UNIVERSITY OF QUEENSLAND

Computer Centre

WEEKLY NEWSLETTER

Date   :   Week ended 12 August 1971

Authorization :   Director of the Computer Centre

1. OPERATIONS

1.1 PDP-10 System

Friday   6 August   End-of-day accounting jobs, which could not run the previous night due to errors in accounting files, 1000-1106
System failure, offline 1655-1712, 1802-1810, 1842-1853.

Monday   9 August   System failure, offline 1017-1035, 1430-1451
Testing of New Batch, 1500-1810.

Tuesday   10 August   Deletion and recovery of disk files showing parity error, 1000-1110
Testing of New Batch, 1410-1804
System failure, offline 1754-1807, 1947-2000, 2025-2033.

Thursday   12 August   System failure, offline 2115-2132

Schedule for forthcoming week: Maintenance 0700-0900, 2300-2400
Operations 1000-2130

1.2 GE-225 System

Schedule for forthcoming week: Maintenance 0700-0900, 2000-2100
Operations 0900-2000, 2100-2400

2. RANDOM NUMBER GENERATING SUBPROGRAMS

The Editor wishes to apologize for the incorrect and misleading information that appeared in last week's newsletter regarding random number generating subprograms. These particular routines are only applicable to the PDP-10 and their correct description is as follows.

RAN is a function subprogram which generates single precision random numbers in the range $0 < x < 1.0$

    e.g. VAR = RAN($\emptyset$)

Note that the value of the argument is ignored.

SAVRAN and SETRAN are subroutine subprograms required to service RAN.

SETRAN is used to provide a non-standard starting point for RAN.

    e.g.   CALL SETRAN (K)

where K has a value in the range $0 < K < 2^{31}-1$. The standard starting point is 524287. Note that if SETRAN is not used RAN will return the same set of 'random' numbers each time the program is run.

SAVRAN is used to save the integer which would be used by the next call to RAN. Thus a sequence of 'random' numbers produced by RAN can be regenerated if the starting point has been saved.

<u>example:</u>

```
        CALL SETRAN(K)              ; sets a non-standard start for RAN
        DO 1Ø  I = 1,N
        X = RAN(Ø)                  ; generates some random numbers
        . . .
10      CONTINUE
        CALL SAVRAN (NUMBER)        ; save the next starting value
        DO 2Ø  I = 1,N
        Y = RAN(Ø)
        . . .
2Ø      CONTINUE
        CALL SETRAN (NUMBER)        ; insert the start to reproduce the
                                     previous set of 'random' numbers.
        DO  3Ø  I = 1,N
        Y = RAN(Ø)                  ; gives the same set as previously.
        . . .
3Ø      CONTINUE
```

To produce a random integer in a given range the following could be used

        K = 1ØØØ*RAN(Ø)

The following sample program uses SETRAN with a non-reproducible argument. RAN may then be called to produce a series of random numbers.

```
        INTEGER HRS
        CALL TIME (NOW)
        DECODE (5,1Ø,NOW) HRS, MINS
1Ø      FORMAT (I2,1X,I2)
        K = MINS*1ØØ + HRS
```

```
C          THIS SCRAMBLES THE TIME
           CALL SETRAN (K)
C          THE STARTING VALUE DEPENDS ON THE
C          TIME OF DAY AND IS NOT PREDICTABLE

           . . .

           X = RAN(∅)

           . . .
```

3. OVERLAYS

Users should be aware of a change in specification of the overlay command in the new batch system. The reason for this change is to permit specification of files to be incorporated in the overlay. (Refer to Chapter 2 of MNT-12 PDP-10 Utility Programs). Until the New Batch is implemented would users please indicate on their Job Identification Card that Overlays (which must be in the form for the present Batch) are used in their program, so that these jobs can always be run under the old batch system.