

Bulls and Cows

Choosing a four digit number, the computer will respond to your guesses (or deductions, we hope) by displaying a bull when you get a correct digit in the right place, and a cow when a number you input also occurs in the computer's number, but not in the same place. You should note that the computer's number can have the same digit repeated.

You can choose the number of guesses you're allowed, making it more difficult for yourself as you get more practised.

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10 REM BULLS AND COWS
20 REM @ ROBERT ERSKINE
30 MODE 1
40 BORDER 0:INK 0,0:INK 1,24:INK 2,20:INK 3,8:PAPER 0:PEN 1:CLS
50 LN=1
60 SYMBOL 251,0,2,3,255,126,126,66,66
70 SYMBOL 252,0,0,3,255,126,126,66,66
80 GOTO 750
90 DIM N(4), A(4),H(4)
100 LN=1: R=RND:LOCATE 4,14:PRINT" HOW MANY GUESSES DO YOU WANT";:INPUT T
110 GOSUB 380
120 CLS: LOCATE 10,14:PRINT"I HAVE CHOSE N A NUMBER":FOR X= 1 TO 1000:NEXT
130 GOSUB 430
140 FOR Q = 1 TO T
150 LOCATE 1,23: PRINT"ENTER YOUR GUESS NOW [4 DIGITS]";:INPUT G$: IF LEN (G$)<>4 THEN LOCATE 32,23:PRINT SPACE$(7);:GOTO 150
160 FOR F=1 TO 4: IF ASC(MID$(G$,F,1))<48 OR ASC(MID$(G$,F,1))>57 THEN LOCATE 32,23:PRINT SPACE$(7);:GOTO 150:NEXT F
170 LOCATE 32,23:PRINT SPACE$(7);
180 GOSUB 250
190 GOSUB 460
200 IF BLACK<4 THEN NEXT Q:FOR X=1 TO 300:NEXT X:GOTO 600
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210 ' IF BLACK >3 THEN FOR X=1 TO 300:NE
XT X:GOTO 4000
220 ' NEXT Q
230 LOCATE 9,25:PRINT"YOU HAVE HAD";Q;"T
RIES";:FOR X=1 TO 300:NEXT X:GOTO 600
240 REM *** CHECK GUESS
250 BLACK=0:WHITE=0
260 FOR X=1 TO 4 : A(X)=0:H(X)=0:J(X)=0:
NEXT X
270 FOR X=1 TO 4
280 A(X)=VAL(MID$(G$,X,1)):NEXT X
290 FOR X=1 TO 4
300 IF A(X)=N(X) THEN BLACK=BLACK+1:H(X)
=1:J(X)=1
310 NEXT X
320 FOR X=1 TO 4
330 FOR Y=1 TO 4
340 IF A(X)=N(Y) AND H(Y)=0 AND J(X)=0
THEN WHITE=WHITE+1:H(Y)=1:J(X)=1:GOTO 36
0
350 NEXT Y
360 NEXT X
370 RETURN
380 REM
390 FOR X= 1 TO 4
400 N(X)=INT(RND*9)+1
410 NEXT X
420 RETURN
430 ENT 1,50,2,2:SOUND 1,284,50,15,0,1:
CLS
440 PRINT"GUESSES      BULLS      COWS"
450 RETURN
460 LN=LN+1:LOCATE 1,LN:PRINT G$;: IF BL
ACK=0 THEN 520
470 F=14
480 FOR X=1 TO BLACK
490 LOCATE F,LN:PEN 3:PRINT  CHR$(251);:
PEN 1
500 F=F+1
510 NEXT X
520 IF WHITE=0 THEN 580
530 F=23
540 FOR X=1 TO WHITE
550 LOCATE F,LN:PEN 3:PRINT  CHR$(252);:F
EN 1

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560 F=F+1
570 NEXT
580 PRINT
590 RETURN
600 IF BLACK<4 THEN 640
610 LOCATE 29,3:PEN 2:PRINT"CORRECT!!":L
OCATE 29,5:PRINT"I  CHOSE";:PEN 1:LOCATE
 29,7
620 FOR X=1 TO 8: ENT 1,100,-X,2:SOUND 1
,284,50,15,0,1:NEXT
630 GOTO 650
640 LOCATE 29,3:PEN 2:PRINT" HARD LUCK!"
:LOCATE 29,5:PRINT" I CHOSE";:PEN 1:LOCA
TE 29,7
650 FOR X=1 TO 4
660 PRINT N(X);
670 NEXT
680 LOCATE 33,11:PEN 2:PRINT"AND";:LOCAT
E 29,13:PRINT"YOU GUESSED";:PEN 1:LOCATE
 29,15
690 FOR X=1 TO 4
700 PRINT A(X);
710 NEXT
720 FOR X=1 TO 30:SOUND 2,(X+100):NEXT
730 LOCATE 1,23:PRINT CHR$(20):LOCATE 9,
24:PRINT"PRESS ANY KEY TO RESTART";
740 IF INKEY$="" THEN GOTO 740 ELSE CLS:
LOCATE 1,2:GOTO 100
750 LOCATE 1,1:PRINT CHR$(24);"
      BULLS AND COWS                ";CHR$(24
):PRINT
760 LOCATE 1,5
770 PRINT:PRINT"The object of Bulls
and Cows is toguess a four digit n
umber chosen by the computer."
780 PRINT:PEN 2:PRINT"After each guess
the computer will give you clues.
Each BULL indicates a correct digit in
the correct position"
790 PRINT"and each COW indicates a corre
ct digit in the wrong position."
800 LOCATE 9,21:PEN 3:PRINT"PRESS ANY KE
Y TO START":PEN 1
810 IF INKEY$="" THEN 810 ELSE CLS
820 GOTO 90

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