with respect to each other. For example, you may want a circle and a square centered on each other or you may want three circles to line up with their left sides on the same vertical line. This is called *aligning* objects. The following illustration shows some objects before they are aligned, and after they are aligned in different ways:



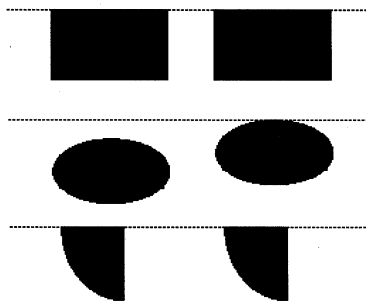
Objects not aligned

Left aligned

Center aligned

Right aligned

You can also *distribute* objects so that they are equally spaced from each other. There are as many ways to distribute objects as there are to align them. The following illustration shows some objects before they are distributed, and after they are distributed along their top edges:



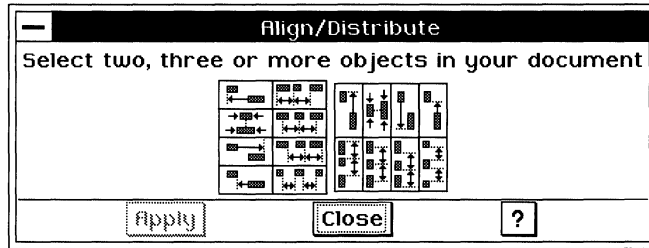
Before

After

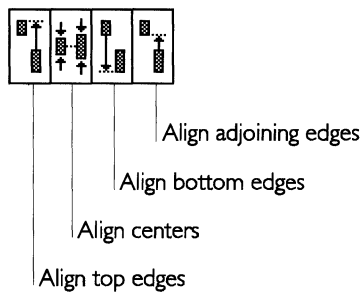
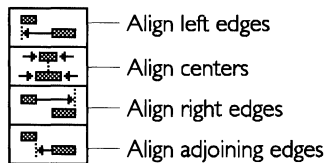
To align objects to each other (Levels 3-4)

1. Select two or more objects you want to align.

- Choose Align/Distribute from the Arrange submenu on the Graphics menu. A dialog box appears:



- Tap the alignment button you want:

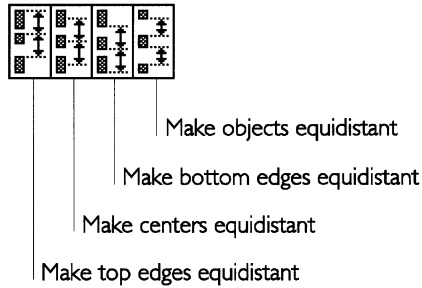
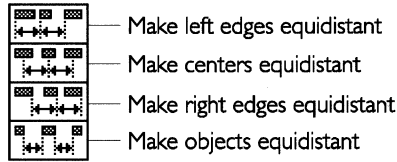


- Tap Apply to apply your changes.
- Tap Close to close the dialog box.

To distribute objects (Levels 3-4)

- Select three or more objects you want to distribute.
- Choose Align/Distribute from the Arrange submenu on the Graphics menu. A dialog box appears.

3. Tap the distribution button you want:

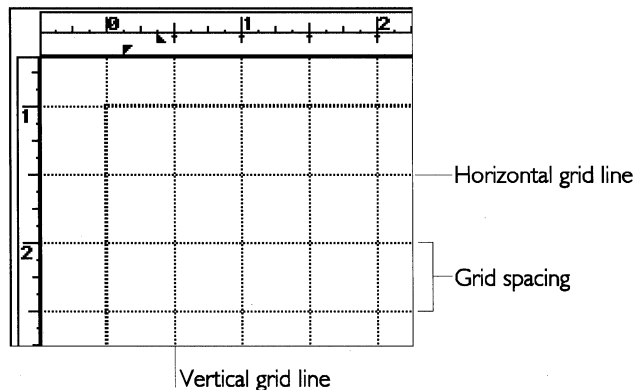


4. Tap Apply to apply your changes.
5. Tap Close to close the dialog box.

Using the Grid and Guidelines

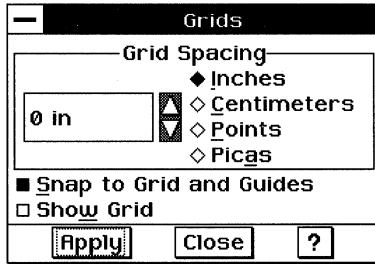
At Levels 3 and 4, you can also use the grid and the guidelines to align objects more precisely in your document. First you need to understand how to set up the grid and the guidelines.

The *grid* is a pattern of evenly spaced vertical and horizontal lines that help you align and size objects in a drawing. The grid helps you set objects in the basic positions where you want them, relative to each other:



To show or hide the grid (Level 4)

1. Choose Grids from the Layout menu. The following dialog box appears:



2. Select Show Grid to display the grid.

or

Deselect Show Grid to hide the grid.

If Grid Spacing is set to zero (0), no grid is created or displayed whether this option is selected or not.

3. Tap Apply to apply your changes.
4. Tap Close to close the dialog box.

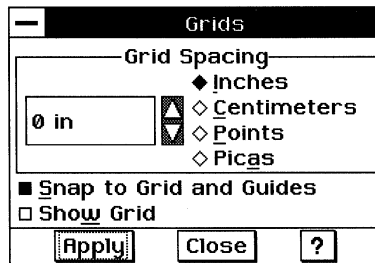
You can also set the distance between grid lines. Decreasing the size increments gives you finer control when you snap objects to the grid.

NOTE

The Grids menu choice is not available in GeoCalc or GeoFile.

To set the grid spacing (Level 4)

1. Choose Grids from the Layout menu. The following dialog box appears:



You can set the grid spacing from 0 to 455 inches.

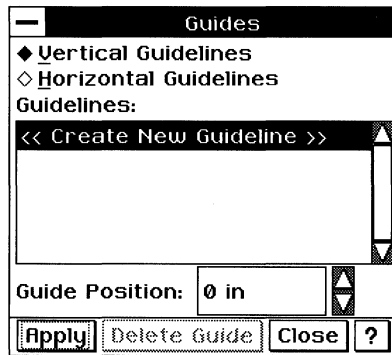
2. In the Grid Spacing area of the dialog box, select the units of measure you want (Inches, Centimeters, Points, or Picas). By default, the units of measure are the same as the ruler setting.
3. Select the distance between grid lines. To enable the grid, select a number that is greater than zero.
4. Tap Apply to apply your changes. The grid spacing changes to the setting you specified.
5. Tap Close to close the dialog box.

NOTE

The Guides menu choice is not available in GeoCalc or GeoFile.

To create or change a guideline (Level 4)

1. Choose Guides from the Layout menu. A dialog box appears:



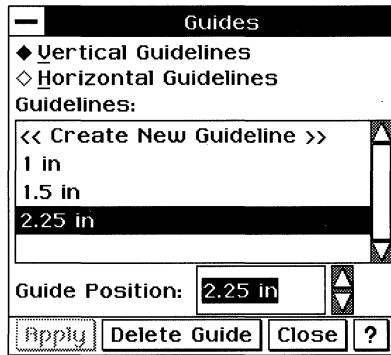
2. Complete the dialog box, changing the options you want:
Vertical Guidelines or **Horizontal Guidelines**. Select the type of guideline you want to create.
Guidelines. Select <<Create New Guideline>> in the Guidelines list to create a new guideline, or select the guideline you want to change from the Guidelines list.
Guide Position. Select the position you want. For a vertical guide, this sets the distance from the left edge of the drawing area. For a horizontal guide, this sets the distance from the top edge of the drawing area.
3. Tap Apply to apply your changes. The new guideline is created in the position you specified, or the position of the guideline you selected is changed.
4. Tap Close to close the dialog box.

NOTE

The Guides menu choice is not available in GeoCalc or GeoFile.

To delete a guideline (Level 4)

1. Choose Guides from the Layout menu. A dialog box appears:



2. Complete the dialog box, changing the options you want:

Vertical Guidelines or **Horizontal Guidelines**. Select the type of guideline you want to delete.

Guidelines. Select the guideline you want to delete from the Guidelines list.

3. Tap Delete Guide. The guideline you selected is deleted.
4. Tap Close to close the dialog box.

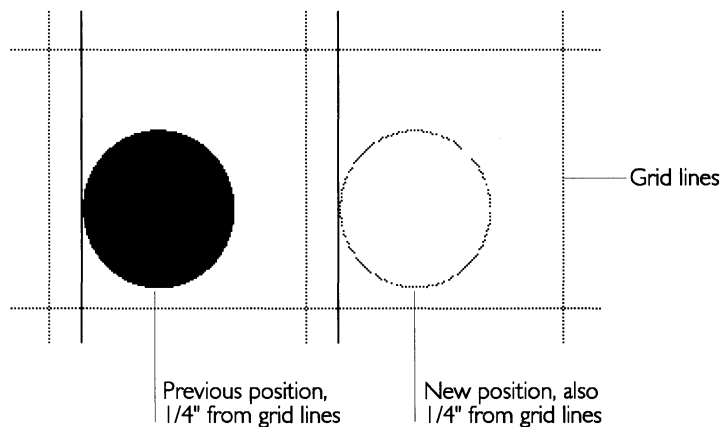
Snapping Objects to the Grid and Guidelines

The drawing tools include a feature that automatically *snaps* (positions) objects along grid lines and guidelines when you create them. If you activate this feature, when you draw or resize a graphic object, the corners of the object are automatically snapped to the closest intersection of the grid lines.

Snapping objects to the grid and guidelines is often faster and more accurate than positioning them manually with the pen. If you create an object while the snapping feature is inactive, you can still align it to the grid or guidelines; for more information, see “Aligning Objects to the Grid and Guidelines” in this chapter.

When you move an object, it keeps its former distance from grid lines or guidelines. For example, if an ellipse starts 1/4 inch from a vertical grid line and you move it horizontally, the program puts

the ellipse 1/4 inch from the closest vertical grid line in its new location, as shown in the following illustration:



NOTE

The Grids menu choice and the Snap to Grid and Guides option are not available in GeoCalc or GeoFile.

To snap objects to the grid or guidelines (Level 4)

1. Choose Grids from the Layout menu. A dialog box appears.
2. Select Snap to Grid and Guides.
3. Tap Apply to apply your changes. While Snap to Grid and Guides is selected, the corners of objects are snapped to the grid and guidelines when you draw, move, or resize the objects.
4. Tap Close to close the dialog box.

*Press **X** or period (.) to turn grid snapping on or off only for the next create, move, or resize operation.*

Aligning Objects to the Grid and Guidelines

You can arrange objects so that they line up along grid lines, grid corners, and guidelines. You might want to do this, for example, to align objects created while snapping was turned off. Aligning works whether snapping is turned on or off. You can do this manually by moving objects in the drawing area, but it is easier and more accurate to let the application program do it for you.

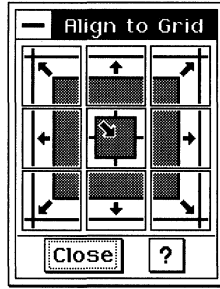
NOTE

The Align to Grid menu choice is not available in GeoCalc or GeoFile.

Objects can be aligned to the grid even when the grid is hidden.

To align objects to the grid and guidelines (Levels 3-4)

1. Enable the grid by setting the grid spacing to some number greater than zero. For more information, see “Using the Grid and Guidelines” in this chapter.
2. Select the object that you want to align to the grid.
3. Choose Align to Grid from the Arrange submenu on the Graphics menu. A dialog box appears:



4. Tap the alignment arrow you want. The selected objects move to the nearest grid line in the direction of the arrow you tap. For example, if you tap the upper-left arrow, the upper-left corner of each selected object moves to the nearest grid corner.
5. You can change the alignment again by tapping another arrow.
or
Tap Close to close the dialog box.

ADDING TEXT TO DRAWINGS

LEVELS 3-4

To treat text graphically, you enter text in *text objects*. Each text object can contain as little or as much text as you like — from a single letter to multiple paragraphs. To create text objects, you use the Text tool. You can move, delete, and resize text objects just as you would any other object (a line, rectangle, or ellipse).

To create a text object (Levels 3-4)



1. Select the Text tool from the Tool Bar.

2. Position the I-beams where you want your text to begin; tap and drag diagonally to outline the area in which you want the text to appear. A dotted line shows the borders of the text object.

Homework

3. Lift the pen. The border of the text object appears with a blinking vertical line, the *insertion point*, showing where you can begin typing. The default font is 12-point Roman. You can change the font as you normally would within the application.
4. Enter text using the floating keyboard or an external keyboard. Text wraps within the text object, and the object automatically grows vertically to accommodate new lines of text. Do not use the **Enter** key unless you want to begin a new paragraph. If you later resize your text object, word wrap will automatically adjust the line endings for you — unless you have pressed **Enter** at the end of each line.

HINT

To quickly create a standard-size text object, select the Text tool, then tap where you want to begin entering text. A text object six inches across and one line deep will appear. As you enter text, the text object automatically grows vertically to accommodate new lines of text. You can resize the object and respecify the text style and size later if you like.

To move, resize, or delete a text object (Levels 3–4)

- Use the pointer tool to move, resize, or delete a text object just as you would any rectangular object. If you make a text object too small, you may not be able to read the text.

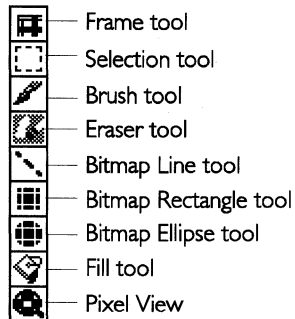
WORKING WITH BITMAPS

LEVELS 3-4

You can use three types of objects to compose a drawing: text objects, draw objects, and bitmap objects. Text objects contain text. Draw objects are shapes that you create by using the drawing tools. Bitmap objects are special shapes that you create using the bitmap tools discussed in this section.

A *bitmap* is an object made up of *pixels*, which are individual dots that make up an image, like the dots on a television screen. Bitmaps give you the ability to create freehand images. Because

bitmaps have special properties, you need to use bitmap tools to manipulate pixels in a bitmap. The bitmap tools appear when you select Bitmap Tools from the Show Tools submenu on the Options menu:



Like their counterparts on the drawing tool bar, the bitmap Line, Rectangle, and Ellipse tools draw geometric shapes. However, the bitmap tools paint pixels in a bitmap, whereas the draw tools create distinct graphic objects. You can change the pixels of a bitmap object, but not of a draw object; however, you can convert draw objects to bitmap objects. For more information about converting objects, see “Converting Draw and Text Objects to a Bitmap” in this chapter.

The following sections describe how to use the bitmap tools to manipulate pixels in a bitmap. Once a bitmap is created, you can move, resize, and transform it as you would any other object in a drawing.

Creating a Bitmap Frame

A *bitmap frame* defines the outer bounds of a bitmap. You can create a bitmap frame by using the Frame tool or by drawing a bitmap shape using other bitmap tools. You can use the bitmap tools to change pixels in the object, and you can manipulate the bitmap like other objects, moving, resizing, or transforming it as desired.

USING THE FRAME TOOL

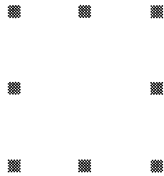
If you know the size of the bitmap you want to create, or if you just want to block out an area of the drawing for the bitmap, you can use the Frame tool to create a rectangular bitmap frame.

Any bitmap operations you perform in the frame are bounded by the frame and become part of it. The frame acts much like a draw object — you can stretch, move, and rotate it. However, you cannot move or resize individual bitmap items you place in the bitmap frame. Once you place a bitmap item in a frame, it permanently becomes part of that frame, unless you choose Undo from the Edit menu.

To draw a bitmap frame (Levels 3-4)



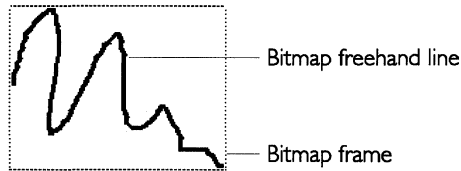
1. Select the Frame tool from the tool bar.
2. With the pen, touch the screen where you want to anchor the first point of the frame, then drag the frame until it is the size you want.
3. Lift the pen. A frame with a white fill and line color appears, with selection handles:



Drawing a bitmap frame creates the bitmap. Now you can change pixels inside the bitmap frame. You can also draw other objects on top of the bitmap; however, they remain separate objects, distinct from the bitmap.

USING A BITMAP SHAPE TOOL

Another way to create a bitmap frame is to draw a bitmap shape (straight line, freehand symbol, rectangle, or ellipse) in a blank part of the drawing area. When you do this, the program creates a rectangular bitmap frame around the image along its outermost points; the boundaries of the frame become the boundaries of the bitmap:



Drawing Bitmap Shapes

You can use the bitmap tools to draw the following bitmap shapes:

- Straight lines
- Rectangles
- Ellipses
- Freehand shapes

When you draw a bitmap shape, you change the pixels that the shape touches. Once you draw a bitmap shape, it becomes part of the bitmap frame. You cannot change a bitmap shape as you can a draw object. For example, you cannot move or resize a bitmap ellipse directly; you can only draw another ellipse in the new location or size you want. For this reason, you should choose Undo from the Edit menu to correct any mistakes you make.

You normally select the attributes of a bitmap shape before you draw it, including the color, shading, line weight, and so on. You can change these attributes after you have drawn the shape.

The default background color for a bitmap is white. You can change the background color by drawing a bitmap shape in a different color using one of the bitmap tools. The Attribute tools do not apply to bitmaps.

NOTE

Unlike other graphic objects, a bitmap is always opaque and never transparent (unfilled). As a result, if you place a bitmap on top of other objects, you cannot see the underlying objects.

To draw a straight line (Levels 3-4)

You can draw a straight line in a bitmap using the Bitmap Line tool.

1. Select the line color, shading, and width you want. To do this, you can use the Line Attributes tools or choose Line Attributes from the Graphics menu. For more information, see “Setting Attributes” in this chapter.
2. Select the Bitmap Line tool from the tool bar.
3. With the pen, touch the screen where you want to anchor the first point of the line, then drag to where you want the line to end.
4. Lift the pen. A straight line appears with the attributes you selected:



To draw a rectangle (Levels 3-4)

You can draw a rectangle in a bitmap using the Bitmap Rectangle tool.

1. Select the area fill color, shading, and pattern you want. To do this, you can use the Area Attributes tools or choose Area Attributes from the Graphics menu. For more information, see “Setting Attributes” in this chapter.
2. Select the Bitmap Rectangle tool.
3. With the pen, touch the screen where you want to anchor one corner of the rectangle, then drag until the rectangle is the size you want.
4. Lift the pen. A rectangle appears with the attributes you selected:



To draw an ellipse (Levels 3-4)

You can draw an ellipse in a bitmap using the Bitmap Ellipse tool.

1. Select the area fill color, shading, and pattern. You can use the Area Attributes tools or choose Area Attributes from the Graphics menu. For more information, see “Setting Attributes” in this chapter.
2. Select the Bitmap Ellipse tool from the tool bar.
3. With the pen, touch the screen where you want to start the ellipse, then drag until the ellipse is the shape and size you want.
4. Lift the pen. An ellipse appears with the attributes you selected:



To draw a freehand shape (Levels 3-4)

You can draw a freehand shape in a bitmap using the Brush tool on the tool bar. This technique is similar to using a paintbrush to make strokes on a canvas.

1. Select the line color, shading, and width you want. You can use the Line Attributes tools or choose Line Attributes from the Graphics menu. For more information, see “Setting Attributes” in this chapter.



2. Select the Brush tool from the Bitmap tool bar.
3. Tap once to change one pixel.

or

With the pen, touch the screen where you want to start the freehand shape, then drag to draw the shape you want, and then lift the pen.

If you draw a shape, it appears with the attributes you selected:

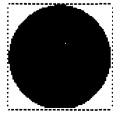


Editing Bitmap Pixels

Once you have created a bitmap, you can use the Bitmap tools to change pixels in the object, to erase portions of the image you do not want, and to select all or part of the image for cut, copy, and paste operations.

SELECTING A BITMAP

Whenever you use a bitmap tool in a bitmap, the bitmap becomes the selected object. The frame appears around the bitmap to show you that it is the selected object, as shown in the following illustration:



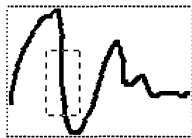
USING THE SELECTION TOOL

You can use the Selection tool to select a rectangular region within a bitmap so that you can perform copy, cut, and paste operations using the pixels in the region. You can select all or part of the object. For more information about clipboard operations, see Chapter 1.

To select a region within a bitmap (Levels 3-4)



1. Tap the Bitmap Selection tool on the tool bar.
2. With the pen, touch the screen where you want to anchor one corner of the selection, then drag until the selection region is the size you want.
3. Lift the pen. A rectangular selection region appears, as shown in the following illustration:



At this point, you can cut or copy the selected region to the clipboard and, if desired, paste it in a different location in the bitmap. For more information about copy, cut, and paste operations, see Chapter 1.

To select all the pixels in a bitmap (Levels 3-4)

1. Choose the Bitmap Selection tool from the tool bar. Tap inside the bitmap. A dotted outline appears, indicating that the bitmap is selected.
2. Choose Select All from the Edit menu to select all the pixels in the bitmap.

CHANGING THE FILL COLOR OR FILL PATTERN

You can change the color of a contiguous group of pixels using the Bitmap Fill tool. Unlike the Fill tool for graphic objects, which fills the entire interior of a graphic object, the Bitmap Fill tool fills an enclosed area with the current area fill color. The enclosed area is bounded by pixels of a different color.

To change the pixels in an enclosed area (Levels 3-4)



1. Select the Bitmap Fill tool from the tool bar.
2. Select the fill color and the pattern you want. You can use the Area Fill Color tool or choose Area Attributes from the Graphics menu. For more information, see “Setting Attributes” in this chapter.
3. Tap anywhere in the enclosed area. All the pixels in the enclosed area are changed to the current area fill color.

ERASING IN THE BITMAP FRAME

You can use the Eraser tool to erase all or part of a bitmap. When you use the Eraser tool, the program changes the color of affected pixels to white. It has the same effect as painting pixels white using a different bitmap tool (such as the Rectangle tool).

HINT

To erase a rectangular region, you can use the Selection tool and the Cut or Delete choice on the Edit menu. For more information, see “Using the Selection Tool” in this chapter. However, to erase a non rectangular region, including freehand erasing, use the Eraser tool instead.

To erase pixels in a bitmap frame (Levels 3-4)



1. Select the Eraser tool from the tool bar.
2. With the pen, touch the screen where you want to start erasing, then drag over the parts of the image you want to erase.

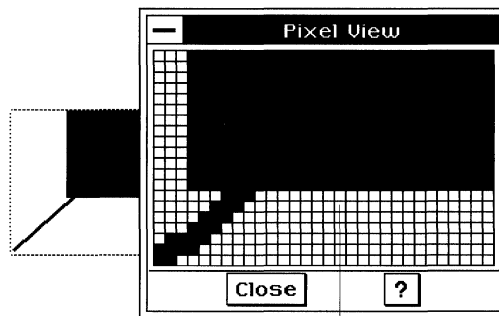
USING THE PIXEL VIEW TOOL

You can use the Pixel View tool on the tool bar to change individual pixels in the Pixel View. The Pixel View tool enlarges your drawing and displays a grid of pixels that you can change individually.

Once an image appears in the Pixel View, you can use any of the bitmap tools to make subtle changes to it, such as “smoothing out” a rough edge or corner. For example, to change the colors of individual pixels, you can select a line color, select the Brush tool, and then tap the pixels you want to change. Similarly, to change a rectangular region of pixels, you can select a fill color, select the Rectangle tool, and then draw a rectangle over the region of pixels you want to change.

To display the Pixel View (Levels 3-4)

1. Select the Pixel View tool from the tool bar.
2. With the pen, touch the screen where you want to change pixels. The Pixel View appears:



Each square is a single pixel.

3. Select the bitmap tool you want to use to change pixels.
4. In the Pixel View window, use any of the Bitmap tools to change pixels individually or in groups.

To change the Pixel View area (Levels 3-4)

- Tap any pixel in the Pixel View window.

or

Tap in the bitmap image outside the Pixel View window.

Either way, the pixel you tap becomes the center pixel in the Pixel View window.

Converting Draw and Text Objects to Bitmaps

You can convert a graphic or text object to a bitmap so that you can edit individual pixels within the object. Doing so can make it easier to fine tune visual details in your drawing.

When you convert an object or a group of objects to a bitmap, the image is converted to a grid of pixels, and transformations (rotation, skewing, and so on) are made part of the object.

NOTE

Once you convert to a bitmap, the identities of individual objects are lost. You cannot convert the bitmap back to a graphic or text object and edit it using the Graphics or Text tool. In a bitmap, you can edit individual pixels only. For example, if you converted four rectangles to a bitmap, you could not convert the bitmap back to its four component rectangles and then edit them individually.

To convert objects to a bitmap (Level 4)

1. Select the object that you want to convert. If you select multiple objects, they will be converted to a single bitmap.
2. Choose Convert from the Transform menu. A submenu appears.
3. Choose Convert to Bitmap. The selected objects are converted to a bitmap. You can edit the new bitmap as you would any other bitmap.

Advanced Graphics

When you advance to Level 4 in GeoWrite, GeoCalc, and GeoFile, the additional drawing tools and Graphics menu choices give you more extensive drawing capability. For example, at Level 4, you can create complex objects called polylines and splines, you can paste objects within other objects, and you can develop graphic style sheets.

This section explains how to use the tools and menu choices that become available at Level 4.

DRAWING TOOLS AT LEVEL 4

LEVEL 4


Five new drawing tools are available on the Level 4 tool bar. The following tools are described in this section:

The Zoom Tool



The Zoom tool lets you zero in on a portion of your drawing. Use it to enlarge a portion of your drawing so that you can focus on the fine details.

To zoom in on a particular point in a drawing (Level 4)

-  1. Select the Zoom tool from the tool bar.
2. Tap the area you want to examine. You can tap again to move closer, up to the maximum zoom.

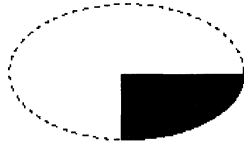
To zoom out (Level 4)

- Use the View menu to zoom out or to return to normal size. For more information about the View menu, see Chapter 3.

The Arc Tool



An *arc* is a portion of a circle or ellipse. You create arcs using the Arc tool. When you create an arc, it appears as one quarter of a circle or ellipse:



You can make an arc appear as one eighth or one sixteenth of a circle or ellipse. For more information, see “Changing Arc Attributes” in this chapter.

You use the Arc tool in the same way as you use the other Shape tools. For information about how to use Shape tools, see “Using the Drawing Tools” in this chapter.

The Polyline Tools

Polylines are objects made up of line segments that are connected end to end. There are two Polyline tools:



Polyline tool. Use this tool to create an object composed of straight line segments.



Rounded Polyline tool. Use this tool to create an object composed of curved line segments.

The Polyline tools give you great flexibility in drawing objects that are composed of many line segments. For more information, see “Creating Complex Objects” in this chapter.

The Spline Tool



The *Spline* tool lets you create and edit polylines with more precision and control than the Polyline and Rounded Polyline tools. You should be familiar with basic polyline techniques before you attempt to master the Spline tool.

CREATING COMPLEX OBJECTS

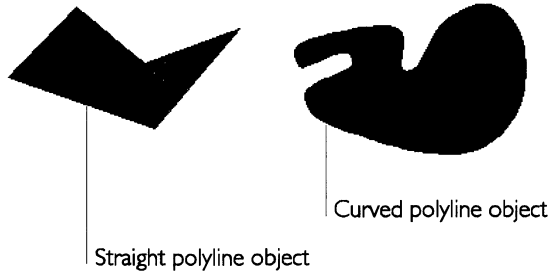
LEVEL 4

At Level 4 you can create objects that are more complex than those you work with at Level 3. This section describes how to create and modify the complex objects that are composed of polylines.

Drawing Polylines

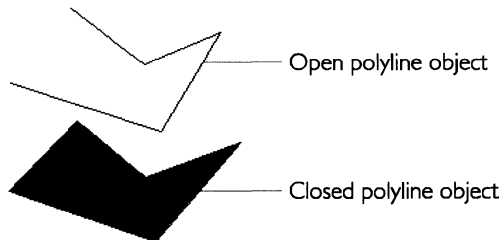


There are two Polyline tools. A *polyline* is an object made up of line segments that are connected end to end. You use the Polyline tool to create objects with straight lines joined by angled corners. You use the Rounded Polyline tool to create curves.



You also can create polyline objects with both straight and curved segments. To do so, first create a straight line object, then modify some of the segments so they are curved. You can also go the other way: create a curved polyline object, then modify some line segments so they are straight.

A polyline object can be open or closed. An *open polyline* is one in which the last line segment does *not* end at the polyline's starting point. A *closed polyline* is one in which the last line segment ends at the first segment's starting point. You can add fill patterns and other area attributes to closed objects. For more information about area attributes, see "Using the Drawing Tools" in this chapter.



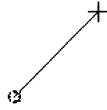
CREATING A POLYLINE AND A ROUNDED POLYLINE

To create a polyline object (Level 4)

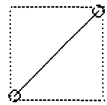
1. Select one of the Polyline tools from the tool bar.
2. Tap where you want the polyline object to begin. A small unfilled circle appears, representing the first anchor point. Anchor points are the points where angles or curves connect the individual polyline segments you draw.

A dotted box appears around the anchor point indicating that the object consists of only one anchor point, so far.

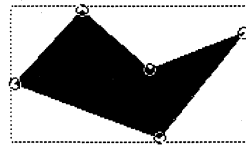
3. Tap where you want to end the first line segment. The line segment appears.



4. Tap again. Another anchor point appears, and the completed line segment remains in place. The dotted box also changes to encompass the object.



5. Continue adding line segments until the object is complete.
6. Double-tap the final anchor point to finish the object. All the anchor points appear in the polyline object, and a dotted box surrounds it, indicating that the object is selected.



TRANSFORMING A POLYLINE

Once you have created a polyline object, you can grab any of its anchor points and move it to change the shape of the object. You also can change one, some, or all of the points in the polyline object from corners to curves or from curves to corners.

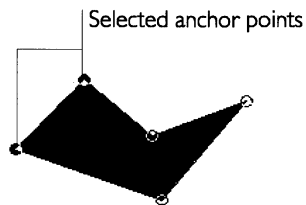
To change the shape of a polyline object (Level 4)

1. Select one of the Polyline tools, then tap the polyline object whose shape you want to change. The object's anchor points are displayed as unfilled circles, and a dotted box appears around the object.
2. Select the point you want to move by tapping it. The selected point is filled, then disappears.
3. Drag the point to change the shape of the object as you like. The affected segments change to show the result of your motion.
4. Lift the pen. The object is redrawn in the new shape.

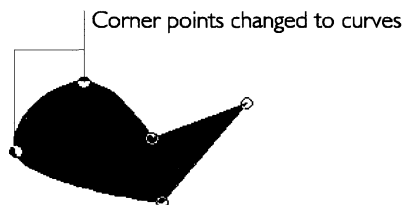
To change polyline points from corners to curves (Level 4)

This procedure is useful if you want to create a polyline object in which some of the lines are straight and some are curved.

1. Select a Polyline tool, then tap the polyline object you want to change. The anchor points appear, and a dotted box surrounds the object.
2. Tap the anchor point you want to change. You can select multiple points by touching the pen to an empty area within the dotted box and then dragging the pen across the points you want to select. Each point you select is filled to distinguish it from unselected points.



3. Choose Polyline from the Transform menu. A submenu appears.
4. Choose either Make Curved Point(s) or Make Corner Point(s) from the submenu. The selected points change accordingly.



HINT

You can change a single point from a corner to a curve (or vice versa) by double-tapping it. Double-tapping again changes it back.

INSERTING AND DELETING ANCHOR POINTS

You can change the shape of a polyline object by inserting or deleting anchor points. Each point anchors one end of a line segment. You can increase the number of segments in the object by adding anchor points, or reduce the number by deleting anchor points. By making the lines shorter (inserting points) or longer (deleting points), you can control the curves and angles that shape the object.

To insert anchor points (Level 4)

1. Select a Polyline tool, then tap the polyline object to which you want to add points. The anchor points appear, and a dotted box surrounds the object.
2. Tap a line segment at the position where you want to insert an anchor point. The new anchor point appears.

To delete anchor points (Level 4)

1. Select a Polyline tool, then tap the polyline object from which you want to delete anchor points. The anchor points appear, and a dotted box surrounds the object.
2. Tap the point you want to delete. You can select multiple points by touching the pen to an empty area within the dotted box and then dragging the pen across the points you want to select. Selected points appear filled.
3. Choose Polyline from the Transform menu. A submenu appears.
4. Choose Delete Point(s). The submenu disappears and the selected points are deleted.

OPENING AND CLOSING POLYLINES

You can change a polyline object from open to closed, or from closed to open. Closed polyline objects are filled and can be colored; open polyline objects are unfilled.

To open or close a polyline object (Level 4)

1. Select a Polyline tool, then tap the polyline object you want to open or close. The anchor points appear, and a dotted box surrounds the object.

2. Choose Polyline from the Transform menu. A submenu appears.
3. Choose Close or Open from the submenu. The submenu disappears and the object changes accordingly, opening or closing the object at the last anchor point that you created or selected.

USING THE SPLINE TOOL TO CREATE AND EDIT POLYLINES

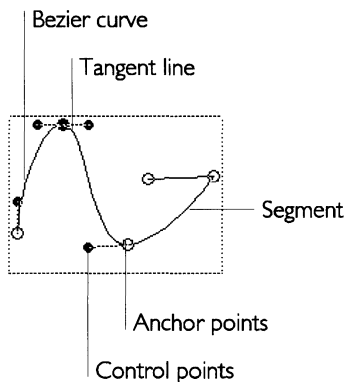
LEVEL 4



Polylines are sometimes called splines or Bézier curves.

At Level 4, the Spline tool appears on the tool bar.

Polylines are comprised of segments and endpoints, called anchor points. Actually, the curves are more complicated than that—you just see the simplified version when you use the Polyline tools. Using the Spline tool, you can see all the elements of a polyline. The following illustration shows the elements of a polyline that become visible with the Spline tool:



Segment. One of the lines or curves that make up a polyline.

Anchor point. An anchor point defines the end of a segment. An anchor point can fall between two straight segments, two curved segments, or a straight segment and a curved segment.

Endpoints. Endpoints are the first and last anchor points for an open polyline. Closed polylines do not have endpoints.

Control points. Control points are handles that you use to change the curvature of a curved segments. To see the control points for a segment, select the Spline tool and tap on a curved segment. The control points you see govern the shape of the selected segment and of the segments next to it.

Tangent line. A tangent line is the line that connects an anchor point and its control points. It runs tangent to the curve at the anchor point.

When working with polyline tools, you do not see the control points or their tangents. When you use the Spline tool, however, you can see and separately manipulate the control points and tangents.

Creating a Polyline with the Spline Tool

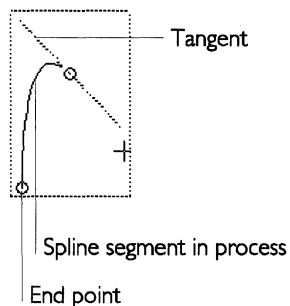
Drawing a polyline with the Spline tool can seem difficult at first. It takes practice to learn to handle the Spline tool effectively. The following procedures give you the basic steps, but you might want to experiment on your own to perfect your technique. If you prefer, you can use the Rounded Polyline tool to create a polyline, and then use the Spline tool to edit it.

To draw a polyline with the Spline tool (Level 4)

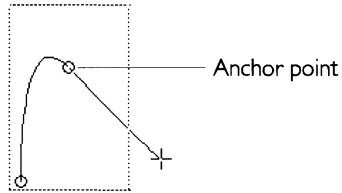
1. Select the Spline tool.
2. Tap where you want to start the first segment of the polyline. A circle surrounds this first anchor point, which is one of the endpoints of the object.
3. Tap where you want to end the segment. A dotted rectangular outline surrounds the object.
4. Tap to create a corner anchor point.

or

Drag the pen to create a curved anchor point. As you drag, a tangent line appears in the direction in which you are dragging and the first segment appears, as shown in the following illustration:



5. If you dragged in Step 4, lift the pen when you are satisfied with the curve of the segment. An anchor point appears, as shown in the following illustration:



The object outline expands, if necessary, to include the new anchor point.

6. Repeat steps 3, 4, and 5 for each segment you want to create. As you add segments, remember the following:
 - The shape of the current segment is affected by the shape of the previous segment.
 - If you move the pen, you will see the segment move.
 - The first and last anchor points remain on screen, but all other previous anchor points disappear while you are drawing.
7. For the last segment in the polyline, tap the first anchor point to create a closed polyline.

or

Double-tap the last anchor point to create an open polyline. (You can later connect the endpoints, if you want, by choosing Polyline from the Transform submenu of the Graphics menu and then choosing Close from the submenu.)

Manipulating Polylines with the Spline Tool

You can use the Spline tool to add anchor points to the polyline, precisely edit the curves in the polyline, and change the attributes of control points.

ADDING AND DELETING ANCHOR POINTS

You can add and delete anchor points using the Polyline and the Curved Polyline tools.

To insert anchor points using the Spline tool (Level 4)

1. Select the Spline tool.

2. If it is not already selected, select the polyline that you want to edit.
3. Tap the polyline segment at the spot where you want to add an anchor point.
4. Choose Polyline from the Transform submenu of the Graphics menu. A submenu appears.
5. Choose Insert Point(s) from the submenu. The new point appears at the spot you indicated.

To delete anchor points using the Spline tool (Level 4)

1. Select the Spline tool.
2. If it is not already selected, select the polyline that you want to edit.
3. Tap to select the anchor point or points you want to delete. Selected anchor points are filled.
4. Choose Delete from the Edit menu. The selected anchor points disappear.

CHANGING CURVED SEGMENTS

You can fine tune the shape of a segment using the Spline tool.

To reshape a segment using the Spline tool (Level 4)

1. Select the Spline tool from the tool bar.

2. Select a segment, and drag the segment to change its shape.

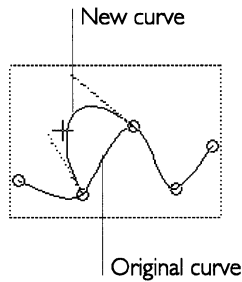
or

Tap a control point to select it, and drag the control points that appear.

or

Tap a segment to select it, and drag the control points that appear.

Regardless of which method you use, both the former curve and the outline of the new curve are displayed, as shown in the following illustration:



If you make a mistake, choose Undo Move from the Edit menu.

4. Lift the pen when you are finished. The new curve is displayed. The control points remain visible.

To turn a curved point into a corner point, or turn a corner point into a curved point (Level 4)

1. Select the Spline tool.
2. If it is not already selected, select the polyline that you want to edit.
3. Select the point you want to change.
4. Choose Polyline from the Transform submenu of the Graphics menu. A submenu appears.
5. Choose Make Corner Point(s) or Make Curve Point(s) from the submenu. The anchor point changes to a corner point or curved point.

Changing Control Point Attributes

You can set the attributes for control points to change the way they behave when you change the smoothness of a curve.

To change control point attributes (Level 4)

1. Select the Spline tool from the tool bar.
2. If it is not already selected, select the polyline that you want to edit.
3. Tap to select the anchor point with the control points you want to change.
4. Choose Polyline from the Transform submenu of the Graphics menu. A submenu appears.
5. Choose Control Points from the submenu. Another submenu appears.
6. Select the control point attribute you want:

Automatic. Under this option, the positions of the control points are automatically calculated to maintain a high degree of smoothness and to ensure an even curve through the anchor point. The two control points and the anchor point must be on the same tangent and they must be the same distance from the anchor point.

Symmetric. This option ensures that the two control points and the anchor point appear on the same tangent, and that the control points are equal distances from the anchor point.

Collinear. This option ensures that the two control points and the anchor point appear on the same tangent, but allows the control points to be at different distances from the anchor point.

Independent. This option allows two control points to be entirely independent.

The attribute is applied to the selected anchor point as soon as you move the anchor point or either of its control points.

Experiment by changing the setting, then manipulating the control points. If you do not like the results of a move, choose Undo Move from the Edit menu.

USING GRAPHIC STYLE SHEETS

LEVEL 4

Like text styles, *graphic styles* allow you to record a set of graphic attributes and give them a common name. Then you can use the style to apply all the attributes to an object at the same time. You can record the following graphic attributes in a graphic style:

- Area attributes, including area fill color, shading, pattern, and draw mode

- Line attributes, including line color, shading, line width, line style, and arrowheads
- Background color
- Gradient fill
- Arc angles for arcs
- Bitmap format for bitmaps
- Extended attributes (annotations and locks)

Graphic styles make it easy for you to apply a group of attributes to one or more objects all at once. This saves you the effort of setting the same attributes for each object individually. For more information about changing the attributes of a graphic object, see “Setting Attributes” in this chapter.

When you create a style, you give it a name. Styles help ensure a consistent look for your drawing. They also make it easier to reformat a drawing, because changing a style automatically updates graphic objects in that style. A *graphic style sheet* is the set of all the named graphic styles used in a drawing.

All GEOS documents include one style, Normal. If you create a drawing based on a template, you may find that other styles have been defined in the template.

Graphic style sheets are similar to text style sheets. For more information, see “Formatting GeoWrite Documents” in Chapter 5.

Defining a New Graphic Style

You can add a new graphic style by giving it a name and defining its attributes.

You can use the formatting defined in another style with similar attributes as the base style for a new style. A *base style* is a style on which other styles depend. If you change an attribute in the base style, all dependent styles will change except those that define the attribute uniquely.

For example, suppose you define a style called “Dark Fill” using another style, “Filled Objects,” as its base style. If you changed the line width in “Filled Objects” to 3 points, the line width in “Dark Fill” would increase to 3 points. The program also updates all objects drawn in either style with the new attributes.

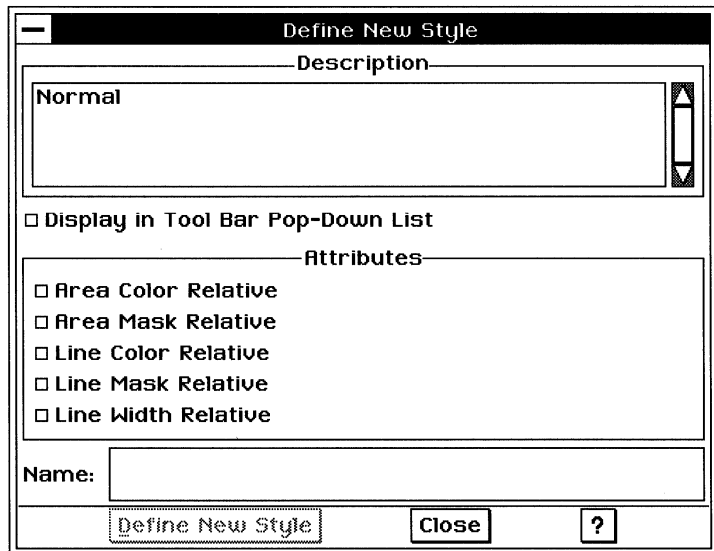
Alternatively, you can define a style so that its unique attributes change *relative* to changes in the base style. For example, if the line width in “Dark Fill” is 4 points and you increase the line width

in “Filled Objects” by 2 points, the line width in “Dark Fill” would also increase by 2 points.

You can also define a new style without using a base style. The program uses the default attributes or the attributes of a selected object as the starting point instead.

To define a new graphic style (Level 4)

1. Select a graphic object with graphic attributes identical or similar to those of the style you want to create. The attributes in the selected (or base) style define the initial attributes of the new style. You can also start from scratch, with no objects selected.
2. Choose Graphic Style Sheets from the Attributes submenu of the Graphics menu. A submenu appears.
3. Choose Define New Style from the submenu. A dialog box appears:



4. Complete the dialog box, changing the options you want:

Display in Tool Bar Pop-Down List. Select whether the style appears in the graphic styles list, if the styles list is available. The styles list appears only if you customize tool bars to show style sheets using the Customize tool bars choice on the Options submenu of the Graphics menu. For more information about customizing tool bars, see Chapter 3.

Area Color Relative. Select to make the area color blend relative to the area color blend of the base style. Changing the area color

blend in the base style changes the area color blend in the current style by the same amount.

Area Mask Relative. Select to make the area shading (mask) percentage relative to the area shading percentage of the base style. Changing the area shading percentage in the base style changes the area shading percentage in the current style by the same amount.

Line Color Relative. Select to make the line color blend relative to the line color blend of the base style. Changing the line color blend in the base style changes the line color blend in the current style by the same amount.

Line Mask Relative. Select to make the line shading (mask) percentage relative to the line shading percentage of the base style. Changing the line shading percentage in the base style changes the line shading percentage in the current style by the same amount.

Line Width Relative. Select to make the line width relative to the line width of the base style. Changing the line width setting in the base style changes the line width setting in the current style by the same amount.

Name. Enter a new style name. You can use letters, numbers, and spaces. Choose a name that indicates what the style does. For example, you could use the name “Dark Area Fill” for a style that fills the area of the graphic object with the specified shading.

5. Tap Define New Style to define the style.
6. Tap Close to close the dialog box.

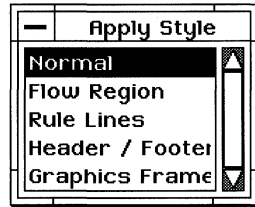
Applying a Graphic Style

You can change the appearance of a graphic object simply by applying a style from the graphic style sheet.

To apply a graphic style (Level 4)

1. Select the graphic object to which you want to apply the style.
2. Choose Graphic Style Sheets from the Attributes submenu of the Graphics menu. A submenu appears.

3. Choose Apply Style from the submenu. A dialog box appears, listing styles from the style sheet, though not necessarily all the styles listed here:



4. Select the style you want from the list. The style is applied to the selected graphic object.
5. Tap the window control button to close the dialog box.

Changing a Graphic Style

You can change a style in two ways. You can change its visual attributes (area attributes, line attributes, gradient fill, and so on), or you can change its style attributes (area color relative, area mask relative, and so on). If the style serves as the base style for other styles, changes can affect those dependent styles as well.

CHANGING VISUAL ATTRIBUTES

You can redefine a style based on the attributes of a selected object. You can change an attribute for one graphic object, then redefine its style to add the attribute to all other graphic objects in the same style.

To change the visual attributes of a graphic style (Level 4)

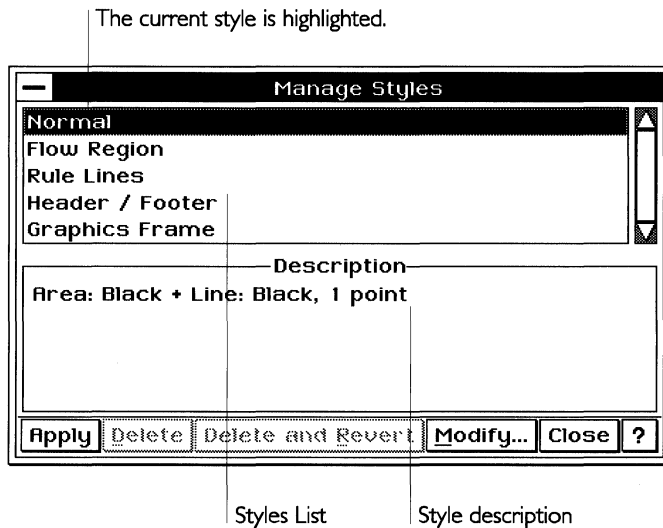
1. Select an object in the style you want to redefine. For example, if you want to redefine a style called “DarkFill,” select an object in the DarkFill style.
2. Change any attributes you want for the style you are redefining.
3. Choose Graphic Style Sheets from the Attributes submenu of the Graphics menu. A submenu appears.
4. Choose Redefine Style from the submenu to update the style with the attributes of the selected graphic object. The program also updates any other graphic objects in that style.

CHANGING STYLE ATTRIBUTES

You can modify the definition of any style in the styles list to change its style attributes (area color relative, area mask relative, and so on).

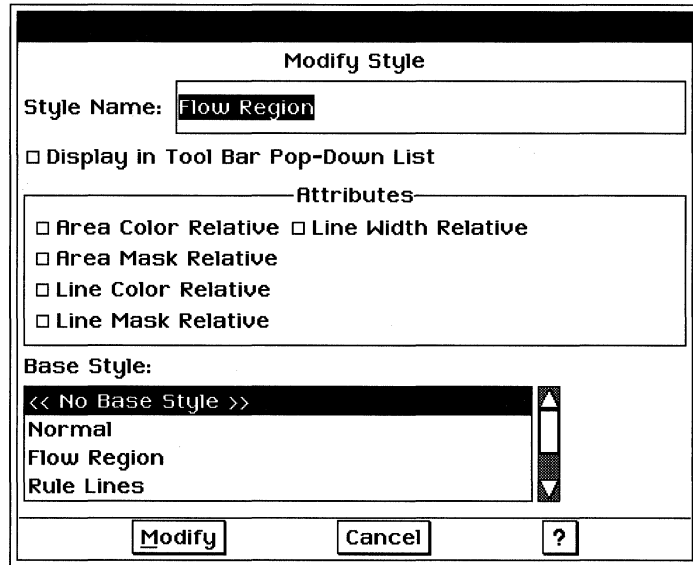
To change the style attributes of a graphic style (Level 4)

1. Choose Graphic Style Sheets from the Attributes submenu of the Graphics menu. A submenu appears.
2. Choose Manage Styles from the submenu. The following dialog box appears, though not necessarily with all the styles shown here:



3. Select the style you want to modify from the list.

4. Tap Modify. A dialog box appears:



5. Complete the dialog box, changing the options you want. For a description of these options, see “Defining a New Graphic Style” in this chapter.
6. Change the base style, if you want, by selecting it in the list. If you do not want a base style, choose <<No Base Style>>.
7. Tap Modify to apply the changes to the selected style. The dialog box disappears.
8. Tap Close to close the Manage Styles dialog box.

Deleting a Graphic Style

You can delete a style you no longer need. This eliminates clutter in the graphic style sheet. Once you delete a style, you cannot recover it. You cannot delete the Normal style.

To delete a graphic style (Level 4)

1. Choose Graphic Style Sheets from the Attributes submenu of the Graphics menu. A submenu appears.

2. Choose Manage Styles from the submenu. The Manage Styles dialog box appears.
3. Select the graphic style you want to delete from the list. If the selected style has a base style, the name of the base style appears in the style description box.
4. Tap Delete to delete the selected graphic style. The program attaches the base style to any graphic objects in the style you just deleted. However, it does not actually change the current graphic attributes of those objects.

or

Tap Delete and Revert. The program deletes the selected graphic style, attaches the base style to any graphic objects in the style you just deleted, and overrides the current graphic attributes of those objects with the attributes in the base style.

Reverting to a Base Graphic Style

If, after you apply a style to an object, you change the attributes of the object, you can remove all your changes by reverting to the object's original style attributes.

To revert to the base graphic style (Level 4)

1. Select the graphic object to which you want to reapply the style.
2. Choose Graphic Style Sheets from the Attributes submenu of the Graphics menu. A submenu appears.
3. Choose Revert to Base Style from the submenu. The program applies the base style to selected graphic objects, overriding the current attributes of selected graphic objects with the attributes in the base style.

Using Style Sheets from Other Drawings

You can copy style sheets (text and graphic styles) from another drawing into a drawing you are working on. That way, you do not need to define the same styles all over again.

To get the graphic style sheet from another drawing (Level 4)

1. Choose Graphic Style Sheets from the Attributes submenu of the Graphics menu. A submenu appears.
2. Choose Bring in Style Sheet from the submenu. A standard file selector appears.

3. Use the file selector to find and select the drawing containing the styles you want to bring in.
4. Tap Load Style Sheet. The styles are imported from the drawing you selected. If two styles with the same name appear in the two drawings, the style attributes in the source drawing are used.
5. Tap Close to close the dialog box.

Storing and Recalling Graphic Attributes Temporarily

You can temporarily store the graphic attributes for one object and then apply them to other objects without first creating a named graphic style. To do so, you use the Store Style choice. Named styles are saved with your document, but graphic styles you record with the Store Style choice are not saved when you exit the application.

To store or recall graphic attributes (Level 4)

1. Select a graphic object that has the formatting attributes you want to store.
2. Choose Graphic Style Sheets from the Attributes submenu of the Graphics menu. A submenu appears.
3. Choose Store Style from the submenu. The program remembers the attributes of the selected graphic object.

Select another object and choose Recall Style from the submenu. The program applies the graphic attributes you stored to the selected graphic object.

SETTING EXTENDED ATTRIBUTES

LEVEL 4

You can set two extended attributes for an object:

- Object annotation
- Object locks

Object annotation allows you to mark objects in your drawing that you do not want printed, or that you want hidden. You can also make annotated objects unselectable and uneditable, locking them against any inadvertent changes.

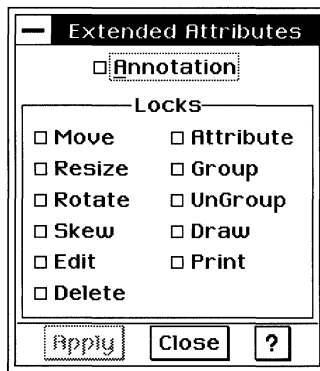
Annotated objects are useful when you want to place reference objects in your drawing, but you do not want them printed. For example, if you need a diagonal guideline, but you do not want

the line to print along with the other objects in your drawing, draw the line and annotate it. Then set the annotation options (in the Options menu) so that the diagonal guide does not print, but still appears on the screen.

You can also *lock* an object against specific changes. For example, you can lock the delete operation so that you do not inadvertently delete an object you want to keep. Similarly, you can lock the move operation so that the object remains in a fixed position and is unaffected by subsequent move, align, or distribute operations.

To set extended attributes for an object (Level 4)

1. Select the object for which you want to set extended attributes.
2. Choose Extended Attributes from the Attributes submenu of the Graphics menu. A dialog box appears:



3. Select the attributes you want:
Annotation. Select this attribute to mark the object as an annotation. By default, this attribute is not selected. For information about annotating documents, see Chapter 3.
Locks. Select any of these attributes to prevent the applicable operation (Move, Resize, Rotate, Skew, Edit, Delete, Attribute, Group, Ungroup, Draw, or Print). By default, these attributes are not selected.
4. Tap Apply to apply your changes.
5. Tap Close to close the dialog box.

To annotate an object (Level 4)

1. Select the object you want to annotate.
2. Choose Extended Attributes from the Attributes submenu of the Graphics menu. A dialog box appears.

3. Tap to select Annotation. All annotated objects will be affected by choices you make on the Annotations submenu in the Options menu.

To print annotated objects (Level 4)

The default setting for annotated objects is that they do not print.

1. Choose Annotations from the Options menu. The Annotations submenu appears.
2. Select Print. To turn off the printing for annotated objects, deselect the Print option.

To make all annotated objects unselectable and uneditable (Level 4)

1. Choose Annotations from the Options menu. The Annotations submenu appears.
2. Tap Make Annotations Unselectable/Uneditable. All your annotated objects are now unselectable and uneditable.

To make all annotated objects selectable and editable (Level 4)

1. Choose Annotations from the Options menu. The Annotations submenu appears.
2. Tap Make Annotations Selectable/Editable. All your annotated objects are now selectable and editable.

To hide all annotated objects (Level 4)

Annotated objects, by default, appear on the screen. You can hide them using this procedure:

1. Choose Annotations from the Options menu. The Annotations submenu appears.
2. Deselect Draw Annotations. The annotated objects in your drawing disappear. To see the annotated objects in your drawing, reselect Draw Annotations.

To delete all annotated objects (Level 4)

1. Choose Annotations from the Options menu. The Annotations submenu appears.
2. Tap Delete Annotations. All annotated objects in your drawing are deleted.

ADVANCED VIEW FEATURES

LEVEL 4

Level 4 offers you two additional ways to change the view of your drawing: hiding objects and changing the size of selection handles. Both can make it easier for you to see objects on your screen that might otherwise be obscured by other objects.

Hiding and Showing Objects

You can select the objects you want to work with and then hide all other objects in the drawing. This feature is helpful if you are working on subtle details in a complex drawing and you want to focus on the area you are changing while ignoring everything else. Hiding an object merely conceals it from view; it does not change the object's size, position, or other attributes in any way.

To hide unselected objects (Level 4)

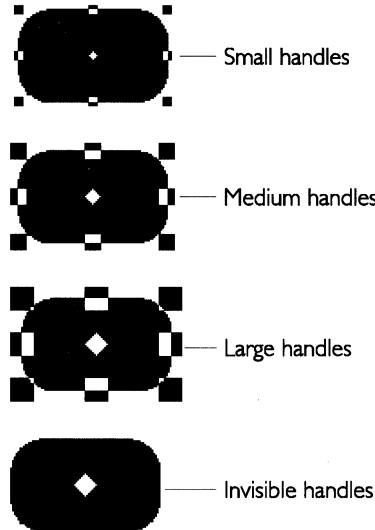
1. Select the object that you want to remain visible.
2. Choose Hide from the Edit submenu of the Graphics menu. A submenu appears.
3. Choose Hide Unselected Objects from the submenu to hide all objects that are not selected.

To show hidden objects (Level 4)

1. Choose Hide from the Edit submenu of the Graphics menu. A submenu appears.
2. Choose Show Hidden Objects to display all hidden objects.

Changing the Size of Selection Handles

You can increase the size of selection handles to make them easier to see and to grab with the pen. You can reduce their size so that they cover less of the drawing area, or you can make them disappear if you do not want to see them.



To change the display size of selection handles (Level 4)

1. Choose Handles from the Options submenu of the Graphics menu. A submenu appears.
2. Choose Small, Medium, Large, or Invisible Handles from the submenu to change selection handles for all objects to the size you want. The new size stays in effect until you exit the application.

ADVANCED DUPLICATING

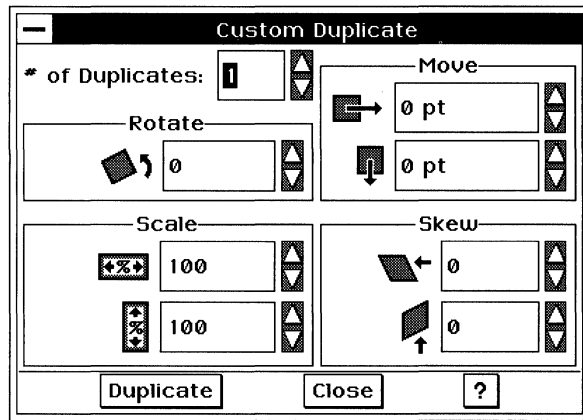
LEVEL 4

At Level 4, you can automatically scale and skew objects when you duplicate them.

To custom duplicate an object (Level 4)

1. Select the object that you want to custom duplicate.
2. Choose Duplicate from the Edit submenu of the Graphics menu. A submenu appears.

3. Choose Custom Duplicate. A dialog box appears:

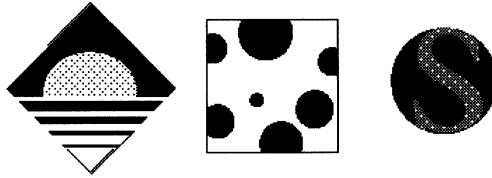


4. Complete the dialog box, changing the options you want:
 - # of Duplicates.** Select the number of duplicates you want to make of the original.
 - Rotate.** Select the number of degrees by which you want to incrementally rotate each duplicate.
 - Scale.** Select the scale percentage by which you want to incrementally resize each duplicate.
 - Move.** Select the vertical and horizontal distance by which you want to incrementally move each duplicate.
 - Skew.** Select the number of left/right and upward/downward degrees by which you want to skew each duplicate.
5. Tap Duplicate to duplicate the selected object using the options you specified.
6. Tap Close to close the dialog box.

PASTING AN OBJECT INSIDE ANOTHER

LEVEL 4

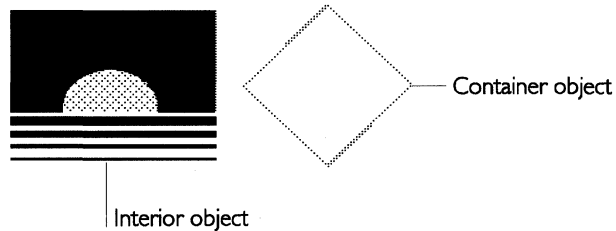
At Level 4, you can paste one object inside another to produce creative visual effects:



Pasting Inside

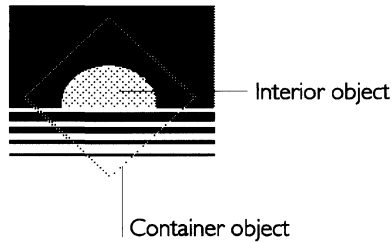
When you paste an object inside another object, the objects are combined into a single object that you can manipulate as you would any other graphic object. You can use this feature just as an airbrush artist would use a stencil overlay on an image.

The outside object is called the *container object* and the inside object is called the *interior object*. The boundaries of the container object become the boundaries of the interior object. The following procedure will use a progressive example that shows how you can paste one object inside another.



To paste inside (Level 4)

1. Place the interior object over the container object. Position the interior object in relation to where you want it inside the container object, as shown in the following example:



If the two objects do not overlap, you cannot paste inside.

NOTE

Be sure to position the interior object as close as possible to where you want it. You can fine tune it later, nudging it one pixel at a time, but you can save time by setting the position precisely in this step.

2. Select the interior object.



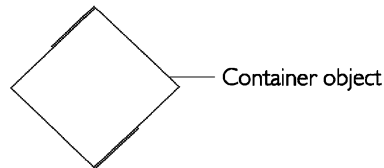
3. Tap the Cut icon.

or

Choose Cut from the Edit menu.

Either way, the object is placed on the clipboard.

4. Select the container object.



5. Choose Paste Inside from the Edit submenu of the Graphics menu. A submenu appears.
6. Choose Paste Inside. The interior object is pasted inside the container object:



Nudging Inside

Once you have pasted an object inside another, you can fine tune the position of the interior object by moving it one pixel at a time.

To nudge inside (Level 4)

1. Select the object that contains the object you want to nudge inside.
2. Choose Paste Inside from the Edit submenu of the Graphics menu. A submenu appears.
3. Choose Nudge Inside. A submenu appears.
4. Select Left, Right, Up, or Down to nudge the interior object one pixel in the direction you select.

Breaking Out Paste Inside

Once you have pasted one object inside another, you can break the object into its component objects using the Break Out Paste Inside choice. That way, you can manipulate the resulting individual component as objects rather than as a group.

To break out paste inside (Level 4)

1. Select the object you want to break out.
2. Choose Paste Inside from the Edit submenu of the Graphics menu. A submenu appears.
3. Choose Break Out Paste Inside to split the component objects into separate objects.

SETTING ATTRIBUTES

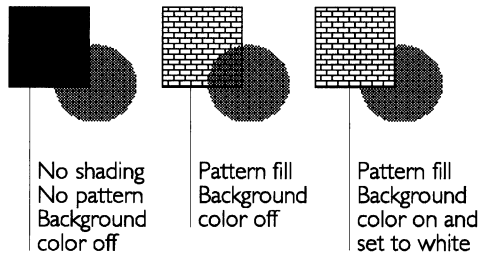
LEVEL 4

This section explains how to set the new attributes that are available at Level 4. For information about area and line attributes, see “Using the Drawing Tools” in this chapter.

Setting the Background Color

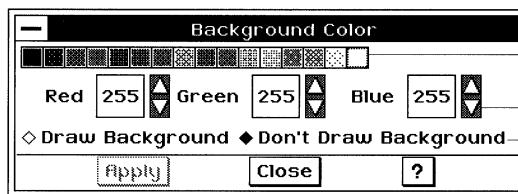
When you apply a pattern or shading to a graphic object, it appears transparent — allowing you to see any graphic objects or text behind it. You can, however, make the object appear completely opaque by turning on the object’s *background color*.

The following illustration shows what an object looks like with its background color turned off and turned on:



To set the background color (Levels 4)

1. Select the graphic objects for which you want to change the background color.
2. Choose Background Color from the Attributes submenu of the Graphics menu. A dialog box appears:



— Sets the background color.
 — Sets the color blend.
 — Determines whether the background color is drawn.

3. Complete the dialog box, changing the attributes you want:

Color Tools. Select the background color from the color palette. You can also fine tune the color blend by setting the amounts of red, green, and blue in the background color; default values depend on the selected color.

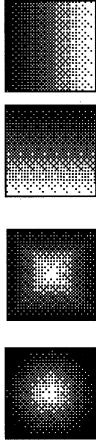
Draw Background or Don't Draw Background. Select Draw Background if you want background color. By default, the program does not, and objects are transparent. Setting the background color has no effect unless Draw Background is selected.
4. Tap Apply to apply your changes to selected objects.
5. Tap Close to close the dialog box.

Setting the Gradient Fill

A *gradient fill* is a type of area fill that gradually fades from one color (gray scale) to another. A gradient fill can give graphic

objects a three-dimensional appearance and can be a visually appealing background for other objects.

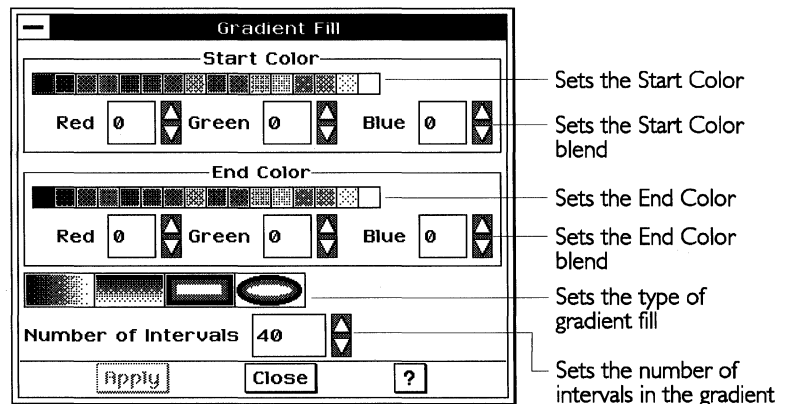
You specify a starting color, an ending color, and the number of times (intervals) the color changes between the starting and ending points. You also select one of the following types of gradient fill:



- A *horizontal gradient* goes from left to right, beginning with the start color on the left edge of the graphic object and ending with the end color on the right edge.
- A *vertical gradient* goes from top to bottom, beginning with the start color on the top edge of the graphic object and ending with the end color on the bottom edge.
- A *rectangular gradient* goes in a rectangular pattern from the outside edge of the graphic object to its center, beginning with the start color on the outside edge and ending with the end color at the center.
- A *radial gradient* goes in an elliptical pattern from the outside edge of the graphic object to its center, beginning with the start color on the outside edge and ending with the end color at the center.

To set the gradient fill for an object (Levels 4)

1. Select the graphic object that you want to fill.
2. Choose Gradient Fill from the Attributes submenu of the Graphics menu. A dialog box appears:



3. Complete the dialog box, changing the attributes you want:
Color Tools. Select the start and end colors (gray scale) for the gradient fill from the color palette. You can also fine tune the color blend by setting the amounts of red, green, and blue in the start and end colors; default values depend on the selected color.
Gradient Fill Type. Select the type of gradient fill (vertical, horizontal, rectangular, or radial).
Number of Intervals. Select the number of changes in color (gradations) from start to end. Some video hardware and printers may be unable to reproduce finer gradations (a higher number of intervals).
4. Tap Apply to apply your changes.
5. Tap Close to close the dialog box.

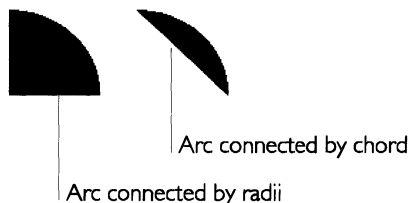
To remove a gradient fill from an object (Levels 3-4)

1. Select the graphic object that you want to change.
2. Choose Gradient Fill from the Attributes submenu of the Graphics menu. A dialog box appears.
3. Tap the selected gradient type to deselect it.
4. Tap Apply to apply your changes. The gradient fill is removed.
5. Tap Close to close the dialog box.

Changing Arc Attributes

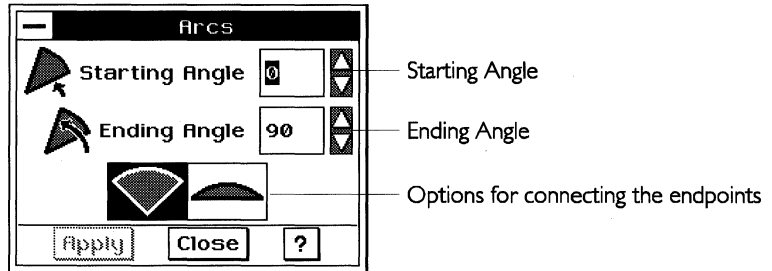
An arc is a portion of an ellipse. Since a full ellipse is 360-degrees around, a 90-degree arc is exactly one quarter of an ellipse; a 180-degree arc is half of an ellipse.

You can set the precise size (in degrees) of the starting angle and ending angle of any arc. You can also specify whether you would like your arc's endpoints connected by radii or by a chord. The following illustration shows what radii- and chord-connected arcs look like.



To change the arc attributes (Levels 4),

1. Select one or more arcs that you want to change.
2. Choose Arcs from the Attributes submenu of the Graphics menu. A dialog box appears:



3. Complete the dialog box, changing the options you want:

Starting Angle. Select the starting angle, measured counterclockwise from horizontal. You can specify from zero (0) to 360 degrees, inclusive.

Ending Angle. Select the ending angle, measured counterclockwise from horizontal. You can specify from zero (0) to 360 degrees, inclusive.

Endpoints Connected. Select whether you want the endpoints connected by two radii or by a chord.

NOTE

The starting and ending angles for the arc of a circle represent angles measured counterclockwise from horizontal. The starting and ending angles of an elliptical arc are slightly different: they represent the angles of a circular arc that has been stretched.

4. Tap Apply to apply your changes.
5. Tap Close to close the dialog box.

Setting Default Attributes

The *default attributes* are the area, line, and other attributes that are used automatically when you create a new graphic object.

When you draw multiple objects with similar attributes, you can save time by formatting the first object, then saving its attributes as the default attributes. The default attributes are applied to any new objects you create.

For example, if you want to draw four patterned squares with heavy borders, you can simply draw the first square, give it a fill

pattern and a heavy line border, set default attributes, and then draw the other three squares (which will automatically have the same formatting).

You can use the tools on the Attribute tool bar to specify default attributes even if no object is selected. For example, you can select a line weight from the Line thickness tool and it will be applied to any new objects you create.

Default attributes apply regardless of the shape you draw. For example, after drawing the four squares in the previous example, you could continue drawing squares, ellipses, arcs, and polylines with the same fill pattern and border thickness.

To change the default attributes (Level 4)

1. Select an object that has the attributes you want to use for the default attributes.
2. Choose Set Default Attributes from the Attributes submenu of the Graphics menu to save the new attributes of the selected object as the default.

You can change the default attributes as often as you like.

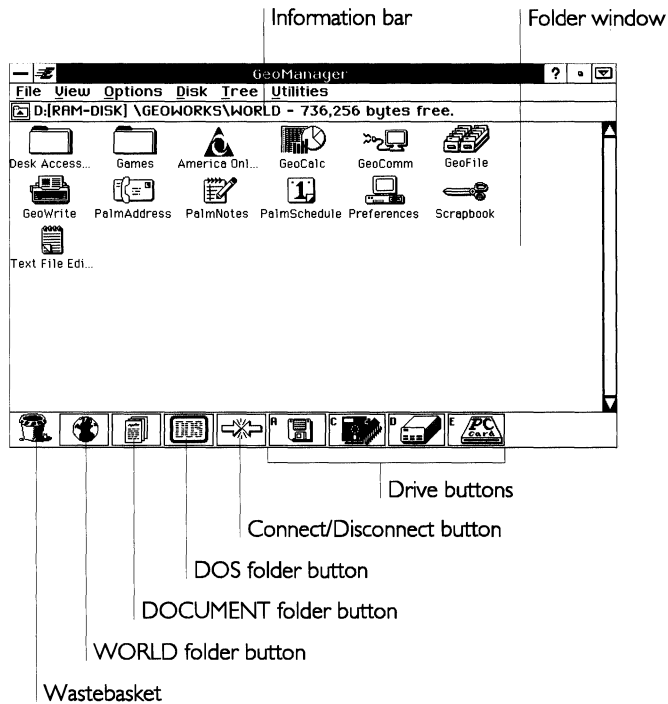
WHAT IS GEOMANAGER?

GeoManager is the unit's central application. GeoManager is the first application you see, and it serves as a platform for starting other GEOS applications (GeoWrite, GeoCalc, GeoFile) or DOS programs.

THE GEOMANAGER WINDOW

When you start the unit, the GEOS operating system starts, and the GeoManager window opens. The GeoManager window usually remains open, though it may close automatically when you start large applications such as GeoWrite. In some situations, for example when you are running several smaller applications and want to improve application speed, you may choose to close the GeoManager window using Close from the File menu. To reopen the GeoManager window, simply choose Go to GeoManager from the Express menu.

Although you can close the GeoManager window, normally you never exit GeoManager. For more information, see "Exiting GeoManager" in this chapter.



The GeoManager window consists of three separate areas:

Information bar. The Information bar displays the folder path name, the number of files and folders currently appearing in the folder window, the amount of disk space in bytes used by the files shown, and the amount of space remaining on the disk containing the folder.

Folder window. This area shows the contents of the currently opened folder. (The name and path of the folder appear in the Information bar.) When the GeoManager window first opens, it displays the contents of the *WORLD* folder, where all GEOS applications are stored. This area can show only one folder at a time.

Tool area. These buttons give you easy access to drives, special folders, and common operations.

Each of these areas is described below.

The Folder Window

The *folder window* shows the contents of the currently opened folder. When you want to perform tasks with a document or a

folder in the folder window, you take some action with the document or folder icon. For instance, to open a folder, you double-tap its icon.

There are several kinds of icons that appear in the folder window:



GeoWrite



CONFIG.SYS

GEOS application icons. These icons represent GEOS applications. (The icon for GeoWrite is shown at left.) You can double-tap a GEOS application icon to start the application. For more information, see Chapter 1.

DOS application icons. These icons represent optional DOS applications that you can run. The files for DOS applications usually end in .EXE, .BAT, or .COM. You can double-tap a DOS application icon to run it. For more information, see “Starting DOS Applications” in this chapter.

WARNING

Do not start a DOS application unless you have an external keyboard attached to your unit. If you start a DOS application that requires a keyboard, and you do not have a keyboard, you must restart the unit to return to GeoManager. To restart the unit, press the restart button on the front of the unit. To connect an external keyboard, turn the unit off, connect the keyboard, and then turn the unit on again.



Letter



Games

GEOS document icons. Each type of GEOS document has a unique icon. This icon usually contains the icon of the application used to create the document. If you double-tap the icon, the application starts and automatically opens the document.

Folder icons. Folder icons in the folder window represent directories. The terms “folder” and “directory” are often used interchangeably, in much the same way as “file” and “document” are.

DOS users should note that although folders correspond to DOS directories, the names of folders do not have to conform to the DOS naming standard. In GEOS, folder names can be as long as 32 characters and can contain upper- and lowercase letters.

The Wastebasket



The icon for the Wastebasket is shown at the left. Drag folders and files onto this icon to throw them away. Use this icon carefully! Once you have dragged a file or folder onto the Wastebasket, it is permanently deleted and cannot be retrieved.



The WORLD, DOCUMENT, and DOSROOM Folders

The icons for the WORLD, DOCUMENT, and DOSROOM folders are shown at the left. Tap these icons to open their respective folders. You can also copy and move documents and folders to these folders by dragging the icons onto the appropriate button.



The Connect/Disconnect Button

The icon for the Connect/Disconnect button is shown at the left. Tap the button to connect to or disconnect from a computer that is running GeoHost. The button icon toggles between connect and disconnect, depending on the current connection status. For more information, see Appendix C.

The Drive Buttons

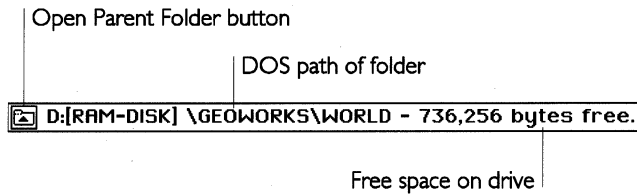


Icons for the drive buttons are shown at the left. Every drive available on the unit, including the RAM-drive and ROM-drive, is represented by a button. A floppy disk button appears for an optional floppy disk drive. Additional buttons appear for other optional devices (such as IDE, SRAM, and flash cards) installed in the unit. Tapping a button opens the root folder of the corresponding drive; similarly, dragging document and folder icons onto a drive button copies or moves the items to the root folder of that drive.

Drives are identified by a single letter (always followed by a colon). This letter appears on the button. "A:" is the default drive assignment for the optional floppy disk drive. "C:" is normally assigned to the ROM-drive and "D:" is normally assigned to the RAM-drive. The rest of the letters are for other storage devices attached to or installed in the unit.

The Information Bar

The *Information bar* at the top of the folder window shows information about the folder, and about the drive on which it is located.



Open Parent Folder button. Tap this button to quickly open the folder that contains the current folder and is one level higher. (This higher-level folder is the *parent folder*.)

Number of icons in the folder. This is the number of items contained in the folder. When you select one or more icons, this number changes to show how many icons are selected.

Total size of icons. This is the total size of all the document icons in the folder. The amount is expressed in bytes, or characters. When you select one or more icons, the figure changes to show the total size of all the selected items. Note that this total does not include the size of items contained within any folders in this folder.

Free storage. This figure shows the amount of space remaining on the drive that contains this folder.

Path of folder. This shows all the folders you went through to reach the current folder. Reading from left to right, it starts with the top folder (the *root folder*) of the drive. It then shows the highest-level parent folder. Then the folder that is contained in *that* folder (the next-lower-level parent folder), and so on until it reaches the current folder. Backward slashes (“\”) separate the folder names. Reading a path is a little like reading an address. For example, if you have a file named “Main Street” in the folder “Ourtown,” which is in the folder “California,” on the disk named “USA,” the path name for “Main Street” would read:

USA\California\Ourtown>Main Street

WORKING WITH DOCUMENT AND FOLDER ICONS

When you want to perform a task with a document or folder, you perform the task by using its icon.



Selecting Icons

Before you can do something with a document or a folder, you must first select its icon by tapping it. The icon is highlighted to show that it is selected, like the icon at the left.

To select multiple icons using the pen

1. Place the pen slightly above and to one side of the icons you want to select, and then hold it on the screen.
2. Holding the pen down, drag it down and across the icons until an outline box surrounds the icons you want to select:

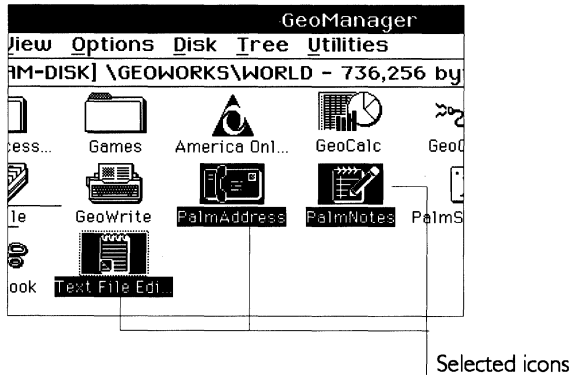


3. Lift the pen when the outline box completely surrounds the icons. The icons you selected are highlighted.

To select multiple icons using the pen and an external keyboard

This procedure works only if you have attached an external keyboard to the unit.

1. Press and hold down the **Ctrl** key, then tap each icon you want to select, while still holding down the **Ctrl** key. Each icon you select is highlighted.



2. You can deselect (unhighlight) an icon by tapping it again while still holding down the **Ctrl** key. Other selected icons stay selected.
3. Release the **Ctrl** key. The icons you have selected remain highlighted.

At this point, you can press the **Ctrl** key again and continue to select and deselect as you like. As long as you press the **Ctrl** key, your selection will continue where you left off.

Dragging Icons

You can copy or move files and folders simply by dragging the icons with the pen and dropping them where you want them to go. When you drag and drop a document icon onto another drive button, a copy of the document is placed in the root folder of the other drive. When you drag and drop a document onto a folder icon on the same drive, the document is moved to that folder.

To drag and drop an icon



1. Select the icon you want to move by tapping the icon and holding down the pen. A small outline (as shown at left) appears on top of the icon.
2. With the pen still held down, drag the pen to move the outline on the screen to the location you want.
3. Lift the pen to drop the icon. The icon appears in the new location.

To drag and drop multiple icons, follow the same procedure as above, only first select all the icons you want to drag, move the pen directly over one of the highlighted icons, and then tap the pen and hold it down until the small outline appears. With the pen held down, drag it to move the outline to the location you want. Lift the pen; the icons appear in the new location.

OPENING FOLDERS



In GeoManager, folders look like little manila folders, like the one shown at left. To view the contents of a folder, you open it so that the contents of the folder are displayed in the GeoManager window. When you start the unit for the first time, GeoManager automatically opens the WORLD folder.

To open a folder, double-tap the folder's icon or select the folder's icon and choose Open from the File menu. The folder opens and its contents are displayed in a window. (This menu choice is disabled if more than one folder is selected; you can open only one folder at a time.)

Viewing Files and Folders as a List

You can view the contents of a folder as an alphabetized word list (with or without details) instead of as icons. Of the three viewing options (listed below), the highlighted option is the one currently in effect.

To change the current viewing option, open the folder you want to change. Choose the option you want from the View menu. You have these choices:

Names Only. This shows the contents of the folder as a list of very small icons with the name of each item on the right (instead of below). This view is especially useful if you have many files in a folder and want to see as many as possible without scrolling.

Names and Details. This also shows the contents of the folder as a list of small icons, but with the name, size, modification date, and attributes to the right of each icon. Each file attribute is represented by a single letter: Read-Only (R), Hidden (H), System (S), and Archive (A). For more information about file attributes, see “Viewing Information About Files and Folders” in this chapter.

Icons. This is the standard option. It shows the contents of the folder as file or folder icons, with the name of each item below its icon.

Sorting the Contents of Folders

In addition to being able to view size, type, and date information for files and folders, you can also sort the icons in the folder window by choosing Sort By from the View menu. You can sort the icons in the following ways:

Name. This sorts the contents of the folder alphabetically by the entire DOS name.

DOS Extension. This sorts the contents of the folder alphabetically by the one- to three-letter suffix appearing after the period in the DOS name for the file or folder.

Modification Date and Time. This sorts the contents of the folder by date and time of last modification, in reverse chronological order.

Creation Date and Time. This sorts the contents of the folder by date and time of creation, in reverse chronological order.

Size. This sorts the contents of the folder in ascending size.

DOS Order. This sorts the contents of the folder in the order in which they would appear in DOS.

Showing Hidden Files

Hidden files and files with the System attribute do not automatically appear in the folder window. To view these files and have them included in the file size count at the top of the window, you must turn on the Show Hidden Files option from the View menu. When you turn this option off, these files disappear again.

Compressing the Folder Display

The Compress Display option on the View menu changes the spacing of icons in the folder window. Turning it on brings the icons closer together, so that more of them can fit in a window. Turning it off returns icons to their normal spacing.

Opening the WORLD, DOCUMENT, and DOSROOM Folders

In GeoManager, you can view the contents of three special folders: WORLD, DOCUMENT, and DOSROOM. The WORLD folder contains GEOS applications, the DOCUMENT folder contains documents (data files created with GEOS applications), and the DOSROOM folder contains DOS application launchers.

To open the WORLD, DOCUMENT, or DOSROOM folder, tap the appropriate folder button at the bottom of the GeoManager window. The folder opens and its contents are displayed in the window.

Opening a Parent Folder



You can open the *parent* folder of the current folder by tapping the Parent Folder button on the Information bar. A parent folder is one level higher than the current folder and is the folder that contains the current folder. When you move up as far as the root folder, the Parent Folder button dims to indicate that the current folder has no parent.



Opening a Folder on Another Drive

You can open a folder on another drive by tapping the appropriate drive button. If the folder is on a floppy disk, remember to insert the floppy disk into the optional floppy disk drive before tapping the drive button. If the folder is on a PCMCIA card, you will not see the drive button until you insert the card into the unit.

Opening Your BACKUP Folder

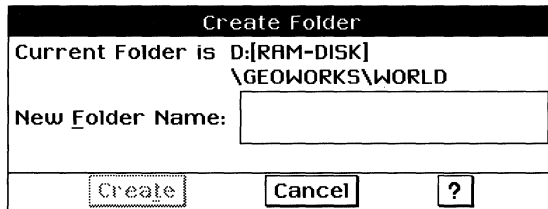
Whenever you use the Make Backup function in an application, the backup document is saved into the BACKUP folder. If you need to open a backup document directly, you do so by first choosing Go to Backup from the Utilities menu to open the folder, and then double-tapping the document icon in this folder.

CREATING A NEW FOLDER

You can create a new folder inside any open folder. The new folder is empty until you move or copy items into it.

To create a new folder

1. Open the folder in which you want to place the new folder. If the folder is already open, make it active.
2. Choose Create Folder from the File menu. A dialog box appears, asking you to name the new folder:



3. Type a name for the folder. You can use any characters, and the name can be as long as 32 characters.
4. Tap Create. A new folder appears in the current folder.

RENAMING A FILE OR FOLDER

The name that you give a folder or file is not necessarily permanent. You can change it at any time by using Rename from the File menu. First select the item (or items) you want to rename,

then choose Rename from the File menu. When the dialog box appears, enter the new name and tap Rename to apply the new name. If a file with the same name already exists, a dialog box asks you to type a different name.

If you've selected several items, you get a separate dialog box for each item. Tap Next to leave the name of the current item unchanged and go on to the next item. Tap Cancel to close the dialog box without renaming the remaining selected files.

Moving and Copying Files and Folders

The easiest way to move or copy a file or folder is to drag it to its destination. Dragging an item to a folder on the same disk *moves* the item to that folder, whereas dragging it to another disk *copies* the item. But you can always force a move by holding down the **Alt** key while you drag the item, or force a copy by holding down the **Ctrl** key.

You can tell what GeoManager is going to do by checking the pointer that you see as you drag the item:

POINTER

MEANING



A filled square below the arrow indicates that the item will be copied.



An unfilled square below the arrow indicates that the item will be moved.



The circle-slash indicates that you cannot move or copy the item to this destination.

To move or copy one or more items by dragging, first select the item or items you want to move or copy. Position the pen over one of the selected items and hold it down. The pointer indicates whether you are dragging a single item or several items. Drag the pen and position it over one of the following (depending on where you want to move or copy the items):

- A folder icon in a folder window. The items are placed in that folder.
- The Parent Folder button in a folder window. The items are moved to the parent folder, one level up in the folder hierarchy.
- One of the drive buttons at the bottom of the GeoManager window.

- One of the special folder buttons (Wastebasket, WORLD, DOCUMENT, or DOSROOM) at the bottom of the GeoManager window. The items are copied to the special folder.

When you move or copy more than one item, a dialog box appears, showing you the progress of the operation. If you want to halt the move or copy operation, tap Stop. The operation stops after finishing with the current file.

You can also move or copy an item by using Move or Copy from the File menu. A file selector appears when you choose either action. Use it to find and open the destination folder. Tap Move to move the items, or Copy to copy the items, into the folder.

DUPLICATING A FILE OR FOLDER

You can make copies (identical in all but their names) of both files and folders. For example, you may want to duplicate a document file before making extensive changes to it, in order to have a backup copy of the original.

To duplicate an item, first select the item (or items) you want to duplicate, then choose Duplicate from the File menu. When the dialog box appears, type in a name for the duplicate or the duplicate will be named "Copy of (file or folder name)." Tap Duplicate. A duplicate of the selected item appears in the same folder as the original.

If you're duplicating more than one item, the name of the next item appears in the dialog box and the whole process repeats. Tap Next to skip the current item altogether. Tap Cancel to close the dialog box without duplicating the remaining items.

DELETING A FILE OR FOLDER



There are times when you need to make room by deleting files or folders you no longer need. Deleting a file or folder with GeoManager is as simple as placing it in the Wastebasket. You can also delete files by choosing Delete from the File menu.

CAUTION

You cannot recover or retrieve items from the Wastebasket. When you place an item in the Wastebasket or use Delete, the item is permanently removed from the unit. Be careful to delete only those

files you know you will not need later. You can set up warnings (through the Options menu) to appear before you delete or throw away an item. For more information, see “Changing GeoManager Options” in this chapter.

To throw away an item by dragging it to the Wastebasket, first select the item (or items) you want to throw away; then position the pointer over the selected item (or one of the items, if several items are selected). Hold down the pen and drag the item to the Wastebasket. The item (or group of items) is deleted. If any applicable warnings are turned on, a dialog box appears, asking you to confirm the deletion. Tap Yes to delete the item. Tap Cancel to close the dialog box without deleting any items.

To delete an item using Delete, first select the item (or items) you want to delete; then choose Delete from the File menu. The item (or group of items) is deleted. If any applicable warnings are turned on, a dialog box appears, asking you to confirm the deletion. Tap Delete to delete the item. Tap Cancel to close the dialog box without deleting any items. Deleting a file removes the file from your disk, so be careful to delete only those files you know you will not need later.

VIEWING INFORMATION ABOUT FILES AND FOLDERS

You can view the following information about files and folder:

- GEOS and DOS names
- DOS location
- Creation and last modification dates and times
- Creator and file owner
- DOS and GEOS file types and attributes
- Size
- User notes

To view information about files or folders, select one or more files or folders, then choose File Information from the File menu. A submenu appears. Tap Get Info. A dialog box appears, displaying information about the first file or folder you selected.

The screenshot shows a dialog box titled "Get Info" with a black header bar. The content is as follows:

Name: Papers	
_DOS Name: PAPERS	
Path: D:[RAM-DISK] \GGEOWORKS\DOCUMENT	
Last Modification: 8:11:22 AM 10/25/93	
Created: 8:11:22 AM 10/25/93	
Attributes: D	File Owner: -
File Size: 29,473	File Type: Folder
Creator: -	Release: 0.0 0-0

User Notes:
Papers and Reports

At the bottom, there are four buttons: "OK", "Next", "Cancel", and "?".

You can enter notes about the file or folder here.

Name. This is the GEOS name for the file or folder.

DOS Name. This is the DOS name for the file or directory that corresponds to your GEOS file or folder. DOS names have up to eight characters, with a three-character extension. The DOS name of a file or folder (directory) may or may not correspond to the name that appears in GEOS.

Path. This is the location of the file.

Last Modification. This is the time and date of the last change that was made to the file or folder.

Created. This is the time and date when the file or folder was created.

Attributes. These are abbreviations for DOS or GEOS options that have been set on a file. If a particular attribute is attached to that file, it appears as one of the following letters:

- *Archive (A)*. This attribute is used as a flag by some DOS commands.
- *Directory (D)*. This indicates that the item is a DOS directory, which appears as a folder in GEOS.
- *Hidden (H)*. This indicates that DOS does not display the file or folder in a directory list.

- *Read-Only (R)*. This indicates that you cannot modify the file or folder.
- *System (S)*. This indicates that the item is a special-purpose file or folder for use by DOS.
- *Template (T)*. This indicates that the item is a GEOS application template. For more information about templates, see Chapter 3.

File Size. This is the number of bytes in the file or folder.

Creator. This is the name of the application with which a file was created.

File Owner. This shows the file owner's name if the computer is attached to a network that supports this field.

File Type. This identifies the system function of the file or folder. File types include the following:

- *Executable.* This indicates that the file is a GEOS application.
- *Data File.* This indicates that the file is a GEOS data file.
- *VM File.* This indicates that the file is a GEOS data file that uses the GEOS virtual memory storage system.
- *Folder.* This indicates that the item is a folder or DOS directory.
- *1.X VM File.* This indicates that the item is a VM data file from an older version of GEOS.
- *DOS File.* This indicates that the file is a DOS data file or application.

Release. This is an internal version number displayed for GEOS applications only. More recent releases of an application have higher release numbers than older releases.

User Notes. You can type your own notes in this text box. If the file is a GEOS file and it is not read-only, you can type comments about it in the User Notes area.

When you are finished with the dialog box, tap either OK or Cancel to close it. If you selected several items for which you wanted to view information, tap Next to see information about the next selected file or folder.

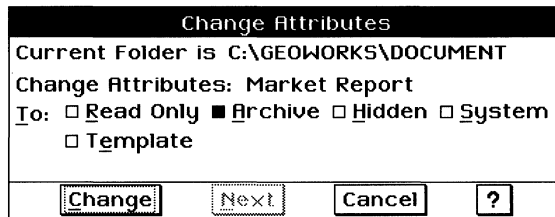
Changing File and Folder Attributes

You can set a number of options or *attributes* on files and folders that will alter the way you use them with DOS or GEOS applications. Only very experienced DOS and GEOS users should change these attributes.

There is one attribute you may find useful for protecting special files or folders. You can set the Read-Only attribute on a file or folder so that you can view it but not modify it in any way. You also cannot move it, but you can throw it away or delete it using Delete on the File menu.

To change file and folder attributes

1. Select one or more files or folders.
2. Choose File Information from the File menu. A submenu appears.
3. Tap Change Attributes. A dialog box appears:

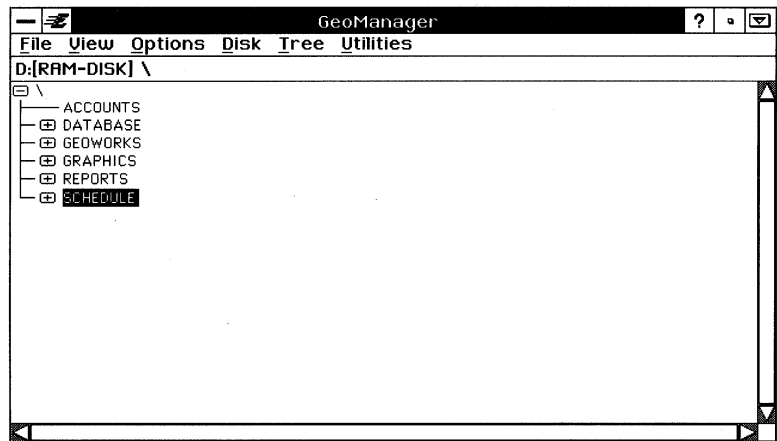


4. Change the attributes to your liking:
 - Archive (A).** This attribute is used as a flag by some DOS commands.
 - Directory (D).** This indicates that the item is a DOS directory, which appears as a folder in GEOS.
 - Hidden (H).** This indicates that DOS does not display the file or folder in a directory list.
 - Read-Only (R).** This indicates that you cannot modify the file or folder.
 - System (S).** This indicates that the item is a special-purpose file or folder for use by DOS.
 - Template (T).** This indicates that the item is a GEOS application template. For more information about templates, see Chapter 3.The attributes are applied or removed, depending on the choices you made.
5. Tap Change to apply the attributes to the file or folder.
or
Tap Next to change attributes on the next selected file or folder.

USING THE FOLDER TREE

One of the best ways to see the folder structure of a drive is to view the organization as an upside-down tree, with the root folder of the drive at the top of the tree. Folders directly under the root folder form the main branches, their subdirectories branch off from them, and so on. Using the Tree menu, you can see this structure on the screen.

Here is the Tree window for a typical drive:



You control how much of the folder tree is displayed by *expanding* or *collapsing* the branches (folders) of the tree. Expanding a folder displays its subdirectories; collapsing a folder hides them. A *plus sign* (+) indicates that a folder can be expanded. A *minus sign* (-) indicates that a folder is already expanded.

The Tree window does not show the files within a folder. You can, however, view a folder's files by double-tapping the folder name. You can also perform all folder management tasks (such as creating, copying, or moving folders) from within the Tree window. You can tap the folder name to select it, then choose the action you want from the File menu. Or just drag a folder from the Tree window to move or copy it into another folder.

To open the Tree window

- Choose Show Tree Window from the Tree menu. The tree for the current drive appears.

To expand all folders in the tree

- Choose Expand All from the Tree menu. This shows every folder (including those contained in other folders) on the current drive.

To expand the next folder level



- Tap the plus sign (+) next to the folder you want to expand.
or

Tap to select the name of the folder you want to expand (do not tap the plus or minus sign) and choose Expand One Level from the Tree menu.

To expand all folders within a branch

1. Tap to select the *name* of the folder you want to expand (do not tap the plus or minus sign).
2. Choose Expand Branch from the Tree menu. This shows you every folder (including those contained in other folders) inside the selected one.

To collapse all folders within a branch



- Tap the minus sign (-) next to the folder you want to collapse.
or

Tap the name of the folder you want to collapse (do not tap the plus or minus sign), and choose Collapse Branch from the Tree menu.

To display the folder tree for another drive

1. Choose Tree Drive from the Tree menu. A cascade menu appears, listing the drives connected to your unit.
2. Tap the drive you want to display. The Tree window changes to show the contents of the selected drive.

To return to the regular GeoManager window

- Choose Close from the Window Control menu. This closes the Tree window. GeoManager is automatically activated.

MANAGING DISK DRIVES

The Disk menu lets you perform the following disk management tasks:

- Copy a drive's contents onto another drive
- Format a disk so that it can be used
- Rename a disk
- Rescan any drives needed to update the contents of the open folders
- View the contents of a disk
- Connect to a remote computer

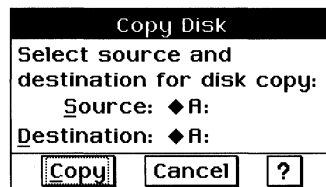
For more information on connecting to a remote computer, see Appendix C.

Copying a Floppy Disk

Copy Disk on the Disk menu lets you create an exact duplicate of a floppy disk. The original disk is called the *source disk*; the duplicate disk is called the *destination disk*. Because GeoManager makes an *exact* duplicate of the source disk, the destination disk must be the same size as the source disk. This means you must duplicate a 3.5-inch, high-density floppy disk onto a 3.5-inch, high-density floppy disk. Also, during a disk copy, GeoManager will write over *all* files that are on the destination disk. Be absolutely sure your destination disk contains nothing you want to keep.

To copy a floppy disk

1. If you have not already done so, label the source and destination disks so you do not inadvertently confuse them.
2. Choose Copy Disk from the Disk menu. A dialog box appears:



3. Tap to select the source drive and the destination drive. If you have only one drive, drive A appears as both the source and the

destination drive. (You can do this with only one disk drive, though you will have to exchange disks in the drive.)

4. Tap Copy.
5. GeoManager tells you whenever you need to insert a new disk. Follow the instructions on the screen.

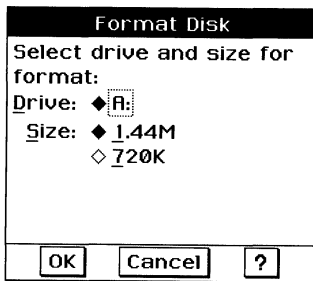
NOTE

If you have turned on Show Advanced Disk Options (in the Options menu), you will see Memory Usage in the Copy Disk dialog box. You can use this option to change the amount of memory that GeoManager uses for copying, which in turn changes the copy speed. Tap High for more memory and faster copying; tap Low for less memory and slower copying.

Formatting a Floppy Disk

Before you can use a disk, you must format it. To check whether a floppy disk is formatted or not, insert it into a floppy disk drive and tap the floppy disk drive button. If the disk needs to be formatted, a message appears, telling you that the disk is unreadable.

To format a floppy disk, choose Format Disk from the Disk menu. A dialog box appears:



Tap the drive that contains the floppy disk, then tap the option for the disk capacity you want, and then tap OK when you're done. Another dialog box appears, requesting a volume name for the disk. The disk name can be from 1 to 11 characters long. You can use numbers, letters, and blank spaces in the name. For example, you could type **FILE 12**. Type a name and tap Format.

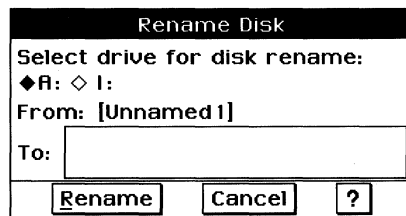
The disk is formatted according to the options you specified. A message tells you how the formatting is proceeding and when it is complete.

NOTE

If, for security reasons, you need to erase (“zero out”) every bit of information on a disk, select Show Advanced Disk Options from the Options menu *before* you format the disk. Then, when you format the disk, turn off the Quick Format option in the Format Disk dialog box. When Quick Format is turned off, it takes longer to format a disk, but every bit on the disk is erased.

Renaming a Disk

You can easily change the name of a floppy disk by choosing Rename Disk from the Disk menu. When you choose Rename Disk, a dialog box appears:



Tap the drive that contains the disk you want to rename. In the “To” area, type a new name for the disk. Tap Rename to rename the disk.

NOTE

You cannot rename drive C: because it is read-only.

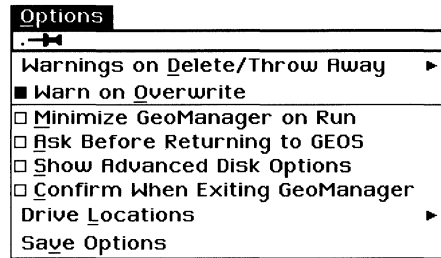
Rescanning

It is possible for a folder display to become out of date. This can happen, for example, if you view the contents of a floppy disk on the unit; eject it from the floppy disk drive; and then, using another machine, add a file to that floppy disk. When you reinsert the disk into the unit’s floppy disk drive, the GeoManager window does not automatically show the new file.

In this situation, GeoManager doesn’t know that the contents of a disk or drive have changed, so it doesn’t update the window. To remedy the situation, simply rescan the disk or drive by choosing Rescan Drives from the Disk menu. GeoManager rereads the contents of any disk or drive whose folders are displayed in the window you see, updating folder windows as needed.

CHANGING GEOMANAGER OPTIONS

The GeoManager options allow you to customize GeoManager to your liking. Once you are satisfied with your settings, save them so that they will apply the next time you start GeoManager. The GeoManager options appear on the Options menu:



To turn an option on or off, choose the option from the Options menu. If the option is currently *on*, choosing it turns it off; if the option is *off*, choosing it turns it on. When options are turned on, they are selected on the menu. For example, when a confirmation option is deselected (turned off) for a given action, no confirmation message appears when you perform the action.

NOTE

You should leave confirmation options *on*, since most of them warn you about actions that cannot be undone. Remember, when you delete or replace a file, you *cannot* undo the operation if you change your mind.

Warnings on Delete/Throw Away. Tap this to see a submenu with the following options. It is strongly recommended that you leave these options on. When they are off, you are not given a warning that you are about to delete a file or files.

- *Single Warning.* When *on*, this option displays a single confirmation message before you delete a group of files.
- *Warning for Each Item.* When *on*, this option displays a confirmation message before you delete each file in a group.
- *Read-Only Files.* When *on*, this option displays a confirmation message before you delete a read-only file. For more information, see “Changing File and Folder Attributes” in this chapter.
- *GEOS Executable Files.* When *on*, this option displays a confirmation message before you delete a GEOS application.

Warn on Overwrite. When *on*, this displays a confirmation message before you copy or move a file to a folder that already contains another file with the same name. When this option is *off*, you risk overwriting files in the destination folder.

Minimize GeoManager on Run. When *on*, this option causes GeoManager to shrink to an icon when you run another application. With this option *off*, the GeoManager window remains open when you run another application.

Ask Before Returning to GEOS. This only applies when you run a DOS program from GeoManager. When it is *on*, you must press **Enter** when you exit from a DOS application before GEOS will start up again. (At this point, you can return to DOS instead of starting GEOS.)

Show Advanced Disk Options. Turn this option *on* to see advanced options in the Copy Disk and Format Disk dialog boxes. For more information, see “Managing Disk Drives” in this chapter.

Confirm When Exiting GeoManager. When *on*, a dialog appears when you exit GeoManager. The message gives you the option to simply exit GeoManager, exit to DOS, or cancel. Note that this option does *not* eliminate the “Are you sure you want to exit?” confirmation dialog box that appears when you exit to DOS.

Drive Locations. This allows you to move the drive buttons around GeoManager, or hide them. There are three options:

- *In Tool Area.* This is the usual location for the drive buttons. The buttons are immovably placed at the bottom of the GeoManager window.
- *Floating.* The drive buttons appear in a separate window that you can move and resize independent of the GeoManager window.
- *Hidden.* Hides the drive buttons from view. You can see the drive buttons again by choosing either of the other two drive location options.

STARTING DOS APPLICATIONS

You can start a DOS application from GEOS by double-tapping either the icon that represents the DOS application program or a *launcher icon* for the program. A launcher icon is an icon that you create so that you can start the application from a more accessible folder, such as the DOSROOM folder. For more information about

DOS launcher icons, see “Creating a DOS Application Launcher” in this chapter.

WARNING

Do not start a DOS application unless you have an external keyboard attached to your unit. If you start a DOS application that requires a keyboard, and you do not have a keyboard, you must restart the unit to return to GeoManager. To restart the unit, press the restart button on the front of the unit. To connect an external keyboard, turn the unit off, connect the keyboard, and then turn the unit on again.

To start a DOS application or batch file directly, open the folder that contains the application or batch file you want to launch. Double-tap the file’s icon or select the file and choose Open from the File menu.

To start a DOS application using its launcher icon, double-tap the launcher icon (usually in the DOSROOM folder). Depending on the launcher’s settings, you may have to respond to some dialog boxes.

In either case, GEOS temporarily shuts down while the DOS application or batch file runs. When you quit the DOS application, or the batch file finishes, GEOS starts up again automatically, exactly as it was before. (If you used a launcher icon, you may see a message box before GEOS starts up again that lets you either return to GEOS or go directly to DOS.)

CREATING A DOS APPLICATION LAUNCHER

If you often use DOS applications or batch files, you will find it helpful to create launchers for them. A launcher is a custom icon that corresponds to a specific DOS program; when you double-tap the icon, GEOS shuts down and runs the program.

Unlike the GEOS applications in the WORLD folder, DOS applications are rarely collected into one folder on a drive — each DOS application usually has its own separate folder. A DOS application often will not work unless it remains in its folder, surrounded by other specific files. When you want to start the application, you have to open folder after folder until you have located the program’s icon.

If you create a launcher for the application, however, you can place the launcher in a top-level folder, such as WORLD or DOSROOM, where it is readily available. To start the application,

simply open the folder where you have put the launcher icon, then double-tap the icon.

To create a DOS application launcher

1. Choose Create Launcher from the Utilities menu. A file selector appears.
2. Using the file selector, select the name of the executable file for the DOS application. The name of a DOS executable is usually the command you type (at the DOS prompt) to run the program, plus a .EXE, .BAT, or .COM file extension.
3. Tap Use This File. A dialog box appears:

DOS Launcher Settings

Icon

Launcher Name: geos

Prompt For A Single File? Yes No

Command Line Options

No Command Line Options
 Ask For Options Each Time
 Specify Options Now

Options:

Confirm Arguments Before Running? Yes No

Ask Before Returning? Yes No

Place Launcher in: DOSROOM Folder WORLD Folder

Use These Settings Options... Cancel ?

4. Choose the icon you would like to use for the launcher by tapping to select one of the icons in the Icon list. Use the scroll bar to see more icons in the list.
5. Type the name that you want to appear under the icon in GeoManager. The default name is the name of the DOS executable file without its extension. The name under the icon can be as long as 32 characters.
6. Change these options if you would like to customize the launching process:

Prompt for a single file? Some programs allow you to specify a file you'd like to open in the command line. Turn this option on if

you would like to specify a file using a file selector. When the option is on, GEOS presents a file selector when you double-tap the launcher icon. The path name for the file you select is placed on the command line along with the other options.

No Command Line Options. This is the default setting. Tap this if you want GEOS to run the DOS application without any command line options.

Ask For Options Each Time. Tap this button if you want GEOS to prompt you for command line options whenever you launch the DOS application. Also, when you tap this button, the Options text field becomes available. If you want, you can type options in this text field. Text you type in this field appears in a dialog box whenever you start the application. You can change the command line options in the dialog box.

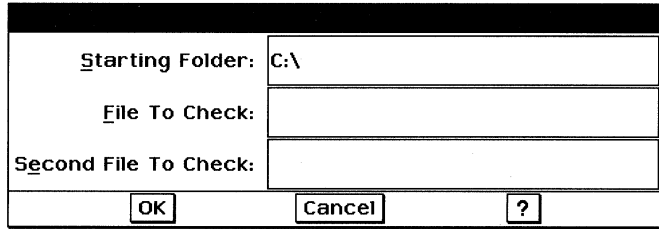
Specify Options Now. Tap this if you want GEOS to use the same command line options every time. When you tap this button, the Options text field becomes available. Type the options you would like in this field.

Confirm Arguments Before Running. When this option is turned on, a dialog box appears just before GeoManager starts the DOS application. All the command line options you have specified appear in the text field of this dialog box. You can check the options, and edit them if you like, before the command is carried out. When this option is turned off, the dialog box does not appear.

Ask Before Returning. When this option is turned on, you are presented with a message after you exit the DOS application, asking if you want to return to GEOS. When this option is turned off, no message appears — you are returned immediately to GEOS as soon as you exit the DOS application.

7. Select the place where you want the launcher icon to appear when you are finished. To put the icon in the WORLD folder, tap the WORLD button. To put the icon in the DOSROOM folder, tap the DOSROOM button.

8. Tap the Options button if you would like to further customize the launching process. A dialog box appears:



Starting Folder:	C:\	
File To Check:		
Second File To Check:		
OK	Cancel	?

Change the options to your liking:

Starting Folder. Type the path of the folder where you would like the DOS application to save its files. If you type something here, your application will act as if you had started the application from this folder.

File To Check. Type the path name of a file. GeoManager checks to make sure this file exists before attempting to run the application. This file is often a batch file (ending in the extension .BAT). This option is rarely needed.

Second File To Check. Type the name of another DOS file. GeoManager checks to make sure this file exists before attempting to run the application. Typically, this file is an executable (ending in the extension .COM or .EXE) contained in the batch file mentioned above. This option is rarely needed.

9. Tap OK when you are finished with the options. In the Create Launcher dialog box, tap Use These Settings when you are satisfied with the current settings. The dialog box disappears and the DOS launcher icon appears in the folder you specified.

To change a DOS launcher's settings, select the icon for the DOS launcher you want to change and choose Edit Launcher from the Utilities menu. A dialog box appears with the current settings; change them to your liking. (This dialog box is identical to the DOS Launcher Settings dialog box.) Tap Use These Settings when you are satisfied.

To remove a DOS application launcher, drag the launcher icon onto the Wastebasket. The launcher icon is deleted. Note that the corresponding DOS application is *not* deleted.

EXITING GEOMANAGER

Exit (on the File menu) allows you to exit from GeoManager, and then closes the GeoManager window. Normally you never exit GeoManager, but if you are running several additional applications and notice that the unit is running slowly, you can exit GeoManager to free up some memory on the unit. (You also exit GeoManager when you use Exit to DOS. For more information on exiting to DOS, see “Exiting to DOS” in this chapter.)

To exit GeoManager, choose Exit from the File menu. The GeoManager window closes, and you exit GeoManager.

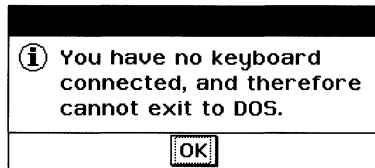
CAUTION

You cannot exit GeoManager unless at least one other application is open. If you try to exit GeoManager when all other applications are closed, the unit automatically reactivates GeoManager.

To restart GeoManager, choose Go to GeoManager from the Express menu of any application. GeoManager restarts.

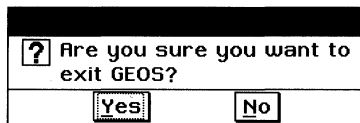
EXITING TO DOS

Exit to DOS (on the Express menu) allows you to exit GeoManager and go to DOS. You can only exit to DOS if you have an external keyboard attached.



To exit to DOS

- Choose Exit to DOS from the Express menu. A dialog box appears:



Tap Yes to exit to DOS. Tap No to cancel and return to GeoManager.

To return to GEOS from DOS

- At the DOS prompt, type **GEOS** and press **Enter**.

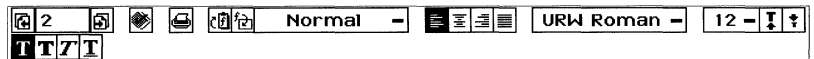
The following are the standard Tool Bars:

- *Style tool bar*. For changing the format of text.
- *Function tool bar*. For working with documents (opening, closing, saving), using the clipboard (cutting, copying, and pasting), and other functions.

For a general overview of tool bars and information on customizing tool bars, see Chapter 3.

THE STYLE TOOL BAR

The Style tool bar allows you to change the text characteristics — font, text size, and style. In addition, you can use the tools on the Style tool bar as shortcuts to perform common word processing functions.



The following list shows each tool and describes the action it performs.



Scrolls to the top of the previous page of the document.



Shows the current page number. If you want to go to a specific page, double tap this number and enter the page number you want.



Scrolls to the top of the next page of the document.



Starts the spell checker, displaying the dialog box so that you can specify the options you need.



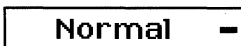
Prints the current document.



Stores the style definition of the current paragraph so that you can use it in the future by clicking Recall Style.



Recalls the style stored by Store Style.



Displays the style for the current paragraph. To change the style, click the button, then select the style you want from the drop-down list.



Aligns the left side of the current paragraph text with the Left Indent marker.



Centers the current paragraph text between the Left and Right Indent markers.



Aligns the right side of the current paragraph text with the Right Indent marker.



Aligns both sides of the paragraph text with both the Right and Left Indent markers.

URW Roman -

Displays the font of the selected characters. To change the font, click the button, then select the font you want from the drop-down list.



Changes the selected text to plain text style.



Changes the selected text to bold text style.



Changes the selected text to italic text style.



Changes the selected text to underlined text style.

12 -

Displays the size of the selected text. To change the text size, click the button then select the size you want from the drop-down list.



Increases the size of the selected text.



Decreases the size of the selected text.

THE FUNCTION TOOL BAR

The Function tool bar contains tools to perform file functions, such as opening, closing, and saving files. It also contains editing tools and zooming tools. The tools available on the Function tool bar vary depending on the application. This section describes the tools common to the applications that have the Function tool bar.



The following list shows each tool and describes the action it performs:



Creates a new document.

















Makes a copy of the current document.



Displays the Find and Replace dialog box to enable you to find and, if you want, change text or formatting.



Reverses the last editing action.

-  Removes the selection from the document and places it on the clipboard.
-  Places a copy of the selection on the Clipboard without removing it from the document.
-  Pastes the contents of the Clipboard into the current document at the insertion point.
-  Selects all text.
-  Deletes the selection.
-  Displays the document at its normal size.
-  Displays the document at a larger size.
-  Displays the document at a smaller size.
-  Redraws the screen.
-  Turns on hyphenation for the selected paragraph. Click again to turn off hyphenation.
-  Adds no extra line space between each row of text in the paragraph containing the selection.
-  Adds a half a line space between each row of text in the paragraph containing the selection.
-  Adds a whole line space between each row of text in the paragraph containing the selection.
-  Adds two line spaces between each row of text in the paragraph containing the selection.

A function is represented by a *keyword* followed by *arguments* enclosed in parentheses. The function *returns* a value based on the arguments you enter. For example, in the expression SQRT(144), SQRT is the keyword for the square root function and 144 is the argument. This function returns 12, the square root of 144.

This appendix describes the math and database functions you can use in formulas in the spreadsheet cells in GeoCalc and the computed fields in GeoFile. It includes the following information:

- Rules governing arguments
- A quick reference to all functions, organized by function type
- A full-function reference, organized alphabetically

This appendix assumes you are familiar with the information covered in both Chapter 1 and Chapter 3, which provide an overview of the skills you need to use any GEOS application. For information about using functions in GeoCalc, see Chapter 6. For information about using functions in GeoFile, see Chapter 7.

CAUTION

GeoCalc, GeoFile, and Calculator all use floating-point math. Though floating point calculations have benefits such as speed, they are inherently inaccurate. All spreadsheets and calculators based on floating-point math produce errors in the 17th or 18th significant digit. Though this often is not detectable, the errors become apparent in some calculations, especially financial functions such as IRR and NPV. GeoCalc, GeoFile, and Calculator all adhere to the IEEE 754 standards for floating-point calculations. However, you should consult a financial specialist before you invest significant sums of money based on floating-point calculations from any source.

ARGUMENT RULES

The following rules apply to using arguments in functions:

- You can use numbers, strings, addresses, ranges, or cell and range names in GeoCalc. You can use numbers, strings, and field names in GeoFile.
- You must enclose text string arguments in quotation marks.
- You must specify interest rates as decimal values and they must be expressed in the same time units as the term. For example, payments that are monthly require a monthly interest rate.

- You must express trigonometric angle arguments in radians. If you want to convert degrees to radians, use the RADIANS() function.
- Some trigonometric functions return radians. If you need the returned value expressed in degrees, use the DEGREES() function.

For a description of each function and its arguments, see “Function Descriptions” in this appendix.

FUNCTIONS AVAILABLE IN GEOCALC ONLY

You can use the following functions only in GeoCalc:

- CHOOSE
- COLS
- COUNT
- FILENAME
- HLOOKUP
- INDEX
- IRR
- N
- NPV
- PAGE
- PAGES
- ROWS
- VLOOKUP

If you try to use any of these functions in GeoFile, you will see an error message.

FUNCTION QUICK REFERENCE

This section gives an overview of the built-in functions, grouped by category. For more detailed descriptions of the functions and their arguments, see “Function Descriptions” in this appendix.

Financial Functions

The arguments for financial functions are either numbers or field names or addresses of cells that contain numbers. When the argument is the interest rate, express it as its actual value (for example, enter **.07** or **7%** rather than **7** to indicate 7%). Be certain to specify the same units for the term and the interest. If the interest is monthly, the term is also monthly. The results of these calculations are always numbers:

CTERM	Number of compounding periods required for an investment to grow to a future value.
DDB	Double-declining balance depreciation of an asset.
FV	Future value of an investment.
IRR*	Internal rate of return of an investment.
NPV*	Net present value.
PMT	Payment of loan.
PV	Present value.
RATE	Required interest rate to reach a future value.
SLN	Straight-line depreciation.
SYD	Accelerated depreciation of an asset, using the sum-of-years' digits method.
TERM	Required number of payment periods to reach a future value.

* Available for use in GeoCalc only.

Information Functions

The information functions return information about a cell, a range of cells, or a field.

CHOOSE*	Chooses a value from a list.
COLS*	Number of columns in a range.
COUNT*	The number of items in a list — that is, the number of non-blank cells in a range.
ERR	Causes the formula to evaluate to the #ERROR# message.
HLOOKUP*	Returns a value from a horizontal lookup table.
INDEX*	Returns the value of the cell at the intersection of a row and column.
ISERR	Returns 1 if an expression is an error or 0 if it is not.
ISNUMBER	Returns 1 if an expression is a number or 0 if it is not.
ISSTRING	Returns 1 if an expression is a string or 0 if it is not.
N*	Returns the value from the first cell in a range.
NA	Causes the formula to evaluate to the #N/A# (Not Available) error.
ROWS*	Number of rows in a range.
VLOOKUP*	Returns a value from a vertical lookup table.

* Available for use in GeoCalc only

Logical Functions

The logical functions evaluate relationships and return “true” or “false” results. True = 1 (or non-zero values) and false = 0.

AND	Logical AND.
FALSE	Returns 0.
IF	Evaluates a condition, returning one specified value if it is true and another if it is false.
OR	Logical OR.
TRUE	Returns 1.

Mathematical Functions

The arguments for mathematical functions are either numbers or field names, or addresses of cells that contain numbers. The results of these calculations are always numbers.

ABS	Absolute value of a number.
EXP	Value of e (the mathematical constant) raised to the n^{th} power.
FACT	Factorial of a number.
INT	Value rounded to the next lowest integer.
LN	Natural logarithm of a number.
LOG	Logarithm of a number.
MOD	Modulus, the remainder of a division calculation.
PRODUCT	Result of multiplication of a list of numbers.
ROUND	Value rounded to the specified number of decimal places.
SQRT	Square root of a number.
SUM	Total of a list of numbers.
TRUNC	The integer portion (without rounding) of a number.

Print Functions

The print functions return the name of the file, the current page, and the number of pages for inclusion in headers and footers when printing documents in GeoCalc. The print functions are not available for use in GeoFile.

FILENAME	Returns the file name.
PAGE	Returns the current page number.
PAGES	Returns the total number of pages.

Statistical Functions

The arguments for statistical functions are either numbers or field names, or addresses of cells that contain numbers. The results of these calculations are always numbers.

AVG	Average of the values in a list.
MAX	Largest number in a list.
MIN	Smallest number in a list.

RANDOM	Random number between 0 and 1.
RANDOMN	Random number between 0 and a number you specify.
STD	Standard deviation of the values in a list.
STDP	Standard deviation of a population.
VAR	Simple variance of sample population.
VARP	Population variance of the values in a list.

String Functions

String arguments must be enclosed in quotation marks.

A *string* is a series of characters. The string functions extract text (including numbers) or return numbers based on text. For example, you can extract the last four digits of a stock number that might identify the manufacturer of a product.

GeoCalc and GeoFile use GEOS code numbers internally to represent each character. The CHAR and CODE string functions convert GEOS codes to characters and vice versa.

CHAR	Converts a GEOS code number to characters.
CLEAN	Strips unprintable characters from a string.
CODE	Converts a character to its GEOS code number.
EXACT	Compares two strings for an exact match.
FIND	Searches within a string for a specific string.
LEFT	Returns the leftmost characters in a string.
LENGTH	Returns the number of characters in a string.
LOWER	Converts uppercase characters to lowercase.
MID	Returns specified characters within a string.
PROPER	Capitalizes the first letter of each word in a string.
REPEAT	Repeats a string a specified number of times.
REPLACE	Replaces matching characters in a string with a specified string.
RIGHT	Returns the rightmost characters in a string.
STRING	Converts numbers to a string.
TRIM	Removes leading, trailing, and extra internal spaces in a string.
UPPER	Converts a string to uppercase.
VALUE	Converts a number in string form to a value.

Time and Date Functions

GeoCalc and GeoFile use serial numbers to represent times and dates. The serial numbers begin with 1 = January 1, 1900. The DATE and DATEVALUE functions return the serial number for a given date. These functions are most useful in formulas in which the time and date are calculated rather than entered as a constant.

DATE	Converts a numeric date (day, month, year) to the GeoCalc and GeoFile serial number format.
DATEVALUE	Converts a date (in text form) to the GeoCalc and GeoFile serial number format.
DAY	Extracts the day from the GeoCalc and GeoFile serial number format.
HOUR	Extracts the hour from the GeoCalc and GeoFile serial number format.
MINUTE	Extracts the minute from the GeoCalc and GeoFile serial number format.
MONTH	Extracts the month from the GeoCalc and GeoFile serial number format.
NOW	Returns the current date (month, day, and year) and time (hour, minute, and second). No arguments are necessary.
SECOND	Extracts the second from the GeoCalc and GeoFile serial number format.
TIME	Converts a numerical time (hour, minute, and second) to the GeoCalc and GeoFile serial number format.
TIMEVALUE	Converts a time (in text format) to the GeoCalc and GeoFile serial number format.
TODAY	Returns the current date (month, day, and year) from the GeoCalc and GeoFile serial number format.
WEEKDAY	Returns the number for the day of the week from the GeoCalc and GeoFile serial number format (Sunday = 1, Monday = 2, and so on).
YEAR	Returns the current year from the GeoCalc and GeoFile serial number format.

Trigonometric Functions

The arguments for trigonometric functions are either numbers or field names, or addresses of cells that contain numbers. The results of these calculations are always numbers.

ACOS	Returns the angle that is the arccosine of a number.
ACOSH	Returns the angle that is the hyperbolic arccosine of a number.
ASIN	Returns the angle that is the arcsine of a number.
ASINH	Returns the angle that is the hyperbolic arcsine of a number
ATAN	Returns the angle that is the arctangent of a number.
ATANH	Returns the angle that is the hyperbolic arctangent of a number.
ATAN2	Returns the arctangent of the angle determined by the coordinates (x,y) .
COS	Returns the cosine of an angle.
COSH	Returns the hyperbolic cosine of an angle.
DEGREES	Converts radians to degrees.
PI	Value of π .
RADIANS	Converts degrees to radians.
SIN	Returns the sine of an angle.
SINH	Returns the hyperbolic sine of an angle.
TAN	Returns the tangent of an angle.
TANH	Returns the hyperbolic tangent of an angle.

FUNCTION DESCRIPTIONS

The following alphabetical list describes each function, including its arguments, and provides one or two simple examples for each.

ABS(*value*)

This mathematical function returns the absolute value of the number represented by *value*. *Value* can be a cell or field reference.

EXAMPLES

ABS(12) *returns* 12.

ABS(-12) *returns* 12.

ACOS(*value*)

This trigonometric function returns the arccosine, the angle for which the cosine equals *value*. *Value* can be a cell or field reference. *Value* must be from -1 to 1 .

EXAMPLE

ACOS(.50) returns 1.05 radians.

ACOSH(*value*)

This trigonometric function returns the hyperbolic arccosine of *value*. *Value* can be a cell or field reference. *Value* must be equal to or greater than 1 .

EXAMPLE

ACOSH(5) returns 2.30.

AND(*logical1,logical2,...*)

This logical function returns 1 if all of the arguments are true or 0 if any of the arguments is false. This function is particularly useful with IF statements.

You can have as many *logical* arguments as you want. *Logical* arguments can be either logical values or arrays, or references to cells or fields that contain logical values. Text is ignored. If the argument does not contain a logical value, AND returns the #TYPE# error. See also OR.

EXAMPLES

AND(1+3=4,3+1=3) returns 0.

AND(1+3=4,3+1=4) returns 1.

IF(AND(A1>B1,A1<C1),100,200) returns 100 if A1 is greater than B1 and less than C1. Otherwise, it returns 200.

ASIN(*value*)

This trigonometric function returns the arcsine of *value*. The angle is between $-\pi/2$ and $\pi/2$ radians. *Value* must be from -1 to 1 .

EXAMPLE

ASIN(.75) returns 0.85 radians.

ASINH(value)

This trigonometric function returns the hyperbolic arcsine of *value*.

EXAMPLES

ASINH(10) returns 2.99.

ASINH(15) returns 3.40.

ATAN(value)

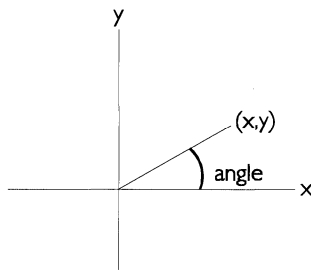
This trigonometric function returns the arctangent of *value*.

EXAMPLE

ATAN(90) returns 1.56 radians.

ATAN2(x,y)

This trigonometric function returns the arctangent of *x,y* — the argument representing an *x,y* coordinate. The arctangent is the angle formed by the *x*-axis and a line passing through the origin (0,0) and the specified *x,y* coordinate. The coordinates *x,y* can be in any quadrant.



The angle is returned in radians from $-\pi/2$ to $\pi/2$. A positive result indicates a counterclockwise angle from the *x*-axis.

You cannot use the origin for the *x,y* argument. If you use 0,0 for *x,y*, the #VALUE# error appears in the cell.

EXAMPLE

ATAN2(1.5,2.0) *returns 0.93 radians.*

ATANH(value)

This trigonometric function returns the hyperbolic arctangent of *value*.

EXAMPLE

ATANH(0.75) *returns 0.97.*

AVG(value1,value2,...)

This statistical function returns the arithmetic mean of a list of *values*. You can use as many arguments as you want, including values, ranges, addresses, named cells, named ranges, and field names for arguments. AVG treats empty cells as zero values. You cannot average cells or fields containing text.

EXAMPLE

AVG(89,94,91,98) *returns 93.*

CHAR(value)

This string function returns the GEOS character code corresponding to *value*. You can use values between 32 and 255. The function of CHAR() is the inverse of that of CODE(). If the value is out of the 32–255 range, CHAR returns a #VALUE# error.

EXAMPLES

CHAR(65) *returns A.*

CHAR(68) *returns D.*

CHOOSE(*index,value1,value2,...*)

This information function returns the n^{th} value in the list of arguments, where the first value is 0 and *index* indicates the n^{th} value. *Value* can be from 0 to $n-1$. You can use as many *values* as you want. *Index* and *values* can be numbers, cell references, defined names, text, formulas, or functions. For example, if the *values* are the months of the year and the *index* is 4, then CHOOSE returns May. This function returns an error if your index is less than zero or greater than the number of values.

EXAMPLES

CHOOSE(5,A1, A2, A3, A4, A5, A6) *returns* the contents of cell A6.
CHOOSE(3,"vanilla","chocolate","toasted almond", "peach")
returns peach.

CLEAN(*string*)

This string function removes control characters from *string*. This is useful for removing nonprintable characters from imported text.

In the following example, CHAR(13) is the return character, which neither prints nor displays on screen.

EXAMPLE

CLEAN(CHAR(13)&"text") *returns* text.

CODE(*string*)

This string function returns the GEOS code for the first character in *string*.

EXAMPLES

CODE("A") *returns* 65.
CODE("D") *returns* 68.
CODE("Now is the time") *returns* 78.

COLS(*range*)

This information function returns the number of columns in *range*. COLS is not available for use in GeoFile.

NOTE

Do not place the COLS function in the range of columns it is intended to count.

EXAMPLE

COLS(B2:F65) *returns* 5.

COS(*angle*)

This trigonometric function returns the cosine of *angle*. You must express *angle* in radians. If you know an angle in degrees, you can use the RADIANS function to convert it to radians.

EXAMPLES

COS(1.5) *returns* 0.07.

COS(RADIANS(40)) *returns* 0.77.

COSH(*angle*)

This trigonometric function returns the hyperbolic cosine of *value*.

EXAMPLE

COSH(2) *returns* 3.76.

COUNT(*value1,value2,...*)

This information function returns the number of arguments. *Values* can be numbers, null, logical values, or dates. In GeoFile, the arguments can only be a comma-separated list. *Values* referring to blank cells or fields are not counted.

EXAMPLES

COUNT(23,42,65,23) *returns* 4.

COUNT(B3:B6) *returns* the number of nonblank cells in the range.

CTERM(*interest,future_value,present_value*)

This financial function returns the number of compound periods required for an investment to grow to a future value. *Interest* is the

interest rate for the calculation. *Future_value* is the proposed value of the asset. *Present_value* is the current value of the asset.

EXAMPLE

CTERM(.05,1000,500) *returns 14.2 periods.*

DATE(year,month,day)

Notice that the year argument appears before the month and day arguments.

This date function returns the serial number for the date *year*, *month*, *day*. *Year* can be a value from 1900 to 2099. For the years 1900 to 1999, you can enter just the last two digits — for example **96** rather than **1996**. *Month* can be a value from 1 to 12. *Day* can be a value from 1 to 31, depending on the number of days in *month*. If you use *year*, *month*, or *day* values that are out of range, DATE returns #VALUE#.

EXAMPLES

DATE(93,01,20) *returns 33988.*

DATE(93,01,32) *returns #VALUE# because the day value 32 is out of bounds.*

DATEVALUE(string)

This date function converts a text date into a serial number.

EXAMPLES

DATEVALUE("1/20/93") *returns 33988.*

DATEVALUE("Jan 20, 1993") *returns 33988.*

DAY(date_value)

This date function returns the day of the month from *date_value*. *Date_value* must be a serial number. Use DATEVALUE to convert dates entered as labels.

EXAMPLES

DAY(33988) *returns 20.*

DAY(DATEVALUE("1/20/93")) *returns 20.*

DDB(*cost,salvage,life,period*)

This financial function calculates the depreciation of an asset, using the double-declining balance method. Depreciation is highest in the first period and decreases in successive periods. Each year's depreciation is a constant percent of the *book value* of the asset and continues until the book value equals the salvage value. *Book value* is the value of the asset in any given period, taking depreciation into account. *Cost* is the original cost of the asset. *Salvage* is the ending value of the asset. *Life* is the duration of the depreciation, using the same units as *period*. *Period* is the time period for which the depreciation calculation occurs.

$$\text{DDB} = \text{cost} - \text{salvage} - \text{total depreciation from previous periods} * 2 / \text{life}$$

NOTE

This is not a cumulative calculation.

EXAMPLES

DDB(5000,250,60,1) returns 166.67, the depreciation during the first month.

DDB(5000,250,60,2) returns 161.11, the depreciation during the second month.

DDB(5000,250,5,1) returns 2000, the depreciation during the first year.

ERR()

This information function causes the formula to evaluate to #ERROR# and stop. This is particularly useful with IF functions to say, "If the condition is true, then return #ERROR#." You must include the empty parentheses.

EXAMPLE

IF(A5>100,ERR(),A5) returns #ERROR# if the value in A5 is greater than 100; otherwise, it returns the value in A5.

EXACT(*string1,string2*)

This string function compares two strings to determine whether they match exactly. EXACT is case-sensitive, meaning that "April" and "april" are not considered an exact match. If *string1* and

string2 match, EXACT returns 1; if they do not match, EXACT returns 0. This action is similar to the equal sign except that the = is not case-sensitive. This is particularly useful with IF statements.

EXAMPLES

EXACT("iteration","iteration") *returns 1.*

EXACT("iteration","Iteration") *returns 0.*

IF(EXACT(A5,"Hotel"),1000,0) *returns 1000 if A5 contains "Hotel".*

IF(A5="Hotel",1000,0) *returns 1000 if A5 contains "Hotel" or "hotel".*

EXP(value)

This mathematical function returns e raised to the power of *value*, where e is approximately equal to 2.718, the base of the natural logarithm.

EXAMPLE

EXP(2) *returns e^2 or 7.39.*

FACT(value)

This mathematical function returns the factorial of *value*. The factorial is equal to $1 * 2 * 3 \dots * value$, where *value* is a positive integer. If *value* has a fractional portion, FACT calculates the factorial for the integer portion of *value*.

EXAMPLES

FACT(4) *returns 24.*

FACT(2.5) *returns 2.*

FALSE()

This logical function returns a zero. You can use FALSE in a calculation or enter it directly into a cell or field where it is interpreted as a logical value by GeoCalc or GeoFile. You must include the empty parentheses. See also TRUE.

EXAMPLE

IF(A5>100, TRUE(),FALSE()) *returns 0 if A5<100.*

FILENAME()

This print function returns the file name of the current file for inclusion in a GeoCalc header or footer. You must include the empty parentheses. FILENAME is not available for use in GeoFile.

FIND(*substring*,*string*,*start*)

This string function finds the *substring* within the entire *string* and returns the numeric position of the first character of the *substring*. You can specify the numeric position of the starting character for the search with the *start* argument. The first character in the string is in position 0.

EXAMPLES

FIND("all","Now is the time for all good men",0) returns 20.

FIND("i","Mississippi",3) returns 4.

FV(*payments*,*interest*,*term*)

This financial function returns the future value of a stream of regularly invested payments. For example, if you save \$250 every month, will that pay your child's college education costs of \$40,000 in 10 years? *Payments* is the payment made each period. *Interest* is the interest rate for the same time period as *payments*. *Term* is the total number of payments that are made. The following is the formula used by the FV function:

Be careful to enter the interest rate for the same time period as the payments.

$$FV = \text{payment} \times \left[\frac{(1 + \text{rate})^{\text{term}} - 1}{\text{rate}} \right]$$

EXAMPLE

FV(250,.05/12,120) returns 38820.57.

HLOOKUP(*value*,*range*,*offset*)

This information function allows you to use a spreadsheet table like a database. You can enter values in the table and then extract information from the rows of the table according to your specifications. HLOOKUP extracts information from the horizontal rows in the same way as VLOOKUP extracts information from vertical columns. HLOOKUP and VLOOKUP assume the entries in

the first row or column are sorted. They return the entry corresponding to the nearest ascending value that is not greater than *value*. These functions are useful when you have several alternatives to “look up,” such as tax rates, commissions, or discounts.

HLOOKUP is not available for use in GeoFile.

Value is the value to be found in the first row of the table. *Value* can be a number, an address, or a text string. The first row of the table needs to be sorted. *Range* is the address of the range that defines the table. *Offset* defines the row that contains the information. The offset of the top row is zero.

EXAMPLE

	A	B	C	D	E
1		Claudia	Jane	Kyle	Steve
2	1Q	12.00	14.00	16.00	15.00
3	2Q	10.00	11.00	8.00	6.00
4	3Q	9.00	13.00	8.00	19.00
5	4Q	13.00	8.00	17.00	5.00

HLOOKUP("Jane",B1:E5,2) returns 11.

HOOR(*time_value*)

This time function returns the hour of the day from the *time_value* serial number. You can use TIMEVALUE to convert text time. The hour is an integer from 0 to 23. Time serial numbers are decimal fractions and can be part of a date/time combination. If there is no fractional part, the time is midnight.

EXAMPLES

HOOR(29453.5) returns 12.

HOOR(TIMEVALUE("11:58PM")) returns 23.

IF(*logical,true_value,false_value*)

This logical function creates a conditional statement that says, “If this is true, then do A; otherwise, do B.” For example, IF(B12=C12,50,25) means “If the value in B12 equals that in C12, then display 50; otherwise, display 25.” For more detailed information about the IF function, see Chapter 6. *Logical* is any expression or value that can be evaluated as true or false.

True_value is the value returned if the logical expression is true.
False_value is the value returned if the logical expression is false.

EXAMPLES

IF(B13=500,50,-50) returns 50 if B13 contains 500. Otherwise, the expression returns -50.

IF(D14 = "warm","red","yellow") returns red if D14 contains "warm". Otherwise, the expression returns yellow.

IF(A1>A2,"Ascending","Descending") returns Ascending if A1 is greater than A2. Otherwise the expression returns Descending.

INDEX(range,column_offset,row_offset)

This information function returns the data in the cell at the intersection of the column and row offsets. The top row is 0,0.

INDEX is not available for use in GeoFile.

Range is the address defining the range. *Column_offset* defines the column offset in the specified range. *Row_offset* defines the row offset in the specified range.

EXAMPLE

INDEX(B1:H24,5,6) returns the contents of G7.

INT(value)

This mathematical function returns the integer portion of *value*, rounding down to the nearest integer. *Value* can be a positive or negative number or a reference to a cell or field that contains a number.

EXAMPLES

INT(123.456) returns 123.

INT(123.567) returns 123.

INT(-123) returns -123.

INT(-123.456) returns -124.

IRR(guess,range)

This financial function calculates the internal rate of return on a series of irregular payments at regular intervals. It returns the nominal rate when you know the initial investment and know you will get regular payments of varying amounts. (NPV finds the initial investment when you know the interest rate.)

IRR assumes that the income from the investment is reinvested at the internal rate of return and calculates the percentage rate at which the PV (present value) of a series of cash flows is equal to the initial investment.

IRR is not available for use in GeoFile.

Guess is the number you guess is approximately the interest rate.
Range is the address defining the range for the cash flow table.

EXAMPLE

For example, your friend is starting a pizza restaurant and you invest \$10,000 initially. He then pays you back varying amounts every month. You make an additional investment after six months to add more staff to the restaurant for the summer. The spreadsheet below shows the cash flow in the range B1:B12.

	A	B
1	January	-10000.00
2	February	2000.00
3	Mach	1000.00
4	April	1000.00
5	May	2000.00
6	June	-5000.00
7	July	2000.00
8	August	2000.00
9	September	3000.00
10	October	1000.00
11	November	1000.00
12	December	2000.00
13		
14	IRR	2.82%

IRR(.05,B1:B12) returns 2.82% if rounded to two decimal places.

ISERR(value)

This information function tests an expression and returns 1 (TRUE) if the expression is an error. This function is particularly useful in IF statements.

EXAMPLES

ISERR(B2) returns 1.00 (TRUE) if the value in B2 is an error.

IF(ISERR(B2),"",B2) returns an empty string if there is an error. Otherwise, the expression returns the contents of B2.

ISNUMBER(value)

This information function tests an expression and returns 1 (TRUE) if the expression is a number. This function is particularly useful in IF statements.

EXAMPLES

ISNUMBER(B2) returns 1.00 (TRUE).

IF(ISNUMBER(B2),"",B2) returns an empty string if B2 contains a number. The expression returns the contents of B2 if B2 does not contain a number.

ISSTRING(value)

This information function tests an expression and returns 1 (TRUE) if the expression is a string. This is useful in IF statements.

EXAMPLES

ISSTRING(B2) returns 1.00 (TRUE).

IF(ISSTRING(B2),"",B2) returns an empty string if B2 contains a string. Otherwise, the expression returns the contents of B2.

LEFT(string,num)

This string function returns the characters in the leftmost position in *string*. *Num* is the number of characters to return. The first character in the string is in position 0. A reference to cells containing values produces an error.

The RIGHT function extracts characters beginning with the rightmost character; LEFT extracts characters beginning with the leftmost character; MID extracts characters starting with an internal position. For more information, see the descriptions of the RIGHT and MID functions.

EXAMPLES

LEFT("Hale",1) returns H.

LEFT("12 items left",2) returns 12.

LENGTH(*string*)

This string function returns the number of characters in *string*. LENGTH counts all characters, punctuation marks, and spaces enclosed in quotation marks.

EXAMPLE

LENGTH("Now is the time.") *returns* 16.

LN(*value*)

This mathematical function returns the natural logarithm of *value*, using the mathematical constant *e* as a base. LN is the inverse of EXP. *Value* must be a positive number.

EXAMPLE

LN(2) *returns* 0.70.

LOG(*value*)

This mathematical function returns the base 10 logarithm of *value*. *Value* must be a positive number.

EXAMPLE

LOG(100) *returns* 2.

LOWER(*string*)

This string function converts all characters in *string* to lowercase.

EXAMPLE

LOWER("SUMMER,1993") *returns* summer,1993.

MAX(*value1,value2,...*)

This statistical function returns the largest value in the list. The list can include values or addresses, separated by commas. MAX ignores empty cells and treats text as a zero. See also MIN.

EXAMPLES

MAX(2,4,6,8) *returns* 8.

MAX(-2,-4,-6,-8) returns -2.

MAX(B3:B13) returns the largest number in the range B3:B13.

MID(string,start,num)

This string function returns the specified number (*num*) of characters in *string*, beginning at the position you indicate (*start*). The first character in the string is in position 0. A reference to cells containing values produces an error.

The RIGHT function extracts characters beginning with the rightmost character, LEFT extracts characters beginning with the leftmost character, and MID extracts characters starting from an internal position. For more information, see the descriptions of the LEFT and RIGHT functions.

EXAMPLE

MID("The United States",4,6) returns United.

MIN(value1,value2,...)

This statistical function returns the smallest value in the list. The list can include values or addresses, separated by commas. MIN ignores empty cells and treats text as a zero. See also MAX.

EXAMPLES

MIN(2,4,6,8) returns 2.

MIN(-2,-4,-6,-8) returns -8.

MIN(B3:B13) returns the smallest number in the range B3:B13.

MINUTE(time_value)

This time function returns the minute from the *time_value* serial number. The minute is an integer from 0 to 59. Time serial numbers are decimal fractions and can be part of a date/time combination. If there is no fractional part, the time is midnight. You can use TIMEVALUE to convert text time.

EXAMPLES

MINUTE(TIMEVALUE("11:58PM")) returns 58.

MINUTE(29453.55) returns 12.

MOD(*value*,*divisor*)

This mathematical function returns the modulus, the remainder from the division of *value* by *divisor*. If you attempt to divide by zero, MOD returns an error.

EXAMPLE

MOD(147,12) *returns* 3.

MONTH(*date_value*)

This date function returns the month from the *date_value* serial number. The month is an integer from 1 to 12. Use DATEVALUE to convert dates entered as labels.

EXAMPLES

MONTH(DATEVALUE("May 6, 1968")) *returns* 5.

MONTH(25420) *returns* 8.

N(*range*)

This information function returns the contents of the first cell in a range, if that cell contains a number, time, or date. If the cell contains text, the function returns 0 (zero). N is not available for use in GeoFile.

EXAMPLE

N(B1:B13) *returns* 2365 *if* B1 *contains* 2365.

NA()

This information function stops the evaluation of a formula and generates #N/A# in the formula cell. NA is the abbreviation for "Not Available." This function is useful if you are creating a spreadsheet and do not have all the required values. If a formula refers to a cell containing #N/A#, it returns #N/A# so that you do not inadvertently forget to complete the spreadsheet. You can type **#N/A#** directly into the cell. You must include the empty parentheses.

NOW()

This time function returns the serial number for the current date and time. The whole number represents the date as a serial number starting January 1, 1900. The decimal fraction of the number represents the time, where midnight = 0. You must include the empty parentheses.

EXAMPLE

NOW() returns 33988.50 (January 20, 1993, 12 noon) if it is now 12 noon on January 20, 1993.

NPV(interest,range)

This financial function returns the net present value, which is the amount of money (in today's dollars) of a future sum to be spent or received. When you want to discount a future cash flow, calculate its present value. If you want to discount *multiple* future cash flows, use net present value to calculate their present values and add them together.

Use NPV when you know the interest rate and want to know the initial investment. Use IRR when you know the initial investment and want to calculate the rate. Both NPV and IRR use irregular payments at regular intervals.

The future cash flows are figured at a constant interest rate, assuming that payments are made at the end of each period. If there is a down payment at the beginning of period 1, add that amount to the result of the NPV calculation.

NPV is not available for use in GeoFile.

Interest is the interest rate for the calculation. *Range* is the cells containing the cash flow information.

The following is the formula used by the NPV function:

$$NPV = \sum_{i=1}^n \frac{values_i}{(1 + rate)^i}$$

EXAMPLE

Suppose you want to send your daughter to design school in the coming year. You know that the tuition payments are due in August and November, and that she will need living costs every month. If the total expense will be \$10,500, how much will you

have to set aside now in an interest account paying 6.25% to cover the necessary expenses each month?

	A	B
1	Month	Payment
2	August	\$4,250.00
3	September	\$250.00
4	October	\$250.00
5	November	\$250.00
6	December	\$4,250.00
7	January	\$250.00
8	February	\$250.00
9	March	\$250.00
10	April	\$250.00
11	May	\$250.00
12		
13	Sum	\$10,500.00
14	NPV	\$10,326.87

$\text{NPV}(0.0625/12, B2:B11)$ returns 10326.87.

OR(logical1,logical2,...)

This logical function returns 1 if at least one of the arguments is true or 0 if all of the arguments are false. The arguments can be values or cell or field references. You can have as many *logical* arguments as you want. OR ignores text. If an argument does not contain a logical value, OR returns the #TYPE# error. OR is particularly useful with IF expressions. See also AND.

EXAMPLES

$\text{OR}(1+2=3, 2+3=5)$ returns 1.

$\text{OR}(1+2=3, 2+3=4)$ returns 1.

$\text{OR}((1+2=2, 2+3=3))$ returns 0.

$\text{IF}(\text{OR}(A1>100, A1=B1), 25, 50)$ returns 25 if A1 is 100 or more, or A1 equals B1.

PAGE()

This print function returns the current page number for use in a GeoCalc header or footer. You must include the empty parentheses. If you use PAGE outside of a GeoCalc header or footer, PAGE is calculated when you print. PAGE is not available for use in GeoFile.

EXAMPLE

"Page "& PAGE()& " of "& PAGES() returns Page 3 of 15.

PAGES()

This print function returns the total number of pages in the document for use in a GeoCalc header or footer. You must include the empty parentheses. If you use PAGES outside of a GeoCalc header or footer, PAGES is calculated when you print. PAGES is not available for use in GeoFile.

EXAMPLE

"Page "& PAGE()& " of "& PAGES() returns Page 3 of 15.

PI()

This trigonometric function returns the value of π . You must include the empty parentheses.

PMT(*principal, interest, term*)

Be careful to enter the interest rate for the same time period as the term.

This financial function calculates the constant payment required to repay a loan at a specified interest rate over a given period of time. *Principal* is the amount of the loan. *Interest* is the interest rate for the same time period as the term. *Term* is the total number of periods over which the payments are made.

EXAMPLE

Use the PMT function to determine the monthly payment for a 20-year loan of \$75,000, at 5% annual interest.

PMT(75000,.05/12,240) returns 494.97.

PRODUCT(*value1,value2,...*)

This mathematical function returns the product of multiplying the values given. You can have as many arguments as you want. *Value* can be numbers, references, and logical values.

EXAMPLE

PRODUCT(250,3,2) returns 1500.

PROPER(string)

This string function capitalizes the first letter of every word and the first letter following any nonletter character. PROPER converts all other characters to lowercase.

EXAMPLES

PROPER("Now is the time") *returns* Now Is The Time.

PROPER("1993 BUDGET") *returns* 1993 Budget.

PV(payment,interest,term)

Be careful to enter the interest rate for same time period as the term.

This financial function returns the present value of an investment, given constant payment stream and interest rate. When you want to discount a future cash flow, calculate its present value. If you want to discount *multiple* future cash flows, use net present value (NPV), which calculates their present values and adds them together. *Payment* is the amount of each payment. *Interest* is the interest rate for the same time period as the term. *Term* is the total number of periods over which the payments are made.

EXAMPLE

If you have car payments of \$250 every month for 10 years at an interest rate of 5%, what is the present value of the loan?

PV(250,.05/12,120) *returns* 23570.34.

RANDOM()

This statistical function returns a random number between 0 and 1. RANDOM returns a new random number every time GeoCalc or GeoFile recalculates.

EXAMPLE

RANDOM() *returns* a decimal value.

RANDOMN(value)

This statistical function returns a random number between 0 and *value*-1. RANDOMN returns a new random number every time GeoCalc or GeoFile recalculates.

EXAMPLE

RANDOMN(100) *returns* a number between 0 and 99.

RATE(future_value,present_value,term)

This financial function calculates the interest rate required to change the present value of an investment into the future value. *Future_value* is the value of the annuity at the end of the investment period. *Present_value* is the value of the annuity today. *Term* is the total number of periods over which the payments are made.

EXAMPLE

If you have \$5,000, what annual interest rate would you need to have \$8,000 in 5 years?

RATE(8000,5000,5) *returns* 9.86%, *provided that you have set the cell number properties to show percentages.*

REPEAT(string,num)

This string function returns *string* the specified number of times. If *num* is zero, REPEAT returns an empty string.

EXAMPLES

REPEAT("Ha",6) *returns* HaHaHaHaHaHa.

REPEAT("Ha ",6) *returns* Ha Ha Ha Ha Ha Ha.

REPLACE(original,start,num,replace)

This string function replaces characters within text. *Original* is the text string in which you want to replace characters. *Start* is the first character in the original string that you want to replace. The first character in the string is in position 0. *Num* is the number of characters in the original string that you want to replace. *Replace* is the replacement string. You can use more or fewer replacement characters than are replaced in the original string.

EXAMPLES

REPLACE("1992",3,1,"3") *returns* 1993.

REPLACE("Now is the time for all good men",29,3,"people") *returns* Now is the time for all good people.

RIGHT(*string,num*)

This string function returns a specified number of characters from the rightmost character in *string*. The rightmost character in the string is in position 0. A reference to cells containing values produces an error.

RIGHT extracts characters beginning with the rightmost character; LEFT extracts characters beginning with the leftmost character; MID extracts characters starting from an internal position. See also LEFT and MID.

EXAMPLES

RIGHT("Section A",1) *returns* A.

RIGHT("Number of Items, 25",2) *returns* 25.

ROUND(*value,places*)

This mathematical function rounds *value* to the number of decimal *places* you specify.

EXAMPLE

ROUND(12.23761,2) *returns* 12.24.

ROWS(*range*)

This information function returns the number of rows in a *range*. ROWS is not available for use in GeoFile.

NOTE

Do not place the ROWS function in the range of rows it is intended to count.

EXAMPLE

ROWS(B2:F65) *returns* 64.

SECOND(*time_value*)

This time function returns the second from the *time_value* serial number. The second is an integer from 0 to 59. Time serial numbers are decimal fractions and can be part of a date/time combination. If there is no fractional part, the time is midnight. You can use TIMEVALUE to convert text time.

EXAMPLE

SECOND(TIMEVALUE("11:58:45PM")) *returns* 45.

SECOND(29453.49) *returns* 36.

SIN(*angle*)

This trigonometric function returns the sine of *angle*. You must express *angle* in radians. If you know an angle in degrees, you can use the RADIANS function to convert it to radians.

EXAMPLE

SIN(RADIANS(45)) *returns* 0.71.

SINH(*angle*)

This trigonometric function returns the hyperbolic sine of *angle*. You must express *angle* in radians. If you know an angle in degrees, you can use the RADIANS function to convert it to radians.

EXAMPLE

SINH(0.5) *returns* 0.52.

SLN(*cost,salvage,life*)

This financial function returns the straight-line depreciation of an asset for a period of time. *Cost* is the initial cost of the asset. *Salvage* is the value of the asset at the end of the time period. *Life* is the useful life of the asset, the number of time periods the asset is being depreciated.

EXAMPLE

SLN(12000,2000,5) *returns* 2000.

SQRT(value)

This mathematical function returns the square root of *value*. *Value* must be a positive number.

EXAMPLE

SQRT(144) returns 12.

STD(value1,value2,...)

This statistical function returns the standard deviation of the sample of *values*. You can use as many *values* as you want.

The following is the formula used by the STD function:

$$\sqrt{\frac{n \sum x^2 - (\sum x)^2}{n(n-1)}}$$

EXAMPLE

STD(254,255,253,248,257,255,256) returns 2.94.

STDP(value1,value2,...)

This statistical function returns the standard deviation of an entire population. You can use as many *values* as you want. You can use values, addresses, ranges, named cells, and field names for arguments.

The following is the formula used by the STDP function:

$$\sqrt{\frac{n \sum x^2 - (\sum x)^2}{n^2}}$$

EXAMPLE

STDP(254,255,253,248,257,255,256) returns 2.73.

STRING(value,n)

This string function converts *value* into a string, using *n* decimal places. *N* can be a number from 0 through 15.

EXAMPLE

STRING(245.356,1) *returns* 245.4.

SUM(value1,value2,...)

This mathematical function returns the total of the *value* list. You can use as many arguments as you want, including values, addresses, ranges, named cells, and field names for arguments.

EXAMPLES

SUM(B3:B13) *returns the sum of cells B3 through B13.*

SUM(23,45,67) *returns* 135.

SYD(cost,salvage,life,period)

This financial function returns the depreciation of an asset for the current period, using the sum-of-years' digits method. *Cost* is the initial cost of the asset. *Salvage* is the value of the asset at the end of the time period. *Life* is the useful life of the asset, the number of time periods the asset is being depreciated. *Period* is the period to analyze.

EXAMPLE

What is the depreciation in the fourth year for a computer system that initially cost \$12,000, which after five years could be sold for \$2,000?

SYD(12000,2000,5,4) *returns* 1333.33.

TAN(angle)

This trigonometric function returns the tangent of *angle*. You must express *angle* in radians. If you know an angle in degrees, you can use the RADIANS function to convert it to radians.

EXAMPLE

TAN(RADIANS(45)) *returns* 1.0.

TANH(angle)

This trigonometric function returns the hyperbolic tangent of *angle*. You must express *angle* in radians. If you know an angle in

degrees, you can use the RADIANS function to convert it to radians.

EXAMPLE

TANH(0.5) returns 0.462117.

TERM(*payments,interest,future_value*)

Be careful to enter the interest rate for the same time period as the term.

This financial function returns the number of time periods required for a number of equal investment payments to reach a future value. Payments are made at the end of each period and earn a constant interest rate. *Payments* is the amount of the periodic payments. *Interest* is the interest rate for the investment per time period. *Future_value* is the value of the annuity at the end of the investment period.

EXAMPLE

How long will it take to accrue \$10,000 if you make monthly payments of \$250 at an annual interest rate of 5.5%?

TERM(250,.055/12,10000) returns 36.8.

TIME(*hour,minute,second*)

This time function returns the serial value from the *hour*, *minute*, and *second* arguments.

EXAMPLE

TIME(12,34,23) returns 0.52.

TIMEVALUE(*string*)

This time function returns the serial value for *string*.

EXAMPLE

TIMEVALUE("1:10PM") returns 0.55.

TODAY()

This date function returns the serial number for the current day.

EXAMPLE

TODAY() returns 33988.00 if today's date is January 20, 1993.

TRIM(string)

This string function removes extra spaces before, after, and between words.

EXAMPLE

TRIM(" Cleveland, Ohio ") returns Cleveland, Ohio.

TRUE()

This logical function returns 1. You can use TRUE in a calculation or enter it directly into a cell or field where it is interpreted as a logical value by GeoCalc or GeoFile. You must include the empty parentheses. See also FALSE.

EXAMPLE

IF(A5>100, TRUE(),FALSE()) returns 1 if A5>100.

TRUNC(value)

This mathematical function removes the fractional portion of *value* without rounding off.

EXAMPLE

TRUNC(23.66) returns 23.

UPPER(string)

This string function converts *string* to uppercase.

EXAMPLE

UPPER("usa") returns USA.

VALUE(string)

This string function converts *string* to a value.

EXAMPLE

VALUE("1.75") *returns* 1.75.

VAR(value1,value2,...)

This statistical function returns the population variance from a sample of *values*. You can use as many arguments as you want, including values, addresses, ranges, named cells, and field names for arguments.

The following is the formula used by the VAR function:

$$\frac{n \sum x^2 - (\sum x)^2}{n(n-1)}$$

EXAMPLE

VAR(254,255,253,248,257,255,256) *returns* 8.67.

VARP(value1,value2,...)

This statistical function returns the population variance from an entire population represented by *values*. You can use as many arguments as you want, including values, addresses, ranges, named cells, and field names for arguments.

EXAMPLE

VARP(254,255,253,248,257,255,256) *returns* 7.43.

VLOOKUP(value,range,offset)

This information function allows you to use a spreadsheet table like a database. You can enter values in the table and then extract information from the columns of the table according to your specifications. VLOOKUP extracts information from vertical columns in the same way as HLOOKUP extracts information from horizontal rows. HLOOKUP and VLOOKUP assume the entries in the first row or column are sorted. They return the entry corresponding to the nearest ascending value that is not greater than *value*.

These functions are useful when you have several alternatives to “look up,” such as tax rates, commissions, or discounts.

VLOOKUP is not available for use in GeoFile.

Value is the value to be found in the first column of the table. *Value* can be a number, an address, or a text string. The first column of the table needs to be sorted. *Range* is the address of the range that defines the table. *Offset* defines the column that contains the information. The first column is 0.

EXAMPLE

	A	B	C	D	E
1		1Q	2Q	3Q	4Q
2	Claudia	12.00	14.00	16.00	15.00
3	Jane	10.00	11.00	8.00	6.00
4	Kyle	9.00	13.00	8.00	19.00
5	Steve	13.00	8.00	17.00	5.00

VLOOKUP("Jane",A2:E5,2) returns 11.00.

WEEKDAY(*date_value*)

This date function returns the day of the week for *date_value*. WEEKDAY returns a number representing the day of the week: 1 for Sunday, 2 for Monday, and so on. *Date_value* must be a serial number. Use DATEVALUE to convert dates entered as labels.

EXAMPLES

WEEKDAY(33988) returns 4 (Wednesday).

WEEKDAY(DATEVALUE("1/20/93")) returns 4 (Wednesday).

YEAR(*date_value*)

This date function returns the year from *date_value*. *Date_value* must be a serial number. Use DATEVALUE to convert dates entered as labels.

EXAMPLES

YEAR(33988) returns 93.

YEAR(DATEVALUE("1/20/93")) returns 93.

INSTALLING AND STARTING GEOHOST

To use GeoHost, you must have:

- An IBM-PC 286 compatible or better.
- At least 1 MB RAM installed.
- At least 3 MB available hard disk space.
- MS-DOS or PC-DOS version 3.11 or higher.
- A LapLink cable (CE-303CB) for connecting the unit to the PC. For more information about attaching the LapLink cable, see “Options” in the *Operation Manual*.

To install and start GeoHost

1. Insert the GeoHost floppy disk into the appropriate PC floppy disk drive.
2. At the DOS prompt, type:

```
A:INSTALL
```

(If GeoHost is inserted into a disk drive other than A, substitute that letter for A.)

3. Press **Enter**, then follow the on-screen instructions.
4. Once GeoHost is installed on your PC, start it by typing

```
CD GEOHOST
```

at the DOS prompt and then pressing **Enter**. If GeoHost is installed in a directory other than GEOHOST, substitute that directory name for GEOHOST.

5. Type:

```
GEOS
```

6. Press **Enter**.

If you are starting GeoHost for the first time, you will see screens for installing your mouse and video drivers. Follow the instructions on the screen. When you have completed the installation process, the Host GeoManager window appears.

NOTE

If you do not have a mouse attached to your PC, choose **Arrow Key Mouse** when the installation program asks what kind of mouse you have. **Arrow Key Mouse** allows you to use the arrow keys on your keyboard to move the mouse pointer.

To enable the arrow key mouse, press **F4**. Use the arrow keys to move the mouse pointer and use the **Insert** and **Delete** keys as your left and right mouse buttons, respectively. When you want to

return to text editing mode, turn off the arrow key mouse by pressing any other key on the keyboard. The **Insert** key, **Delete** key, and arrow keys return to their usual functions.

ABOUT GEOHOST WINDOWS

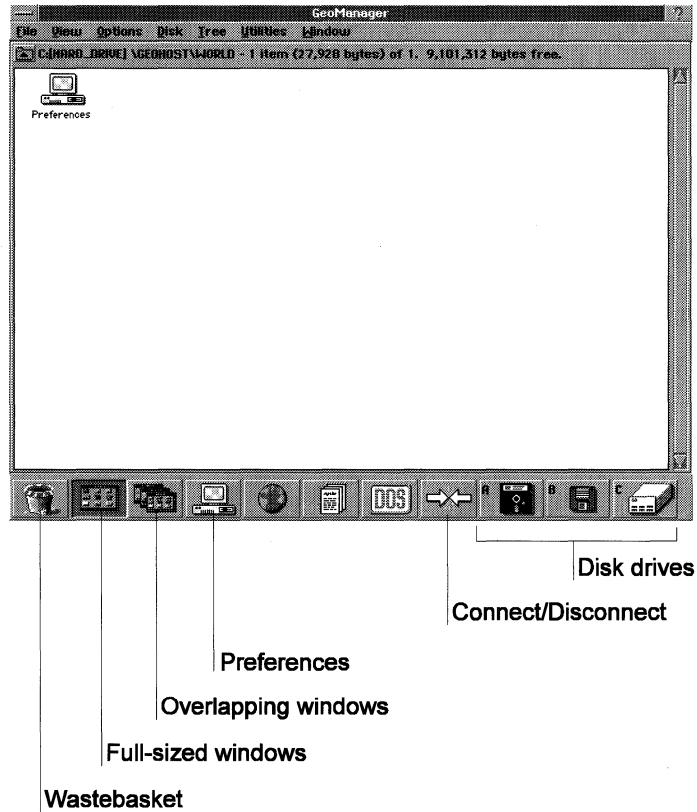
GeoHost application windows are very similar to regular GEOS windows, with two exceptions:

- GeoHost application windows are always full-screen. Since you cannot change the size of these windows, the title bar does not contain either a Minimize or a Maximize-Restore button. The windows also have no resize border.
- GeoHost application windows do not have an Express menu. The only way to leave the current application is to choose Exit from the File menu or to double-click the Window Control button.

THE HOST GEOMANAGER WINDOW

From Host GeoManager, you can connect your PC to the unit, manage files on both the PC and the unit, and start Host Preferences.

The Host GeoManager window looks this:



Wastebasket. Drag folders and files to the wastebasket to throw them away. You can also open the wastebasket to see the items you have thrown away but not yet deleted.

Full-sized windows/Overlapping windows. Choose between displaying only one folder at a time or several folders at the same time.

When you display several folders, each one has its own window within the Host GeoManager window. You can move and resize these windows and drag icons from one folder to another.

Preferences. Tap to start Host Preferences.

Connect/Disconnect. Use to open or close a connection between two machines. When no connection is open, the button represents *Connect*. When there is a connection, the button changes to represent *Disconnect*.

Disk drive buttons. One appears for each available PC drive. When a connection is open, additional disk drive buttons appear, representing each available drive on the unit.

Each disk drive button is labeled with the letter of the corresponding drive. If the button corresponds to a drive on the unit, the name of the unit (the default is “remote”) precedes the letter.

CONNECTING THE UNIT AND THE PC

Before you can transfer files from the unit to the PC and vice versa, you must connect the LapLink cable and set up both machines.

To connect the LapLink cable, use the serial ports of the host PC and the unit. For more information, see “Options” in the *Operation Manual*.

To set up the unit or change the unit’s name, port, or baud rate, use the Connect option in the unit’s Preferences application. For more information, see “Preferences” in Chapter 4.

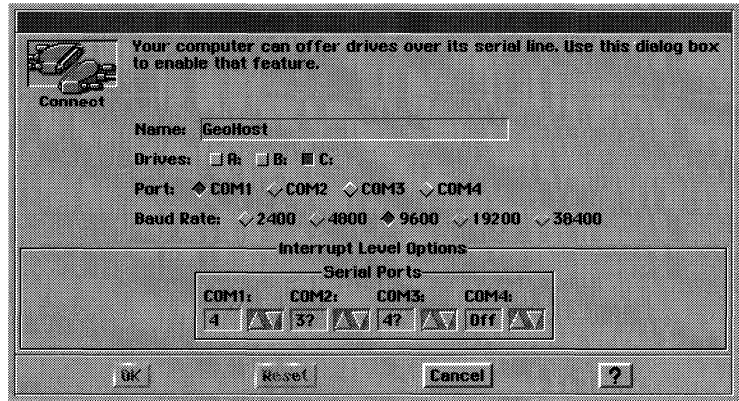
Setting Up the PC

Follow this procedure the first time you set up the PC to transfer files. From then on, you only need to do this if you want to change your setup.

To set up the PC

1. In Host GeoManager, click the Preferences icon. The Host Preferences window appears.

2. Click Connect. The following dialog box appears:



Change the following options as necessary:

Name. Type a name to identify the PC. This name appears on every PC drive button that appears on the unit. The name is initially set to GeoHost.

Drives. Choose the PC drives you want to appear on the unit.

Port. Choose the serial port you are using for the connection.

Baud Rate. Choose the connection speed between the PC and the unit. The baud rate you set *must* be the same on both machines.

Interrupt Level Options. Click the arrows to change or disable the interrupts assigned to each serial port. (A question mark appears next to each interrupt assignment until GeoManager has actually used the port and verified that the interrupt works correctly.)

3. Click OK to close the dialog box; then exit Preferences.

Opening a Connection



Once the unit and the PC are set up, you open a connection between them so that you can transfer files between the machines.

To open a connection between the two machines

(In the following procedure, you can reverse the order of steps 1 and 2.)

1. Tap the Connect button at the bottom of the GeoManager window on the unit. A dialog box appears, informing you that a connection is being attempted. If you want to stop the connection, tap Cancel.

2. Click the Connect button at the bottom of the Host GeoManager window on the PC. A dialog box appears, informing you that a connection is being attempted. If you want to stop the connection, click Cancel.
3. When a successful connection is made, the drives from the PC appear as additional drive buttons in GeoManager on the unit and the drives from the unit appear in Host GeoManager on the PC. The Connect button changes to a Disconnect button.

Only the unit's drive D appears on the PC and only those drives you have selected in Host Preferences appear on the unit. For information on Host Preferences, see "Host Preferences" in this appendix.

TRANSFERRING FILES

Once the connection is open, you can work with folders and files on any disk drive whose icon appears at the bottom of the GeoManager or Host GeoManager window. You can transfer folders and files back and forth between the two machines, move or copy them between folders, delete files and folders, and perform other GeoManager functions.

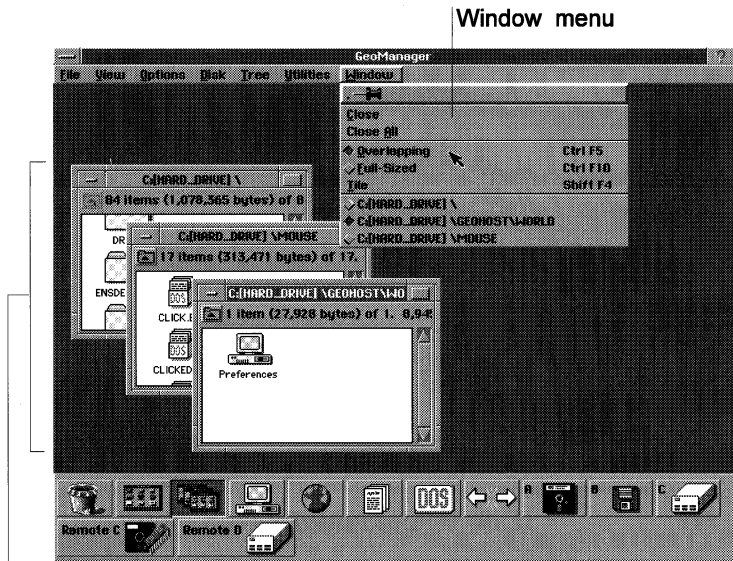
Although you can transfer files using either GeoManager on the unit or Host GeoManager on the PC, it is strongly recommended that you work with Host GeoManager on the PC, since it is considerably faster and offers some additional tools.

NOTE

To transfer files to and from any PCMCIA cards that you have attached to the unit, you must use GeoManager on the unit. This is because PCMCIA card drives do not appear as icons in Host GeoManager, but they do appear in GeoManager.

Working with Multiple Folders

Initially, you view folders one at a time in a full-sized Host GeoManager window. Each folder you open fills the window, covering up any folder that previously appeared there. There is a way, however, to view many folders simultaneously as smaller, overlapping windows. It is much easier to transfer folders and files when you use overlapping windows.



Overlapping windows

Host GeoManager includes a new menu, called the Window menu. You can use this menu to switch between one folder and another. You can also choose to display the folders Full-Sized, Overlapping, or Tile. The names of all open folders appear at the bottom of the Window menu.

When the display is full-sized and you have more than one folder open, you can only see the one on top, like seeing only the top page on a stack of reports sitting on your desk. You can switch between folders by choosing the name of the folder you want to be on top from the Window menu.

Overlapping folders are stacked so that you can see the upper left corner of each folder. You can resize and move overlapping folders in the application window. By choosing Tile from the Window menu, you can display the folders side by side.

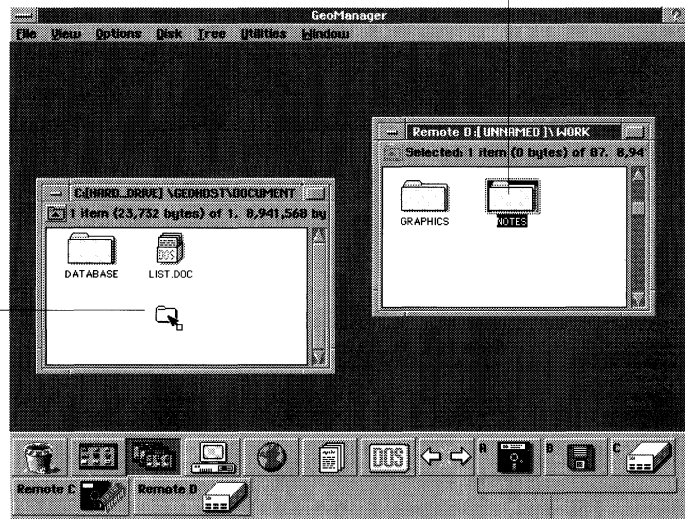
To move one of the overlapping windows to the front, click on that window. The folder you specified appears on the top of the stack with its title bar highlighted.

Copying and Moving Folders

To move a folder from one disk (or folder) to another, select the folder you want and use the right mouse button to drag it to its new location. Dragging an item to a folder on the same disk *moves* the item to that folder; dragging it to another disk *copies* the item. You can, however, move (and not copy) an item to a different disk by holding down the **Alt** key as you drag the item. Similarly, you can copy (and not just move) an item on the same disk by holding down the **Ctrl** key as you drag the item.

Move Folder icon positioned over a PC drive window

Selected folder on a remote drive window



Remote disk drives

PC disk drives

DELETING FILES USING HOST GEOMANAGER

Deleting files with Host GeoManager is a two-step process. The first step is to throw the document or folder away, by placing it in the Wastebasket. The second step is actually deleting the file by emptying the Wastebasket.

NOTE

On the unit, these two steps are combined. When you throw something away, it is immediately deleted.

Host GeoManager's Wastebasket works much like a real wastebasket. Items you throw away remain in the Wastebasket until you empty it. That way, you can recover items from the Wastebasket by pulling them out before the Wastebasket is emptied.

Once you empty Host GeoManager's Wastebasket, everything in it is deleted. Deleting a file removes the file from your disk, so be careful to delete only those files you know you won't need later. The Wastebasket is automatically emptied when you exit to DOS.

You can also delete files by selecting the files you want to delete and then choosing Delete from the File menu, but it is much safer to throw them into the Wastebasket first.

To throw away items into the Wastebasket, select the item or items you want to throw away and drag them to the Wastebasket using the right mouse button.

To view the contents of the Wastebasket, tap its icon. If you want to recover any of these items, select one or more of them and drag them to another folder. You can also choose Wastebasket from the File menu and then choose Recover from the Wastebasket menu. You will be asked to choose a destination for the recovered file.

To permanently delete specific items in the Wastebasket

1. Open the Wastebasket window and select the files and folders you want to delete.
2. Choose Delete from the File menu. The files you selected are deleted.

To permanently delete all items in the Wastebasket

1. Choose Wastebasket from the File menu.
2. Tap Empty Wastebasket. All the files and folders in the Wastebasket are deleted.

BREAKING THE CONNECTION

To break the connection between the machines, tap or click the Disconnect button at the bottom of the unit or the Host GeoManager window. You can break the connection from either machine.

HOST PREFERENCES



You can start Host Preferences by clicking its icon. Host Preferences can only be accessed when the PC and the unit are *not* connected. Host Preferences contains four groups of options:

Connect. For information about the Connect option, see “Setting Up the PC” in this appendix.

Keyboard. Functions the same as the Keyboard option in the unit’s Preferences. For more information, see “Preferences” in Chapter 4.

Mouse. Functions the same as the Mouse option in the unit’s Preferences. For more information, see “Preferences” in Chapter 4.

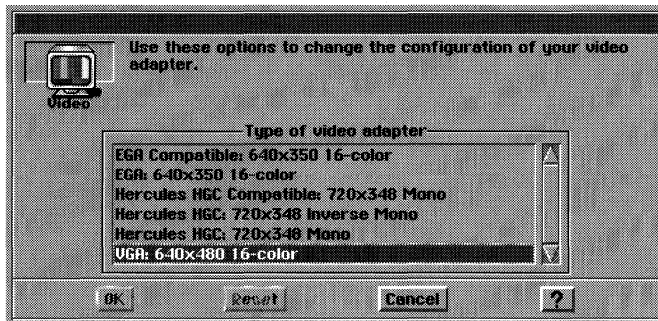
Video. Allows you to specify or change the type of video adapter you are using. For more information, see “Changing Your Video Adapter” in this appendix.

Changing Your Video Adapter

The video adapter is the type of graphic display your computer uses. The Video option in Host Preferences allows you to change your video adapter.

To change your video adapter

1. Open Preferences and click the Video button. A dialog box appears:



2. Select the appropriate type of video adapter from the list, then click OK. A dialog box appears, informing you that the system software will shut down and then restart to change the video setting.
3. Click Yes to restart.
or
Click No, then click Reset to change the video setting back to its original setting.
4. If you chose to restart, you will see a series of test screens to ensure that your choice is correct. If the display is jumbled or stays blank for more than two minutes, press **F10** to return to your original video setting.

ADDITIONAL OPTIONS

The Options menu for Host GeoManager includes additional options you can use to customize Host GeoManager. Once you're satisfied with your settings, save them so that they will apply the next time you start GeoManager.

Warn on Emptying Wastebasket. When *on*, this option displays a confirmation message whenever you empty the wastebasket.

Hold Items in Wastebasket. When this option is *on*, any file that you drag to the wastebasket remains there until you empty the wastebasket or exit to DOS. When it is *off*, files are deleted as soon as you drag them to the wastebasket.

NOTE

Remember, when you delete or replace a file, you *cannot* undo the operation if you change your mind. We suggest you leave confirmation options *on*. Most of them warn you of actions that cannot be undone.

All other Host GeoManager functions are the same as those in the unit GeoManager. For more information on any of these functions, see Chapter 9.

WHAT ARE FILES?

When you store information on a disk, GeoDOS creates a file to hold it, with a unique name given by you. By storing information in a file, you can retrieve it later to edit it, print it, send it to another computer, and so on.

If you are using an application (such as Text File Editor, Date Book, or GeoCalc), it will create, name, save, or retrieve files for you, by instructing GeoDOS to do what you want.

GeoDOS also provides commands to manipulate files directly, such as those to copy, rename, delete, and display files. For example, if you have saved several files to the internal disk and want to copy them to a PCMCIA memory card, a single COPY command will do this for you. (Alternatively, you can use GeoManager, described in Chapter 9.)

Naming Files

When you create a file you must give it a unique name. File names must follow certain rules. First, a file name generally has two parts: the name (up to 8 characters) and the extension (up to 3 characters), separated by a period. For example, ABC.TXT is a valid file name.

The name identifies the file. The extension typically categorizes the file; it is optional, but very useful for identifying files in the same category. For example, the ABC.TXT file might have the extension TXT to indicate it is a text file.

Files stored in the same directory must have unique names.

NOTE

The rules for naming files described in this section only apply when you are not using GEOS. When you are using GEOS, the rules are very different. (For instance, files created while using GEOS can have names that are 32 characters long.) For more information about GEOS naming files, see Chapter 1.

ACCEPTABLE CHARACTERS

The following characters are acceptable in file names:

- Any letter in the alphabet (capitals and small letters are equivalent)
- The numbers 0 through 9

- The following punctuation marks:

! @ # \$ % & ^ () - _ ' { } ~

UNACCEPTABLE CHARACTERS

Characters other than those shown above are unacceptable characters in a file name. For example, commas, double quotation marks, and spaces are not acceptable.

NOTE

If you use a period in a file name, GeoDOS will assume that the characters following it are the file's extension.

UNACCEPTABLE FILE NAMES

Do not use any of the following as file names, since they are reserved by GeoDOS for its own use: AUX, COM1, COM2, COM3, COM4, LPT1, LPT2, LPT3, NUL, and PRN.

Saving Files

When you save a file to a disk, GeoDOS stores additional information about the file in the file directory. This information includes the file name and extension, the size of the file, (the number of "bytes," or characters), and the date and time the file was created or last updated.

STARTING GEODOS

To start GeoDOS, choose Exit to DOS from the Express menu.

NOTE

You need to connect an external XT keyboard and the AC adaptor to start GeoDOS.

Returning to GEOS

To return to GEOS, enter the following command at the GeoDOS prompt:

```
GEOS
```

and press **Enter**.

Specifying a Drive

GeoDOS assigns letters to the various storage devices you have in the unit. For example, the letter A identifies a floppy disk drive (which your unit won't have); the letter D identifies the RAM storage built into the unit. The following table identifies the letters for each type of storage device.

DEVICE	ASSIGNMENT
ROM	C
RAM	D
Floppy	A or B
IDE card, slot 1	E
IDE card, slot 2	F
SRAM, slot 1	G, H
SRAM, slot 2	I, J
Flash, slot 1	K
Flash, slot 2	L

Changing the Current Drive

To specify a drive in a GeoDOS command, type its drive letter followed by a colon.

The default DOS command line prompt displays the current drive and directory. For example, C:\DOS> shows that you are in the DOS directory of drive C.

To change the current drive, simply type the new drive letter and a colon, and press **Enter**. For example, to select drive C, type:

```
C:
```

and press **Enter**.

To change to another directory, use the CD command. For example, to change to the DOS subdirectory, type:

```
CD \DOS
```

and press **Enter**. (For more details on using directories, see "Directories" in this chapter.)

USING THE KEYBOARD

When the GeoDOS prompt is displayed, you can type commands. Commands can be entered in either uppercase, lowercase, or a combination of both. Commands and options must be separated

by spaces. A command only begins executing when you press the **Enter** key.

The keyboard key functions are described as follows:

KEY	FUNCTION
Enter	Executes the GeoDOS command typed at the prompt.
Ctrl, Alt	Control, Alternate keys. Used with other keys as “shift” keys for certain control functions.
Esc	Escape key. Cancels the command line you are typing.
Backspace	Backspace key. Erases the character to the left of the cursor.
Pause	Halts scrolling of the screen. To continue scrolling, press any key. Ctrl+S performs the same function.
Break	Hold down the Ctrl key and press Pause to interrupt execution of the current command or a GeoDOS batch file. Ctrl+C performs the same function.
Ctrl+P	Turns on or off screen printing to the printer. Everything that is printed on the screen is echoed to the printer.

NOTE:

When you enter commands and data, make sure not to confuse the 0 (zero) and O (uppercase o) keys, as well as the 1 (one) and l (lower case L) keys.

GeoDOS Editing Keys

To continue a long command on the next line, Press **Ctrl+Enter** and continue typing the command.

To enter ASCII characters which are not on the keyboard, hold down the **Alt** key and type the character’s ASCII code on the numeric keypad. Release **Alt** and the character is displayed on the screen.

Certain keys have special functions when used at the GeoDOS prompt, to make entering and editing commands easier:

KEY	FUNCTION
F1	(COPY1) Displays the last command line one character at a time.
F2 c	(COPYUP) Displays the last command line up to the first occurrence of the character c.

F3	(COPYALL) Displays all of the last command line.
F4 c	(SKIPUP) Skips over the characters in the last command line up to the first occurrence of the character c.
F5	(NEWLINE) Stores the current command line for editing and displays a prompt for new input.
F6	(EOF) Types an End-of-file character Ctrl+Z (^Z).
Del	Skips over a character from the last command line.
Ins	Toggles insert mode.
Esc	Cancels the current command line and allows re-entry on the next line.

DIRECTORIES

To organize your files, you can divide them into named groups, called *directories*.

Creating a Directory (MD or MKDIR)

The MD, or MKDIR, command creates a new directory. To create a directory called WP (for your word processing program and files) on drive D, select drive D and type:

```
MD WP
```

and press **Enter**.

Then, if you use the DIR command to list the current directory, you will see a new entry, WP, with the label <DIR> instead of the file size.

Each disk starts off with a single directory called the root directory. When you create directories, you place them either in the root, or in other directories which you have created, producing a “tree” structure.

PATH NAMES

To refer to a file in another directory, you can use a path name. The path name describes where on the disk the file is located. The \ (backslash) character is used both to indicate the root directory and to separate names in a path.

For example, to copy LETTER.TXT from drive E to the WP directory on drive D, type:

```
COPY E:LETTER.TXT D:\WP
```

and press **Enter**.

CAUTION

At the top of each directory listing are the entries . (dot) and .. (double-dot) which represent the directory and its parent directory. Do not delete these entries.

Removing a Directory (RD or RMDIR)

The RD, or RMDIR, command deletes a directory. To delete a directory, first use the DEL command to delete all files from the directory, then type RD followed by the directory name.

Changing the Working Directory (CD or CHDIR)

The CD, or CHDIR, command changes the directory in which you are working. GeoDOS always considers you to be “in” a directory. This is called your *current directory*. If you type a file name without a path, or omit the directory name from a command which expects one, GeoDOS will assume you mean your current directory. If you want to work with files in another directory, you can use path names, but you’ll generally find it easier to first use the CD command to move to the directory in which you want to work.

For example, to move to the WP directory on the current drive, type:

```
CD \WP
```

and press **Enter**.

To move to the root directory, type:

```
CD \
```

and press **Enter**.

USING OTHER COMMANDS

This section introduces some additional simple but useful GeoDOS commands.

Using Wild Cards to Create Global Commands

Global commands are commands that are carried out on a group of files. Instead of typing the exact file name to copy, delete, rename, or whatever, you type a name which specifies a group of file names, using one or both of two special characters: query (?) and asterisk (*). These are called *wild cards*, and you can use them to replace part or all of a file name.

THE ? CHARACTER

Query (?) specifies a single wild card character. For example, `DIR FILE.0?` will list `FILE.01`, `FILE.02`, and `FILE.03`, but not `FILE.10`.

THE * CHARACTER

Asterisk (*) specifies any characters from its position forward within the file name. For example, `DIR *.TXT` will list all file names with the extension `TXT`, such as `ABC.TXT`, `SHARP.TXT`, and `SALES.TXT`, but not `ABC.TNT`.

CAUTION

Although global commands can save a lot of time and typing, use them very carefully, especially with the `DEL` command. For example, `DEL *.*` means delete all the files in the current directory!

Displaying a File List (DIR)

In its simplest form, the `DIR` command displays a list of all the files in the current directory, with file name, extension, size in bytes, and the date and time that the file was last modified. Type `DIR` and press **Enter**.

To list information about a particular file, type the name and extension after the command. For example, to display information about `LETTER.DOC`, type:

```
DIR LETTER.DOC
```

and press **Enter**.

You can add two options to the end of any `DIR` command to make it more convenient when listing a large number of files. To make `DIR` list files a screenful at a time, add `/P`. To make `DIR` list just the names and extensions, add `/W`.

Displaying the Contents of a File (TYPE)

The TYPE command displays the contents of a text file. To stop the display from scrolling off the screen, press **Ctrl+S**. To interrupt the process before the end of the file is reached, press **Ctrl+C**.

Copying a File (COPY)

The COPY command copies files from one directory or disk to another.

COPYING A FILE TO ANOTHER DISK

To copy EXAMPLE.TXT from the current directory to drive A, type:

```
COPY EXAMPLE.TXT A:
```

and press **Enter**.

To copy NEW.TXT from drive A to the current directory, type:

```
COPY A:NEW.TXT
```

and press **Enter**.

COPYING A FILE TO THE SAME DIRECTORY

To copy a file to the same directory you must give the copy a different name. For example, to make a copy of LETTER.TXT and name it MEMO.TXT, type:

```
COPY LETTER.TXT MEMO.TXT
```

and press **Enter**.

Changing the Name of a File (REN or RENAME)

The REN, or RENAME, command changes the name of a file. Using the wild card characters (* and ?) you can rename groups of files in a similar way.

For example, to rename LETTER.TXT to MEMO.TXT, type:

```
REN LETTER.TXT MEMO.TXT
```

and press **Enter**.

(If you choose a name which already exists on that disk, or if you mistype the name of the file you want to rename, you will get an error message.)

You can use wild cards to rename groups of files. For example, to change all the files in the current directory that have the extension .TXT to the extension .DOC, type:

```
REN *.TXT *.DOC
```

and press **Enter**.

To rename a file on another drive, type the drive name before the file name. For example, to rename TEST.01 on drive A to TEST-01.DOC, type:

```
REN A:TEST.01 TEST-01.DOC
```

and press **Enter**.

Deleting a File (DEL)

The DEL command deletes files from a disk. At some point your disks may become cluttered with files that you no longer need. Deleting unwanted files is an important part of good housekeeping for your system. You can delete a single file or groups of files with the DEL command.

For example, to delete EXAMPLE.TXT type:

```
DEL EXAMPLE.TXT
```

and press **Enter**.

To delete all files with the extension .BAK, type:

```
DEL *.BAK
```

and press **Enter**.

CAUTION

Be careful when using DEL with wild card characters. It is easy to delete the wrong files by mistake.

If you type DEL *.* (which would delete all the files in the directory), you will be asked for confirmation: Are you sure? (Y/N) ? To delete all the files in the directory, type Y and press **Enter**. To abort the process, type N and press **Enter**.

CONFIGURATION FILES

GeoDOS uses two files when starting up: CONFIG.SYS and AUTOEXEC.BAT. These files are located on drive C. You can also

create new CONFIG.SYS and AUTOEXEC.BAT files manually, with Text File Editor.

CAUTION

Do not edit CONFIG.SYS or AUTOEXEC.BAT manually unless you know what you are doing. Certain mistakes are difficult to correct.

If you create a new CONFIG.SYS or AUTOEXEC.BAT, you will find it in the root directory of drive D.

Before a new version of CONFIG.SYS or AUTOEXEC.BAT can take effect, you must restart your computer. If you push the restart switch quickly, the unit will restart using the information in the new configuration files. If you hold down the restart switch for five seconds, the unit will restart with the settings in the original CONFIG.SYS and AUTOEXEC.BAT. GEOS then overwrites these files on CONFIG.SYS and AUTOEXEC.BAT in drive D. If you wish to restore these files to your states prior to the restart, run RESETINI.BAT in the DOSROOM folder.

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