GEEK VINTAGE

DOES . . .

The Aquarius User Magazine Type In Programs - Sketch Pad Design Draw - Binary to Decimal For the Mattel Aquarius

4K PROGRAMS

Every month, as well as printing one or two games programs (to begin with!) we will have a page of small programs and routines that we hope are either fun or useful. Here we kick off with three programs from P Lee of Macclesfield.

HERE IS one fun program and two that should be extremely useful for saving memory on the Aquarius. Program 1 turns the Aquarius into an etch-a-sketch screen. It makes four of the keys effectively into cursor control keys to move a line forwards, backwards, up and down across the screen. The routines in the bottom half of the program could be used in other types of program.

Program two is a memory saving device. It allows the user to design a screen display and then convert it into numbers and thereby save memory. Mr Lee writes, "The program allows a full 80 by 72 screen to be held in 720 locations instead of 5760 (80 by 72) as pixels or 960 locations when stored as characters".

"The user could convert the binary form to decimal by the standard method as follows:

	PSET	
Bit 7	yes	2^7=128
Bit 6	no	
Bit 5	yes	2^5= 32
Bit 4	no	
Bit 3	yes	2^3= 8
Bit 2	no	
Bit 1	yes	2^1= 2
Bit 0	no	

Binary 10101010 = 170 decimal"

(If you are confused at this stage, don't panic! Watch out for our series on assembler which will include an explanation of binary, decimal and hexadecimal numbers—Ed.)

"Or alternatively using Program 3 to do the conversion once the binary form has been recorded. These programs could be combined."

Thanks a lot Mr Lee.

AQUARIUS SKETCH PAD

```
_5 REM Aquarius Sketch Pad (c) P. LEE 1984
_6 PRINTCHR$(11)
_10 PRINT"You are able to draw in a
    grid          80 across by 72 down":PRINT
_20 PRINT"To DRAW to the LEFT PRESS Z":PRINT
_30 PRINT"To DRAW to the RIGHT PRESS M":PRINT
_40 PRINT"To DRAW UPwards PRESS X":PRINT
_50 PRINT"To DRAW DOWNwards PRESS N":PRINT
_55 PRINT"To ERASE your last move PRESS E":PRINT
_60 PRINT"To STOP the program
    PRESS 0":PRINT:PRINT:PRINT
_70 PRINT"      PRESS SPACE TO CONTINUE"
_80 PRINT"Input x":INPUT X:IF X>79 OR X<0 THEN
    PRINT"X OUT OF RANGE":PRINT CHR$(7):GOTO 80
_90 PRINT"Input Y":INPUT Y:IF Y>72 OR Y<0 THEN
    PRINT"Y OUT OF RANGE":PRINTCHR$(7):GOTO 90
_95 PRINTCHR$(11)
_96 FOR I=13352 TO 14311:POKE I,7:NEXT I:
     POKE 12369,32
_100 PSET(X,Y)
_105 K$=INKEY$
_110 IF K$=" " THEN 105
_120 IF K$="z" THEN PSET(X-1,Y):X=X-1
_130 IF K$="m" THEN PSET(X+1,Y):X=X+1
_140 IF K$="x" THEN PSET(X,Y-1):Y=Y-1
_150 IF K$="n" THEN PSET(X,Y+1):Y=Y+1
_160 IF K$="e" THEN PRESET(X,Y)
_170 IF K$="0" THEN END
_180 GOTO 105
```

AQUARIUS DESIGN DRAW

```
_10 REM DESIGN DRAW
_15 S=0:E=19:REM START & END OF DATA LOOP
_20 FOR R=S TO E:READ N
_25 REM EACH DATA LINE= A ROW OF 80 PIXELS
_30 DATA 0,255,0,255,0,255,0,255,0,255
_40 DATA 255,0,255,0,255,0,255,0,255,0
_99 REM MAIN PROGRAM:X & Y ARE START
     POINT,UNLESS CHANGED X=0,Y=0
_100 IF N>=128 THEN PSET(X,Y):N=N-128
_105 X=X+1
_110 IF N>=64 THEN PSET(X,Y):N=N-64
_115 X=X+1
_120 IF N>=32 THEN PSET(X,Y):N=N-32
_125 X=X+1
_130 IF N>=16 THEN PSET(X,Y):N=N-16
_135 X=X+1
_140 IF N>=8 THEN PSET(X,Y):N=N-8
_145 X=X+1
_150 IF N>=4 THEN PSET(X,Y):N=N-4
_155 X=X+1
_160 IF N>=2 THEN PSET(X,Y):N=N-2
_165 X=X+1
_170 IF N=1 THEN PSET(X,Y)
_175 X=X+1
_180 IF X>79 THEN X=0:Y=Y+1
_190 NEXT R
_195 REM THE NEXT LINE FILLS
  THE SCREEN BY REPEATING THE LOOP
_200 RESTORE:GOTO 20
```

AQUARIUS BINARY TO DECIMAL CONVERTER

```
_10 REM BINARY TO DECIMAL CONVERTER
_15 D=0:FOR N=7 TO 0 STEP-1:B(N)=0:
    Y(N+1)=1:Z(N+1)=1:NEXT N
_20 PRINT:PRINT
_30 PRINT"INPUT YOUR BINARY NUMBER AS AN
    '8'    FIGURE NUMBER e.g. 10101010"
_31 INPUT B$
_32 IF LEN(B$)<>8THEN PRINT CHR$(7):GOTO 15
_33 FOR X=1 TO 8
_34 IF MID$(B$,X,1)="0" THEN Y(X)=0:Z(X)=Y(X)
_35 IF MID$(B$,X,1)="1" THEN Z(X)=0:Y(X)=Z(X)
_36 IF Y(X)=1 OR Z(X)=1 THEN PRINT CHR$(7):GOTO 15
_37 NEXT X
_40 FOR N=1 TO 8
_50 IF MID$(B$,N,1)="1" THEN B(8-N)=2^(8-N)
_55 NEXT N
_60 D=B(7)+B(6)+B(5)+B(4)+B(3)+B(2)+B(1)+B(0)
_70 PRINT:PRINTB$;" IN BINARY =";D;" IN DECIMAL"
_80 FOR T=1 TO 5000:NEXT T:GOTO 15
```