PCC
(PEOPLE'S COMPUTER COMPANY)
GAMES

NUMBER

See October '72 issue PCC Vol. 1, No. 1, pages 8,9.
Length: 428 words.

```
100  REM *** NUMBER *** A NUMBER GUESSING GAME ***
110  REM *** COPYRIGHT, PEOPLE'S COMPUTER COMPANY ***
120  REM *** 1921 MENALTO AVENUE, MENLO PARK, CA. 94025 ***
200  REM *** PRINT INSTRUCTIONS ON HOW TO PLAY
210  PRINT "I WILL THINK OF A WHOLE NUMBER BETWEEN 1 AND 100."
220  PRINT "TRY TO GUESS MY NUMBER. AFTER EACH GUESS, I WILL"
230  PRINT "TELL YOU IF YOU HAVE GUESSED MY NUMBER OR IF YOUR"
240  PRINT "GUESS IS TOO SMALL OR TOO BIG."
300  REM *** COMPUTER 'THINKS' OF A NUMBER - CALL IT X
310  LET X=INT(100*RND(0))+1
320  PRINT
330  PRINT "OK, I HAVE A NUMBER. START GUESSING."
400  REM *** HUMAN STARTS GUESSING
410  PRINT
420  PRINT "WHAT IS YOUR GUESS";
430  INPUT G
440  IF G=X THEN 500
450  IF G>X THEN 480
460  PRINT "TOO SMALL. TRY A LARGER NUMBER."
470  GOTO 410
480  PRINT "TOO BIG. TRY A SMALLER NUMBER."
490  GOTO 410
500  REM *** HUMAN HAS GUESSED THE COMPUTER'S NUMBER
510  PRINT
520  PRINT "YOU GOT IT! LET'S PLAY AGAIN."
530  PRINT
540  GOTO 300
999  END
```

LETTER   page 11.   Length: 418 words.

```
100  REM *** LETTER - A LETTER GUESSING GAME
110  DIM A$(26)
120  LET A$="ABCDEFGHIJKLMNOPQRSTUVWXYZ"
200  REM *** PRINT INSTRUCTIONS ON HOW TO PLAY
210  PRINT "I WILL THINK OF A LETTER OF THE ALPHABET, A TO Z."
220  PRINT "TRY TO GUESS MY LETTER. AFTER EACH GUESS, I WILL"
230  PRINT "TELL YOU IF YOU GUESSED MY LETTER OR IF YOUR GUESS"
240  PRINT "IS TOO HIGH OR TOO LOW. THE LOWEST LETTER IS 'A'"
250  PRINT "AND THE HIGHEST LETTER IS 'Z'."
300  REM *** COMPUTER THINKS OF A LETTER
310  LET X=INT(26*RND(0))+1
320  LET L$=A$(X,X)
330  PRINT
340  PRINT "OK, I HAVE A LETTER.  START GUESSING."
400  REM *** HUMAN STARTS GUESSING
410  PRINT
420  PRINT "WHAT IS YOUR GUESS";
430  INPUT G$
440  IF G$=L$ THEN 500
450  IF G$>L$ THEN 480
460  PRINT "TOO LOW. TRY A HIGHER LETTER."
470  GOTO 410
480  PRINT "TOO HIGH. TRY A LOWER LETTER."
490  GOTO 410
500  REM *** HUMAN HAS GUESSED THE LETTER
510  PRINT
520  PRINT "YOU GOT IT!  LET'S PLAY AGAIN."
530  PRINT
540  GOTO 300
999  END
```

ABOUT PEOPLE'S COMPUTER COMPANY:

People's Computer Company publishes the magazines listed below. We also have a retail bookstore that carries a variety of computer-related publications. Write for catalog.

STARS

See Dec.'72 issue PCC Vol. 1, No.2, page 3.
See May '73 issue PCC Vol. 1, No.5, page 19.
Length: 583 words.

```
100   REM *** STARS - PEOPLE'S COMPUTER CENTER, MENLO PARK, CA
110   PRINT "STARS - A NUMBER GUESSING GAME"
120   PRINT
130   REM *** A IS LIMIT ON NUMBER
140   LET A=100
160   PRINT "DO YOU WANT INSTRUCTIONS";
170   INPUT Z$[1,1]
180   IF Z$ <> "Y" THEN 270
190   REM *** INSTRUCTIONS ON HOW TO PLAY
200   PRINT "I AM THINKING OF A WHOLE NUMBER FROM 1 TO";A
210   PRINT "TRY TO GUESS MY NUMBER. AFTER YOU GUESS, I"
220   PRINT "WILL TYPE ONE OR MORE STARS (*). THE MORE"
230   PRINT "STARS I TYPE, THE CLOSER YOU ARE TO MY NUMBER."
240   PRINT "ONE STAR (*) MEANS FAR AWAY. SEVEN STARS (*******)"
250   PRINT "MEANS REALLY CLOSE!"
260   REM *** COMPUTER 'THINKS' OF A NUMBER
270   PRINT
280   PRINT
290   LET X=INT(A*RND(0))+1
300   PRINT "OK. I AM THINKING OF A NUMBER. START GUESSING."
310   REM *** GUESSING BEGINS
320   K=1
330   PRINT
340   PRINT "YOUR GUESS";
350   INPUT G
360   IF G=X THEN 590
370   LET D=ABS(X-G)
380   IF D >= 64 THEN 500
390   IF D >= 32 THEN 490
400   IF D >= 16 THEN 480
410   IF D >= 8 THEN 470
420   IF D >= 4 THEN 460
430   IF D >= 2 THEN 450
440   PRINT "* ";
450   PRINT "* ";
460   PRINT "* ";
470   PRINT "* ";
480   PRINT "* ";
490   PRINT "* ";
500   PRINT "* ";
510   PRINT
520   K=K+1
530   GOTO 330
580   REM *** WE HAVE A WINNER
590   FOR N=1 TO 50
600   PRINT "*";
610   NEXT N
620   PRINT "!!!"
630   PRINT "YOU GOT IT IN";K;"GUESSES!!! LET'S PLAY AGAIN."
640   GOTO 270
650   END
```

TRAP

See Feb.'73 issue PCC Vol. 1, No. 3, page 8.
Length: 580 words.

```
100   REMARK TRAP...DYMAX, P.O. BOX 310, MENLO PARK CA 94025
120   LET N=100
130   PRINT "DO YOU WANT INSTRUCTIONS";
140   INPUT Z$[1,1]
150   IF Z$ <> "Y" THEN 270
160   PRINT
170   PRINT "I WILL THINK OF A WHOLE NUMBER FROM 1 TO";N
180   PRINT "TRY TO GUESS MY NUMBER. ENTER TWO NUMBERS, TRYING"
190   PRINT "TO TRAP MY NUMBER BETWEEN YOUR TWO NUMBERS. I WILL"
200   PRINT "TELL YOU IF YOU HAVE TRAPPED MY NUMBER OR IF MY"
210   PRINT "NUMBER IS SMALLER THAN YOUR TWO TRAP NUMBERS OR"
220   PRINT "IF MY NUMBER IS LARGER THAN YOUR TWO TRAP NUMBERS."
230   PRINT "IF YOU THINK YOU KNOW WHAT MY NUMBER IS, ENTER "
240   PRINT "YOUR GUESS FOR BOTH TRAP NUMBERS."
250   PRINT
270   PRINT
280   LET X=INT(N*RND(0))+1
290   LET K=1
300   PRINT
310   PRINT "GUESS NUMBER";K
320   PRINT "FIRST TRAP NUMBER";
330   INPUT A
340   PRINT "SECOND TRAP NUMBER";
350   INPUT B
360   LET T=SGN(X-A)+SGN(X-B)
370   GOTO T+3 OF 410,390,380,390,430
380   IF A=B THEN 500
390   PRINT "MY NUMBER IS TRAPPED BY YOUR NUMBERS."
400   GOTO 440
410   PRINT "MY NUMBER IS SMALLER THAN YOUR TRAP NUMBERS."
420   GOTO 440
430   PRINT "MY NUMBER IS LARGER THAN YOUR TRAP NUMBERS."
440   K=K+1
450   GOTO 300
480   PRINT "LET'S PLAY AGAIN. BETTER LUCK NEXT TIME!"
490   GOTO 270
500   PRINT "YOU GOT IT IN";K;"GUESSES!!"
510   PRINT
520   PRINT "DO YOU WANT TO PLAY AGAIN";
530   INPUT Z$[1,1]
540   IF Z$="Y" THEN 270
550   END
```

BAGELS was originally written by Pete Rowe at Lawrence
Hall of Science. Permission was granted for its use in this booklet.

BAGELS

See Dec.'72 issue PCC Vol. 1, No. 2, page 18.
Length: 859 words.

```
10   REM *** BAGELS
20   REM *** MODIFIED BY FRED MOORE FOR
30   REM *** PEOPLES COMPUTER COMPANY
40   DIM N[3],A[3]
50   REM *** INSTRUCTIONS
60   PRINT "WANT THE RULES (1=YES,0=NO)";
```

```
70    INPUT R
80    IF R <> 1 THEN 150
90    PRINT
100   PRINT "I AM THINKING OF A THREE DIGIT NUMBER (NO DIGITS THE SAME)."
110   PRINT "TRY TO GUESS MY NUMBER.  AFTER EACH GUESS I WILL PRINT:"
120   PRINT "   'FERMI'  FOR EACH CORRECT DIGIT IN THE CORRECT PLACE,"
130   PRINT "   'PICO'   FOR EACH CORRECT DIGIT IN THE WRONG PLACE, OR"
140   PRINT "   'BAGELS' IF NO DIGIT IS CORRECT."
150   REM *** SELECT NUMBER AT RANDOM
160   N[3]=INT(RND(0)*9+1)
170   N[2]=INT(RND(0)*10)
180   IF N[2]=N[3] THEN 170
190   N[1]=INT(RND(0)*10)
200   IF N[1]=N[2] THEN 190
210   IF N[1]=N[3] THEN 190
220   PRINT
230   PRINT "OK, I HAVE A NUMBER."
240   G=0
250   REM *** A GUESS
260   PRINT
270   PRINT
280   PRINT "YOUR GUESS";
290   INPUT X
300   G=G+1
310   A[3]=INT(X/100)
320   A[2]=INT(X/10)-A[3]*10
330   A[1]=X-INT(X/10)*10
340   IF A[3]>9 THEN 410
350   IF A[3]<1 THEN 410
360   IF INT(X) <> X THEN 410
370   IF A[1]=A[2] THEN 410
380   IF A[2]=A[3] THEN 410
390   IF A[1]=A[3] THEN 410
400   GOTO 440
410   PRINT "   PICK A THREE DIGIT NUMBER FROM 102 TO 987"
420   PRINT "   HINT: IN MY NUMBER ALL THE DIGITS ARE DIFFERENT"
430   GOTO 270
440   REM *** COMPARE GUESS WITH SELECTED NUMBER
450   F=P=0
460   FOR I=1 TO 3
470   FOR J=1 TO 3
480   IF A[I]=N[J] THEN 540
490   NEXT J
500   NEXT I
510   IF F+P <> 0 THEN 590
520   PRINT "BAGELS";
530   GOTO 260
540   IF I=J THEN 570
550   P=P+1
560   GOTO 490
570   F=F+1
580   GOTO 490
590   IF P=0 THEN 630
600   FOR K=1 TO P
610   PRINT "PICO ";
620   NEXT K
630   IF F=0 THEN 260
640   IF F=3 THEN 690
650   FOR K=1 TO F
660   PRINT "FERMI ";
670   NEXT K
680   GOTO 260
690   PRINT
700   PRINT "YOU GOT IT IN";G;"GUESSES!!!"
710   PRINT
720   PRINT "YOU WANT TO PLAY AGAIN (1=YES, 0=NO)";
730   INPUT R
740   IF R <> 0 THEN 150
750   END
```

Length: 1015 words.

```
10    REM *** BEYOND BAGELS ***
20    REM *** G CONTROLS THE MAXIMUM NUMBER OF GUESSES
30    G=20
40    PRINT "WELCOME TO   *** BEYOND BAGELS ***"
50    PRINT
60    PRINT "RULES (1=YES 0=NO)";
70    INPUT X
80    PRINT
90    IF X <> 1 THEN 310
100   PRINT "   I'LL THINK OF A THREE DIGIT NUMBER (LIKE 532)"
110   PRINT "AND YOU HAVE";G;"TRIES TO GUESS IT.  AFTER YOU TELL ME"
120   PRINT "YOUR GUESS, I'LL PRINT YOUR SCORE FOR THAT GUESS."
130   PRINT
140   PRINT "YOU GET 1 POINT FOR EACH DIGIT THAT'S ALSO IN MY NUMBER,"
150   PRINT "AND ANOTHER POINT FOR EACH CORRECT DIGIT THAT'S ALSO"
160   PRINT "IN THE CORRECT PLACE."
170   PRINT
180   PRINT "IF MY NUMBER IS     532"
190   PRINT "AND YOU GUESS       421"
200   PRINT "YOU GET 1 POINT (FOR THE 2)"
210   PRINT
220   PRINT "IF MY NUMBER IS     689"
230   PRINT "AND YOU GUESS       692"
240   PRINT "YOU GET 3 POINTS (2 BECAUSE OF THE 6, AND"
250   PRINT "THE 9 ADDS THE OTHER POINT"
260   PRINT
270   PRINT "BUT BE CAREFUL!  SOME SCORES (LIKE 3 POINTS)"
280   PRINT "CAN BE MADE IN MORE THAN ONE WAY !!!"
290   PRINT
300   PRINT "HERE WE GO..."
310   DIM A[3],B[3]
320   A[1]=INT(RND(0)*9)+1
330   A[2]=INT(RND(0)*10)
340   IF A[2]=A[1] THEN 330
350   A[3]=INT(RND(0)*10)
360   IF A[3]=A[2] THEN 350
370   IF A[3]=A[1] THEN 350
380   PRINT "I'VE PICKED MY NUMBER"
390   PRINT
400   FOR G1=1 TO G
410   PRINT
420   PRINT "GUESS #";G1;
430   INPUT X
440   IF X >= 100 AND X <= 999 THEN 470
450   PRINT "HINT:  MY NUMBER HAS THREE DIGITS"
460   GOTO 410
470   P=0
480   FOR I=1 TO 3
490   B[I]=INT(X/100)
500   X=10*(X-100*B[I])
510   NEXT I
520   IF P=6 THEN 750
530   IF B[1] <> B[2] AND B[1] <> B[3] AND B[2] <> B[3] THEN 560
540   PRINT "HINT:  IN MY NUMBER, ALL THE DIGITS ARE DIFFERENT"
550   GOTO 410
560   FOR I=1 TO 3
570   FOR J=1 TO 3
580   IF B[I] <> A[J] THEN 620
590   P=P+1
600   IF I <> J THEN 620
610   P=P+1
620   NEXT J
```

```
630   NEXT I
640   IF P=6 THEN 750
650   IF P <> 1 THEN 680
660   PRINT P;"POINT FOR THIS ONE"
670   GOTO 690
680   PRINT P;"POINTS FOR THIS ONE"
690   NEXT G1
700   PRINT
710   PRINT
720   PRINT "SORRY YOU DIDN'T GUESS IT."
730   PRINT "MY NUMBER WAS ";A[1];A[2];A[3]
740   GOTO 820
750   PRINT
760   PRINT
770   PRINT "YOU GUESSED IT IN ";G1;" GUESSES !!!";
780   FOR I=1 TO G/2-G1
790   PRINT "";
800   NEXT I
810   PRINT
820   PRINT "PLAY AGAIN (1=YES 0=NO)";
830   INPUT X
840   IF X=1 THEN 290
850   PRINT "BYE!"
860   END
```

MUGWUMP

See Feb.'73 issue PCC Vol. 1, No.3, page 8.
See April '73 issue PCC Vol. 1, No.4, page 3.
Length: 785 words.

```
100   REM *** MUGWUMP - A HIDE AND SEEK GAME
110   REM *** PEOPLE'S COMPUTER COMPANY, MENLO PARK CA
120   REM *** G=GRID SIZE
130   LET G=10
150   PRINT "DO YOU WANT THE RULES";
160   INPUT Z$[1,1]
170   IF Z$ <> "Y" THEN 340
180   REM *** RULES IN LINES 200 THRU 330
190   PRINT "A MUGWUMP IS HIDING IN A";G;"BY";G;"GRID. TRY TO"
200   PRINT "FIND HIM BY GUESSING HIS GRIDPOINT. HOMEBASE IS"
210   PRINT "GRIDPOINT  0,0  AND A GUESS IS A PAIR OF WHOLE"
220   PRINT "NUMBERS (0 TO";G-1;") SEPARATED BY A COMMA. THE FIRST"
230   PRINT "NUMBER IS THE DISTANCE TO THE RIGHT OF HOMEBASE"
240   PRINT "AND THE SECOND NUMBER IS THE DISTANCE ABOVE THE"
250   PRINT "HOMEBASE. FOR EXAMPLE, IF YOU THINK THE MUGWUMP"
260   PRINT "IS HIDING 8 UNITS TO THE RIGHT OF HOMEBASE AND"
270   PRINT "3 UNITS ABOVE HOMEBASE, THEN ENTER  8,3  AS YOUR"
280   PRINT "GUESS AND PRESS THE 'RETURN' KEY."
290   PRINT
300   PRINT "AFTER EACH GUESS, I WILL TELL YOU HOW FAR (IN A"
310   PRINT "DIRECT LINE) YOU ARE FROM THE MUGWUMP."
340   LET A=INT(G*RND(0))
350   LET B=INT(G*RND(0))
360   PRINT
370   PRINT "THE MUGWUMP IS HIDING.  TRY TO FIND HIM."
390   T=1
400   PRINT
410   PRINT "WHAT IS YOUR GUESS";
420   INPUT X,Y
430   REM *** IF MUGWUMP NOT FOUND GO TO LINE 500
440   IF X <> A THEN 510
450   IF Y <> B THEN 510
460   PRINT "YOU FOUND HIM IN";T;"GUESSES!!!"
470   GOTO 600
500   REM *** D=STRAIGHTLINE DISTANCE TO MUGWUMP
```

```
510   LET D=SQR((X-A)↑2+(Y-B)↑2)
520   REM *** THEN WE ROUND D TO ONE DECIMAL PLACE
530   LET D=INT(10*D)/10
540   PRINT "YOU ARE";D;"UNITS FROM THE MUGWUMP."
550   T=T+1
560   GOTO 400
600   PRINT "LET'S PLAY AGAIN."
610   PRINT
620   IF RND(0)<.1 THEN 340
630   PRINT "WAIT A MINUTE - THE MUGWUMP HAS TO TIE IT'S SHOES."
640   ENTER 5,X,Y
650   PRINT "O.K."
660   GOTO 340
670   END
```

HURKLE

See Feb.'73 issue PCC Vol. 1, No. 3, page 8.
See April '73 issue PCC Vol. 1, No.4, page 22.
Length: 981 words.

```
100   REM *** HURKLE - PEOPLE'S COMPUTER COMPANY, MENLO PARK, CA
110   REM *** RANDOM
140   PRINT "DO YOU WANT THE RULES (1=YES  0=NO)";
150   INPUT Z
160   IF Z <> 1 THEN 490
170   REM *** HERE ARE THE RULES
180   PRINT "A HURKLE IS HIDING IN A GRID, LIKE THE ONE BELOW."
190   PRINT
200   PRINT
210   PRINT TAB(26);"NORTH"
220   PRINT
230   FOR K=9 TO 0 STEP -1
240   IF K <> 4 THEN 270
250   PRINT TAB(8);"WEST    4";TAB(20);". . . . . . . . . .    EAST"
260   GOTO 280
270   PRINT TAB(14);K;TAB(20);". . . . . . . . . ."
280   NEXT K
290   PRINT
300   PRINT TAB(20)"0 1 2 3 4 5 6 7 8 9"
310   PRINT
320   PRINT TAB(26);"SOUTH"
330   PRINT
340   PRINT "TRY TO GUESS WHERE THE HURKLE IS HIDING. YOU GUESS"
350   PRINT "BY TELLING ME THE GRIDPOINT WHERE YOU THINK THAT"
360   PRINT "THE HURKLE IS HIDING. HOMEBASE IS POINT  0,0  IN"
370   PRINT "THE SOUTHWEST CORNER. YOUR GUESS SHOULD BE A PAIR"
380   PRINT "OF WHOLE NUMBERS, SEPARATED BY A COMMA. THE FIRST"
390   PRINT "NUMBER TELLS HOW FAR TO THE RIGHT OF HOMEBASE AND"
400   PRINT "THE SECOND NUMBER TELLS HOW FAR ABOVE HOMEBASE YOU"
410   PRINT "THINK THE HURKLE IS HIDING. FOR EXAMPLE, IF YOU "
420   PRINT "THINK THE HURKLE IS 7 TO THE RIGHT AND 5 ABOVE"
430   PRINT "HOMEBASE, YOU ENTER  7,5  AS YOUR GUESS AND THEN"
440   PRINT "PRESS THE 'RETURN' KEY. AFTER EACH GUESS, I WILL"
450   PRINT "TELL YOU THE APPROXIMATE DIRECTION TO GO FOR YOUR"
460   PRINT "NEXT GUESS. GOOD LUCK!"
```

```
470    PRINT
480    REM *** HURKLE 'PICKS' A GRIDPOINT AND HIDES
490    LET A=INT(10*RND(0))
500    LET B=INT(10*RND(0))
510    PRINT
520    PRINT "THE HURKLE IS HIDING.  TRY TO FIND HIM."
530    PRINT
540    REM *** GET A GUESS AND PRINT INFO FOR PLAYER
550    K=1
560    PRINT "WHAT IS YOUR GUESS";
570    INPUT X,Y
580    IF ABS(X-A)+ABS(Y-B)=0 THEN 710
590    REM *** GO TO INFO SUBROUTINE
600    GOSUB 760
610    PRINT
620    K=K+1
630    GOTO 560
700    REM *** HURKLE HAS BEEN FOUND!
710    PRINT
720    PRINT "YOU FOUND HIM IN"K;"GUESSES!!!"
730    PRINT "LET'S PLAY AGAIN."
740    GOTO 490
750    REM *** SUBROUTINE: PRINT INFORMATION FOR NEXT GUESS
760    PRINT "GO ";
770    IF Y=B THEN 820
780    IF Y<B THEN 810
790    PRINT "SOUTH";
800    GOTO 820
810    PRINT "NORTH";
820    IF X=A THEN 870
830    IF X<A THEN 860
840    PRINT "WEST";
850    GOTO 870
860    PRINT "EAST";
870    PRINT
880    RETURN
890    END
```

SNARK   5

Length: 867 words.

```
100    REM *** SNARK ... CATCH HIM WITH A WELL PLACED CIRCLE
110    REM *** PEOPLE'S COMPUTER COMPANY, MENLO PARK CA
120    REM *** SOME COMPUTERS NEED 'RANDOM' HERE
150    PRINT "WANT THE RULES (1=YES  0=NO)";
160    INPUT Z
170    IF Z=0 THEN 510
200    REM *** HERE ARE THE RULES
210    PRINT
220    PRINT "A SNARK IS HIDING IN A 10 BY 10 GRID LIKE THE ONE"
230    PRINT "SHOWN BELOW:"
240    PRINT
245    PRINT " Y"
250    FOR Y=9 TO 0 STEP -1
260    PRINT Y;" . . . . . . . . . ."
273    NEXT Y
280    PRINT
290    PRINT TAB(6);" 0 1 2 3 4 5 6 7 8 9  X"
300    PRINT
310    PRINT "TRY TO CATCH HIM. HERE'S HOW ... WHEN I ASK, YOU TYPE"
320    PRINT "THE X,Y COORDINATES OF A GRIDPOINT (IF YOU DON'T KNOW"
330    PRINT "WHAT THAT MEANS, ASK SOMBODY!) AND PRESS THE RETURN"
340    PRINT "KEY. THEN, WHEN I ASK FOR 'RADIUS', YOU TYPE THE RADIUS"
350    PRINT "OF A CIRCLE CENTERED ON THE GRIDPOINT WHOSE X,Y"
360    PRINT "COORDINATES YOU JUST ENTERED. I WILL THEN TELL YOU"
370    PRINT "WHETHER THE SNARK IS 'INSIDE' YOUR CIRCLE, 'OUTSIDE'"
380    PRINT "YOUR CIRCLE, OR 'ON' YOUR CIRCLE."
390    PRINT
400    PRINT "!!! IMPORTANT !!! IF YOU THINK YOU KNOW WHERE HE IS"
410    PRINT "HIDING, ENTER 0 (ZERO) AS THE RADIUS. GOOD HUNTING."
500    REM *** HIDE THE SNARK
510    LET X=INT(10*RND(0))
520    LET Y=INT(10*RND(0))
530    PRINT
540    PRINT "SNARK IS HIDING ... START GUESSING!"
600    REM *** GUESSING BEGINS
610    K=1
620    PRINT
630    PRINT "COORDINATES";
640    INPUT A,B
650    LET D2=(X-A)*(X-A)+(Y-B)*(Y-B)
660    PRINT "RADIUS";
670    INPUT R
680    IF R <> 0 THEN 700
690    IF D2=0 THEN 910
700    IF D2<R*R THEN 730
710    IF D2>R*R THEN 750
720    IF D2=R*R THEN 770
730    PRINT "SNARK IS INSIDE YOUR CIRCLE"
740    GOTO 780
750    PRINT "SNARK IS OUTSIDE YOUR CIRCLE"
760    GOTO 780
770    PRINT "SNARK IS ON YOUR CIRCLE"
780    K=K+1
790    GOTO 620
900    REM *** WE GOT A WINNER
910    PRINT
920    PRINT "YOU CAUGHT HIM IN";K;"GUESSES!!!"
930    PRINT "GOOD SHOW!"
940    PRINT
950    PRINT "DO YOU WANT TO PLAY AGAIN (1=YES  0=NO)";
960    INPUT Z
970    IF Z=1 THEN 510
999    END
```

REVERSE

See May '73 issue PCC Vol. 1, No. 5, page 5.
Length: 874 words.

```
100 REM *** REVERSE - A GAME OF SKILL
110 REM *** PEOPLE'S COMPUTER COMPANY, MENLO PARK CA

130 DIM A(20)
140 REM *** N = NUMBER OF NUMBERS (1 THRU N)
150 LET N=9
160 PRINT "DO YOU WANT THE RULES (1=YES  0=NO)";
170 INPUT A
180 IF A=0 THEN 210
190 GOSUB 710
200 REM *** MAKE A RANDOM LIST A(1) TO A(N)
210 LET A(1)=INT((N-1)*RND(0))+2
220 FOR K=2 TO N
230 LET A(K)=INT(N*RND(0))+1
240 FOR J=1 TO K-1
250 IF A(K)=A(J) THEN 230
260 NEXT J
270 NEXT K
280 REM *** PRINT ORIGINAL LIST AND START GAME
290 PRINT
300 PRINT "HERE WE GO ... THE LIST IS:"
310 LET T=0
320 GOSUB 610
330 PRINT "HOW MANY SHALL I REVERSE";
340 INPUT R
350 IF R=0 THEN 520
360 IF R<=N THEN 390
370 PRINT "OOPS! TOO MANY - I CAN REVERSE AT MOST";N
380 GO TO 330
390 LET T=T+1
400 REM *** REVERSE R NUMBERS AND  PRINT NEW LIST
410 FOR K=1 TO INT(R/2)
420 LET Z=A(K)
430 LET A(K)=A(R-K+1)
440 LET A(R-K+1)=Z
450 NEXT K
460 GOSUB 610
470 REM *** CHECK FOR A WIN
480 FOR K=1 TO N
490 IF A(K)<>K THEN 330
500 NEXT K
510 PRINT "YOU WON IN";T;"MOVES!!!"
520 PRINT
530 PRINT "AGAIN (1=YES  0=NO)";
540 INPUT A
550 IF A<>0 THEN 210
560 STOP
600 REM *** SUBROUTINE *** PRINT LIST A(1) TO A(N)
610 PRINT
620 FOR K=1 TO N
630 PRINT A(K);
640 NEXT K
650 PRINT
660 PRINT
670 RETURN
700 REM *** SUBROUTINE *** PRINT THE RULES
710 PRINT
720 PRINT "THIS IS THE GAME OF 'REVERSE'. TO WIN, ALL YOU HAVE"
730 PRINT "TO DO IS ARRANGE THE LIST OF NUMBERS (1 THROUGH";N;")"
740 PRINT "IN NUMERICAL ORDER FROM LEFT TO RIGHT. TO MOVE, YOU"
750 PRINT "TELL ME HOW MANY NUMBERS (COUNTING FROM THE LEFT) TO"
760 PRINT "REVERSE. FOR EXAMPLE, IF THE CURRENT LIST IS:"
770 PRINT
780 PRINT " 2 3 4 5 1 6 7 8 9"
790 PRINT
800 PRINT "AND YOU REVERSE 4, THE RESULT WILL BE:"
810 PRINT
820 PRINT " 5 4 3 2 1 6 7 8 9"
830 PRINT
840 PRINT "NOW, IF YOU REVERSE 5, YOU WIN!"
850 PRINT
860 PRINT " 1 2 3 4 5 6 7 8 9"
870 PRINT
880 PRINT "NO DOUBT YOU WILL LIKE THIS GAME OF SKILL, BUT"
890 PRINT "IF YOU WANT TO QUIT, REVERSE 0 (ZERO)."
900 PRINT
910 RETURN
999 END
```

BUTTON

Length: 909 words.

```
10  REM *** BUTTON, BUTTON, WHO'S GOT THE BUTTON? ***
15  REM *** WRITTEN BY * DAVE KAUFMAN * AUGUST 1973 ***
20  REM *** PEOPLE'S COMPUTER COMPANY, MENLO PARK, CALIFORNIA ***
25  REM ****************************** REM
30  REM FNM COMPUTES X MODULAR 7
35  REM FNN COMPUTES THE NEXT ONE TO GET THE BUTTON
40  DEF FNM(X)=(X=0)*7+(X<=7)*X+(X=8)*1
45  DEF FNN(X)=FNM(X+SGN(RND(0)-.5))
50  GOSUB 1000
100 REM *** GAME STARTS HERE ***
110 REM B  THE ONE WHO HAS THE BUTTON
120 REM L  THE LAST ONE WHO HAD IT
130 B=INT(RND(0)*6)+2
140 L=8
150 PRINT
160 PRINT
170 REM *** GUESSING STARTS HERE ***
180 REM G  PLAYER'S GUESS
190 PRINT "WHO DO YOU GUESS HAS IT";
200 INPUT G
210 IF G=0 THEN 440
220 IF G=B THEN 430
230 IF G=L THEN 360
240 IF G=FNM(B+1) OR G=FNM(B-1) THEN 340
250 IF G>0 AND G<8 THEN 290
260 PRINT "SILLY - THERE'S NO ONE HERE BY THAT NUMBER"
270 PRINT "TRY AGAIN ..."
280 GOTO 190
290 PRINT G;": 'WHO, ME?'"
300 PRINT
310 PRINT
320 PRINT "WHOEVER HAS IT, KEEPS IT"
330 GOTO 170
340 PRINT G;": 'MY NEIGHBOR HAS IT'"
350 GOTO 370
360 PRINT G;": 'I HAD IT LAST TIME'"
370 L=B
380 B=FNN(B)
390 PRINT
400 PRINT
410 PRINT "...BUT WHOEVER HAS IT, PASSES IT"
420 GOTO 170
430 PRINT G;": 'RIGHT YOU ARE - LUCKY!'"
440 REM *** AGAIN? ***
450 PRINT
```

```
460   PRINT "AGAIN (1=YES, 0=NO)";
470   INPUT G
480   IF G=0 THEN 510
490   PRINT "*** NEW GAME ***"
500   GOTO 100
510   REM *** END PROGRAM ***
520   STOP
1000  REM *** THE INTRO ***
1010  PRINT
1020  PRINT
1030  PRINT "BUTTON, BUTTON, WHO'S GOT THE BUTTON?"
1040  PRINT
1050  PRINT
1060  PRINT "SEVEN FRIENDS ARE SITTING IN A CIRCLE"
1070  PRINT "AND YOU'RE IN THE CENTER"
1080  PRINT
1090  PRINT
1100  PRINT "     1"
1110  PRINT
1120  PRINT " 7          2"
1130  PRINT
1140  PRINT "   YOU'RE"
1150  PRINT "6     IT      3"
1160  PRINT
1170  PRINT "   5      4"
1180  PRINT
1190  PRINT
1200  PRINT "SOMEONE HAS THE BUTTON AND YOU HAVE TO GUESS WHO"
1210  PRINT
1220  PRINT "HE CAN PASS THE BUTTON (IF HE WANTS TO)"
1230  PRINT "BUT ONLY TO SOMEONE HE'S SITTING NEXT TO"
1240  PRINT
1250  PRINT "IF YOU WANT TO STOP, TYPE 0 (ZERO)"
1260  PRINT
1270  PRINT "GOOD LUCK   !!!"
1280  RETURN
1290  END
```

CHOMP

See Feb.'73 issue PCC Vol. 1, No. 3, page 9.

Length: 1153 words.

```
10    REM *** THE GAME OF CHOMP ***
20    REM *** COPYRIGHT, PEOPLE'S COMPUTER COMPANY ***
30    REM *** 1921 MENALTO AVE., MENLO PARK, CA.  94025 ***
40    REM *** BASED ON AN ARTICLE IN SCIENTIFIC AMERICAN, JAN 1973 ***
110   PRINT "THIS IS THE GAME OF CHOMP (SCIENTIFIC AMERICAN, JAN 1973)"
120   PRINT
130   PRINT "WANT THE RULES (1=YES, 0=NO!)";
140   INPUT R
150   IF R=0 THEN 340
160   F=1
170   R=5
180   C=7
190   PRINT "CHOMP IS FOR 1 OR MORE PLAYERS (HUMANS ONLY)."
200   PRINT
210   PRINT "HERE'S HOW A BOARD LOOKS (THIS ONE IS 5 BY 7):"
220   GOSUB 540
230   PRINT
240   PRINT "THE BOARD IS A BIG COOKIE - R ROWS HIGH AND C COLUMNS"
250   PRINT "WIDE. YOU INPUT R AND C AT THE START. IN THE UPPER LEFT"
260   PRINT "CORNER OF THE COOKIE IS A POISON SQUARE (P). THE ONE WHO"
270   PRINT "CHOMPS THE POISON SQUARE LOSES. TO TAKE A CHOMP, TYPE THE"
280   PRINT "ROW AND COLUMN OF ONE OF THE SQUARES ON THE COOKIE."
290   PRINT "ALL OF THE SQUARES BELOW AND TO THE RIGHT OF THAT SQUARE"
300   PRINT "(INCLUDING THAT SQUARE, TOO) DISAPPEAR -- CHOMP!!"
310   PRINT "NO FAIR CHOMPING SQUARES THAT HAVE ALREADY BEEN CHOMPED,"
320   PRINT "OR THAT ARE OUTSIDE THE ORIGINAL DIMENSIONS OF THE COOKIE."
330   PRINT
340   PRINT "HERE WE GO..."
350   DIM A[10,10]
360   F=0
370   FOR I=1 TO 10
372   FOR J=1 TO 10
375   LET A[I,J]=0
377   NEXT J
379   NEXT I
380   PRINT
390   PRINT "HOW MANY PLAYERS";
400   INPUT P
410   I1=0
420   PRINT "HOW MANY ROWS";
430   INPUT R
440   IF R <= 9 THEN 470
450   PRINT "TOO MANY ROWS (9 IS MAXIMUM). NOW, ";
460   GOTO 420
470   PRINT "HOW MANY COLUMNS";
480   INPUT C
490   IF C <= 9 THEN 530
500   PRINT "TOO MANY COLUMNS (9 IS MAXIMUM). NOW, ";
510   GOTO 470
530   PRINT
540   FOR I=1 TO R
550   FOR J=1 TO C
560   A[I,J]=1
570   NEXT J
580   NEXT I
590   A[1,1]=-1
600   REM PRINT THE BOARD
610   PRINT
620   PRINT TAB(7);"1 2 3 4 5 6 7 8 9"
630   FOR I=1 TO R
640   PRINT I;TAB(7);
650   FOR J=1 TO C
660   IF A[I,J]=-1 THEN 700
670   IF A[I,J]=0 THEN 720
680   PRINT "* ";
690   GOTO 710
700   PRINT "P ";
710   NEXT J
720   PRINT
730   NEXT I
740   PRINT
750   IF F=0 THEN 770
760   RETURN
770   REM GET CHOMPS FOR EACH PLAYER IN TURN
780   LET I1=I1+1
790   LET P1=I1-INT(I1/P)*P
800   IF P1 <> 0 THEN 820
810   P1=P
820   PRINT "PLAYER ";P1
830   PRINT "COORDINATES OF CHOMP (ROW,COLUMN)";
840   INPUT R1,C1
850   IF R1<1 THEN 920
860   IF R1>R THEN 920
870   IF C1<1 THEN 920
880   IF C1>C THEN 920
890   IF A[R1,C1]=0 THEN 920
900   IF A[R1,C1]=-1 THEN 1010
910   GOTO 940
920   PRINT "NO FAIR. YOU'RE TRYING TO CHOMP ON EMPTY SPACE!"
930   GOTO 820
940   FOR I=R1 TO R
950   FOR J=C1 TO C
960   A[I,J]=0
970   NEXT J
980   NEXT I
```

```
990    GOTO 610
1000   REM END OF GAME DETECTED IN LINE 900
1010   PRINT "YOU LOSE, PLAYER ";P1
1020   PRINT
1030   PRINT "AGAIN (1=YES; 0=NO!)";
1040   INPUT R
1050   IF R=1 THEN 340
1060   END
```

TAXMAN

See Sept.'73 issue PCC Vol. 2, No. 1, pages 6,7.
See Nov. '73 issue PCC Vol. 2, No. 2, page 7.
See Jan. '74 issue PCC Vol. 2, No. 3, page 8.
Length: 1739 words.

```
100    PRINT
102    PRINT
104    PRINT "HI, I'M THE TAXMAN."
106    PRINT "DO YOU WANT THE REGULATIONS (1=YES,0=NO)";
108    INPUT R
110    IF R=1 THEN 900
120    REM *** INITIALIZATION
122    GOSUB 800
124    REM *** THE HUMAN TAKES A NUMBER
126    GOSUB 500
128    REM *** COMPUTE THE HUMAN'S AND TAXMAN'S TOTALS
130    GOSUB 570
132    REM *** PRINT THE NEW LIST
134    GOSUB 600
136    REM *** CHECK IF ANY NUMBERS STILL HAVE FACTORS
138    GOSUB 650
140    IF M=1 THEN 126
142    REM *** FIND THE WINNER
144    GOSUB 700
146    REM *** AGAIN?
148    GOTO 750
496    REM
497    REM  ***  THE HUMAN MOVES
498    REM
500    PRINT
502    PRINT
504    PRINT "YOU TAKE";
506    INPUT K
508    LET K=INT(K)
510    IF K <= 0 THEN 750
512    IF K <= N THEN 518
514    PRINT K;"IS NOT IN THE LIST  -- TRY AGAIN."
516    GOTO 502
518    IF L[K]=0 THEN 514
520    REM  FIND ALL THE FACTORS
522    IF K>1 THEN 530
524    PRINT "THERE ARE NO FACTORS OF";K;"FOR ME."
526    PRINT "ARE YOU TRYING TO SHORT-CHANGE THE TAXMAN?"
528    GOTO 502
530    LET M=0
532    FOR I=1 TO K/2
534    IF L[I]=0 THEN 544
536    IF K <> I*INT(K/I) THEN 544
538    LET M=M+1
540    LET T[M]=I
542    LET L[I]=0
544    NEXT I
546    REM  CHECK WHETHER THERE WERE ANY FACTORS
548    IF M=0 THEN 524
```

```
550    LET L[K]=0
552    RETURN
566    REM
567    REM  ***  COMPUTE THE HUMAN'S AND TAXMAN'S TOTALS
568    REM
570    LET Y=Y+K
572    PRINT "YOUR TOTAL IS";Y
574    PRINT "I GET";
576    FOR I=1 TO M
578    PRINT T[I];
580    LET Z=Z+T[I]
582    NEXT I
584    PRINT
586    PRINT "MY TOTAL IS";Z
588    RETURN
596    REM
597    REM  ***  PRINT THE NEW LIST
598    REM
600    PRINT
602    PRINT "NEW LIST:";
604    LET M=0
606    FOR I=1 TO N
608    IF L[I]=0 THEN 614
610    PRINT I;
612    LET M=1
614    NEXT I
616    RETURN
646    REM
647    REM  ***  CHECK IF ANY NUMBERS STILL HAVE FACTORS
648    REM
649    REM  CHECK IF THE LIST IS EMPTY
650    IF M=0 THEN 690
652    FOR I=N TO 4 STEP -1
654    FOR J=2 TO I/2
656    IF L[J]=0 THEN 664
658    IF I <> J*INT(I/J) THEN 664
660    LET M=1
662    RETURN
664    NEXT J
666    NEXT I
668    REM  THE TAXMAN GETS THE REST OF THE NUMBERS
670    PRINT
672    PRINT "I GET ";
674    FOR I=1 TO N
676    IF L[I]=0 THEN 682
678    PRINT I;
680    LET Z=Z+I
682    NEXT I
684    PRINT "BECAUSE NO FACTORS OF ANY NUMBER ARE LEFT."
686    PRINT "MY TOTAL IS";Z
688    LET M=0
690    RETURN
696    REM
697    REM  ***  FIND THE WINNER
698    REM
700    PRINT
702    IF Z>Y THEN 708
704    PRINT "YOU";Y;"    TAXMAN";Z;"     YOU WIN !!!"
706    RETURN
708    PRINT "TAXMAN";Z;"    YOU";Y;"     THE TAXMAN WINS."
710    RETURN
746    REM
747    REM  ***  AGAIN?
748    REM
750    PRINT
752    PRINT
754    PRINT "AGAIN (1=YES,0=NO)";
756    INPUT R
758    IF R=0 THEN 999
```

```
760   GOTO 122
796   REM
797   REM  ***  INITIALIZATION
798   REM
800   PRINT
802   PRINT "HOW MANY NUMBERS DO YOU WANT IN THE LIST";
804   INPUT N
806   LET N=INT(N)
808   IF N <= 0 THEN 999
810   IF N <= 50 THEN 816
812   PRINT "AT THIS TIME, REGULATIONS ALLOW A MAXIMUM OF 50 NUMBERS."
814   GOTO 800
816   DIM L[50],T[10]
818   LET Y=0
820   LET Z=0
822   PRINT
824   PRINT "THE LIST IS:";
826   FOR I=1 TO N
828   PRINT I;
830   LET L[I]=1
832   NEXT I
834   IF N>1 THEN 844
836   PRINT
838   PRINT "HOW VERY GENEROUS OF YOU TO FORFEIT ALL TO THE TAXMAN."
840   PRINT "TAXMAN  1     YOU  0      THE TAXMAN WINS."
842   GOTO 750
844   RETURN
896   REM
897   REM  ***  INSTRUCTIONS
898   REM
900   PRINT
901   PRINT "YOU TRY TO BEAT THE TAXMAN."
902   PRINT
904   PRINT "WE START WITH A LIST OF WHOLE NUMBERS IN NUMERICAL"
906   PRINT "ORDER (YOU DECIDE HOW MANY)."
908   PRINT
910   PRINT "YOU TAKE A NUMBER FROM THE LIST -- THE TAXMAN GETS"
912   PRINT "ALL THE FACTORS OF YOUR NUMBER THAT ARE STILL LEFT."
914   PRINT "YOUR NUMBER AND ALL ITS FACTORS ARE THEN DELETED"
916   PRINT "FROM THE LIST."
918   PRINT
920   PRINT "FOR EXAMPLE, SUPPOSE YOU WANT 10 NUMBERS TO BE IN THE LIST."
922   PRINT "THEN THE LIST WOULD BE:  1  2  3  4  5  6  7  8  9  10"
924   PRINT
926   PRINT "IF YOU TOOK 8, THE TAXMAN WOULD GET  1, 2, AND 4"
928   PRINT "AND THE NEW LIST WOULD BE:  3  5  6   7  9  10"
930   PRINT
932   PRINT "THE TAXMAN MUST GET SOMETHING EVERY TIME SO YOU CAN"
934   PRINT "ONLY PICK A NUMBER THAT HAS FACTORS LEFT."
936   PRINT
938   PRINT "WHEN NONE OF THE REMAINING NUMBERS HAS ANY FACTORS,"
940   PRINT "THE TAXMAN GETS THEM!!"
942   PRINT
944   PRINT "YOUR SCORE IS THE SUM OF THE NUMBERS YOU TAKE."
946   PRINT "IF YOU WANT TO GIVE UP, TAKE 0."
948   PRINT "GOOD LUCK!"
950   GOTO 122
999   END
```

See Nov.'73, issue PCC Vol. 2, No. 2, page 17.

Length: 1401 words.

```
1     REM *** SUN SIGN DESIGN - PEOPLE'S COMPUTER CENTER ***
2     REM *** BOX 310 MENLO PARK CALIFORNIA 94025 ***
3     REM *** PROGRAMMER : JANE WOOD ***
4     REM
10    DIM A$[72],B$[26]
20    B$="ABCDEFGHIJKLMNOPQRSTUVWXYZ"
30    REM
100   REM *** INSTRUCTIONS ***
105   PRINT
110   PRINT "DO YOU NEED INSTRUCTIONS ";
115   GOSUB 4000
120   PRINT
125   IF X=0 THEN 200
130   PRINT "THIS PROGRAM PRINTS DESIGNS BASED ON A PERSON'S"
132   PRINT "NAME AND SUN SIGN. HERE IS A TABLE OF SUN SIGNS :"
134   PRINT
136   PRINT "ARIES       MAR 21-APR 20    LIBRA        SEP 24-OCT 23"
138   PRINT "TAURUS      APR 21-MAY 21    SCORPIO      OCT 24-NOV 22"
140   PRINT "GEMINI      MAY 22-JUN 21    SAGITTARIUS  NOV 23-DEC 21"
142   PRINT "CANCER      JUN 22-JUL 23    CAPRICORN    DEC 22-JAN 20"
144   PRINT "LEO         JUL 24-AUG 23    AQUARIUS     JAN 21-FEB 19"
146   PRINT "VIRGO       AUG 24-SEP 23    PISCES       FEB 20-MAR 20"
148   PRINT
150   PRINT "THE PROGRAM ASKS FOR A FIRST, MIDDLE AND LAST"
152   PRINT "NAME. IF YOU DON'T HAVE A MIDDLE NAME TYPE A"
154   PRINT "CARRIAGE RETURN. THE PROGRAM ONLY PAYS ATTEN-"
156   PRINT "TION TO LETTERS, AND IGNORES ALL OTHER TELE-"
158   PRINT "TYPE CHARACTERS. HERE WE GO . . . . . . ."
160   PRINT
200   REM *** GET STRING PARAMETERS ***
205   PRINT
210   PRINT
215   PRINT "FIRST NAME   ";
220   GOSUB 3000
225   GOSUB 1000
230   V0=X
235   PRINT
240   PRINT "MIDDLE NAME  ";
245   GOSUB 3000
250   GOSUB 1000
255   V2=X
260   PRINT
265   PRINT "LAST NAME    ";
270   GOSUB 3000
275   GOSUB 1000
280   V4=X
285   PRINT
290   PRINT "SUN SIGN     ";
295   GOSUB 3000
300   GOSUB 1000
305   V6=X
310   PRINT
315   PRINT
320   PRINT
325   REM
400   REM *** COMPUTE NUMERIC PARAMETERS ***
405   V=V0
410   Q=9
415   GOSUB 2000
420   V1=M
425   V=V2
430   GOSUB 2000
435   V3=M
```

```
440    V=V4
445    Q=7
450    GOSUB 2000
455    V5=M
460    V=V6
465    Q=5
470    GOSUB 2000
475    V9=M
480    C=0
485    REM
500    REM *** PICTURE PRINTING LOOP ***
505    FOR J=-(V9+3) TO V9+2
510    A$="                    "
515    V0=V0-J
520    V2=V2-J
525    K0=2*V5+2
530    REM
535    REM *** COMPUTE ROW ***
540    FOR K=-K0 TO K0
545    K1=K0+K+18
550    V0=V0-K*V5
555    V=V0
560    Q=9
565    GOSUB 2000
570    V7=M
575    V2=V2-K*V3
580    V=V2
585    Q=7
590    GOSUB 2000
595    V8=M
600    IF K <> K0 THEN 610
605    V8=-1
610    GOTO SGN(V8-V7)+2 OF 625,615,635
615    A$[K1,K1]="0"
620    GOTO 640
625    A$[K1,K1]=" "
630    GOTO 645
635    A$[K1,K1]="*"
640    C=C+1
645    NEXT K
650    REM
655    REM *** PRINT ROW ***
660    K=1
665    IF C=0 THEN 695
670    PRINT A$[K,K];
675    IF A$[K,K]=" " THEN 685
680    C=C-1
685    K=K+1
690    IF K <= LEN(A$) THEN 665
695    PRINT
700    NEXT J
800    REM *** ASK FOR ENCORE ***
805    PRINT
810    PRINT
815    PRINT
820    PRINT
825    PRINT "WOULD YOU LIKE TO DO ANOTHER ONE ";
830    GOSUB 4000
835    IF X=1 THEN 200
840    STOP
845    REM
1000   REM *** CONVERT INPUT STRING TO NUMBER ***
1010   X=0
1020   J=1
1030   IF J>LEN(A$) THEN 1120
1040   K=1
1050   IF K>26 THEN 1100
1060   IF A$[J,J]=B$[K,K] THEN 1090
1070   K=K+1
```

```
1080   GOTO 1050
1090   X=X+K+192
1100   J=J+1
1110   GOTO 1030
1120   RETURN
1130   REM
2000   REM *** MODULOUS FUNCTION ***
2010   M=V-INT(V/Q)*Q+1
2020   RETURN
2030   REM
3000   REM *** FETCH STRING ***
3010   PRINT "? ";
3020   ENTER 255,T,A$
3030   IF T=-256 THEN 3020
3040   PRINT
3050   RETURN
3060   REM
4000   REM *** YES OR NO FETCH ***
4010   X=0
4020   INPUT A$
4030   IF A$="NO" THEN 4090
4040   X=1
4050   IF A$="YES" THEN 4090
4060   PRINT "PLEASE ANSWER YES OR NO ..."
4070   PRINT "ANSWER ";
4080   GOTO 4010
4090   RETURN
4100   REM
9999   END
```

TREE SUBROUTINES

See Jan.'74 issue PCC Vol. 2, No. 3, page 21.
Length: 2225 words.

```
7400   REM *** TREE SUBROUTINES BEGIN ***
7402   REM SACRED NAMES: N(127),P(385),L(99),N9,P1,P2,P3,P4,P5,P9,
7404   REM               L1,FND,FNN,FNU
7406   REM ARGUMENT: V1,V2,N1,D1
7408   REM N1 IS NAME OF CURRENT NODE (FOR TOP NODE, N1=1)
7410   REM D1 IS NAME OF DAUGHTER NODE
7412   REM NODE NAMES CAN BE ANY NUMBER EXCEPT 9999
7414   REM
7416   REM V1=  0 INITIALIZE TREE; MAKE #1 THE CURRENT NODE
7418   REM      1 ADD D1 AS NEXT DAUGHTER TO CURRENT NODE
7420   REM      2 CUT D1 OFF FROM CURRENT NODE (BUT LEAVE IT AND
7422   REM        ALL BELOW IT)
7424   REM      3 PRUNE D1 (AND ALL BELOW IT) FROM TREE
7426   REM      4 GO UP FROM N1 TO MOTHER NODE (UNLESS AT TOP)
7428   REM      5 GO UP FROM N1 THE WAY YOU CAME (UNLESS AT TOP)
7430   REM      6 GO DOWN TO D1 FROM CURRENT NODE (IF LEGAL)
7432   REM      7 RETURN WITH NEXT DAUGHTER NODE (AFTER D1) IN D1
7434   REM        IF NO MORE, D1=9999
7436   REM        IF D1 ISN'T A DAUGHTER OF CURRENT NODE, RETURN WITH
7438   REM        FIRST DAUGHTER NODE
7440   REM      8 RESET CURRENT NODE TO D1, WHEREVER IT IS IN TREE
7442   REM
7444   REM V2=  2  INSTRUCTION CARRIED OUT, BUT D1 IS A NEW NODE NAME
7446   REM      1  INSTRUCTION CARRIED OUT
7448   REM     -1  CANNOT MOVE UP (OR DOWN) BECAUSE ON TOP (BOTTOM)
7450   REM     -2  MORE THAN 127 NODES
7452   REM     -3  TOO MANY CONNECTIONS
7454   REM     -4  D1 IS NOT A NODE NAME
7480   DIM N(127),P(385),L(99)
7482   DEF FNP(X)=INT(P(X)/512)
7484   DEF FNN(X)=P(X)-INT(P(X)/512)*512
```

```
7500    REM ***ENTRY POINT FOR TREE SUBROUTINES
7505    V2=1
7510    GOSUB V1+1 OF 7525,7600,7700,7800,7900,8000,8100,8200,8300
7515    N1=N[P1]
7520    RETURN
7525    REM *** V1=0 ***
7526    REM *** INITIALIZE TREE
7530    N[1]=1
7531    FOR P1=2 TO 127
7532    N[P1]=9999
7533    NEXT P1
7535    N9=2
7540    FOR P1=2 TO 384
7545    P[P1]=P1+1
7550    NEXT P1
7551    P[1]=0
7552    P[127]=0
7553    P[385]=0
7555    P1=1
7557    P2=1
7560    P9=128
7565    L1=1
7570    RETURN
7600    REM *** V1=1 ***
7601    REM *** ADD D1 AS THE NEXT DAUGHTER TO CURRENT NODE
7602    GOSUB 8400
7604    IF P2>0 THEN 7622
7606    IF N9 <> 0 THEN 7612
7608    V2=-2
7610    RETURN
7612    V2=2
7614    N[N9]=D1
7618    P2=N9
7620    N9=P[N9]
7621    P[P2]=0
7622    P3=P1
7624    IF FNN(P3)=0 THEN 7632
7626    P3=FNN(P3)
7628    IF FNP(P3)=P2 THEN 7646
7630    GOTO 7624
7632    IF P9 <> 0 THEN 7638
7634    V2=-3
7636    RETURN
7638    P[P3]=P[P3]+P9
7640    P3=P9
7642    P9=P[P9]
7644    P[P3]=P2*512
7646    IF FNP(P2) <> 0 THEN 7650
7648    P[P2]=P[P2]+P1*512
7650    RETURN
7700    REM *** V1=2 ***
7701    REM *** CUT D1 OFF FROM CURRENT NODE (BUT LEAVE IT  & ALL BEL..)
7702    GOSUB 8400
7704    IF V2<0 THEN 7740
7706    P3=P1
7708    P4=P3
7710    P3=FNN(P3)
7712    IF FNP(P3)=P2 THEN 7718
7714    IF P3=100 THEN 7740
7716    GOTO 7708
7718    IF FNP(P2) <> P1 THEN 7734
7720    P[P2]=P[P2]-P1*512
7734    P[P4]=P[P4]+FNN(P3)-P3
7736    P[P3]=P9
7738    P9=P3
7740    RETURN
7800    REM *** V1=3 ***
7801    REM *** PRUNE D1 AND ALL BELOW IT
7802    GOSUB 8400
```

```
7804    IF V2<0 THEN 7899
7806    REM * ADD TO FREE LISTS ALL N AND P ENTRIES IN SUBTREE
7808    IF FNN(P2) <> 0 THEN 7818
7810    N[P2]=9999
7812    P[P2]=N9
7814    N9=P2
7816    GOTO 7870
7818    P[P2]=FNN(P2)
7820    N[P2]=9999
7822    P3=FNN(P2)
7823    IF P3=0 THEN 7856
7824    P4=FNP(P3)
7826    IF N[P4]=9999 THEN 7844
7828    IF FNN(P4)=0 THEN 7838
7830    REM DROP DOWN TO DAUGHTER
7832    P[P4]=P[P4]+(P2-FNP(P4))*512
7834    P2=P4
7836    GOTO 7820
7838    N[P4]=9999
7840    P[P4]=N9
7842    N9=P4
7844    REM MOVE TO NEXT DAUGHTER
7845    P4=FNN(P3)
7846    IF P4=0 THEN 7851
7847    P[P3]=P[P4]
7848    P[P4]=P9
7849    P9=P4
7850    GOTO 7824
7851    P[P3]=P9
7852    P9=P3
7856    REM GO UP TO MOTHER NODE
7858    P3=FNP(P2)
7860    P[P2]=N9
7862    N9=P2
7864    P2=P3
7866    IF P2 <> 0 THEN 7822
7870    REM * DELETE ALL REFERENCES TO PRUNED NODES
7872    FOR P2=1 TO 127
7874    IF N[P2]=9999 THEN 7898
7876    REM LOOK AT ALL DAUGHTERS
7878    P3=P2
7880    P4=P3
7882    P3=FNN(P3)
7884    IF P3=0 THEN 7898
7886    IF N[FNP(P3)] <> 9999 THEN 7880
7888    P[P4]=P[P4]+FNN(P3)-FNN(P4)
7890    P[P3]=P9
7892    P9=P3
7894    P3=FNN(P4)
7896    GOTO 7884
7898    NEXT P2
7899    RETURN
7900    REM *** V1=4 ***
7901    REM *** GO UP FROM N1 TO ITS MOTHER NODE (UNLESS AT TOP)
7905    IF FNP(P1)=0 THEN 7935
7910    P2=P1
7915    D1=N1
7920    P1=FNP(P1)
7925    L1=(L1-1) MAX 1
7930    RETURN
7935    V2=-1
7940    RETURN
8000    REM *** V1=5 ***
8001    REM *** GO UP THE WAY YOU CAME (UNLESS AT TOP)
8005    IF L1>1 THEN 8020
8010    V2=-1
8015    RETURN
8020    L1=L1-1
8021    IF N[L[L1]]=9999 THEN 8010
```

See May '73 issue PCC Vol. 1, No. 5, page 4.

Length: 1365 words.

```
8022    P2=P1
8025    P1=L[L1]
8027    D1=N1
8030    RETURN
8100    REM *** V1=6 ***
8101    REM *** GO DOWN TO D1 FROM CURRENT NODE (IF LEGAL)
8115    GOSUB 8400
8120    IF V2<0 THEN 8150
8125    P3=P1
8127    P3=FNN(P3)
8130    IF P3=0 THEN 8145
8135    IF FNP(P3)=P2 THEN 8155
8140    GOTO 8127
8145    V2=-1
8150    RETURN
8155    L[L1]=P1
8160    P1=P2
8165    L1=L1+1
8170    RETURN
8200    REM *** V1=7 ***
8201    REM *** RETURN WITH NEXT DAUGHTER NODE IN D1 (IF NO MORE, D1=9999)
8205    IF FNN(P1)=0 THEN 8275
8210    GOSUB 8400
8220    P3=P1
8225    P3=FNN(P3)
8230    IF P3=0 THEN 8245
8235    IF FNP(P3)=P2 THEN 8250
8240    GOTO 8225
8245    P3=P1
8250    P2=FNN(P3)
8255    IF P2=0 THEN 8275
8257    P2=FNP(P2)
8260    D1=N[P2]
8265    RETURN
8275    D1=9999
8280    RETURN
8300    REM *** V1=8 ***
8301    REM **: RESET TO NODE D1
8310    GOSUB 8400
8320    IF V2<0 THEN 8350
8330    P1=P2
8340    L1=1
8350    RETURN
8400    REM *** FIND POINTER FOR D1
8402    IF D1=9999 THEN 8440
8403    IF P2<1 OR P2>127 THEN 8406
8404    IF N[P2]=D1 THEN 8460
8406    IF D1<1 OR D1>127 THEN 8414
8408    IF N[D1] <> D1 THEN 8414
8410    P2=D1
8412    RETURN
8414    FOR P2=1 TO 127
8420    IF N[P2]=D1 THEN 8460
8430    NEXT P2
8440    V2=-4
8450    P2=-1
8460    RETURN
```

```
10      N1=D1=1
20      REM *** CAVES1 ***
30      REM *** PROGRAM MAKES A SET OF LINKED ROOMS FOR YOU TO EXPLORE
40      REM *** PROGRAMMER - DAVID KAUFMAN
50      G=1
60      G2=1
70      PRINT "WELCOME TO THE CAVES"
80      PRINT
90      PRINT "IS THIS YOUR FIRST VISIT (1=YES, 0=NO)";
100     INPUT X
110     IF X=1 THEN 170
120     PRINT
130     PRINT "HOW HARD SHOULD I MAKE THE CAVES?"
140     PRINT "  1=USUAL, 2=HARDER, 3=!!!  ";
150     INPUT G
160     G=ABS(G) MIN 3
170     V1=0
180     GOSUB 7500
190     R=2
200     FOR I=1 TO 4
210     GOSUB 1360
220     GOSUB 1500
230     FOR J=1 TO G-1
240     GOSUB 1450
250     GOSUB 1500
260     NEXT J
270     NEXT I
280     W=R-1
290     IF G2>1 THEN 520
300     PRINT
310     PRINT "DO YOU WANT AN INTRODUCTION (1=YES, 0=NO)";
320     INPUT X
330     IF X=0 THEN 520
340     PRINT
350     PRINT "   IMAGINE YOURSELF AN EXPLORER OF THE FAMOUS"
360     PRINT "DUZZLEDORF CAVES.  YOU'VE BEEN UNDERGROUND"
370     PRINT "FOR DAYS, TRIPPING THROUGH THE CAVERNS AND"
380     PRINT "TUNNELS.  UNFORTUNATELY, YOU'RE LOST, AND"
390     PRINT "YOUR FOOD HAS RUN OUT."
400     PRINT
410     PRINT "   THERE IS ONLY ONE PATH OUT.  SEE IF YOU"
420     PRINT "CAN FIND IT."
430     PRINT
440     PRINT "   WHEN I TYPE A '?', YOU GIVE ME THE NUMBER"
450     PRINT "OF THE CAVERN YOU WANT TO GO TO. LIKE THIS:"
460     PRINT
470     PRINT "WHERE NEXT? 7"
480     PRINT
490     PRINT "ADVICE: MAKE A MAP AS YOU GO - IN THE HARDER CAVES"
500     PRINT "        YOU SOMETIMES HAVE TO GO BACK AND TRY ANOTHER"
510     PRINT "        WAY. GOOD LUCK!"
520     D1=1
530     V1=8
540     GOSUB 7500
550     X=9999
560     PRINT
570     PRINT "YOU'RE IN CAVERN #";N1
580     D1=9999
590     V1=7
600     FOR I=1 TO 3
610     GOSUB 7500
620     PRINT "#";D1;
630     IF D1=W THEN 660
```

```
640    NEXT I
650    IF N1=1 THEN 720
660    V1=4
670    GOSUB 7500
680    PRINT "#";N1;
690    X=N1
700    V1=6
710    GOSUB 7500
720    PRINT "ARE WHERE YOU CAN GO"
730    PRINT "WHERE NEXT";
740    INPUT D1
750    IF D1=N1 THEN 730
760    IF D1 <> X THEN 800
770    V1=4
780    GOSUB 7500
790    GOTO 560
800    V1=6
810    GOSUB 7500
820    IF V2>0 THEN 850
830    PRINT "ILLEGAL MOVE"
840    GOTO 730
850    IF N1=W THEN 940
860    D1=9999
870    V1=7
880    GOSUB 7500
890    IF D1 <> 9999 THEN 560
900    PRINT "DEADEND"
910    V1=4
920    GOSUB 7500
930    GOTO 730
940    PRINT
950    PRINT
960    PRINT TAB(10);"!!!   SUNLIGHT   !!!"
970    PRINT
980    PRINT TAB(10);"!!!  FRESH AIR  !!!"
990    PRINT
1000   PRINT TAB(10);"...  REPORTERS   ..."
1010   PRINT
1020   PRINT
1030   PRINT "WELL, AT LEAST YOU'RE OUT"
1040   IF G>1 THEN 1100
1050   PRINT
1060   PRINT "CONGRATULATIONS, INTREPID EXPLORER"
1070   PRINT "OF THE FEARSOME CAVES.  IF YOU WANT TO"
1080   PRINT "EXPLORE AGAIN, YOU CAN CHOOSE A HARDER SET"
1090   PRINT "OF CAVES OR ANOTHER ONE JUST AS DIFFICULT"
1100   PRINT
1110   PRINT "AGAIN (1=YES, 0=NO)";
1120   INPUT X
1130   IF X=0 THEN 1210
1140   G2=G2+1
1150   IF G=3 THEN 160
1160   PRINT "HARDER";
1170   INPUT X
1180   IF X=0 THEN 160
1190   G=G+1
1200   GOTO 160
1210   CHAIN "CAVESM"
1360   REM *** ADD DAUGHTERS TO CURRENT NODE
1370   V1=1
1380   FOR J1=1 TO 3
1390   IF R=50 THEN 1440
1400   D1=R
1410   GOSUB 7500
1420   R=R+1
1430   NEXT J1
1440   RETURN
1450   REM *** CREATE DAUGHTERS, AND RETURN
1460   GOSUB 1360
1470   V1=4
```

```
1480   GOSUB 7500
1490   RETURN
1500   REM *** PICK A DAUGHTER NODE AT RANDOM AND GO DOWN
1510   V1=7
1520   FOR J1=1 TO INT(RND(0)*3)+1
1530   GOSUB 7500
1540   IF D1=9999 THEN 1530
1550   NEXT J1
1560   V1=6
1570   GOSUB 7500
1580   D1=9999
1590   V1=7
1600   GOSUB 7500
1610   IF D1=9999 THEN 1650
1620   V1=4
1630   GOSUB 7500
1640   GOTO 1510
1650   RETURN
```

CAVES2

See Sept.'73 issue PCC Vol. 2, No. 1, page 12.
Length: 1269 words.

```
10    REM *** CAVES2 *** YOU MAKE A SET OF LINKED CAVES FOR A FRIEND
20    REM TO EXPLORE
30    REM *** WRITTEN BY DAVE KAUFMAN - JUNE 1973 ***
35    REM *** COPYRIGHT, PEOPLE'S COMPUTER CO. ***
37    REM *** 1921 MENALTO AVE., MENLO PARK, CA. 94025 ***
40    PRINT
50    PRINT "WELCOME TO THE CAVES"
60    PRINT
70    PRINT "DO YOU WANT AN INTRODUCTION (1=YES, 0=NO)";
80    INPUT X
90    IF X=0 THEN 250
100   PRINT
110   PRINT "THIS GAME IS JUST LIKE CAVES1,"
120   PRINT "EXCEPT YOU SET UP THE CAVES"
130   PRINT
140   PRINT "THEN, YOU CAN EXPLORE THEM,"
150   PRINT "OR ASK A FRIEND TO FIND HIS WAY OUT"
160   PRINT
170   PRINT "A GOOD IDEA IS TO MAKE A MAP"
180   PRINT "AS YOU GO ALONG, SO YOU CAN SEE"
190   PRINT "WHAT YOUR CAVES LOOK LIKE"
200   PRINT
210   PRINT "EACH CAVERN HAS A NUMBER OF TUNNELS"
220   PRINT "LEADING TO OTHER CAVERNS - 0 TUNNELS"
230   PRINT "MEANS A DEADEND CAVERN.   OTHERWISE,"
240   PRINT "YOU CAN HAVE 1,2,3,4 OR 5 TUNNELS"
250   V1=0
260   GOSUB 7500
270   R=1
280   IF R >= 50 THEN 430
290   PRINT
300   PRINT
310   PRINT "YOU'RE IN CAVERN #";N1
320   PRINT "HOW MANY TUNNELS";
330   INPUT X
340   GOTO X+1 OF 550,370,370,370,370,370
350   PRINT "HOW MANY (0,1,2,3,4,5 ONLY)";
360   GOTO 330
370   PRINT "THEY LEAD TO ";
380   V1=1
390   FOR D1=R+1 TO R+X
400   IF D1 <= 50 THEN 450
410   PRINT
420   PRINT
```

```
430  PRINT "THAT'S ALOT OF CAVERNS!  IN FACT, THAT'S MY LIMIT!"
440  GOTO 640
450  PRINT "#";D1;
460  GOSUB 7500
470  NEXT D1
480  R=D1-1
490  D1=9999
500  V1=7
510  GOSUB 7500
520  V1=6
530  GOSUB 7500
540  GOTO 280
550  V1=5
560  GOSUB 7500
570  IF V2<0 THEN 640
580  V1=7
590  GOSUB 7500
600  IF D1=9999 THEN 550
610  V1=6
620  GOSUB 7500
630  GOTO 300
640  PRINT
650  PRINT "THE CAVES ARE COMPLETE EXCEPT FOR ONE SMALL THING -"
660  PRINT "THEY NEED A ROOM THAT LEADS TO THE OUTSIDE."
670  PRINT
680  PRINT "WHICH ROOM # WILL THAT ONE BE";
690  INPUT D1
700  V1=8
710  GOSUB 7500
720  IF V2>0 THEN 750
730  PRINT "NO FAIR;"D1;"ISN'T A ROOM # !"
740  GOTO 670
750  W=D1
760  D1=1
770  V1=8
780  GOSUB 7500
790  PRINT "WHEN YOU'RE READY, TYPE ANY NUMBER"
800  INPUT X
810  X=9999
820  PRINT
830  PRINT "YOU'RE IN CAVERN #";N1
840  IF W=1 THEN 1200
850  D1=9999
860  V1=7
870  GOSUB 7500
880  IF D1=9999 THEN 910
890  PRINT "#";D1;
900  GOTO 870
910  IF N1=1 THEN 980
920  V1=4
930  GOSUB 7500
940  PRINT "#";N1;
950  X=N1
960  V1=6
970  GOSUB 7500
980  PRINT "ARE WHERE YOU CAN GO"
990  PRINT "WHERE NEXT";
1000 INPUT D1
1010 IF D1=N1 THEN 990
1020 IF D1 <> X THEN 1060
1030 V1=4
1040 GOSUB 7500
1050 GOTO 820
1060 V1=6
1070 GOSUB 7500
1080 IF V2>0 THEN 1110
1090 PRINT "ILLEGAL MOVE"
1100 GOTO 990
1110 IF N1=W THEN 1200
1120 D1=9999
1130 V1=7
1140 GOSUB 7500
1150 IF D1 <> 9999 THEN 820
1160 PRINT "DEADEND"
1170 V1=4
1180 GOSUB 7500
1190 GOTO 990
1200 PRINT
1210 PRINT
1220 PRINT TAB(10);"!!!   SUNLIGHT   !!!"
1230 PRINT
1240 PRINT TAB(10);"!!!  FRESH  AIR  !!!"
1250 PRINT
1260 PRINT TAB(10);"...  REPORTERS  ..."
1270 PRINT
1280 PRINT
1290 PRINT "WELL, AT LEAST YOU'RE OUT"
1300 PRINT
1310 PRINT "THIS SET OF CAVES AGAIN (1=YES, 0=NO)";
1320 INPUT X
1330 IF X=1 THEN 760
1340 PRINT "DO YOU WANT TO MAKE ANOTHER SET OF CAVES (1=YES, 0=NO)";
1350 INPUT X
1360 IF X=1 THEN 250
1370 CHAIN "CAVESM"
```

CAVES3

See Sept.'73 issue PCC Vol. 2, No. 1, page 13.
Length: 1487 words.

```
10   REM *** CAVES3 *** YOU MAKE A SET OF COMPLEX-LINKED CAVES
20   REM FOR A FRIEND TO FIND HIS WAY OUT OF
30   REM *** WRITTEN BY DAVE KAUFMAN - JUNE 1973 ***
40   REM *** COPYRIGHT, PEOPLE'S COMPUTER CO. ***
50   REM *** 1921 MENALTO AVE., MENLO PARK, CA., 94025 ***
60   PRINT "WELCOME TO THE CAVES"
70   PRINT
80   PRINT "INTRODUCTION (1=YES, 0=NO)";
90   INPUT X
100  IF X=0 THEN 270
110  PRINT
120  PRINT "   THIS GAME IS LIKE CAVES1 AND CAVES2 EXCEPT YOU"
130  PRINT "CAN SET UP THE CAVES ANY WAY YOU LIKE.  DIFFERENT"
140  PRINT "TUNNELS CAN LEAD TO THE SAME CAVERN, OR YOUR CAVERNS"
150  PRINT "CAN FORM LOOPS LIKE #12 - #13 - #19 - #12"
160  PRINT "(WARNING: NEVER TUNNEL BACK TO CAVERN # 1)"
170  PRINT "   EACH CAVERN HAS A NUMBER OF TUNNELS LEADING TO"
180  PRINT "OTHER CAVERNS - 0 TUNNELS MEANS A DEADEND CAVERN"
190  PRINT "OTHERWISE, YOU CAN HAVE 1,2,3,4 OR 5 TUNNELS"
200  PRINT
210  PRINT "   WHEN YOU'RE FINISHED, ASK A FRIEND TO FIND HIS WAY OUT"
220  PRINT
230  PRINT "   A GOOD IDEA IS TO MAKE A MAP AS YOU GO ALONG,"
240  PRINT "SO YOU CAN SEE WHAT YOUR CAVES LOOK LIKE"
250  PRINT
260  PRINT "   GOOD LUCK!"
270  V1=0
280  GOSUB 7500
290  R=1
300  IF R >= 50 THEN 690
310  PRINT
320  PRINT "YOU'RE IN CAVERN #";N1
330  PRINT "HOW MANY NEW TUNNELS";
340  INPUT X
350  GOTO X+1 OF 770,380,380,380,380,380
```

```
360    PRINT "HOW MANY (0,1,2,3,4,5 ONLY)";
370    GOTO 340
380    PRINT "ONE AT A TIME:"
390    D9=0
400    FOR I=1 TO X
410    INPUT Y
420    IF Y=N1 THEN 710
430    V1=7
440    D1=9999
450    GOSUB 7500
460    IF D1=9999 THEN 490
470    IF D1=Y THEN 710
480    GOTO 450
490    R=R+1
500    D1=Y
510    V1=1
520    GOSUB 7500
530    N2=N1
540    V1=8
550    GOSUB 7500
560    D1=N2
570    V1=1
580    GOSUB 7500
590    IF D9 <> 0 THEN 650
600    D1=9999
610    V1=7
620    GOSUB 7500
630    IF D1 <> N2 THEN 650
640    D9=N1
650    V1=8
660    D1=N2
670    GOSUB 7500
680    IF V2>0 THEN 710
690    PRINT "THAT'S ALOT OF CAVERNS!  IN FACT, THAT'S MY LIMIT!"
700    GOTO 940
710    NEXT I
720    IF D9=0 THEN 770
730    D1=D9
740    V1=6
750    GOSUB 7500
760    GOTO 310
770    IF N1=1 THEN 940
780    V1=4
790    GOSUB 7500
800    V1=7
810    GOSUB 7500
820    IF D1=9999 OR D1=1 THEN 770
830    N2=N1
840    V1=8
850    GOSUB 7500
860    D1=9999
870    V1=7
880    GOSUB 7500
890    IF D1=N2 THEN 310
900    D1=N2
910    V1=8
920    GOSUB 7500
930    GOTO 800
940    PRINT
950    PRINT "THE CAVES ARE COMPLETE EXCEPT FOR ONE SMALL THING,"
960    PRINT "THEY NEED A ROOM THAT LEADS TO THE OUTSIDE."
970    PRINT
980    PRINT "WHICH ROOM # WILL THAT ONE BE";
990    INPUT D1
1000   V1=8
1010   GOSUB 7500
1020   IF V2>0 THEN 1050
1030   PRINT "NO FAIR;";D1;"ISN'T A ROOM # !"
1040   GOTO 970
1050   W=D1
1060   D1=1
1070   V1=8
1080   GOSUB 7500
1090   PRINT
1100   PRINT
1110   PRINT
1120   PRINT "WHEN YOU'RE READY, TYPE ANY NUMBER"
1130   INPUT X
1140   PRINT
1150   PRINT
1160   PRINT "LET'S GO!"
1170   X=9999
1180   PRINT
1190   PRINT "YOU'RE IN CAVERN #";N1
1200   IF W=1 THEN 1450
1210   D1=9999
1220   V1=7
1230   GOSUB 7500
1240   IF D1=9999 THEN 1270
1250   PRINT "#";D1;
1260   GOTO 1230
1270   PRINT "ARE WHERE YOU CAN GO"
1280   PRINT "WHERE NEXT";
1290   INPUT D1
1300   IF D1=N1 THEN 1280
1310   V1=6
1320   GOSUB 7500
1330   IF V2>0 THEN 1360
1340   PRINT "ILLEGAL MOVE"
1350   GOTO 1280
1360   IF N1=W THEN 1450
1370   D1=9999
1380   V1=7
1390   GOSUB 7500
1400   IF D1 <> 9999 THEN 1180
1410   PRINT "DEADEND"
1420   V1=4
1430   GOSUB 7500
1440   GOTO 1280
1450   PRINT
1460   PRINT
1470   PRINT TAB(10);"!!!   SUNLIGHT   !!!"
1480   PRINT
1490   PRINT TAB(10);"!!!  FRESH  AIR  !!!"
1500   PRINT
1510   PRINT TAB(10);"...   REPORTERS   ..."
1520   PRINT
1530   PRINT
1540   PRINT "WELL, AT LEAST YOU'RE OUT"
1550   PRINT
1560   PRINT "THIS SET OF CAVES AGAIN (1=YES, 0=NO)";
1570   INPUT X
1580   IF X=1 THEN 1060
1590   PRINT "DO YOU WANT TO MAKE ANOTHER SET OF CAVES (1=YES, 0=NO)";
1600   INPUT X
1610   IF X=1 THEN 270
1620   CHAIN "CAVESM"
```

CAVESM

Length: 687 words.

```
10   REM *** MENU PROGRAM FOR ALL GAMES IN THE CAVES FAMILY ***
20   REM *** WRITTEN BY DAVE KAUFMAN - SEPTEMBER 1973 ***
30   REM *** COPYRIGHT, PEOPLE'S COMPUTER COMPANY, MENLO PARK, CA. ***
40   REM *** 1921 MENALTO AVE., MENLO PARK ***
100  PRINT
110  PRINT "HERE ARE ALL THE GAMES IN THE 'CAVES' FAMILY:"
120  PRINT
130  PRINT "   CAVES1  THE COMPUTER SETS UP THE CAVES FOR YOU"
140  PRINT "           AND YOU TRY TO FIND YOUR WAY OUT"
150  PRINT
160  PRINT "   CAVES2  HERE YOU CAN MAKE UP THE CAVES FOR A FRIEND"
170  PRINT "           WHO HAS TO FIND HIS WAY OUT"
180  PRINT
190  PRINT "   CAVES3  SAME AS CAVES2, EXCEPT YOU CAN SET UP MORE"
200  PRINT "           COMPLEX CAVES"
210  PRINT
220  PRINT "   CAVES4  THESE COMPUTER-MADE CAVES ARE ON ALIEN PLANETS"
230  PRINT "           (THERE ARE 4 PLANETS TO EXPLORE) AND EACH HAS"
240  PRINT "           DIFFERENT DANGERS. (PROGRAM NOT AVAILABLE YET)"
250  PRINT
260  PRINT "   PCAVES  THE PUBLIC CAVES: NO NUMBERS IN THIS GAME, ALL"
270  PRINT "           THE CAVERNS HAVE NAMES AND ARE COVERED WITH"
280  PRINT "           WRITING.  YOU CAN WRITE 'ANYTHING' YOU LIKE"
290  PRINT "           AND IT WILL STAY ON THE WALLS AFTER YOU LEAVE"
300  PRINT
310  PRINT "   TREES   YOU CAN MAKE CAVES, GET A MAP PRINTED, THEN"
320  PRINT "           GO BACK AND CHANGE THE CAVES.  YOU CAN ALSO"
330  PRINT "           SAVE YOUR CAVES INSIDE THE COMPUTER FOR AS"
335  PRINT "           LONG AS YOU LIKE. (PROGRAM NOT AVAILABLE YET)"
340  PRINT
350  PRINT "GOODBYE!!!"
360  PRINT
370  END
```

THE CAVES FAMILY

After you have completed punching a paper tape for each program, use this procedure to save them on the disc.

The TREE SUBROUTINES must be appended to CAVES1, CAVES2, and CAVES3 to make them usuable.
Procedure:

With TTY terminal on line and system ready:

1. Type   SCR
(Push RETURN key after typing command)
Type   NAME-TREE
Type   TAPE
Load paper tape marked TREE into tape reader.
Wait while tape is read in.
Type   LEN
Type   SAVE

2. Type   SCR
Type   NAME-CAVES1
Type   TAPE
Load tape CAVES1 and read in.
Type   LEN
Type   APP-TREE
Type   9999 END
Type   SAVE

3. To load CAVES2, repeat procedure 2. with CAVES2 in place of CAVES1.

4. To load CAVES3, repeat procedure 2. with CAVES3 in place of CAVES1.

5. Type   SCR
Type   NAME-CAVESM
Type   TAPE
Load tape CAVESM and read in.
Type   LEN
Type   SAVE

6. Unless you have errors or there are errors in the tapes, you can play the game now.
Type   GET-CAVES1
Type   RUN

[OPEN]

See Nov.'73 issue PCC Vol. 2, No. 2, pages 18,19,
Length: 1015 words.

```
10    REM *** PUBLIC CAVES OPENING CEREMONY ***
20    REM *** WRITTEN BY DAVE KAUFMAN - SEPTEMBER 1973 ***
30    REM *** PEOPLE'S COMPUTER COMPANY, MENLO PARK, CA. ***
40    REM >>> DON'T FORGET TO APPEND-TREE <<<
50    REM >>> ALSO, YOU MUST OPEN-PCAVE1,50 <<<
100   DIM N$[56],X$[20],A$[56],B$[56],C$[56],D$[56],E$[56],F$[56],G$[56]
110   DIM Z$[721],S$[56]
120   DIM T[6]
130   FILES PCAVE1
140   FOR I=1 TO 56
150   S$[I,I]=" "
160   NEXT I
200   PRINT "WELCOME TO ..."
210   PRINT
220   PRINT "       ***    THE GRAND OPENING OF    ***"
230   PRINT "               'THE PUBLIC CAVES'"
240   PRINT
250   PRINT
300   V1=0
310   GOSUB 7500
320   C=1
500   REM *** NEW CAVERN ***
505   PRINT
510   PRINT "YOU ARE IN CAVERN #";N1
520   PRINT "THE NAME OF THIS CAVERN WILL BE ..."
530   INPUT Z$
540   IF LEN(Z$) <= 56 THEN 570
550   PRINT "UP TO 56 CHARACTERS"
560   GOTO 530
570   N$=Z$
600   PRINT "AND WHOM SHALL THEY SAY NAMED IT?"
610   INPUT Z$
620   IF LEN(Z$) <= 20 THEN 650
630   PRINT "UP TO 20 CHARACTERS"
640   GOTO 610
650   X$=Z$
700   PRINT "UP TO 7 LINES OF GRAFFITTI (SAY  END  TO STOP)"
702   A$=S$
704   B$=S$
706   C$=S$
708   D$=S$
710   E$=S$
712   F$=S$
714   G$=S$
716   FOR L=1 TO 7
720   ENTER 255,T9,Z$
722   IF T9<0 THEN 720
724   PRINT
730   IF LEN(Z$) <= 56 THEN 760
740   PRINT "UP TO 56 CHARACTERS"
750   GOTO 720
760   IF Z$="END" THEN 1000
770   GOTO L OF 780,800,820,840,860,880,900
780   A$=Z$
790   GOTO 910
800   B$=Z$
810   GOTO 910
820   C$=Z$
830   GOTO 910
840   D$=Z$
850   GOTO 910
860   E$=Z$
870   GOTO 910
880   F$=Z$
890   GOTO 910
900   G$=Z$
910   NEXT L
1000  REM *** TUNNELS ***
1010  MAT T=ZER
1020  V1=1
1030  PRINT
1040  PRINT "HOW MANY TUNNELS LEADING OUT (HINT: 0 TO 4)";
1050  INPUT X
1055  IF X=0 THEN 1070
1060  IF X<0 OR X>4 THEN 1040
1065  PRINT "THEY LEAD TO ";
1070  FOR I=1 TO X
1080  IF C<50 THEN 1110
1090  PRINT "ENOUGH!  50 CAVERNS IS THE ABSOLUTE MAXIMUM!"
1100  GOTO 1210
1110  D1=C=C+1
1120  GOSUB 7500
1130  T[I]=D1
1135  PRINT "#";D1;
1140  NEXT I
1145  PRINT
1150  V1=4
1160  GOSUB 7500
1170  IF V2<0 THEN 1210
1180  T[I]=N1
1190  V1=6
1200  GOSUB 7500
1210  PRINT #1,N1;N$,T[1],T[2],T[3],T[4],T[5],T[6],X$,A$,B$,C$,
                                                    D$,E$,F$,G$
1220  IF X=0 THEN 1270
1230  D1=T[1]
1240  V1=6
1250  GOSUB 7500
1260  GOTO 500
1270  V1=4
1280  GOSUB 7500
1290  IF V2<0 THEN 2000
1300  V1=7
1310  GOSUB 7500
1320  IF D1=9999 THEN 1270
1330  V1=6
1340  GOSUB 7500
1350  GOTO 500
2000  REM *** ALL DONE ***
2010  PRINT
2020  FOR I=C+1 TO 50
2030  PRINT #1,I;S$,0,0,0,0,0,0,S$[1,20],S$,S$,S$,S$,S$,S$,S$
2040  NEXT I
2050  PRINT "ALL DONE"
2060  STOP
```

PCAVES

See Nov.'73 issue PCC Vol. 2, No. 2, pages 18,19.

Length: 3506 words.

```
10    REM *** PUBLIC CAVES ***
20    REM *** WRITTEN BY DAVE KAUFMAN - AUGUST 1973 ***
30    REM *** PEOPLE'S COMPUTER COMPANY, MENLO PARK, CA. ***
40    REM >>> BEFORE RUNNING PCAVES FOR THE FIRST TIME ON YOUR SYSTEM, <<<
50    REM >>> YOU MUST RUN [OPEN] (THE OPENING CEREMONY PROGRAM <<<
100   FILES PCAVE!
110   REM A$ THRU G$ STORE THE SEVEN GRAFFITI LINES FOR THE
120   REM CURRENT CAVERN
130   DIM A$[56],B$[56],C$[56],D$[56],E$[56],F$[56],G$[56]
140   REM N$ IS THE NAME OF THE CURRENT CAVERN AND X$ IS THE NAME
150   REM OF ITS CREATOR
160   DIM N$[56],X$[20]
170   REM THESE ARE TEMPORARIES
180   DIM H$[56],M$[56],S$[56],Y$[20],Z$[72]
182   FOR I=1 TO 56
184   S$[I,I]=" "
186   NEXT I
188   DIM I$[6]
189   I$="123456"
190   REM S AND T ARRAYS ARE THE TUNNEL POINTERS
200   DIM S[6],T[6]
280   B=D=0
290   N1=1
300   PRINT "WELCOME TO ... 'THE PUBLIC CAVES'"
310   PRINT
320   PRINT "WOULD YOU LIKE AN INTRODUCTION (YES OR NO)";
330   INPUT Z$
340   IF Z$[1,1]#"Y" THEN 1000
350   PRINT
360   PRINT "   I SHALL ACT AS YOUR GUIDE THRU 'THE PUBLIC CAVES .'"
370   PRINT "FEEL FREE TO BROWSE THRU THE CAVERNS AND TUNNELS"
380   PRINT "WHICH MAKE UP THE PUBLIC CAVES."
390   PRINT
400   PRINT "   ENJOY THE DELECTABLE WRITINGS ON THE WALLS"
410   PRINT "LEFT BY THOSE WHO'VE COME BEFORE YOU.  ADD YOUR OWN"
420   PRINT "LINES WHENEVER THE CREATIVE URGE STARTS ITCHING."
430   PRINT
440   PRINT "   YOU CAN ALSO CREATE A NEW CAVERN (AND NAME IT Too !)"
450   PRINT "OR ELSE DIG A TUNNEL FROM THE CAVERN YOU FIND YOURSELF"
460   PRINT "IN TO ANY OTHER CAVERN OF YOUR CHOICE."
470   PRINT
480   PRINT "   AFTER BROWSING AWHILE IN EACH CAVERN, READING THE"
490   PRINT "GRAFFITTI AND WHATNOT, I SHALL ASK YOU:"
500   PRINT
510   PRINT "WHAT WOULD YOU LIKE TO DO NEXT?"
520   PRINT
530   PRINT "YOU CAN SAY:"
540   PRINT
550   PRINT "   WRITE   IF YOU WANT TO ADD SEVERAL LINES OF YOUR OWN"
560   PRINT "   MOVE    IF YOU WISH TO MOVE ON TO ANOTHER CAVERN"
570   PRINT "   BUILD   IF YOU WOULD LIKE TO BUILD A NEW CAVERN"
580   PRINT "           (AND AUTOMATICALLY DIG A TUNNEL TO IT)"
590   PRINT "   DIG     IF YOU WANT TO DIG A TUNNEL"
600   PRINT "           (TO AN EXISTING CAVERN)"
610   PRINT "   OUT     IF YOU'VE DECIDED TO LEAVE 'THE PUBLIC CAVES'..."
620   PRINT "           *** IMMEDIATELY ***"
630   PRINT
640   PRINT "   LET'S GO !!!"
1000  PRINT
1010  PRINT
1020  READ #1,N1;N$,T[1],T[2],T[3],T[4],T[5],T[6],X$,A$,B$,C$,
                                               D$,E$,F$,G$
1022  FOR I=LEN(N$) TO 1 STEP -1
1024  IF N$[I,I]#" " THEN 1028
1026  NEXT I
1028  N$=N$[1,I]
1030  PRINT "YOU ARE NOW IN ..."
1035  PRINT "*";N$;"*"
1040  PRINT
1042  FOR I=LEN(X$) TO 1 STEP -1
1044  IF X$[I,I]#" " THEN 1048
1046  NEXT I
1048  X$=X$[1,I]
1050  PRINT "WHICH WAS CREATED BY ";X$
1060  PRINT
1070  REM *** GRAFFITTI ***
1080  IF A$#S$ THEN 1130
1090  L=1
1100  PRINT "THE WALLS ARE EMPTY HERE"
1120  GOTO 1500
1130  PRINT "THIS IS WRITTEN ON THE WALLS:"
1140  PRINT
1150  PRINT A$
1160  IF B$#S$ THEN 1190
1170  L=2
1180  GOTO 1500
1190  PRINT B$
1200  IF C$#S$ THEN 1230
1210  L=3
1220  GOTO 1500
1230  PRINT C$
1240  IF D$#S$ THEN 1270
1250  L=4
1260  GOTO 1500
1270  PRINT D$
1280  IF E$#S$ THEN 1310
1290  L=5
1300  GOTO 1500
1310  PRINT E$
1320  IF F$#S$ THEN 1350
1330  L=6
1340  GOTO 1500
1350  PRINT F$
1360  IF G$#S$ THEN 1390
1370  L=7
1380  GOTO 1500
1390  PRINT G$
1400  L=8
1500  REM *** WHAT NEXT ***
1510  PRINT
1520  PRINT "WHAT WOULD YOU LIKE TO DO NEXT";
1530  INPUT Z$
1540  IF Z$[1,5]="WRITE" THEN 1600
1550  IF Z$[1,4]="MOVE" THEN 2000
1560  IF Z$[1,5]="BUILD" THEN 2200
1570  IF Z$[1,3]="DIG" THEN 2400
1580  IF Z$[1,3]="OUT" THEN 2800
1585  PRINT "I'M SORRY, BUT THE ONLY WORDS I RECOGNIZE ARE"
1590  PRINT "  WRITE, MOVE, BUILD, DIG, OUT"
1595  GOTO 1500
1600  REM *** WRITE ***
1610  PRINT "WRITE A LINE AT A TIME ... WHEN YOU'RE FINISHED,"
1620  PRINT "TYPE THE WORD  END ."
1630  PRINT
1640  FOR I=1 TO 7
1650  GOSUB 3500
1660  IF LEN(Z$)#3 THEN 1680
1670  IF Z$[1,3]#"END" THEN 1680
1675  PRINT #1,N1;N$,T[1],T[2],T[3],T[4],T[5],T[6],X$,A$,B$,C$,
                                               D$,E$,F$,G$
1677  GOTO 1500
1680  IF L <= 7 THEN 1800
1690  A$=B$
```

```
1700   B$=C$
1710   C$=D$
1720   D$=E$
1730   E$=F$
1740   F$=G$
1750   G$=Z$
1760   L=L+1
1770   GOTO 1950
1800   GOTO L OF 1810,1830,1850,1870,1890,1910,1930
1810   A$=Z$
1820   GOTO 1940
1830   B$=Z$
1840   GOTO 1940
1850   C$=Z$
1860   GOTO 1940
1870   D$=Z$
1880   GOTO 1940
1890   E$=Z$
1900   GOTO 1940
1910   F$=Z$
1920   GOTO 1940
1930   G$=Z$
1940   L=L+1
1950   NEXT I
1960   GOTO 1675
2000   REM *** MOVE ***
2020   PRINT "TUNNELS LEAD TO:"
2030   FOR I=1 TO 6
2040   IF T[I]=0 THEN 2080
2050   READ #1,T[I];M$
2060   PRINT I$[I,I];" '";M$;"'"
2070   NEXT I
2080   PRINT
2082   IF I>2 THEN 2090
2084   J=1
2086   GOTO 2120
2090   PRINT "WHICH NUMBER";
2100   INPUT J
2110   IF J<1 OR J>I-1 THEN 2090
2120   N1=T[J]
2130   GOTO 1000
2200   REM *** BUILD ***
2202   IF B=0 THEN 2210
2204   PRINT "ONLY ONE 'BUILD' PER VISIT"
2206   GOTO 1500
2210   GOSUB 3000
2220   IF T=0 THEN 1500
2230   FOR N2=N1+1 TO 50
2240   READ #1,N2;M$,T1
2250   IF T1=0 THEN 2300
2260   NEXT N2
2270   PRINT "THERE'S NO ROCK LEFT IN 'THE PUBLIC CAVES' TO BUILD"
2280   PRINT "NEW CAVERNS."
2290   GOTO 1500
2300   PRINT "WHAT WILL THE NAME OF THE NEW CAVERN BE?"
2310   GOSUB 3500
2315   H$=Z$
2320   PRINT "AND YOUR NAME IS";
2330   INPUT Z$
2332   IF LEN(Z$) <= 20 THEN 2338
2334   PRINT "AW, COME ON - YOUR NAME ISN'T THAT LONG."
2336   PRINT "BESIDES, I CAN ONLY TAKE UP TO 20 LETTERS"
2337   GOTO 2330
2338   Y$=Z$
2340   PRINT "STAND BACK - THE MINERS AND ELECTRICIANS ARE GETTING"
2342   PRINT "TO WORK."
2346   PRINT
2347   PRINT "RUMBLE RUMBLE  DIG DIG  BUZZ BUZZ  FLICKER FLICKER"
2348   PRINT #1,N2;H$,N1,0,0,0,0,0,0,Y$,S$,S$,S$,S$,S$,S$,S$
2350   T[T0]=N2
2360   PRINT #1,N1;N$,T[1],T[2],T[3],T[4],T[5],T[6],X$,A$,B$,C$,
                                       D$,E$,F$,G$
2361   B=1
2362   PRINT
2363   PRINT "   ANOTHER SUCCESSFUL ADDITION TO 'THE PUBLIC CAVES'"
2364   PRINT "YOU CAN 'MOVE' TO YOUR NEW CAVERN NEXT, IF YOU LIKE"
2370   GOTO 1500
2400   REM *** DIG ***
2402   IF D=0 THEN 2410
2404   PRINT "ONLY ONE 'DIG' PER VISIT"
2406   GOTO 1500
2410   GOSUB 3000
2420   IF T=0 THEN 1500
2430   PRINT "THE MINERS ARE STANDING BY FOR DRILLING ..."
2440   PRINT "WHAT IS THE NAME OF THE CAVERN YOU WANT THEM TO DIG TO?"
2450   INPUT Z$
2452   IF LEN(Z$) <= 56 THEN 2458
2454   H$=Z$[1,56]
2456   GOTO 2460
2458   H$=Z$
2460   FOR N2=1 TO 50
2470   READ #1,N2;M$,S[1],S[2],S[3],S[4],S[5],S[6]
2480   IF H$=M$ THEN 2520
2490   IF S[1]=0 THEN 2500
2495   NEXT N2
2500   PRINT "HMM ... CAN'T FIND THAT NAME ON MY LIST"
2502   PRINT "MAYBE YOU LEFT OUT SOME SPACES OR MISSED A LETTER -"
2504   PRINT "I NEED TO HAVE THE NAME EXACTLY AS ITS TYPED OUT"
2510   GOTO 1500
2520   IF N2#N1 THEN 2550
2530   PRINT "HEY - IT WOULD BE SILLY TO CONNECT THIS CAVERN WITH"
2540   GOTO 1500                                   ITSELF!"
2550   FOR S0=1 TO 6
2560   IF S[S0]=0 THEN 2650
2570   NEXT S0
2580   PRINT "JUST CHECKED WITH THE MINERS STANDING BY IN"
2590   PRINT "'";H$;"'"
2600   PRINT "THEY SAY THERE'S ALREADY SIX TUNNELS LEADING OUT"
2610   PRINT "FROM THERE ... ANY MORE TUNNELS AND THERE WON'T BE ANY"
2620   PRINT "SPACE LEFT FOR GRAFFITI!"
2630   GOTO 1500
2650   PRINT "OK - I JUST GAVE THE MINERS THE GO-AHEAD SIGNAL."
2660   PRINT "STAND CLEAR FOR FALLING ROCKS!!!!!!"
2670   PRINT
2680   PRINT "  RUMBLE  RUMBLE  RUMBLE"
2682   T[T0]=N2
2684   PRINT #1,N1;N$,T[1],T[2],T[3],T[4],T[5],T[6],X$,A$,B$,C$,
                                       D$,E$,F$,G$
2686   READ #1,N2;N$,S[1],S[2],S[3],S[4],S[5],S[6],X$,A$,B$,C$,
2687   S[S0]=N1                                D$,E$,F$,G$
2688   PRINT #1,N2;N$,S[1],S[2],S[3],S[4],S[5],S[6],X$,A$,B$,C$,
                                       D$,E$,F$,G$
2689   READ #1,N1;N$,T[1],T[2],T[3],T[4],T[5],T[6],X$,A$,B$,C$,
2690   ENTER 15,T9,Z$                          D$,E$,F$,G$
2692   PRINT
2700   PRINT "        ALL CLEAR"
2705   D=1
2710   GOTO 1500
2800   REM *** OUT ***
2810   PRINT
2820   PRINT "THANKS FOR VISITING 'THE PUBLIC CAVES' WITH ME"
```

```
2830 PRINT
2840 PRINT "BRING YOUR FRIENDS BACK NEXT TIME AND SHOW-THEM AROUND!"
2850 PRINT
2860 CHAIN "CAVESM"
3000 REM *** CHECK # OF TUNNELS ***
3010 FOR T0=1 TO 6
3020 IF T(T0)=0 THEN 3080
3030 NEXT T0
3040 PRINT "THIS CAVERN HAS SIX TUNNELS ALREADY; ANY MORE AND"
3050 PRINT "THERE WON'T BE ROCK LEFT TO WRITE GRAFFITTI ON!"
3060 T=0
3070 RETURN
3080 T=1
3090 RETURN
3500 REM *** INPUT Z$ AND CHECK LEN(Z$) ***
3505 PRINT "?";
3510 ENTER 255,T9,Z$
3512 IF T9<0 THEN 3510
3514 PRINT
3520 IF LEN(Z$) <= 56 THEN 3560
3530 PRINT "I'LL RUN OUT OF CRAYON WITH A LINE THAT LONG."
3540 PRINT "TRY AGAIN"
3550 GOTO 3510
3560 RETURN
9999 END
```

DUMPS   20

Length: 506 words.

```
10  REM *** DUMPS PUBLIC CAVES ***
20  DIM N$[56],X$[20],T[6],A$[56],B$[56],C$[56],D$[56],E$[56],
30  DIM S$[56]                              F$[56],G$[56]
40  FOR S=1 TO 56
50  S$(S,S)=" "
60  NEXT S
70  FILES PCAVE1
80  PRINT "DUMP OF PUBLIC CAVES FOR DAY #";TIM(2);",YEAR 19";TIM(3)
90  FOR N1=1 TO 50
100 READ #1,N1;N$,T[1],T[2],T[3],T[4],T[5],T[6],X$,A$,B$,C$,
110 PRINT                                  D$,E$,F$,G$
120 PRINT "****************"
130 PRINT "*              *"
140 PRINT  USING 150;N1
150 IMAGE "*  CAVERN # ",2D," *"
160 PRINT "*              *"
170 PRINT "****************"
180 PRINT
190 PRINT "THE NAME IS ..."
200 PRINT "'";N$;"'"
210 PRINT
220 PRINT "AND IT WAS CREATED BY ...";X$
230 PRINT
240 IF A$#S$ THEN 270
250 PRINT "THE WALLS ARE EMPTY HERE"
260 GOTO 420
270 PRINT "THIS IS WRITTEN ON THE WALLS:"
280 PRINT
290 PRINT A$
300 IF B$=S$ THEN 420
310 PRINT B$
320 IF C$=S$ THEN 420
330 PRINT C$
340 IF D$=S$ THEN 420
350 PRINT D$
360 IF E$=S$ THEN 420
370 PRINT E$
380 IF F$=S$ THEN 420
390 PRINT F$
400 IF G$=S$ THEN 420
410 PRINT G$
420 PRINT
430 PRINT "TUNNELS LEAD TO ..."
440 PRINT "CAVERN # NAME"
450 FOR T1=1 TO 6
460 IF T[T1]=0 THEN 510
470 READ #1,T[T1];N$
480 PRINT  USING "#,2X,2D,5X";T[T1]
490 PRINT N$
500 NEXT T1
510 NEXT N1
520 PRINT "THAT'S ALL, FOLKS!!!"
530 END
```

DUMPS: This program is useful if you want to get a print out of what has happened in PCAVES after it has been opened to the public for a period of time. DUMPS lists the caverns, their names, who created them, what is written on the walls, and where the tunnels lead.

After you have completed punching a paper tape for each program, use this procedure to save them on the disc.

The **TREE SUBROUTINES** must be appended to make [OPEN] usuable. A file named **PCAVE1** must be opened with space for 50 records.

Procedure:
1. Type   SCR
   Type   NAME-TREE
   Type   TAPE
   Load paper tape **TREE** into tape reader.
   Wait while tape is read in.
   Type   LEN
   Type   SAVE

2. Type   SCR
   Type   NAME-PCAVES
   Type   TAPE
   Load tape **PCAVES** and read in.
   Type   LEN
   Type   SAVE

3. Type   SCR
   Type   NAME-[OPEN]
   Type   TAPE
   Load tape [OPEN] and read in.
   Type   LEN
   Type   APP-TREE
   Type   9999 END
   Type   SAVE

4. Initialize the cave structure.
   Type   OPEN-PCAVE1,50
   Type   GET-[OPEN]
   Type   RUN
   Run [OPEN] only this once. After you have
   set up a few caverns the cave structure will be
   ready for the public.

5. If there have been no errors or errors in the tape,
   you can let anyone play the game now.
   Type   GET-PCAVES
   Type   RUN

WUMPUS

```
10   REM- HUNT THE WUMPUS
20   PRINT "INSTRUCTIONS (Y-N)";
30   INPUT I$
40   IF I$="N" THEN 52
50   GOSUB 1000
52   REM- ANNOUNCE WUMPUSII FOR ALL AFICIONADOS ... ADDED BY DAVE
54   PRINT
56   PRINT "      ATTENTION ALL WUMPUS LOVERS!!!"
58   PRINT "      THERE ARE NOW    ADDITIONS TO THE WUMPUS FAMILY";
60   PRINT " OF PROGRAMS."
62   PRINT
64   PRINT "      WUMP2:  SOME DIFFERENT CAVE ARRANGEMENTS"
66   PRINT "      WUMP3:  DIFFERENT HAZARDS"
67   PRINT "      WUMP4:  HIDE-N-SEEK"
68   REM- SET UP CAVE (DODECAHEDRAL NODE LIST)
70   DIM S[20,3]
80   FOR J=1 TO 20
90   FOR K=1 TO 3
100  READ S[J,K]
110  NEXT K
120  NEXT J
130  DATA 2,5,8,1,3,10,2,4,12,3,5,14,1,4,6
140  DATA 5,7,15,6,8,17,1,7,9,8,13,18,2,9,11
150  DATA 10,12,19,3,11,13,12,14,20,4,13,15,6,14,16
160  DATA 15,17,20,7,16,18,9,17,19,11,18,20,13,16,19
170  DEF FNA(X)=INT(20*RND(0))+1
180  DEF FNB(X)=INT(3*RND(0))+1
190  DEF FNC(X)=INT(4*RND(0))+1
200  REM-LOCATE L ARRAY ITEMS
210  REM-1-YOU,2-WUMPUS,3&4-PITS,5&6-BATS
220  DIM L[6]
230  DIM M[6]
240  FOR J=1 TO 6
250  L[J]=FNA(0)
260  M[J]=L[J]
270  NEXT J
280  REM-CHECK FOR CROSSOVERS (IE L(1)=L(2),ETC)
290  FOR J=1 TO 6
300  FOR K=J TO 6
310  IF J=K THEN 330
320  IF L[J]=L[K] THEN 240
330  NEXT K
340  NEXT J
350  REM-SET# ARROWS
360  A=5
365  L=L[1]
370  REM-RUN THE GAME
375  PRINT "HUNT THE WUMPUS"
380  REM-HAZARD WARNINGS & LOCATION
390  GOSUB 2000
400  REM-MOVE OR SHOOT
410  GOSUB 2500
420  GOTO 0 OF 440,480
430  REM-SHOOT
440  GOSUB 3000
450  IF F=0 THEN 390
460  GOTO 500
470  REM-MOVE
480  GOSUB 4000
490  IF F=0 THEN 390
500  IF F>0 THEN 550
510  REM-LOSE
520  PRINT "HA HA HA - YOU LOSE!"
```

```
530   GOTO 560
540   REM-WIN
550   PRINT "HEE HEE HEE - THE WUMPUS'LL GETCHA NEXT TIME!!"
560   FOR J=1 TO 6
570   L[J]=M[J]
580   NEXT J
590   PRINT "SAME SET-UP (Y-N)";
600   INPUT I$
610   IF I$#"Y" THEN 240
620   GOTO 360
1000  REM-INSTRUCTIONS
1010  PRINT "WELCOME TO 'HUNT THE WUMPUS'"
1020  PRINT " THE WUMPUS LIVES IN A CAVE OF 20 ROOMS. EACH ROOM"
1030  PRINT "HAS 3 TUNNELS LEADING TO OTHER ROOMS. (LOOK AT A"
1040  PRINT "DODECAHEDRON TO SEE HOW THIS WORKS-IF YOU DON'T KNOW"
1050  PRINT "WHAT A DODECAHEDRON IS, ASK SOMEONE)"
1060  PRINT
1070  PRINT "     HAZARDS:"
1080  PRINT " BOTTOMLESS PITS - TWO ROOMS HAVE BOTTOMLESS PITS IN THEM"
1090  PRINT "     IF YOU GO THERE, YOU FALL INTO THE PIT (& LOSE!)"
1100  PRINT " SUPER BATS - TWO OTHER ROOMS HAVE SUPER BATS. IF YOU"
1110  PRINT "        GO THERE, A BAT GRABS YOU AND TAKES YOU TO SOME OTHER"
1120  PRINT "        ROOM AT RANDOM. (WHICH MIGHT BE TROUBLESOME)"
1130  PRINT
1140  PRINT "     WUMPUS:"
1150  PRINT " THE WUMPUS IS NOT BOTHERED BY THE HAZARDS (HE HAS SUCKER"
1160  PRINT " FEET AND IS TOO BIG FOR A BAT TO LIFT). USUALLY"
1170  PRINT " HE IS ASLEEP. TWO THINGS WAKE HIM UP: YOUR ENTERING"
1180  PRINT " HIS ROOM OR YOUR SHOOTING AN ARROW."
1190  PRINT "     IF THE WUMPUS WAKES, HE MOVES (P=.75) ONE ROOM"
1200  PRINT " OR STAYS STILL (P=.25). AFTER THAT, IF HE IS WHERE YOU"
1210  PRINT " ARE, HE EATS YOU UP (& YOU LOSE!)"
1220  PRINT
1230  PRINT "     YOU:"
1240  PRINT " EACH TURN YOU MAY MOVE OR SHOOT A CROOKED ARROW"
1250  PRINT "     MOVING: YOU CAN GO ONE ROOM (THRU ONE TUNNEL)"
1260  PRINT "     ARROWS: YOU HAVE 5 ARROWS. YOU LOSE WHEN YOU RUN OUT."
1270  PRINT "        EACH ARROW CAN GO FROM 1 TO 5 ROOMS. YOU AIM BY TELLING"
1280  PRINT "        THE COMPUTER THE ROOM#S YOU WANT THE ARROW TO GO TO."
1290  PRINT "        IF THE ARROW CAN'T GO THAT WAY(IE NO TUNNEL) IT MOVES"
1300  PRINT "        AT RANDOM TO THE NEXT ROOM."
1310  PRINT "        IF THE ARROW HITS THE WUMPUS, YOU WIN."
1320  PRINT "        IF THE ARROW HITS YOU, YOU LOSE."
1330  PRINT
1340  PRINT "     WARNINGS:"
1350  PRINT "     WHEN YOU ARE ONE ROOM AWAY FROM WUMPUS OR HAZARD,"
1360  PRINT "        THE COMPUTER SAYS:"
1370  PRINT " WUMPUS- 'I SMELL A WUMPUS'"
1380  PRINT " BAT    - 'BATS NEARBY'"
1390  PRINT " PIT    - 'I FEEL A DRAFT'"
1400  PRINT ""
1410  RETURN
2000  REM-PRINT LOCATION & HAZARD WARNINGS
2010  PRINT
2020  FOR J=2 TO 6
2030  FOR K=1 TO 3
2040  IF S[L[1],K]#L[J] THEN 2110
2050  GOTO J-1 OF 2060,2080,2080,2100,2100
2060  PRINT "I SMELL A WUMPUS!"
2070  GOTO 2110
2080  PRINT "I FEEL A DRAFT"
2090  GOTO 2110
2100  PRINT "BATS NEARBY!"
2110  NEXT K
2120  NEXT J
2130  PRINT "YOU ARE IN ROOM "L[1]
2140  PRINT "TUNNELS LEAD TO "S[L,1];S[L,2];S[L,3]
2150  PRINT
2160  RETURN

2500  REM-CHOOSE OPTION
2510  PRINT "SHOOT OR MOVE (S-M)";
2520  INPUT I$
2530  IF I$#"S" THEN 2560
2540  O=1
2550  RETURN
2560  IF I$#"M" THEN 2510
2570  O=2
2580  RETURN
3000  REM-ARROW ROUTINE
3010  F=0
3020  REM-PATH OF ARROW
3030  DIM P[5]
3040  PRINT "NO. OF ROOMS(1-5)";
3050  INPUT J9
3060  IF J9<1 OR J9>5 THEN 3040
3070  FOR K=1 TO J9
3080  PRINT "ROOM #";
3090  INPUT P[K]
3095  IF K <= 2 THEN 3115
3100  IF P[K] <> P[K-2] THEN 3115
3105  PRINT "ARROWS AREN'T THAT CROOKED - TRY ANOTHER ROOM"
3110  GOTO 3080
3115  NEXT K
3120  REM-SHOOT ARROW
3130  L=L[1]
3140  FOR K=1 TO J9
3150  FOR K1=1 TO 3
3160  IF S[L,K1]=P[K] THEN 3295
3170  NEXT K1
3180  REM-NO TUNNEL FOR ARROW
3190  L=S[L,FN3(1)]
3200  GOTO 3300
3210  NEXT K
3220  PRINT "MISSED"
3225  L=L[1]
3230  REM-MOVE WUMPUS
3240  GOSUB 3370
3250  REM-AMMO CHECK
3255  A=A-1
3260  IF A>0 THEN 3280
3270  F=-1
3280  RETURN
3290  REM-SEE IF ARROW IS AT L(1) OR L(2)
3295  L=P[K]
3300  IF L#L[2] THEN 3340
3310  PRINT "AHA! YOU GOT THE WUMPUS!"
3320  F=1
3330  RETURN
3340  IF L#L[1] THEN 3210
3350  PRINT "OUCH! ARROW GOT YOU!"
3360  GOTO 3270
3370  REM-MOVE WUMPUS ROUTINE
3380  K=FNC(0)
3390  IF K=4 THEN 3410
3400  L[2]=S[L[2],K]
3410  IF L[2]#L THEN 3440
3420  PRINT "TSK TSK TSK- WUMPUS GOT YOU!"
3430  F=-1
3440  RETURN
4000  REM- MOVE ROUTINE
4010  F=0
4020  PRINT "WHERE TO";
4030  INPUT L
4040  IF L<1 OR L>20 THEN 4020
4050  FOR K=1 TO 3
4060  REM- CHECK IF LEGAL MOVE
4070  IF S[L[1],K]=L THEN 4130
4080  NEXT K
```

```
4090   IF L=L[1] THEN 4130
4100   PRINT "NOT POSSIBLE -";
4110   GOTO 4020
4120   REM-CHECK FOR HAZARDS
4130   L[1]=L
4140   REM-WUMPUS
4150   IF L#L[2] THEN 4220
4160   PRINT "... OOPS! BUMPED A WUMPUS!"
4170   REM-MOVE WUMPUS
4180   GOSUB 3380
4190   IF F=0 THEN 4220
4200   RETURN
4210   REM-PIT
4220   IF L#L[3] AND L#L[4] THEN 4270
4230   PRINT "YYYIIIIEEEE . . . FELL IN PIT"
4240   F=-1
4250   RETURN
4260   REM-BATS
4270   IF L#L[5] AND L#L[6] THEN 4310
4280   PRINT "ZAP--SUPER BAT SNATCH! ELSEWHEREVILLE FOR YOU!"
4290   L=FNA(1)
4300   GOTO 4130
4310   RETURN
5000   END
```

WUMP3   SUPER WUMPUS

Length: 2529 words.

```
10    REM- HUNT THE WUMPUS
20    PRINT "INSTRUCTIONS (Y-N)";
30    INPUT I$
40    IF I$="N" THEN 68
50    GOSUB 1000
68    REM- SET UP CAVE (DODECAHEDRAL NODE LIST)
70    DIM S[20,3]
80    FOR J=1 TO 20
90    FOR K=1 TO 3
100   READ S[J,K]
110   NEXT K
120   NEXT J
130   DATA 2,5,8,1,3,10,2,4,12,3,5,14,1,4,6
140   DATA 5,7,15,6,8,17,1,7,9,8,10,18,2,9,11
150   DATA 10,12,19,3,11,13,12,14,20,4,13,15,6,14,16
160   DATA 15,17,20,7,16,18,9,17,19,11,18,20,13,16,19
170   DEF FNA(X)=INT(20*RND(0))+1
180   DEF FNB(X)=INT(3*RND(0))+1
190   DEF FNC(X)=INT(4*RND(0))+1
195   DEF FND(X)=INT(12*RND(0))+1
200   REM-LOCATE L ARRAY ITEMS
205   REM-H IS THE NUMBER OF 'RESIDENTS'
210   H=7
215   REM-1-YOU,2-WUMPUS,3&4-PITS,5&6-BATS,7-TUMAERO
220   DIM L[7]
230   DIM M[7]
240   FOR J=1 TO H
250   L[J]=FNA(0)
260   M[J]=L[J]
270   NEXT J
280   REM-CHECK FOR CROSSOVERS (IE L[1]=L[2],ETC)
290   FOR J=1 TO H
300   FOR K=J TO H
310   IF J=K THEN 330
320   IF L[J]=L[K] THEN 240
330   NEXT K
340   NEXT J
350   REM-SET# ARROWS
355   A=5
```

```
360   L=L[1]
365   REM-RUN THE GAME
370   PRINT "HUNT THE WUMPUS"
375   REM-CHECK 'UNUSUAL' CONDITIONS
380   GOSUB 1800
385   GOSUB 4130
390   GOTO F+2 OF 520,400,550
395   REM-HAZARD WARNINGS & LOCATION
400   GOSUB 2000
405   REM-MOVE OR SHOOT
410   GOSUB 2500
420   GOTO 0 OF 440,480
430   REM-SHOOT
440   GOSUB 3000
450   GOTO 490
470   REM-MOVE
480   GOSUB 4000
490   GOTO F+2 OF 520,380,550
510   REM-LOSE
520   PRINT "HA HA HA - YOU LOSE!"
530   GOTO 560
540   REM-WIN
550   PRINT "HEE HEE HEE - THE WUMPUS'LL GETCHA NEXT TIME!!"
560   FOR J=1 TO 6
570   L[J]=M[J]
580   NEXT J
590   PRINT "SAME SET-UP (Y-N)";
600   INPUT I$
610   IF I$="Y" THEN 240
620   GOTO 355
1000  REM-INSTRUCTIONS
1005  PRINT
1010  PRINT "THIS VERSION (WUMP3) OF 'HUNT THE WUMPUS' IS PLAYED"
1020  PRINT "LIKE THE 'NORMAL' VERSION WITH A FEW (CHUCKLE) ADDITIONS"
1030  PRINT
1040  PRINT "TUMAERO (ANAEROBIC TERMITE) SWARM:  EATS CROOKED ARROWS,"
1050  PRINT TAB(10);"ONE ARROW EACH TIME YOU ENTER ITS ROOM."
1060  PRINT "WARNING:  'MY ARROWS ARE QUIVERING' WHEN YOU ARE ";
1070  PRINT "ONE ROOM AWAY."
1080  PRINT
1090  PRINT "HAZARDS CAN MOVE!!!"
1100  PRINT TAB(5);"WUMPUS   - THE WUMPUS SLEEP-WALKS"
1110  PRINT TAB(5);"PITS     - EARTHQUAKES CLOSE THE OLD PITS AND";
1120  PRINT " FORM NEW ONES"
1130  PRINT TAB(5);"BATS     - BAT MIGRATION"
1140  PRINT TAB(5);"TUMAEROS - THE TUMAEROS SWARM IN SEARCH OF FOOD"
1150  PRINT
1160  PRINT "GOOD LUCK!"
1170  PRINT
1180  RETURN
1795  REM-SLEEP-WALKING, EARTHQUAKES, AND BAT MIGRATION
1800  PRINT
1805  IF FND(0)>1 THEN 1820
1810  PRINT "DON'T BLINK NOW, BUT I HEAR THE WUMPUS SLEEP-WALKING!!"
1815  L[2]=FNA(0)
1820  IF FND(0)>1 THEN 1850
1825  PRINT "RUMBLE, RUMBLE - YOU'RE STANDING ON SHAKY GROUND . . ."
1830  PRINT TAB(5);"NEW PITS HAVE BEEN FORMED BY THE EARTHQUAKE!!"
1835  L[3]=FNA(0)
1840  L[4]=FNA(0)
1845  IF L[4]=L[3] THEN 1840
1850  IF FND(0)>1 THEN 1875
1855  PRINT "WHAT A FLAP YOU'RE IN . . . IT'S BAT MIGRATION TIME!!"
1860  L[5]=FNA(0)
1865  L[6]=FNA(0)
1870  IF L[6]=L[5] THEN 1865
1875  IF FND(0)>1 THEN 1890
1880  PRINT "BUZZ, BUZZ - THE TUMAEROS ARE SWARMING"
1885  L[7]=FNA(0)
```

```
1890    RETURN
2000    REM-PRINT LOCATION & HAZARD WARNINGS
2010    PRINT
2020    FOR J=2 TO H
2030    FOR K=1 TO 3
2040    IF S[L[1],K]#ABS(L[J]) THEN 2110
2045    GOTO J-1 OF 2050,2060,2060,2070,2070,2080
2050    PRINT "I SMELL A WUMPUS!"
2055    GOTO 2110
2060    PRINT "I FEEL A DRAFT"
2065    GOTO 2110
2070    PRINT "BATS NEARBY!"
2075    GOTO 2110
2080    PRINT "MY ARROWS ARE QUIVERING"
2110    NEXT K
2120    NEXT J
2125    L=L[1]
2130    PRINT "YOU ARE IN ROOM "L[1]
2140    PRINT "TUNNELS LEAD TO "S[L,1];S[L,2];S[L,3]
2150    PRINT
2160    RETURN
2500    REM-CHOOSE OPTION
2510    PRINT "SHOOT OR MOVE (S-M)";
2520    INPUT I$
2530    IF I$#"S" THEN 2560
2540    O=1
2550    RETURN
2560    IF I$#"M" THEN 2510
2570    O=2
2580    RETURN .
3000    REM-ARROW ROUTINE
3010    F=0
3020    REM-PATH OF ARROW
3030    DIM P[5]
3040    PRINT "NO. OF ROOMS(1-5)";
3050    INPUT J9
3060    IF J9<1 OR J9>5 THEN 3040
3070    FOR K=1 TO J9
3080    PRINT "ROOM #";
3090    INPUT P[K]
3095    IF K <= 2 THEN 3115
3100    IF P[K] <> P[K-2] THEN 3115
3105    PRINT "ARROWS AREN'T THAT CROOKED - TRY ANOTHER ROOM"
3110    GOTO 3080
3115    NEXT K
3120    REM-SHOOT ARROW
3130    L=L[1]
3140    FOR K=1 TO J9
3150    FOR K1=1 TO 3
3160    IF S[L,K1]=P[K] THEN 3295
3170    NEXT K1
3180    REM-NO TUNNEL FOR ARROW
3190    L=S[L,FNB(1)]
3200    GOTO 3300
3210    NEXT K
3220    PRINT "MISSED"
3230    REM-MOVE WUMPUS
3240    GOSUB 3370
3250    REM-AMMO CHECK
3255    A=A-1
3260    IF A>0 THEN 3280
3270    F=-1
3280    RETURN
3290    REM-SEE IF ARROW IS AT L(1) OR L(2)
3295    L=P[K]
3300    IF L#L[2] THEN 3340
3310    PRINT "AHA! YOU GOT THE WUMPUS!"
3320    F=1
3330    RETURN
3340    IF L#L[1] THEN 3210
3350    PRINT "OUCH! ARROW GOT YOU!"
3360    GOTO 3270
3370    REM-MOVE WUMPUS ROUTINE
3380    K=FNC(0)
3390    IF K=4 THEN 3410
3400    L[2]=S[L[2],K]
3410    IF L[2]#L THEN 3440
3420    PRINT "TSK TSK TSK- WUMPUS GOT YOU!"
3430    F=-1
3440    RETURN
4000    REM- MOVE ROUTINE
4020    PRINT "WHERE TO";
4030    INPUT L
4040    IF L<1 OR L>20 THEN 4020
4050    FOR K=1 TO 3
4060    REM- CHECK IF LEGAL MOVE
4070    IF S[L[1],K]=L THEN 4130
4080    NEXT K
4090    IF L=L[1] THEN 4150
4100    PRINT "NOT POSSIBLE -";
4110    GOTO 4020
4120    REM-CHECK FOR HAZARDS
4130    L[1]=L
4135    F=0
4140    REM-WUMPUS
4150    IF L#L[2] THEN 4220
4160    PRINT "... OOPS! BUMPED A WUMPUS!"
4170    REM-MOVE WUMPUS
4180    GOSUB 3380
4190    IF F=0 THEN 4220
4200    RETURN
4210    REM-PIT
4220    IF L#L[3] AND L#L[4] THEN 4270
4230    PRINT "YYYIIIIEEEE . . . FELL IN PIT"
4240    F=-1
4250    RETURN
4260    REM-BATS
4270    IF L#L[5] AND L#L[6] THEN 4310
4280    PRINT "ZAP--SUPER BAT SNATCH! ELSEWHEREVILLE FOR YOU!"
4290    L=FNA(1)
4300    GOTO 4130
4310    IF L#ABS(L[7]) THEN 4360
4320    IF L[7]<0 THEN 4350
4330    PRINT "CHOMP, CHOMP - THAT WAS A TASTY ARROW"
4340    GOSUB 3255
4350    L[7]=-L[7]
4360    RETURN
5000    END
```

```
TRADE*

10   COM S[12,15],T[12,12],T$[72],B[3,12]
20   COM W,D9,K9,X9,D1,X1,P9,T9,S9,Y9,H
30   COM Y1,R9,G9,Q,M[6,3],C[6,3]
35   COM S1,T1,R
40   REM *** STAR TRADERS ***
50   REM MAIN MODULE
120  REM SET UP CALENDAR AND STAR SYSTEM NAMES
130  DIM C$[36],S$[60]
140  LET C$="JANFEBMARAPRMIYJUNJULAUGSEPOCTNOVDEC"
150  LET S$="SOL YORKBOYDIVANREEFHOOKSTANTASKSINKSANDQUINGAOLKIRK"
160  LET S$[53]="KRISFATE"
170  REM S IS THE STAR SYSTEM INFO ARRAY
180  REM T IS THE TRADING SHIP INFO ARRAY
190  REM T$ IS THE TRADING SHIP NAME STRING (6 CHARS PER SHIP)
200  REM P CONTAINS THE FAIR PRICES ON THE LOCAL PLANET
210  REM Q HAS THE FIXED PRICES
220  REM B CONTAINS THE BANK ACCOUNTS
230  DIM P[6],Q[6]
240  DIM A$[6],D$[5],N$[36],G[6]
250  RESTORE 270
260  MAT READ Q
270  DATA 5000,3500,4000,4500,3000,3000
280  LET N$="  UR    MET    HE    MED    SOFT  GEMS"
290  REM FNZ COMPUTES THE PRICE WINDOW THROUGH WHICH A BID IS
300  REM ACCEPTABLE FOR FURTHER HAGGLING
310  DEF FNZ(X)=(FNY(X)*.5+( NOT FNY(X))*X/(2*ABS(S[I1,S1])))/K1
320  DEF FNY(X)=X >= ABS(S[I1,S1])
330  REM R9 IS THE SPEED OF A SHIP IN LIGHTYEARS PER DAY
340  REM D9 IS THE MINIMUM DISTANCE ALLOWED BETWEEN STARS
350  REM Q IS THE PROBABILITY OF A DELAY
360  REM K9 IS THE MAX NUMBER OF BIDDING ROUNDS
370  REM W IS THE MAX WEIGHT OF A TRADING SHIP'S CARGO
380  REM X9 CONTROLS THE PROFIT MARGIN; HIGH X9 LIMITS THE %
390  REM G9 IS THE STELLAR DEVELOPEMENT # INCREMENT 1<=G9<=5
400  REM *** BLOCK #5
402  IF R=0 THEN 410
404  GOSUB 3860
406  GOTO 2040
410  GOSUB 5190
420  GOSUB 3190
430  S1=T1=L1=1
440  PRINT
450  PRINT "ALL SHIPS START AT SOL"
460  PRINT "ADVICE; VISIT THE CLASS III AND IV SYSTEMS -"
470  PRINT "SOL AND THE CLASS II STARS PRODUCE ALOT OF HE,MED
     AND"
480  PRINT "SOFT, WHICH THE POORER STAR SYSTEMS (CLASS III AND"
490  PRINT "IV) NEED.  ALSO, THE POOR STARS PRODUCE THE RAW GOODS -"
500  PRINT "UR,MET,GEMS THAT YOU CAN BRING BACK TO SOL AND"
510  PRINT "THE CLASS II SYSTEMS IN TRADE"
520  PRINT
530  PRINT "STUDY THE MAP AND CURRENT PRICE CHARTS CAREFULLY -"
540  PRINT "CLASS I AND II STARS MAKE EXCELLENT TRADING PARTNERS"
550  PRINT "WITH CLASS III OR IV STARS."
560  FOR I1=1 TO T9/P9
570  FOR P1=1 TO P9
580  PRINT
590  PRINT "PLAYER";P1;",WHICH. STAR WILL ";T$[L1,L1+5];"TRAVEL TO";
600  GOSUB 2770
610  L1=L1+6
620  T1=T1+1
630  NEXT P1
640  NEXT I1
650  REM *** BLOCK #6
660  D=T[9,1]
670  Y=T[10,1]
680  T1=1
690  FOR I=2 TO T9
700  IF T[10,I]<Y THEN 740
710  IF T[10,I]>Y THEN 770
720  IF T[9,I]>D THEN 770
730  IF T[9,I]=D AND RND(0)>.5 THEN 770
740  D=T[9,I]
750  Y=T[10,I]
760  T1=I
770  NEXT I
780  IF Y1=Y THEN 900
790  D1=1
800  Y1=Y
810  T2=T1
820  GOSUB 3190
822  IF Y1 <> 2071 THEN 830
824  GOSUB 4500
826  PRINT "THE LAST YEAR OF THIS GAME IS ";Y9;"BUT IF YOU"
828  PRINT "WANT TO QUIT BEFORE THEN, YOU CAN TYPE 'SAVE' AS"
829  PRINT "YOUR NEXT PORT OF CALL - THIS WILL PUNCH A TAPE"
830  PRINT "SO YOU CAN CONTINUE THE GAME LATER"
831  T1=T2
840  IF Y1<Y9 THEN 900
850  GOSUB 4500
860  PRINT "NEW GAME";
870  INPUT A$
880  IF A$[1,1]="N" THEN 5500
890  CHAIN "TRADER"
900  D1=D
910  M=INT((D1-1)/30)
920  L=3*M+1
930  PRINT
940  PRINT
950  PRINT "*****************"
960  PRINT "* ";C$[L,L+2];D1-30*M;",";Y1
970  L=(T1-1)*6+1
980  S1=T[8,T1]
990  M=S[8,S1]
1000 PRINT "* ";T$[L,L+5];" HAS LANDED ON ";S$[M,M+3]
1010 GOTO T[12,T1]+1 OF 1080,1060,1040,1020
1020 PRINT "3 WEEKS LATE - PIRATES ATTACKED MIDVOYAGE"
1030 GOTO 1080
1040 PRINT "2 WEEKS LATE - 'WE GOT LOST.SORRY'"
1050 GOTO 1080
1060 PRINT "1 WEEK LATE - 'OUR COMPUTER MADE A MISTAKE'"
1070 REM *** PRINT CARGO STATUS FOR CURRENT SHIP
1080 PRINT
1090 PRINT "$ ON BOARD";N$;" NET WT"
1100 PRINT USING 1110;T[11,T1],T[1,T1],T[2,T1],T[3,T1],T[4,T1],T[5,T1],
     T[6,T1],T[7,T1]
1110 IMAGE DDXDDDXDDD,7(4X,2D)
1120 REM *** BLOCK #7
1130 GOSUB 3870
1140 PRINT
1150 PRINT "WE ARE BUYING:"
1160 J1=1
1170 FOR I1=1 TO 6
1180 IF S[I1,S1] >= 0 OR T[I1,T1]<.5 THEN 1480
1190 PRINT TAB(5);N$[J1,J1+5];" WE NEED ";-INT(S[I1,S1]);" UNITS.";
1200 PRINT "HOW MANY ARE YOU SELLING";
1210 GOSUB 4430
1220 IF X=0 THEN 1480
1230 IF X <= T[I1,T1] THEN 1270
1240 PRINT TAB(5);"YOU ONLY HAVE ";T[I1,T1];" UNITS IN YOUR HOLD"
1250 PRINT TAB(5);
```

```
1260    GOTO 1200
1270    IF X <= 2*-INT(S[I1,S1]) THEN 1300
1280    X=2*-INT(S[I1,S1])
1290    PRINT TAB(5)"WE'LL BID ON ";X;" UNITS."
1300    FOR K1=1 TO K9
1310    IF K1#K9 MAX 2 THEN 1340
1320    PRINT TAB(5)"OUR FINAL OFFER:";
1330    GOTO 1350
1340    PRINT TAB(5)"WE OFFER ";
1350    PRINT 100*INT(.009*P[I1]*X+.5)" WHAT DO YOU BID";
1360    INPUT Y
1370    IF Y <= P[I1]*X THEN 1430
1380    IF Y>(1+FNZ(X))*P[I1]*X THEN 1410
1390    P[I1]=.8*P[I1]+.2*Y/X
1400    NEXT K1
1410    PRINT TAB(5)"WE'LL PASS THIS ONE"
1420    GOTO 1480
1430    PRINT TAB(5)"WE'LL BUY!"
1440    T[I1,T1]=T[I1,T1]-X
1450    T[7,T1]=T[7,T1]-X*(I1<5)
1460    T[I1,T1]=T[I1,T1]+Y
1470    S[I1,S1]=S[I1,S1]+X
1480    J1=J1+6
1490    NEXT I1
1500    PRINT
1510    REM *** BLOCK #8
1520    PRINT "WE ARE SELLING:"
1530    J1=1
1540    FOR I1=1 TO 6
1550    IF G[I1] <= 0 OR S[I1,S1]<1 THEN 1960
1560    PRINT TAB(5)NS[J1,J1+5]" UP TO "INT(S[I1,S1])" UNITS.";
1570    PRINT "HOW MANY ARE YOU BUYING";
1580    GOSUB 4430
1590    IF X=0 THEN 1960
1600    IF I1>4 OR X+T[7,T1] <= W THEN 1660
1610    PRINT TAB(5)"YOU HAVE "T[7,T1]" TONS ABOARD, SO "X;
1620    PRINT " TONS PUTS YOU OVER"
1630    PRINT TAB(5)"THE ";W;" TON LIMIT."
1640    PRINT. TAB(5);
1650    GOTO 1570
1660    IF X <= S[I1,S1] THEN 1700
1670    PRINT TAB(5)"WE ONLY HAVE "INT(S[I1,S1])" UNITS"
1680    PRINT TAB(5);
1690    GOTO 1570
1700    FOR K1=1 TO K9
1710    IF K1#K9 MAX 2 THEN 1740
1720    PRINT TAB(5)"OUR FINAL OFFER:";
1730    GOTO 1750
1740    PRINT TAB(5)"WE WANT ABOUT ";
1750    PRINT 100*INT(.011*P[I1]*X+.5);
1760    PRINT "YOUR OFFER";
1770    INPUT Y
1780    IF Y >= P[I1]*X THEN 1840
1790    IF Y<(1-FNZ(X))*P[I1]*X THEN 1820
1800    P[I1]=.8*P[I1]+.2*Y/X
1810    NEXT K1
1820    PRINT TAB(5)"THAT'S TOO LOW"
1830    GOTO 1960
1840    IF Y <= T[11,T1] THEN 1910
1850    PRINT TAB(5)"YOU BID $";Y;" BUT YOU HAVE ONLY $";T[11,T1]
1860    GOSUB 4310
1870    IF S[7,S1]<10 OR T[11,T1]+B[1,B1]<Y THEN 1820
1880    PRINT TAB(5);
1890    GOSUB 4020
1900    IF Y>T[11,T1] THEN 1820
1910    PRINT TAB(5)"SOLD!"
1920    T[I1,T1]=T[I1,T1]+X
1930    T[7,T1]=T[7,T1]+X*(I1<5)
1940    S[I1,S1]=S[I1,S1]-X
1950    T[11,T1]=T[11,T1]-Y

1960    J1=J1+6
1970    NEXT I1
1980    REM *** BLOCK #9
1990    GOSUB 4310
2000    IF S[7,S1]<10 OR T[11,T1]+B[1,B1]=0 THEN 2040
2010    PRINT
2020    GOSUB 4020
2030    PRINT
2040    PRINT "WHAT IS YOUR NEXT PORT OF CALL";
2050    GOSUB 2770
2060    REM *** BLOCK #10.1
2070    J=0
2080    FOR I=1 TO 6
2090    IF S[I,S1] >= 0 THEN 2120
2100    IF S[I,S1]<G[I] THEN 660
2110    J=J+1
2120    NEXT I
2130    IF J>1 THEN 660
2140    REM *** BLOCK #10.2
2150    S[7,S1]=S[7,S1]+G9
2160    IF S[7,S1]/5#INT(S[7,S1]/5) THEN 2220
2170    GOSUB 4580
2180    GOSUB 4500
2190    PRINT "STAR SYSTEM "S$[S[8,S1],S[8,S1]+3]" IS NOW A CLASS ";
2200    PRINT D$;" SYSTEM"
2210    REM *** BLOCK #10.3
2220    IF S9=15 THEN 660
2230    J=0
2240    FOR I=1 TO S9
2250    J=J+S[7,I]
2260    NEXT I
2270    IF J/S9<10 THEN 660
2280    REM A NEW STAR IS BORN!
2290    S1=S9=S9+1
2300    GOSUB 4680
2310    GOSUB 2450
2320    S[9,S1]=D1
2330    S[10,S1]=Y1
2340    FOR J=1 TO 6
2350    S[J,S1]=0
2360    NEXT J
2370    GOSUB 4500
2380    PRINT "A NEW STAR SYSTEM HAS BEEN DISCOVERED!  IT IS A CLASS IV"
2390    PRINT "AND ITS NAME IS"S$[S[8,S1],S[8,S1]+3]
2400    GOSUB 5190
2410    GOTO 660
2420    STOP
2430    REM *** GOSUBS FOLLOW ***
2440    REM <FRONTIER> GOSUB
2450    X=(RND(0)-.5)*100
2460    Y=50*RND(0)
2470    IF (ABS(X)<25) AND (Y<25) THEN 2450
2480    F=1
2490    GOSUB 2550
2500    IF F=0 THEN 2450
2510    S[7,S1]=0
2520    RETURN
2530    REM *** <TEST STAR CO-ORDS> GOSUB
2540    REM FIRST CONVERT CO-ORDS TO NEXT HALF-BOARD
2550    GOTO H OF 2660,2620,2600,2560
2560    Z=X
2570    X=-Y
2580    Y=Z
2590    GOTO 2660
2600    Y=-Y
2610    GOTO 2660
2620    Z=X
2630    X=Y
2640    Y=Z
```

```
2650    REM SECOND TEST PROXIMITY
2660    FOR J=1 TO S1-1
2670    IF SQR((X-S[11,J])+2+(Y-S[12,J])+2) >= D9 THEN 2700
2680    F=0
2690    RETURN
2700    NEXT J
2710    REM FINALLY ENTER CO-ORDS AND INCREMENT HALF-BOARD COUNTER
2720    S[11,S1]=INT(X)
2730    S[12,S1]=INT(Y)
2740    H=1+(H <= 3)*H
2750    RETURN
2760    REM *** <NEXT ETA> GOSUB
2770    INPUT A$
2780    FOR I=1 TO S9
2790    J=S[8,I]
2800    IF A$[1,4]=S$[J,J+3] THEN 2870
2810    NEXT I
2820    IF A$[1,4] <> "SAVE" THEN 2840
2830    GOSUB 4770
2840    PRINT "'"JA$[1,4]J"'"J" IS NOT A STAR NAMEJ"J
2850    PRINT "NEXT STAR"J
2860    GOTO 2770
2870    T[8,T1]=I
2880    IF I#S1 THEN 2910
2890    PRINT "CHOOSE A DIFFERENT STAR SYSTEM TO VISIT"
2900    GOTO 2850
2910    D2=SQR((S[11,S1]-S[11,I])+2+(S[12,S1]-S[12,I])+2)/R9
2920    D2=INT(D2)
2930    IF RND(0)>Q/2 THEN 3030
2940    I=1+INT(RND(0)*3)
2950    GOTO I OF 3000,2980,2960
2960    PRINT "SHIP DOES NOT PASS INSPECTION"J
2970    GOTO 3010
2980    PRINT "CREWMEN DEMAND A VACATION"J
2990    GOTO 3010
3000    PRINT "LOCAL HOLIDAY SOON"J
3010    PRINT " - "JIJ" WEEK DELAY,"
3020    D2=D2+7*I
3030    T[9,T1]=T[9,T1]+D2
3040    IF T[9,T1] <= 360 THEN 3070
3050    T[9,T1]=T[9,T1]-360
3060    T[10,T1]=T[10,T1]+1
3070    M=INT((T[9,T1]-1)/30)
3080    L=3*M+1
3090    PRINT "THE ETA AT "JS$[J,J+3]J" IS "JC$[L,L+2]J" "JT[9,T1]-30*MJ",
        T[10,T1]
3100    REM UPDATE ETA PLUS RANOM DELAY FACTOR (0,1,2 OR 3 WEEKS)
3110    I=(INT(RND(0)*3)+1)*(RND(0)>Q/2)
3120    T[9,T1]=T[9,T1]+7*I
3130    IF T[9,T1] <= 360 THEN 3160
3140    T[9,T1]=T[9,T1]-360
3150    T[10,T1]=T[10,T1]+1
3160    T[12,T1]=I
3170    RETURN
3180    REM *** <REPORT> GOSUB
3190    GOSUB 4500
3200    PRINT TAB(10)J"JAN  1, "JY1JTAB(35)J"YEARLY REPORT #"JY1-2069
3210    PRINT
3220    PRINT
3230    IF Y1>2070 THEN 3450
3240    PRINT "STAR SYSTEM CLASSES:"
3250    PRINT "   I   COSMOPOLITAN"
3260    PRINT "   II  DEVELOPED"
3270    PRINT "   III UNDERDEVELOPED"
3280    PRINT "   IV  FRONTIER"
3290    PRINT
3300    PRINT
3310    PRINT "MERCHANDISE:"
3320    PRINT "  UR  URANIUM"
3330    PRINT "  MET METALS"
3340    PRINT "  HE  HEAVY EQUIPMENT"
3350    PRINT "  MED MEDICINE"
3360    PRINT "  SOFT  COMPUTER SOFTWARE"
3370    PRINT "  GEMS  STAR GEMS"
3380    PRINT
3390    PRINT
3400    PRINT TAB(5)J"EACH TRADING SHIP CAN CARRY MAX "JWJ" TONS CARGO."
3410    PRINT "STAR GEMS AND COMPUTER SOFTWARE, WHICH AREN'T SOLD BY THE'
3420    PRINT "TON, DON'T COUNT."
3430    PRINT
3440    PRINT
3450    PRINT TAB(20)J"CURRENT PRICES"
3460    PRINT
3470    PRINT
3480    PRINT "NAME  CLASS"JN$
3490    PRINT
3500    FOR S1=1 TO S9
3510    GOSUB 3870
3520    FOR I=1 TO 6
3530    P[I]=SGN(S[I,S1])*P[I]
3540    NEXT I
3550    GOSUB 4580
3560    PRINT USING "#,4A,2X"JS$[S[8,S1],S[8,S1]+3]
3570    PRINT USING "5A,6(S5D)"JD$,P[1],P[2],P[3],P[4],P[5],P[6]
3580    IF S1/2 <> INT(S1/2) THEN 3600
3590    PRINT
3600    NEXT S1
3610    PRINT
3620    PRINT "('+' MEANS SELLING AND '-' MEANS BUYING)"
3630    PRINT
3640    PRINT
3650    PRINT TAB(22)J"CAPTAINS"
3660    PRINT
3670    PRINT
3680    PRINT "NUMBER  $ ON SHIPS    $ IN BANK     CARGOES      TOTALS"
3690    FOR B1=1 TO P9
3700    GOSUB 4380
3710    NEXT B1
3720    FOR P1=1 TO P9
3730    PRINT
3740    M1=M2=0
3750    FOR I1=0 TO T9/P9-1
3760    M1=M1+T[11,P9*I1+P1]
3770    FOR K=1 TO 6
3780    M2=M2+T[K,P9*I1+P1]*Q[K]
3790    NEXT K
3800    NEXT I1
3810    M3=M2+M1+B[1,P1]
3820    PRINT USING 3830JP1,M1,B[1,P1],M2,M3
3830    IMAGE 2X,2D,2X,4(2X,DDXDDDXDDD)
3840    NEXT P1
3850    RETURN
3860    REM *** <PRICES> GOSUB
3870    R1=1+(S[7,S1] >= 5)+(S[7,S1] >= 10)
3880    D2=12*(Y1-S[10,S1])+(D1-S[9,S1])/30
3890    FOR I=1 TO 6
3900    G[I]=(1+S[7,S1]/15)*(M[I,R1]*S[7,S1]+C[I,R1])
3910    IF ABS(G[I])>.01 THEN 3940
3920    P[I]=0
3930    GOTO 3970
3940    S[I,S1]=SGN(G[I])*(ABS(G[I]*12) MIN ABS(S[I,S1]+D2*G[I]))
3950    P[I]=Q[I]*(1-SGN(S[I,S1])*ABS(S[I,S1]/(G[I]*X9)))
3960    P[I]=100*INT(P[I]/100+.5)
3970    NEXT I
3980    S[9,S1]=D1
3990    S[10,S1]=Y1
4000    RETURN
4010    REM *** <BANK CALL> GOSUB
4020    PRINT "DO YOU WISH TO VISIT THE LOCAL BANK"J
4030    INPUT A$
```

```
4040    IF A$[1,1]="Y" THEN 4060
4050    RETURN
4060    GOSUB 4310
4070    GOSUB 4380
4080    PRINT TAB(5);"YOU HAVE ";B[1,B1];" DOLLARS IN THE BANK"
4090    IF B[1,B1]=0 THEN 4190
4100    PRINT TAB(5);"HOW MUCH DO YOU WISH TO WITHDRAW";
4110    INPUT Z
4120    IF Z <= B[1,B1] THEN 4150
4130    PRINT TAB(5);"TOO MUCH; ";
4140    GOTO 4100
4150    IF Z <= 0 THEN 4190
4160    B[1,B1]=B[1,B1]-Z
4170    T[11,T1]=T[11,T1]+Z
4180    RETURN
4190    PRINT TAB(5);"HOW MUCH DO YOU WISH TO DEPOSIT";
4200    INPUT Z
4210    IF Z >= 0 THEN 4240
4220    PRINT "YOU CAN'T DEPOSIT A NEGATIVE NUMBER"
4230    GOTO 4190
4240    IF Z <= T[11,T1] THEN 4270
4250    PRINT TAB(5);"YOU HAVE $";T[11,T1];" ON YOUR SHIP"
4260    GOTO 4190
4270    T[11,T1]=T[11,T1]-Z
4280    B[1,B1]=B[1,B1]+Z
4290    RETURN
4300    REM *** <B1> GOSUB
4310    B1=T1
4320    FOR I=1 TO S9/P9
4330    IF B1 <= P9 THEN 4360
4340    B1=B1-P9
4350    NEXT I
4360    RETURN
4370    REM    ***<BANK UPDATE> GOSUB
4380    B[1,B1]=B[1,B1]*(1+.05*(Y1-B[3,B1]+(D1-B[2,B1])/360))
4390    B[2,B1]=D1
4400    B[3,B1]=Y1
4410    RETURN
4420    REM *** <INPUT> GOSUB
4430    INPUT X
4440    IF INT(X)=X AND X >= 0 THEN 4480
4450    PRINT TAB(5);"TYPE A ZERO IF YOU WANT TO PASS THIS ONE,"
4460    PRINT TAB(5);"BUT NO NEGATIVES OR DECIMALS"
4470    GOTO 4430
4480    RETURN
4490    REM *** <GA> GOSUB
4500    PRINT
4520    PRINT
4530    PRINT TAB(20),"*** GENERAL ANNOUNCEMENT ***"
4540    PRINT
4550    PRINT
4560    RETURN
4570    REM *** <D$> GOSUB
4580    GOTO S[7,S1]/5+1 OF 4650,4630,4610,4590
4590    D$="   I"
4600    RETURN
4610    D$="  II"
4620    RETURN
4630    D$=" III"
4640    RETURN
4650    D$="  IV"
4660    RETURN
4670    REM *** <STAR NAME> GOSUB
4680    IF S1>1 THEN 4710
4690    I=1
4700    GOTO 4750
4710    I=4*INT(14*RND(0))+5
4720    FOR J=2 TO S1-1
4730    IF I=S[8,J] THEN 4710
```

```
4740    NEXT J
4750    S[8,S1]=I
4760    RETURN
4770    REM *** <SAVE GAME ON TAPE> GOSUB
4780    PRINT "WHEN I TYPE '?' THIS IS WHAT YOU SHOULD DO:"
4790    PRINT
4800    PRINT "  1.   PUSH THE 'ON' BUTTON ON THE TAPE PUNCHER"
4810    PRINT "  2.   PRESS THE 'HERE IS' KEY (UPPER RIGHT) 3 TIMES"
4820    PRINT "  3.   PUSH THE 'OFF' BUTTON ON THE TAPE PUNCHER"
4830    PRINT "  4.   TYPE ANY NUMBER"
4840    PRINT "  5.   PRESS THE 'RETURN' KEY"
4850    PRINT
4860    PRINT "WHEN I TYPE '!!!' THAT MEANS I'LL START PUNCHING"
4870    PRINT "THE TAPE IN ABOUT 10 SECONDS, SO:"
4880    PRINT
4890    PRINT "    ***    DON'T FORGET TO TURN THE PUNCHER BACK ON"
4900    PRINT LIN(3)
4910    INPUT X
4920    PRINT "!!!"
4930    FOR I=1 TO 10000
4940    X=X+1
4950    NEXT I
4960    PRINT T$;""
4970    PRINT W;","D9;",";K9;",";X9;",";D1;",";Y1;""
4980    PRINT P9;",";T9;",";S9;",";Y9;",";T1;",";S1;""
4990    FOR J=1 TO S9
5000    FOR I=1 TO 9 STEP 4
5010    PRINT S[I,J];",";S[I+1,J];",";S[I+2,J];",";S[I+3,J];""
5040    NEXT I
5060    NEXT J
5070    FOR J=1 TO T9
5080    FOR I=1 TO 9 STEP 4
5090    PRINT T[I,J];",";T[I+1,J];",";T[I+2,J];",";T[I+3,J];""
5120    NEXT I
5140    NEXT J
5150    FOR I=1 TO P9
5160    PRINT B[1,I];",";B[2,I];",";B[3,I];""
5170    NEXT I
5172    FOR I=1 TO 50
5174    PRINT " ";
5176    NEXT I
5180    STOP
5190    REM *** <PRINT STAR MAP> GOSUB
5200    PRINT LIN(3)
5210    PRINT TAB(22);"STAR MAP"
5220    PRINT TAB(20);"************"
5230    PRINT
5240    DIM L$[55]
5250    FOR L1=15 TO -15 STEP -1
5260    IF L1 <> 0 THEN 5290
5270    L$="1----1----1----1----1----*SOL-1----1----1----1----1    "
5280    GOTO 5340
5290    L$="                                                       "
5300    IF ABS(L1)/3=INT(ABS(L1)/3) THEN 5330
5310    L$[26,26]="1"
5320    GOTO 5340
5330    L$[26,26]="-"
5340    Y=L1*10/3
5350    FOR S1=2 TO S9
5360    IF Y<S[12,S1] OR ABS(Y-S[12,S1])>10/3 THEN 5400
5370    X1=INT(26+S[11,S1]/2)
5380    L$[X1,X1]="*"
5390    L$[X1+1,X1+4]=S$[S[8,S1],S[8,S1]+3]
5400    NEXT S1
5410    FOR I=55 TO 26 STEP -1
5420    IF L$[I,I] <> " " THEN 5440
5430    NEXT I
5440    PRINT L$[I,I]
5450    NEXT L1
```

```
5460   PRINT
5470   PRINT "THE MAP IS 100 LIGHT-YEARS BY 100 LIGHT-YEARS,"
5480   PRINT "SO THE CROSS-LINES MARK 10 LIGHT-YEAR DISTANCES"
5490   RETURN
5500   END
```

TRADER

See Jan.'74 issue PCC Vol. 2, No. 3, pages 4,5.

Length: 3290 words.

TRADER

```
10    COM S[12,15],T[12,12],T$[72],B[3,12]
20    COM W,D9,K9,X9,D1,X1,P9,T9,S9,Y9,H
30    COM Y1,R9,G9,Q,M[6,3],C[6,3]
35    COM S1,T1,R
40    REM *** STAR TRADERS ***
50    REM <<<GAME SET-UP MODULE>>>
60    REM S IS THE STAR SYSTEM INFO ARRAY
70    REM T IS THE TRADING SHIP INFO ARRAY
80    REM T$ IS THE TRADING SHIP NAME STRING
90    REM M AND C DETERMINE A STAR'S PRODUCTIVITY/MONTH
92    REM    PROD/MO. = S(7,J) * M(I,R1) + C(I,R1)
94    REM    WHERE J IS THE STAR ID #,I THE MERCHANDISE #,
96    REM    AND R1 IS THE DEVELOPMENT CLASS OF THE STAR
100   REM B CONTAINS THE BANK ACCOUNTS
110   REM A$ IS THE STANDARD INPUT BUFFER
120   DIM A$[6]
130   REM R9 IS THE SPEED OF A SHIP IN LIGHT-YEARS PER DAY
140   REM D9 IS THE MINIMUM  DISTANCE ALLOWED BETWEEN STARS
150   REM Q IS THE PROBABILITY OF A DELAY
160   REM K9 IS THE MAX NUMBER OF BIDDING ROUNDS
170   REM W IS THE MAX WEIGHT OF A TRADING SHIP
180   REM X9 CONTROLS THE PROFIT MARGIN; HIGH X9 LIMITS THE %
190   REM G9 IS THE STELLAR DEVELOPMENT INCREMENT 1<=G9<=5
195   REM R=1 IF THIS IS A RESTART
200   LET R9=2/7
210   LET D9=15
220   LET Q=.1
230   LET K9=3
240   LET W=30
250   LET X9=36
260   LET G9=1.25
265   LET R=0
270   REM D1 IS THE DAY OF THIS YEAR (1<=D1<=360)
280   REM Y1 IS THIS YEAR
290   LET D1=1
300   LET Y1=2070
302   REM SET UP ECONOMETRICS MODEL
304   RESTORE 2410
306   MAT  READ M,C
310   REM *** BLOCK #1
320   PRINT "INSTRUCTIONS (TYPE 'Y' OR 'N' PLEASE)";
330   INPUT A$
340   IF A$[1,1]="N" THEN 590
350   PRINT
360   PRINT "       THE DATE IS JAN 1, 2070 AND INTERSTELLAR FLIGHT"
370   PRINT "HAS EXISTED FOR 70 YEARS.  THERE ARE SEVERAL STAR"
380   PRINT "SYSTEMS THAT HAVE BEEN COLONIZED.  SOME ARE ONLY"
390   PRINT "FRONTIER SYSTEMS, OTHERS ARE OLDER AND MORE DEVELOPED."
400   PRINT
410   PRINT "       EACH OF YOU IS THE CAPTAIN OF TWO INTERSTELLAR"
420   PRINT "TRADING SHIPS.  YOU WILL TRAVEL FROM STAR SYSTEM TO"
430   PRINT "STAR SYSTEM, BUYING AND SELLING MERCHANDISE.  IF YOU"
440   PRINT "DRIVE A GOOD BARGAIN YOU CAN MAKE LARGE PROFITS."
450   PRINT
```

```
460   PRINT "       AS TIME GOES ON, EACH STAR SYSTEM WILL SLOWLY"
470   PRINT "GROW, AND ITS NEEDS WILL CHANGE.  A STAR SYSTEM THAT"
480   PRINT "IS SELLING MUCH URANIUM AND RAW METALS CHEAPLY"
490   PRINT "MAY NOT HAVE ENOUGH FOR EXPORT IN A FEW YEARS."
500   PRINT
510   PRINT "       YOUR SHIPS CAN TRAVEL ABOUT TWO LIGHTYEARS IN A"
520   PRINT "WEEK AND CAN CARRY UP TO";W;" TONS OF CARGO.  ONLY"
530   PRINT "CLASS I AND CLASS II STAR SYSTEMS HAVE BANKS ON THEM."
540   PRINT "THEY PAY 5% INTEREST AND ANY MONEY YOU DEPOSIT ON ONE"
550   PRINT "PLANET IS AVAILABLE ON ANOTHER - PROVIDED THERE'S A LOCAL"
560   PRINT "BANK."
570   PRINT
580   REM *** BLOCK #2
590   PRINT "HAVE ALL PLAYERS PLAYED BEFORE";
600   INPUT A$
605   PRINT
610   IF A$[1,1]="Y" THEN 630
620   GOTO 660
630   PRINT "DO YOU WANT TO SET UP YOUR OWN GAME";
640   INPUT A$
645   PRINT
650   IF A$[1,1]="Y" THEN 760
660   PRINT "HOW MANY PLAYERS";
670   INPUT P9
675   PRINT
680   GOTO P9-1 OF 710,710,710
690   PRINT "2,3, OR 4 CAN PLAY"
700   GOTO 660
710   T9=2*P9
720   S9=3*P9+1
730   Y9=Y1+5
740   GOTO 1350
750   REM *** BLOCK #3
760   PRINT "IS THIS A RESTART";
770   INPUT A$
775   PRINT
780   IF A$[1,1]="N" THEN 940
790   PRINT "LOAD THE TAPE INTO THE TAPE READER.  WHEN I TYPE A '?'"
800   PRINT "YOU CAN FLIP THE SWITCH TO 'START' WHENEVER YOU'RE READY"
810   PRINT
820   INPUT T$
830   INPUT W,D9,K9,X9,D1,Y1
835   INPUT P9,T9,S9,Y9,T1,S1
840   FOR J=1 TO S9
845   FOR I=1 TO 9 STEP 4
850   INPUT S[I,J],S[I+1,J],S[I+2,J],S[I+3,J]
855   NEXT I
860   NEXT J
870   FOR J=1 TO T9
875   FOR I=1 TO 9 STEP 4
880   INPUT T[I,J],T[I+1,J],T[I+2,J],T[I+3,J]
885   NEXT I
890   NEXT J
900   FOR I=1 TO P9
910   INPUT B[1,I],B[2,I],B[3,I]
920   NEXT I
925   R=1
930   CHAIN "*TRADE*"
940   PRINT "HOW MANY PLAYERS";
950   INPUT P9
955   PRINT
960   IF P9 >= 2 AND P9 <= 12 THEN 990
970   PRINT "2,3,4, ... ,12 CAN PLAY"
980   GOTO 940
990   PRINT "HOW MANY SHIPS PER PLAYER";
1000  INPUT X
1005  PRINT
1010  IF X<1 THEN 990
1020  T9=P9*X
```

```
1030    IF T9 <= 12 THEN 1070
1040    PRINT "I CAN'T KEEP TRACK OF MORE THAN 12 SHIPS;"
1050    PRINT P9;" PLAYERS TIMES";X;" SHIPS MAKES";T9
1060    GOTO 990
1070    PRINT "HOW MANY STAR SYSTEMS";
1080    INPUT S9
1085    PRINT
1090    IF S9 >= 4 AND S9 <= 13 THEN 1120
1100    PRINT "FROM 4 TO 13 STARS"
1110    GOTO 1070
1120    PRINT "ENTER THE LENGTH OF GAME IN YEARS";
1130    INPUT X
1135    PRINT
1140    IF X >= 1 AND INT(X)=X THEN 1170
1150    PRINT "CHOOSE A POSITIVE INTEGER"
1160    GOTO 1130
1170    Y9=Y1+X
1180    PRINT "WHAT'S THE MAX CARGOE TONNAGE(USUALLY 30)";
1190    INPUT V
1195    PRINT
1200    IF V<25 THEN 1180
1210    PRINT "WHAT'S THE MINIMUM DISTANCE BETWEEN STARS(USUALLY 15)";
1220    INPUT D9
1225    PRINT
1230    IF D9 <= 25 AND D9 >= 10 THEN 1260
1240    PRINT "MIN SPACING 10, MAX 25"
1250    GOTO 1210
1260    PRINT "HOW MANY BIDS OR OFFERS(USUALLY 3)";
1270    INPUT K9
1275    PRINT
1280    IF K9<1 THEN 1260
1290    PRINT "SET THE PROFIT MARGIN(1,2,3,4 OR 5)...THE HIGHER"
1300    PRINT "THE NUMBER, THE LOWER THE PROFIT % ... USUALLY SET TO 2"
1310    PRINT "...YOUR NUMBER";
1320    INPUT X9
1330    X9=18*(ABS(X9) MIN 5)
1340    REM *** BLOCK #4.1
1350    S[11,1]=S[12,1]=0
1360    S[7,1]=15
1370    REM *** BLOCK #4.2
1380    H=1
1390    S1=2
1400    GOSUB 1920
1410    S1=3
1420    GOSUB 1920
1430    S1=4
1440    GOSUB 2010
1450    FOR S1=5 TO S9
1460    GOSUB S1-3*INT((S1-1)/3) OF 1920,2010,2060
1470    NEXT S1
1480    REM *** BLOCK #4.3
1490    FOR S1=1 TO S9
1500    FOR J=1 TO 6
1510    S[J,S1]=0
1520    NEXT J
1530    IF S1>1 THEN 1560
1540    I=1
1550    GOTO 1600
1560    I=4*INT(14*RND(0))+5
1570    FOR J=2 TO S1-1
1580    IF I=S[8,J] THEN 1560
1590    NEXT J
1600    S[8,S1]=I
1610    S[9,S1]=270
1620    S[10,S1]=Y1-1
1630    NEXT S1
1640    REM *** BLOCK #4.4
1650    T1=L=1
1655    PRINT
1657    PRINT
1660    PRINT "CAPTAINS, NAME YOUR SHIPS (UP TO 6 LETTERS)"
1670    FOR I=1 TO T9/P9
1680    PRINT
1690    FOR P1=1 TO P9
1700    T[1,T1]=T[2,T1]=T[6,T1]=0
1710    T[3,T1]=15
1720    T[4,T1]=T[5,T1]=10
1730    T[7,T1]=25
1740    T[9,T1]=D1
1750    T[10,T1]=Y1
1760    T[11,T1]=5000
1770    PRINT "    CAPTAIN";P1;"WHAT DO YOU CHRISTEN YOUR SHIP #";I;
1780    INPUT T$[L,L+5]
1790    T1=T1+1
1800    L=L+6
1810    NEXT P1
1820    NEXT I
1830    REM *** BLOCK #4.5
1840    FOR B1=1 TO P9
1850    B[1,B1]=0
1860    B[2,B1]=D1
1870    B[3,B1]=Y1
1880    NEXT B1
1890    CHAIN "*TRADE*"
1900    REM *** GOSUBS FOLLOW ***
1910    REM <FRONTIER> GOSUB
1920    X=(RND(0)-.5)*100
1930    Y=50*RND(0)
1940    IF (ABS(X)<25) AND (Y<25) THEN 1920
1950    F=1
1960    GOSUB 2190
1970    IF F=0 THEN 1920
1980    S[7,S1]=0
1990    RETURN
2000    REM *** <UNDERDEVELOPED> GOSUB
2010    E=100
2020    GOSUB 2110
2030    S[7,S1]=5
2040    RETURN
2050    REM *** <DEVELOPED> GOSUB
2060    E=50
2070    GOSUB 2110
2080    S[7,S1]=10
2090    RETURN
2100    REM *** <GENERATE CO-ORDS> GOSUB
2110    X=(RND(0)-.5)*E
2120    Y=RND(0)*E/2
2130    F=1
2140    GOSUB 2190
2150    IF F=0 THEN 2110
2160    RETURN
2170    REM *** <TEST STAR CO-ORDS> GOSUB
2180    REM FIRST CONVERT CO-ORDS TO NEXT HALF-BOARD
2190    GOTO H OF 2300,2260,2240,2200
2200    Z=X
2210    X=-Y
2220    Y=Z
2230    GOTO 2300
2240    Y=-Y
2250    GOTO 2300
2260    Z=X
2270    X=Y
2280    Y=Z
2290    REM SECOND, TEST PROXIMITY
2300    FOR J=1 TO S1-1
2310    IF SQR((X-S[11,J])+2+(Y-S[12,J])+2) >= D9 THEN 2340
2320    F=0
2330    RETURN
```

```
2340   NEXT J
2350   REM FINALLY, ENTER CO-ORDS AND INCREMENT HALF-BOARD CTR
2360   S[11,S1]=INT(X)
2370   S[12,S1]=INT(Y)
2380   H=1+(H <= 3)*H
2390   RETURN
2400   REM *** DATA FOR ECONOMETRIC MODEL FOLLOWS ***
2410   REM MODEL #1
2420   DATA -.1,-.2,-.1,0,-.1,-.1,0,.1,.1,-.1,.1,0,.1,.2,.1,.1,-.1,0
2430   DATA 1,1.5,.5,.75,.75,.75,-.75,-.75,-.75,-.5,-1.5,.5,-1,-1.5
2440   DATA -.5,.5,1.5,-.5
2450   END
```

STAR TRADER

Procedure to put the paper tape programs on HP 2000 F
Time-Shared Basic and save them on the disc.

1. Type   SCRATCH
   Type   NAME-TRADER
   Type   TAPE
   Load paper tape TRADER into tape reader.
   Wait while tape is read in.
   Type   LEN
   Type   SAVE

2. Type   SCR
   Type   NAME-TRADE*
   Type   TAPE
   Load paper tape TRADE* into tape reader.
   Wait while tape is read in.
   Type   LEN
   Type   SAVE

3. Unless you have errors, you can now type   GET-TRADER
   Type   RUN