UNIVERSITY OF QUEENSLAND

Computer Centre

WEEKLY NEWSLETTER

Date   :   Week ended 26 August 1971

Authorization   :   Director of the Computer Centre

1.   OPERATIONS

1.1 PDP-10 System

Friday   20 August   System development, 1000-1015
                         System failure, offline 1120-1125, 1230-1240,
                         1320-1355, 1455-1605, 1810-1820.

Monday   23 August   End-of-day accounting procedure, which could not be run
                         the previous night, 1000-1040
                         System failure, offline 1525-1538
                         Test of new Batch, 1620-1850
                         Disk drive powered down, offline 1750-1800, 1925-1930,
                         1940-2020.

Tuesday   24 August   Transfer of accounting files from previous operational
                         diskpacks to new operational diskpacks, 0900-1040
                         Test of new Batch, 1345-1820.

Wednesday   25 August   End-of-day accounting procedure, which could not be run
                         the previous night, 1000-1026
                         Test of new Batch, 1230-1725
                         System failure, offline 1419-1527.

Thursday   26 August   Restoration of accounting files, 1000-1100
                         System failure, offline 1354-1358, 1515-1528, 1703-1713,
                         1821-1855
                         Test of new Batch, 1402-1739.

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.   WORKSHOP ON 'PICTORIAL ORGANIZATION AND SHAPE'

A Workshop will be held at the C.S.I.R.O. Division of Computing Research,
Canberra on the 29-30 November 1971. This date follows the Canberra
Perception Symposium from 26-28 November. The aims of the Workshop are:

1. to discuss viewpoints on what constitutes 'pictorial organization' and 'shape'

2. to compare different algorithmic approaches for recovering pictorial organization and shape

3. to examine the results of psychological and physiological experiments which might be relevant to these approaches.

C.S.I.R.O. invites prospective attendees to reply by 5 October stating their background and interests. Intending speakers should also include a summary of their topic and be prepared to provide a written paper at the Workshop.

Reply directory to Dr J.F. O'Callaghan, C.S.I.R.O., Division of Computing Research, P.O. Box 109, CANBERRA CITY, A.C.T. 2601.

3.   FORTRAN VERSION 23

The following errors have been reported to Digital. Corrections exist for them, and will be incorporated in the near future.

(a) Users are warned not to use mixed mode expressions that involve subexpressions of integer, real and double precision type. If integer expressions are avoided, results are satisfactory. However, if integer expressions are involved, the compiler in some circumstances fails to take note of the 'type' of the variables when converting from integer to real to double.

(b) Statements involving logical IFs followed by subroutine CALLS result in an illegal UUO.

        e.g.   IF (IC.GT.$\emptyset$)   CALL PUTOUT (')')

results in two arguments being generated and the program will crash with an illegal UUO.

(c) Recursive statements are not flagged as illegal by the FORTRAN compiler. However the code generated by the statement will cause the program to enter a loop from which it cannot exit.

        e.g.   FUNC (I,J,K)=I+J+FUNC(I,J,K)

(d) The compiler generates incorrect subroutine exit code when some of the dummy arguments are double precision or complex arrays.

(e) The compiler does not always handle complex arithmetic correctly, e.g. in the case of division of a complex number the imaginary part is not divided.

The following errors have been reported to Digital for correction.

(f) Users should not use repeats with slashes in FORMAT statements.

        e.g.   5F4.$\emptyset$ will work correctly

but (2(/), 5F4.$\emptyset$) will cause values to be lost, in this example every sixth output value is lost.

(g) In the following example the output list contained 3 implied DO loops with an overall fourth DO loop. The outer two have their first index as a variable (J), but the middle one has a constant index (1). Wrong code is produced for the third implied DO loop.

```
IMPLICIT INTEGER (A-Z)
DIMENSION THEM (9,3ØØ)
WRITE (6,3Ø5) FMT, (THEM(J,I),J=2,7),THEM(1,I),(THEM(J,I),J=8,
1ITMSIZ), I=INDEX,MOST,LINES)
FORMAT (A1,2ØX,6A5,2X,A1,1X,2A5,2ØX,6A5,2X,A1,1X,2A5)
END
```

The cure is to rearrange the data so that the same first index is used for the three internal implied DO loops.

The following are warnings.

(h) Subprogram names may not be used as dummy arguments or appear in any non-executable statement in a program other than as a scalar variable in a type statement. It must appear as a scalar variable and be assigned a value during execution of the subprogram which is the function value.

e.g. SUBROUTINE A(A) is incorrect.

(i) A number of FORTRAN compiler diagnostics are either not detected or not flagged correctly

e.g. I-2 ARRAY NAME ALREADY IN USE is flagged as S-1 SYNTAX

M-12 NON INTEGER PARAMETER is flagged as S-10 ILLEGAL CHARACTER

When the compiler detects an error it records the error and the continuation card and column at which the error occurred. The compiler then returns to the statement recognition scan routine. Depending on the nature of the initial error, it may be that other error situations will be induced. The compiler assumes the last error is the correct one and ignores previous ones. In practice, this means that the diagnostic message may not be very meaningful, although it does indicate an error of some sort exists in the statement.

4. BASIC VERSION 15

(a) An illegal statement, such as

10   A=1, B=Ø

is not detected and is not flagged with a diagnostic message. Instead some kind of execution is attempted, usually giving erroneous results. In PDP-10 BASIC it is incorrect to write two LET statements on one line, but the compiler has failed to recognize the error and the program results in an execution error. Users should check the syntax of their programs as well in these cases if they feel that there is no error in their program logic.

5.   MACRO VERSION 43

Macro expansion fails when an IRP is contained inside a REPEAT within a Macro.

6,   PLOTTING

The problem reported in WN-43 concerning plotter coordinates close to the plotting boundary appears to have been solved.   The Computer Centre would appreciate any users still having trouble with this problem to contact the Administrative Officer.