

Deep Thought

Jon Tarrant and Rachel Braverman submitted one of the nicest offerings in the first competition. It wasn't a megabyte of code but a very delightful example of what can be done with the efficiency of the CPC464.

The program structure itself is nice and elegant. The only complaint we had was the presence of rather a large number of LET statements. Tut, tut. Refer to Chapter 8 of the user guide.

Is this evidence of an 'alien' program from another machine with a lazy BASIC? Anyway, you lot don't need to worry about typing in the LETs. We reproduce them here, since this is a computer-originated listing, and we would hate to be accused of meddling.

The screen display setup and the general handling of the input are a good example for all to observe.

The Plot....

'Deep Thought' is a computer version of the traditional game 'Bulls and Cows' - of which the 'Mastermind' board game is also a derivative. (I never knew that!)!

The computer will set a four digit code, the degree of difficulty is determined by the selected skill level. You have a maximum of 10 attempts to break the code, and are scored after each guess depending on how accurate you are. After each guess is typed in - but before the computer scores it - you have the chance to change your entry.

This is particularly useful, because it allows you to see your guess in print and compare it to your previous guesses without

wasting an attempt if you then spot an obvious error.

There are three levels of play which determine the nature of the code you have to crack:

1. Code contains any four of the digits 1 to 9 inclusive. No digits are repeated at level (1).
2. As for (1), except that 0 is also used.
3. As (2) but may include any number of repeats. The hardest one. A solid spot on the 'score' shows that you have guessed both a digit and its relative position correctly. The position of the score dot has no particular relevance. An open dot indicates you have guessed the value of a digit correctly, but it is not in the correct relative position in the display.

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10 REM *****DEEP THOUGHT by RACHEL BRAVERMAN AND JON TARRANT**
20 :
30 GOSUB 1000:REM **introductory text**
40 :
50 GOSUB 2000:REM **start up screen**
60 :
70 GOSUB 3000:REM **play game**
80 :
90 GOTO 4000:REM **end/return game**
999 :
1000 REM **** introductory text ****
1010 MORE 1:INK 1,2:CLR:PRINT @:CORNER @:PER 1
1020 PRINT SPC(13);"DEEP THOUGHT"
1030 PRINT:PRINT SPC(13);"ABSTRACTGEMS"
1040 FOR N=1 TO 5:PRINT:NEXT 1
1050 PRINT "The object of the game is to break a"
1060 PRINT "four figure code created by the Computer"
1070 PRINT "There are three skill levels; 1 is the"
1080 PRINT "easiest and 3 is the hardest. 40 skill"
1090 PRINT "level 1, the computer's code will only"
1100 PRINT "contain digits 1 to 9 and no digits are"
1110 PRINT "repeated. At skill level 2 the code may"
1120 PRINT "include zeroes, and at level 3 repeated"
1130 PRINT "digits may also be used."
1140 LOCATE 1,24:PRINT "SELECT SKILL LEVEL REQUIRED (1/2/3)"
1150 LET S@=INKEY$:IF S@<"1" AND S@<"2" AND S@<"3" THEN GOTO 1160
1160 LOCATE 1,24:PRINT "PRESS ANY KEY TO PLAY GAME AT LEVEL "S@S
1200 CALL 8000
1299 RETURN
1299 :
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0000 CLEARNUMBER 5
0010 LOCATE 23,2:PRINT CHR$(143); " :CHR$(143); " :CHR$(143); " :CHR$(143); "
0020 FOR T= 348 TO 444 STEP 32:PILOT T,386:DRAW T,386:DRAW T+22,364:DRAW
T+22,386:DRAW T,386:NEXT T
0030 PILOT 332,18:DRAW 482,18:DRAW 482,394:DRAW 332,394:DRAW 332,18
0040 PILOT 332,394:DRAW 481,394
0050 WINDOW #1,3,18,3,4
0060 INK 3,0
0070 PAPER #1,13:PEN #1,3
0080 PRINT #1,"***** DEEP THOUGHT *****")
0090 WINDOW #2,2,19,18,19
0100 PILOT 18,82:DRAW 386,82:DRAW 386,218:DRAW 18,258:DRAW 18,82
0110 PEN #1:LOCATE 2,8:PRINT "INSTRUCTIONS"
0120 LOCATE 2,22:PRINT CHR$(255); " RIGHT NUMBER":PRINT " OR WORDS
PLACE":PRINT " :CHR$(255); " RIGHT NUMBER":PRINT " IN RIGHT PLACE"
0130 RETURN
0140 :
0150 REM *** play the game ***
0160 LET t=INT(RANDOM(16) TIME
0170 FOR m=1 TO 4
0180 c=INT(16*10)
0190 NEXT m
0200 IF c=0 THEN GOTO 3000
0210 FOR n=1 TO 3
0220 FOR p=(n+1) TO 4
0230 IF c(n)=c(p) THEN t= "fail"
0240 NEXT p
0250 NEXT n
0260 IF c=0 THEN GOTO 3000
0270 FOR m=1 TO 4
0280 IF c(m)=0 THEN t= "fail"
0290 NEXT m
0300 LET p=1
0310 CLS #2:PRINT #2:PRINT #2,"ATTEMPT NO.":PRINT #2:PRINT #2,"?"
0320 FOR n=1 TO 4
0330 LET t=INKEY$:IF t= "1" AND t= "2" OR t= "3" AND t= "4" THEN GOTO 3120
ELSE IF t= "0" OR t= "9" THEN GOTO 3120
0340 LET aC=ASC(t):PRINT #2,aC);
0350 NEXT n
0360 FOR n=1 TO 4:PRINT #2:PRINT #2
0370 PRINT #2,"Is this what you want? (Y/N)"
0380 LET t=INKEY$:IF t= "Y" OR t= "y" THEN GOTO 3160
0390 IF t= "N" AND t= "n" THEN GOTO 3060
0400 LET a= "":FOR n=1 TO 4:LET a=a+RIGHT$(STR$(t),1);23:PRINT #2
0410 LOCATE 23,2+c*23:PRINT a
0420 REM *** to compare input and answer ***
0430 LET comp= ""
0440 FOR n=1 TO 4:LET pC=0:LET qC=0:PRINT #2
0450 FOR m=1 TO 4
0460 IF aC(m)=c(m) THEN comp=comp+CHR$(255);pC=1;qC=1
0470 NEXT m
0480 IF LEN(comp)=4 THEN LOCATE 33,2+c*23:PRINT comp:GOTO 3330
0490 FOR n=1 TO 4
0500 IF pC(n)>0 THEN a= "0"
0510 FOR m=1 TO 4
0520 IF qC(m)=0 THEN GOTO 3300
0530 IF t(m)=a(m) AND aC(m)=c(m) THEN LET comp=comp+CHR$(255):LET qC(m)=0:LET a=
0540 NEXT m
0550 NEXT n
0560 LOCATE 33,2+c*23:PRINT comp
0570 IF a=0 THEN LET p=1:GOTO 3160
0580 LET t= "":IF LEN(comp)=4 THEN LET t= "fail"
0590 FOR n=1 TO 4:IF aC(n)=c(n) THEN CHR$(255) THEN t= "fail":PRINT #2
0600 CLS #2:PRINT #2:IF t= "fail" THEN PRINT #2," BAD LUCK!" ELSE PRINT #2,"
WELL DONE!"
0610 PRINT #2:LOCATE 23,2:LET c= "":FOR n=1 TO 4:LET c=c+
CHR$(RANDOM(16));23 :NEXT n:PRINT #2
0620 FOR T= 348 TO 444 STEP 32:PILOT T,386:DRAW T,364:DRAW T+22,364:DRAW
T+22,386:DRAW T,386:NEXT T

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3900 RETURN
3999 :
4000 REM *** BE-BUN OR END? ***
4010 PRINT A2:PRINT A2:PRINT A2,"PLAY AGAIN? (Y/N)"
4020 IN$=INKEY$:IF LEN(IN$)=0 THEN 4020 ELSE IF IN$="N" OR IN$="n" THEN 4999
4030 IF IN$="y" AND IN$="Y" THEN 4020
4040 CLS A2
4050 PRINT A2,"You were playing" :PRINT A2,"at level "+A2B+" . would" :PRINT
A2,"you like to alter" :PRINT A2,
"the level for the" :PRINT A2,"next game? (Y/N)"
4060 IN$=INKEY$:IF LEN(IN$)=0 THEN 4060 ELSE IF IN$="N" OR IN$="n" THEN 4998
4070 IF IN$="y" AND IN$="Y" THEN 4060
4080 PRINT A2:PRINT A2,"ENTER SKILL LEVEL"
4090 IN$=INKEY$:IF LEN(IN$)=0 THEN 4090 ELSE IF IN$="1" OR IN$="5" THEN 4090
4100 LET A2B=IN$
4110 PRINT A2:PRINT A2,"LEVEL "+A2B+" SELECTED" :FOR T=1 TO 500:INKEY T
4998 GOTO 50
4999 CALL 40
5000 REM *** END OF MDP THOUGHT ***

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