Lab 3A

Due Aug 2 by 11:59pm **Points** 100 **Submitting** a text entry box or a file upload
Available Jul 26 at 12am - Aug 12 at 11:59pm

This assignment is only for Graduate students.

Convert the BASIC code below to a more modern language.

File name must be <NetID>_lab3A.ext

where <NetID> is replaced with your own NetID and the .ext is the proper extension for the language you chose.

Points available: 100

50 for submitting converted code

30 for the grader being able to run it

20 for how readable the resulting code is.

BONUS: 10 points for keeping it in a more modern BASIC (that allows do/while, etc.)

Amazing

This program will print out a different maze every time it is run and guarantees only one path through. You can choose the dimensions of the maze — i.e. the number of squares wide and long.

The original program author was Jack Hauber of Windsor, Connecticut.

```
10 PRINT TAB(28);"AMAZING PROGRAM"
20 PRINT TAB(15);"CREATIVE COMPUTING  MORRISTOWN, NEW JERSEY"
30 PRINT:PRINT:PRINT:PRINT
100 INPUT "WHAT ARE YOUR WIDTH AND LENGTH";H,V
102 IF H<>1 AND V<>1 THEN 110
104 PRINT "MEANINGLESS DIMENSIONS.  TRY AGAIN.":GOTO 100
110 DIM W(H,V),V(H,V)
120 PRINT
130 PRINT
140 PRINT
150 PRINT
160 Q=0:Z=0:X=INT(RND(1)*H+1)
165 FOR I=1 TO H
170 IF I=X THEN 173
171 PRINT ".--";:GOTO 180
173 PRINT ".  ";
180 NEXT I
190 PRINT "."
195 C=1:W(X,1)=C:C=C+1
200 R=X:S=1:GOTO 260
210 IF R<>H THEN 240
215 IF S<>V THEN 230
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```
660 GOTO 820
670 IF R=H THEN 740
680 IF W(R+1,S)<>0 THEN 740
685 IF S<>V THEN 700
690 IF Z=1 THEN 730
695 Q=1:GOTO 830
```

WHAT ARE YOUR WIDTH AND LENGTH? 15,20

```
.--.--.--.--.--.--.--.--.--.--.--.--.--.--.--.
I  I           I        I     I  I I        I
I  I  I--I  I--I--I  I  I--I  I  I  I  I     I
I     I  I  I     I     I  I     I  I  I  I   I
I--I  I  I  I  I--I--I  I  I--I--I  I  I  .
I     I  I  I     I     I     I  I  I   I   I
I  I--I  I--I  I--I--I--I  I  I--I--I  .
I     I     I  I     I     I  I     I   I   I
I--I--I--I--I  I     I     I  I--I--I  .
I     I     I     I  I     I     I     I   .
I  I--I  I  I  I--I  I--I  I  I--I--I  .
I--I  I  I--I  I--I--I  I--I--I  I--I--.
I     I  I  I     I     I     I  I  I   I
I  I--I  I  I  I--I--I  I  I  I     I--I .
I  I     I  I   I  I  I  I  I     I  I
I  I  I--I--I  I--I  I  I--I  I--I--.
I     I     I  I I I     I     I     I   I
I--I--I--I--I  I  I--I--I  I  I--I  I--.
I     I     I  I  I     I     I  I  I   .
I  I  I  I--I--I--I--I  I  I     I  I--.
I  I     I  I   I     I     I     I   I
I--I  I--I--I--I--I--I--I--I--I--I  .--I--.
OK
```

```
220 R=1:S=1:GOTO 250
230 R=1:S=S+1:GOTO 250
240 R=R+1
250 IF W(R,S)=0 THEN 210
260 IF R-1=0 THEN 530
265 IF W(R-1,S)<>0 THEN 530
270 IF S-1=0 THEN 390
280 IF W(R,S-1)<>0 THEN 390
290 IF R=H THEN 330
300 IF W(R+1,S)<>0 THEN 330
310 X=INT(RND(1)*3+1)
320 ON X GOTO 790,820,860
330 IF S<>V THEN 340
334 IF Z=1 THEN 370
338 Q=1:GOTO 350
340 IF W(R,S+1)<>0 THEN 370
350 X=INT(RND(1)*3+1)
360 ON X GOTO 790,820,910
370 X=INT(RND(1)*2+1)
380 ON X GOTO 790,820
390 IF R=H THEN 470
400 IF W(R+1,S)<>0 THEN 470
405 IF S<>V THEN 420
410 IF Z=1 THEN 450
415 Q=1:GOTO 430
420 IF W(R,S+1)<>0 THEN 450
430 X=INT(RND(1)*3+1)
440 ON X GOTO 790,860,910
450 X=INT(RND(1)*2+1)
460 ON X GOTO 790,860
470 IF S<>V THEN 490
480 IF Z=1 THEN 520
485 Q=1:GOTO 500
490 IF W(R,S+1)<>0 THEN 520
500 X=INT(RND(1)*2+1)
510 ON X GOTO 790,910
520 GOTO 790
530 IF S-1=0 THEN 670
540 IF W(R,S-1)<>0 THEN 670
545 IF R=H THEN 610
547 IF W(R+1,S)<>0 THEN 610
550 IF S<>V THEN 560
552 IF Z=1 THEN 590
554 Q=1:GOTO 570
560 IF W(R,S+1)<>0 THEN 590
570 X=INT(RND(1)*3+1)
580 ON X GOTO 820,860,910
590 X=INT(RND(1)*2+1)
600 ON X GOTO 820,860
610 IF S<>V THEN 630
620 IF Z=1 THEN 660
625 Q=1:GOTO 640
630 IF W(R,S+1)<>0 THEN 660
640 X=INT(RND(1)*2+1)
650 ON X GOTO 820,910
700 IF W(R,S+1)<>0 THEN 730
710 X=INT(RND(1)*2+1)
720 ON X GOTO 860,910
730 GOTO 860
740 IF S<>V THEN 760
750 IF Z=1 THEN 780
755 Q=1:GOTO 770
760 IF W(R,S+1)<>0 THEN 780
770 GOTO 910
780 GOTO 1000
790 W(R-1,S)=C
800 C=C+1:V(R-1,S)=2:R=R-1
810 IF C=H*V+1 THEN 1010
815 Q=0:GOTO 260
820 W(R,S-1)=C
830 C=C+1
840 V(R,S-1)=1:S=S-1:IFC=H*V+1 THEN 1010
850 Q=0:GOTO 260
860 W(R+1,S)=C
870 C=C+1:IF V(R,S)=0 THEN 880
875 V(R,S)=3:GOTO 890
880 V(R,S)=2
890 R=R+1
900 IF C=H*V+1 THEN 1010
905 GOTO 530
910 IF Q=1 THEN 960
920 W(R,S+1)=C:C=C+1:IF V(R,S)=0 THEN 940
930 V(R,S)=3:GOTO 950
940 V(R,S)=1
950 S=S+1:IF C=H*V+1 THEN 1010
955 GOTO 260
960 Z=1
970 IF V(R,S)=0 THEN 980
975 V(R,S)=3:Q=0:GOTO 1000
980 V(R,S)=1:Q=0:R=1:S=1:GOTO 250
1000 GOTO 210
1010 FOR J=1 TO V
1011 PRINT "I";
1012 FOR I=1 TO H
1013 IF V(I,J)<2 THEN 1030
1020 PRINT "  ";
1021 GOTO 1040
1030 PRINT "  I";
1040 NEXT I
1041 PRINT
1043 FOR I=1 TO H
1045 IF V(I,J)=0 THEN 1060
1050 IF V(I,J)=2 THEN 1060
1051 PRINT ":  ";
1052 GOTO 1070
1060 PRINT ":--";
1070 NEXT I
1071 PRINT "."
1072 NEXT J
1073 END
```

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