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DECUS NO.	FOCAL8-84
TITLE	2D PLOTTER FOR SERIAL EXPERIMENTAL DATA
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SOURCE LANGUAGE	FOCAL

ATTENTION

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2D PLOTTER FOR SERIAL EXPERIMENTAL DATA

DECUS Program Library Write-up

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ABSTRACT:

This FOCAL program will accept and plot on TTY up to 40 sets of data (in 4K). The print-out is organized to display the Cartesian Space by spacing through values of "Y" and line feeding through values of "X", where these may represent any physical quantities. Since the base line increment is accomplished by the line feed, some care must be exercised in specifying this parameter in response to the ASK "BASE LINE POSITION" to avoid distortion of the display.

Data must be input in the order in which they will fall on the base line. The plotting routine will line-feed to the proper base line position, then space to the proper value of the parameter being plotted. Line 06.08 specifies the plot symbol. By inputting the largest value of the plotted parameter, the program is enabled to scale the display to fit the width of the TTY page. Purposely violating this provision makes it possible to compress or expand the display. The base line is serialized for those positions on which data occur.

Following the plotting of data, the display scale factor and the adjusted values for the plotted parameter are typed out by calling for the whole symbol table.

This program was designed to serve as a universal plotting routine in its own right, but is group numbered to facilitate incorporation into some other program as a dedicated display routine. In this latter case, the new program should provide the values presently listed in group 3, and only groups 5 & 6 need be retained from the present program. The group 1 instructions are erased as the program is executed the first time after loading. Since they merely provide a minimum set of instructions for operating the program, the erasure cuts down program reentry time; but most importantly, the erasure clears space for the table of subscripted variables generated as the program runs.

C-FOCAL , 8/68

01.01 T "GROUP ONE INSTRUCTIONS WILL BE ERASED AS EXECUTED SO THAT"!!
01.02 T !!!"2- D PLOTTER FOR SERIAL EXPERIMENTAL DATA"!!
01.03 T "WILL HAVE STORAGE FOR UP TO 44 SUBSCRIPTED VARIABLES."!
01.04 T "REGARD DATA AS RESIDING IN REGION OF POS 'Y' ONLY, AND"!
01.05 T "BASE LINE PARAMETERS OVER ANY INTERVAL OF 'X', WHICH"!
01.06 T "MAY THEN, OF COURSE, REFER TO ANY PHYSICAL QUANTITY."!
01.07 T "THIS PROGRAM WILL SCALE THE DATA TO FIT THE TTY PAGE"!
01.08 T "AND CAUSE ONE LINE FEED FOR EACH WHOLE COUNT ON THE"!
01.09 T "BASE LINE, WHETHER OR NOT THERE ARE DATA TO BE PLOTTED."!
01.10 T !"<GO> AGAIN FOR THE PROGRAM"!!!!!!;E 1

03.01 T "2- D PLOTTER FOR SERIAL EXPERIMENTAL DATA"!
03.02 A "NUMBER OF SETS OF DATA",SE,"LARGEST DATUM",LA
03.04 T !"ENTER DATA IN PLOTTING ORDER"!!;S W=70/LA
03.10 F PL=1,SE;A "NEXT DATUM",DA;S Z(PL)=DA*W;D 6.25

05.02 T !!!;F PL=1,SE;D 6
05.04 T ! %4.02 "PLOT IS SCALED",W," TO BEST USE AVAILABLE SPACE"!!
05.06 T "YOUR DATA WERE PLOTTED AS THE SUBSCRIPTED Z'S BELOW"!!
05.08 T !!!!!!!!!!!!!!!;E
05.09 0

06.01 F PR=1,[X(PL)-PW];T !"="#
06.02 T %4,X(PL),#
06.06 F PR=0,Z(PL);T " "
06.08 T "*" "
06.09 S PW=X(PL);R
06.25 A "BASE LINE POSITION",BL,!;S X(PL)=BL;R

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