FANTASTIC GAMES
FANTASTIC GAMES

Programs Adapted by John Miller and Scott McCann

Editor: Carol Batchelor, B.A., M.A.
Illustration: Tim O'Halloran, Margaret Horvath
Design: Margaret Horvath, Pat Strachan
Cover: Richard Livingston

Radio Shack, 279 Bayview Drive, Barrie, Ontario L4M 4W5
NOTE

The publisher and authors have made every effort to assure that the computer programs are accurate and complete. However, this publication is prepared for general readership, and neither the publisher nor the authors have any knowledge about or ability to control any third party's use of the programs and programming information. There is no warranty or representation by either the publisher or the authors that the programs or programming information in this book will enable the reader or user to achieve any particular result.

Copyright© 1984 by Hayes Publishing Ltd. All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without permission from the publisher.

©1984 Hayes Publishing Ltd.
Burlington, Ontario

ISBN 0-88625-074-9

TRS-80™ is a registered trademark of Radio Shack, Division, Tandy Corporation
INTRODUCTION

This book contains listings for games written in BASIC for the TRS-80 COLOR COMPUTER made by Radio Shack.

You probably know from your owner's manual that the question mark (?) is a short way of typing in PRINT. You can save some time by using it when you are typing in these programs.

Remember, accidents do happen; you could type in many lines of a program only to have a power failure, or you could unknowingly RUN a program with mistakes that destroy the program. So SAVE copies of the game on tape or floppy disk as you enter it. Do so frequently. Once you have a final copy of the game you can record over the other versions on tape or delete the disk versions.

DEBUGGING

After typing in a program and SAVEing it, the TRS-80 may have trouble RUNning it. This happens when copying a program from paper to computer. Check that you entered all the program lines completely. A common problem is the famous SYNTAX ERROR. If you get one, list the program line on the screen. Compare it to the book listing. You will probably see one of these problems:
Fix it and try RUNning the program again. It may take several attempts to get all the errors out, but the work will be worth it. Remember to save a final copy that has all the corrections made.

**EXPERIMENT**

If you have some programming knowledge do not be afraid to try changing the games. After each program description is a list of what the program variables are used for. And remember, there is nothing that you can enter into the TRS-80 by program or through the keyboard that can do any permanent damage. If something goes wrong, you can either turn the TRS-80 off and on to begin again, or press the RESET button.

1. Spelling error, or

2. Punctuation error (brackets, commas, colons or semi-colons missing), or

3. The number zero confused with the letter 'O' (or vice versa), or

4. The number 1 confused with the letter 'I' (or vice versa).
Row row row your boat gently down the stream...

Not this time! You have a speed boat instead of the row boat. It isn't too difficult to navigate at first; just use the left and right arrow keys to steer. Throughout the river are bonus numbers. By guiding the boat over these you will build up a higher score. After a score of 3000 points the river will narrow. At 4000 it narrows still more. As well as the points in the water there are logs. Hitting these will get you as far as taking the boat to shore will... nowhere.

Variables Used

1$ (1-3) - the logs  
R$, RAS, RBS - the rivers  
R3$, R6$ - the bonuses  
T - the river's position  
M - the boat's position  
Y - the tree's position  
H - checks boat's position
SPEEDBOAT

10Cls:Print@75,"SPEEDBOAT":Print@224,"ARE YOU USING JOYSTICKS [Y/N]"
20Input J$:If Left$(J$,1)="Y" THEN J=1
30Print INSTRUCTIONS [Y/N]":Input I$:If Left$(I$,1)="Y" Then Cls:Gosub 850
40Gosub 700:Print@452,"PRESS <ENTER> TO BEGIN":If Inkeys<>Chr$(13) Then 10
50For S=1 To 27:Read N,T:Sound N,T:NEXT S
60T=Rnd(18):M=T+5:Mo=1088+M:S=0:T2=0:C=1:MN=5
70For X=1 To 16:Print Tab(T) R$:NEXT
80If PEEK(343)=247 Or J=1 And Joystk(0)<30 Then M=M-1
90If PEEK(344)=247 Or J=1 And Joystk(0)>33 Then M=M+1
100Poke 1054,64+C:Poke 1120+M:MN=Poke(1120+M):Poke 1120+M,128:Poke MO,175
110If H=115 Or H=118 Then S=S+H-112:Sound 200,1
120If H=159 Or H=255 Then 300
130S=S+3:MO=M+1088:If P=1 Then P=0:Return
140If S>4000 Then Rs=RAs:T2=2:C=2:X=Rnd(6)
150If S>4000 Then Rs=RAs:T2=4:C=3
160If T=0 And X<4 Then T=2
170If T>18+T2 And X>3 Then T=T-2
180If X<4 Then T=T-1:Print Tab(T) R$
190If X>3 And X<7 Then T=T+1:Print Tab(T) R$
200If X=7 Then Print Tab(T)L$(Rnd(3))
210If X=8 Then Print Tab(T)R3$
220If X=9 Then Print Tab(T)R6$
230P=1:Gosub 50
240Y=Rnd(32):If Y<T+1 Or Y>T+12-T2 Then Poke 1471+Y,94
220 PRINT TAB(T) R$:GOTO 50
300 MN=MN-1:FOR Q=1 TO 2:FOR X=120 TO 1 STEP-10:SOUNDX,1:NEXTX,Q
310 IF MN<>0 THEN T=RND(18):M=T+5:MO=1088+M:GOTO 40
320 CLS:PRINT@98,"YOUR SCORE IS...";S:IF S>HG THEN HG=S
340 PRINT@194,"HIGH SCORE IS...";HG:PRINT@290,"ANOTHER GAME [Y/N]"
345 G$=INKEY$:IF G$="" THEN 350
360 IF G$="Y" THEN RESTORE:GOTO 10
370 IF G$="N" THEN END ELSE 350
700 BS=CHR$(159)+CHR$(159):CS=CHR$(175):DS=CHR$(255)
710 R$="":L$="":FOR X=1 TO 8:R$=R$+CS:NEXT:R$=BS+R$+BS
720 RA$=BS+CS+CS:RB$=CS+CS+BS
730 R6$=RA$+CS+CS:"6"+CS+RB$:R3$=RA$+CS+"3"+CS+CS+RB$
740 RB$=RA$+RB$:R$=RA$+RIGHT$(RB$,6)
750 FOR X=1 TO 6:L$=L$+DS:NEXT
760 L$(1)=BS+CS+L$+CS+BS
770 L$(2)=BS+CS+DS+CS+RIGHT$(L$(1),7)
780 L$(3)=LEFT$(L$(1),7)+CS+DS+CS+BS
790 RETURN
800 DATA 89,5,89,5,89,5,108,4,125,4,125,3,108,3,125,3,133,3,147,3,176,3,176,3,147,3,147,3,125,3,125,3,89,3,89,3,147,3,133,3,125,3,108,3,89,3
850 PRINT@64,"IT'S A GREAT DAY TO GO CRUISING IN YOUR NEW SPEEDBOAT."
860 PRINT"BUT BEWARE, IT'S LOGGING SEASON!"
870 PRINT@192,"STEER YOUR BOAT WITH THE (L,R) ARROW KEYS."
880 PRINT@288,"THE NUMBERS ARE BONUSES.";RETURN
LOGGER
By Brian Jaikens
Picture yourself as a lumberjack out in the great redwood forests. You are cutting one down when suddenly, from out of nowhere, an eagle swoops down and steals your axe. You chase the fiendish bird back to its tree. In order to get your axe back, you must climb up into the bird’s tree house. You use the arrow keys for movement. But climbing is not the only challenge; all the time you are on the way up, logs are being rolled down at you. To jump over these logs use the space bar.

**Variables Used**

- $F$ - the logger’s feet
- $T$ - a ladder rung
- $U$ - the log’s position
- $V$ - the logger’s position
- $W$ - the number of dead loggers
- $L$ - $A(X)$
- $H$
- $Q$
LOGGER

1 CLS:PRINT@128,"INSTRUCTIONS [Y/N]":INPUT I$:CLS:IF LEFT$(I$,1)="Y" GOSUB 850
10 DIM A(98):A(0)=1501:C$=CHR$(128):E$=C$+C$+C$:L$=CHR$(158)
     +CHR$(156)+CHR$(157)
20 F$="i"+C$+"i":T$=C$+"j"+C$+"j":U$="j"+C$+"j":V$=C$+"1"+C$:
     W$="1"+C$+"1"
30 DATA 2,50,3,50,34,62,35,62,36,123,38,29,64,60,65,62,66,
     62,67,62,68,62,69,61,70,23,97,60,98,62,64,60,98,62,99,62,100,61,130,
     58,131,58
40 FOR X=1 TO 28:A(X)=1155+X:A(31+X)=1342-X:A(X+64)=1473+X:
     NEXT
50 FOR X=1 TO 5:A(X+26)=1182+32*X:A(X+59)=1313+32*X:NEXT X
60 RESTORE:H=475:OH=477:CLS 0:FOR X=1 TO 19:READ A,B:POKE
     1024+A,129+B:NEXT
70 FOR X=1 TO 32:FOR Y=0 TO 320 STEP 160:POKE X+Y+1183,175:
     NEXT Y,X:FOR X=1 TO 3:POKE X+1212,128:POKE X+1343,128:
     NEXT X
80 FOR X=1 TO 3:PRINT@153+X*32,L$:PRINT@292+X*32,L$:NEXT X
90 SOUND 200,10:GOTO 600
100 IF H=448 OR H=134 THEN RETURN ELSE H=H-1
110 IF H>449 AND H<453 OR H>310 AND H<314 THEN PRINT@388,L$;
     :PRINT@249,L$:ELSE PRINT@H-62,C$;
     120 IF INT(H/2)=H/2 THEN PRINT@H,U$:ELSE PRINT
     @H,T$;
     130 PRINT@H-29,C$:PRINT@H+3,C$:RETURN
150 IF H=477 OR H=317 THEN RETURN ELSE H=H+1
160 IF H>312 AND H<316 OR H>451 AND H<455
     THEN PRINT@388,L$:PRINT@249,L$:ELSE PRINT
     @H-64,C$;
170 IF INT(H/2)=H/2 THEN PRINT@H,W$; ELSE PRINT@H,V$;
180 PRINT@H-33,C$; PRINT@H-1,C$; RETURN
200 IF PEEK(960+H)<158 AND PEEK(1056+H)<158 OR H=292 OR
   H=153 THEN RETURN
210 IF H=452 OR H=420 OR H=313 OR H=281 THEN PRINT@H,E$; ELSE
   PRINT@H,L$;
220 H=H-32:IF H=420 OR H=292 OR H=281 OR H=153 THEN PRINT@H,F$;
   ELSE PRINT@H,"i";CHR$(156);"i";
230 RETURN
250 IF PEEK(1056+H)<158 AND PEEK(960+H)<158 OR H=452 OR
   H=313 THEN RETURN
260 IF H=388 OR H=420 OR H=281 OR H=249 THEN PRINT@H-64,L$;
   PRINT@H-32,L$; ELSE PRINT@H-63,C$; PRINT@H-32,E$;
270 IF H=356 OR H=217 THEN PRINT@H-32,L$;
280 H=H+32:PRINT@H,"i";CHR$(PEEK(H+1025));"i";RETURN
300 IF ABS(A(X)-1025-H)>3 OR H<455 AND H>449 OR H<316 AND
   H>310 THEN RETURN
310 PRINT@H,E$;
320 POKE 929+H,15:POKE 960+H,47:POKE 961+H,15:POKE 962+H,28:
   PRINT@H-32,F$;
330 FOR Y=1 TO 3:POKE A(X+Y-1),128:POKE A(X+Y),0
340 FOR J=1 TO 35:NEXT J,Y;S=S+80:IF PEEK(1094)=47 THEN 800
350 PRINT@H-96,E$;PRINT@H-64,E$;PRINT@H,F$;
360 OH=H+1;X=X+Y-1;SOUND 128,2:RETURN
600 X=1+N
610 PRINT@20,S;POKE A(X-1-N),128:
   IF PEEK(A(X-N))<128 OR H=157 OR
   H=288 THEN 700
620 POKE A(X),0:IF X=2 THEN POKE 1155,185:POKE 1156,178
630 IF X=4 THEN POKE 1155,187:POKE 1156,128
640 FOR Y=1 TO 5:IF PEEK(340+Y)=247 THEN A=Y:Y=5
650 NEXT Y:ON A GOSUB 200,250,100,150,300:IF H=OH THEN PRINT @H,F$:GOTO 680
680 S=S+OH-H:OH=H:A=0
690 IF X>60 AND H<320 OR X>27 AND H<160 OR X>92 THEN POKE A(X),128:GOTO 600
695 X=X+1+N:GOTO 610
700 FOR K=H TO 447 STEP 32:GOSUB 260
710 POKE 961+H,15:POKE 992+H,47:POKE 993+H,15:POKE 994+H,28:
720 NEXT:PRINT@H-63,C$:PRINT@H,"ioi":FOR K=1 TO 1500:NEXT
730 IF Q<>3 THEN Q=Q+1:GOTO 60
740 CLS:PRINT@98,"SCORE...":S:IF S>HI THEN HI=S
750 PRINT@226,"HIGH...":HI:PRINT@416,"DO YOU WISH TO PLAY AGAIN [Y/N]?"
760 G$=INKEY$:IF G$="" THEN 760 ELSE IF G$="Y" THEN S=0:Q=0:
N=0:GOTO 60
770 IF G$="N" THEN END ELSE GOTO 760
800 FOR P=1 TO 251 STEP 50:SOUND P,4:NEXT:S=S+920:N=1:GOTO 60
850 PRINT@64,"THE BIRD HAS STOLEN YOUR AXE AND YOU MUST GET IT BACK!"
860 PRINT@160,"GUIDE YOURSELF THROUGH THE TREE-HOUSE WITH THE ARROW KEYS."
870 PRINT"JUMP OVER THE LOGS WITH THE SPACE BAR."
880 PRINT@320,"ONCE YOU HAVE REACHED THE BIRD YOU MUST JUMP UP TO GET YOUR AXE."
890 PRINT@448,"PRESS A KEY TO CONTINUE ...": IF INKEY$="" THEN
890 ELSE RETURN
Have you ever felt like a mouse in a maze? Well, with this game you might as well be one. But you won't be relying on your nose to find the cheese at the end because there is none. All you have to do is get out. You can see the maze exit at all times, and while it is being built you have a chance to plan a way out. There is only one way out. Once the maze is complete, your 'mouse' appears in the top left-hand corner. Using the four arrow keys, you race against time to get to the lower right-hand corner of the screen. Hope you make it!

**Variables Used**

- **A$** - input values
- **MZ** - the maze array
- **R** - random direction of maze setup
- **X, Y** - positions in the maze
- **XX, YY** - screen positions
REM "THIS PROGRAM REQUIRES 16K EXTENDED COLOR BASIC"
40 DIM MZ(22,21):CLS 0
55 INPUT "INSTRUCTIONS [Y/N]"; A$: IF A$="Y" THEN GOSUB 5000
57 CLS 0
60 FOR I=1 TO 20: MZ(0,I)=10: MZ(22,I)=10: NEXT I
70 FOR I=1 TO 21: MZ(I,0)=5: MZ(I,21)=5: NEXT I
80 MZ(0,0)=15: MZ(0,21)=15: MZ(22,0)=5: MZ(22,21)=15
95 X=10: Y=10: GOSUB 700
99 PMODE 4,1: SCREEN 1,1: PCLS: LINE(7,7)-(177,169), PSET, BF
100 A=0
110 IF MZ(X-1,Y)=0 THEN V(A)=1: A=A+1
120 IF MZ(X,Y-1)=0 THEN V(A)=4: A=A+1
130 IF MZ(X,Y+1)=0 THEN V(A)=2: A=A+1
140 IF MZ(X+1,Y)=0 THEN V(A)=3: A=A+1
150 IF A=0 AND X=10 AND Y=10 THEN 1000
160 IF A=0 THEN R=INT(MZ(X,Y)/256): GOTO 230
170 B=RND(A+1)-1: IF B>=A THEN 170
180 R=V(B)
190 IF R=1 THEN MZ(X,Y)=MZ(X,Y) OR 1: MZ(X-1,Y)=772
192 IF R=2 THEN MZ(X,Y)=MZ(X,Y) OR 2: MZ(X,Y+1)=1032
194 IF R=3 THEN MZ(X,Y)=MZ(X,Y) OR 4: MZ(X+1,Y)=257
198 IF R=4 THEN MZ(X,Y)=MZ(X,Y) OR 8: MZ(X,Y-1)=514
230 IF R=1 THEN X=X-1
235 IF R=2 THEN Y=Y+1
238 IF R=3 THEN X=X+1
240 IF R=4 THEN Y=Y-1
250 GOSUB 10000
270 GOTO 100
410 LINE(XX,YY)-(XX+7,YY), PSET: RETURN
420 LINE(XX,YY)-(XX,YY+7), PSET: RETURN
430 LINE(XX,YY)-(XX+7,YY), PSET: LINE(XX,YY)-(XX,YY+7), PSET: RETURN
700 XX=X*8: YY=Y*8: RETURN
1000 X=1: Y=1: MZ(1,1)=MZ(1,1) OR 8: GOSUB 10000
1010 X=1: Y=0: MZ(1,0)=2: GOSUB 10000
1015 X=1: Y=0: MZ(1,0)=2: GOSUB 10000
1020 X=1: Y=0: MZ(21,20)=MZ(21,20) OR 2: GOSUB 10000
1025 X=21: Y=21: MZ(21,21)=B: GOSUB 10000
1030 X=1:Y=0:GOSUB 700:CIRCLE(XX+5,YY+5),2
1035 SOUND50,10:TIMER=0
1040 A$=INKEY$
1050 IF A$=CHR$(8)AND(MZ(X,Y)AND1)<0THENX=X-1:
GOTO 1085
1060 IF A$=CHR$(94)AND(MZ(X,Y)AND8)<0THENY=Y-1:
GOTO1085
1070 IF A$=CHR$(10)AND(MZ(X,Y)AND2)<0THENY=Y+1:
GOTO1085
1080 IF A$=CHR$(9)AND(MZ(X,Y)AND4)<0THENX=X+1:
GOTO1085
1081 IF A$="1" THEN SCREEN1,0:GOSUB 1205:SCREEN1,1
1083 GOTO 1040
1085 CIRCLE(XX+5,YY+5),2,0
1090 GOSUB700
1095 CIRCLE(XX+5,YY+5),2
1110 IFX<22ANDY<21THEN1040
1200 PLAY"LAT10A#AtDDDCCAEGFGACCDCAFGAAGG"
1205 PRINT@0,"YOUR TIME IS";INT(TIMER/60*100)/100
1206 IF A$="1" THEN B$=INKEY$:IF B$="2" THENRETURN
ELSE GOTO1205
1210 INPUT"PLAY AGAIN [Y/N]";A$:IF A$="Y" THEN RUN
ELSE CLS:END
5000 CLS:PRINT"haze maze instructions"
5020 PRINT@65,"IN THIS GAME YOU MUST MOVE
THROUGH A MAZE IN THE SHORTEST AMOUNT
OF TIME."
5030 PRINT@192,"YOU ARE IN THE TOP LEFT CORNER.
WHEN YOU HEAR THE BEEP USE"
5040 PRINT"THE ARROW KEYS TO GUIDE A MOUSE TO
THE LOWER RIGHT CORNER."
5070 PRINT@352,"PRESS '1' FOR YOUR CURRENT TIME,
AND '2' TO RETURN TO THE MAZE."
5080 PRINT@480,"PRESS <ENTER>":A$=INKEY$:IF A$=
CHR$(13) THEN RETURN ELSE 5080
10000 GOSUB700:COLOR0,0:LINE(XX,YY)-(XX+7,YY+7),
PSET,BF:COLOR5,0
10001 IF (MZ(X,Y)AND1)<0 AND (MZ(X,Y)AND8)<0
THEN RETURN
10010 IF (MZ(X,Y)AND1)<0 THEN 410
10020 IF (MZ(X,Y)AND8)<0 THEN 420
10030 GOTO 430
GETAWAY
By Howard Evans
You are the driver for a bank robbery. Sitting impatiently at the wheel of the van you await your colleagues' return. They are inside the bank throwing money out to you. As they are in the second story in several locations, you drive to the spots where they are throwing the money. Move the van with the left and right arrow keys.

Watch out though! Here come the police. Quickly you try to leave. In the rush you drop the van keys on the floor. You fumble about in the dark to pick the correct key to restart the engine before the police arrive.

Variables Used

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T$</td>
<td>the van</td>
</tr>
<tr>
<td>SC</td>
<td>the score</td>
</tr>
<tr>
<td>Z</td>
<td>the money bag's position</td>
</tr>
<tr>
<td>H</td>
<td>the van's position</td>
</tr>
<tr>
<td>U</td>
<td>the car's position</td>
</tr>
<tr>
<td>HF</td>
<td>the big van's position</td>
</tr>
<tr>
<td>W$, X$</td>
<td>the big van</td>
</tr>
<tr>
<td>G$</td>
<td>the letter</td>
</tr>
<tr>
<td>L$</td>
<td>your letter guess</td>
</tr>
<tr>
<td>DD</td>
<td>the number of men caught</td>
</tr>
</tbody>
</table>
GETAWAY

1 CLS:PRINT@126,"INSTRUCTIONS [Y/N]":INPUT I$:IF LEFT$(I$,1)="Y" GOSUB 8500
50 DATA 5,244,58,239,89,232,125,227,147,218,170,204,185
100 CLS:PRINT@82,"$$":"PRINT@120,"$$":"PRINT@151,"$$$$$":"PRINT@182,"$$ "$'
110 PRINT@213,"$$":PRINT@246,"$$$$$$$$":"PRINT@278,"$$$$$$":PRINT@316,"$$"'
120 PRINT@342,"$$":PRINT@375,"$$$$$":"PRINT@408,"$$$$$":PRINT@440,"$$$

135 FOR Y=1 TO 3:RESTORE:FOR X=1 TO 13:
V$=V$+CHR$(191):SOUND X,2:NEXT X,Y
140 PRINT@98,"'THE GETAWAY'":PRINT@290,
"PRESS <ENTER>":PRINT@324,"TO BEGIN";
150 I$=INKEY$:IF I$<>CHR$(13) THEN 150
160 W$=LEFT$(V$,5):X$=LEFT$(V$,7)
170 R$=CHR$(128):CLS 0
200 FOR X=1024 TO 1119:POKE X,36:NEXT X
250 T$=LEFT$(V$,3)+CHR$(187):E$=R$+R$+R$+R$
260 PRINT@446,"bank":PRINT@448,T$;
290 IF SC<2500 THEN ST=32:V1=0:P=1
300 F=RND(32)
310 FOR V=0+V1 TO 416 STEP ST
320 Z=1055+F+V:OL=PEEK(Z):POKE Z,100:OH=H
360 IF PEEK(343)=247 THEN H=H+1*P
370 IF PEEK(344)=247 THEN H=H+1*P
380 IF H<0 THEN H=0
390 IF H>28 THEN H=28
392 POKE 1055+F+V,0L
400 IF H<OH THEN PRINT@448+OH,E$;
PRINT@448+H,T$;
440 NEXT V
460 IF OL=191 OR OL=187 THEN SOUND 170,1:SC=SC+120 ELSE
SOUND 1,1
470 ST=64:Vl=-32:P=2:SC=SC-20
490 SC$=STR$(SC):IF SC>-1 THEN SC$=RIGHT$(SC$,LEN(SC$)-1)
500 PRINT@78,""
520 IF RND(16)=5 GOSUB 670
540 GOTO 290
670 HF=6+INT(H/3+.4)
680 PRINT@260,"THE POLICE ARE COMING !!!";
690 FOR S=1 TO 3:SOUND 230,5:FOR SD=1 TO 100:NEXT SD,S
730 FOR D=1 TO 999:NEXT:CLS0:T=0
750 U=1313+T:POKE U,175:POKE U+1,172:POKE U+2,172:
POKE U+3,175
760 FOR X=31 TO 37:POKE U+X,175:NEXT X
770 POKE U+38,152:POKE U+64,172:POKE U+68,172
810 IF T>0 THEN 1000
820 Y=264+HF:PRINT@Y,W$;
830 PRINT@Y+32,W$;CHR$(188);CHR$(191);
840 PRINT@Y+84,X$;CHR$(152);
850 PRINT@Y+97,CHR$(188);:PRINT@Y+101,CHR$(188);
900 IF EE=-1 THEN RETURN
930 G$=CHR$(RND(26)+64)
940 PRINT@0:PRINT@32,"GUESS THE RIGHT LETTER
TO ESCAPE":PRINT
1000 L$=INKEY$:POKE U-30,179
1005 IF L$="" OR L$<"A" OR L$>"Z" THEN POKE U-30,128:GOTO 1000
1010 PRINT@34+ASC(L$),L$:SOUND 220,4:IF L$=G$ THEN 2000
1040 IF PEEK(U+39)=191 THEN 3000
1050 POKE U,128:POKE U+31,128:POKE U-30,128
1060 POKE U+68,128:POKE U+64,128:T=T+1:GOTO 750
2000 PRINT@32,"YOU ESCAPED, THE LETTER WAS ";L$
2015 SOUND 200,4:SOUND 220,3:SOUND 240,4
2020 FOR X=1 TO 999:NEXT:EE=-1:FOR Q=HF TO 15
2060 FOR X=0 TO 2:PRINT@Y+X*32,R$;:NEXT X
2070 PRINT@Y+101,R$;:PRINT@Y+97,R$;
2090 HF=HF+1:GOSUB 820:NEXT Q:H=0
2120 EE=0:FOR D=1 TO 1000:NEXT D:GOTO 170
3000 PRINT@64," THE CORRECT LETTER WAS ";G$
3010 DD=DD+1:IF DD=4 THEN 7000
3030 PRINT@32," THEY HAVE CAUGHT";DD;"OF YOUR MEN"
3050 FOR BB=101 TO 1 STEP -10:SOUND BB,4:NEXT BB
3080 FOR X=1 TO 800:NEXT X:H=0:GOTO 170
7000 PRINT@32," THEY'VE NAILED YOU !";PRINT@96
7010 FOR X=1 TO 800:NEXT:X=SOUND 55,5:SOUND 55,5:SOUND 55,5
7020 SOUND 1,12:IF SC>HI THEN HI=SC
7030 PRINT@32," THE HIGH SCORE IS";HI
7040 PRINT:PRINT" PLAY AGAIN [Y/N]?";PRINT
7060 A$=INKEY$:IF A$=""THEN 7060
7080 IF A$="Y" THEN DD=0:SC=0:H=0:GOTO 170
7090 IF A$="N" THEN CLS ELSE 7060
8500 PRINT@96,"YOU DRIVE THE GETAWAY VAN."
8550 PRINT"YOU MUST CATCH THE MONEY YOUR PARTNERS THROW OUT OF THE BANK."
8600 PRINT@256,"STEER THE VAN WITH THE (L,R) ARROW KEYS."
8700 PRINT@448,"PRESS A KEY TO CONTINUE...":IF INKEY$="" THEN 8700 ELSE RETURN
SUB ATTACK

By Stuart Hall
The south coast is in danger. The waters are plagued by pirates. They travel the waters in many different vessels. You are the Captain of the Guardian, a submarine, and you have been selected to patrol the pirate-infested waters. The best strategy, you decide, is to sit on the ocean floor and use torpedoes to cripple the pirate ship. Your submarine's movement is controlled with the left and right arrow keys. Torpedoes are fired with the space bar. You have only one minute to destroy as much of the pirate fleet as you can.

**Variables Used**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B$(1-8)</td>
<td>the pirate ships</td>
</tr>
<tr>
<td>T$(1-8)</td>
<td>the blown up ships</td>
</tr>
<tr>
<td>B$(9)</td>
<td>the submarine</td>
</tr>
<tr>
<td>T$(9)</td>
<td>erases ships</td>
</tr>
<tr>
<td>T$</td>
<td>the trees</td>
</tr>
<tr>
<td>H</td>
<td>the sub's position</td>
</tr>
<tr>
<td>Y</td>
<td>the ship's position</td>
</tr>
<tr>
<td>F</td>
<td>the torpedo's position</td>
</tr>
<tr>
<td>S</td>
<td>the score</td>
</tr>
</tbody>
</table>
SUB ATTACK

1 CLS:PRINT@128,"INSTRUCTIONS [Y/N]":INPUT T$:CLS:IF LEFT$(I$,1)="Y" GOSUB 850
10 Z=128:DATA 3,4,3,5,11,6,11,1,3,0,3,9,-1,17,0,18,28,19,
 22,-1,1,9,1,5,-1
15 DATA 113,116,-1,4,6,15,14,-60,9,-48,10,15,12,8,1,-1,
 29,28,31,22,31,26,31,29
20 DATA 28,20,-1,13,4,-48,9,-44,9,8,12,-1,125,118,127,
 117,126,124,-1,35,0,35,0
25 DATA 43,0,35,0,34,0,-1,:FOR B=1 TO 9
30 READ C
35 IF C=-1 THEN BS$(B)=CHR$(Z)+BS$(B):NEXT B:GOTO 50
40 READ D:BS$(B)=BS$(B)+CHR$(Z+C):TS$(B)=TS$(B)+CHR$(Z+D):GOTO 30
50 BS$(9)=BS$(9)+CHR$(Z):TS$(9)=TS$(9)+CHR$(Z)
60 CLS :FOR B=0 TO 190:PRINT@B,CHR$(175):NEXT B
62 FOR B=1 TO 7:TS$=TS$+"":IF B=3 THEN PRINT@94,TS$;
64 IF B=5 THEN PRINT@125,TS$;PRINT@187,TS$;
66 NEXT B:PRINT@156,TS$;H=490:PRINT@H,BS$(9);
80 PRINT@237,"PRESS";PRINT@269,"A KEY";
90 IF INKEY$="" THEN 90
100 PRINT@237,TS$(9);PRINT@269,TS$(9);
110 R=RND(4)*32+191:B=RND(4):Y=R
120 X=X+1:PRINT@Y,B$(B);:PRINT@Y+32,B$(B+4);
130 IF PEEK(343)=247 AND H>481 THEN H=H-1
140 IF PEEK(344)=247 AND H<504 THEN H=H+1
150 PRINT@H,B$(9);:IF PEEK(345)=247 AND L=0 GOSUB 700
170 IF L=1 GOSUB 710
180 Y=Y+1:IF X=550 THEN 250
200 IF PEEK(R+1088)<128 THEN POKE R+1088,128:PRINT@Y,T$(9)
   ;:PRINT@Y+32,T$(9);:GOTO 110
210 GOTO 120
250 IF S>H THEN H=S
260 PRINT@224,"HIGH SCORE...";HI;
270 PRINT@256,"YOUR SCORE...";S;
280 PRINT@320,"DO YOU WISH TO PLAY AGAIN [Y/N]?";AS=INKEY$:IF
   AS="" THEN 280
290 IF AS="Y" THEN S=0:X=0:L=0:T$="";GOTO 60
300 IF AS="N" THEN END ELSE 280
700 F=H+1027:L=1
710 F=F-32:P=PEEK(F):POKE F,30:IF F<1248 THEN L=0;GOTO 750
740 IF P<128 THEN PRINT@Y+1,T$(B);:PRINT@Y+33,T$(B+4);
   :L=0:S=S+B*20:SOUND 9,1:SOUND 120,2:POKE R+1088,32
750 POKE F,Z:RETURN
850 PRINT@32,"YOUR MISSION: TO DESTROY AS MA
     NY PIRATE SHIPS AS POSSIBLE IN ONE MINUTE."
860 PRINT@192,"THERE ARE FOUR TYPES OF SHIPS WORTH 20,40,60 A
   ND 80 POINTS."
870 PRINT@288,"USE THE [L,R] ARROW KEYS TO GUIDE YOUR SUBMA
   RINE, AND THE SPACE BAR TO FIRE TORPEDOES."
880 PRINT@448,"PRESS A KEY TO CONTINUE...";IF INKEY$="" THEN 88
   0 ELSE RETURN
This is a game for two players using joysticks or the keyboard. Player One, using the left side of the keyboard or the left joystick, starts at the top. Player Two starts at the bottom. The object of the game is to build up the highest score without running into the other player's trail or your own.

**Variables Used**

- **TM** - the counter
- **P(1,2)** - the snails' positions
- **S(1,2)** - the scores
- **D(1,2)** - the changes in position
- **N(1,2)** - checks the squares the snails are on
100 GOSUB 3000: GOSUB 800
110 P(1)=11: P(2)=15: S(1)=0: S(2)=0: D(1)=32: D(2)=-32
120 FOR TM=1 TO 600 STEP 3
140 IF PEEK(340)=253 OR J=1 AND JOYSTICK(0)<30 THEN D(2)=-1
150 IF PEEK(341)=223 OR J=1 AND JOYSTICK(0)>33 THEN D(2)=1
160 IF PEEK(339)=254 OR J=1 AND JOYSTICK(2)<30 THEN D(1)=-1
170 IF PEEK(344)=254 OR J=1 AND JOYSTICK(2)>33 THEN D(1)=1
180 IF PEEK(345)=253 OR J=1 AND JOYSTICK(1)<30 THEN D(2)=-32
190 IF PEEK(342)=223 OR J=1 AND JOYSTICK(1)>33 THEN D(2)=32
200 IF PEEK(338)=247 OR J=1 AND JOYSTICK(3)<30 THEN D(1)=-32
210 IF PEEK(333)=247 OR J=1 AND JOYSTICK(3)>33 THEN D(1)=32
220 FOR X=1 TO 2: P(X)=P(X)+D(X): N(X)=PEEK(P(X))
250 IF N(X)<>159 AND N(X)<>175 AND N(X)<>255 AND N(X)<>207 THEN 6000
260 IF N(X)=159 THEN S(X)=S(X)+1
270 IF N(X)=175 THEN S(X)=S(X)+2
280 IF N(X)=255 THEN S(X)=S(X)+3
290 IF N(X)=207 THEN S(X)=S(X)+S
300 POKE P(1),185: POKE P(2),233
310 SOUND (127+D(X)*3),1: NEXT X
320 PRINT@34,S(1);: PRINT@41,TM;: PRINT@57,S(2);
330 NEXT TM
800 FOR C=1 TO 20: W$=W$+CHR$(207): R$=R$+CHR$(255): B$=B$+CHR$(175): NEXT C
820 CLS 2: PRINT"ONE TIME HIGH TWO"
830 PRINT" 0 0"
840 FOR X=-1 TO 0
850 PRINT@166+X*32,B$;:
PRINT@422+X*32,B$;:
SOUND 150,3
860 PRINT@230+X*32,C$;:
PRINT@358+X*32,C$;:
SOUND 30,3
870 PRINT@294+X*32,D$;:
SOUND 200,3:NEXT X
FOR C=1088 TO 1504 STEP 32:POKE C,128:POKE C+31,128:
NEXT C
POKE 1103,185:SOUND 30,7:POKE 1520,233:SOUND 220,7
RETURN
CLS:PRINT@13,"SNAILS"
PRINT@66,"POINTS DENOMINATION..."
PRINT@98,CHR$(159);" YELLOW =1"
PRINT@130,CHR$(175);" BLUE =2"
PRINT@162,CHR$(255);" ORANGE =3"
PRINT@194,CHR$(207);" BUFF =5"
PRINT@258,"THE WINNER GETS A 20 PT. BONUS"
PRINT@322,"ARE YOU USING JOYSTICKS [Y/N]?
J$=INKEY$:IF J$="" THEN 3080 ELSE IF J$="Y" THEN J=1:
GOTO 3140
PRINT@322,"PLAYER ONE: PLAYER TWO:
PRINT" E O"
PRINT" A F J ;"
PRINT" X ,"
PRINT@485,"*PRESS ENTER TO BEGIN*";
E$=INKEY$:IF E$<>CHR$(13) THEN 3150
RETURN
FOR S=100 TO 1 STEP-4
SOUND S,2:NEXT S
SOUND 1,12:S(3-X)=S(3-X)+20
PRINT@134,"PLAYER ONE WINS !!!!";
IF S(2)>S(1) THEN PRINT@141,"TWO"
IF S(2)>HI THEN HI=S(2)
IF S(1)>HI THEN HI=S(1)
PRINT@34,S(1);:PRINT@49,Hl:PRINT@57,S(2)
PRINT@262,"ANOTHER GAME [Y/N] ?"
G$=INKEY$:IF G$="" THEN 6000
IF G$="Y" THEN TM=601:GOSUB 820:GOTO 110
IF G$="N" THEN CLS ELSE 6090
HOW A GAME IS MADE
Every game starts in the same place... in someone's head. The idea is then put down on paper. All the features of that game are written down. Pictures of the different characters and backgrounds are drawn. Every rule and aspect of the game is included in this paper plan.

The next step is to put all this information into an order of events. On another piece of paper shapes are drawn and each event of the game is put in a box, circle or diamond. With each figure a brief note is made. The name of this series of shapes and notes is a flowchart. Every event in the flowchart is a small program in itself. These small programs are commonly called subroutines. Breaking all the events into subroutines makes the task of programming the game much easier. Tracing a flaw in any particular subroutine is easier than tracing a flaw in a game made not using subroutines.

Quite often subroutines can be used more than once. They can even be transferred from one game to another. There is no point in designing a new subroutine to examine which way a player has moved the joystick for every game using a joystick. By using some of the same subroutines from game to game, a programmer will save himself/herself a lot of time.

Here are some guidelines to follow when designing a game:
1. Write down your ideas.
2. Draw up a flowchart.
3. Use subroutines.
4. Use the same subroutines where possible.

Here is a description of how the game SUB ATTACK works:

<table>
<thead>
<tr>
<th>Line Number(s)</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gives instructions option.</td>
</tr>
<tr>
<td>10 to 50</td>
<td>Creates boats and submarine.</td>
</tr>
<tr>
<td>60 to 66</td>
<td>Sets up sky and coastline.</td>
</tr>
<tr>
<td>80 to 100</td>
<td>Waits for player to start.</td>
</tr>
<tr>
<td>110</td>
<td>Chooses both boat type and position.</td>
</tr>
<tr>
<td>120 to 210</td>
<td>Main loop.</td>
</tr>
<tr>
<td>120</td>
<td>Displays boat.</td>
</tr>
<tr>
<td>130 to 170</td>
<td>Moves and displays submarine; checks for torpedo fire.</td>
</tr>
<tr>
<td>180 to 200</td>
<td>Erases and redraws boat, and monitors time.</td>
</tr>
<tr>
<td>210</td>
<td>End of loop.</td>
</tr>
<tr>
<td>250 to 300</td>
<td>Scores routine and “play again” option.</td>
</tr>
<tr>
<td>700 to 750</td>
<td>Torpedo firing routine.</td>
</tr>
<tr>
<td>850 to 880</td>
<td>Instructions’ display routine.</td>
</tr>
</tbody>
</table>