TERMINAL TALK

October 1970 Vol. III No. 9

- THE WOFFORD CONNECTION -

Wofford College Computer Center Spartanburg, South Carolina

Plotter Pen Control.

The recommended procedure for raising the plotter pen under computer control is to use the upward arrow immediately following the last digit of the Y-coordinate. This is done easily in FORTRAN, using the FORMAT statement. In BII, the SET statement can be used. However, BASIC does not give the user sufficient format control to do this easily. BASIC programmers may adopt a technique based on the use of the delimiter logic built into the plotter. The command PLTL<< turns the plotter on in the "plot between delimiters" mode and also gives the opening delimiter (which need not be on the individual data lines). The spaces provided by BASIC after the Y-coordinate value will be ignored. The limitation is that nothing but the desired upward arrow may be printed on this same line. Examples:

FORTRAN
```
100 PRINT 7, X, Y, "↑
110 7 FORMAT (2I5,A1)
```

BII
```
10 SET X = Y = 4.0
200 PRINT X; Y "↑"
```

BASIC
```
150 PRINT "PLTL<<"
200 PRINT X;Y "↑"
```

BII Subroutines.

The CALL statement in BII allows the user to build a library of external subroutines and integrate these into other programs as needed. A few such subroutines are already available. These programs use only the variable names beginning with Z. Examples are

BIISLE*** Use for fast line slewing. To skip N lines on the page, use a line like 1008 Z9 = N + 1\CALL BIISLE***

BIIPAG*** -- Use to page the output from a BII program, 50 lines per page with page numbers and headings. A program segment of the following type must be included in your main program to allow for a heading:

```
90000  Z8 = 1\Z2 =  2\CALL BIIPAG***
90002 IF Z8 = 2 THEN 90004 \ RETURN
90004 PRINT TAB (30); "HEADING LINE 1"
90006 PRINT TAB (30); "HEADING LINE 2"
90100 CALL BIIPAG*** \GO TO 90000.
```

On line 90000 the variable Z2 must be set equal to the number of lines of heading (0 to 6) which starts on line 90004 and goes to 90099. If no heading is desired, insert 90004 X = X.

CALL BIIPAG*** for three purposes:

A. To initialize the subroutine use 100 GOSUB 90000

B. Before each output line or block of lines use
150 Z = 2\GOSUB90000

Where Z is set equal to the number of output lines in the block or is set equal to zero to start a new page.

C. To complete the last page and stop the program use 500 Z7 = -1\ GOSUB90000.

BIIPL*.

CALL BIIPL* for three purposes.

A. Before plotting, when the subroutine will request values for the left, right, bottom, and top of your graph. Use a program statement like the following:
10 Z9 = 0\CALL BIIPL*

B. During plotting, when the abcissa and ordinate have been calculated and assigned to X and Y (where you might have been using PRINT X,Y), insert a line such as
720 CALL BIIPL*

C. When the plot is complete, use a line such as
980 Z9 = 2\CALL BIIPL*
This will turn off the plotter. This line may also be used, if necessary, so that your program may print at the teletype even though the TTY mute switch on the plotter is depressed.

D. Do not attempt to print while plotting, except as in C above.

E. You may set Z7 as follows to control plotter action:

Z7=0 to leave pen down and go to next point (draw lines)
Z7=1 to bring pen up and go to next point (plot points or begin a new line)
Z7=2 to plot data points as small plus signs
Z7=3 to plot data points as small X's
Z7=4 to plot data points as small asterisks
Z7=5 to plot data points in small triangles
Z7=6 to plot data points in small rectangles.

Iowa Conference.

The College has received the Proceedings of a Conference on Computers in the Undergraduate Curricula. The Conference was held at the University of Iowa in June 1970. The Proceedings contain reprints of the papers and include many ideas for computer use under such headings as: Humanities, Statistics, Engineering, Mathematics, Economics, Simulation in the Natural Sciences, Physics, Chemistry, and Social Sciences. A copy will be placed in the library.