28. Simon

General Description

This program is a computer version of the SIMON memory game available in High Street shops. I have included it because I like the way Ian Clarke has handled the sound and display and I believe there is a place in any suite of programs for a memory tester such as this.

When you run the program you will see four coloured bars grouped in a square shape. There are numbers next to each bar (1-4), and these are the keys that control any bar - key 1 controls bar 1.

If you are not familiar with SIMON style games, then read on. The computer makes a sound and flashes a bar. You must then repeat exactly what the computer has generated by pressing the key corresponding to the bar that flashed. To begin with the sounds and flashes are simple but quickly become more difficult.

The computer will tell you how many goes you survived. This runs on a Model 'A'.

Detailed Description

Lines 10-300 This sets level of play. Auto repeat and cursor are turned off. The S() array holds the time gaps for each level of play before the next sound and bar colour flash generated. Array T() holds the number of goes before the game is considered even at that level. Invalid characters generate a 'beep' and the valid characters are converted to numbers 1-5 (line 300).

310-440 These print the colour bars on the screen.

450-620 This is the actual game. The subroutines in line 510 flash the bar. The array G() holds the computer's random sound and bar flashes. The computer checks each response as you GET

it in from the keyboard.

630-690 The success routine.

700-1090 These are the sound and flash routines. Line 970 sets the colour pitch for the flash colours, bars 1 and 3. Line 750 does the same for bars 2 and 4. The sound value 5 is called in 980 and 760 respectively.

1100-1230 The fail routine and the option for another go. Line 1190 could use the more sophisticated validation shown elsewhere.

Educational Notes

Young children in particular need assistance in developing retentive facilities and I think SIMON style games manage to do this. It avoids cramming useless facts into the mind, merely developing the ability to remember. I have found that first years enjoy it as an occasional end of lesson filler. It can hold the attention of a small group of youngsters for about 10 minutes.

Program Listing

```
   10  REM ****************************
   20  REM **   SIMON                **
   30  REM **   Written by Ian Clarke.**
   40  REM **   Jan 83               **
   50  REM ****************************
   60  ON ERROR GOTO 1200
   70  ENVELOPE 1,2,4,-8,4,8,16,8,1,0,0,-2,120,120
   80  *FX4,1
   90  *FX11,0
  100  MODE 7
  101  VDU 23;8202;0;0;0;
  102  PRINT
  110  DIM S(5),T(5),S$(2)
  120  S$(0)="es."
  130  S$(1)="."
  140  S(1)=800:T(1)=10
  150  S(2)=500:T(2)=15
  160  S(3)=300:T(3)=20
  170  S(4)=150:T(4)=25
  180  S(5)=50 :T(5)=30
  190  PRINT TAB(3,6);CHR$(141);CHR$(131);"What level do you
 want to play at?"
  200  PRINT TAB(3);CHR$(141);CHR$(131);"What level do you w
ant to play at?"
  210  PRINT TAB(10,10);CHR$(141);CHR$(131);"1,2,3,4 OR 5."
  220  PRINT TAB(10);CHR$(141);CHR$(131);"1,2,3,4 OR 5."
  230   FOR X=1 TO 200:NEXT
  240  *FX15
```

```
  250  A=GET
  260  IF A<49 THEN VDU 7:GOTO 230
  270  IF A>53 THEN VDU 7:GOTO 230
  280  PRINT TAB(15,13);CHR$(141);CHR$(131);A-48
  290  PRINT TAB(15);CHR$(141);CHR$(131);A-48
  300  A=A-48
  310  DIM G(T(A))
  320  FOR X=1 TO 1000:NEXT
  330  CLS
  340  D=0
  350  GOSUB 750
  360  PRINT TAB(18,4);CHR$(133);"1"
  370  GOSUB 970
  380  PRINT TAB(5,12);CHR$(129);"2"
  390  D=5:
  400  GOSUB 750
  410  PRINT TAB(18,22);CHR$(132);"3"
  420  D=52
  430  GOSUB 970
  440  PRINT TAB(32,12);"4"
  450  FOR X=1 TO 1000:NEXT
  460  FOR H=1 TO T(A)
  470    G(H)=RND(4)
  480    FOR X=1 TO S(A):NEXT
  490    FOR J=1 TO H
  500      D=G(J)+48
  510      ON G(J) GOSUB 750,970,750,970
  520    NEXT J
  530    FOR J=1 TO H
  540      FOR X=1 TO 100:NEXT
  550      D=GET
  560      IF D<49 THEN VDU 7:GOTO 540
  570      IF D>53 THEN VDU 7:GOTO 540
  580      IF D-48<>G(J) THEN GOTO 1100
  590      ON D-48 GOSUB 750,970,750,970
  600    NEXT J
  610    FOR X=1 TO 1000:NEXT
  620  NEXT H
  630  CLS
  640  FOR X=1 TO 1000:NEXT
  650  PRINT TAB(5,8);CHR$(141);CHR$(131);"Congratulations o
n completing"
  660  PRINT TAB(5);CHR$(141);CHR$(131);"Congratulations on
completing"
  670  PRINT TAB(13);CHR$(141);CHR$(131);"level ";A;"."
  680  PRINT TAB(13);CHR$(141);CHR$(131);"level ";A;"."
  690  GOTO 1140
  700  REM ----------------------------
  710  REM This subroutine produces
  720  REM sound for the top bar or
  730  REM bottom bar and flashes
  740  REM the bar off then on.
  750  IF D=51 THEN S=81:Y1=21:C=132 ELSE S=53:Y1=5:C=133
  760  SOUND 1,-15,S,10
  770  FOR X=0 TO 20
  780    D$=D$+CHR$(32)
  790  NEXT
  800  FOR X=1 TO S(A)/4:NEXT
  810  PRINT TAB(8,Y1);D$
  820  D$=""
  830  FOR X=1 TO 20
  840    D$=D$+CHR$(255)
  850  NEXT
  860  PRINT TAB(8,Y1);CHR$(C);D$
  870  D$=""
  880  FOR X=1 TO S(A):NEXT
  890  SOUND &0011,0,0,0
  900  REM ..........................
  910  RETURN
```

```
  920  REM ----------------------------
  930  REM This subroutine produces
  940  REM sound for the left bar or
  950  REM right bar and flashes
  960  REM the bar off then on.
  970  IF D=52 THEN S=101:X1=29:C=130 ELSES=69:X1=7:C=129
  980  SOUND 1,-15,S,10
  990  FOR Y=6 TO 20
 1000    PRINT TAB(X1+1,Y);CHR$(32)
 1010  NEXT
 1020  FOR X=1 TO S(A)/4:NEXT
 1030  FOR Y=6 TO 20
 1040    PRINT TAB(X1,Y);CHR$(C);CHR$(255)
 1050  NEXT
 1060  FOR X=1 TO S(A):NEXT
 1070  SOUND &0011,0,0,0
 1080  REM ..........................
 1090  RETURN
 1100  CLS
 1110  IF H=2 THEN W=1 ELSE W=0
 1120  PRINT TAB(5,10);CHR$(141);CHR$(131);"You failed after
";H-1;" go";S$(W)
 1130  PRINT TAB(5);CHR$(141);CHR$(131);"You failed after ";
H-1;" go";S$(W)
 1140  FOR X=1 TO 5000:NEXT
 1150  PRINT TAB(5,13);CHR$(141);CHR$(131);"Do you want anot
her game?"
 1160  PRINT TAB(5);CHR$(141);CHR$(131);"Do you want another
 game?"
 1170  *FX15
 1180  D$=GET$
 1190  IF D$="Y" OR D$="y" THEN RUN
 1200  SOUND 1,1,120,70
 1210  CLS
 1220  PRINT TAB(15,12);CHR$(136);CHR$(141);;CHR$(134);"BYE!
!!"
 1230  PRINT TAB(15);CHR$(136);CHR$(141);;CHR$(134);"BYE!!!"
 1240  FOR X=1 TO 8500:NEXT
 1250  MODE 7
 1260  *FX4
 1270  *FX11,25
 1280  END
```