SUB - SEARCH

Contents

INSTRUCTIONS

IN THE 'SUB SEARCH' PROGRAM YOU ARE CAPTAIN OF THE DESTROYER USS BINARY.
YOU ARE GIVEN ORDERS TO SEEK AND DESTROY A STATIONARY (IT DOESN'T MOVE)
ENEMY SUB , YOU SEARCH FOR IT IN A 3-DIMENSIONAL CUBE OF WATER.
THE SIZE OF THE CUBE IS SELECTED BY YOU , AND SO IS THE NUMBER OF SHOTS.
IF YOU ARE CONFUSED , TAKE A LOOK AT THE SAMPLE RUN ON PAGE #3.
AFTER YOU HAVE ENTERED AREA DIMENSIONS (CUBE SIZE) THE PROGRAM WILL ASK
YOU 'DO YOU WANT INSTRUCTIONS?' , BEFORE AANSWERING THIS EARTSHAKING
QUESTION , PLEASE NOTE THAT THE INSTRUCTIONS BUILT INTO THE PROGRAM ARE
NOT ANYWHERE NEAR AS DETAILED AS THESE. BUT FOR THE FIRST TIME TYPE A 'Y'.
OH , YES , I FORGOT TO TELL YOU TO ANSWER QUESTIONS WITH A 'Y' FOR YES AND
A 'N' FOR NO.

NOW THAT YOU HAVE STARTED READING THE INSTRUCTIONS YOU WILL SEE IN THE
SECOND SCREENFUL THAT THE INSTRUCTIONS MENTION 'X,Y,Z COORDINATES' ,
THESE ARE NOTHING BUT 3-DIMENSIONAL COORDINATES. X,Y,Z COORDINATES ARE
NOTHING BUT THE REGULAR X,Y (2-DIMENSIONAL) COORDINATES WITH THE NEXT
DIMENSION (THIRD DIMENSION/Z COORDINATE) ADDED. NOW THAT I'VE EXPLAINED
ALL THAT , YOU CAN GO ON TO THE NEXT PARAGRAPH ON PLAYING THE GAME.

WHEN THE PROGRAM ASKS YOU 'EAST/WEST:' IT IS REQUESTING THAT YOU TYPE
A NUMBER (FROM 0 TO THE X DIMENSION -1 , IF YOU ARE CONFUSED CONSULT THE
SAMPLE RUN.) TO REPRESENT YOUR GUESS FOR THE X COORDINATE OF THE SUB.
NEXT THE PROGRAM WILL ASK YOU 'NORTH/SOUTH:' , RESPOND WITH YOUR GUESS
FOR THE Y COORDINATE OF THE SUB. TO END YOUR DATA INPUTTING FOR THIS TRIAL,
THE PROGRAM WILL ASK YOU 'DEPTH:' , NOW TYPE IN YOUR GUESS FOR THE Z COOR-
DINATE OF THE SUB. AT THIS POINT , THE PROGRAM WILL CLEAR THE SCREEN AND
PRINT OUT THE LOCATION OF THE EXPLOSION COMPARED TO THE LOCATION OF THE
SUB.(SEE SAMPLE RUN FOR DETAILS).IT WILL ALSO PRINT OUT THE LOCATION OF
THE LAST COORDINATES (THE ONES INPUTTED DURING THE LAST TRIAL).
NEXT IT WILL GO THROUGH THE X,Y,Z COORDINATE INPUT ROUTINE (UNLESS THE
LAST COORDINATES WERE THE EXACT SAME LOCATION AS THE SUB) , AND THEN GO
THROUGH THE EXPLOSION POINT RELATIVE TO SUB COORDINATES ROUTINE AND THEN
THE LAST COORDINATES PRINT OUT ROUTINE. THIS WILL GO ON TILL EITHER ONE
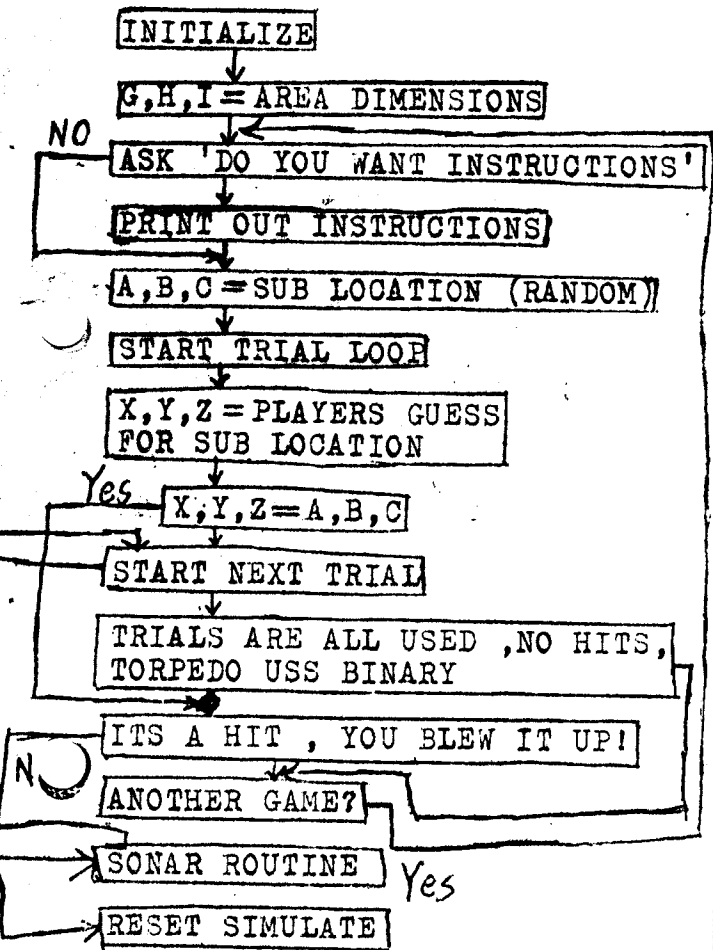OF TWO THINGS HAPPEN ;
1. YOU WILL FINALLY GET THE SUB , AND THE PROGRAM WILL CONGRATULATE YOU.
2. YOU WILL RUN OUT OF SHOTS AND GET TORPEDOED BY THE SUB.

ON PAGE #7 THERE IS A DRAWING OF A 10 x 10 3-DIMENSIONAL GRID AREA.
X10

HAVE FUN!!!

FLOWCHART

INIT , LINES 1000-1080

INITIALIZE	
G,H,I = AREA DIMENSIONS	AREA DIMS , LINES 1090-1160
ASK 'DO YOU WANT INSTRUCTIONS'	INSTRUCTIONS? , LINES 1210-1230
PRINT OUT INSTRUCTIONS	PRINT OUT INSTRUCTIONS , LINES 1240-1430
A,B,C = SUB LOCATION (RANDOM)	A,B,C = SUB LOCATION , LINES 1450-1470
START TRIAL LOOP	START TRIAL LOOP , LINES 1480-1480
X,Y,Z = PLAYERS GUESS FOR SUB LOCATION	X,Y,Z = PLAYERS GUESS , LINES 1510-1530
X,Y,Z = A,B,C	X,Y,Z = A,B,C , LINES 1540-1540
START NEXT TRIAL	START NEXT TRIAL , LINES 1560-1590
TRIALS ARE ALL USED , NO HITS, TORPEDO USS BINARY	TRIALS ALL USED , LINES 1600-1630
ITS A HIT , YOU BLEW IT UP!	IT'S A HIT , LINES 1640-1670
ANOTHER GAME?	ANOTHER GAME? , LINES 1680-1730
SONAR ROUTINE	SONAR ROUTINE , LINES 1740-1840
RESET SIMULATE	RESET SIMULATE , LINES 1850-1910

NO

Yes

N

Yes

Note:

If X, Y, Z = A, B, C

GOTO 1640

SAMPLE RUN

A LONG LINE REPRESENTS THE CLEARING OF THE SCREEN AND PRINTING THE NEXT
SCREENFUL OF INFORMATION.

RUN

AREA DIMENSIONS:
EAST/WEST: 10
NORTH/SOUTH: 10
DEPTH: 10
HOW MANY SHOTS?5

DO YOU WANT INSTRUCTIONS? (NO)

TRIAL #1
EAST/WEST: 6
NORTH/SOUTH: 5
DEPTH: 5

SONAR SENSES EXPLOSION POINT WAS NORTH AND TOO LOW.
LAST COORDINATES = 6,5,5

TRIAL #2
EAST/WEST: 6
NORTH/SOUTH: 3
DEPTH: 3

SONAR SENSES EXPLOSION POINT WAS NORTH AND TOO LOW.
LAST COORDINATES = 6,3,3

TRIAL #3
EAST/WEST: 6
NORTH/SOUTH: 1
DEPTH: 1

SONAR SENSES EXPLOSION POINT WAS NORTH AND TOO HIGH.
LAST COORDINATES = 6,1,1

TRIAL #4
EAST/WEST: 6
NORTH/SOUTH: 0
DEPTH: 2

B O O M ! ! YOU FOUND IT IN 4 TRIES!
ANOTHER GAME? (NO)

PROGRAM LISTING

```
1000.
1010.
1020.
1030. *SUB - SEARCH*
1040. BY MARC GLADSTEIN
1050 NT = 0
1060 CLEAR
1070 BC = 0
1080 FC = -65
1090 PRINT
1100 PRINT "AREA DIMENSIONS:"
1110 INPUT "EAST/WEST: " G
1120 INPUT "NORTH/SOUTH:" H
1130 INPUT "DEPTH:" I
1140 IF G < 1 G = 1
1150 IF H < 1 H = 1
1160 IF I < 1 I = 1
1170 INPUT "NUMBER OF SHOTS:"N
1180 IF N < 1 N = 1
1190 PRINT
1200 PRINT
1210 PRINT "DO YOU WANT INSTRUCTIONS?"
1220 K = KP
1230 IF K = "N" GOTO 1440
1240 CLEAR
1250 PRINT "        *SUB SEARCH*"
1260 PRINT "YOU ARE CAPTAIN OF THE DESTROYER USS BINARY #11010."
1270 PRINT "AN UNFRIENDLY RUSSIAN SUB HAS BEEN BUGGING YOU,"
1280 PRINT "YOUR MISSION IS TO SEEK AND DESTROY IT."
1290 PRINT "YOU HAVE ",#1,N,"SHOT",
1300 IF N = 1 PRINT "."
1310 IF N > 1 PRINT "S."
1320 PRINT
1330 PRINT "        PRESS GO"
1340 IF KP = 13 CLEAR
1350 PRINT
1360 PRINT "    SUB SEARCH CONT."
1370 PRINT "INDICATE EXPLOSION POINT WITH X,Y,Z COORDINATES,"
1380 PRINT "THE FIRST TWO NUMBERS ARE THE SURFACE COORDINTES,"
1390 PRINT "THE THIRD IS FOR THE DEPTH .(FIRST TWO ARE REGULAR X,Y"
1400 PRINT "COORDINATES,THE THIRD IS THE OTHER DIMENSION)."
1410 PRINT "MAY THE FORCE BE WITH YOU!"
1420 PRINT "    PRESS GO TO START"
1430 IF KP#13 GOTO 1430
1440 CLEAR
1450 A = RND (G)-1
1460 B = RND (H)-1
1470 C = RND (I)-1
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PROGRAM LISTING
(CONTINUED)

```
1480  FOR D = 1 TO N
1490  PRINT
1500  PRINT "TRIAL #",#1,D
1510  INPUT "EAST/WEST:"X
1520  INPUT "NORTH/SOUTH:"Y
1530  INPUT "DEPTH:"Z
1540  IF ABS (X-A)+ABS (Y-B)+ABS (Z-C)=0 GOTO 1650
1550  CLEAR
1560  GOSUB 1740
1570  PRINT #1,"LAST COORDINATES ",X,",",Y,",",Z
1580  PRINT
1590  NEXT D
1600  PRINT
1610  PRINT "YOU'VE BEEN TORPEDOED! ABANDON SHIP!"
1620  PRINT #1,"THE SUBMARINE WAS AT ",A,",",B,",",C
1630  GOTO 1680
1640  PRINT
1650  PRINT "B O O M ! ! YOU FOUND IT IN ",#1,D," TRIE",
1660  IF D=1 PRINT "!"
1670  IF D>1 PRINT "S!"
1680  PRINT
1690  PRINT
1700  PRINT "ANOTHER GAME?"
1710  K = KP
1720  IF K#89 GOTO 1850
1730  GOTO 1170
1740  PRINT "SONAR SENSES EXPLOSION POINT WAS ",
1750  IF Y>B PRINT "NORTH",
1760  IF Y<B PRINT "SOUTH",
1770  IF X>A PRINT "EAST",
1780  IF X<A PRINT "WEST",
1790  IF (Y#B)+(X#A) PRINT " AND ",
1800  IF Z>C PRINT "TOO LOW."
1810  IF Z<C PRINT "TOO HIGH."
1820  IF Z=C PRINT "DEPTH A - OK."
1830  PRINT
1840  RETURN
1850  PRINT "OK - HOPE YOU ENJOYED YOURSELF."
1860  NT = 3
1870  BC = 7
1880  FC = 0
1890  CLEAR
1900  PRINT
1910  PRINT "BALLY BASIC"
```

END OF PROGRAM (E.O.P.).

NOTES

1. THE SAMPLE RUN IS NOT EXACTLY THE SAME AS THE REAL PROGRAM RUN THAT I T
   COPIED IT FROM , OF COURSE , NO VARIABLES WERE CHANGED, BUT THE BIGGEST
   DIFFERENCE (AND ALSO JUST ABOUT THE ONLY ONE) WAS THAT I DID NOT DO
   THE LINE SPACING PROPERLY (E.G. WHERE THE PROGRAM MIGHT HAVE DONE A
   'PRINT;PRINT' , I MIGHT HAVE DONE ONLY ONE 'PRINT').

2. ON THE FLOWCHART I DID NOT PUT IN ALL OF THE THINGS THAT THE PROGRAM
   DOES , ONLY THE MAJOR THINGS (E.G. PRINTING OUT THE INSTRUCTIIONS , THE
   SONAR SUBROUTINE , ETC.).

3. A SUGGESTION FOR MODIFYING THE PROGRAM:
   MAKE THE SUB NONSTATIONARY (IT WOULD MOVE) , HAVE IT MOVE ONE SPACE
   IN ANY DIRECTION OR NOT MOVE AT ALL (THIS WOULD MAKE IT MORE LIKE FRIBB
   TRIBBLE , A COMPUTER GAME).

4. SOON I WILL BE BRINGING OUT MORE PROGRAMS , MY NEXT ONE BEING A PROGRAM
   TO CALCULATE SINE , COSINE , TAGENT , SQUARE ROOT , SQUARE , POWERS AND
   I'M ADDING DIVISION WITH A QUOTIENT IN FRACTIONS. PRICE - 95¢ ,
   PROGRAM HAS SAME QUALITY DOCUMENTATION (PAPERS) AS SUB SEARCH EXEPT
   NO FLOWCHART. DON'T ORDER NOW , WAIT TILL IT COMES OUT IN THE ARCADIAN.

MAP OF 10x10x10 GRID AREA

THIS IS A MAP OF AN AREA OF SEAWATER THAT YOU WILL BE SEARCHING IN ,
YOU MAY SELECT A CUBE LARGER OR SMALLER THAN THIS ONE , TO DO THIS
TYPE IN THE APPROPRIATE NUMBERS FOR THE AREA DIMENSIONS (SEE PAGE #1).
WHEN YOU ARE USING THIS MAP NOTE THAT IF YOUR SHOT HIT <u>EAST</u> OF THE SUB ,
YOUR NEXT SHOT MUST BE FARTHER WEST. THE SAME GOES FOR NORTH/SOUTH
COORDINATES , IN OTHER WORDS IF YOUR SHOT HIT <u>WEST</u> OF THE SUB ,
THEN YOUR NEXT SHOT MUST BE FARTHER EAST. THIS PRINCIPLE ALSO GOES FOR
THE DEPTH. IF YOU ARE CONFUSED , SEE SAMPLE RUN ON PAGE #3.