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1978

FILE = TST

BLK= 0

01C TEST SHIT TO DUMP NEAT OVECTOR STUFF.)
11HEX V= VERBADR
21SUBR NEWINTR B LDAX, B INX, A L MOV, B LDAX, B INX, A H MOV,
31VERBADR SHLD, PCHL,
41CODE ZAMMER NEWINTR Y LXIX, NEXT
514 LSAT ZAMMER \$
61DECIMAL \$S
71# VD CR ." C= " DUP NOWC OVB@ .
81 ." R= " DUP NOWR OVB@ .
91 ." D= " DUP NOWD OVB@ .
101 ." DIS= " DUP DISTANCE OVB@ H.
111 ." DD= " DUP DELTADIST OVB@ H.
121 ." MAXD= " DUP MAXDIST OVB@ H.
131 ." X= " DUP VX OVB@ H.
141 ." Y= " DUP VY OVB@ H. CR \$
151-->

FILE = VE
BLK= 0
01(VECTOR FIELDS) . " **OGBUG" (VLENGTH S = C= VLENGTH)
11DECIMAL VLENGTH SC= INTR NC= INTG (INITIAL POS AND COL.)
21NC= NOWR NC= NOWC (CURRENT ROW AND COLUMN)
31NC= NOWD (CURRENT DIRECTION)
41(NC= NXTR NC= NXTC) (NEXT ROW AND COLUMN)
51(CUSTOM VECTOR ROUTINE GOODIES)
61NC= BASEX 1+
71NC= BASEY 1+
81NC= DELTAX 1+
91NC= DELTAY 1+
101NC= MAXDIST MAXDIST NOWR - 1+ C= POSLEN
111NC= DISTANCE 1+
121NC= DELTADIST 1+ DELTADIST NOWR - C= SNATLEN
131(NC= ACCDIST 1+)
141NC= MEMDIST NC= MEMR NC= MEMC NC= MEMD -->
151-->

BLK= 1
01(MORE CUSTOM VECTOR FIELDS)
11NC= CUSVEC 1+ (CUSTOM VECTOR ROUTINE ADDRESS)
21NC= MYTYPE (VECTOR TYPE INDICATOR)
31NC= MYFLAG (BUILD IN NEATO FLAG) NC= FLAGCODE
41NC= MYFACE 1+ (WHAT I LOOK LIKE IN THE OPEN)
51NC= VCOR 1+ (MY COROUTINE CELL)
61NC= BEHIND 1+ (FELLOW BEHIND ME)
71NC= AHEAD 1+ (FELLOW AHEAD OF ME)
81NC= VISFLAG
911+ C= MLENGTH
101MLENGTH SC= HOSSV NC= ASSMSV
111NC= VIRGIN
121NC= DIST-1 (PREV DISTANCE)
131NC= DISPF (DISPLACEMENT FACTOR)
141NC= SNATCHER 1+
1511+ C= HLENGTH -->

BLK= 2
01(MORE UNIQUE VECTOR STUFF)
11MLENGTH AHEAD C= MYSLAVE
21SC= FNDFPTR FNDFPTR C= TRACKPTR 1+ NC= TREECK 1+
31BEHIND C= MYBOSS
41NC= FRONTIER 1+
51NC= VISMAT NCOLS + C= TREES
610 SC= TPL NC= TPH NC= TC NC= TR NC= TD 1+ C= TEL
71TEL NNODES * C= TDEPTH 70 C= SURPLUS
81TDEPTH TREES + SURPLUS +
911+ C= MNLEN
101HLENGTH C= PLENGTH (PLAYERS VECTOR LENGTH)
111PLENGTH C= RVLENGTH (REVEALERS LENGTH)
121(BITS AND CODES)
131(VECTOR TYPES)
1410 SC= T-TYP NC= H-TYP NC= M-TYP C= K-TYP
151-->

FILE = VE

BLK= 3

01(HOSTAGE AND PLAYER STATE VARIABLES)
11(THE HOSTAGE STATE VARIABLE)
210 SC= HSFREE (HOSTAGE FREE)
31NC= HSATP (HOSTAGE ATTACHED TO PLAYER)
41NC= HSATM DROP (HOSTAGE ATTACHED TO MONSTER)
51(ASSIMILATION STATE VARIABLE)
610 SC= ASNOT (NOT ASSIMILATED)
71NC= ASSIM DROP (FULLY ASSIMILATED)
81(PLAYERS ASSIMILATION STATE VARIABLE)
910 SC= ASCOOL (PLAYER IS SPIFFY)
10INC= ASONTOP DROP (PLAYER IS ON TOP OF HOSTAGES)

11!-->

121

131

141

151

BLK= 4

01(VECTOR STUFF)
11XC? NOT IFTRUE VPTR @ HEX FFF0 VPTR ! IFEND <STKD
21RAMMARK MLENGTH BR= BKV0 RAMLEN C= BKVL VARHERE C= BKVS
31RAMMARK PLENGTH BR= PLYRV RAMLEN C= PLYRL VARHERE C= PLYVS
41RAMMARK RLENGTH BR= REVV RAMLEN C= REVL VARHERE C= REVS
51RAMMARK TLENGTH BR= TV1 RAMLEN C= TVVL VARHERE C= TVVS

61!-->

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BLK= 5

01(MONSTER STUFF)
11
21RAMMARK MONLEN BR= MONV1
31MONLEN BR= MONV2
41MONLEN BR= MONV3
51MONLEN BR= MONV4
61RAMLEN C= MONVL VARHERE C= MONVS
71MONLEN C= MONVBYTES
81STICX XC? NOT IFTRUE VPTR @ H. VPTR ! IFEND

91DECIMAL -->

101

111

121

131

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151

FILE = VE
BLK= 6
01(TREASURE VECTORS)
11
21RAMMARK MLENGTH BR= TRSV1
31MLENGTH BR= TRSV2 MLENGTH BR= TRSV3
41MLENGTH BR= TRSV4
51RAMLEN C= TRSVL VARHERE C= TRSVS
61MLENGTH C= TRSVBYTES
714 C= TOTAL-JEWELS
81-->
91
101
111
121
131
141
151

BLK= 7
01(HOSTAGE VECTORS)
11RAMMARK HLENGTH BR= HOSV1
21HLENGTH BR= HOSV2 HLENGTH BR= HOSV3
31HLENGTH BR= HOSV4
41RAMLEN C= HOSVL VARHERE C= HOSVS
51HLENGTH C= HOSVBYTES
614 C= TOTAL-HOSTAGES
71TABLE HOSTAB HOSV1 , HOSV2 , HOSV3 , HOSV4 , 0 ,
81
91(*****)
101HOSV4 C= TEMRM
111-->
121
131
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151

BLK= 8
01(MORE NEAT VECTOR STUFF)
11# ZAP:VECT 0 MONV4 BKGV MONV4 - BKVL + FILL
210 HOSV4 TRSV1 HOSV4 - MLENGTH + FILL #
31-->
41
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141
151

FILE = VE

BLK= 9

01C SPECIAL VECTOR GETTERS AND PUTTERS)

11CODE PUSH:CCR O H MVI, H D MOV, Y PUSHX, vaddr LIYD,
21NOWC Y L LDX, NOWR Y E LDX, Y POPX, H PUSH, D PUSH, NEXT

31

41CODE PUSH:CCRD O H MVI, H D MOV, Y PUSHX, vaddr LIYD,

51NOWC Y L LDX, NOWR Y E LDX, NOWD Y A LDX,

61Y POPX, H PUSH, D PUSH, A E MOV, D PUSH, NEXT

71

81CODE CGOG (exchange BC with VCOR)

91 vaddr LHLD, VCOR D LXI, D DAD,

101 M A MOV, C M MOV, A C MOV, H INX,

111 M A MOV, B M MOV, A B MOV, NEXT

121# SETCO 1+ VCOR V! ;

131

141

151-->

FILE = VA
BLK= 0
01(GAME CONTROL PARAMETERS)
11V= NOBREAK
21V= TRASHFLAG
31V= GAME-OVER V= GAME#
41V= NPLAYERS V= PLAYERUP
51V= INITIAL-LIVES
61V= REMAINING-LIVES
71V= PLAYERDEAD (PLAYER NAILED BY MONSTER FLAG)
81V= PLAYERVERLO (PLAYER VELOCITY)
91BV= FREEZEFLAG (PLAYER MOTION FREEZE FLAG)
101BV= SMARTS (MONSTER SMARTNESS FACTOR)
111V= MONSTERCOUNT (# OF MONSTERS FLOATING AROUND)
121BV= BANC BV= BANR (POINT OF BANISHMENT FOR MONSTER)
131BV= IBNC BV= IBNR (POINT OF INITIAL RETURN FOR MONSTER)
141-->
151

BLK= 1
01(MORE VARIABLES)
11V= TOTAL-CONNECTS V= OLD-CONNECTS
21V= TOTAL-REVEALED-GROTTOS
31V= KEY-THRESHOLD
41EV= KEY-STATUS
510 SC= KYNONE NC= KYSHOW NC= KYOPEN NC= KYGONE DROP
61V= TOTAL-PATHS
71V= REVEALED-PATHS (# OF PATHS REVEALED TO PLAYER SO FAR)
81BV= REVEAL-ACTIVE
91V= START-COL V= STOP-COL
101V= FOUNDIT BV= THATSALL
111DECIMAL -->
121
131
141
151

BLK= 2
01(FREEZE AND UNFREEZE ROUTINES)
11SUBR FREEZE FREEZEFLAG H LXI, M INR, RET,
21SUBR FREEZE? FREEZEFLAG LDA, A ANA, RET,
31CODE FREEZETH FREEZE CALL, NEXT
41CODE UNFREEZE FREEZEFLAG H LXI, M DCR, OC, IF, O M MVI, THEN,
51NEXT
61-->
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101
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FILE = DI
BLK= 0
01C NEW SQUARE ROOT ROUTINE)
11F= srt1
2ISUBR srt1 <ASSEMBLE
311 A MVI, 1 B LXI, 1 D LXI,
4ILABEL srt1 A ANA, D DSBC, RZ, RC, D DAD, B INX, B INX,
5IXCHG, B DAD, A INR, XCHG, srt1 Jmpr, ASSEMBLED
6I-->
7I
8I
9I
10I
11I
12I
13I
14I
15I

BLK= 1
01C 16 BIT INTEGER DIVIDE ROUTINE: M N UN/ Q R) DECIMAL
11FORWARD .ZERO FORWARD IDV50 FORWARD IDV60
2IFORWARD IDV10 FORWARD IDV20 FORWARD IDV30 FORWARD IDV40
3ISUBR unsdiv <ASSEMBLE L C MOV, H B MOV, D A MOV, O H LXI,
4IE ORA, .ZERO JRZ, B A MOV, 16 B MVI,
5ILABEL IDV10 C RALR, RAL, H DADC, D DSBC,
6ILABEL IDV20 CMC, IDV50 JRNC,
7ILABEL IDV30 IDV10 DJNZ, IDV60 Jmpr,
8ILABEL IDV40 C RALR, RAL, H DADC, A ANA, D DADC,
9IIDV30 JRC, IDV20 JRZ,
10ILABEL IDV50 IDV40 DJNZ, D DAD, A ANA, (MAKE IT POS)
11ILABEL IDV60 C RALR, RAL, A D MOV, C E MOV,
12ILABEL .ZERO RET, ASSEMBLED
13ISUBR UNSDIV H PUSH, D DSBC, CY, IF, O D LXI, H POP, ELSE,
14IH POP, unsdiv CALL, THEN, RET, CODE UN/ EXX, D POP, H POP,
15IUNSDIV CALL, H PUSH, D PUSH, EXX, NEXT DECIMAL -->

BLK= 2
01C COMPUTE DELTA FOR I COORDINATE - CLEAR VECTOR)
11C FIRST A NEGATION SUBROUTINE)
2ISUBR CMPHL H A MOV, CMA, A H MOV, CMA, A L MOV, H INX,
3IRET,
4IC IN: HL=TARGET, DE=TIME, BC=START)
5ISUBR CDELTA B PUSH, A ANA, B DSBC, CY~, IF, UNSDIV CALL,
6IELSE, CMPHL CALL, UNSDIV CALL, CMPHL CALL, XCHG, CMPHL CALL,
7IXCHG, THEN, B POP, B DAD, RET,
8IDECIMAL -->
9I
10I
11I
12I
13I
14I
15I

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FILE = NM
BLK= 0
 01( MESH PARAMETERS ) <STKD
 11
21336 NCOLS / C= COLSIZE 180 NROWS / C= ROWSIZE
3140 C= COLGUARD 28 C= ROWGUARD 10 C= CIR-RAD
418 C= HOLE-RAD NROWS 1- C= START-ROW
51COLSIZE COLGUARD - C= COLDEV ROWSIZE ROWGUARD - C= ROWDEV
61
71: COLCENT COLSIZE * COLSIZE 2 / + 168 - ;
81: ROWCENT ROWSIZE * ROWSIZE 2 / + 107 - ;
91
101: COMP:X COLCENT COLDEV 2 / COLDEV RND - + ;
111: COMP:Y ROWCENT ROWDEV 2 / COLDEV RND - + ;
121
131: COMP:XY COMP:Y SWAP COMP:X SWAP ;
141STKD -->
151

BLK= 1
 01( MESH MATRIX GOODIES )
110 SC= NODX NC= NODXH
21NC= NODY NC= NODYH NC= NBX 1+ NC= NBY 1+
31NC= MPLO 7 +
41NC= NDXO 7 +
51NC= NDYO 7 +
61NC= CONFLG NC= #CON
71NC= DRAWFLG NC= DRAWMSK
81NC= >TREASURE 1+
911+ C= NODSIZ
101NODSIZ NNODES * C= NODEMAT:SIZE
111NODEMAT:SIZE BA= NODEMAT -->
121
131
141
151

BLK= 2
 01( NODE ZAMMERS )
11( SUBR node^ D= ROW E= COL C= DISP, OUT HL= ^ )
21F= N^1 F= N^2 SUBR node^ <ASSEMBLE D PUSH, B PUSH,
31D B MOV, B INR, NCOLS MINUS A MVI,
41LABEL N^1 NCOLS ADI, N^1 DJNZ, E ADD, A INR, A B MOV,
51NODSIZ MINUS H LXI, NODSIZ D LXI,
61LABEL N^2 D DAD, N^2 DJNZ, B DAD, O NODEMAT B LXI, B DAD,
71B POP, D POF, RET, ASSEMBLED>
81CODE NODE^ EXX, B POP, H POP, D POP, L D MOV, node^ CALL,
91H PUSH, EXX, NEXT
101SUBR node^ node^ CALL, D PUSH, MPLO D LXI, D DAD, D POP, RET,
111-->
121
131
141
151

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FILE = NM
BLK= 3
01(TEST:REL AND MOVE:NODE)
11(D=ROW,E=COL,C=REL COL ROW REL TEST:REL --- DIST)
21SUBR test:rel C A MOV, MPIO ADI, A C MOV, node^ CALL,
31M A MOV, RET,
41CODE TEST:REL EXX, B POP, H POP, D POP, L D MOV, test:rel CALL,
51A L MOV, O H MVI, H PUSH, EXX, NEXT
61(MOVE:NODE TABLES)
71DATA xtbl -1 B, 0 B, 1 B, -1 B, 1 B, -1 B, 0 B, 1 B,
81DATA ytbl 1 B, 1 B, 1 B, 0 B, 0 B, -1 B, -1 B, -1 B,
91SUBR move:node B PUSH, (C=DIR, D=ROW,E=COL)
1010 B MVI, ytbl H LXI, B DAD, M A MOV, D ADD, A D MOV,
111xtbl H LXI, B DAD, M A MOV, E ADD, A E MOV, B POP, RET,
121CODE MOVE:NODE EXX, B POP, H POP, D POP, L D MOV,
131move:node CALL, D L MOV, O D MVI, D H MOV,
141D PUSH, H PUSH, EXX, NEXT
151-->

BLK= 4
01(STUFF)
11 NODE! NODE^ ! ;
21 NODE@ NODE^ @ ;
31 NODEB@ NODE^ B@ ;
41 CLEAR:NODEMAT O O NODEMAT NODEMAT:SIZE FILL ;
51-->
61
71
81
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101
111
121
131
141
151

BLK= 5
01(ESTVALDIR)
11F= EVDL
21SUBR estvaldir <ASSEMBLE NOWR Y D LDX, NOWC Y E LDX,
310 NOWD Y MVIX,
41LABEL EVDL NOWD Y A LDX, MPIO ADI, A C MOV, node^ CALL,
51M A MOV, A ANA, RNZ, NOWD Y INRX, EVDL JMPR, ASSEMBLE>
61CODE ESTVALDIR B PUSH, Y PUSHX, vaddr LIYD, estvaldir CALL,
71Y POPX, B POP, NEXT
81
91-->
101
111
121
131
141
151

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FILE = NM
BLK= 6
01( NODE MATRIX MANIPULATORS )
11# SET#DRAWN ROLL DRAWMSK NODE^ SET #
21# TEST#DRAWN ROLL DRAWMSK NODE^ BIT #
31# SET#GROTTO#DRAWN DRAWFLG NODE^ BONE #
41# TEST#GROTTO#DRAWN DRAWFLG NODE@ #
51-->
61
71
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131
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FILE = VC
BLK= 0
01(MORE STUFF)
11: RETURN: INITIAL: POSITION INTR VB@ NOWR VB! INTC VBE NOWC VB! ;
21: SET: NEW: MCCR NOWR VB! NOWC VB! ;
31: SET: INITIAL: MCCR DUP ROLL INTR OVB! INTC OVB! ;
51X BN\$HAROEDE\$TUNATION INTR VB@ = SWAP INTC VBE = AND ;
61-->
71
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101
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121
131
141
151

FILE = CD
BLK= 0
01C COMPUTE DELTAS FOR STORAGE ROUTINE)
11C THIS ROUTINE COMPUTES DELTA FOR ONE COORDINATE)
21SUBR CDEL1 (DE=R,C B=COORD PTR, C=DIR)
31B PUSH, D PUSH,
41B PUSH, C A MOV, MFL0 ADJ, A C MOV, node^ CALL, M L MOV,
510 H MVI, B POP, L A MOV, A ANA, 0C>, IF,
61H PUSH, D PUSH, move:node CALL,
71B C MOV, node^ CALL, M E MOV, H INX, M D MOV, XCHG,
SIXTHL, XCHG, node^ CALL, M C MOV, H INX, M B MOV,
91H POP, (TARGET) D POP, (TIME) CDELTA CALL, E A MOV,
101THEN, D POP, B POP, A B MOV, RET,
111-->
121
131
141
151

BLK= 1
01C SET DELTAS FOR BOTH COORDINATES FOR A GIVEN PATH)
11SUBR SETDELT
21NBX B MVI, CDEL1 CALL, B PUSH, C A MOV, NDX0 ADJ, A C MOV,
31node^ CALL, B M MOV, B POP, NBY B MVI, CDEL1 CALL,
41B PUSH, C A MOV, NDY0 ADJ, A C MOV,
51node^ CALL, B M MOV, B POP, RET,
61-->
71
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101
111
121
131
141
151

BLK= 2
01C COMPUTE DELTAS FOR WHOLE MATRIX)
11F= MAKELP
21CODE MAKEDELT **S** ASSEMBLE B PUSH,
310 D LXI, 0 C MVI,
41LABEL MAKELP SETDELT CALL,
51C A MOV, A INR, A C MOV, S CPI, MAKELP JRNZ, 0 C MVI,
61E A MOV, A INR, A E MOV, NCOLS CPI, MAKELP JRNZ, 0 E MVI,
71D A MOV, A INR, A D MOV, NROWS CPI, MAKELP JRNZ,
81B POP, NEXT ASSEMBLED
91: FIXVGER NCOLS 0 DO NROWS 0 DO
101: I NDX NODE@ XADJ J I NBX NODE!
111: J I NDY NODE@ YADJ J I NBY NODE! LOOP LOOP;
121: MD FIXVGER MAKEDELT ;
131-->
141
151

FILE = VR

BLK= 0

01(HOPPED UP 8 BIT MPY ROUTINE)
11(THIS ROUTINE IS USED TO MULTIPLY DELTA BY DISTANCE)
21(ADDING RESULT TO INITIAL DISP)
31(HL= INITIAL DISP, DE= DELTA, A= DIST)
41SUBR HOTMPY RRC, CY, IF, D DAD, THEN, E SLAR, D RALR,
51RRC, CY, IF, D DAD, THEN, E SLAR, D RALR,
61RRC, CY, IF, D DAD, THEN, E SLAR, D RALR,
71RRC, CY, IF, D DAD, THEN, E SLAR, D RALR,
81RRC, CY, IF, D DAD, THEN, E SLAR, D RALR,
91RRC, CY, IF, D DAD, THEN, E SLAR, D RALR,
101RRC, CY, IF, D DAD, THEN, E SLAR, D RALR,
111RRC, CY, IF, D DAD, THEN, RET,
121SUBR SQUARE BABS CALL, A E MOV, O D MVI, O H LXI,
131HOTMPY Jmpr,
141-->
151

BLK= 1

01(CALCULATE X Y POSITION OF OBJECT FROM DISTANCE, BASE, AND)
11(DELTAS)
21SUBR CALCX Y C MVI,
31NOWR Y A LDX, MEMR Y CMPX, O<>, IF, C INR, A MEMR Y STX, THEN,
41NOWC Y A LDX, MEMC Y CMPX, O<>, IF, C INR, A MEMC Y STX, THEN,
51NOWD Y A LDX, MEMD Y CMPX, O<>, IF, C INR, A MEMD Y STX, THEN,
61DISTANCE 1+ Y A LDX, A B MOV, MEMDIST Y CMPX, O<>, IF,
71C INR, A MEMDIST Y STX, THEN,
81C A MOV, A ANA, O=, IF,
91VX Y E LDX, VX 1+ Y D LDX,
101VY Y L LDX, VY 1+ Y H LDX,
111RET,
121THEN, VBSUPDATE VLOGICSTAT Y SETX,
131-->
141
151

BLK= 2

01(MORE CUTE CALCULATIONS)
11B A MOV,
21BASEX Y L LDX, BASEX 1+ Y H LDX, DELTAX Y E LDX,
31DELTAX 1+ Y D LDX, HOTMPY CALL, L VX Y STX, H VX 1+ Y STX,
41H PUSH,
51BASEY Y L LDX, BASEY 1+ Y H LDX, DELTAY Y E LDX,
61DELTAY 1+ Y D LDX, HOTMPY CALL, L VY Y STX, H VY 1+ Y STX,
71D POP,
81RET,
91-->
101
111
121
131
141
151

FILE = VR
BLK= 3
01(SET BASE POSITION)
11(IN DE=ROW,COL)
21SUBR SETBASEPOS B PUSH, D PUSH,
3INBX C MVI, node^ CALL, M E MOV, H INX, M D MOV, H INX,
4IM C MOV, H INX, M B MOV,
5IE BASEX Y STX, D BASEX 1+ Y STX,
6IE VX Y STX, D VX 1+ Y STX,
7IC BASEY Y STX, B BASEY 1+ Y STX,
8IC VY Y STX, B VY 1+ Y STX,
9ID POP, B POP, RET,
101SUBR FREEZEBASE A XRA,
11IA DISTANCE Y STX, A DISTANCE 1+ Y STX,
121(A ACCDIST Y STX, A ACCDIST 1+ Y STX,)
13IA DELTADIST Y STX, A DELTADIST 1+ Y STX, RET,
14I-->
15I

BLK= 4
01(ROUTINE TO ESTABLISH NEW BASE POSITIONS AND DELTAS)
11(FIRST A SIGN ROUTINE)
21SUBR SGNA A ANA, O A MVI, RP, A DCR, RET,
31SUBR NEWPATH,
41NOWR Y D LDX, NOWC Y E LDX,
51SETBASEPOS CALL, NOWD Y A LDX, MPLO ADI, A C MOV,
61node^ CALL, M A MOV, A MAXDIST Y STX, S D LXI, D DAD,
71M A MOV, A DELTAX Y STX, SGNA CALL, A DELTAX 1+ Y STX,
81D DAD, M A MOV, A DELTAY Y STX, SGNA CALL, A DELTAY 1+ Y STX,
91RET,
10I-->
11I
12I
13I
14I
15I

BLK= 5
01(ROUTINE TO CAUSE OBJECT TO ARRIVE AT A NEW POSITION)
11SUBR ARRIVE DI,
21NOWR Y D LDX, NOWC Y E LDX, NOWD Y C LDX,
31move^node CALL, D NOWR Y STX, E NOWC Y STX,
41SETBASEPOS CALL, FREEZEBASE CALL,
51RET,
6I-->
7I
8I
9I
10I
11I
12I
13I
14I
15I

FILE = VR
 BLK= 6
 01(DISTANCE PHASE ACCUMULATOR)
 11(DISTANCE HAS BOTH DELTA AND ACCELERATION)
 21(IN A= TIMEBASE TO USE)
 31SUBR DISTPA TBDEST TCHGSTAT Y BITX, RNZ,
 41DISTANCE Y L LDX, DISTANCE 1+ Y H LDX,
 51DELTADIST Y E LDX, DELTADIST 1+ Y D LDX,
 61(ACCDIST Y C LDX, ACCDIST 1+ Y B LDX,)
 71BEGIN, D DAD, (XCHG, B DAD, XCHG,) A DCR, O=, END,
 81(IF BEYOND MAX DISTANCE, SET AT MAX DISTANCE AND FLAG)
 91MAXDIST Y A LDX, A ANA, O<, IF, H A MOV, MAXDIST Y CMPX,
 101CY~, IF, TBDEST TCHGSTAT Y SETX, MAXDIST Y H LDX, O L MVI,
 111THEN, THEN, E DELTADIST Y STX, D DELTADIST 1+ Y STX,
 121L DISTANCE Y STX, H DISTANCE 1+ Y STX,
 131RET,
 141-->
 151

BLK= 7
 01(DISTANCE VECTORING ROUTINE AND VGER VERBS)
 115 C= TB-DVECT (TVMROPT2 BIT TO ACTIVATE DISTANCE VECTORING)
 21SUBR DISTVECT PSW PUSH, B PUSH,
 31B A MOV, DISTPA CALL,
 41CALCXY CALL, B POP, PSW POP, RET,
 51SUBR NEWVECT TB-DVECT TVMROPT2 Y BITX, vect JZ,
 61H PUSH, CUSVEC Y L LDX, CUSVEC 1+ Y H LDX, XTHL, RET,
 71XC? NOT IFTRUE
 81HEX NEWVECT 89D9 (8956) U! DECIMAL (***** STUFF IN LINK)
 91IFEND
 101CODE DVECT-OFF Y PUSHX, vaddr LIYD, TB-DVECT TVMROPT2 Y RESX,
 111Y POPX, NEXT
 121CODE DVECT-ON Y PUSHX, vaddr LIYD,
 131DISTVECT H LXI, L CUSVEC Y STX, H CUSVEC 1+ Y STX,
 141TE-DVECT TVMROPT2 Y SETX, Y POPX, NEXT
 151-->

BLK= 8
 01(CODE FOR TASKS TO INTERFACE TO NEW GOODIES)
 11CODE ESTPOS DI, B PUSH, Y PUSHX, vaddr LIYD,
 21NOWC Y E LDX, NOWR Y D LDX,
 31SETBASEPOS CALL,
 41FREEZEBASE CALL,
 51Y POPX, B POP, NEXT
 61(TRAVEL AWAY FROM NODE)
 71CODE DEPART:NODE DI, B PUSH, Y PUSHX, vaddr LIYD,
 81NEWPATH CALL,
 91Y POPX, B POP, NEXT
 101(ARRIVE NODE)
 111CODE ARRIVE:NODE DI, B PUSH, Y PUSHX, vaddr LIYD,
 121ARRIVE CALL,
 131Y POPX, B POP, NEXT
 141-->
 151

FILE = VR
BLK= 9
01(REVERSE DIRECTION ROUTINE)
11SUBR REVERSE:DIRECTION
21NOWR Y D LDX, NOWC Y E LDX, NOWD Y C LDX,
31move+node CALL, C A MOV, DMA, 7 ANI,
41D NOWR Y STX, E NOWC Y STX, A NOWD Y STX,
51NEWPATH CALL, MAXDIST Y H LDX, O L MVI,
61DISTANCE Y E LDX, DISTANCE 1+ Y D LDX,
71A ANA, D DSBC, L DISTANCE Y STX, H DISTANCE 1+ Y STX,
81RET,
91CODE RUSH:SOURCE DI, B PUSH, Y PUSHX, vaddr LIYD,
101DISTANCE Y A LDX, DISTANCE 1+ Y ORAX, OC>, IF,
111REVERSE:DIRECTION CALL,
121THEN,
131Y POPX, B POP, NEXT
141-->
151

FILE = WR
BLK= 0
01(VMR)
11HEX
21SUBR SLEZR2A (does mat offset and relabs)
31 (in- BC= masic/exp , HL= Y , DE= X , IX= pattern addr)
41 (out- HL= new vscraddr , C= new vmasic)
51 invertxy? CALL, L SLAR, H RALR, L SLAR, H RALR, (*4 For Y)
61 invert? CALL,
71 H PUSH, XCHG, O X D LDX, O E MVI, (X offset)
81 D SRAR, E RARR, D SRAR, E RARR, (/4 For X offset)
91 MRFLOP C BIT, O<>, IF, D DAD, ELSE, A ORA, D DSBC, THEN,
101 XTHL, (Push X+off, HL<-Y) 1 X D LDX, O E MVI, (Y offset)
111 MRFLIP C BIT, O<>, IF, D DAD, H DCX,
121 ELSE, A ORA, D DSBC, THEN,
131 D POP,
141-->
151

BLK= 1
01(VMR)
11 (Y can not set here larger then 256)
21 H A MOV, O H MVI, A L MOV, H DAD, H DAD, H DAD,
31 H DAD, D PUSH, L E MOV, H D MOV, H DAD, H DAD, (*64)
41 D DAD, (#80) XCHG, H POP, (X)
51 L A MOV, (SAVE BIT CNT) H L MOV, O H MVI, D DAD, (x+y)
61 RLC, RLC, 3 ANI,
71 MRFLOP C BIT, O<>, IF, NEG, O<>, IF, H DCX, THEN, THEN,
81 3 ANI, A E MOV, invert? CALL, C A MOV, FC ANI, E ORA,
91A C MOV, (HL= screen address) RET,
101DECIMAL -->
111
121
131
141
151

BLK= 2
01(MY OWN EASY TO USE WRITE ROUTINE)
11BV= INTERSTAT
21CODE WRITER A XRA, INTERSTAT STA, INTcpt IN,
31X PUSHX, D POP, EXX, X POPX, B POP, H POP, yadj CALL, XTHL,
41xadj CALL, XCHG, H POP, (HL= Y DE= X)
51SLEZR2A CALL, X INXX, X INXX, O X E LDX, X INXX, O X D LDX,
61X INXX, write CALL, EXX,
71INTcpt IN, INTERSTAT STA,
81D PUSH, X POPX, NEXT
91DECIMAL -->
101
111
121
131
141
151

FILE = SC
BLK= 0
01(SCORING GOODIES)
11
21RAMMARK SLENGTH R= P1SV RAMLEN C= P1SL VARHERE C= P1SS
31RAMMARK SLENGTH R= P2SV RAMLEN C= P2SL VARHERE C= P2SS
412 A= P1SCR 2 A= P2SCR
519 BA= AP1SCR 9 BA= AP2SCR
61: C:S:V 0 P1SS P1SL FILL 0 P2SS P2SL FILL :
71: CLEAR:SCORES 0 P1SCR ZERO 1 P1SCR ZERO
810 P2SCR ZERO 1 P2SCR ZERO C:S:V :
91-->
101
111
121
131
141
151

BLK= 1
01(TASK TO DISPLAY PLAYER ONES SCORE)
11: DISPP1SCR ;TASK:
210 P1SCR @ 1 P1SCR @ 1 AP1SCR 7 BIN->ASC
318 0 AP1SCR B! 48 1 AP1SCR B!
410 AP1SCR OSUPR
51-160 X! 99 Y!
61PLOP-ON
717 XPAND!
810 AP1SCR PATTERN!
91STRING :
101
111: BUMPP1SCR 0 P1SCR @ 1 P1SCR @ ROT 0 D+ 1 P1SCR ! 0 P1SCR !
121P1SV DISPP1SCR ;
131
141-->
151

BLK= 2
01(TASK TO DISPLAY PLAYER TWOS SCORE)
11: DISPP2SCR ;TASK:
210 P2SCR @ 1 P2SCR @ 1 AP2SCR 7 BIN->ASC
318 0 AP2SCR B! 48 1 AP2SCR B!
410 AP2SCR OSUPR
5196 X! 99 Y!
61PLOP-ON
717 XPAND!
810 AP2SCR PATTERN!
91STRING :
101: BUMPP2SCR 0 P2SCR @ 1 P2SCR @ ROT 0 D+ 1 P2SCR ! 0 P2SCR !
111P2SV DISPP2SCR ;
121: INCSCORE PLAYERUP @ IF BUMPP2SCR ELSE BUMPP1SCR THEN :
131-->
141
151

FILE = SC
BLK= 3
01: TOGGLE:LIFE, DISPLAY REMAINING LIVES, AND BITE DUST)
11: TOGGLE:LIFE INITIAL-LIVES @ -2 / + 16 *
2190 96 ROTY1 WRITEP ;
31
41: DIRL
51: REMAINING-LIVES @ 1- DUP IF
610 DO I TOGGLE:LIFE LOOP
71ELSE DROP THEN ;
81
91: BITE:DUST REMAINING-LIVES 1-!
10: REMAINING-LIVES @ DUP IF 1- TOGGLE:LIFE
11: ELSE DROP 1 GAME-OVER ! STOPme 1+B! THEN ;
121
131-->
141
151

FILE = NGM
 BLK= 0
 01(NEW CONFLICT CHECKER IN: DE=R, C B=D OUT: A= FLAG)
 11DATA CONCM 1 B, 0 B, 1 B, 0 B, 0 B, 6 B, 0 B, 6 B,
 215 B, 0 B, 7 B, 0 B, 0 B, 0 B, 0 B, 2 B,
 31SUBR CONFLICT? B PUSH, 0 B MVI, CONCM H LXI, B DAD,
 41M A MOV, A ANA, 0=, IF, B POP, RET, THEN,
 51D PUSH, H PUSH, A C MOV, move:node CALL,
 61H POP, 8 B LXI, B DAD, M A MOV, MPLO ADI, A C MOV,
 71node^ CALL, M A MOV, D POP, B POP, RET,
 81CODE CONFLICT:CHECK EXX, B POP, H POP, D POP, L D MOV,
 91CONFLICT? CALL, A L MOV, 0 H MVI, H PUSH, EXX, NEXT
 101
 111(CHECK FOR LEGAL NODE)
 121(D= ROW, E= COL RETURNS CY SET IF LEGAL COMBO)
 131SUBR movecheck
 141D A MOV, NROWS CPI, RNC, E A MOV, NOOLS CPI, RET, -->
 151
 BLK= 1
 01(VARIABLES FOR MATRIX GENERATOR)
 11V= GMRC V= GMD V= GMNRC
 21V= RCX V= RCY V= NRDX V= NRCY
 31-->
 41
 51
 61
 71
 81
 91
 101
 111
 121
 131
 141
 151
 BLK= 2
 01(ADD PATH ROUTINE)
 11SUBR addpath GMRC SDED, C A MOV, GMD STA, (STUFF STUFF)
 21MPLO ADI, A C MOV, node^ CALL, M A MOV, A ANA, RNZ,
 31GMD LDA, A C MOV, move:node CALL, GMNRC SDED, (SET NEW R, C)
 41movecheck CALL, RNC,
 51GMRC LDED, CONFLICT? CALL, A ANA, RNZ,
 61TOTAL-PATHS LHLD, H INX, TOTAL-PATHS SHLD, (BUMP PATHS)
 71(COMPUTE DISTANCES AND DELTAS)
 81NODX C MVI, GMRC LDED, node^ CALL,
 91M E MOV, H INX, M D MOV, H INX, RCX SDED,
 101M E MOV, H INX, M D MOV, RCY SDED,
 111GMNRC LDED, node^ CALL,
 121M E MOV, H INX, M D MOV, H INX, NRDX SDED,
 131M E MOV, H INX, M D MOV, NRCY SDED,
 141-->
 151

FILE = NOM

BLK= 3

01(COMPUTE DISTANCE)
11RCY LHLD, A ANA, D DSBC, L A MOV, SQUARE CALL, H PUSH,
21NRCX LDED, RCX LHLD, A ANA, D DSBC, L A MOV,
31SQUARE CALL, D POP, D DAD, sart CALL, A B MOV, (B= DIST)
41GMRC LDED, GMD LDA, MPLO ADI, A C MOV, node^ CALL, B M MOV,
51#CON C MVI, node^ CALL, M INR,
61GMD LDA, CMA, 7 ANI, MPLO ADI, A C MOV,
71GMNRC LDED, node^ CALL,
81B M MOV, #CON C MVI, node^ CALL, M INR, RET,
91CODE ADD:PATH EXX, B POP, H POP, D POP, L D MOV,
101addpath CALL, EXX, NEXT

111-->

121

131

141

151

BLK= 4

01(ASSEM CONNECTIVITY MARKER)

11BV= MAKCON

21F= MRPT F= MCLP F= MDLP F= NOSH F= NXTRC
31CODE MARK:CONNECTIVITY <ASSEMBLE EXX.
41LABEL MRPT A XRA, MAKCON STA, O D LXI,
51LABEL MCLP CONFLG C MVI, node^ CALL, M A MOV, A ANA,
61NXTRC JRNZ, (SKIP IF ALREADY CONNECTED)
71MPLO CONFLG - B LXI, B DAD, O B MVI, (B= DIR CTR)
81LABEL MDLP M A MOV, A ANA, NOSH JRZ, (KICKOUT NOT REL)
91B C MOV, H PUSH, D PUSH,
101move+node CALL, (GOTO NEIGHBOR)
11ICONFLG C MVI, node^ CALL, D POP, M A MOV, H POP,
121A ANA, (IS NEIGHBOR MARKED?) NOSH JRZ,
131ICONFLG C MVI, node^ CALL, 1 A MVI, A M MOV, MAKCON STA,
141TOTAL-CONNECTS LHLD, H INX, TOTAL-CONNECTS SHLD,
151NXTRC Jmpr, -->

BLK= 5

01(TRY THE NEXT DIRECTION)

11LABEL NOSH B INR, H INX, B A MOV, S CPI, MDLP JRNZ,

21(GOTO NEXT GROTTO)

31LABEL NXTRC E INR, E A MOV, NOOLS CPI, MCLP JRNZ, O E MVI,
41D INR, D A MOV, NROWS CPI, MCLP JRNZ,

51(KEEP SCANNING UNTIL THANGS STABILIZED)

61MAKCON LDA, A ANA, MRPT JRNZ, EXX, NEXT

71ASSEMBLED

81-->

91

101

111

121

131

141

151

```

FILE = GM
BLK= 0
01( CONNECTIVITY TESTING )
11: ZAM BKGV vaddr ! NCOLS 0 DO NROWS 0 DO J I
21COMP: XY J I NODY NODE! J I NDX NODE! LOOP LOOP ;
31: N:C CONFLG NODE^ BONE !
41: T:C CONFLG NODEB@ ; -->
51-->
61
71
81
91
101
111
121
131
141
151

BLK= 1
01( CONNECT INDICATED ZONES TOGETHER )
11: CRND DUP 0= IF 5 RND ELSE DUP NCOLS 1- = IF 5 RND 3 +
21ELSE 8 RND THEN THEN ;
31: ADD:ANOTHER TOTAL-PATHS @ BEGIN NCOLS 2 - RND 1+
41NROWS 2 - RND 1+ CRND ADD:PATH DUP TOTAL-PATHS @
51C> END DROP ;
61: MAKE:MAZE CLEAR:NODEMAT ZAM
711 TOTAL-CONNECTS !
81NCOLS 2 - RND 1+ DUP START-COL ! 0 N:C
91NCOLS 2 - RND 1+ STOP-COL !
101NCOLS 0 DO NROWS 0 DO J I CRND ADD:PATH LOOP LOOP
111BEGIN
1211 ( INIT ) NCOLS 0 DO NROWS 0 DO J I #CON NODEB@ 2 < IF
131J I CRND ADD:PATH DROP 0 THEN LOOP LOOP END
141BEGIN MARK:CONNECTIVITY TOTAL-CONNECTS @ 1 = WHILE
151START-COL @ 0 CRND ADD:PATH REPEAT -->

BLK= 2
01( KEEP COOKING UNTIL EVERYONES CONNECTED )
11BEGIN
21NCOLS 0 DO NROWS 0 DO J I T:C NOT IF
31J I CRND ADD:PATH THEN LOOP LOOP
41MARK:CONNECTIVITY TOTAL-CONNECTS @ NNODES =
51END
614 GAME# BE 4 MIN - 4 * DUP IF 0 DO ADD:ANOTHER LOOP
71ELSE DROP THEN ;
81
91( ARE WE IN THE START CHAMBER )
101: START:CHAMBER?
1112DUP START-ROW = IF START-COL @ = IF 2DROP 0 ELSE .1 THEN
121ELSE DROP 1 THEN ;
131-->
141
151

```

FILE = LD
BLK= 0
01(**** LOCAL DISTANCE ****)
11(LOCAL DISTANCE ROUTINE)
21(THIS ROUTINE COMPUTES THE DISTANCE BETWEEN TWO OBJECTS)
31(IN: IX= FOLLOWER IY= LEADER OUT: A=DIST, B= REV FLAG)
41F= DIFB E= TRYM F= SAMD G= INFIN
51SUBR LDIST CASSEMBLE
61NOWC X E LDX, NOWR X D LDX,
71(DOES CI=CO AND RI=RO ?)
81E A MOV, NOWC Y CMPX, TRYM JRNZ,
91D A MOV, NOWR Y CMPX, TRYM JRNZ,
101(ME AND HIM BOTH HAVE SAME ORIGIN)
111(ARE WE ON THE SAME BRANCH?)
121NOWD X A LDX, NOWD Y CMPX, DIFB JRNZ,
131(YES SIR - WE ARE ON SAME BRANCH)
141DISTANCE 1+ Y A LDX, DISTANCE 1+ X SUBX, O B MVI, BABS JMP,
151-->

BLK= 1
01(WE ARE ON DIFFERENT BRANCHES OF THE SAME ORIGIN)
11LABEL DIFB DISTANCE 1+ Y A LDX,
21DISTANCE 1+ X ADDX, 1 B MVI, BABS JMP,
31LABEL TRYM NOWD X C LDX, H PUSH, move#node CALL, (TO DEST)
41H POP, MAXDIST X A LDX, DISTANCE 1+ X SUBX, (REVERSE DIST)
51A B MOV, (AND SAVE IT IN B)
61D A MOV, NOWR Y CMPX, INFIN JRNZ,
71E A MOV, NOWC Y CMPX, INFIN JRNZ,
81C A MOV, CMA, 7 ANI, NOWD Y CMPX, SAMD JRZ,
91(I AM ON A PATH LEADING ME TO OTHERS ORIGIN)
101B A MOV, DISTANCE 1+ Y ADDX, O B MVI, BABS JMP,
111(I AM ON COMPLEMENTARY PATH THAT OBJECT IS ON)
121LABEL SAMD DISTANCE 1+ Y A LDX, B SUB, 1 B MVI, BABS JMP,
131(OBJECTS ARE FARTHER THEN WE CAN EASILY DETERMINE)
141LABEL INFIN 127 A MVI, RET,
151ASSEMBLED-->

BLK= 2
01(DISTANCE ROUTINE FOR LIST REFORMER TO USE)
11(IF IT GETS INFINITY BACK IT WILL TRY SWAPPING X AND Y)
21
31SUBR LRDIST LDIST CALL, (TRY IT ONE WAY)
41127 CPI, RNZ, (RETURN IF NON INFINITE)
51(ITS INFINITE SO TRY IT THE OTHER WAY AROUND)
61X PUSHX, XTIY, X POPX, LDIST CALL,
71(BUT SWITCH BACK TO OLD POINTER SCAM BEFORE GOING HOME)
81X PUSHX, XTIY, X POPX, RET,
91-->
101
111
121
131
141
151

FILE = LD
BLK= 3
01(NEW FINDCLOSE ROUTINE)
11DECIMAL
21F= SRCL F= FCOLD
31SUBR FINDCLOSE <ASSEMBLE
410 HOSTAB H LXI, EXX, 127 C MVI, EXX,
51LABEL SRCL M E MOV, H INX, M D MOV, H INX, D A MOV, E ORA,
61FCLD JRZ, D PUSH, X POPX, ASSMSV X A LDX, ASNOT CPI,
71SRCL JRNZ, HOSSV X A LDX, HSATP CPI, SRCL JRNZ,
81DIST CALL, EXX, C CMP, CY, IF, A C MOV,
91X PUSHX, H POP, EXX, B A MOV, EXX, A B MOV, THEN,
101EXX, SRCL JMPR,
111LABEL FCOLD EXX, RET,
121ASSEMBLED
131-->
141
151

BLK= 4
01(CHECK FINDCLOSE, AND IF FOUND LIGHT UP FOLLOWER)
11SUBR LOOKFOLLOWER (SEARCH LIST) FINDCLOSE CALL,
21C A MOV, MAXASSM CPI, (IS FOLLOWER CLOSE ENUFF?)
31RNC, (KICKOUT IF TOO FAR AWAY)
41DISPF Y CMPX, RC, (OR TOO CLOSE)
51H PUSH, X POPX, (IX= FOLLOWER)
61Y PUSHX, D POP, (DE= LEADER)
71(LINK HER IN) L BEHIND Y STX, H BEHIND 1+ Y STX,
81E AHEAD X STX, D AHEAD 1+ X STX, ASSIM ASSMSV X MVIX,
91DELTADIST Y A LDX, A DELTADIST X STX,
101DELTADIST 1+ Y A LDX, A DELTADIST 1+ X STX,
111B A MOV, A ANA, RZ, (NEED WE REVERSE FOLLOWER?)
121D PUSH, H PUSH, Y POPX, REVERSE:DIRECTION CALL, Y POPX, RET,
131SUBR LOOKASS BEHIND Y A LDX, BEHIND 1+ Y ORAX, RNZ, B PUSH,
141D PUSH, H PUSH, X PUSHX, LOOKFOLLOWER CALL,
151X POPX, H POP, D POP, B POP, RET, -->

FILE = OT
BLK= 0
01(CHECK FOR ONTOP)
11F= ONTL
21SUBR ONTOP? <ASSEMBLE
310 HOSTAB H LXI, O C MVI,
41LABEL ONTL M E MOV, H INX, M D MOV, H INX,
51D A MOV, E ORA, RZ,
61D PUSH, X POPX, HOSSTV X A LDX, HSATP CPI, ONTL JRNZ,
71B PUSH, LRDIST CALL, B POP, ONTOPLMT CPI, CY, IF,
811 C MVI, THEN, A B MOV, 127 CPI, OC>, IF,
91DIST-1 X SUBX,
1010=, IF, 1 C MVI, ELSE, OC, IF, 1 C MVI, THEN, THEN, THEN,
111B DIST-1 X STX, ONTL JMNR,
121ASSEMBLED
131-->
141
151

BLK= 1
01(PLAYERS INTERRUPT LEVEL ONTOP CHECKER)
11SUBR PILOTR
21ASSMSV Y A LDX, A ANA, OC>, IF,
31ONTOP? CALL, C A MOV, A ANA, RNZ,
41ASCOOL ASSMSV Y MVIX, (CLEAR ONTOP STATE)
51THEN, LOOKASS CALL, (CHECK MY ASS)
61RET,
71SUBR PILOTC X PUSHX, PILOTR CALL, X POPX, RET,
81-->
91
101
111
121
131
141
151

BLK= 2
01(PROPAGATE LEADERS DELTA DOWN THRU LIST)
11(IY= LEADERS VECTOR)
21F= CDLP SUBR COPYDELT <ASSEMBLE
31BEHIND Y E LDX, BEHIND 1+ Y D LDX,
41LABEL CDLP
51D A MOV, E ORA, RZ, D PUSH, X POPX,
61L DELTADIST X STX, H DELTADIST 1+ X STX,
71BEHIND X E LDX, BEHIND 1+ X D LDX, CDLP JMNR,
81ASSEMBLED
91-->
101
111
121
131
141
151

FILE = OT

BLK= 3

01(MAKE ALL MY FRIENDS HALT RIGHT NOW)

11F= EHN F= RELP

21SUBR HALTNOW <ASSEMBLE

31DI, B PUSH, D PUSH, H PUSH, X PUSHX, Y PUSHX,

410 HOSTAB H LXI, PLYRV Y LXIX,

51LABEL RELP M E MOV, H INX, M D MOV, H INX,

61D A MOV, E ORA, EHN JRZ, D PUSH, X POPX,

71HOSSV X A LDX, HSATP CPI, RELP JRNZ,

81A XRA, A BEHIND X STX, A BEHIND 1+ X STX,

91A AHEAD X STX, A AHEAD 1+ X STX,

101A DELTADIST X STX, A DELTADIST 1+ X STX,

111ASNOT ASSMSV X MVIX,

121LRDIST CALL, A DIST-1 X STX, RELP JMPR,

131LABEL EHN A XRA, A BEHIND Y STX, A BEHIND 1+ Y STX,

141Y POPX, X POPX, H POP, D POP, B POP, ASONTOP A MVI,

151ASSMSV PLYRV + STA, RET, ASSEMBLE> -->

BLK= 4

01(INTERFACES TO THE TERSE WORLD)

11

21CODE PROPDeltas DI, X PUSHX, Y PUSHX, B PUSH,

31addr LIYD,

41DELTADIST Y L LDX, DELTADIST 1+ Y H LDX,

51COPYDELTS CALL,

61B POP, Y POPX, X POPX, NEXT

71-->

81

91

101

111

121

131

141

151

FILE = HF
BLK= 0
01(INTERFACES TO THE TERSE WORLD)
11CODE JOIN:LINE DI, X PUSHX, Y PUSHX, B PUSH,
21vaddr LIYD, HSATP HOSSV Y MVIX, PLYRV Y LXIX,
31HALTNOW CALL,
41B POP, Y POPX, X POPX, NEXT
51
61-->
71
81
91
101
111
121
131
141
151

BLK= 1
01(ASSIMULATED NODE ROUTINE)
11F= GOHM F= VIRG
21SUBR HASSIM CASSEMBLE DI, PSW PUSH,
31DISTVECT CALL,
41LOOKASS CALL,
51VIRGIN Y A LDX, A ANA, OCD, IF, O VIRGIN Y MVIX, VIRG Jmpr,
61THEN,
71(AM I AT THE END OF THIS PATH?)
81TBDEST TCHGSTAT Y BITX, GOHM JRZ, (NO = KICKOUT)
91-->
101
111
121
131
141
151

BLK= 2
01(MORE)
11LABEL VIRG
21X PUSHX, H PUSH, D PUSH, B PUSH, (GRAB PARMs FROM LDR)
31NOWNR B LXI, Y PUSHX, H POP, B DAD, XCNG,
41AHEAD Y L LDX, AHEAD 1+ Y H LDX, (HL= FL)
51H PUSH, X POPX,
61B DAD, POSLEN B LXI, LDIR,
71(SET HDS DISTANCE TO N UNITS LESS THAN LEADER)
81DISTANCE 1+ X A LDX, DISPF X SUBX, OCD, IF, A XRA, THEN,
91A DISTANCE 1+ Y STX, A XRA, A DISTANCE Y STX,
101TBDEST TCHGSTAT Y RESX, (DON'T ALARM TERSE)
111B POP, D POP, H POP, X POPX,
121LABEL GOHM PSW POP, RET, ASSEMBLED-->
131
141
151

FILE = HF

BLK= 3

01(FOLLOW MONSTER ROUTINE)
11SUBR MONF DI, B PUSH,
21Y PUSHX, H POP, NOWR B LXI, B DAD, XCHG,
31SNATCHER Y L LDX, SNATCHER 1+ Y H LDX, B DAD,
41SNATLEN B LXI, LDIR, A XRA, A DELTADIST Y STX,
51A DELTADIST 1+ Y STX,
61CALCXY CALL,
71B POP, PSW POP, RET,
81-->
91
101
111
121
131
141
151

BLK= 4

01(SPECIAL MASTER VECTORING ROUTINE FOR HOSTAGES)
11
21SUBR H!V PSW PUSH,
31HOSGV Y A LDX, HSATM CPI, MONF JRZ,
41ASSMSV Y A LDX, A ANA,
51OC, IF, PSW POP, HASSIM JMP,
61THEN, PSW POP, DISTVECT JMP,
71
81CODE HVECT-ON Y PUSHX, vaddr LJYD,
91H!V H LXI, L CUSVEC Y STX, H CUSVEC 1+ Y STX,
101TB-DVECT TVMR0PT2 Y SETX, Y POPX, NEXT
111-->
121
131
141
151

FILE = LEN
BLK= 0
01(LOOK FOR NEARBY THANGS)
11(HL= R,C IX= SUBJ RET Z IF NEAR, NZ IF NOT)
21SUBR NEARBY? NOWR X D LDX, NOWC X E LDX,
31D A MOV, H CMP, O=, IF, E A MOV, L CMP,
41RZ, THEN,
51DISTANCE 1+ X A LDX, A ANA, O=, IF, A INR, RET, THEN,
61NOWD X C LDX, H PUSH, movefnode CALL, H POP,
71D A MOV, H CMP, RNZ, E A MOV, L CMP, RET,
81
91(NEARBY LIST -- HL:= TARG HL= LIST RET Z= NONE NZ= FOUND)
101SUBR NEARBYLIST M E MOV, H INX, M D MOV, H INX,
111D A MOV, E ORA, RZ, D PUSH, X POPX, EXX,
121NEARBY? CALL, EXX, NEARBYLIST JRNZ,
131I A MVI, A ANA, RET,
141-->
151

BLK= 1
01(CODE ROUTINE TO DO NEARBY CHECK)
11(C R LIST MTC? --- T)
21CODE MTC? H POP, (HL= LIST)
31EXX, D POP, H POP, E H MOV, EXX, (R,C)
41X PUSHX, NEARBYLIST CALL, O H LXI, O=, IF, H INX, THEN,
51X POPX, H PUSH, NEXT
61
71DATA PCONF7 MONV1 , MONV2 , MONV3 , MONV4 , HOSV1 , HOSV2 ,
81HOSV3 , HOSV4 , TRSV1 , TRSV2 , TRSV3 , TRSV4 , TV1 , 0 ,
91
101: NOBODY@HOME@YET? 2DUP PCONF7 MTC? IF 1 ELSE 2DROP O THEN ;
111-->
121
131
141
151

FILE = T
BLK= 0
01(PLACE TREASURE IN MAZE)
11TABLE T/M TRSV1 , TRSV2 , TRSV3 , TRSV4 , 0 ,
21TABLE T/I THESTAR , THESYM , THEJEWEL , THEFLOWER , 0 ,
31-->
41
51
61
71
81
91
101
111
121
131
141
151

BLK= 1
01(TASK FOR A HUNK OF TREASURE)
11
21# TRS-T :TASK# 20 RND TIMER!-ON WAIT
31(MAKE SELF APPEAR)
41ESTPOS
51MYFACE V@ ANIM! 1STWRITE
61XOR-ON ZERODXYAXAY
7110 TIMEBSCALE!
81SELF MYFLAG V^ FLAG!-ON GO DI (TREA-S) ZEROTIMEB
91TREA-S 2000 INCSCORE NULPAT ANIM! 1 TIMER!-ON GO ;
101-->
111
121
131
141
151

BLK= 2
01(PLACE TREASURE IN MAZE)
11V= THESpot
21# HIDE:PEICE THESpot ! BEGIN BEGIN
31NOLs RND NROWS RND START:CHAMBER? END
41NOBODY:HOME:YET? END
512DUP THESpot @ NOWR OVB! THESpot @ NOWC OVB!
61THESpot @ ROLL >TREASURE NODE! THESpot @ TRS-T ;
71# HIDE:TREASURE TOTAL-JEWELS 0 DO
81I T/I @ I T/M @ MYFACE OV!
91I T/M @ HIDE:PEICE LOOP ;
101# TREASURE:CHECK PUSH:CCR >TREASURE NODE@ DUP IF
111DUP MYTYPE OVB@ T-TYP = IF
121(JEWELS-REVEALED 1+!) THEN 1 SWAP MYFLAG OVB!
1310 PUSH:CCR >TREASURE NODE! ELSE DROP THEN ;
141:S
151

FILE = RS
BLK= 0
01(ROUTE SEARCH ROUTINE)
11(VISITED MATRIX GOODIES)
21SUBR VIS? H PUSH, B PUSH, Y PUSHX, H POP, VISMAT B LXI, B DAD,
31E C MOV, B DAD, D A MOV, BIT^ CALL, M ANA, B POP, H POP, RET,
41SUBR SETVIS H PUSH, B PUSH, Y PUSHX, H POP, VISMAT B LXI,
51B DAD, E C MOV, B DAD, D A MOV, BIT^ CALL, M ORA, A M MOV,
61B POP, H POP, RET,
71(CLEAR OUT VIS BITMATRIX)
81SUBR ZAPVIS B PUSH, H PUSH, VISMAT B LXI, Y PUSHX, H POP,
91B DAD, NCOLS DO, O M MVI, H INX, LOOP, H POP, B POP, RET,
10!-->
111
121
131
141
151

BLK= 1
01(GENERATE TREE ENTRY'S FOR ONE ENTRY)
11F= RUGLP
21SUBR GENTE CASSEMBLE MPLO C MVI, node^ CALL, H PUSH, S B MVI,
31LDAR, 7 ANI, A C MOV,
41BEGIN, H POP, H PUSH, B A MOV, O B MVI, B DAD, A B MOV,
51M A MOV, A ANA, O<, IF, D PUSH, move:node CALL,
61VIS? CALL, O=, IF, (GENERATE NODE)
71SETVIS CALL,
81MYBOSS Y A LDX, A TPL X STX, MYBOSS 1+ Y A LDX, A TPL 1+ X STX,
91E TC X STX, D TR X STX, C TD X STX,
101TREECHECK Y L LDX, TREECK 1+ Y H LDX, FORKETH CALL, (END CHECK?)
111TEL D LXI, D DADX,
121THEN, D POP, THEN, C A MOV, A INR, 7 ANI, A C MOV, LOOP, H POP,
131RET,
141ASSEMBLED
15!-->

BLK= 2
01(ADVANCE TREE ONE DEPTH DOWN)
11SUBR ADVT MYBOSS Y L LDX, MYBOSS 1+ Y H LDX,
21H INX, H INX, M E MOV, H INX, M D MOV,
31GENTE CALL, MYBOSS Y L LDX, MYBOSS 1+ Y H LDX,
41TEL D LXI, D DAD, M E MOV, H INX, M D MOV,
51D INX, D A MOV, E ORA, O=, IF, H INX, ELSE, H DCX, THEN,
61L MYBOSS Y STX, H MYBOSS 1+ Y STX, ADVT JRNZ,
71-1 X O MVIX, X INXX, -1 X O MVIX, X INXX, RET,
81-->
91
101
111
121
131
141
151

FILE = RS
BLK= 3
01(FIND PATH ROUTINE)
11C BC=TARGET R,C DE= NOWR,NOWC HL= ENDCHK IY= TREE, RAM)
21CODE STARTSEARCH X PUSHX, D POP, Y PUSHX, H POP, EXX,
31H POP, vaddr LIYD, ZAPVIS CALL,
41A XRA,
51A FNDPTR Y STX, A FNDPTR 1+ Y STX,
61A MYBOSS Y STX, A MYBOSS 1+ Y STX,
71NOWR Y D LDX, NOWC Y E LDX,
81L TREECK Y STX, H TREECK 1+ Y STX,
91Y PUSHX, X POPX, TREES B LXI, B DADX,
101X PUSHX, GENTE CALL, H POP,
111L MYBOSS Y STX, H MYBOSS 1+ Y STX,
121-1 X O MVIX, X INXX, -1 X O MVIX, X INXX,
131X PUSHX, D POP, E FRONTIER Y STX, D FRONTIER 1+ Y STX,
141EXX, D PUSH, X POPX, H PUSH, Y POPX, NEXT -->
151

BLK= 4
01(MORE PATH FINDER)
11F= TREELP F= SCANBK F= SCAN1
21SUBR BANGTREE CASSEMBLE
31FRONTIER Y E LDX, FRONTIER i+ Y D LDX, D PUSH, X POPX,
41FNDPTR Y L LDX, FNDPTR 1+ Y H LDX,
51L A MOV, H ORA, SCAN1 JRNZ, ADVT CALL,
61X PUSHX, D POP, E FRONTIER Y STX, D FRONTIER 1+ Y STX,
71A XRA, RET,
81-->
91
101
111
121
131
141
151

BLK= 5
01(MORE)
11LABEL SCAN1 O B LXI,
21LABEL SCANBK M E MOV, C M MOV, H INX,
31M D MOV, B M MOV, H DCX, H B MOV, L C MOV,
41E A MOV, D ORA,
51O<>, IF, XCHG, SCANBK JMPR, THEN, 1 A MVI, A ANA, RET,
61ASSEMBLE>
71
81CODE LOOKAHEAD Y PUSHX, D POP, X PUSHX, H POP, EXX,
91vaddr LIYD, BANGTREE CALL, O=, IF,
1010 H LXI, ELSE, H PUSH, 1 H LXI, THEN, H PUSH,
111EXX, H PUSH, X POPX, D PUSH, Y POPX, NEXT
121
131-->
141
151

FILE = RS
BLK# 6
01(ROUTINE TO FIND BEST PATH TOWARDS TARGET)
11(CHECK ROUTINE - ARE WE HOME YET?)
21SUBR BULLSEYE? INTR Y A LDX, D CMP, RNZ,
31INTC Y A LDX, E CMP, RNZ, X PUSHX, H POP,
41L FNDPTR Y STX, H FNDPTR 1+ Y STX, RET,
51: RECON
61BULLSEYE? STARTSEARCH BEGIN SYNC DI
71LOOKAHEAD END TRACKPTR V! C000 ;
81CODE FOLLOWTRACK Y PUSHX, vaddr LIYD,
91TRACKPTR Y L LDX, TRACKPTR 1+ Y H LDX,
101M E MOV, H INX, M D MOV, H INX, H INX, H INX,
111E TRACKPTR Y STX, D TRACKPTR 1+ Y STX, M L MOV, O H MVI,
121Y POPX, H PUSH, NEXT ASSEMBLED -->
131
141
151

FILE = H
BLK= 0
01(HOSTAGE TABLE, HOSTAGE INTERCEPT CHECKER)
11(CHECK HOSTAGE INTERCEPT WITH MONSTERS)
21DATA MONLIST MONV1 , MONV2 , MONV3 , MONV4 , 0 ,
31HEX 0202 DECIMAL C= XYHOST
41(HOSTAGES INTERCEPT CHECKER, RUNS AS HOOK)
51SUBR HOS-MON? FREEZE? CALL, RNZ, EXX,
61MONLIST H LXI, XYHOST B LXI, CHECK:VECTOR:LIST CALL,
71O<, IF,
811 MYFLAG Y MVIX, (SET ME EATEN) FREEZE CALL,
91X PUSHX, D POP, E SNATCHER Y STX, D SNATCHER 1+ Y STX,
101Y PUSHX, D POP, E MYSLAVE X STX, D MYSLAVE 1+ X STX,
111HSATM HOSSV Y MVIX, HALTNOW CALL,
1211 MYFLAG X MVIX, (TELL MONSTER MOVE FLAG) THEN,
131EXX, RET,
141-->
151

BLK= 1
01(TASK FOR A TEST HOSTAGE) HEX 400 C= EXITVEL DECIMAL
11(V= RECURADDR)
21: H-T :TASK: DI H-H-D DISPF VB! H-TYP MYTYPE VB!
31ZERO TIMEB 20 RND TIMER!-ON WAIT DI 1STWRITE
41ESTPOS ESTVALIDIR BEGIN DI O MYFLAG VB!
51HOSSV VB@ HSFREE CASE DVECT-ON
61HOS-B ANIM! XOR-ON 10 TIMEBScale! O TIMEBMAX!
71MYFLAG V^ FLAG!-ON GO
81ELSE HSATP CASE
91(PRTBM TIMEBMAX!)
101CAPT-S HOS-A ANIM! JOIN:LINE
1111 VIRGIN VB! O TIMEBScale!
121MYFLAG V^ FLAG!-ON HOS-MON? HOOK!-ON
131500 INCSCORE HVECT-ON GO
141-->
151

BLK= 2
01(FOLLOW MONSTER TO NEW HANGOUT)
11ELSE HSATM CASE FREEZETH DRUG-S
21FLAG-OFF HVECT-ON
31HOOK-OFF
41ZERO TIMEB
51(FOLLOW MONSTER TO ITS TARGET POSITION)
61BEGIN MYFLAG V^ FLAG!-ON GO DI FLAG? END
71ESTPOS ESTVALIDIR
81UNFREEZE HSFREE HOSSV VB! ASNOT ASSMSV VB!
91ELSE DROP THEN THEN THEN O END ;
101-->
111
121
131
141
151

FILE = H
BLK= 3
01(PLACE HOSTAGES IN MAZE)
11: HIDE:HOS THESpot ! BEGIN BEGIN .
2|NCOLS RND NROWS RND START:CHAMBER? END
3|NOBODY:HOME:YET? END
4|THESpot @ NOWR OVB! THESpot @ NOWC OVB!
5|THESpot @ H-T ;
6|: JAIL:HOS TOTAL-HOSTAGES 0 DO
7|I HOSTAB @ HIDE:HOS LOOP ;
8I:S
9I
10I
11I
12I
13I
14I
15I

FILE = R
BLK= 0
01C VGS.interrupt vector erase VERASE VERASEWRITE -> <STK
11SUBR XOR-FLIP VOXPAND Y B LDX, VOMAGIC Y C LDX,
21VOPATH Y H LDX,
31 VOPAT Y L LDX, H INX, H INX, (pat off set) H PUSH, X POPX,
41 VOSCRADRH Y H LDX, VOSCRADR Y L LDX,
51 writer JMP, (erase it)
61
71
81-->
91
101
111
121
131
141
151

BLK= 1
01C ROUTINE TO LINK TO VGER WRITE ROUTINE)
11SUBR WRITE-LINK
21 VBNOWRITE VLOGICSTAT Y BITX, O=, IF, INTCPT IN, VWRITE CALL,
31 TBINTCPT-CMK TVMROPT Y BITX, O<, IF, INTCPT IN,
41 A ANA, O<, IF, TBINTCPT TCHGSTAT Y SETX,
51 TBNOVECT TVMROPT Y SETX, THEN, THEN,
61 ELSE, VBNOWRITE VLOGICSTAT Y RESX, THEN, RET, STK> -->
71
81
91
101
111
121
131
141
151

BLK= 2
01C CHECK:NEAR)
11DATA PCON PLYRV , MONV1 , MONV2 , MONV3 ,
21MONV4 , TV1 , TRSV1 , TRSV2 , TRSV3 , TRSV4 ,
31HOSV1 , HOSV2 , HOSV3 , HOSV4 , O ,
41-->
51
61
71
81
91
101
111
121
131
141
151

FILE = R
 BLK= 3
 01(SPECIAL WRITE ROUTINE FOR REVEALS)
 11HEX OCOC C= XYZONE DECIMAL
 21F= REML F= RESL F= LISTEND
 31SUBR REVEALWRITE <ASSEMBLE O H LXI, H PUSH, (MARK STACK)
 41(Y PUSHX, H POP, CONF TAB D LXI, D DAD,)
 51PCON H LXI,
 61LABEL REML M E MOV, H INX, M D MOV, H INX, D A MOV, E ORA,
 71LISTEND JRZ, D PUSH, X POPX,
 81 VBNDERASE VLOGICSTAT X BITX, REML JRNZ,
 91 VOPATH X A LDX, VOPAT X DRAX, REML JRZ,
 101
 111-->
 121
 131
 141
 151

BLK= 4
 01(MORE OF SPECIAL WRITE ROUTINE FOR REVEALS)
 11XYZONE B LXI,
 21PROXIMITY-CHECK CALL, REML JRZ,
 31X PUSHX, H PUSH, Y PUSHX, X PUSHX, Y POPX, XOR-FLIP CALL,
 41Y POPX, H POP, REML JMPL,
 51LABEL LISTEND WRITE-LINK CALL,
 61LABEL RESL D POP, D A MOV, E ORA, transition JZ,
 71Y PUSHX, D PUSH, Y POPX,
 81XOR-FLIP CALL, Y POPX, RESL JMPL,
 91ASSEMBLED
 101
 111HEX 400 C= INITIAL#LEAP
 121100 C= REVVEL 4 C= SHORTGOAL DECIMAL -->
 131
 141
 151

BLK= 5
 01(DRAW ARROWS TO REVEAL OPTIONS)
 11HEX SUBR DRAWARROWS DI, B PUSH, X PUSHX,
 210 B MVI, BEGIN,
 31B C MOV, node^ CALL, M A MOV, A ANA, OC>, IF,
 41DRAWMSK C MVI, node^ CALL, M C MOV, B A MOV,
 51BIT^ CALL, C ANA, O=, IF, B PUSH, D PUSH,
 61B C MOV, O B MVI, QUIVER H LXI, B DAD, B DAD,
 71M C MOV, H INX, M B MOV, B PUSH, X POPX,
 81NBX C MVI, node^ CALL, M E MOV, H INX, M D MOV, H INX,
 91M A MOV, H INX, M H MOV, A L MOV, 20 B LXI,
 101SLEZR2A CALL, X INXX, X INXX, O X E LDX, X INXX,
 111O X D LDX, X INXX, write CALL,
 121D POP, B POP, THEN, THEN, B INR, B A MOV, B CPI, CY~, END,
 131X POPX, B POP, RET,
 141DECIMAL -->
 151

FILE = R
BLK= 6
01(MORE ARROWHEADED ACTIVITY)
11BV= ARROWFLG V= ARROWRC
21CODE ONARROWS REVEAL-ACTIVE LDA, A ANA, O=, IF,
31ARROWFLG LDA, A ANA, O=, IF,
41Y PUSHX, vaddr LIYD,
51NOWR Y D LDX, NOWC Y E LDX, Y POPX,
61ARROWRC SDED, DRAWARROWS CALL,
711 A MVI, ARROWFLG STA, THEN, THEN, NEXT
81
91CODE OFFARROWS ARROWFLG LDA, A ANA, OC, IF,
101ARROWRC LDOD, DRAWARROWS CALL,
111A XRA, ARROWFLG STA, THEN, NEXT
121-->
131
141
151

BLK= 7
01(HEADLIGHT REVEALER)
11HEX t HEADLIGHT:REVEAL :TASK: DI REVEAL-ACTIVE BONE
21NOWC PLYRV DVBC NOWC VB! NOWR PLYRV DVBC NOWR VB!
31NOWD PLYRV DVBC NOWD VB! ESTPOS DEPART: NODE
41MAXDIST VB SHORTGOAL - MAXDIST VB!
51REVEALPAT ANIM! OC XPAND!-ON OR-ON 1STWRITE PRTBM TIMEBMAX!
61INITIAL#LEAP DISTANCE V! REVVEL DELTADIST V! DVECT-ON
71REVEALWRITE ZGO DI
81-->
91
101
111
121
131
141
151

BLK= 8
01(MORE HEADLIGHT REVEALER)
11PUSH:CCRD TEST: DRAWN NOT IF
21REVEALED-PATHS 1+! (INCREMENT # OF PATHS REVEALED)
31THEN
41PUSH:CCRD SET: DRAWN
51ARRIVE:NODE PUSH:CCRD COM 7 AND SET: DRAWN
61PUSH:CCR TEST: GROTTO: DRAWN NOT IF 2 REVEAL-ACTIVE B!
71GROTTOPAT ANIM! 1STWRITE OC XPAND!-ON
81TOTAL-REVEALED-GROTTOS 1+!
911 TIMER!-ON REVEALWRITE ZGO DI
101PUSH:CCR SET: GROTTO: DRAWN THEN REVEAL-ACTIVE BZERO :
111DECIMAL -->
121
131
141
151

FILE = R
BLK= 9
01(REVEAL FIRST CHAMBER)
11HEX BV= UNROLL
21 INITIAL:REVEAL :TASK:
31PLYRV NOWR OVBR NOWR VB!
41PLYRV NOWC OVBC NOWC VB! ESTPOS DVECT-ON
51GROTTOPAT ANIM! 1STWRITE OC XPAND! XPAND-ON XOR-ON
611 TIMER!-ON REVEALWRITE ZGO
71PUSH:CCR SET:GROTT0:DRAWN
8118 UNROLL B!
91BEGIN 1 TIMER!-ON WAIT UNROLL BG DUP VERBL OUTP 4 + DUP
101UNROLL B! ODO = END ;
111
121DECIMAL --->
131
141
151

FILE = K
BLK= 0
01(KEY MONITOR) WAIT FOR N CHAMBERS TO BE REVEALED)
1!CANIM-TBL FLASHEXIT GROTTOPAT 20 NULPAT 20 TBL>
2!
3! KEY-TASK :TASK: K-TYP MYTYPE VB! KYNONE KEY-STATUS B!
4!BEGIN SO TIMER!-ON WAIT DI
5!TOTAL-REVEALED-GROTTOS @ KEY-THRESHOLD @ > END
6!BEGIN BEGIN
7!NCOLS RND NROWS 2- RND START:CHAMBER? END
8!NOBODY:HOME:YET? END
9!NOWR VB! NOWC VB!
10!SELF PUSH:CCR >TREASURE NODE!
11!KEY-S
12!KYSHOW KEY-STATUS B!
13!-->
14!
15!

BLK= 1
01(KEY REVEALER)
1!ESTPOS
2!KEY1 ANIM! 1STWRITE XOR-ON
3!MYFLAG V^ FLAG!-ON DVECT-ON GO DI
4!KYOPEN KEY-STATUS B!
5!NULPAT ANIM! 1 TIMER!-ON GO
6!KEY-S
7! (NOW REVEAL EXIT CHAMBER)
8!BEGIN
9!STOP-COL B@ NOWC VB! START-ROW NOWR VB! ESTPOS
10!GROTTOPAT ANIM! PLEASE-UPDATE
11!XOR-ON XPAND-ON 8 XPAND! SO TIMER!-ON GO DI
12!-->
13!
14!
15!

BLK= 2
01(REVEAL THE EXIT CHAMBER)
1!GROTTOPAT ANIM! 1STWRITE 12 XPAND! XPAND-ON OR-ON
2!ESTPOS
3!1 TIMER!-ON REVEALWRITE ZGO DI
4!ESTPOS
5!FLASHEXIT ANIM!
6!1STWRITE XOR-ON XPAND-ON 8 XPAND!
7!MYFLAG V^ FLAG!-ON GO KYGONE KEY-STATUS B!
8!-->
9!
10!
11!
12!
13!
14!
15!

FILE = K
BLK= 3
01(MORE EXIT REVEALER AND KEY HIDER)
11
21: HIDE:KEY BEGIN BEGIN
31NCOLS RND NROWS 2- RND START:CHAMBER? END
41NOBODY:HOME:YET? END
512DUP TV1 NOWR OVB! TV1 NOWC OVB!
61TV1 ROLL >TREASURE NODE! TV1 KEY-TASK :
71-->
81
91
101
111
121
131
141
151

BLK= 4
01(ROUTINE TO END GAME)
11: END-GAME !TASK:
210 BEHIND PLYRV OV@ BEGIN DUP WHILE SWAP 5000 + SWAP
31BEHIND OV@ REPEAT DROP INCSCORE 60 TIMER!-ON WAIT
41STOPme 1+B! NOBREAK BZERO :
51-->
61
71
81
91
101
111
121
131
141
151

FILE = P
BLK= 0
01(JOYSTICK ROUTINES)
11HEX (BV= JOYCODE EV= JOYLAST) (D800 DF ! *****)
21DATA JOYTBL -1 B, -1 B, -1 B, -1 B, -1 B, 0 B, 5 B, -1 B,
31-1 B, 2 B, 7 B, -1 B, -1 B, -1 B, -1 B, -1 B,
41-1 B, 1 B, 6 B, -1 B, 3 B, 0 B, 5 B, -1 B,
514 B, 2 B, 7 B, -1 B, -1 B, -1 B, -1 B,
61(SUBR MYINTR PSW PUSH, H PUSH, 12 IN, CMA, 1F ANI,
71JOYLAST H LXI, M CMP, A M MOV, O<>, IF, 1F A MVI, THEN,
81JOYCODE STA, H POP, PSW POP, SUI1 JMP,)
91SUBR setJoycode 12 IN, CMA, 1F ANI, A E MOV, O D MVI,
101JOYTBL H LXI, D DAD, M A MOV, A ANA, RET,
111CODE GET:JOYCODE
12112 IN, CMA, 1F ANI, A E MOV, O D MVI, JOYTBL H LXI,
131D DAD, M A MOV, A ANA, O<>, IF, O H LXI, ELSE,
141A E MOV, D PUSH, 1 H LXI, THEN, H PUSH, NEXT
151DECIMAL -->

BLK= 1
01(NEW SCAN ADJUSTER)
11DATA CCWTBL 3 B, 0 B, 1 B, 5 B, 2 B, 6 B, 7 B, 4 B,
21DATA CWTBL 1 B, 2 B, 4 B, 0 B, 7 B, 3 B, 5 B, 6 B,
31F= scanr F= noso
41SUBR adj-scan CASSEMBLE
51H PUSH, O B MVI, B DAD, M A MOV, A ANA,
61scanr JRZ, H POP, C A MOV, RET,
71LABEL scanr CCWTBL H LXI, B DAD, M E MOV, O D MVI,
81H POP, H PUSH, D DAD, M D MOV,
91CWTBL H LXI, B DAD, C A MOV, M C MOV, H POP, B DAD,
101A B MOV, M A MOV,
111A ANA, O<>, IF, D A MOV, A ANA, noso JRNZ,
121C A MOV, RET, THEN, D ORA, noso JRZ, E A MOV, RET,
131LABEL noso B A MOV, RET,
141ASSEMBLE>
151-->

BLK= 2
01(INTERRUPT LEVEL JOY MONITOR)
11CODE ADJ-SCAN EXX, B POP, H POP,
21adj-scan CALL, A L MOV, O H MVI, H PUSH, EXX, NEXT
31BV= OBJECT-MOVING
41F= RVRS
51SUBR JOYCHECK CASSEMBLE OBJECT-MOVING LDA, A ANA, RZ,
61TBDEST TCHSTAT Y BITX, RNZ, DISTANCE 1+ Y A LDX, A ANA, RZ,
71setJoycode CALL,
81O<>, IF, PLYRV ASSMSV + LDA, ASCOOL CPI, O<>, IF,
91PLYRV MAXDIST + LDA, DISTANCE 1+ Y SUBX, COASTZONE CPI,
101CY~, IF,
1110 H LXI, PLYRV DELTADIST + SHLD, THEN, THEN, RET,
121THEN, PLAYERVERLO LHLD, PLYRV DELTADIST + SHLD,
131-->
141
151

FILE = P
BLK= 3
01(CHECK FOR REVERSAL)
11CMIA, 7 ANI, NOWD Y E LDX, E CMP, RVRS JRZ,
210 D MVI, CWTBL H LXI, D DAD, M CMP, RVRS JRZ,
31CCWTBL H LXI, D DAD, M CMP, RNZ,
41LABEL RVRS
51REVERSE:DIRECTION CALL, HALTNOW CALL,
61NOWD Y A LDX, RRC, RRC, A VANGLE Y STX, RET,
71ASSEMBLE>
81SUBR PL-M JOYCHECK CALL, PILOTC CALL, RET,
91-->
101
111
121
131
141
151

BLK= 4
01(CHECK FOR PLAYER ESCAPING INTO EXIT CHAMBER)
11CODE ESCAPE? KEY-STATUS LDA, KYOPEN CPI, O=, IF,
21B PUSH, Y PUSHX, vaddr LIYD,
31STOP-COL LDA, NOWC Y CMPX, O=, IF,
41NOWR Y A LDX, START-ROW CPI, O=, IF,
51(WE WIN! - SHAZAM!)
61STOPme H LXI, M INR, (SHUTUP)
71A XRA, NOBREAK STA,
81THEN, THEN,
91Y POPX, B POP, THEN, NEXT
101-->
111
121
131
141
151

BLK= 5
01(PLAYER HOSTAGE INTERFACE JUNK)
11F= DISH
21SUBR dishes <ASSEMBLE O HOSTAB H LXI,
31LABEL DISH M E MOV, H INX, M D MOV, H INX, D A MOV, E ORA, RZ,
41XCHG, HOSSV B LXI, B DAD, M A MOV, HSATP CPI, O=, IF,
51HSFREE M MVI, MYFLAG HOSSV - B LXI, B DAD, 1 M MVI, THEN,
61XCHG, DISH JMPR, ASSEMBLE>
71CODE DISHOS B PUSH, dishes CALL, B POP, NEXT
81CODE HALTER HALTNOW CALL, NEXT
91-->
101
111
121
131
141
151

FILE = P
BLK= 6
01(CHECK VECTOR FOR INTERCEPT WITH OTHER VECTORS)
11(ROUTINE TO FIND INTERCEPTORS, IF ANY)
21(ENTRY: BC= NEARNESS X AND Y, HL= CHECKLIST ADDR)
31(IY= SUBJECT VECTOR)
41(RETURNS Z= NOFIND, NZ= FIND, IX= FOUND THANG)
51F= C:UH
61SUBR C:U:H <ASSEMBLE
71LABEL C:UH
81M E MOV, H INX, M D MOV, H INX, D A MOV, E ORA,
91RZ, D PUSH, X POPX,
101HOSSV X A LDX, HSFREE CPI, O=, IF,
111PROXIMITY-CHECK CALL, RNZ, THEN, C:UH JMPR,
121ASSEMBLE>
131-->
141
151

BLK= 7
01(CHECK PLAYER INTERCEPT WITH OTHER VECTORS)
110 C= EATEN 1 C= EATHOST
21DATA CHECKLIST MONV1 , MONV2 , MONV3 , MONV4 , O ,
31HEX 0202 DECIMAL C= XYBOUNDS
41(PLAYERS INTERCEPT CHECKER, RUNS AS HOOK)
51SUBR P:I:C FREEZE? CALL, RNZ, EXX,
61CHECKLIST H LXI, XYBOUNDS B LXI, CHECK:VECTOR:LIST CALL,
71O<>, IF, 1 A MVI, PLAYERDEAD STA, FREEZE CALL,
81EATEN FLAGCODE X MVIX, A MYFLAG X STX, (SET EATEN FLAG)
913 A MVI, 4 OUT, ELSE,
101(ANY HOSTAGE ABOUT?)
1110 HOSTAB H LXI, XYBOUNDS B LXI, C:U:H CALL,
121O<>, IF, 1 MYFLAG X MVIX, HSATP HOSSV X MVIX, THEN,
131A XRA, THEN, 4 OUT,
141EXX, RET,
151-->

BLK= 8
01(CHECK VMAX SWITCH)
11HEX
21CODE VMAX? O H LXI, 12 IN, 5 A BIT, O=, IF, H INX, THEN,
31H PUSH, NEXT
41
51CODE SETVEL EXX, H POP, Y PUSHX, vaddr LIYD,
61L DELTADIST Y STX, H DELTADIST 1+ Y STX, PLAYERVERLO SHLD,
71Y POPX, EXX, NEXT
81DECIMAL -->
91
101
111
121
131
141
151

FILE = P
BLK= 9

01 (EXPLORE-MAZE)
11: ROTUND :TASK: DI
21H-P-D DISPF VB! ESTPOS
31ROTROTY ANIM! XOR-ON 1STWRITE PRTBM TIMEBMAX!
41BEGIN DI ONARROWS
51PUSH:CCR TEST:DRAWN IF GETJOYCODE ELSE 0 THEN
61DE PUSH:CCR MPLO NODE^ SWAP ADD-SCAN
71DUP NOWD VB@ COM 7 AND = (IF HALTER THEN DUP NOWD VB!
81DUP 32 * VANGLE VB!
91-->
101
111
121
131
141
151

BLK= 10

01 (MORE PLAYER STUFF)
11PUSH:CCR ROT TEST:REL
21IE ZEROTIMEB
31PUSH:CCR NODE VB
41TEST:DRAWN IF
51VMAX? IE 512 ELSE 384
61THEN ELSE 256 THEN SETVEL
71SETARROWS
81OBJECT-MOVING BONE
91DEPART-NODE
101PUSH:CCRD TEST:DRAWN NOT IF DIG-S
111100 INCSCORE
121REVEAL-ACTIVE B@ 2 = IE BEGIN SYNC REVEAL-ACTIVE B@ 0= END THEN
131REVV HEADLIGHT:REVEAL SYNC DI ROTDROT ANIM! ELSE WALK-S THEN
141-->
151

BLK= 11

01 (EXPLORE-MAZE)
11ELSE 0 SETVEL 3 TIMER!-ON
21THEN ELSE 0 SETVEL 2 TIMER!-ON THEN
31P:IE HOOK!-ON
41PROPTELTAS PLAYERDEAD FLAG!-ON DVECT-ON mastersur IGO DI
51OBJECT-MOVING BZERO
61FLAG? IF MELT-S ZEROTIMEB DEATHACT ANIM! BITE:DUST
710 SETVEL HALTER DISHOS
8120 TIMER!-ON GO DI ROTROTY ANIM!
91START-COL B@ NROWS 1- SET:NEW:MCCR ESTPOS
101PLAYERDEAD ZERO THEN DI
111-->
121
131
141
151

FILE = P
BLK= 12
01(YET MORE PLAYER CONTROLLER)
11DEST? IF ARRIVE: NODE PROPDeltas
21ESCAPE? TREASURE:CHECK DI ROTROTY ANIM! THEN
310 END ; DECIMAL --->
41
51
61
71
81
91
101
111
121
131
141
151

FILE = IP
BLK= 0
01(PROCESS A HOT ROD MISSLE)
11BV= HOTFLIP
21SUBR HOTROD
31 TBMISSE TSTAT Y BITX, (are we ready to process)
41 RZ, (NOT A MISSLE)
51 (A= timebase) mastervmr CALL,
61 VBMISWRT VLOGICSTAT Y BITX, (time to write ?)
71 VBMISWRT VLOGICSTAT Y RESX,
81 O<>, IF, TSUR Y L LDX, TSUR 1+ Y H LDX, FORKETH CALL,
91THEN, RET,
101-->
111
121
131
141
151

BLK= 1
01<STKH
11SUBR MIS-INT (missile interrupt test)
21 PSW PUSH, B PUSH, D PUSH, H PUSH, EXX, EXAF,
31 PSW PUSH, B PUSH, D PUSH, H PUSH, Y PUSHX, X PUSHX,
41(12 IN, CMA, 1F ANI,
51JOYLAST H LXI, M CMP, A M MOV, O<>, IF, 1F A MVI, THEN,
61JOYCODE STA,) (HOT ROD THE PLAYERS VECTOR)
71HOTFLIP H LXI, M A MOV, A INR, 1 ANI, A M MOV,
81PLYRV Y LXIX, O=, IF, PL-M CALL,
91ELSE, 2 A MVI, HOTROD CALL, (REVV Y LXIX, THEN, 2 A MVI,)
101(HOTROD CALL,)
111THEN,
121 SUI2-NP JMP,
131: MYPUP MYPUP MIS-INT SUI1V ! -1 HORCB OUTP : STK> -->
141
151

FILE = M
BLK= 0
01(INDEXER AND VISABLE MONSTER WRITER)
11: I:M MONVBYTES * MONV1 SWAP - ;
21
31SUBR VISMONWRITE (VISABLE MONSTER WRITER)
41 VBNOERASE VLOGICSTAT Y BITX, O=, IF,
51 VOPATH Y A LDX, VOPAT Y ORAX, O<>, IF,
61 VERASE CALL, THEN, (don't erase if no pattern)
71 ELSE, VBNOERASE VLOGICSTAT Y RESX, THEN,
81 VBNOWRITE VLOGICSTAT Y BITX, O=, IF, INTcpt IN, VWRITE CALL,
91 TBINTCPT-CHK TVMROPT Y BITX, O<>, IF, INTcpt IN,
101 A ANA, O=, IF, TBINTCPT TCHGSTAT Y SETX,
111 TBNOVECT TVMROPT Y SETX, THEN, THEN,
121 ELSE, VBNOWRITE VLOGICSTAT Y RESX, THEN,
131 transition JMP, -->
141
151

BLK= 1
01(MONSTER STUFF)
11DECIMAL
21t BANISH:MONSTER BEGIN BEGIN NCOLS RND DUP INTC VB!
31NOWC PLYRV DVBC - ABS 2 > END BEGIN NROWS RND DUP INTR VB!
41NOWR PLYRV DVBC - ABS 1 > END INTC VB! INTR VB! NOBODY:HOME:YET?
51 END ZDROP ;
61t MONGO INTERCEPT-ON DVECT-ON
71VISFLAG VB! IF'MYFACE V@ ANIM! VISMONWRITE ZOO DI
81INTERCEPT? IF 0 VISFLAG VB! THEN
91ELSE EYEBALLS-PAT ANIM! DO DI INTERCEPT? IF 1 VISFLAG VB! THEN
101THEN COGO ;
11t FREESLAVE DI MYSLAVE V@ IF MYSLAVE V@ MYFLAG + BONE
121(0 MYSLAVE V@ SNATCHER + !)
1310 MYSLAVE V! THEN ;
141-->
151

BLK= 2
01(MORE MONSTER STUFF)
11(COMPARE POSITION IN D AND E WITH POSITION IN VECTOR)
21SUBR compos D A MOV, NOWR Y CMPX, RNZ,
31E A MOV, NOWC Y CMPX, RET,
41CODE CHASEPLAYER EXX, X PUSHX, Y PUSHX,
51PLYRV X LXIX, vaddr LIYD,
61NOWR X D LDX, NOWC X E LDX, NOWD X C LDX,
71moveNode CALL, moveCheck CALL, CY, IF,
81compos CALL, O=, IF, (IF AT PLAYERS DEST, GRAB HIS SOURCE)
91NOWR X D LDX, NOWC X E LDX, THEN,
101D INTR Y STX, E INTC Y STX,
111THEN, EXX, Y POPX, X POPX, NEXT
121(GO ANYWHERE I AM NOT NOW)
131t VAMOOSE BEGIN NCOLS RND INTC VB! NROWS RND INTR VB!
141ON:TARGET? NOT END ;
151-->

FILE = M
BLK= 3
01(MONSTER TASK)
11HEX TABLE MONVEL 60 , 80 , A0 , C0 , 100 , DECIMAL
21: RODAN? MYFACE V@ THEWAROD1 = ;
31DECIMAL
41: MONSTER-TASK :TASK: DI
51RETURN:INITIAL:POSITION
61ESTPOS
71MYFACE V@ ANIM! XOR-ON 1STWRITE BEGIN DI
81ON:TARGET? IF RODAN? IF
911 ELSE SMARTS B@ RND THEN IF CHASEPLAYER
101ON:TAROET? IF VAMOOSE THEN ELSE VAMOOSE THEN
111' RECON SETCO COGO DI ZEROTIMEB
121-->
131
141
151

BLK= 4
01THEN FOLLOWTRACK NOWD VB!
11GAME# @ RODAN? +
214 MIN MONVEL @ DELTADIST V! DEPART:NODE
31(HAVE MONSTER CRAWL ABOUT)
41BEGIN MYFLAG V^ FLAG!-ON
51' MONGO SETCO COGO DI
61-->
71
81
91
101
111
121
131
141
151

BLK= 5
01(BANISHMENT STUFF)
11FLAG? IF 0 DELTADIST V!
21BANISH:MONSTER INTG VB@ BANC B!
31INTR VB@ BANR B!
41' RECON SETCO COGO DI
510 MYFLAG VB! FLAG-OFF
61(WANDER BACK TO WHERE MONSTER LAST CAME FROM)
71BEGIN ESTPOS ZEROTIMEB
81ON:TARGET? NOT IF FOLLOWTRACK NOWD VB!
91DEPART:NODE EXITVEL DELTADIST V!
101BEGIN ' MONGO SETCO COGO DEST? END ARRIVE:NODE 0
111ELSE 1 THEN END
121FREESLAVE
131UNFREEZE 1 ELSE 0 DEST? IF ARRIVE:NODE DROP 1 THEN THEN
141END 0 END ;
151DECIMAL -->

```
FILE = M
BLK= 6
01( MONSTER MASH )
11BTABLE MRTBL O B, O B, 2 B, 2 B,
21BTABLE MCTBL O B, NCOLS 1- B, O B, NCOLS 1- B,
31: MONSTERMASH MONSTERCOUNT @ O DO I MCTBL BE I MRTBL BE
41I I:M SET:INITIAL:MCCR I O= IF THEWARD1 ELSE THESPDR
51 THEN I I:M MYFACE OV! I I:M MONSTER-TASK
61LOOP :
71-->
81
91
101
111
121
131
141
151
```

FILE = E

BLK= 0

01(PRE VGER ACTIVITY) HEX
1!XC? IFTRUE : CLMUS 0 BGMV TLENGTH FILL ;
2!CODE CRAMIT OD800 H LXI, BEGIN, 0 M MVI, H INX, H A MOV,
3!OFO CPI, O=, END, NEXT
4!OTHERWISE : CRAMIT ; : CLMUS ; IFEND
5!: VG MYPUP DI CRAMIT SPARKLES-OFF CLEAR:SCORES ZAP:VECT
6!S O DO 8 I OUTP LOOP
7!4 DUP REMAINING-LIVES ! INITIAL-LIVES !
8!GAME-OVER ZERO
9!GAME# ZERO
10!BEGIN TOTAL-PATHS ZERO REVEAL-ACTIVE BZERO ARROWFLG BZERO
11!CHEAPRND O RND# !
12!MAKE-MAZE MD
13!SCRERASE
14!(BLUEFILL) -1 4000 800 FILL
15!-->

BLK= 1

01(MORE EXPLORE)
1!DT CLMUS MYPUP AMUSE
2!18 VERBL OUTP -1 HORCB OUTP
3!NOBREAK BONE ZAP:VECT
4!C:S:V
5!HIDE:TREASURE JAIL:HOS
6!NPLAYERS ZERO PLAYERUP ZERO
7!REVEALED-PATHS ZERO ! TOTAL-REVEALED-GROTTOS !
8!-->
9!
10!
11!
12!
13!
14!
15!

BLK= 2

01(PRE VGER ACTIVITY)
1!START-COL @ DUP PLYRV NOWC OVB!
2!REVV NOWC OVB!
3!START-ROW DUP PLYRV NOWR OVB!
4!REVV NOWR OVB! PLAYERDEAD ZERO
5!3 GAME# @ + 4 MIN MONSTERCOUNT ! STARTEXCITE BACK-S
6!GAME# @ 1+ 4 * 26 MIN KEY-THRESHOLD !
7!GAME# @ 2/ 1+ SMARTS B! FREEZEFLAG BZERO
8!P1SV DISPP1SCR P2SV DISPP2SCR
9!BKGV INITIAL:REVEAL
10!PLYRV ROTUND (JOYV JOYSTICK-MONITOR)
11!MONSTERMASH TV1 KEY-TASK
12!DT:R:L 8 7 OUTP
13!-->
14!
15!

FILE = E
BLK= 3
0(YET MORE)
1!TT GAME# 1+! NOBREAK B@ DUP O= IF DI MYPUP O TVVS TVVL FILL
2!TV1 END-GAME TT THEN
3!(S O DO 8 I OUTP LOOP)
4!GAME-OVER B@ OR EMUSIC END ;
5!
6!HEX
7!: GAMELP BEGIN CRAMIT VG BEGIN 10 INP OFF <> END O END ;
8!DECIMAL -->
9!
10!
11!
12!
13!
14!
15!