



Using The Routine From BASIC

In order to use the Linesub routine from BASIC, you must first load Linesub and Plotsub as shown in the BASIC Demonstration Program. We have called our final object code programs PLOTSUB.HEX and LINESUB.HEX. After loading the machine code routines, this short demonstration program asks the user for the co-ordinates of two points, tests the gradient and, if it is not less than one, accesses Plotsub to clear the HIRES screen and set the colour. The subroutine at line 2000 converts the X co-ordinates into

Lobyte and Hibyte, before POKEing these values to locations set aside in Linesub for the endpoints of the line. The subroutine at line 3000 prints the values of all the locations used for variables by Linesub. This can be a useful method of debugging machine code programs.

As an alternative to typing in the source code for Linesub and assembling it into machine code, the Machine Code Loader program enters the same program into memory by READING a series of DATA values and POKEing them into memory. Type in this program and RUN it to load Linesub into memory.

BASIC Demonstration Program

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10 REM *****
12 REM ** LINESUB 64 **
13 REM *****
14 :
15 DN=8:REM FOR CASSETTE SET DN=1
20 IF A=0 THENA=1:LOAD"PLOTSUB.HEX",DN,1
30 IF A=1 THENA=2:LOAD"LINESUB.HEX",DN,1
50 INPUT"FIRST POINT":X1,Y1
60 INPUT"SECOND POINT":X2,Y2
70 GOSUB1000:REM SET HIRES MODE
80 GOSUB2000:REM LINESUB
90 GETA#:IFA#=""THEN 90
95 IF A#="" THEN200
100 REM **** RESET SCREEN ****
110 POKE49408,0:SYS 49422
120 GOSUB3000
125 GETA#:IFA#=""THEN125
127 GOT050
140 :
200 REM **** DRAW TRIANGLE ****
205 XA=30:YA=10:XB=310:YB=98
210 XC=90:YC=180
220 GOSUB1000
230 X1=XA:Y1=YA:X2=XB:Y2=YB:GOSUB2000
240 X1=XC:Y1=YC:GOSUB2000
250 X2=XA:Y2=YA:GOSUB2000
255 GETA#:IFA#="" THEN 255
260 REM **** RESET SCREEN ****
270 POKE49408,0:SYS 49422
275 PRINTCHR$(147)
280 END
290 :
1000 REM **** SET HIRES ****
1010 POKE49408,1:POKE49409,1
1015 POKE49410,1
1020 SYS 49422
1030 RETURN
1040 :
2000 REM **** ENTER LINESUB ****
2010 MHI=INT(X1/256):MLO=X1-256*MHI
2020 NHI=INT(X2/256):NLO=X2-256*NHI
2030 POKE49920,MLO:POKE49921,MHI
2040 POKE49922,NLO:POKE49923,NHI
2050 POKE49924,Y1:POKE49925,Y2
2060 SYS 49934
2070 RETURN
2080 :
3000 REM **** PRINT VALUES ****
3001 RESTORE
3002 PRINTCHR$(147):REM CLEAR SCREEN
3005 FORI=0T013
3010 READA#
3020 PRINTA#,PEEK(49920+I)
3030 NEXT I
3040 DATA X1LO,X1HI,X2LO,X2HI,Y1,Y2,DXLO
3050 DATA DXHI,DY,TEMP,TOTLO,TOTHI,NEGREG,DECFLG
3060 RETURN

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Machine Code Loader

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10 FOR I=49934 TO 50371
20 READA:CC=CC+A
30 POKEI,A:NEXT
50 READA:IFCC<>A THEN PRINT"CHECKSUM
ERROR":END
100 DATA72,138,72,152,72,169,0,141,13
110 DATA195,141,12,195,141,10,195,141
120 DATA11,195,173,2,195,56,237,0,195
130 DATA141,6,195,173,3,195,237,1,195
140 DATA141,7,195,16,8,173,12,195,9,2
150 DATA141,12,195,173,5,195,56,237,4
160 DATA195,141,8,195,176,8,173,12,195
170 DATA9,1,141,12,195,173,12,195,201
180 DATA1,240,20,201,2,208,6,32,140
190 DATA196,76,19,195,201,3,208,19,32
200 DATA140,196,76,19,195,173,4,195,56
210 DATA237,5,195,141,8,195,238,13,195
220 DATA173,6,195,24,105,1,141,6,195
230 DATA173,7,195,105,0,141,7,195,238
240 DATA8,195,173,4,195,168,173,7,195
250 DATA201,1,240,115,173,6,195,205,8
260 DATA195,176,107,173,0,195,141,3
270 DATA193,173,1,195,141,4,193,152
280 DATA141,5,193,32,131,193,173,10
290 DATA195,24,109,6,195,176,8,141,10
300 DATA195,205,8,195,144,24,56,237,8
310 DATA195,141,10,195,173,0,195,24
320 DATA105,1,141,0,195,173,1,195,105
330 DATA0,141,1,195,173,13,195,201,1
340 DATA208,31,136,204,5,195,240,3,76
350 DATA161,195,152,141,5,193,173,0
360 DATA195,141,3,193,173,1,195,141,4
370 DATA193,32,131,193,76,134,196,200
380 DATA204,5,195,144,152,76,134,196
390 DATA173,0,195,141,3,193,173,1,195
400 DATA141,4,193,152,141,5,193,32,131
410 DATA193,173,10,195,24,109,8,195
420 DATA141,10,195,173,11,195,105,0
430 DATA141,11,195,173,10,195,56,237,6
440 DATA195,141,10,195,173,11,195,237
450 DATA7,195,141,11,195,48,15,173,13
460 DATA195,201,1,240,4,200,76,104,196
470 DATA136,76,104,196,173,10,195,24
480 DATA109,6,195,141,10,195,173,11
490 DATA195,109,7,195,141,11,195,173,0
500 DATA195,24,105,1,141,0,195,173,1
510 DATA195,105,0,141,1,195,205,3,195
520 DATA208,142,173,0,195,205,2,195
530 DATA208,134,104,168,104,170,104,96
540 DATA173,2,195,141,9,195,173,0,195
550 DATA141,2,195,173,9,195,141,0,195
560 DATA173,3,195,141,9,195,173,1,195
570 DATA141,3,195,173,9,195,141,1,195
580 DATA173,5,195,141,9,195,173,4,195
590 DATA141,5,195,173,9,195,141,4,195
600 DATA96,230
610 DATA50794:REM*CHECKSUM*

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