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1 REM Frank Thielen
4 REM      &
5 REM Thomas Barndt
8 REM
10 MODE 2
20 BORDER 0
30 INK 1,26:PEN 1
40 INK 0,0:PAPER 0
50 MEMORY &9FFF
60 FOR i=&A000 TO &A0BF
70 READ byte:POKE i,byte:s=s+byte:NEXT
80 IF s<>23767 THEN PRINT"Fehler in datas !":EN
   D
90 CLEAR
100 DEFINT d,i,j,r,f,g,n,m
110 CLS
120 PRINT"                                3D-Plot":PRINT
    :PRINT "                                Copyright FTCP 198
    2":PRINT
130 PRINT
140 PRINT"                                Realisiert durch FTCP & THB
    CS 1985":PRINT:PRINT
150 PRINT"                                Eingabe der Funktion als z=f(x,y)
    ab Zeile 1000"
160 PRINT
170 PRINT"Eingabe von   xmin, xmax,"
180 PRINT"                                ymin, ymax,"
190 PRINT"                                zmin, zmax,"
200 INPUT "                                Anzahl Linien";xmin,xmax
    ,ymin,ymax,zmin,zmax,n
210 IF xmin>=xmax OR ymin>=ymax OR zmin>=zmax OR
    n<2 THEN 110
220 m=320      Anzahl der Punkte in beiden Haupta
    chsrichtungen
230 d1=320
240 d2=100
250 d3=200

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260 c1=(xmax-xmin)/(n-1)
270 c2=d1/(n-1)
280 c3=d1/m
290 c4=d3/(zmax-zmin)
300 c5=(xmax-xmin)/m
310 c6=(ymax-ymin)/(n-1)
320 c7=(ymax-ymin)/m
330 c8=d2/(n-1)
340 c9=d2/m
350 DIM maxp(2*d1),minp(2*d1)
360 MODE 2
370 ORIGIN 320,0
380 FOR r=-1 TO 0
390   FOR i=0 TO 2*d1
400     maxp(i)=-10000:minp(i)=-10000
410   NEXT i
420   FOR i=0 TO n-1
430     IF r THEN x=xmin+c1*i ELSE y=ymin+c6*i
440     f=-1
450     FOR j=0 TO m
460       IF r THEN y=ymin+c7*j ELSE x=xmin+c5*j
470       GOSUB 1000
480       xp%=ROUND(i*c2-j*c3):IF NOT r THEN xp%=-xp%
490       yp%=ROUND(i*c8+j*c9+(z-zmin)*c4)
500       index=xp%+d1
510       IF maxp(index)=-10000 THEN maxp(index)=yp%:minp(index)=yp%:g=-1:GOTO 530

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520      IF yp%>maxp(index) THEN maxp(index)=yp
      %:g=-1 ELSE IF yp%<minp(index) THEN mi
      np(index)=yp%:g=-1 ELSE g=0
530      IF j=0 THEN MOVE xp%,yp%:GOTO 560
540      IF f AND g THEN DRAW xp%,yp%
550      IF g THEN MOVE xp%,yp%
560      f=g
570      NEXT j
580      NEXT i
590      NEXT r
600      DIM rs(639)
610      FOR i=0 TO 639
620          rs(i)=PEEK(49152+i MOD 80+(i\80)*2048)
630      NEXT
640      LOCATE 1,1:PRINT"H)ardcopy B)eenden N)eustar
      t"
650      s$=LOWER$(INKEY$):IF s$="b" THEN CLS:END ELS
      E IF s$="n" THEN ERASE minp,maxp,rs:GOTO 110
      ELSE IF s$<>"h" THEN 650
660      FOR i=0 TO 639
670          POKE 49152+i MOD 80+(i\80)*2048,rs(i)
680      NEXT
690      PRINT#8,CHR$(27);"@";:CALL &A000:PRINT#8:PRI
      NT#8,CHR$(27);"@"
700      GOTO 640
990      '      *** Huegel ***
1000     'z=EXP(-x*x-y*y)
1010     '      *** Sombrero ***
1020     z=EXP(-x*x-y*y)*COS(SQR(x*x+y*y)*5)
1030     '      *** Spitze ***
1040     'z=sqr(x*x+y*y)
1050     'if z>2 then z=0 else z=2-z
1060     '      *** Torte ***
1070     'z=sqr(x*x+y*y)
1080     'if z>2 then z=0 else z=2
1090     '      *** Hochzeitstorte ***
1100     'z=sqr(x*x+y*y)
1110     'if z>3 then z=0 else z=3-int(z)
1120     '      *** Kuppel ***
1130     'z=x*x+y*y
1140     'if sqr(z)>3 then z=0 else z=sqr(9-z)
1150     '      *** Wellen ***
1160     'z=COS(x):z=z*z*y*y

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1170 '      *** Schwarzes Loch ***
1180 'z=SQR(x*x+y*y)
1190 'IF z=0 THEN z=0.01
1200 'z=-ABS(1/z)
1210 '      *** Kreuzgewoelbe ***
1220 'z=EXP(-(x)*x)+EXP(-(y)*y)-EXP(-(x)*x-y*y)
3000 RETURN
3010 '
3020 '
3030 DATA &cd,&ba,&bb,&cd,&e7,&bb,&32,&bd
3040 DATA &a0,&cd,&6c,&a0,&21,&8f,&01,&22
3050 DATA &be,&a0,&11,&00,&00,&3e,&07,&32
3060 DATA &c0,&a0,&cd,&7c,&a0,&0e,&00,&3a
3070 DATA &c0,&a0,&47,&e5,&d5,&c5,&cd,&f0
3080 DATA &bb,&c1,&d1,&21,&bd,&a0,&be,&e1
3090 DATA &37,&20,&01,&a7,&cb,&11,&2b,&2b
3100 DATA &10,&e9,&cd,&af,&a0,&79,&cd,&a6
3110 DATA &a0,&13,&e5,&21,&7f,&02,&37,&ed
3120 DATA &52,&e1,&38,&05,&2a,&be,&a0,&18
3130 DATA &cc,&23,&7c,&b5,&c8,&2b,&11,&00
3140 DATA &00,&22,&be,&a0,&3e,&07,&bd,&20
3150 DATA &b9,&7c,&b4,&20,&b5,&3e,&04,&32
3160 DATA &c0,&a0,&18,&ae,&3e,&1b,&cd,&a6
3170 DATA &a0,&3e,&41,&cd,&a6,&a0,&3e,&07
3180 DATA &cd,&a6,&a0,&c9,&e5,&3e,&42,&cd
3190 DATA &1e,&bb,&e1,&28,&02,&e1,&c9,&3e
3200 DATA &0d,&cd,&a6,&a0,&3e,&0a,&cd,&a6
3210 DATA &a0,&3e,&1b,&cd,&a6,&a0,&3e,&4c
3220 DATA &cd,&a6,&a0,&3e,&7f,&cd,&a6,&a0
3230 DATA &3e,&02,&cd,&a6,&a0,&c9,&cd,&2e
3240 DATA &bd,&38,&fb,&cd,&2b,&bd,&c9,&3a
3250 DATA &c0,&a0,&fe,&07,&c8,&af,&cb,&11
3260 DATA &cb,&11,&cb,&11,&c9,&00,&00,&00

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