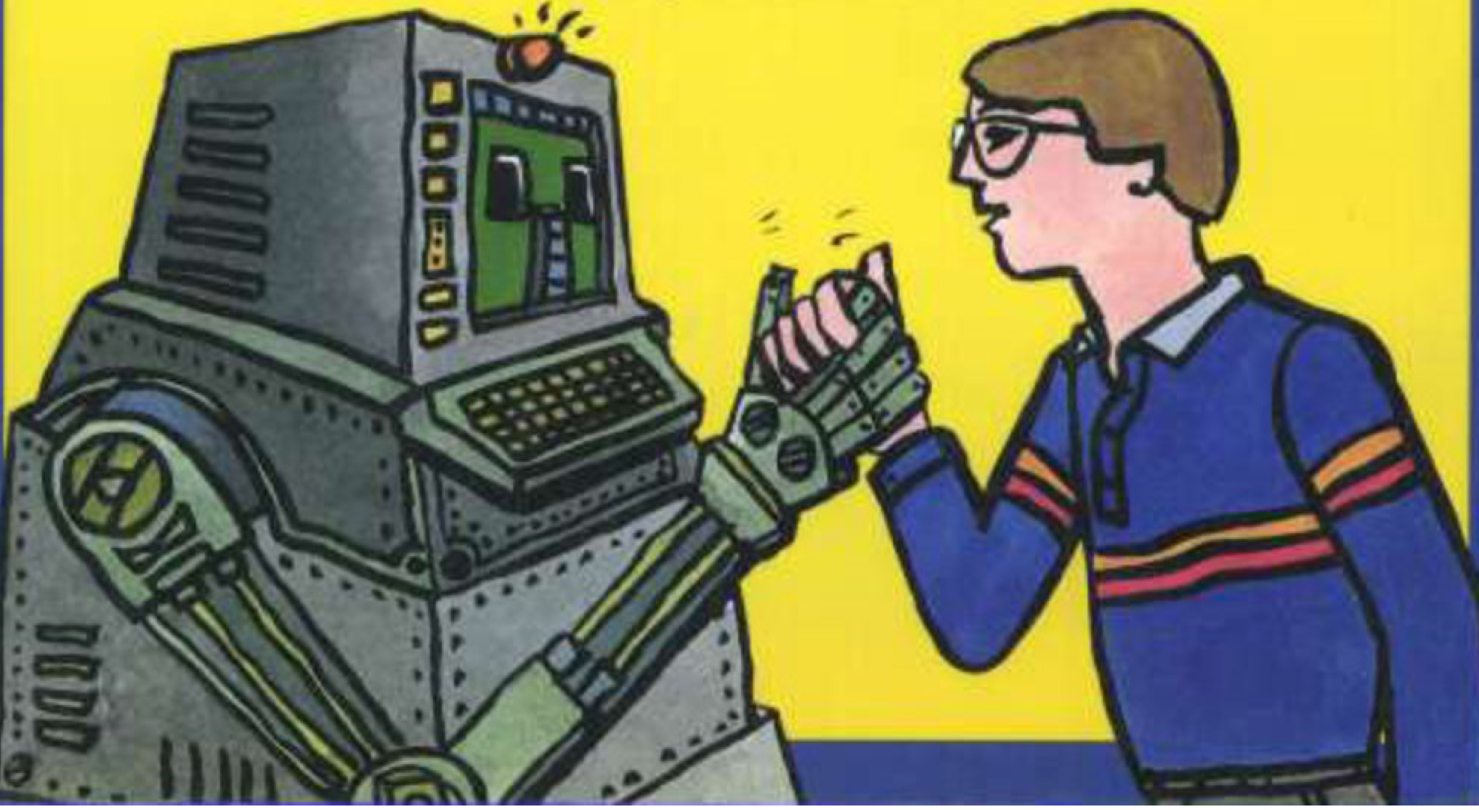
BIG COMPUTER GAMES

12 Challenging Games to Play on Your Home Computer.
All in Basic with program listing and sample run.
Edited by David H. Ahl.



BIG COMPUTER GAMES

Edited by David H. Ahl

Creative Computing Press
Morris Plains, New Jersey

The Author and the Publisher have made every effort to verify the accuracy of the information contained in this book. However, neither the Author nor the Publisher assumes any responsibility for the use of this information, nor any infringements of patents or other rights of third parties that may arise from the use of the information in this book. Neither the Author nor the Publisher assumes any liability for any damages that may result from the information contained herein.

Big Computer Games
Copyright © 1984 by Creative Computing Press.
All rights reserved. No portion of this book may be reproduced—
mechanically, electronically, or by any other means, including
photocopying—without express written permission from the publisher.

Library of Congress Cataloging in Publication Data
Big computer games.

1. Computer games. 2. Basic (Computer program language) I. Ahl, David H.
GV1469.2.B5 1984 794.8'2 84-12730
ISBN 0-916688-40-2

Creative Computing Press
39 East Hanover Avenue
Morris Plains, New Jersey 07950 USA

Manufactured in the United States of America

86 85 84 9 8 7 6 5 4 3 2 1

Art direction by Patrick Calkins. Illustrations and production by Eugene Bicknell, Chris DeMilia, Peter Kelley, and Diana Negri Radio.

Dedicated to Ken Uston, a good friend and gamester extraordinaire who, to this day, claims he would have beaten me for Gamester of the Year (1983) if only he had a better joystick.

About the Author

David H. Ahl has a BEE from Cornell University, MBA from Carnegie-Mellon University and has done further work in educational psychology at the University of Pittsburgh.

He served in the Army Security Agency, was a consultant with Management Science Associates and a senior research fellow with Educational Systems Research Institute.

In early 1970, he joined Digital Equipment Corporation. As education product line manager, he formalized the concept of an educational computer system consisting of hardware, software and courseware and helped guide DEC into a leading position in the education market.

Mr. Ahl joined AT&T in 1974 as education marketing manager and was later promoted to manager of marketing communications for the unit later to become American Bell. Concurrent with this move, he started *Creative Computing* as a hobby in late 1974. It was the first personal computing magazine in the world.

As *Creative Computing* grew, Mr. Ahl left AT&T in 1978 to devote full time to it. *Creative Computing* magazine today is Number 1 in software and applications.

Mr. Ahl is the author or editor of 20 books and over 200 articles about the use of computers. He is a frequent lecturer and workshop leader at educational and professional conferences.

CONTENTS

Preface viii
Converting the games to your computer

Cribbage 2
Interesting high-scoring card game

Dukedom 11
Challenging land management game

Eliza 20
Your own psychotherapist

Lost & Forgotten Island 25
Cooperative survival game for one to three players

Monster Combat 34
Try to get treasures from the monsters

Mu-Torere 43
Maori game from New Zealand

Presidential Campaign 47
Simulation of the nine-month pre-election period

Star Merchant 57
Futuristic trading simulation

Streets of the City 66
Manage the transportation system of a small city

Survival 79
Stranded on the moon with three hours of oxygen

Trucker 87
Drive your rig from Los Angeles to New York

How To Write An Adventure 100
Techniques for writing and playing adventure games

Adventures in Videoland 103
Rollercoaster: A computer/videodisc adventure

Tips for Playing Adventure Games 116
You too can be a master explorer

Preface

It seems that my games books come out at about five-year intervals. The first version of *Basic Computer Games* was published in July 1973. *More Basic Computer Games* made its debut in June 1979. And here we are some five years later with *Big Computer Games*. So what is significant about that? Not much at all, except that it gives you an historical perspective on computer games, specifically ones written in Basic.

Years ago, most games in Basic were very short, reflecting of course, the limited memory available in most computers. Indeed, my first lunar lander program was written to fit in a computer with 4K of memory in which the Basic interpreter occupied nearly 3.5K. Thus the program was less than 500 bytes long. In the first book I edited, *Basic Computer Games*, nearly one-half of the 101 programs were less than 40 lines long. Some of them were mighty interesting programs, although there wasn't much room for the rules, error checking, or user-friendly features.

On the other hand, years ago people who had access to large timesharing systems were writing long, elaborate programs with all sorts of extended features. Unfortunately, these weren't of much use to early microcomputer owners who felt lucky to be able to afford 4K, or maybe 8K if they splurged.

Times have changed. Today, memory is cheap. When I talk to kids at schools, they can't imagine a computer with less than 48K and another one to four times that on disk. Consequently, although many of the programs in this book were originally developed on large timesharing systems, today they will run on the average microcomputer. Actually, most of them don't require much more than 16K (some timesharing systems limited users to a 16K partition). Of course, some of the programs in this book were initially developed on microcomputers.

So, as a result of the relentless march of technology, today we are able to run programs on a small computer that ten years ago required a $100,000 system. Furthermore, many of the programs being written today on small computers are more elaborate than those written on larger machines.

I wish I could say that these advances in technology have led to higher quality programming; they have in some cases, but certainly not across the board. Valdocs and Lotus 1-2-3 are certainly masterful pieces of code; most of the programs in this book are not. Some of the programs almost cry out for improvement, but for that you must first get them into your computer.

The Games

Cribbage

The computer game of Cribbage was written by Margaret Turner in IBM Basic for a 370/158. It appeared in this form in Creative Computing, May 1979. For this book, it was converted to Microsoft Basic by Steve Williams.

If you happen to be a cribbage fanatic, you know the frustration of wanting to play but not being able to find an opponent. Well, never again. Cribbage will always be willing to accept the challenge. If you don't happen to be a cribbage player, this program provides a good way to learn the game.

Rules of Cribbage

Cribbage is a two-player game. A regular deck of cards is used. The cards are used chiefly as numbers; the suits have practically no role in the game. Each player receives six cards on the deal. From his hand, each player selects two cards for discard; these four cards are placed face down and are known as the crib, an extra hand which belongs to the dealer.

After the crib is laid down, the nondealer cuts the rest of the pack and the dealer turns up the top card of the lower portion. This card is the starter or up card. If it is a jack, the dealer scores 2 points. This operation is done automatically by the program.

In normal play of the game, a cribbage board is used to keep track of the scores, a function performed by the computer in this game. The game is won when one player has traversed twice around the board (121 or more points).

The nondealer begins by playing any card; face cards and the ten have a point value of 10. The dealer then plays a card and announces the sum of the two cards thus far played. Play continues alternately, the new sum being announced each time, until one player is unable to play without carrying the total over 31. He must then say "go" and his opponent pegs (is scored) for go. The player who called the go must lead again for a new series of plays. The count begins again at zero, and again the total must not be carried beyond 31.

After go is called, the other player must play additional cards if he can do so without exceeding 31. Thus, the same player may play two or three times in succession. For making exactly 31, the player scores 2; for a go at less than 31, he scores 1. Playing the last card of the eight in play counts 1 point, or 2 if it makes the sum 31.

Scoring During Play

In addition to the points for go's and playing the last card, other points are awarded as follows:

Fifteen. For making the sum 15, score 2.

Pairs. For playing a card of the same rank as just played by your opponent (i.e., king, king, or 8, 8), score 2. Playing the third card of a rank scores 6, and the fourth scores 12.

Runs. For playing a card in sequence with two or more just played, score the number of cards in the run (or sequence). The cards need not be played in sequential order to score for a run; for example, if the cards played are 5, 7, 6, the last player scores 3 for the run.

Scoring A Hand

In cribbage, scoring a hand is known as showing. The hands are shown in order: nondealer, dealer, and crib. The starter (or up card) is treated as a fifth card belonging to each of these three hands. The combinations that score are as follows:

Fifteen. For each combination of cards that total 15, score 2. Thus, a hand with 9, 8, 7, 7, and 6 has three combinations of 15: 9 and 6, 8 with one 7, and 8 with the other 7.

Multiples. For a pair, score 2; for three of a kind, score 6; for four of a kind, score 12.

Runs. For each combination that makes a run of three or more, score the number of cards in the run. In the hand, 9, 8, 7, 7, 6, there are 8 points for two runs of four, using one 7 in each run.

Flush. For four cards in the hand (excluding the up card) of the same suit, score 4, or 5 if the up card is also the same suit. For crib and up card of the same suit, score 5; there is no score for a four-flush in the crib alone.

His Nobs. For a jack in the hand of the same suit as the up card, score 1.

Muggins

If a player overlooks a score to which he is entitled, either in playing or showing, his opponent may call "Muggins!" and take the score himself. Since the computer keeps playing scores automatically and always counts his own hand correctly, the only time that Muggins is used in this game is against you when you score your hand or the crib hand.

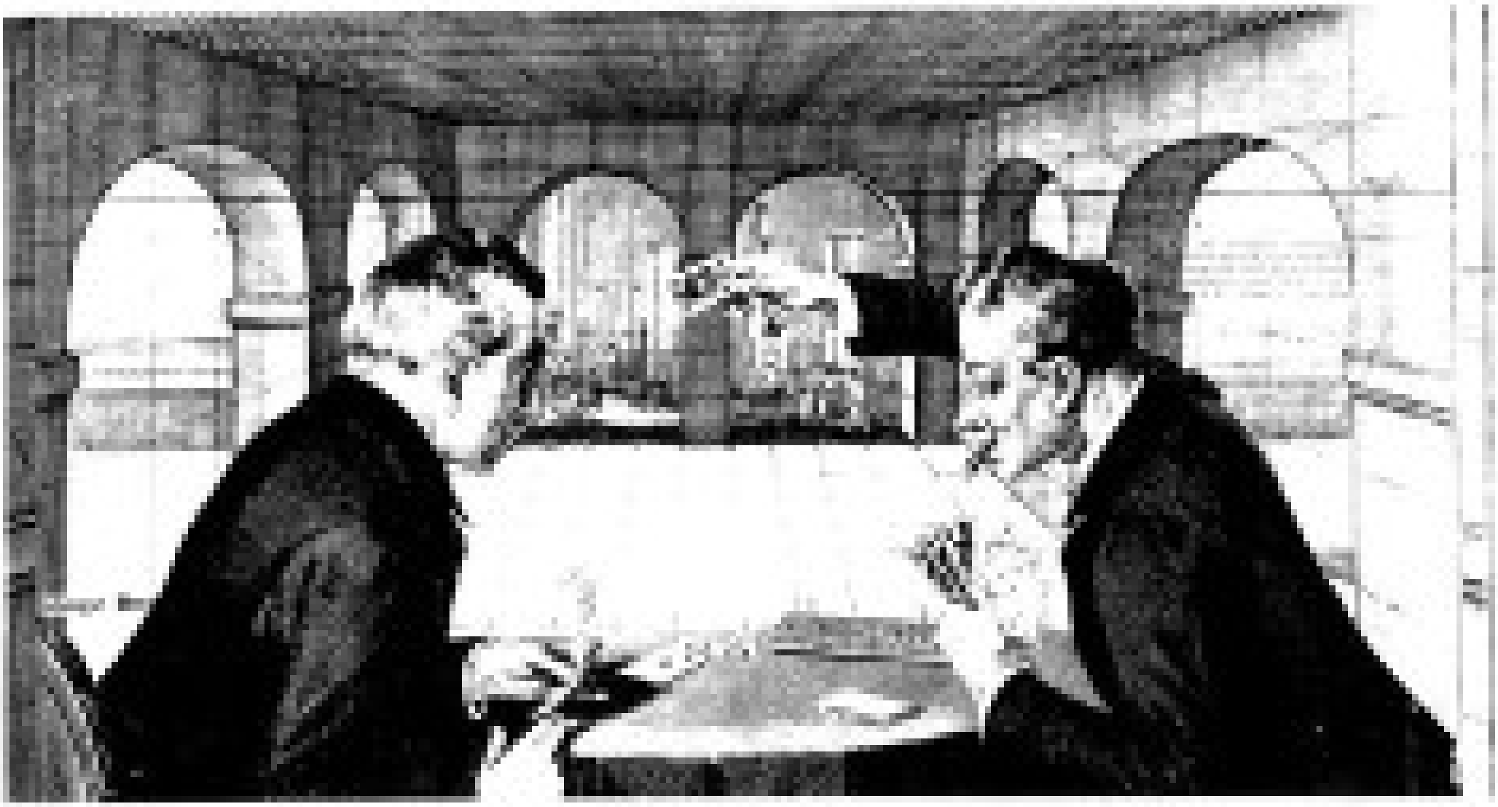
Specifics of the Computer Version

To the question, "Cut for deal?" you should enter a number between 1 and 52 which is where the shuffled deck will be cut. The cards in your hand are numbered 1 to 6; any entries representing cards should use these numbers, not the value(s) of the card. If you must say go, simply type it instead of a card number on your turn.

The computer will shuffle, deal, generate the starter (up card), keep track of the running scores, and credit all points earned during play. It will not let you exceed 31, but it doesn't check to see if you could have played a card if you respond with go. It is up to you to score your hand and the computer will call Muggins without mercy if you have counted incorrectly.

The program uses a very simple playing strategy of keeping the cards that yield the most points or playing the card which will score the most points. There are much more involved strategies of play that can be found in any good book of card games.

Good playing!



Cribbage

```
10 REM ****************************
20 REM *        CRIBBAGE          *
30 REM *   IN MICROSOFT BASIC     *
40 REM ****************************
50 CLS:CLEAR 1000
60 PRINT "*************** CRIBBAGE ***************"
70 PRINT:INPUT "Enter a number from 1 to 500";N
80 IF N>1000 OR N<0 THEN 70
90 FOR X=1 TO N:Y=RND(1):NEXT X
100 DIM D(52,4),D$(52),I(52),H(6,4)
110 DIM M(6,4),T(4,4),C(4,4),S$(13),B(4)
120 DIM V(13,7),E(11,4),P(4,5),Z(52)
130 FOR X=1 TO 13:FOR Y=1 TO 7
140 READ V(X,Y):NEXT Y:NEXT X
150 FOR X=1 TO 11:FOR Y=1 TO 4
160 READ E(X,Y):NEXT Y:NEXT X
170 FOR X=1 TO 4:FOR Y=1 TO 5
180 READ P(X,Y):NEXT Y:NEXT X
190 FOR I=1 TO 6:READ S(I):NEXT I
200 FOR I=1 TO 6:READ [illegible]:NEXT I
210 FOR I=1 TO 13
220 READ C$
230 D$(I)=LEFT$(C$,4)+" of Spades   "
240 D$(I+13)=LEFT$(C$,4)+" of Diamonds "
250 D$(I+26)=LEFT$(C$,4)+" of Hearts   "
260 D$(I+39)=LEFT$(C$,4)+" of Clubs    "
270 NEXT I
280 PRINT:PRINT
290 S1=0:S2=0
300 REM ** SHUFFLE DECK & CUT FOR DEAL
310 GOSUB 3850
320 GOSUB 4030
330 REM ** SUFFLE AND DEAL
340 GOSUB 4090
350 GOSUB 4280
360 REM ** FIND BEST 4 CARDS
370 GOSUB 3480
380 REM ** DISCARDS
390 I1=V(M9,3)
400 I2=V(M9,4)
410 PRINT
420 PRINT "Your discards";
430 INPUT I3,I4
440 IF I3<1 THEN 460
450 IF I3<7 THEN 470
460 PRINT "Invalid input":GOTO 420
470 IF INT(I3)<>I3 THEN 460
480 IF I4>6 THEN 460
490 IF I4<1 THEN 460
500 IF I4=I3 THEN 460
510 IF I4<>INT(I4) THEN 460
520 REM ** CRIB
530 FOR J=1 TO 4
540 C(1,J)=M(I1,J)
550 C(2,J)=M(I2,J)
560 C(3,J)=H(I3,J)
570 C(4,J)=H(I4,J)
580 NEXT J
590 REM ** GENERATE THE UPCARD
600 GOSUB 4020
610 REM ** PLAY OF THE HAND
620 GOSUB 1520
630 IF D=0 THEN 670
640 PRINT "You score first "
650 X1=1
660 GOTO 890
670 PRINT "I score first "
680 X1=2
690 GOTO 1160
700 PRINT "The crib cards are"
710 PRINT
720 FOR J=1 TO 4
730 PRINT D$(C(J,1))
740 NEXT J
750 FOR I=1 TO 4:FOR J=1 TO 4
760 W(I,J)=C(I,J)
770 NEXT J:NEXT I
780 C=1
```

```
790 W(5,4)=T9
800 GOSUB 4820
810 ON X1 GOTO 820,870
820 PRINT
830 PRINT F;"points"
840 S2=S2+F
850 IF S2>=121 THEN 1460
860 GOTO 1170
870 X1=3
880 GOTO 1010
890 K=1
900 FOR I=1 TO 6
910 IF I=I3 THEN 970
920 IF I=I4 THEN 970
930 FOR J=1 TO 4
940 W(K,J)=H(I,J)
950 NEXT J
960 K=K+1
970 NEXT I
980 W(5,4)=T9
990 C=0
1000 GOSUB 4820
1010 PRINT "How many points ";
1020 INPUT P4
1030 D=F-P4
1040 IF D>=0 THEN 1070
1050 PRINT "Not with that hand"
1060 GOTO 1020
1070 S2=S2+P4
1080 IF S2>=121 THEN 1460
1090 IF D=0 THEN 1150
1100 S1=S1+D
1110 PRINT
1120 PRINT "Muggins for";D;"points"
1130 PRINT
1140 IF S1>=121 THEN 1420
1150 ON X1 GOTO 1160,700,1370
1160 FOR K=1 TO 4
1170 L=V(M9,K)
1180 FOR J=1 TO 4
1190 W(K,J)=M(L,J)
1200 NEXT J
1210 NEXT K
1220 PRINT "My cards are"
1230 PRINT
1240 FOR K=1 TO 4
1250 L=W(K,1)
1260 PRINT D$(L)
1270 NEXT K
1280 W(5,4)=T9
1290 C=0
1300 GOSUB 4820
1310 S1=S1+F
1320 IF S1>=121 THEN 1420
1330 PRINT
1340 PRINT F;"points"
1350 PRINT
1360 ON X1 GOTO 700,890
1370 PRINT
1380 PRINT "I have";S1;"points."
1390 PRINT "You have";S2;"points."
1400 PRINT
1410 GOTO 330
1420 PRINT
1430 PRINT "I win";S1;"to";S2
1440 PRINT
1450 STOP
1460 PRINT
1470 PRINT "You win";S2;"to";S1
1480 PRINT
1490 STOP
1500 REM **
1510 REM ** PLAY OF THE HAND
1520 REM **
1530 Y9=0:M8=0:L=0:C8=0:U=0
1540 IF M=0 THEN 1940
1550 IF Y9=14 THEN 1580
1560 IF M8=4 THEN 1690
```

Cribbage

```
1570 GOTO 1990
1580 PRINT "Your play ";
1590 INPUT C$
1600 IF C$="go" OR C$="GO" THEN 1940
1610 FOR C6=1 TO 4
1620 IF C$=B$(C6) THEN 1660
1630 NEXT C6
1640 PRINT "Invalid play"
1650 GOTO 1590
1660 IF C6=11 THEN 1880
1670 IF C6=14 THEN 1880
1680 IF H8=0 THEN 1720
1690 FOR J=1 TO T8
1700 IF I(J)=J6 THEN 1900
1710 NEXT J
1720 IF B9+V(C6,2)>31 THEN 1920
1730 B9=B9+V(C6,2)
1740 T8=T8+1
1750 I(T8)=H2+C6
1760 E=E+1
1770 J(E)=V(C6,4)
1780 GOSUB 3020
1790 PRINT "You played the ";C$(V(C6,1))
1800 PRINT "Sum =";:PRINT USING"##";B9;
1810 PRINT ", Points =";:PRINT USING"###";P
1820 F=1
1830 S2=S2+P
1840 IF S2>121 THEN 1440
1850 IF B9<>31 THEN 1940
1860 F=0:C=0:B9=0:E=0
1870 GOTO 1940
1880 PRINT "You discarded that card."
1890 GOTO 1590
1900 PRINT "Already played"
1910 GOTO 1590
1920 PRINT "That totals more than 31"
1930 GOTO 1590
1940 IF H8<>4 THEN 2110
1950 IF V5=4 THEN 2570
1960 IF C$<>"go" AND C$<>"GO" THEN 1580
1970 PRINT
1980 IF F=2 THEN 2050
1990 PRINT "You get one point for the last card."
2000 PRINT
2010 S2=S2+1
2020 IF S2>=121 THEN 1440
2030 F=0:C=0:B9=0
2040 GOTO 1580
2050 PRINT "I get one point for the last card."
2060 PRINT
2070 S1=S1+1
2080 IF S1>=121 THEN 1420
2090 F=0:C=0:B9=0
2100 GOTO 1580
2110 E9=0:F9=0
2120 C9=0
2130 C=C+1
2140 H9=C9
2150 FOR I9=1 TO 4
2160 I1=I9+4
2170 IF I9=11 THEN 2310
2180 IF I9=14 THEN 2310
2190 IF H8=0 THEN 2230
2200 FOR J9=1 TO H8
2210 IF I9=I(J9)+4 THEN 2310
2220 NEXT J9
2230 IF B9+V(I9,2)>31 THEN 2310
2240 E9=E9+1
2250 B9=B9+V(I9,2)
2260 J(E)=V(I9,4)
2270 GOSUB 3020
2280 IF P>F9 THEN F9=P
2290 I=C9-P
2300 I=B9-V(I9,2)
2310 NEXT I9
2320 C=F9
2330 E=E9
2340 IF C9>0 THEN 2690
2350 IF C$<>"go" AND C$<>"GO" THEN 2440
2360 IF G=1 THEN 2450
2370 PRINT
2380 PRINT "I get 1 point for the last card."
2390 PRINT
2400 C=0:B9=0
2410 S1=S1+1
2420 IF S1>121 THEN 1420
2430 GOTO 1580
2440 IF V5<>4 THEN 2530
2450 PRINT
2460 PRINT "I'll give you 1 point for last card."
2470 PRINT
2480 S2=S2+1
2490 IF S2>=121 THEN 1440
2500 C=0:B9=0:E=0
2510 C$=""
2520 GOTO 1940
2530 IF G=1 THEN 1580
2540 PRINT "Go"
2550 G=1
2560 GOTO 1580
2570 IF F=0 THEN 2670
2580 PRINT
2590 IF F=1 THEN 2640
2600 PRINT "I get 1 point for the last card."
2610 S1=S1+1
2620 IF S1>121 THEN 1420
2630 GOTO 2670
2640 PRINT "You get 1 point for the last card."
2650 S2=S2+1
2660 IF S2>=121 THEN 1440
2670 PRINT
2680 RETURN
2690 E=E+1
2700 H8=H8+1
2710 IF C<>1 THEN 2840
2720 FOR I9=1 TO 4
2730 I9=V(B9,I9)
2740 REM ** DON'T PLAY A 5 FIRST
2750 IF V(I9,2)=5 THEN 2810
2760 I(H8)=I9+4
2770 J(E)=V(I9,4)
2780 P=0
2790 B9=V(I9,2)
2800 GOTO 2910
2810 NEXT I9
2820 L=V(B9,1)
2830 GOTO 2760
2840 FOR J9=1 TO H9
2850 I9=I(J9)
2860 IF I(I9)=P9 THEN 2880
2870 NEXT J9
2880 I(H8)=I9+4
2890 J(E)=V(I9,4)
2900 B9=B9+V(I9,2)
2910 PRINT "My card is the ";C$(V(I9,1))
2920 PRINT "Sum =";:PRINT USING"##";B9;
2930 PRINT ", Points =";:PRINT USING"###";P
2940 F=2
2950 S1=S1+P
2960 IF S1>121 THEN 1420
2970 IF B9<>31 THEN 3000
2980 F=0:C=0:B9=0
2990 GOTO 1580
3000 IF C$="go" OR C$="GO" THEN 1940
3010 GOTO 1580
3020 REM **
3030 REM ** CHECK FOR 15 OR 31 OR
3040 REM ** 2,3,4 OF A KIND RUNS
3050 REM **
3060 P=0
3070 IF C=1 THEN 3500
3080 IF B9<>15 THEN 3110
3090 P=P+2
3100 GOTO 3080
3110 IF B9<>31 THEN 3140
3120 P=P+2
```

Cribbage

```
3130 U9=C-2:IF C-2<2 THEN U9=2
3140 FOR I=C TO U9 STEP -1
3150 IF Z(I)<>Z(I-1) THEN 3220
3160 ON C-I+1 GOTO 3170,3190,3210
3170 P=P+2
3180 GOTO 3220
3190 P=P+6
3200 GOTO 3220
3210 P=P+12
3220 NEXT I
3230 REM ** RUNS
3240 IF C<3 THEN 3300
3250 R9=0
3260 FOR I=3 TO C
3270 GOSUB 3310
3280 NEXT I
3290 P=P+R9
3300 RETURN
3310 FOR J=1 TO I
3320 Z(J)=T(C-J+1)
3330 NEXT J
3340 FOR K=1 TO I
3350 FOR L=K+1 TO I
3360 IF Z(K)<=Z(L) THEN 3400
3370 K9=Z(K)
3380 Z(K)=Z(L)
3390 Z(L)=K9
3400 NEXT L
3410 NEXT K
3420 FOR K=1 TO I-1
3430 IF Z(K+1)<>(Z(K)+1) THEN 3460
3440 NEXT K
3450 R9=I
3460 RETURN
3470 REM **
3480 REM ** FIND THE BEST 4 CARD HAND
3490 REM **
3500 P9=0
3510 FOR I9=1 TO 15
3520 I1=V(I9,1)
3530 I2=V(I9,2)
3540 I3=V(I9,3)
3550 I4=V(I9,4)
3560 FOR J=1 TO 2
3570 W(1,J)=H(I1,J)
3580 W(2,J)=H(I2,J)
3590 W(3,J)=H(I3,J)
3600 W(4,J)=H(I4,J)
3610 W(5,J)=0
3620 NEXT J
3630 REM ** EVALUATE THE HAND
3640 O=0
3650 GOSUB 4520
3660 V(I9,7)=P
3670 IF P>P9 THEN P9=P
3680 NEXT I9
3690 REM ** FIND ALL HANDS WITH MAX
3700 REM    SCORE (P9)
3710 J=0
3720 FOR I=1 TO 15
3730 IF V(I,7)<>P9 THEN 3760
3740 J=J+1
3750 I(J)=I
3760 NEXT I
3770 IF J>1 THEN 3810
3780 REM ** THIS IS SINGLE BEST HAND
3790 B9=I(1)
3800 RETURN
3810 REM ** NO SINGLE BEST HAND,
3820 REM    SEARCH FOR KEY CARDS
3830 REM ** CHECK FOR FIVES
3840 C9=5
3850 J=1
3860 GOTO 4100
3870 REM ** CHECK FOR EIGHTS
3880 C9=8
3890 J=2
3900 GOTO 4100
3910 REM ** CHECK FOR SEVENS
3920 C9=7
3930 J=3
3940 GOTO 4100
3950 REM ** CHECK FOR JACKS
3960 C9=11
3970 J=4
3980 GOTO 4100
3990 REM ** CHECK FOR ACES
4000 C9=1
4010 J=5
4020 GOTO 4100
4030 REM ** RANDOMLY CHOOSE A HAND IF
4040 REM    WE REACH THIS POINT
4050 FOR W9=1 TO N7:B9=INT(J*RND(1))+1:NEXT W9
4060 B9=I(B9)
4070 RETURN
4080 REM ** BEST HAND WILL BE THAT
4090 REM    WHICH HAS MOST OF CARD C9
4100 P9=0
4110 FOR I=1 TO 15
4120 Z(I)=0
4130 NEXT I
4140 FOR I=1 TO J
4150 FOR K=1 TO 4
4160 L=V(I(I),K)
4170 IF H(L,1)<>C9 THEN 4190
4180 Z(I)=Z(I)+1
4190 NEXT K
4200 IF Z(I)>P9 THEN P9=Z(I)
4210 NEXT I
4220 K=0
4230 FOR I=1 TO J
4240 IF Z(I)<>P9 THEN 4270
4250 K=K+1
4260 B9=I(I)
4270 NEXT I
4280 IF K>1 THEN 4300
4290 RETURN
4300 ON J GOTO 3870,3910,3950,3990,4030
4310 REM **
4320 REM ** GENERATE THE UP CARD
4330 REM **
4340 U=INT(36*RND(1))+13
4350 PRINT
4360 PRINT "The up card is the ";C$(D(U,1))
4370 PRINT
4380 FOR I=1 TO 2
4390 W(5,I)=D(U,I)
4400 NEXT I
4410 T9=W(5,1)
4420 IF W(5,1)<>11 THEN 4510
4430 IF R=0 THEN 4480
4440 PRINT "2 points to me "
4450 S1=S1+2
4460 IF S1>=121 THEN 1430
4470 RETURN
4480 PRINT "2 points to you "
4490 S2=S2+2
4500 IF S2>=121 THEN 1440
4510 RETURN
4520 REM **
4530 REM ** SCORE THE 5 CARD HAND
4540 REM **
4550 REM    CHECK FOR A JACK OF SAME
4560 REM    SUIT AS UP CARD, EXCEPT CRIB
4570 P=0
4580 IF O=1 THEN 4650
4590 FOR I=1 TO 4
4600 IF W(I,1)<>11 THEN 4640
4610 IF W(I,2)<>W(5,2) THEN 4640
4620 P=P+1
4630 GOTO 4650
4640 NEXT I
4650 REM ** CHECK FOR A 4 OR 5 CARD
4660 REM    FLUSH
4670 FOR I=1 TO 3
4680 IF W(I,2)<>W(I+1,2) THEN 4750
```

Cribbage

```
4690 NEXT I
4700 REM ** CRIB SCORES ONLY FOR A 5
4710 REM     CARD FLUSH
4720 IF C<>0 THEN 4770
4730 P=P+4
4740 IF W(4,3)<>W(5,3) THEN 4790
4750 P=P+1
4760 GOTO 4790
4770 IF W(4,3)<>W(5,3) THEN 4790
4780 P=P+5
4790 REM ** CHECK FOR 2 CARD SUMS OF 15
4800 FOR I=1 TO 4
4810 FOR J=I+1 TO 5
4820 IF W(I,2)+W(J,2)<>15 THEN 4840
4830 P=P+2
4840 NEXT J
4850 NEXT I
4860 REM ** CHECK FOR 3 CARD SUMS OF 15
4870 FOR I=1 TO 3
4880 FOR J=I+1 TO 4
4890 FOR K=J+1 TO 5
4900 IF W(I,2)+W(J,2)+W(K,2)<>15 THEN 4920
4910 P=P+2
4920 NEXT K
4930 NEXT J
4940 NEXT I
4950 REM ** CHECK FOR 4 CARD SUMS OF 15
4960 FOR I=1 TO 2
4970 FOR J=I+1 TO 3
4980 FOR K=J+1 TO 4
4990 FOR L=K+1 TO 5
5000 IF W(I,2)+W(J,2)+W(K,2)+W(L,2)<>15 THEN 5020
5010 P=P+2
5020 NEXT L
5030 NEXT K
5040 NEXT J
5050 NEXT I
5060 REM ** CHECK FOR 5 CARD SUMS OF 15
5070 S=0
5080 FOR I=1 TO 5
5090 S=S+W(I,2)
5100 NEXT I
5110 IF S<>15 THEN 5130
5120 P=P+2
5130 REM ** CHECK FOR PAIRS AND THREE
5140 REM     OR FOUR OF A KIND
5150 FOR I=1 TO 13
5160 Z(I)=0
5170 NEXT I
5180 FOR I=1 TO 5
5190 J=W(I,4)
5200 Z(J)=Z(J)+1
5210 NEXT I
5220 FOR I=1 TO 13
5230 ON Z(I)+1 GOTO 5270,5270,5260,5250,5240
5240 P=P+6
5250 P=P+4
5260 P=P+2
5270 NEXT I
5280 REM ** SORT HAND INTO ASCENDING
5290 REM     SEQUENCE
5300 FOR I=1 TO 5
5310 FOR J=1 TO 5
5320 IF W(I,4)<=W(J,4) THEN 5360
5330 X=W(I,4)
5340 W(I,4)=W(J,4)
5350 W(J,4)=X
5360 NEXT J
5370 NEXT I
5380 REM ** CHECK FOR A 5 CARD RUN
5390 B=W(1,4)-B(1,1)
5400 FOR I=1 TO 11
5410 FOR J=1 TO 5
5420 B(I,J)=B(I,J)+B
5430 NEXT J
5440 NEXT I
5450 FOR I=1 TO 11
5460 FOR J=1 TO 5
5470 IF W(J,4)<>B(I,J) THEN 5520
5480 NEXT J
5490 REM ** A 5 CARD RUN
5500 P=P+B(1,4)
5510 RETURN
5520 NEXT I
5530 REM ** CHECK FOR A 4 CARD RUN
5540 FOR L=1 TO 2
5550 B=W(L,4)-B(1,1)
5560 FOR I=1 TO 4
5570 FOR J=1 TO 4
5580 B(I,J)=B(I,J)+B
5590 NEXT J
5600 NEXT I
5610 FOR I=1 TO 4
5620 FOR K=1 TO 4
5630 IF W(K+L-1,4)<>B(I,K) THEN 5680
5640 NEXT K
5650 REM ** A 4 CARD RUN
5660 P=P+B(1,4)
5670 RETURN
5680 NEXT I
5690 NEXT L
5700 REM ** CHECK FOR A 3 CARD RUN
5710 FOR L=1 TO 3
5720 B=W(L,4)-B(1)
5730 FOR I=1 TO 3
5740 B(I)=B(I)+B
5750 NEXT I
5760 FOR I=1 TO 3
5770 IF W(L+I-1,4)<>B(I) THEN 5820
5780 NEXT I
5790 REM ** A 3 CARD RUN
5800 P=P+B(3)
5810 RETURN
5820 NEXT L
5830 RETURN
5840 REM **
5850 REM ** SHUFFLE THE DECK
5860 REM **
5870 FOR I=1 TO 52
5880 Z(I)=0
5890 NEXT I
5900 FOR I=1 TO 52
5910 J=INT(52*RND(1))+1
5920 IF Z(J)<>0 THEN 5910
5930 D(I,1)=J
5940 D(I,2)=INT((J-1)/13)+1
5950 D(I,4)=J-13*INT((J-1)/13)
5960 DV=10:IF D(I,4)<DV THEN DV=D(I,4)
5970 D(I,3)=DV
5980 Z(J)=1
5990 NEXT I
6000 RETURN
6010 REM **
6020 REM ** CUT FOR DEAL
6030 REM **
6040 PRINT "Please cut for deal";
6050 INPUT C
6060 IF C<1 THEN 6080
6070 IF C<53 THEN 6100
6080 PRINT "Enter the card number to cut."
6090 GOTO 6040
6100 IF C<>INT(C) THEN 6080
6110 C1=D(C,1)
6120 PRINT "Your card is the ";C$(C1)
6130 J=INT(52*RND(1))+1
6140 IF J=C THEN 6130
6150 J1=D(J,1)
6160 PRINT "  My card is the ";C$(J1)
6170 IF D(C,4)<D(J,4) THEN 6240
6180 IF D(J,4)<D(C,4) THEN 6210
6190 PRINT "Cut again"
6200 GOTO 6040
6210 REM ** COMPUTER DEALS
6220 N=0
6230 RETURN
6240 REM ** PLAYER DEALS
```

Gribbage

```
6250 N=1
6260 RETURN
6270 REM **
6280 REM ** DEAL
6290 REM **
6300 IF M=0 THEN 6330
6310 PRINT "You are dealing."
6320 GOTO 6340
6330 PRINT "I am dealing."
6340 M1=0
6350 P1=0
6360 PRINT
6370 PRINT "Your cards are:"
6380 FOR I=1 TO 6
6390 GOSUB 7
6400 L=[illegible]
6410 FOR J=1 TO 6
6420 REM ** COMPUTER'S HAND
6430 H(1,J)=D(K,J)
6440 REM ** PLAYER'S HAND
6450 H(2,J)=D(L,J)
```

```
6460 NEXT J
6470 PRINT USING"###";I;
6480 PRINT" ";D$(I,J);
6490 NEXT I
6500 RETURN
6510 DATA [illegible]
6520 DATA [illegible]
6530 DATA [illegible]
6540 DATA [illegible]
6550 DATA [illegible]
6560 DATA [illegible]
6570 DATA [illegible]
6580 DATA [illegible]
6590 DATA [illegible]
6600 DATA [illegible]
6610 DATA [illegible]
6620 DATA [illegible]
6630 DATA [illegible]
6640 DATA [illegible]
6650 END
```

```
**************** CRIBBAGE ****************

Enter a number from 1 to 500? 400


Please cut for deal? 26
Your card is the  4 of Spades
  My card is the  5 of Clubs
You are dealing.

Your cards are:
  1)  6 of Clubs
  2)  4 of Clubs
  3)  5 of Clubs
  4)  4 of Diamonds
  5)  A of Spades
  6) 10 of Spades

Your discards? 2,1

The up card is the  6 of Spades

My card is the  A of Hearts
Sum = 1, Points =  0
Your play? 5
You played the  A of Spades
Sum = 2, Points =  2
My card is the  5 of Hearts
Sum = 7, Points =  0
Your play? 6
You played the 10 of Spades
Sum =17, Points =  0
My card is the 10 of Diamonds
Sum =27, Points =  2
Your play? 4
You played the  4 of Diamonds
Sum =31, Points =  2
My card is the  A of Clubs
Sum = 1, Points =  0
Your play? 3
You played the  5 of Clubs
Sum = 6, Points =  0

You get 1 point for the last card.

I score first
My cards are

 5 of Hearts
 A of Hearts
 A of Clubs
10 of Diamonds

 6 points
```

```
How many points? 4
The crib cards are

 4 of Hearts
 4 of Clubs
 8 of Hearts
 6 of Clubs
How many points? 8

Muggins for 1 points


I have 9 points.
You have 16 points.

I am dealing.

Your cards are:
  1)  4 of Clubs
  2) 10 of Spades
  3)  8 of Hearts
  4)  2 of Clubs
  5)  3 of Diamonds
  6)  9 of Diamonds
```

```
**************** CRIBBAGE ****************

Enter a number from 1 to 500? 225


Please cut for deal? 23
Your card is the  6 of Clubs
  My card is the  8 of Hearts
I am dealing.

Your cards are:
  1)  2 of Clubs
  2)  9 of Diamonds
  3)  9 of Spades
  4)  6 of Hearts
  5)  7 of Spades
  6)  3 of Diamonds

Your discards? 1,2

The up card is the  2 of Spades

Your play? 5
You played the  7 of Spades
Sum = 7, Points =  0
```

Cribbage

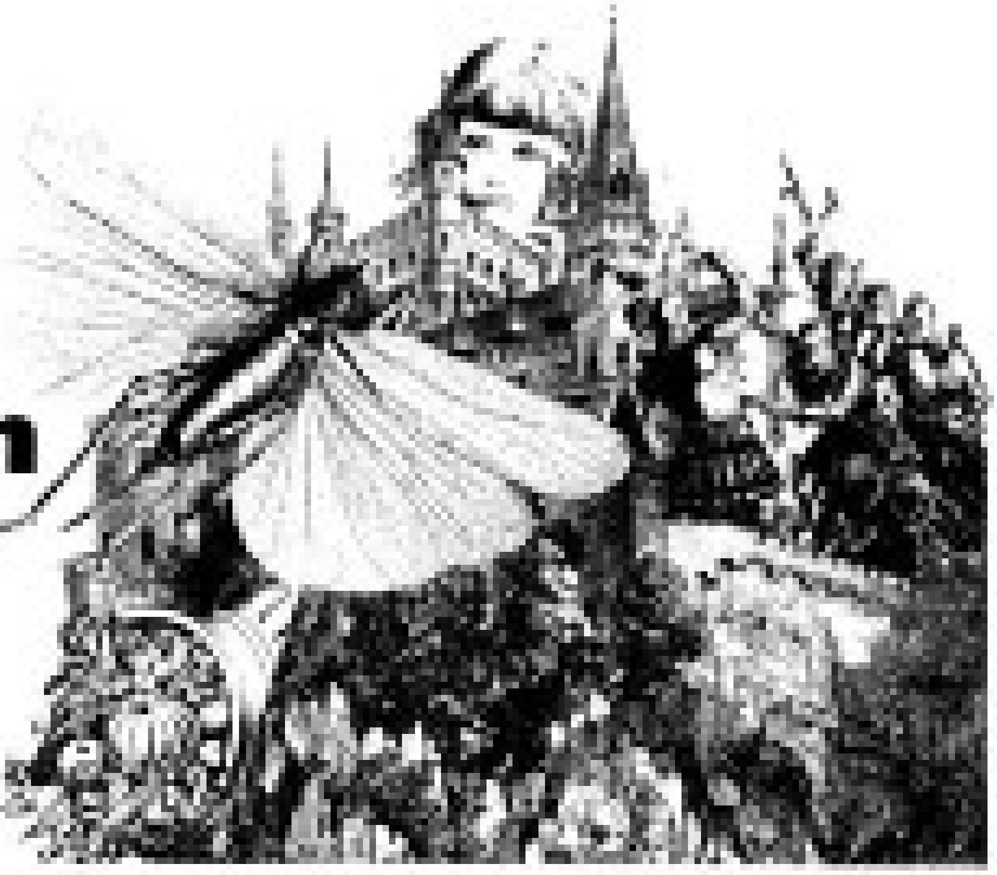
```
My card is the  7 of Diamonds
Sum =15, Points =  2
Your play? 3
You played the  8 of Spades
Sum =23, Points =  0
My card is the  6 of Clubs
Sum =29, Points =  0
Your play? 4
That totals more than 31
? GO
My card is the  2 of Clubs
Sum =31, Points =  2
Your play? GO
My card is the  6 of Clubs
Sum = 6, Points =  0

I get one point for the last card.

Your play? 4
You played the  4 of Hearts
Sum = 4, Points =  0
Your play? GO

You get one point for the last card.

Your play? 4
Already played
? 2
Already played
? GO


You get one point for the last card.

Your play? GO

You get one point for the last card.

Your play? GO


You get one point for the last card.

Your play? GO

You get one point for the last card.

Your play? 1
You discarded that card.
? GO

You get one point for the last card.

Your play? GO

You get one point for the last card.

Your play? 5
Already played
? 4
You played the  5 of Diamonds
Sum = 5, Points =  0

You get 1 point for the last card.

You score first
How many points? 10

Not with that hand
 10

Not with that hand
 5

Not with that hand
 3

Not with that hand
 1
```

```
Muggins for 1 points

My cards are

 A of Clubs
 7 of Diamonds
 2 of Clubs
 9 of Hearts

 0 points

The crib cards are

 2 of Spades
 5 of Clubs
 6 of Clubs
 9 of Diamonds

 2 points


I have 16 points.
You have 9 points.

You are dealing.

Your cards are:
   1:  8 of Clubs
   2:  3 of Clubs
   3:  5 of Clubs
   4:  4 of Diamonds
   5:  A of Spades
   6: 10 of Spades

Your discards? 5,2

The up card is the  8 of Diamonds

My card is the  3 of Hearts
Sum = 3, Points =  0
Your play? 1
You played the  8 of Clubs
Sum =11, Points =  0
My card is the  5 of Hearts
Sum =16, Points =  0
Your play? 4
You played the  4 of Diamonds
Sum =20, Points =  0
My card is the  9 of Clubs
Sum =29, Points =  0
Your play? 6
That totals more than 31
? GO

I get 1 point for the last card.

Your play? 6
You played the 10 of Spades
Sum =10, Points =  0
My card is the 10 of Diamonds
Sum =20, Points =  2
Your play? 3
You played the  5 of Clubs
Sum =25, Points =  0

You get 1 point for the last card.

 I score first
My cards are

  3 of Hearts
  5 of Hearts
  9 of Clubs
 10 of Diamonds

  4 points

How many points? 7
```

Cribbage

```
Muggins for 3 points

The crib cards are

 J of Hearts
 6 of Clubs
 9 of Clubs
 3 of Clubs
How many points? 3

Not with that hand
 1

Muggins for 1 points


I have 29 points.
You have 14 points.




 **************** CRIBBAGE ****************

Enter a number from 1 to 500? 40


Please cut for deal? 36
Your card is the  9 of Clubs
  My card is the  K of Diamonds
You are dealing.

Your cards are:
   1)  4 of Spades
   2)  6 of Clubs
   3)  5 of Clubs
   4)  5 of Hearts
   5)  3 of Clubs
   6)  5 of Spades

Your discards? 2,3

The up card is the  4 of Diamonds

My card is the  7 of Spades
Sum = 7, Points =  0
Your play? 1
You played the  4 of Spades
Sum =11, Points =  0
My card is the  7 of Hearts
Sum =18, Points =  0
Your play? 6
You played the  5 of Spades
Sum =23, Points =  0
My card is the  8 of Clubs
Sum =31, Points =  2
Your play? GO
My card is the  7 of Spades
Sum = 7, Points =  0

I get one point for the last card.

Your play? 5
You played the  3 of Clubs
Sum = 3, Points =  0
Your play? 4
You played the  5 of Hearts
Sum = 8, Points =  0

You get 1 point for the last card.

I score first
My cards are

  7 of Spades
  7 of Hearts
  8 of Clubs
  5 of Diamonds

  6 points

How many points? 2

Muggins for 2 points

The crib cards are

  K of Clubs
  6 of Spades
  7 of Hearts
  6 of Clubs
How many points? 4

I have 11 points.
You have 7 points.

I am dealing.

Your cards are:
   1)  Q of Clubs
   2)  3 of Spades
   3)  3 of Clubs
   4)  K of Spades
   5)  K of Diamonds
   6)  5 of Diamonds

Your discards? 1,4

The up card is the 10 of Spades

Your play? 4
You discarded that card.
? 5
You played the  K of Diamonds
Sum =10, Points =  0
My card is the  J of Spades
Sum =20, Points =  0
Your play? 2
You played the  3 of Spades
Sum =23, Points =  0
Go
Your play? 6
You played the  5 of Diamonds
Sum =28, Points =  0
Your play? 1
You discarded that card.
? 2
Already played
? 3
That totals more than 31
? GO

I'll give you 1 point for last card.

My card is the  J of Spades
Sum =10, Points =  0
```

Dukedom



Hammurabi by Rick Merrill and David Ahl (1969) is the original computerized land management game. It was expanded by Lee Schneider and Todd Voros as **Kingdom** (1974) and then by Vince Talbot as **Dukedom** (1976). It was further revised by Jamie Hanrahan and finally converted to Microsoft Basic by Richard Kaapke. This final version first appeared in *Creative Computing*, February 1980.

You are one of several Dukes chosen by the High King to help run the Kingdom. Your Duchy is not in the best of shape, and your job is to build up its population, land holdings, and grain reserves. Your secret ambition is to become powerful enough to overthrow the High King.

The game cycles on an annual basis, and it is now fall and the harvest has just been completed. Each year at this time the computer will display the current population, land and grain totals, followed by a detailed report of the previous year's events. Note that land and grain are measured in metric units hectares (HA.) and hectoliters (HL.), respectively.

Each year you will have to make the following decisions:

Grain for Food

You must decide how much grain to feed the peasants. 14 HL. of grain will just adequately feed one peasant; 13 will cause some hunger and decrease the peasants' fighting ability, and 12 or fewer will cause some starvation. The peasants will complain if you try to starve them excessively and they know that you are holding back grain. If you feed the peasants more than 14 HL. each (up to a maximum of 18) they will appreciate the boon and fight better in any war the following summer. A long term memory keeps track of the peasants' cumulative attitude (it fades slowly with time) and if you create sufficient bad will (by underfeeding them, for instance) they will depose you. You may enter the quantity of grain for the peasants in two ways. Numbers less than 100 are interpreted as hectoliters per peasant, while an entry of 100 or more represents the total amount for the entire population.

Land to Buy

Enter the number of hectares of land you want to buy. The prices offered vary from about 4 hectoliters/hectare to about 30, depending primarily on last year's crop yield. If you don't want to buy any land, enter 0. You will then be given the option of selling your land at a price one unit lower than the buying price. Enter the number of hectares you want to sell, or enter 0 if you don't want to sell any.

Land to Plant

Enter the number of hectares you wish to plant. Each hectare planted will require 2 hectoliters of grain to seed it. Also, remember that each peasant can plant and care for no more than 4 hectares. There is no fertilizer and no alternate crop, so land used many years in a row becomes depleted. The annual report lists the number of hectares you have of each of six classes from 100% yield to 0%. In any given year, land used in any class moves 1 step closer to being totally depleted while unused land moves two steps closer to fallow (100%). The best quality land will always be planted first. The yield for fallow land is calculated each year at random (variances in the weather) and ranges from 4 to 13 hectoliters of grain harvested for each hectare planted. The actual yield obtained will be the average generated by the various qualities of land used.

Special Operating Instructions

When a response is prompted by a "?", a Y or N may be given for Yes or No, respectively. A simple return will be assumed to be a "N" response.

When a response is prompted by a "*", a non-negative integer is required. Any fraction will be removed from input, and a simple return will be interpreted as an entry of 0.

General Information

Running totals are maintained by the computer. All additions and subtractions are made at once and further transactions are limited by the current balance. No credit is allowed (with one exception).

One hectare of land equals about 2.5 acres. One hectoliter of grain equals about 2.8 bushels.

It is (usually) necessary to gamble occasionally to win. Most gambles consist of buying land you can't afford at very low prices and gambling that yield will be high and there won't be a war. If the gamble fails, you will spend the next ten years recovering (if you survive, that is).

Food Allocation

By overfeeding the peasants when possible, you can build up good will among the population. This may save your life as it can counteract unavoidable resentment in the future (during times of famine, for instance). Judge Lynch never sleeps!

Land Trading

When you buy land you always receive 60% quality. When you sell land the machine sells your 60% land until it's used up, then the 80% quality, and finally the 100% if you sell that much. You can never sell 40% (or poorer) quality land, no buyers will accept it.

There is another limit on land sales: You cannot sell more than 4000 HL. worth in any one year. That's all the grain available to pay you with.

Crop Hazards

Sometimes the rats get into the granary and eat up to 10% or so of your reserve grain. Rats never eat field grain—field grain is eaten by the seven year locusts. They eat half of all your crop in the years that they appear. The yield printed in those years already includes locust losses.

The King's Peasant Levy

Occasionally rats will eat so much of the High King's grain that some of his workers starve to death. When this happens, the King will require some peasants from each of his Dukes as replacements. You may supply them as requested or pay an alternate amount of grain.

Wars

Neighboring Dukes may attack you, hoping to obtain some land. This is more probable in years of poor crop yield. It is no secret, and you can attack first if you wish. This means that you and your peasants go over there some night and burn a few huts and generally make a great din. If your attack is impressive, the nearby Duke may cancel his war plans. This depends on the size of your attack force and the size of his current defense force. You will certainly lose some peasants in such an attack.

If your first attack fails, or if you do not elect to attack first, the war will ensue. You had better hire some mercenaries since your enemy is doing the same. A mercenary is worth about 8 peasants in fighting power. Mercenaries cost 40 HL. each, and there is a maximum of 75 mercenaries available to you. If your fighting power (mercenaries & peasants) exceeds your enemy's, you win, otherwise he wins. The winner acquires land from the loser in ratio to the size of the win. How much you fed the peasants last fall is now important and may occasionally make the difference between a win and a loss.

The winner also picks up some grain from the captured land and is able to harvest the captured land along with his own (at the same yield as his original land). The land acquired (or lost) will appear in next year's land quality table evenly distributed between the 100%, 80%, and 60% categories.

Since the mercenaries are horse mounted and the peasants are on foot, the mercenaries attack first. Thus, a large number of mercenaries will keep down your peasant losses whether you win or lose. The mercenaries must be paid after the battle. You can use granary reserves and the actual grain captured from acquired land (the one exception to the seventh rule), but not the anticipated harvest (the mercenaries want their pay NOW).

If you can't pay all the mercenaries, they will attack your peasants, killing them and collecting grain from their huts until fully paid. Since the peasants don't have much grain left this late in the season, even a small default may cost you a lot of peasants. Incidentally, if the mercenaries do turn on the peasants, they also rape every female in the Duchy, making next year's birth rate very high. (We ignore the fact that the women deliver only a few months later—these are no ordinary mercenaries.) All peasant deaths from war cause resentment to build up against you. Attack by your own mercenaries is quite heavily resented.

Plagues and Poxes

The plague will kill off a third of the population, but in so doing it confers a 13-year immunity on the survivors. Therefore the plague cannot occur again for at least 13 years.

The pox is less deadly: it kills 10% or fewer peasants but confers no immunity. It can occur several years in a row.

Taxes and Expenses

The High King charges a tax of ½ HL. of grain for each HA. of land you possess (after war gains or losses). You had better be able to pay.

After the grain is harvested it must be milled. The castle granary can mill a maximum of 4000 HL. during the year. Additional harvest must be sent to the village miller at a charge of 10% of the amount milled. This amount is added to the castle overhead, which is fixed at 120 HL. per year.

Births and Deaths

During the year, some natural deaths and numerous births have occurred. Both are lumped together as if they occur just after the fall harvest.

The computer now prints out the results for the year, and you start over again with the peasant's food decision.

Winning the Game

Through astute land management, profitable real-estate trading, winning a few wars, and lots of luck, you may be able to build up your Duchy. If instead you let it decline, the High King may take it away from you and select a new manager. An unemployed Duke can find employment as a mercenary in somebody else's game.

Prosperity brings its risks. If you get too prosperous, the High King may become worried and begin to subsidize wars against you. These subsidies get larger as the game progresses.

If you should persevere, you may eventually beat some Duke so badly that you succeed in taking over his entire Duchy. In addition to the mere 400 HA. of land you will obtain, you get all of his surviving peasants (your war casualties will be positive) and the remaining contents of his granary. This poses a real threat to the crown, and the High King will begin planning a direct attack against you. At the beginning of the following year the King will demand twice the usual tax. You may pay it and continue the game as usual, or you may refuse. You will never be rid of the double tax once it starts unless you refuse to pay it. This constitutes defiance of your Liege Lord, and the King has his excuse for attacking you directly. The rest of the year will go as usual except that there will be no tax at all (no peasant levies either) and there will be no war threats (nobody dares).

The following year the King will attack just before planting time. You will have to hire as many foreign mercenaries as possible at 100 HL. each, grain in advance (the loser won't be in any position to pay). The program will automatically hire as many mercenaries as you can afford at the time. There is no limit to the number of foreign mercenaries you can hire except your current grain holdings. Each mercenary has as much fighting power as 8 peasants. If your total fighting strength is greater than the King's, you win. 250 to 300 mercenaries ought to be enough, depending on how many peasants you have.

Either way, the game is over. Good Luck!

Historical Notes

No historical accuracy is implied in any way by this game. Except for the grain yields and planting requirements, the game is almost pure fiction. There were few mercenaries, Dukes did not often fight each other nor readily buy and sell land, the church was a power to be feared. The metric system had not yet been developed and the seven year famines were not so reliable.

A Duke would have as his lord not a King but a Count or Earl and would have under him Barons or Marquises. Their various nobles were the fighting force of the Kingdom (peasants did not fight). Taxes were paid not in grain but in periods of military service. (Yes, the National Guard was a medieval invention—at the latest.)

Dukedom

```
10 REM      DUKEDOM-MICROSOFT BASIC
20 REM
30 [illegible]
40 CLS:PRINT
50 CLEAR 600
60 DEF FNR%(G1,G2)=RND(1)*(G2-G1)+G1
70 DEF FN[illegible]
80 GOTO 440:' skip subroutine def
90 REM
100 REM     SUBPROGRAM DEFINITIONS
110 REM
120 DIM [illegible]
130 REM PARTIALLY GAUSSIAN RANDOM'S
140 G3=FNR%(G1,G2)
150 G3=FNR%(G1,G2)
160 IF FNR%(G1,G2)<5 THEN G5=(G3+FNR%(G1,G2))/2 ELSE G5=G3
170 RETURN
180 REM
190 REM    READ YES/NO
200 REM
210 LINE INPUT Y$:Y$=LEFT$(Y$,1)
220 IF LEN(Y$)=0 THEN Y$="N" ELSE IF ASC(Y$) > 95 THEN Y$=CHR$(ASC(Y$)-32)
230 IF Y$="Y" OR Y$="N" THEN RETURN ELSE PRINT "Please enter YES or NO";
240 GOTO 210
250 REM
260 REM    INPUT NUMERIC RESPONSE
270 REM
280 LINE INPUT Y$:Y=INT(VAL(Y$))
290 IF Y>= 0 THEN RETURN ELSE PRINT "Pleas enter a non-negative #:";
300 GOTO 280
310 REM
320 REM    COMMON MESSAGES
330 REM
340 PRINT "But you don't have enough grain":PRINT"You have"G"HL. of grain left,"
350 IF Y1>=4 THEN PRINT "Enough to buy"INT(G/Y1)"HA. of land":RETURN
360 PRINT "Enough to plant"INT(G/2)"HA. of land":RETURN
370 PRINT "But you don't have enough land"
380 PRINT "You only have"F"HA. of land left":RETURN
390 PRINT "But you don't have enough peasants"
400 PRINT "Your peasants can only plant"4*P"HA. of land":RETURN
410 REM
420 REM    INTRO TO THE GAME
430 REM
440 PRINT "D U K E D O M":PRINT:PRINT " - MS Microsoft Basic Version"
450 PRINT " Converted by:[illegible] "          "Bob Anderson"
460 [illegible]:REM ONCE ONLY INIT
470 PRINT "Do you want to skip detailed reports ";:GOSUB 210:R$=Y$
480 REM
490 REM    START NEW GAME
500 REM
510 READ Y%,P1,U1,U2,K1,D,F,L,G
520 FOR I%=1 TO 8:READ P(I%):NEXT
530 FOR I%=1 TO 7:READ L(I%):NEXT
540 FOR I%=1 TO 10:READ G(I%):NEXT
550 FOR I%=1 TO 6:READ S(I%):NEXT
560 FOR I%=1 TO 8:READ P$(I%):NEXT
570 FOR I%=1 TO 7:READ L$(I%):NEXT
580 FOR I%=1 TO 10:READ G$(I%):[illegible]
590 RESTORE
600 DATA 0,3,96,0,0,0,0,100,600,4177,96,0,0,0,0,0
610 DATA -4,8,600,0,0,5193,1344,0,-768,0,0,0,1516,-120,-300,0,0,200,300,0,0,0
620 REM
630 REM    INIT RANDOM BASE TABLE
640 REM
650 [illegible]
660 [illegible]
670 [illegible]
680 [illegible]
690 REM
700 REM    DISPLAY LAST YEARS RESULTS
710 REM
720 PRINT:PRINT:PRINT "Year"Y%"Peasants"P"Land"F"Grain"G:PRINT
730 IF R$="Y" THEN 800
740 FOR J1%=1 TO 8:IF P1(J1%)<>0 OR J1%=1 THEN PRINT P$(J1%);TAB(25);P1(J1%)
750 NEXT J1%:PRINT "Peasants at end";TAB(25);P:PRINT
760 FOR J1%=1 TO 3:IF L1(J1%)<>0 OR J1%=1 THEN PRINT L$(J1%);TAB(25);L1(J1%)
770 NEXT J1%:PRINT "Land at end of year";TAB(25);F:PRINT
780 PRINT "100%  80%  60%  40%  20%  Depl":PRINT USING "#####";U(1);
```

Dukedom

```
790 FOR J1=2 TO 6:PRINT USING "#####";[illegible];:NEXT J1:PRINT:PRINT
800 FOR J2=1 TO 16:IF G(J2,1)<>0 OR J2=1 THEN PRINT [illegible];TAB(25);[illegible]
810 NEXT J2:PRINT "Grain at end of year";TAB(25);G
820 IF V=1 THEN PRINT "(Severe crop damage due to seven";:PRINT" year locusts)"
830 PRINT:PRINT:Y1=Y1+1
840 FOR J1=1 TO 6:[illegible]:NEXT:FOR J1=1 TO 16:[illegible]:NEXT
850 FOR J1=1 TO 10 :[illegible]:NEXT:[illegible]
860 REM
870 REM    TEST FOR END OF GAME
880 REM
890 IF P>=33 THEN 910 ELSE PRINT "You have so few peasants left that"
900 PRINT"the High King has abolished your Ducal":PRINT"right":GOTO 1420
910 IF L>=199 THEN 920 ELSE PRINT "You have so little land left that":GOTO 900
920 IF [illegible] OR [illegible] THEN 930 ELSE IF [illegible] THEN 950
930 PRINT "The peasants tired of war and starvation"
940 PRINT"You are deposed":PRINT:GOTO 1420
950 IF Y1> 45 AND [illegible] THEN PRINT "You have reached the age of retirement":GOTO 1420
960 U1=0:IF [illegible] THEN PRINT "The King demands twice the royal tax in" ELSE GOTO 1020
970 PRINT"THE HOPE TO PROVIDE WAR. WILL YOU PAY";: GOSUB 310
980 X3=2:IF W$="N" THEN X3=-1
990 REM
1000 REM    FOOD FOR PEASANTS
1010 REM
1020 PRINT "Grain for food =";:GOSUB 300:[illegible]
1030 IF [illegible] THEN GOSUB 340:GOTO 1020
1040 IF [illegible] AND [illegible] THEN PRINT "The peasants demonstrate before the":PRINT "castle"
1050 [illegible]
1060 [illegible]
1070 IF [illegible] THEN PRINT "Some peasants have starved":[illegible]
1080 [illegible]
1090 IF [illegible] THEN 930 ELSE IF [illegible] THEN 890
1100 REM
1110 REM    LAND BUY/SELL
1120 REM
1130 [illegible]
1140 PRINT "Land to buy at";[illegible];"HL./HA. = ";:GOSUB 300:[illegible]
1150 IF -G(2) > [illegible] THEN GOSUB 340:GOTO 1140
1160 [illegible]:IF [illegible] THEN 1170 ELSE [illegible]
1170 FOR J1=1 TO [illegible]:PRINT "Land to sell at";[illegible];"HL./HA. = ";:GOSUB 300
1180 IF [illegible] THEN PRINT "But you only have";[illegible];"HA. of good land":GOTO 1170
1190 [illegible]:IF [illegible] THEN 1220
1200 PRINT "No buyers have that much grain try less"
1210 NEXT J1:PRINT "Buyers have lost interest":[illegible]
1220 L(2)=-V
1230 FOR J2=6 TO 1 STEP -1:IF [illegible] THEN 1260
1240 [illegible]:NEXT J2
1250 PRINT "Land selling loop error":STOP
1260 [illegible]
1270 [illegible]:IF [illegible] THEN 910
1280 IF [illegible] AND [illegible] THEN 1290 ELSE GOTO 1310
1290 [illegible]:PRINT "The High King appropriates half"
1300 PRINT"of your earnings as punishment":PRINT"for selling at such a low price"
1310 [illegible]
1320 REM
1330 REM    WAR WITH THE KING
1340 REM
1350 IF X3<> -2 THEN 1460
1360 PRINT "The King's army is about to attack"
1370 PRINT"your duchy":[illegible]:PRINT"at 100 HL. each (pay in advance)"
1380 PRINT "You have hired";[illegible];"foreign mercenaries":IF [illegible] THEN 1400
1390 PRINT "Your head is placed atop of the":PRINT "castle gate.":GOTO 1420
1400 PRINT "Wipe the blood from the crown - you"
1410 PRINT"are High King! A nearby monarchy"
1420 PRINT"THREATENS WAR; HOW MANY .........":PRINT:PRINT:PRINT:END
1430 REM
1440 REM    GRAIN PRODUCTION
1450 REM
1460 PRINT "Land to be planted = ";:GOSUB 300:IF [illegible] THEN GOSUB 370:GOTO 1460
1470 [illegible]:IF [illegible] THEN GOSUB 340:GOTO 1460
1480 [illegible]
1490 FOR J1=1 TO [illegible]:NEXT
1500 FOR J2=1 TO 6:IF [illegible] THEN 1520
1510 [illegible]:NEXT J2
1520 PRINT "LAND TABLE ERROR":STOP
1530 [illegible]
1540 FOR J1=[illegible] TO [illegible]:[illegible]:NEXT J1
1550 FOR J1=1 TO [illegible]:[illegible]:NEXT J1:[illegible]
1560 REM
```

Dukedom

```
1570 REM    CROP YIELD AND LOSS
1580 REM
1590 [illegible] THEN PRINT "Seven year locusts":[illegible]
1600 [illegible]
1610 FOR [illegible]:NEXT [illegible]:IF [illegible] THEN [illegible]
1620 C1=INT([illegible])
1630 PRINT "Yield =";[illegible]:IF [illegible] THEN [illegible]
1640 [illegible]
1650 PRINT "Rats infest the grainery";:IF [illegible] THEN [illegible]
1660 [illegible]
1670 PRINT "The king requires";[illegible];"peasants for":PRINT"his estate and mines.Will you supply"
1680 PRINT"them (Y)es or (N)o";[illegible]
1690 PRINT"grain instead (Y/N) ? ";:GOSUB 210
1700 IF Y$="N" THEN [illegible]:GOTO [illegible]
1710 [illegible]
1720 REM
1730 REM    WAR
1740 REM
1750 IF [illegible] THEN [illegible]
1760 PRINT "The High King calls for peasant levies"
1770 PRINT"and hires many foreign mercenaries":[illegible]:GOTO [illegible]
1780 [illegible]
1790 IF [illegible] THEN [illegible]
1800 PRINT "The High King grows uneasy and may"
1810 PRINT "be subsidizing wars against you": [illegible]:GOTO [illegible]
1820 [illegible]
1830 [illegible]:IF [illegible] THEN [illegible]
1840 PRINT "A nearby Duke threatens war; ";[illegible]
1850 [illegible]:PRINT "Will you attack first ? ";:GOSUB 210
1860 IF Y$[illegible] THEN [illegible]
1870 IF [illegible] THEN [illegible] ELSE PRINT "Peace negotiations successful"
1880 [illegible]:GOTO [illegible]
1890 PRINT "First strike failed - you need"
1900 PRINT"professionals";[illegible]
1910 [illegible]:IF [illegible] THEN [illegible]:GOTO [illegible]
1920 PRINT "How many mercenaries will you hire":PRINT"at [illegible] each = ";[illegible]:IF [illegible] THEN PRINT
 "There are only 75 available for hire":GOTO [illegible]
1930 [illegible]
1940 [illegible]
1950 IF [illegible] THEN [illegible]
1960 PRINT "You have been over-run and have lost":PRINT"your entire Dukedom":GOTO [illegible]
1970 [illegible]
1980 FOR [illegible]:IF [illegible] THEN [illegible] ELSE [illegible]
1990 [illegible]:NEXT [illegible]
2000 IF [illegible] THEN [illegible]
2010 PRINT "You have overrun the enemy and annexed":PRINT"his entire Dukedom"
2020 [illegible]:IF [illegible] THEN [illegible]
2030 [illegible]:PRINT "The King fears for his throne and"
2040 PRINT"may be planning direct action": GOTO [illegible]
2050 IF [illegible] THEN [illegible]
2060 PRINT "You have won the war";[illegible]:GOTO [illegible]
2070 PRINT "You have lost the war";[illegible]
2080 IF [illegible] THEN [illegible] ELSE [illegible]
2090 [illegible]
2100 IF [illegible] THEN [illegible]:GOTO [illegible]
2110 [illegible]
2120 PRINT "There isn't enough grain to pay the":PRINT"mercenaries"
2130 [illegible]
2140 [illegible]
2150 REM
2160 REM  PLAGUE,BIRTHS,DEATHS
2170 REM
2180 [illegible]:IF [illegible] THEN [illegible]
2190 IF [illegible] THEN [illegible]
2200 IF [illegible] THEN [illegible]
2210 PRINT "The BLACK PLAGUE has struck the area":[illegible]
2220 [illegible]:GOTO [illegible]
2230 PRINT "A POX EPIDEMIC has broken out": [illegible]
2240 [illegible]
2250 [illegible]
2260 [illegible]
2270 [illegible]
2280 IF [illegible] THEN [illegible] ELSE [illegible]
2290 [illegible]
2300 IF [illegible] THEN [illegible]
2310 PRINT "You have insufficient grain to pay":PRINT"the royal tax":GOTO [illegible]
2320 [illegible]
2330 REM
```

Dukedom

```
2340 REM  UPDATE COUNTER AND CONTINUE
2350 REM
2360 [illegible]:GOTO 720
2370 DATA "Peasants at start","Starvations","King's levy","War casualties"
2380 DATA "Looting victims","Disease victims","Natural deaths","Births"
2390 DATA "Land at start","Bought/sold","Fruits of war"
2400 DATA "Grain at start","Used for food"
2410 DATA "Land deals","Seeding","Rat losses","Mercenary hire"
2420 DATA "Fruits of war","Crop yield","Castle expense","Royal tax"
2430 PRINT "Do you wish to play again ? ";:GOSUB [illegible]:IF Y$<>"Y" THEN [illegible]
```

```
D U K E D O M

 TI Microsoft Basic Version
 Converted By
        Bob Anderson
Do you want to skip detailed reports ?


Year 0 Peasants 100 Land 600 Grain 4177

Peasants at start          96
Natural deaths             -4
Births                      8
Peasants at end           100

Land at start             600
Land at end of year       600

100%  80%  60%  40%  20%  Depl
  216  200  184    0    0    0

Grain at start           5193
Used for food           -1344
Seeding                  -768
Crop yield               1516
Castle expense           -120
Royal tax                -300
Grain at end of year     4177
(Severe crop damage due to seven
 year locusts)


Grain for food =13
Some peasants have starved
Land to buy at 7 HL./HA. = 200
Land to be planted = 400
Yield = 9.03 HL./HA.


Year 1 Peasants 113 Land 800 Grain 3869

Peasants at start          100
Starvations                -2
Natural deaths             -4
Births                     19
Peasants at end           113

Land at start             600
Bought/sold               200
Land at end of year       800

100%  80%  60%  40%  20%  Depl
  400  216  184    0    0    0

Grain at start            4177
Used for food            -1200
Land deals               -1400
Seeding                   -800
Crop yield                3612
Castle expense            -120
Royal tax                 -400
Grain at end of year      3869


Grain for food =12
Some peasants have starved
Land to buy at 18 HL./HA. =
Land to sell at 17 HL./HA. =
Land to be planted = 400
Yield = 11 HL./HA.
Rats infest the granary
The king requires 3 peasants for
his estate and mines.Will you supply
them (Y)es or pay 300 HL.of
grain instead (N)o ? Y
A POX EPIDEMIC has broken out


Year 2 Peasants 109 Land 800 Grain 5366

Peasants at start          113
Starvations                -8
King's levy                -3
Disease victims            -4
Natural deaths             -5
Births                     16
Peasants at end           109

Land at start              800
Land at end of year        800

100%  80%  60%  40%  20%  Depl
  400  400    0    0    0    0

Grain at start            3869
Used for food            -1356
Seeding                   -800
Rat losses                -187
Crop yield                4400
Castle expense            -160
Royal tax                 -400
Grain at end of year      5366


Grain for food =17
Some peasants have starved
Land to buy at 21 HL./HA. = 80
Land to be planted = 400
Yield = 9 HL./HA.
Rats infest the granary


Year 3 Peasants 112 Land 880 Grain 4910

Peasants at start          109
Starvations                -8
Natural deaths             -5
Births                     16
Peasants at end            112

Land at start              800
Bought/sold                 80
Land at end of year        880

100%  80%  60%  40%  20%  Depl
  480  400    0    0    0    0
```

Dukedom

```
Grain at start              3086
Used for food              -1452
Land deals                 -1980
Seeding                     -800
Rat losses                  -242
Crop yield                  3600
Castle expense              -120
Royal tax                   -420
Grain at end of year        4916


Grain for food =12
Land to buy at 20 HL./HA. =
Land to sell at 19 HL./HA. =
Land to be planted = 450
Yield = 9 HL./HA.



Year 4 Peasants 153 Land 850 Grain 5794

Peasants at start            143
Natural deaths                -4
Births                        14
Peasants at end              153

Land at start                850
Land at end of year          850

100%  80%  60%  40%  20%  Depl
  450  400    0    0    0    0

Grain at start              4916
Used for food              -1716
Seeding                     -900
Crop yield                  4050
Castle expense              -125
Royal tax                   -405
Grain at end of year        5794


Grain for food =12
Land to buy at 17 HL./HA. = 50
Land to be planted = 400
Yield = 11 HL./HA.
Rats infest the granary
The king requires 5 peasants for
his estate and mines.Will you supply
them (Y)es or pay 500 HL.of
grain instead (N)o ? y



Year 5 Peasants 171 Land 900 Grain 6712

Peasants at start            153
King's levy                   -5
Natural deaths                -7
Births                        30
Peasants at end              171

Land at start                850
Bought/sold                   50
Land at end of year          900

100%  80%  60%  40%  20%  Depl
  500  400    0    0    0    0

Grain at start              5794
Used for food              -1836
Land deals                  -850
Seeding                     -800
Rat losses                  -275
Crop yield                  4400
Castle expense              -140
Royal tax                   -480
Grain at end of year        6712
```

```
Grain for food =12
Land to buy at 21 HL./HA. = 50
Land to be planted = 500
Yield = 9 HL./HA.
Rats infest the granary
The king requires 4 peasants for
his estate and mines.Will you supply
them (Y)es or pay 400 HL.of
grain instead (N)o ? y
The High King grows uneasy and may
be subsidizing wars against you



Year 6 Peasants 177 Land 950 Grain 6138

Peasants at start            171
King's levy                   -4
Natural deaths                -6
Births                        16
Peasants at end              177

Land at start                900
Bought/sold                   50
Land at end of year          950

100%  80%  60%  40%  20%  Depl
  450  500    0    0    0    0

Grain at start              6712
Used for food              -2052
Land deals                 -1050
Seeding                    -1000
Rat losses                  -176
Crop yield                  4500
Castle expense              -150
Royal tax                   -646
Grain at end of year        6138


Grain for food =12
Some peasants have starved


Land to buy at 18 HL./HA. =
Land to sell at 17 HL./HA. =
Land to be planted = 550
Seven year locusts
Yield = 4.74 HL./HA.
Rats infest the granary
The king requires 3 peasants for
his estate and mines.Will you supply
them (Y)es or pay 300 HL.of
grain instead (N)o ? y
The High King grows uneasy and may
be subsidizing wars against you



Year 7 Peasants 171 Land 950 Grain 4602

Peasants at start            177
Starvations                  -13
King's levy                   -3
Natural deaths                -8
Births                        18
Peasants at end              171

Land at start                950
Land at end of year          950

100%  80%  60%  40%  20%  Depl
  400  450  100    0    0    0
```

Dukedom

```
Grain at start             5150
Used for food             -2964
Seeding                   -1000
Rat losses                 -181
Crop yield                 5507
Castle expense             -120
Royal tax                  -475
Grain at end of year       4605


Grain for food =13
Some peasants have starved
Land to buy at 12 HL./HA. =
Land to sell at 11 HL./HA. =
Land to be planted = 480
Yield = 7.80 HL./HA.
Rats invade the palace
The King requires 2 peasants for
his estate and mines.Will you supply
them (Y)es or pay 500 HL.of
grain instead (N)o ? y
```

```
Year 10 Peasants 100 Land 980 Grain 4609

Peasants at start         200
Starvations               -18
King's levy                -2
Natural deaths             -7
Births                     15
Peasants at end           200

Land at start             980
Land at end of year       980

100%  80%  60%  40%  20%  Depl
  500  400   70    0    0    0

Grain at start           5605
Used for food           -2460
Seeding                  -900
Rat losses               -150
Crop yield               3519
Castle expense           -120
Royal tax                -875
Grain at end of year     4619

The peasants tire of war and starvation
You are deposed

Do you wish to play again ? n
```

Eliza

Eliza was originally written by Joseph Weizenbaum in 1966 at MIT. The first version in Basic was written by Jeff Shrager in 1973 and converted to MITS 8K Basic (later to become Microsoft Basic) by Steve North in 1977. It originally appeared in *Creative Computing*, July/August 1977.

Introduction

Eliza is a program which accepts natural English as input and carries on a reasonably coherent conversation based on the non-directive psychoanalytic techniques of Carl Rogers. You will have to forgive Eliza for her awkward English. You will find it is best not to use punctuation (especially commas and contractions) in your input and keep each line of input to one main idea. Since Eliza is a non-directive therapist, you will have to carry the conversation; nevertheless, that can lead to some mighty interesting results. You may end your conversation by typing in "SHUT UP" (or just "SHUT").

How It Works

In order to do what it does, Eliza must: (1) get a string from the user and prepare it for further processing; (2) find the keywords in the input string; (3) if a

keyword is found, take the part of the string following the keyword and "translate" all the personal pronouns and verbs ("I" becomes "YOU", "ARE" becomes "AM", etc.); (4) finally, look up an appropriate reply based on the keyword which was found, print it and, if necessary, the "translated" string. ELIZA uses four types of program data to accomplish this:

(1) 36 keywords, such as "I AM", "WHY DONT YOU", and "COMPUTER". The keywords are in order of priority, so Eliza will key on "YOU ARE" before "YOU".

(2) 12 strings used for the translation or conjugation process. These are in pairs such that if one member of the pair is found, the other is substituted for it. Examples: "I", "YOU", "AM", "ARE", etc.

(3) 112 reply strings. The strings are arranged in groups corresponding to the keywords. There is no fixed number of different replies for each keyword. Replies ending in a "*" are to be followed by the translated string, while the strings ending in normal punctuation are to be printed alone.

(4) Numerical data to determine which replies to print for each keyword. For each keyword there is a pair of numbers signifying the start of reply strings and the number of reply strings. Thus the fifth pair of numbers, (10, 4), means that the replies for the fifth keyword ("I DONT") start with the tenth reply string and that there are four replies.

Name	*Usage*
R(X),S(X),N(X)	*See text.*
I$	Input string
K$	Keyword string
C$	Translated or conjugated string
F$	Reply string, also used to save K$ in scanning for keyword
R$,S$	Strings used in conjugation process
P$	Previous input string
Z$	Sratch (used for simulating RESTORE NNNN statement)
N1	Number of keywords
N2	Number of conjugation strings
N3	Number of replies
K	Keyword number
S,T	Used to save K and L when scanning for keyword
X,L	X,L Scratch. X is generally used for looping, while L is used for scanning through strings.
V	Used for scanning for keyword string.

Detailed Explanation

Lines 10–160: Intialization. Arrays and strings are dimensioned. N1, N2, and N3, which represent the number of keywords, number of translation strings, and number of replies, respectively, are defined. Then the arrays are filled. S(keyword number) is the ordinal number of the start of the reply strings for a a given keyword, R(keyword number) is the actual reply to be used nest, and N(keyword number) is the last reply for that keyword. Finally, an introduction is printed.

Lines 170–255: User input section. This part of the program gets a string from the user, places one space at the start of the string and two at the end (to make it easier to correctly locate keywords and to prevent subscripting out of bounds), throws out all the apostrophes (so DONT and DON'T are equivalent), and stops if the word SHUT is found in the input string (which it takes to mean SHUT UP). Eliza also checks for repetitive input by the user.

Lines 260–370: Keyword-finding section. Eliza scans the input string for keywords and saves the keyword of highest priority temporarily in S, T, and F$. If no keyword is found, the keyword defaults to number 36, NOKEYFOUND (which causes Eliza to say something noncommital) and it skips the next section.

Lines 380–555: Translation or conjugation section. The part of the input string following the keyword is saved. Then pairs of translation strings, as described above, are read, and upon the occurrence of one of these strings, the other is substituted for it. When this is done Eliza makes sure there is only one leading space in the translated string.

Lines 560–640: Reply printing section. Using R(keyword number), S(keyword number), and N(keyword number), the correct reply is located. The pointer for the next reply is bumped and reset if it is too large. If the reply string ends in a "*" it is printed with the translated string, otherwise it is printed alone. The previously entered input string is saved to permit checking for repetitive input, and then Eliza goes back for more input.

Modifications

You can easily add, change, or delete any of the keywords, translation words, or replies. Remember, you will also have to change N1, N2, N3, and/or the numerical data. Just as a suggestion, if you decide to insert "ME" and "YOU" in the translation string list, put a nonprinting (control) character in YOU to prevent Eliza from substituting I→YOU→ME. This means that YOU will always be assumed to be the subject of a verb, never the object, but resolving that difficulty is a whole different problem.

What It All Means

We'll leave this to you. Although this program is an inferior imitation of the original, it does work. It is pretty far-fetched to believe that a psycholanalyst is nothing but a sentence-input-keyword-finder-conjugator-reply finder, but if you really think so, you can buy your computer a speech-recognition unit, a Computalker, and a green couch, and charge $75 per hour. My computer, the doctor!

Eliza

```
10 REM
20 REM    ELIZA/DOCTOR
30 REM    CREATED BY JOSEPH WEIZENBAUM AT MIT    THIS VERSION BY JEFF SHRAGER
50 REM    EDITED BY BOB ANDERSON
60 REM    CREATIVE COMPUTING
70 REM
80 REM --- INITIALIZATION ---
90 DIM C$(72),I$(72),K$(72),F$(72),S$(72),R$(72),P$(72),Z$(72)
100 DIM S(36),R(36),N(36)
110 N1=36:N2=14:N3=112
120 FOR X=1 TO N1+N2+N3:READ Z$:NEXT X
130 FOR X=1 TO N1
140 READ S(X),L:R(X)=S(X):N(X)=S(X)+L-1
150 NEXT X
160 PRINT "HI! I'M ELIZA. WHAT IS YOUR PROBLEM?"
170 REM
180 REM --- USER INPUT ---
190 REM
200 INPUT I$
210 I$=" "+I$+"  "
220 REM
230 FOR L=1 TO LEN (I$)
240 IF MID$(I$,L,1)="'" THEN I$=LEFT$(I$,L-1)+RIGHT$(I$,LEN(I$)-L):GOTO 240
250 IF L+4 <= LEN(I$) THEN IF MID$(I$,L,4)="SHUT" THEN PRINT "SHUT UP...":END
260 NEXT L
270 IF I$=P$ THEN PRINT "PLEASE DON'T REPEAT YOURSELF!":GOTO 170
280 REM
290 REM --- FIND KEYWORD ---
300 REM
310 RESTORE
320 S=0
330 FOR K=1 TO N1
340 READ K$
350 IF S>0 THEN 390
360 FOR L=1 TO LEN(I$)-LEN(K$)+1
370 IF MID$(I$,L,LEN(K$))=K$ THEN S=K:T=L:F$=K$
380 NEXT L
390 NEXT K
400 IF S>0 THEN K=S:L=T:GOTO 430
410 K=36:GOTO 630
420 REM
430 REM  TAKE RIGHT PART OF STRING
440 REM  AND CONJUGATE CORRECTLY
450 REM
460 RESTORE:FOR X=1 TO N1:READ Z$:NEXT X
470 C$=" "+RIGHT$(I$,LEN(I$)-LEN(F$)-L+1)
480 FOR X=1 TO N2/2
490 READ S$,R$
500 FOR L=1 TO LEN(C$)
510 IF L+LEN(S$)>LEN(C$) THEN 560
520 IF MID$(C$,L,LEN(S$))<>S$ THEN 560
530 C$=LEFT$(C$,L-1)+R$+RIGHT$(C$,LEN(C$)-L-LEN(S$)+1)
540 L=L+LEN(R$)
550 GOTO 600
560 IF L+LEN(R$)>LEN(C$)THEN 600
570 IF MID$(C$,L,LEN(R$))<>R$ THEN 600
580 C$=LEFT$(C$,L-1)+S$+RIGHT$(C$,LEN(C$)-L-LEN(R$)+1)
590 L=L+LEN(S$)
600 NEXT L
610 NEXT X
620 REM
630 REM --- GET REPLY ---
640 REM
650 RESTORE:FOR X=1 TO N1+N2:READ Z$:NEXT X
660 FOR X=1 TO R(K):READ F$:NEXT X
670 R(K)=R(K)+1:IF R(K)>N(K) THEN R(K)=S(K)
680 IF RIGHT$(F$,1)<>"*" THEN PRINT F$:P$=I$:GOTO 170
690 PRINT LEFT$(F$,LEN(F$)-1);C$
700 P$=I$:GOTO 170
1000 REM
1010 REM --- PROGRAM DATA ---
1020 REM
1030 REM --- KEYWORDS ---
1040 REM
1050 DATA "CAN YOU","CAN I","YOU ARE","YOURE","I DONT","I FEEL"
1060 DATA "WHY DONT YOU","WHY CANT I","ARE YOU","I CANT","I AM","IM "
1070 DATA "YOU ","I WANT","WHAT","HOW","WHO","WHERE","WHEN","WHY"
1080 DATA "NAME","CAUSE","SORRY","DREAM","HELLO","HI ","MAYBE"
```

```
1230 DATA "NO","YOUR","ALWAYS","THINK","ALIKE","YES","FRIEND"
1240 DATA "COMPUTER","NOKEYFOUND"
1250 REM
1260 REM ---- CONJUGATION DATA ----
1270 REM REM
1280 DATA " ARE "," AM ","WERE ","WAS "," YOU "," I ","YOUR ","MY "
1290 DATA " IVE "," YOUVE "," IM "," YOURE "
1300 REM
1310 REM ---- REPLIES ----
1320 REM
1330 DATA "DON'T YOU BELIEVE THAT I CAN*"
1340 DATA "PERHAPS YOU WOULD LIKE TO BE ABLE TO*"
1350 DATA "YOU WANT ME TO BE ABLE TO*"
1360 DATA "PERHAPS YOU DON'T WANT TO*"
1370 DATA "DO YOU WANT TO BE ABLE TO*"
1380 DATA "WHAT MAKES YOU THINK I AM*"
1390 DATA "DOES IT PLEASE YOU TO BELIEVE THAT I AM*"
1400 DATA "PERHAPS YOU WOULD LIKE TO BE*"
1410 DATA "DO YOU SOMETIMES WISH YOU WERE*"
1420 DATA "DON'T YOU REALLY*"
1430 DATA "WHY DON'T YOU*"
1440 DATA "DO YOU WISH TO BE ABLE TO*"
1450 DATA "DOES THAT TROUBLE YOU?"
1460 DATA "TELL ME MORE ABOUT SUCH FEELINGS."
1470 DATA "DO YOU OFTEN FEEL*"
1480 DATA "DO YOU ENJOY FEELING*"
1490 DATA "DO YOU REALLY BELIEVE I DON'T*"
1500 DATA "PERHAPS IN GOOD TIME I WILL*"
1510 DATA "DO YOU WANT ME TO*"
1520 DATA "DO YOU THINK YOU SHOULD BE ABLE TO*"
1530 DATA "WHY CAN'T YOU*"
1540 DATA "WHY ARE YOU INTERESTED IN WHETHER OR NOT I AM*"
1550 DATA "WOULD YOU PREFER IF I WERE NOT*"
1560 DATA "PERHAPS IN YOUR FANTASIES I AM*"
1570 DATA "HOW DO YOU KNOW YOU CAN'T*"
1580 DATA "HAVE YOU TRIED?"
1590 DATA "PERHAPS YOU CAN NOW*"
1600 DATA "DID YOU COME TO ME BECAUSE YOU ARE*"
1610 DATA "HOW LONG HAVE YOU BEEN*"
1620 DATA "DO YOU BELIEVE IT IS NORMAL TO BE*"
1630 DATA "DO YOU ENJOY BEING*"
1640 DATA "WE WERE DISCUSSING YOU-- NOT ME."
1650 DATA "OH, I*"
1660 DATA "YOU'RE NOT REALLY TALKING ABOUT ME, ARE YOU?"
1670 DATA "WHAT WOULD IT MEAN TO YOU IF YOU GOT*"
1680 DATA "WHY DO YOU WANT*"
1690 DATA "SUPPOSE YOU SOON GOT*"
1700 DATA "WHAT IF YOU NEVER GOT*"
1710 DATA "I SOMETIMES ALSO WANT*"
1720 DATA "WHY DO YOU ASK?"
1730 DATA "DOES THAT QUESTION INTEREST YOU?"
1740 DATA "WHAT ANSWER WOULD PLEASE YOU THE MOST?"
1750 DATA "WHAT DO YOU THINK?"
1760 DATA "ARE SUCH QUESTIONS ON YOUR MIND OFTEN?"
1770 DATA "WHAT IS IT YOU REALLY WANT TO KNOW?"
1780 DATA "HAVE YOU ASKED ANYONE ELSE?"
1790 DATA "HAVE YOU ASKED SUCH QUESTIONS BEFORE?"
1800 DATA "WHAT ELSE COMES TO MIND WHEN YOU ASK THAT?"
1810 DATA "NAMES DON'T INTEREST ME."
1820 DATA "I DON'T CARE ABOUT NAMES, GO ON."
1830 DATA "IS THAT THE REAL REASON?"
1840 DATA "DON'T ANY OTHER REASONS COME TO MIND?"
1850 DATA "DOES THAT REASON EXPLAIN ANYTHING ELSE?"
1860 DATA "WHAT OTHER REASONS MIGHT THERE BE?"
1870 DATA "PLEASE DON'T APOLOGIZE."
1880 DATA "APOLOGIES ARE NOT NECESSARY."
1890 DATA "WHAT FEELINGS DO YOU GET WHEN YOU APOLOGIZE."
1900 DATA "DON'T BE SO DEFENSIVE!"
1910 DATA "WHAT DOES THAT DREAM SUGGEST TO YOU?"
1920 DATA "DO YOU DREAM OFTEN?"
1930 DATA "WHAT PERSONS APPEAR IN YOUR DREAMS?"
1940 DATA "ARE YOU DISTURBED BY YOUR DREAMS?"
1950 DATA "HOW DO YOU DO... PLEASE STATE YOUR PROBLEM."
1960 DATA "YOU DON'T SEEM QUITE CERTAIN."
1970 DATA "WHY THE UNCERTAIN TONE?"
1980 DATA "CAN'T YOU BE MORE POSITIVE?"
1990 DATA "YOU AREN'T SURE?"
2000 DATA "DON'T YOU KNOW?"
```

```
2010 DATA "ARE YOU SAYING THAT JUST TO BE NEGATIVE?"
2020 DATA "YOU ARE BEING A BIT NEGATIVE."
2030 DATA "WHY NOT?"
2040 DATA "ARE YOU SURE?"
2050 DATA "WHY NOT?"
2060 DATA "WHY ARE YOU CONCERNED ABOUT MY*"
2070 DATA "WHAT ABOUT YOUR OWN*"
2080 DATA "CAN YOU THINK OF A SPECIFIC EXAMPLE?"
2090 DATA "WHEN?"
2100 DATA "WHAT ARE YOU THINKING OF?"
2110 DATA "REALLY, ALWAYS?"
2120 DATA "DO YOU REALLY THINK SO?"
2130 DATA "BUT YOU ARE NOT SURE YOU*"
2140 DATA "DO YOU DOUBT YOU*"
2150 DATA "IN WHAT WAY?"
2160 DATA "WHAT RESEMBLANCE DO YOU SEE?"
2170 DATA "WHAT DOES THE SIMILARITY SUGGEST TO YOU?"
2180 DATA "WHAT OTHER CONNECTIONS DO YOU SEE?"
2190 DATA "COULD THERE REALLY BE SOME CONNECTION?"
2200 DATA "HOW?"
2210 DATA "YOU SEEM QUITE POSITIVE."
2220 DATA "ARE YOU SURE?"
2230 DATA "I SEE."
2240 DATA "I UNDERSTAND."
2250 DATA "WHY DO YOU BRING UP THE TOPIC OF FRIENDS?"
2260 DATA "DO YOUR FRIENDS WORRY YOU?"
2270 DATA "DO YOUR FRIENDS PICK ON YOU?"
2280 DATA "ARE YOU SURE YOU HAVE ANY FRIENDS?"
2290 DATA "DO YOU IMPOSE ON YOUR FRIENDS?"
2300 DATA "PERHAPS YOUR LOVE FOR FRIENDS WORRIES YOU?"
2310 DATA "DO COMPUTERS WORRY YOU?"
2320 DATA "ARE YOU TALKING ABOUT ME IN PARTICULAR?"
2330 DATA "ARE YOU FRIGHTENED BY MACHINES?"
2340 DATA "WHY DO YOU MENTION COMPUTERS?"
2350 DATA "WHAT DO YOU THINK COMPUTER HAVE TO DO WITH YOUR PROBLEM?"
2360 DATA "DON'T YOU THINK COMPUTERS CAN HELP PEOPLE?"
2370 DATA "WHAT IS IT ABOUT MACHINES THAT WORRIES YOU?"
2380 DATA "SAY, DO YOU HAVE ANY PSYCHOLOGICAL PROBLEMS?"
2390 DATA "WHAT DOES THAT SUGGEST TO YOU?"
2400 DATA "I SEE."
2410 DATA "I'M NOT SURE I UNDERSTAND YOU FULLY."
2420 DATA "COME COME ELUCIDATE YOUR THOUGHTS."
2430 DATA "CAN YOU ELABORATE ON THAT?"
2440 DATA "THAT IS QUITE INTERESTING."
2500 REM
2510 REM --- REPLY FINDING DATA ---
2520 REM
2530 DATA 1,3,4,2,6,4,6,4,10,4,14,3,17,3,20,2,22,3,25,3
2540 DATA 28,4,28,4,32,3,35,5,40,9,40,9,40,9,40,9,40,9,40,9
2550 DATA 49,2,51,4,55,4,59,4,63,1,63,1,64,5,69,5,74,2,76,4
2560 DATA 80,3,83,7,90,3,93,6,99,7,106,6
```

```
HI! I'M ELIZA. WHAT IS YOUR PROBLEM?
? I'M AN IBM 370
DID YOU COME TO ME BECAUSE YOU ARE AN IBM 370
? YES I WANT A NEW LINE PRINTER
WHAT WOULD IT MEAN IF YOU GOT  A NEW LINE PRINTER
? ABOUT 1000 LPM
SAY, DO YOU HAVE ANY PSYCHOLOGICAL PROBLEMS?
? HOW WOULD YOU KNOW YOU'RE A SPECTRAVIDEO
WHAT MAKES YOU THINK I AM  A SPECTRAVIDEO
? IT SAYS SO ABOVE YOUR KEYBOARD
WHY ARE YOU CONCERNED ABOUT MY  KEYBOARD
? CAUSE THAT IS WHAT I'M TYPING ON
HOW LONG HAVE YOU BEEN TYPING ON
? SINCE I TYPED RUN
WHAT DOES THAT SUGGEST TO YOU?
? YOU'RE THE SHRINK
DOES IT PLEASE YOU TO BELIEVE THAT I AM  THE SHRINK
? DON'T YOU KNOW
WE WERE DISCUSSING YOU-- NOT ME.
? I AM BEGINNING TO WONDER ABOUT YOU
DID YOU COME TO ME BECAUSE YOU ARE  BEGINNING TO WONDER ABOUT I
? I DIDN'T START TO WONDER ABOUT YOU UNTIL AFTER I CAME TO YOU
```

Lost & Forgotten Island

Lost & Forgotten Island was passed along to us by Ron Mosteller of Texas Instruments and converted to Microsoft Basic by Jeffrey Yuen. It first appeared in Creative Computing, March 1980.

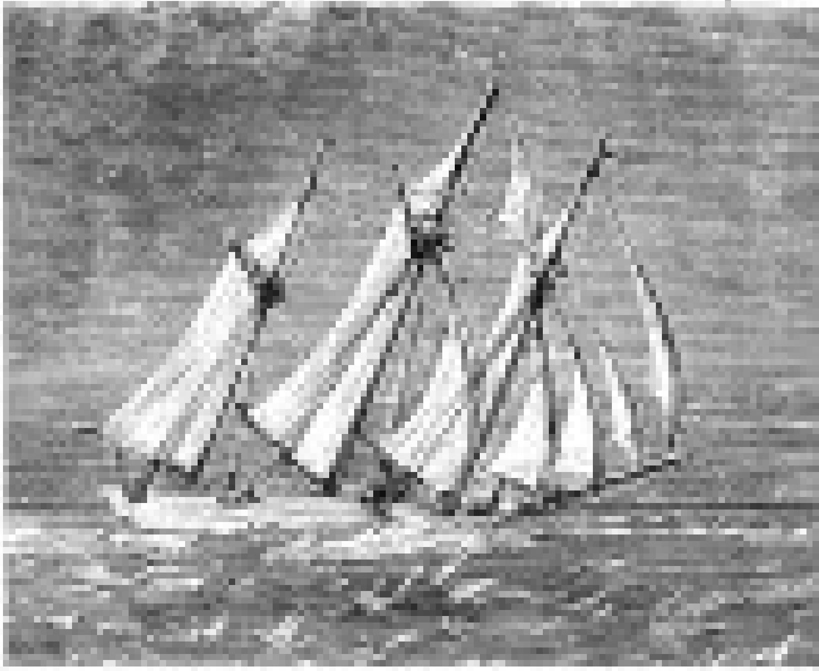
Lost & Forgotten Island is a game of survival for one to three players. Unlike other similar games, to survive requires cooperation and joint decision-making among players.

In this scenario, you and all the other players have been shipwrecked and are now stranded on a remote island in the Pacific Ocean. Also on the island is a pirate's cache of buried treasure and, of course, your damaged ship. To complicate matters, a typhoon is approaching.

On each turn, each player must make a decision as to whether to do repair work on the ship or to dig for gold. The longer you remain on the island collecting treasure, the higher the risk that the typhoon will catch up with your ship when you leave the island.

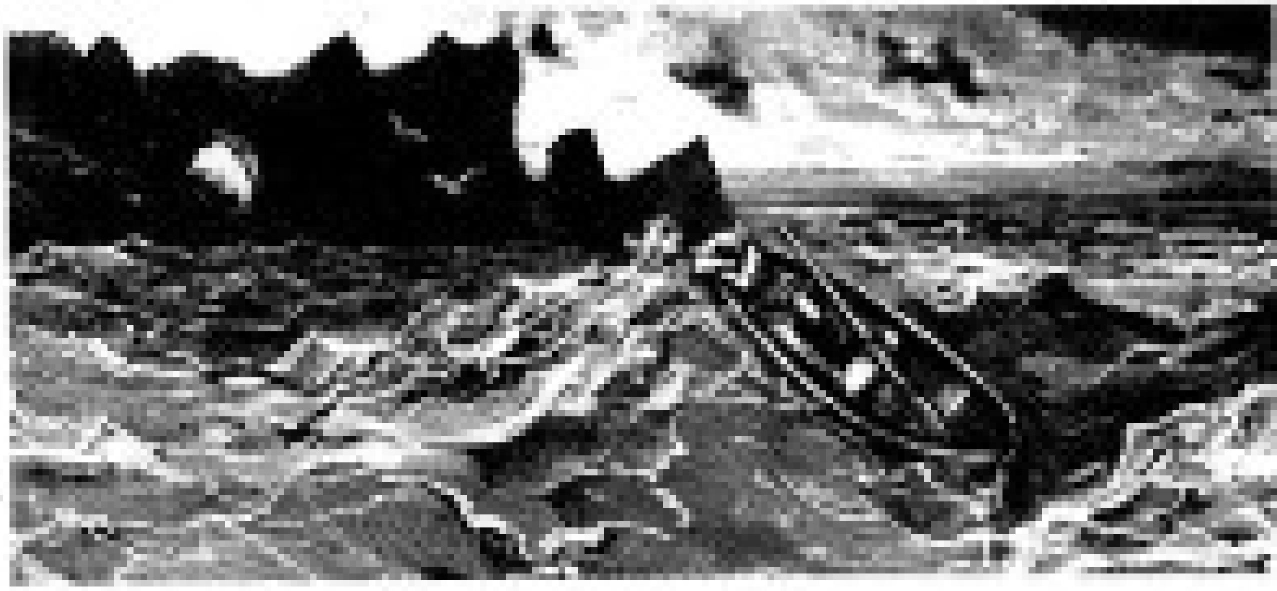
In addition to your race against the approaching typhoon, you will encounter other problems—mainly injuries from mishandling your tools or explosives. You may trade tools among players for either other tools or gold. Certain tools will perform two functions, although using a tool for the wrong function will diminish its ability to perform its main function. For example, using an axe to dig dulls it and makes it less useful for cutting down trees for ship repairs.

There are several ways in which the game can end, some of which are not at all pleasant. But with persistence, sensible decisions, and cooperation among players, you can all make it back to safety with enough gold to buy a fleet of Rolls Royces. Good Luck!



Lost & Forgotten Island

```
10 REM-LOST AND FORGOTTEN ISLAND
20 REM-REV. [illegible]
30 DIM [illegible]
40 DIM [illegible]
50 DIM N$(3),B$(3)
60 REM INSTRUCTIONS
70 REM ADAPTED FROM "COMPUTERS AND SOCIETY" VOL.7-NO.3,FALL,1976
80 PRINT"WELCOME TO THE LOST AND FORGOTTEN ISLAND."
90 PRINT"WOULD YOU LIKE SOME INSTRUCTIONS";
100 INPUT I$
110 IFI$="YES"THEN150
120 IFI$="NO"THEN250
130 PRINT"INVALID ANSWER, PLEASE RETYPE. YES OR NO"
140 GOTO 100
150 PRINT"LOST AND FORGOTTEN ISLAND IS A SURVIVAL GAME BASED ON"
160 PRINT"COOPERATION. IT CONTAINS A MIXTURE OF LIFE'S VALUES."
170 PRINT"IMAGINE:"
180 PRINT"        YOU HAVE BEEN SHIPWRECKED ON A REMOTE ISLAND."
190 PRINT"YOU HAVE THE CHOICE OF FISHING FOR GOLD AND/OR BUILDING"
200 PRINT"A SHIP TO SURVIVE THE APPROACHING HURRICANE."
210 PRINT"CAN YOU SURVIVE? IF SO, WITH HOW MUCH GOLD?"
220 PRINT
230 PRINT"       GOOD LUCK"
240 PRINT
250 T0=RND(1)
260 FORI=1TO3
270 FOR J=1TO9
280 T(I,J)=0
290 U(I,J)=0
300 V(I,J)=0
310 W(I,J)=0
320 NEXTJ
330 NEXTI
340 FOR I=1TO10
350 N(I)=0
360 NEXTI
370 FOR I=1TO4
380 R(I)=0
390 S(I)=0
400 E(I)=0
410 F(I)=0
420 P(I)=0
430 NEXT I
440 N$(1)="NOBODY"
450 FOR I=1 TO 9
460 READP$(I)
470 NEXT I
480 PRINT
490 REM NUMBER OF PLAYERS
500 PRINT"HOW MANY PEOPLE (1/2/3) ARE PLAYING";
510 FOR XX=1TO3
520 FORYY=1TO9
530 T(XX,YY)=0
540 NEXT YY
550 NEXT XX
560 INPUT N
570 PRINT
580 IFN<1THEN 600
590 IFN<=3THEN630
600 PRINT"YOU MUST PLAY WITH 1,2 OR 3 PLAYERS"
610 PRINT
620 GOTO 500
630 X=0
640 FOR K=1TON
650 G(K)=0
660 T(K)=0
670 F(K)=0
680 W(K)=0
690 NEXT K
700 Z1=0
710 FOR I=1TON
720 PRINT"PLAYER ";I;"WHAT NAME ARE YOU USING";
730 INPUTN$(I)
740 PRINT
750 FOR J=1TOI
760 IF J=I THEN 810
770 IFN$(I)<>N$(J) THEN 810
780 PRINT"SOMEONE ELSE ALREADY HAS THIS NAME SO PLEASE CHOOSE ANOTHER."
```



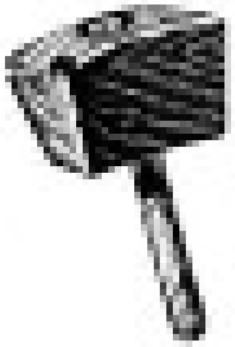
Lost & Forgotten Island

```
790 PRINT
800 GOTO 730
810 NEXT J
820 NEXT I
830 FOR X3=1TO3
840 FOR X4=1TO7
850 Y3(X3,X4)=1
860 Y2(X3,X4)=Y2(X3,X4)*(-10)
870 NEXT X4
880 NEXT X3
890 REM
900 FOR I=1TO5
910 T3(1,I)=1
920 NEXT I
930 T3(1,6)=1
940 T3(2,7)=1
950 T3(2,8)=1
960 T3(2,9)=1
970 C=0-0I
980 FOR I=1TO5
990 FOR J=1TO3
1000 R1=INT(RND(1)*9+1)
1010 R3(I,J)=R1
1020 R1(I,J)=T3(1,R1)
1030 R2(I,J)=T3(2,R1)
1040 NEXT J
1050 C1(I)=INT(RND(1)*11+2)
1060 NEXT I
1070 GOSUB 1110
1080 DATA"AXE","CHISEL","HAMMER","NAILS AND SCREWS","SAW"
1090 DATA"LUMBER","SHOVEL","PICKAXE","EXPLOSIVES"
1100 STOP
1110 REM SUBROUTINE LAPIS II
1120 REM THIS IS LAPIS II
1130 REM TRADING TOOLS
1140 IF N1<2 THEN 1160
1150 IF N1>2 THEN 1170
1160 N$(1)="SOMEONE"
1170 J$(1)="A"
1180 J$(2)="ANOTHER"
1190 FOR I=3 TO 5
1200 J$(I)=J$(I-1)
1210 NEXT I
1220 C$(1)="WHO (ONE NAME ONLY PLEASE) WISHES TO TRADE"
1230 C$(2)="WHO ELSE WISHES TO TRADE"
1240 D=0
1250 FOR N=1TO5
1260 REM WHICH DAY?
1270 PRINT"THIS IS DAY ";N
1280 PRINT
1290 GOSUB 3700
1300 PRINT
1310 PRINT
1320 IFD>=THEN 1370
1330 IFD<=THEN1390
1340 D=D-1
1350 PRINT"THE STORM IS ABOUT TO HIT"
1360 PRINT
1370 IF N1=1THEN2010
1380 GOSUB1430
1390 IFN=5THEN1420
1400 PRINTINT(RND(1)*4+1)
1410 IFD<=4THEN1420
1420 K=1
1430 IF N1=1THEN2010
1440 PRINT"DO ANY OF YOU WISH TO TRADE TOOLS";
1450 INPUTA$
1460 PRINT
1470 IF A$="YES"THEN1520
1480 IFA$="NO"THEN1720
1490 PRINT"PLEASE TRY AGAIN. YOU MUST ANSWER YES OR NO."
1500 PRINT
1510 GOTO 1440
1520 FOR I=1TO5
1530 FOR J=1TO3
1540 V3(I,J)=T3(I,J)
1550 V1(I,J)=Y1(I,J)
1560 V2(I,J)=Y2(I,J)
```

Lost & Forgotten Island

```
1570 NEXT J
1580 CC(I)=N$(I)
1590 NEXT I
1600 FOR J=1TO3
1610 N1(J)=0
1620 NEXT J
1630 FOR I=1TO3
1640 PRINTB$(I);
1650 INPUTR$(I)
1660 PRINT
1670 IFR$(I)=N$(1)THEN1740
1680 IFR$(I)=N$(2)THEN1740
1690 IFR$(I)=N$(3)THEN1740
1700 PRINT"YOU MUST ANSWER WITH '";N$(1);"', OR '";N$(3)
1710 PRINT"        PLEASE TRY AGAIN
1720 PRINT
1730 GOTO 1640
1740 N1(I)=N1(I)+1
1750 N2(I)=N2(I)+1
1760 NEXT I
1770 FOR I=1TO3
1780 Z1=0
1790 PRINTB$(I);", ARE YOU GIVING ANY GOLD IN THIS TRADE";
1800 INPUTC$
1810 PRINT
1820 IFC$="Y"THEN1950
1830 IFC$="NO"THEN 2080
1840 IFC$="YES"THEN1950
1850 IFC$="T"THEN 1910
1860 PRINT"PLEASE TRY AGAIN. YOU MUST ANSWER YES, NO,"
1870 PRINT"N (TO CALL OFF THE TRADE), OR T (TO SEE THE LIST OF"
1880 PRINT"TOOLS WHICH EVERYONE HAD BEFORE THE START OF THIS TRADE)."
1890 PRINT
1900 GOTO 1790
1910 PRINT"YOUR SITUATION AT THIS TIME
1920 PRINT
1930 GOSUB 4840
1940 GOTO 1790
1950 PRINTB$(I);", HOW MUCH GOLD (IN DOLLARS) ARE YOU GOING TO GIVE";
1960 INPUTA7
1970 PRINT
1980 IF C1(N1(I))>=A7 THEN 2020
1990 PRINT"YOU MAY NOT GIVE MORE THAN YOU HAVE (";C1(N1(I));") DOLLARS"
2000 PRINT
2010 GOTO 1950
2020 IFA7>=0THEN2060
2030 PRINT"YOU MAY NOT INPUT A NEGATIVE NUMBER. TRY AGAIN."
2040 PRINT
2050 GOTO 1950
2060 C1(N1(I))=C1(N1(I))-A7
2070 C1(N1(I-1))=C1(N1(I-1))+A7
2080 PRINTB$(I);", ARE YOU GIVING A(NY) TOOL(S) IN THIS TRADE";
2090 INPUTD$
2100 PRINT
2110 IFD$="Y"THEN 2220
2120 IFD$="NO"THEN 2480
2130 IFD$="YES"THEN2220
2140 IFD$="T"THEN2180
2150 PRINT"TRY AGAIN. ANSWER YES, NO, N OR T"
2160 PRINT
2170 GOTO 2080
2180 PRINT"YOUR SITUATION AT THIS TIME"
2190 PRINT
2200 GOSUB 4840
2210 GOTO2080
2220 PRINTB$(I);", HOW MANY TOOLS ARE YOU GIVING";
2230 INPUT N5
2240 PRINT
2250 FOR J=1TON5
2260 PRINTB$(I);", WHAT IS THE NAME OF ";J;" TOOL THAT ";
2270 PRINT"YOU ARE GIVING IN TRADE";
2280 INPUT E$
2290 PRINT
2300 IFE$="X"THEN2510
2310 IFE$="N"THEN2510
2320 IFE$="T"THEN2510
2330 FORK=1TO50
2340 IFT$(K,I)=E$THEN2430
```

```
2350 NEXT [illegible]
2360 PRINT"PLEASE USE THE NAME OF THE TOOL. USE X IF YOU WANT TO"
2370 PRINT"GO AHEAD WITH THE TRADE WITHOUT GIVING MORE TOOLS."
2380 PRINT"USE T IF YOU WANT TO SEE THE LIST OF TOOLS EVERYONE"
2390 PRINT"HAD BEFORE THIS TRADE STARTED."
2400 PRINT"OR USE Z IF YOU WANT TO CALL OFF THE TRADE."
2410 PRINT
2420 GOTO [illegible]
2430 FOR [illegible]
2440 IF [illegible] THEN [illegible]
2450 NEXT [illegible]
2460 PRINT [illegible];", YOU DO NOT HAVE THIS TOOL. PLEASE TRY AGAIN."
2470 PRINT"YOU MUST USE THE NAME OF A TOOL YOU HAVE. USE X TO GO"
2480 PRINT"AHEAD WITH THE TRADE WITHOUT GIVING MORE TOOLS, USE Z"
2490 PRINT"TO CALL OFF THE TRADE, OR USE T TO SEE THE LIST OF TOOLS WHICH "
2500 PRINT"EVERYONE HAD BEFORE THE START OF THIS TRADE."
2510 PRINT
2520 GOTO 2200
2530 PRINT"YOUR SITUATION AT THIS TIME"
2540 PRINT
2550 GOSUB 4000
2560 GOTO 2200
2570 [illegible]
2580 [illegible]
2590 [illegible]
2600 FOR [illegible]
2610 IF [illegible]
2620 NEXT L
2630 [illegible]
2640 [illegible]
2650 [illegible]
2660 [illegible]
2670 NEXT J
2680 NEXT I
2690 PRINT"THIS IS YOUR LAST CHANCE TO CALL OFF THE TRADE. IF YOU"
2700 PRINT"WANT TO CALL IT OFF TYPE X. OTHERWISE TYPE ANY OTHER LETTER AFTER"
2710 PRINT"THE QUESTION MARK."
2720 INPUT [illegible]
2730 PRINT
2740 IF [illegible] THEN [illegible]
2750 FOR [illegible]
2760 FOR [illegible]
2770 [illegible]
2780 [illegible]
2790 [illegible]
2800 NEXT J
2810 [illegible]
2820 NEXT I
2830 PRINT"DO ANY TWO OF YOU WISH TO TRADE NOW";
2840 INPUT [illegible]
2850 PRINT
2860 IF [illegible]="YES"THEN [illegible]
2870 IF [illegible]="NO"THEN [illegible]
2880 PRINT"PLEASE TRY AGAIN. YOU MUST ANSWER YES OR NO."
2890 PRINT
2900 GOTO [illegible]
2910 FOR [illegible]
2920 IF [illegible] THEN [illegible]
2930 [illegible]
2940 REM WHAT TYPE OF WORK TODAY?
2950 PRINT [illegible];", WHAT ARE YOU GOING TO WORK ON TODAY";
2960 INPUT A$
2970 PRINT
2980 IFA$="BOAT"THEN [illegible]
2990 IFA$="GOLD"THEN [illegible]
3000 PRINT"PLEASE ANSWER BOAT IF YOU WANT TO WORK ON THE BOAT"
3010 PRINT"OR GOLD IF YOU WANT TO MINE GOLD."
3020 PRINT
3030 GOTO [illegible]
3040 REM WORKING ON SOME GOLD
3050 FOR [illegible]
3060 IF [illegible] THEN [illegible]
3070 PRINT [illegible];", DO YOU WISH TO USE THE AXE TO MINE GOLD?"
3080 PRINT"REMEMBER THAT THE AXE BREAKS EASILY IF USED"
3090 PRINT"IF IT IS USED TO MINE GOLD."
3100 INPUT [illegible]
3110 PRINT
3120 IF [illegible]="NO"THEN [illegible]
```



Lost & Forgotten Island

```
3130 IFQ$="NO"THEN 3170
3140 PRINT"PLEASE TRY AGAIN. YOU MUST USE YES OR NO."
3150 PRINT
3160 GOTO3010
3170 Y1(I,2)=Y2(I,2)
3180 P1=P1+V2(I,2)*C(I)
3190 Y1(I,2)=INT(Y1(I,2)/2)*10+.5)/10
3200 Y2(I,2)=0
3210 GOTO 3230
3220 P1=P1+V2(I,2)*C(I)
3230 NEXTJ
3240 I9=RND(1)*2+1
3250 K=1
3260 IFC(K)=1THEN3300
3270 C9=0
3280 IFK<>1THEN3300
3290 C9=.25
3300 C9=C9+.25
3310 I9=C4*D9*D8*P1
3320 PRINTN$(I);" HAS JUST MADE ";INT(I9);" DOLLARS MORE GOLD."
3330 G1(I)=G1(I)+I9
3340 PRINT
3360 GOTO 3910
3370 REM WORKING ON THE BOAT
3380 B(I)=1
3390 FOR J=1TO9
3400 IFT(I,J)<>2THEN3460
3410 FOR K=1TO9
3420 IFY(J,K)<>1THEN3450
3430 P1=P1+Z*Y(J,K)*C(I)
3440 GOTO 3470
3450 NEXT K
3460 P1=P1+V(I,J)*C(I)
3470 NEXT J
3480 I9=P1/12
3490 PRINTN$(I);" HAS EARNED ";INT(I9);" MORE WORK POINTS."
3500 PRINT
3510 W(I)=W(I)+I9
3520 T9=T9+I9
3530 P1=INT(RND(1)*19+C(I)*1+1)
3540 FOR J=1TO9
3550 IF T(J,2)<1THEN3580
3560 IFT(I,J)<>2THEN3580
3570 IFT(I,J)<>1THEN 3580
3580 IFY(I*P(I,J)THEN3610
3590 PRINTN$(I);" HAS BEEN INJURED BY THE ";T$(T(J,2));". HIS/HER"
3600 PRINT"TOOL PROFICIENCY WILL NOW BE CUT IN HALF."
3610 PRINT
3620 C(I)=INT(C(I)/2)+.5)
3630 J=9
3640 IFY(1,2)<>0THEN3710
3650 IF Y<>T(I,J)THEN3710
3660 PRINTN$(I);" HAS BEEN KILLED IN THE ACCIDENTAL"
3670 PRINT"IGNORANCE OF SOME OF THE ABORIGINES. PLEASE"
3680 PRINT"NOTIFY HIS/HER FRIENDS AND RELATIVES IF YOU MAKE IT BACK."
3690 PRINT
3700 C(I)=1
3710 IFD7=1THEN3760
3720 N$(I)="DROWNED"
3730 D7=1
3740 Q1(I)=0
3750 Q2(I)=0
3760 IFN1=1THEN3870
3770 FOR K=1TO9
3780 IFT(I,K)=-1THEN3910
3790 R1=INT(RND(1)*9+1)
3800 IFR1=CTHEN3790
3810 FOR L=1TO9
3820 IF T(R1,L)<>-1THEN3890
3830 T(R1,L)=T(I,K)
3840 Y1(R1,L)=Y1(I,K)
3850 Y2(R1,L)=Y2(I,K)
3860 T(I,K)=-1
3870 Y1(I,K)=0
3880 Y2(I,K)=0
3890 L=9
3900 NEXTL
3910 NEXTK
```

Lost & Forgotten Island

```
3920 [illegible]
3930 NEXT J
3940 NEXT I
3950 NEXT P
3960 GOSUB 3990
3970 GOSUB 4360
3980 REM THE FOLLOWING IS THE SUBROUTINE STATE
3990 FOR I=1TO3
4000 FOR J=1TO4
4010 T2(I,J)=T3(I,J)
4020 NEXT J
4030 NEXT I
4040 C9=C2
4050 FOR K=1TON1
4060 PRINT
4070 PRINT
4080 IF(S(K)=1)THEN4270
4090 IF(C(K)>1)THEN4110
4100 C9=1
4110 E=INT(((H(K)/T2)*100+.5))
4120 PRINTN$(K);" HAS ";INT(G(K)+.5);" DOLLARS WORTH OF GOLD, A TOOL"
4130 PRINT"PROFICIENCY OF ";C(K);", ";INT(H(K)+.5);" WORK POINTS, WHICH"
4140 PRINT"IS ";E;" PERCENT OF THE TOTAL, AND THE FOLLOWING TOOLS:"
4150 PRINT
4160 FORJJ=1TO9
4170 K$=" "
4180 IFT(K,JJ)=0THEN4200
4190 IFT(K,JJ)>T3(K,JJ)THEN4210
4200 K$="*"
4210 PRINTTAB(4);K$;T$(T(K,JJ))
4220 NEXT JJ
4230 PRINT
4240 PRINT"JUST HIT RETURN WHEN YOU ARE READY TO GO ON.";
4250 INPUT R$
4260 PRINT
4270 NEXT K
4280 PRINT
4290 PRINT"THE SUM OF EVERYONE'S WORK POINTS IS ";INT(T2);"."
4300 PRINT
4310 X9=X8
4320 RETURN
4330 DATA"AXE","CHISEL","HAMMER","NAILS AND SCREWS","SAW"
4340 DATA"LUMBER","SHOVEL","PICKAXE","EXPLOSIVES"
4350 RETURN
4360 REM SUBROUTINE LAPIS X
4370 DEF FNE(Z)=2.718^Z
4380 DEF FNC(Z)=(FNE(Z)+FNE(-Z))/2
4390 DEF FNS(Z)=(FNE(Z)-FNE(-Z))/2
4400 Y4=0
4410 IFX(2)=0THEN4430
4420 C2=0
4430 IF Z1=1THEN4450
4440 C4=0
4450 FOR I=1TON1
4460 IF C5(I)=1THEN4480
4470 IFH(I)<C(I,3) THEN 4490
4480 C4=C4+H(I)
4490 NEXT I
4500 FOR I=1TO N1
4510 IF C5(I)=1THEN[illegible]
4520 PRINT
4530 PRINT
4540 REM THE RESULTS
4550 PRINT
4560 PRINT"THE RESULTS FOR ";N$(I);":"
4570 PRINT
4580 PRINT
4590 IF(H(I)/C(I))>.2THEN4610
4600 A=H(I)/C4
4610 T1=INT(A*2.718^(1-A)*100)
4620 T2=INT(A*(1+(FNS(7-A*13)/(0.5))/FNC(7-A*13))/4.5)))
4630 T3=INT(A*(1+(FNS(14-A*13)/(2))/FNC(14-A*13))/4.5)))
4640 G=INT(G8(I)*T3)
4650 IFH(I)<>0THEN4680
4660 IFT(I)=1THEN4690
4670 PRINT"PROPER CONDOLENCES WILL BE SENT TO THE FRIENDS"
4680 PRINT"AND RELATIVES OF";N$(I);" WHO DROWNED DURING"
4690 PRINT"PASSAGE THERE."
```

Lost & Forgotten Island

```
4500 FOR I=1TO N1
4510 IF C1(I)=1THEN4710
4520 PRINT
4530 PRINT
4540 REM THE RESULTS
4550 PRINT
4560 PRINT"THE RESULTS FOR ";N$(I);":"
4570 PRINT
4580 PRINT
4590 IFG(I)/C(I)<.25THEN4610
4600 H(I)=C4
4610 I1=INT(40*2.718^(1-H(I)/40))
4620 I2=INT(50*(1-(EXP(-(7-H(I))/0.5))/(1+EXP(-(7-H(I))/0.5))))
4630 I3=INT(50*(1-(EXP((14-H(I))/5))/(1+EXP((14-H(I))/5))))
4640 R5=INT(RND(1)*(R))
4650 IFR5(I)>I1THEN4690
4660 IFR5>I2THEN4710
4670 PRINT"PROPER CONDOLENCES WILL BE SENT TO THE FRIENDS"
4680 PRINT"AND RELATIVES OF ";N$(I);" WHO DROWNED DURING"
4690 PRINT"TYPHOON URSULA."
4700 GOTO 4920
4710 IFR5>I2THEN4800
4720 PRINTN$(I);", YOU MADE IT BACK TO AMERICA, BUT A"
4730 PRINT"LARGE WAVE WASHED YOUR GOLD OVERBOARD. SORRY."
4740 GOTO 4920
4750 IFR5>I3THEN4810
4760 PRINTN$(I);", YOU MADE IT BACK BUT THE BOAT NEARLY SWAMPED."
4770 PRINT"SO, HALF OF YOUR GOLD WAS THROWN OVERBOARD."
4780 PRINT"THIS MEANS YOU HAVE";INT(G(I)/2);
4790 PRINT" DOLLARS WORTH OF GOLD LEFT."
4800 GOTO 4920
4810 PRINTN$(I);", CONGRATULATIONS !"
4820 PRINT"YOU MADE IT WITH ALL YOUR GOLD.";INT(G(I));
4830 PRINT" DOLLARS WORTH."
4840 GOTO 4920
4850 IFR5>=R7THEN4890
4860 PRINTN$(I);", DID NOT GET OFF THE ISLAND AND WAS"
4870 PRINT"KILLED BY TYPHOON URSULA."
4880 GOTO 4920
4890 PRINTN$(I);", YOU SURVIVED TYPHOON URSULA, BUT LOST ALL YOUR GOLD"
4900 PRINT"AND HAD BETTER START MAKING SMOKE SIGNALS BECAUSE YOU WERE"
4910 PRINT"LEFT BEHIND."
4920 NEXT I
4930 PRINT
4940 PRINT"DO YOU WISH TO PLAY ANOTHER GAME";
4950 INPUT C$
4960 PRINT
4970 PRINT
4980 PRINT
4990 PRINT
5000 PRINT"****************************"
5010 PRINT
5020 IFC$="NO"THEN5080
5030 IFC$="YES"THEN90
5040 PRINT"YOU MUST ANSWER YES OR NO. PLEASE TRY AGAIN."
5050 PRINT
5060 GOTO 4940
5070 RETURN
5080 END
```

```
WELCOME TO THE LOST AND FORGOTTEN ISLAND.
WOULD YOU LIKE SOME INSTRUCTIONS? YES
LOST AND FORGOTTEN ISLAND IS A SURVIVAL GAME BASED ON
COOPERATION. IT COMBINES A MIXTURE OF LIFE'S [illegible]
[illegible]
         YOU HAVE BEEN SHIPWRECKED ON A REMOTE ISLAND.
YOU HAVE THE CHOICE OF DIGGING FOR GOLD AND/OR BUILDING
A SHIP TO SURVIVE THE APPROACHING HURRICANE.
CAN YOU SURVIVE?  IF SO, WITH HOW MUCH GOLD?

      GOOD LUCK

HOW MANY PEOPLE (1/2/3) ARE PLAYING? 2

PLAYER  1 WHAT NAME ARE YOU USING? OWEN

PLAYER  2 WHAT NAME ARE YOU USING? RUSS
```

```
THIS IS DAY  1


OWEN HAS  0  DOLLARS WORTH OF GOLD, A TOOL
PROFICIENCY OF  10 ,  0 WORK POINTS, WHICH
IS  0  PERCENT OF THE TOTAL, AND THE FOLLOWING TOOLS:


JUST HIT RETURN WHEN YOU ARE READY TO GO ON.?


RUSS HAS  0  DOLLARS WORTH OF GOLD, A TOOL
PROFICIENCY OF  10 ,  0 WORK POINTS, WHICH
IS  0  PERCENT OF THE TOTAL, AND THE FOLLOWING TOOLS:
```

```
JUST HIT RETURN WHEN YOU ARE READY TO GO ON.?

THE SUM OF EVERYONE'S WORK POINTS IS  1 .


DO ANY OF YOU WISH TO TRADE TOOLS? NO

OWEN, WHAT ARE YOU GOING TO WORK ON TODAY? GOLD

OWEN HAS JUST MADE  2000  DOLLARS MORE GOLD.

RUSS, WHAT ARE YOU GOING TO WORK ON TODAY? BOAT

RUSS HAS EARNED  1  MORE WORK POINTS.

THIS IS DAY  2

OWEN HAS  4000  DOLLARS WORTH OF GOLD, A TOOL
PROFICIENCY OF  13 ,  0  WORK POINTS, WHICH
IS  0  PERCENT OF THE TOTAL, AND THE FOLLOWING TOOLS:



JUST HIT RETURN WHEN YOU ARE READY TO GO ON.?


RUSS HAS  0  DOLLARS WORTH OF GOLD, A TOOL
PROFICIENCY OF  11 ,  2  WORK POINTS, WHICH
IS  100  PERCENT OF THE TOTAL, AND THE FOLLOWING TOOLS:



JUST HIT RETURN WHEN YOU ARE READY TO GO ON.?

THE SUM OF EVERYONE'S WORK POINTS IS  2 .


DO ANY OF YOU WISH TO TRADE TOOLS? YES

WHO (ONE NAME ONLY PLEASE) WISHES TO TRADE? OWEN

WHO ELSE WISHES TO TRADE? RUSS

OWEN, ARE YOU GIVING ANY GOLD IN THIS TRADE? NO

OWEN, ARE YOU GIVING ANY TOOL(S) IN THIS TRADE? YES

OWEN, HOW MANY TOOLS ARE YOU GIVING? 1

OWEN, WHAT IS THE NAME OF A TOOL THAT YOU ARE GIVING IN TRADE? AXE

OWEN, YOU DO NOT HAVE THIS TOOL.  PLEASE TRY AGAIN.
YOU MUST USE THE NAME OF A TOOL YOU HAVE, USE A 0 TO GO
AHEAD WITH THE TRADE WITHOUT GIVING MORE TOOLS, USE A 1
TO CALL OFF THE TRADE, OR USE 2 TO SEE THE LIST OF TOOLS WHICH
EVERYONE HAD BEFORE THE START OF THIS TRADE.

OWEN, WHAT IS THE NAME OF A TOOL THAT YOU ARE GIVING IN TRADE? 1

DO ANY TWO OF YOU WISH TO TRADE GOLD? NO

OWEN, WHAT ARE YOU GOING TO WORK ON TODAY? GOLD

OWEN HAS JUST MADE  1500  DOLLARS MORE GOLD.

RUSS, WHAT ARE YOU GOING TO WORK ON TODAY? BOAT

RUSS HAS EARNED  1  MORE WORK POINTS.

THIS IS DAY  3

OWEN HAS  5500  DOLLARS WORTH OF GOLD, A TOOL
PROFICIENCY OF  13 ,  0  WORK POINTS, WHICH
IS  0  PERCENT OF THE TOTAL, AND THE FOLLOWING TOOLS:
```

```
JUST HIT RETURN WHEN YOU ARE READY TO GO ON.?


RUSS HAS  0  DOLLARS WORTH OF GOLD, A TOOL
PROFICIENCY OF  11 ,  3  WORK POINTS, WHICH
IS  100  PERCENT OF THE TOTAL, AND THE FOLLOWING TOOLS:



JUST HIT RETURN WHEN YOU ARE READY TO GO ON.?

THE SUM OF EVERYONE'S WORK POINTS IS  3 .


DO ANY OF YOU WISH TO TRADE TOOLS?
```

Monster Combat

Monster Combat was written by Lee J. Chapel and originally appeared in *Creative Computing*, February 1981.

Monster Combat is a game in which you wander around a forest and encounter various monsters. Your objective is to win as much treasure from each encounter as possible and, of course, not get killed in the process.

Play of the Game

When you play the game you will be randomly placed in a forest ten by ten squares in size. Only one of these squares (the one you are in) is displayed, thus allowing you to see only a small part of the forest at a time. The sector you are in is again divided into ten by ten squares. Each of these, too, is divided up to ten by ten; but you can see those hundred smallest squares. Each of these little squares is shown by a single character. It covers an area of forest ten by ten yards, making the fuller square that is displayed a hundred by a hundred yards and the entire forest a thousand by a thousand yards. T's are trees, .'s are paths, I's are walls, ^'s are inns and M's are enchanted castles. The "O" is you.

Also displayed with the portion of forest you are in is your combat strength, treasure total, and the various magic spells you have. Your combat strength is used to fight the various monsters you meet, each monster having a combat strength of his own; these range from five (for a goblin) to a hundred (for a basilisk). Your combat strength is also used in movement, the amount used depending upon how far you go, how much treasure you're lugging around, and the type of terrain you end up on after you move.

At the inns you are allowed to regain the strength you began with and all the magic you had at the start. Don't worry when you find yourself displayed in the square below the inn when you stop there; that is the way the program is set up. Of course, the innkeeper takes some of your treasure for providing you with his services. However, sometimes he has information which he passes on to you at no additional cost—like where the forest edge is, or where an enchanted castle might be found.

There may be up to fifteen enchanted castles in the forest. These usually contain items of great value to treasure hunters, as you will see. (However, they tend to vanish if you make the wrong move, such as falling into a pit when you land on the castle square.)

Most of the time you will not be visiting inns and castles. You will be hacking your way through thick underbrush or trotting along forest paths in search of treasure. And you will find it, usually guarded by some sort of monster. Upon encountering one or more of these creatures you are given a choice of fighting them, running away, bribing them, or casting a spell on them.

To fight you must hit a "1"; then, when it asks you to, you enter however much of your combat strength you wish to use against the monster. If you choose to use strength equal to the monster's strength you then have a fifty-fifty chance of winning. The more strength you use the greater the odds are of winning, the less you use the smaller your odds of winning. Also affecting what you use to fight the monster is your treasure total. The more treasure you have the more strength you must use.

Sample Run

The first and third parts of the sample run give examples of fighting a monster or monsters. In the first case there are three cyclopses. Cyclopses have a combat strength of 20, which means that three of them have a total strength of 60. I used 121 of my combat strength to fight them, over twice the cyclopses' strength, which gave me over a 95% chance of winning. And, as can be seen in the example, I did beat him.

In the third part of the sample run I am fighting 19 goblins. Since goblins have a combat strength of 5, 19 have a combined strength of 95. I used only 60 combat points that time, giving me around a 30% chance of winning. And, as can be seen in the example, I did get myself killed.

Playing Strategy

If you do not wish to fight the monster you can always run. However, the higher the strength of the monster the less likely you will get away and the more likely that you will be forced to fight. Whether or not you do get away is based upon a random number and the strength of the monster. If you do get away you are randomly placed in an adjacent square and get to find out what is there. Once in a while, when you attempt to run, the monster catches you and kills you.

If you don't care to run or fight, you can try to bribe the monster. Few people like to do this since it means handing over some of your hard-earned treasure. Whether your bribe is accepted or not depends upon how much treasure the monster is guarding, his strength, and a random number. The greater the value of the treasure the monster has, the more you'll have to pay him if you don't care to fight. Usually if the monster doesn't care for your bribe you have to fight him. Sometimes, though, he just kills you anyway.

Finally, if you don't care for any of the previous choices, you may cast a spell. There are three types of spells: sleep, charms, and invisibility. Sleep spells tend to be the least effective and invisibility the most effective, with charms somewhere in the middle. Spells, no matter what kind they are, don't always work too well, sometimes not working at all, thus causing you to have to fight the monster.

In addtion to the various monsters, there are other things you will occasionally run into; some are good and some bad, as you will see when you run the program. Everything is determined randomly and thus you can go back to a spot where you were previously and find something different there.

You have thirty days to hunt for treasure in the forest. Each little square you move through takes a tenth of a day to cross, meaning it takes an entire day to cross the entire displayed square. To move, you enter the direction you wish to go (N meaning North, which is upwards, S meaning South, E meaning East, which is to the right, and W meaning West). Then you enter the distance, each little square being one. For example, in the first part of the sample run, I enter S (south) for the direction and then 3 for the distance. This places me on top of the arrow, which is an inn, and thus I am shown in the square below the inn when the next map of the area is drawn. In moving from the inn I again go south, this time a distance of 7, which causes me to end up in the next large square.

When you leave the forest, intentionally or accidentally, you can obtain a listing of the number of monsters you've killed, bribed, and run from, plus the amount of treasure you have won so far. If you decide not to return to the forest or your thirty days are up, you are offered several choices: you may go to a new forest with the same strength and magic (the treasure total going back to zero); you may go to a new forest with new strength and magic; or you can stop playing the game. If you should wish to use the strength and magic left over from the game you just played, you can obtain a listing of these at the very end of the game and then write them down or store them, however you wish. Then, the next time you play the game, you just answer the initial question with a "Y" and then enter the various things you are asked for.

As of this writing, the record treasure total is 7562, set by the author. Most of the time the scores run between 1000 and 2000, with many lower and a few higher. If you get above 2,000 you're doing well.

The following is a description of each monster, giving its combat strength and telling something about the tales and myths surrounding it.

Goblin (2)—A mischievous little sprite only about a yard in height. Rather ugly, uses coarse and uncouth language, is generally evil and malicious; all in all, a rather unpleasant little fellow. Even though they're little they can be very vicious, and more than one warrior has has been killed underestimating them.

Minotaur (75)—From Greek mythology, a monster with the head of a bull and the body of a man. Minos, king of Crete, received a bull from Poseidon, god of the sea, which he refused to sacrifice to the god. Poseidon inspired an unnatural love for the bull in Pasiphae, Minos' wife, and the minotaur resulted from the union. Minos enclosed the creature in a labyrinth constructed in the city of Knossos, and fed it seven young men and women (whom Athens had to pay as tribute to Crete) every few years. The original minotaur was eventually slain by the Athenian hero Theseus.

Cyclops (25)—Also from Greek mythology, a member of a race of one-eyed giants. According to Homer, the cyclopses were shepherds living on an island in the western seas. The best known of them was Polyphemus, who had his eye poked out by the hero, Odysseus. According to Hesiod, the cyclopses were three of the children of Uranus and Gaea. They forged the thunderbolt for Zeus, king of the gods, and became the assistants of Hephaestus, god of the forge.

Zombie (10)—From legends in the West Indies, a corpse which has been reanimated. A rather unpleasant person to meet, he generally smells of rot and decay. He often has rotting pieces of himself falling off his body, yet never seems to fall apart completely. He is difficult to kill, since he is already dead. A person has to chop him into tiny pieces and then get away before the monster can pull himself back together.

Giant (40)—Appears in the mythology of almost all nations, huge beings of terrible aspect. In the Greek myths the giants are said to live in volcanic regions where they were banished after an unsuccessful war against the gods. Some giants are peaceful, but others, like the ones in the forest, would think nothing of having you or anyone else for a snack.

Harpy (30)—From Greek mythology, disgusting women with the wings and lower body of a bird, generally a bird of prey. They stole and befouled the food of blind Phineus as punishment from the gods. Phineus nearly died before Jason and the Argonauts arrived while sailing in search of the Golden Fleece. Two of the Argonauts, Zetes and Calais drove the harpies away and were then told by one of the gods that the harpies would bother Phineus no more. The harpies continued their disgusting practices elsewhere.

Griffin (90)—From Eastern mythology, a creature usually represented as having the head, beak, and wings of an eagle, and the body and legs of a lion. It builds its nest of gold, making it very tempting to hunters and forcing the griffin to keep vigilant guard. It instinctively knows where buried treasure is hidden and does its best to keep any plunderers at a distance.

Chimera (75)—From Greek mythology, a monster with the foreparts of a lion, the rearparts of a goat with a goat's head in the middle of its back, and with a serpent for a tail. The original chimera was slain by Bellerophon, who was riding on Pegasus, the winged horse. Ironically, Pegasus was a distant relative of the chimera.

Dragon (85)—Found in many of the world's mythologies, a reptilic monster resembling a giant lizard and usually represented as having wings, huge claws, and a fiery breath. In some places the dragon is considered to be a peaceful creature, notably in Japan and China, where it is regarded as a symbol of good fortune. However, the dragons in the forest are of the other sort; they will kill and eat you if you let them, and they take very unkindly to anyone trying to steal their treasure.

Wyvern (90)—A distant relative of the dragon, this is a fabulous two-legged creature, with wings and head of a dragon on a basilisk's body. Although he cannot kill you with one glance like the basilisk, he is still a very unpleasant creature to meet.

Basilisk (150)—The worst of all eleven monsters, his deadly glare kills anyone who gazes upon his face. From Greek mythology, the basilisk was called the king of serpents, being endowed with a scaly crest upon his head like a crown. This monster was supposedly produced from the egg of a cock hatched under toads or serpents. The weasel, the only animal which can withstand the basilisk's glare, often fought it to the death. Humans must use a mirror if they wish to be assured of victory over a basilisk, for the mirror will reflect the creature's gaze back upon it and kill it. This monster is not to be confused with the basilisk of South America, a harmless lizard with the ability to run across water.

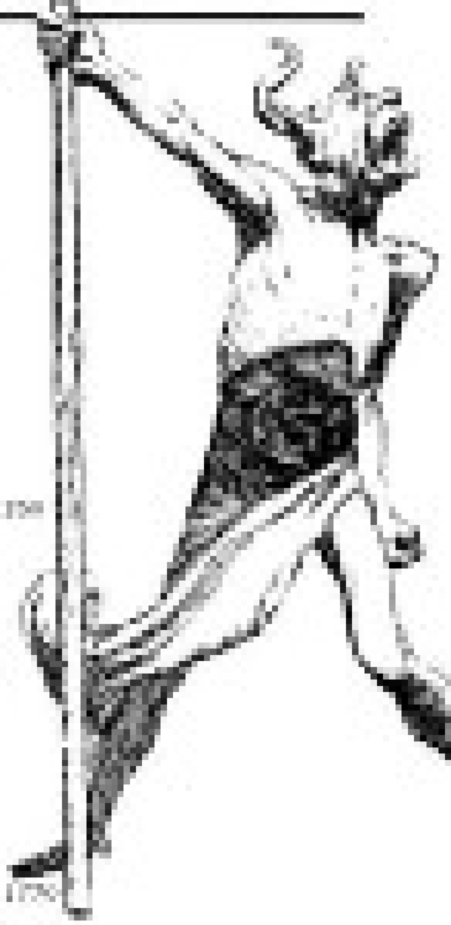
Monster Combat

```
10 [illegible]
20 REM "GIANT MONSTER ATTACK"
30 REM BY LEE J. CHAPEL 5/1/1980
40 REM MICROSOFT VERSION BY CHRIS GODELL
50 PRINT "*** GIANT MONSTER ATTACK"
60 DIM B(10,10),E(10,10),P(12),M$(12),M(12),T$(12),F(12),O(10)
70 DIM C(15),D(15)
80 FOR I=1 TO 11 : READ M$(I),T$(I),M(I),P(I) : NEXT I
90 V=INT(RND(1)*3)
100 C=INT(RND(1)*750+500) : S=INT(RND(1)*6) : P=INT(RND(1)*6)
110 Q$(1)="SLEEP SPELL" : Q$(2)="CHARM" : Q$(3)="INVISIBILITY SPELL"
120 PRINT:PRINT "DO YOU WISH TO USE THE STRENGTH AND MAGIC FROM A"
130 INPUT "PREVIOUS GAME (Y OR N)";A$ : IF A$="Y" THEN 3210
140 E=0 : X1=5 : Y1=5 : K1=5 : PRINT"PLEASE WAIT"
150 FOR I=1 TO 10 : FOR J=1 TO 20
160 Z=INT(RND(1)*10) : IF Z<1 OR Z>9 THEN 190
170 M=INT(RND(1)*20) : B=INT(RND(1)*10) : F=INT(RND(1)*50)
180 B(I,J)=1000*M+100*B+F
190 IF T=1 THEN C(C)=I : D(C)=J : B(C)=J
200 NEXT J : NEXT I : T=0
210 X1=INT(RND(1)*8)+2 : Y1=INT(RND(1)*8)+2
220 X=INT(RND(1)*10)+1 : Y=INT(RND(1)*10)+1
230 IF X<2 OR X>10 OR Y<1 OR Y>10 THEN 2200
240 FOR I=1 TO 10 : FOR J=1 TO 20 : B(I,J)=0 : NEXT J : NEXT I
250 [illegible]
260 [illegible]
270 [illegible]
280 IF C=1 THEN I=INT(RND(1)*10+1) : J=INT(RND(1)*10+1) : B(I,J)=7
290 IF C=1 AND I=X AND Y=J THEN B(I,J)=0 : GOTO 280
300 IF A=1 THEN I=INT(RND(1)*10+1) : J=INT(RND(1)*9+1)
310 IF A=1 AND B(I,J)<>0 THEN 300
320 IF A=1 THEN B(I,J)=9
330 B(X,Y)=5 : IF A=0 THEN 380
340 FOR I=1 TO 4
350 J=INT(RND(1)*10+1) : K=INT(RND(1)*10+1)
360 IF B(J,K)<>0 THEN 350
370 B(J,K)=2 : NEXT I
380 IF P=0 THEN 430
390 FOR I=1 TO P
400 J=INT(RND(1)*10+1) : K=INT(RND(1)*10+1)
410 IF B(J,K)<>0 THEN 400
420 B(J,K)=1 : NEXT I
430 FOR I=1 TO 10 : FOR J=1 TO 20
440 IF B(I,J)=0 THEN PRINT ".";
450 IF B(I,J)=1 THEN PRINT "*";
460 IF B(I,J)=2 THEN PRINT "O";
470 IF B(I,J)=3 THEN PRINT "T";
480 IF B(I,J)=5 THEN PRINT "X";
490 IF B(I,J)=7 THEN PRINT "M";
500 NEXT J: PRINT TAB(30);
510 IF I=2 THEN PRINT "COMBAT STRENGTH=";: PRINT TAB(50) S
520 IF I=3 THEN PRINT "TREASURE TOTAL =";: PRINT TAB(50) T
530 IF I=4 THEN PRINT "MAGIC:"
540 IF I=5 THEN PRINT " SLEEP SPELLS=";   : PRINT TAB(50) M(1)
550 IF I=6 THEN PRINT " CHARMS=";: PRINT TAB(50) M(2)
560 IF I=7 THEN PRINT " INVISIBILITY=";   : PRINT TAB(50) M(3)
570 IF I=9 THEN PRINT "DAYS IN FOREST=";   : PRINT TAB(50) D
580 IF I=1 OR I=8 OR I=10 THEN PRINT
590 NEXT I: PRINT : IF T=1 THEN RETURN
600 IF T=0 THEN 1270
610 I=INT(RND(1)*5) : IF I=0 THEN GOSUB 2800
620 IF I=1 AND T<>9 THEN PRINT "THERE WAS NOTHING THERE" : GOTO 1270
630 IF I=1 AND T=9 THEN 1200
640 I=INT(RND(1)*55+1) : T=I : IF I=12 THEN 2040
650 IF I=13 THEN 2080
660 IF I=14 THEN 2120
670 IF I>14 THEN J=100 : GOTO 720
680 J=INT(RND(1)*(500/T)+1) : N=1 : IF J=5 THEN J=1 : N1=J
690 IF J=1 THEN M=M(I) : PRINT "A "T$(I)" IS GUARDING IT"
700 IF J>1 THEN M=M(I)*J : PRINT J;" "T$(I)" ARE GUARDING IT"
710 M=P(I)*J : I=INT(RND(1)*10+1)
720 IF I>11 AND J=100 THEN 810
730 IF I>12 AND J=100 THEN PRINT "NOTHING IS GUARDING IT"
740 IF I>11 THEN 2000
750 IF I<11 THEN PRINT "NOTHING" : F=0 : GOTO 970
760 PRINT T$(I) : F=P(I)
770 IF M>M(I) AND B1=7 THEN 2020
780 IF J=100 THEN PRINT "YOU GET THE TREASURE FREE" : GOTO 1190
```

Monster Combat

```
790 PRINT "DO YOU WISH TO (1)FIGHT, (2)RUN, (3)BRIBE, OR (4)";
800 INPUT "CAST A SPELL";K
810 IF K<1 OR K>4 THEN 790
820 ON K GOTO 830,940,1080,1660
830 INPUT "HOW MANY COMBAT POINTS DO YOU WISH TO USE";X
840 IF X>C THEN PRINT "YOU ONLY HAVE";C;"COMBAT POINTS" : GOTO 830
850 Z=INT(INT(RND(1)*[illegible]) : [illegible] : L=[illegible]
860 FOR H=1000 TO 0 STEP -50
870 IF L>H*K AND X>=1 THEN 1170
880 L=L-.1 : NEXT H
890 PRINT "THE ";M$;" KILLED YOU. "
900 PRINT "YOU LOSE EVERYTHING!"
910 INPUT "WISH TO TRY AGAIN (Y OR N)";K$ : PRINT
920 IF K$="Y" THEN 400
930 PRINT : PRINT "SO LONG... BETTER LUCK NEXT TIME" : END
940 I=INT(RND(1)*12) : IF I=11 THEN 890
950 FOR H=0 TO 13 : IF H(I)=H AND H<>1 THEN 970
960 NEXT H: GOTO 1150
970 A=X : B=Y : X0=0 : T=0 : C=C-INT((RND(1)*[illegible])-[illegible])-5
980 X=A+INT(RND(1)*3)-1 : Y=B-INT(RND(1)*3)-1
990 IF X=A AND Y=B THEN 980
1000 D1=D1+.1 : IF D1>10 THEN 890 : [illegible]
1010 IF Y>10 THEN Y=1 : Y1=Y1+1 : X=1
1020 IF X<1  THEN X=10: X1=X1-1 : X=1
1030 IF Y<1  THEN Y=10 : Y1=Y1-1 : X=1
1040 IF B(X,Y)=1 AND [illegible] THEN 990
1050 B(A,B)=INT(RND(1)*3) : B(X,Y)=5 : IF [illegible] THEN I=I+1
1060 IF I=1 THEN 230
1070 GOTO 610
1080 INPUT "HOW MUCH DO YOU WISH TO PAY";X
1090 IF X>R THEN PRINT "YOU ONLY HAVE";R;"TREASURE POINTS." : GOTO 1080
1100 I=INT(RND(1)*22) : L=0 : IF I=21 OR (I>20 AND X<21) THEN 890
1110 L=X*(100/R) : IF X>R THEN 1140
1120 FOR H=0 TO 20 : IF X>=L*H AND I>=H THEN 1160
1130 L=L+.1 : NEXT H: GOTO 1140
1140 PRINT "YOUR BRIBE WAS NOT ACCEPTED."
1150 PRINT "YOU MUST FIGHT" : GOTO 830
1160 R=R-X : C=C-X : B=B+X : T=1 : PRINT "YOUR BRIBE WAS ACCEPTED." : GOTO 1240
1170 B(X)=B(X)+H
1180 PRINT "YOU BEAT THE ";M$
1190 IF H<10  THEN I=INT(RND(1)*5) : IF I=0 THEN 1220
1200 IF [illegible] THEN I=INT(RND(1)*5) : IF I=0 THEN 1220
1210 C=C+P
1220 IF P<20 THEN 1500
1230 IF T>0 AND T<[illegible] THEN C=C+P : GOTO 2060
1240 PRINT "YOU NOW HAVE";C;"TREASURE POINTS."
1250 IF R>=200 THEN 1700
1260 IF T=P THEN GOSUB 2000
1270 INPUT "WHICH DIRECTION (PRESS 1 FOR THE MAP)";K$
1280 IF K$="1" THEN T=2 : GOTO 400
1290 T=0 : INPUT "WHAT DISTANCE";X : IF X<>INT(X) THEN 1270
1300 GOSUB 2900
1310 N1=0 : E1=0 : [illegible] : [illegible]
1320 IF  LEFT$(K$,1)="N" THEN Y=Y+X
1330 IF  LEFT$(K$,1)="S" THEN Y=Y-X
1340 IF RIGHT$(K$,1)="E" THEN X=X+X
1350 IF RIGHT$(K$,1)="W" THEN X=X-X
1360 IF X>10 THEN X=X-10 : X1=X1+1 : IF X>10 THEN 1360
1370 IF X<1  THEN X=X+10 : X1=X1-1 : IF X<1 THEN 1370
1380 IF Y>10 THEN Y=Y-10 : Y1=Y1-1 : IF Y>10 THEN 1380
1390 IF Y<1  THEN Y=Y+10 : Y1=Y1-1 : IF Y<1 THEN 1390
1400 IF B(X,Y)=1 THEN C=C-5
1410 IF B(X,Y)=0 THEN C=C-10
1420 IF C<=0 THEN PRINT "YOU DIED FROM LACK OF STRENGTH." : GOTO 900
1430 IF X1<>0 OR Y1<>0 THEN 230
1440 IF B(X,Y)=7 THEN 770
1450 IF B(X,Y)=2 THEN 1480
1460 IF B(X,Y)=3 THEN 1500
1470 B(A,B)=INT(RND(1)*3) : B(X,Y)=5 : GOTO 430
1480 PRINT "YOU TRIED TO GO THROUGH A WALL"
1490 C=C-INT(RND(1)*[illegible])-25 : X=A : Y=B : GOTO 1270
1500 P=P+1 : C=C : B(A,B)=INT(RND(1)*3) : B(X,Y)=5 : T=1 : X=X
1510 R=R : I=0 : GOSUB 100
1520 PRINT "YOU STOPPED AT AN INN AND REGAINED YOUR STRENGTH"
1530 I=INT(RND(1)*5.75) : IF I>0 AND I>R THEN I=5
1540 IF I>R AND I>5 THEN I=5
1550 PRINT "YOU PAID";I;"TREASURE POINTS TO SAY THERE" : R=R-I
1560 PRINT "YOU NOW HAVE";R;"TREASURE POINTS"
```

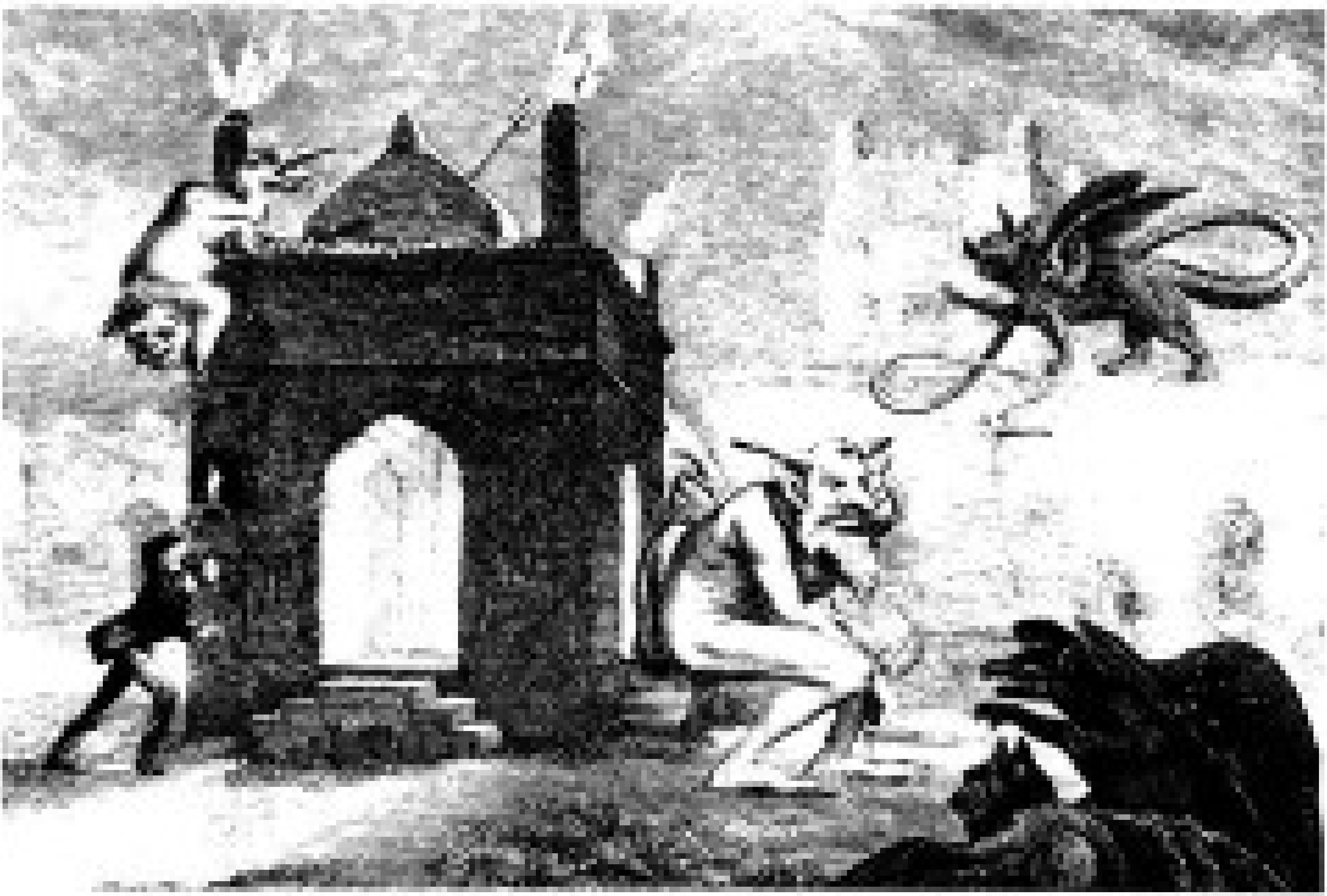
Monster Combat



```
1570 I=INT(RND(1)*10) : IF I>2 THEN 1270
1580 IF I=1 THEN GOSUB 2170 : GOTO 1270
1590 I=INT(RND(1)*4+1)
1600 PRINT "THE INNKEEPER TOLD YOU THAT THE FOREST KING IS [illegible]"
1610 ON I GOTO 1620,1630,1640,1650
1620 PRINT Y*100;"PACES TO THE NORTH" : GOTO 1270
1630 PRINT (11-Y)*100;"PACES TO THE SOUTH" : GOTO 1270
1640 PRINT X*100;"PACES TO THE WEST" : GOTO 1270
1650 PRINT (11-X)*100;"PACES TO THE EAST" : GOTO 1270
1660 IF T>5 THEN PRINT "YOU CAN'T USE MAGIC TO GET MAGIC!" : GOTO 770
1670 IF S+A+V=0 THEN PRINT "YOU HAVE NO MAGIC" : GOTO 770
1680 PRINT "WHAT TYPE OF SPELL:(1)SLEEP, (2)CHARM, OR (3)INVISIBILITY";
1690 INPUT C : PRINT : IF C<1 OR C>3 THEN 1680
1700 ON C GOTO 1710,1790,1850
1710 IF S=0 THEN PRINT "YOU HAVE NO SLEEP SPELLS.":GOTO 1150
1720 IF M=6 THEN PRINT "YOU CAN'T PUT "[illegible]"S TO SLEEP.":S=S-1 : GOTO 1150
1730 I=INT(RND(1)*10) : S=S-1
1740 IF I<2 THEN PRINT "YOUR SPELL WAS UNSUCCESSFUL.": GOTO 1150
1750 IF I>3 THEN PRINT "YOU GOT THE TREASURE SAFELY" : GOTO 1770
1760 PRINT "THE "[illegible]" WOKE TOO SOON"
1770 P=INT(RND(1)*P) : G=G+P
1780 PRINT "YOU GOT AWAY WITH";P;"TREASURE POINTS" : GOTO 1270
1790 IF A=0 THEN PRINT "YOU HAVE NO CHARMS.": GOTO 1150
1800 I=INT(RND(1)*10) : A=A-1
1810 IF M<10 AND I<6 THEN PRINT "YOUR CHARM DIDN'T WORK.": GOTO 1150
1820 IF M>10 AND I<2 THEN PRINT "YOUR CHARM DIDN'T WORK.": GOTO 1150
1830 IF I<3 THEN PRINT "THE CHARM WORE OFF TOO SOON." : GOTO 1770
1840 I=2 : GOTO 1770
1850 IF V=0 THEN PRINT "YOU HAVE NO INVISIBILITY SPELLS.": GOTO 1150
1860 I=INT(RND(1)*10) : V=V-1
1870 IF M<10 AND I<3 THEN PRINT "THE "[illegible]" SMELLED YOU!" : GOTO 1770
1880 IF M>10 AND I<5 THEN PRINT "YOUR INVISIBILITY WORE OFF TOO SOON" : GOTO 1770
1890 GOTO 1840
1900 I=INT(RND(1)*2+1) : ON I GOTO 1910,1930
1910 C=C*2 : PRINT "YOU WON AN ENCHANTED SWORD. YOUR COMBAT STRENGTH "
1920 PRINT "IS DOUBLED AND IS NOW";C : GOTO 1240
1930 PRINT "YOU WON AN ORDINARY SWORD. YOUR COMBAT STRENGTH IS NOT"
1940 PRINT "DOUBLED AND REMAINS AT";C : GOTO 1240
1950 J=INT(RND(1)*50) : I=INT(RND(1)*10)
1960 IF J>7 AND M<12 THEN M=1 : GOTO 1990
1970 IF I=1 THEN 2010
1980 GOTO 1240
1990 PRINT "THERE WAS A MIRROR IN THE CHEST. IT WILL PROTECT YOU"
2000 PRINT "AGAINST ANY "[illegible]"S YOU MAY MEET" : [illegible] : GOTO 1270
2010 PRINT "THE TREASURE CHEST WAS A TRAP. YOU WERE KILLED WHEN "
2020 PRINT "YOU OPENED IT" : GOTO 990
2030 PRINT "YOUR MIRROR KILLED THE "[illegible] : [illegible] : GOTO 1170
2040 PRINT "A GIANT BAT GRABBED YOU AND CARRIED YOU TO A NEW SPOT"
2050 [illegible]
2060 X=INT(RND(1)*10)+1 : Y=INT(RND(1)*10)+1 : IF B(X,Y)<>1 THEN 2060
2070 B(X,Y)=INT(RND(1)*4) : [illegible] : GOTO 520
2080 PRINT "YOU FELL INTO A PIT." : I=INT(RND(1)*[illegible]) : [illegible]
2090 IF C<[illegible] THEN PRINT "YOU DIED TRYING TO GET OUT" : GOTO 990
2100 PRINT "YOU USED";I;"COMBAT POINTS TRYING TO GET OUT" : C=C-I
2110 FOR J=1 TO 750 : NEXT J : GOTO 770
2120 J=0 : FOR I=1 TO 11 : [illegible] : NEXT I : IF J[illegible] THEN 610
2130 PRINT "A GIANT ROC CARRIED YOU TO SAFETY."
2140 FOR I=1 TO 1000 : NEXT I : [illegible] : GOTO 2060
2150 I=INT(RND(1)*[illegible]) : [illegible]
2160 PRINT "A "[illegible]" HEARD THE NOISE OF THE BATTLE AND CAME WANDERING BY"
2170 IF [illegible] THEN 2220
2180 INPUT "DO YOU WISH TO (1)FIGHT, (2)RUN, (3)CAST A SPELL";C
2190 IF C<1 OR C>3 THEN 2180
2200 ON C GOTO 830,940,1160
2210 [illegible]
2220 PRINT "A "[illegible]" CAME WANDERING BY" : GOTO 2170
2230 IF I<14 THEN 750
2240 [illegible] : PRINT [illegible] : GOTO 770
2250 I=INT(RND(1)*10)
2260 IF I<5 THEN PRINT "YOU WERE UNABLE TO MASTER THE SPELL."
2270 IF I<5 THEN PRINT "YOU GAIN NO "[illegible] : GOTO 1270
2280 IF T=6 THEN S=S+1 : [illegible]
2290 IF T=7 THEN A=A+1 : [illegible]
2300 IF T=8 THEN V=V+1 : [illegible]
2310 PRINT "YOU WON THE "[illegible] : T=0 : IF [illegible] THEN GOSUB 2330
2320 GOTO 1270
2330 FOR A=1 TO 750 : NEXT A
2340 PRINT "YOU SURVIVED THE FOREST" : FOR J=1 TO 1000 : NEXT J
```

Monster Combat

```
2350 PRINT "DO YOU WISH TO SEE THE # OF MONSTERS YOU KILLED, AND FREE?"
2360 INPUT "AND BRIBED (Y OR N)";X$ : IF X$="N" THEN PRINT : GOTO 2420
2370 PRINT "MONSTER";TAB( 11);"# SLAIN";TAB( 22);"MONSTER";TAB( 32);"# SLAIN"
2380 FOR I=1 TO 5 : PRINT M$(I);TAB( 14);S(I);TAB( 22);M$(I+5);
2390 PRINT TAB( 40);S(I+5)
2400 NEXT I : PRINT TAB( 22); M$(11);: TAB( 40); S(11)
2410 PRINT : PRINT "BRIBED:";B9; TAB( 22) "GOLD FREE";F2
2420 PRINT TAB( 10);"TREASURE TOTAL:";T2
2430 IF C3<>0 THEN GOSUB 2690
2440 PRINT "CONGRATULATIONS!" : IF C3<>0 AND D1<20 THEN PRINT " AGAIN" : PRINT
2450 PRINT : X$=""
2460 IF D1<20 THEN INPUT "DO YOU WISH TO RETURN TO THE FOREST";X$
2470 REM
2480 D=D1 : V=V1 : W=W1 : C=0 : IF X$<>"Y" THEN 1000
2490 GOTO 210
2500 D1=D1+X/20+1 : IF D1<20 THEN 220
2510 PRINT "YOUR TIME IS UP, 20 DAYS HAVE PASSED"
2520 FOR I=1 TO 1000 : NEXT I : GOTO 2350
2530 FOR I=1 TO 2500 : NEXT I : T=0
2540 PRINT "YOU MADE IT INTO THE ENCHANTED CASTLE!"
2550 I=INT(RND(1)*20)*100 : J=INT(RND(1)*7) : R(C,Y1)=R(C,Y1)+1000
2560 GOSUB 2770 : PRINT "YOU FOUND ";I;"TREASURE POINTS THERE" : G=G+I
2570 IF J<>7 OR M=7 THEN 2600
2580 PRINT "YOU ALSO FOUND A MIRROR WHICH WILL KILL ANY ";
2590 PRINT M$(11);"S" "YOU MEET" : M=7
2600 J=INT(RND(1)*20) : IF J>2 THEN 2630
2610 IF J>2 THEN PRINT "YOU ALSO FOUND AN ENCHANTED SWORD WHICH DOUBLES ";
2620 IF J<2 THEN PRINT "YOUR STRENGTH"
2630 FOR I=1 TO C3-1 : IF C(I)<>C1 THEN 2650
2640 FOR J=I TO C3-1 : C(J)=C(J+1) : D(J)=D(J+1) : NEXT J
2650 NEXT I : C3=C3-1 : IF C3=0 THEN PRINT "YOU FOUND THE LAST OF THE CASTLES!"
2660 RETURN
2670 IF C3=0 THEN RETURN
2680 I=INT(RND(1)*C3)+1
2690 PRINT "THE SORCERER TOLD YOU OF A LEGEND OF A CASTLE..";
2700 IF C(I)=X1 AND D(I)=Y1 THEN PRINT "VERY CLOSE BY" : RETURN
```



Monster Combat

```
2710 J=X1-C(I) : I=Y1-D(I)
2720 IF ABS(I)<>ABS(J) THEN PRINT "DIRECTLY TO THE "; : GOTO 2740
2730 PRINT "SOMEWHERE TO THE ";
2740 IF I<0 THEN PRINT "SOUTH";
2750 IF I>0 THEN PRINT "NORTH";
2760 IF J<0 THEN PRINT "WEST";
2770 IF J>0 THEN PRINT "EAST";
2780 PRINT : RETURN
2790 REM
2800 I=INT(RND(1)*11+1)
2810 ON I GOTO 2820, 2840, 2860, 2890, 2920, 2950, 2970, 2990, 3010, 3020, 3050
2820 PRINT "YOU STEPPED INTO A TIME WARP AND LOST SEVEN DAYS"
2830 D1=D1-7 : RETURN
2840 J=INT(RND(1)*10)+1 : J=D1 : D1=D1-J : IF D1<1 THEN D1=.1 : J=J-D1
2850 PRINT "YOU STEPPED INTO A TIME WARP AND GAINED";J;"DAYS" : RETURN
2860 IF C=0 THEN RETURN
2870 PRINT "YOU MET AN ELF WITH A MAGIC DRINK THAT GAVE"
2880 PRINT "YOUR COMBAT STRENGTH BACK" : C=0 : RETURN
2890 IF V+R+S=V1+R1+S1 THEN RETURN
2900 PRINT "YOU RAN INTO A WIZARD WHO GAVE YOU A POTION THAT"
2910 PRINT "RESTORED ALL YOUR MAGIC" : V=V1 : R=R1 : S=S1 : RETURN
2920 IF G<1 THEN RETURN
2930 PRINT "YOU FELL INTO SOME QUICKSAND. YOU LOST HALF OF YOUR"
2940 PRINT "TREASURE" : G=INT(G/2) : RETURN
2950 PRINT "YOU RAN INTO SOME THICK UNDERBRUSH AND USED UP HALF"
2960 PRINT "YOUR STRENGTH" : C=INT(C/2) : RETURN
2970 I=INT(RND(1)*50+1) : PRINT "YOU FOUND";I;"COINS LYING ON THE";
2980 PRINT " GROUND AND PICKED THEM UP" : G=G+I : RETURN
2990 IF M1<1 THEN RETURN
3000 PRINT "YOU TRIPPED OVER SOME ROOTS AND LOST YOUR MIRROR" : M1=0 : RETURN
3010 PRINT "A HERMIT TOLD YOU THAT THERE ARE";C8;"CASTLES LEFT" : RETURN
3020 IF V+S+R=0 THEN RETURN
3030 PRINT "YOU WANDERED INTO AN AREA WHERE MAGIC DOESN'T WORK"
3040 PRINT "YOU LOSE ALL YOUR PRESENT MAGIC" : V=0 : S=0 : R=0 : RETURN
3050 IF C8=0 THEN RETURN
3060 PRINT "YOU MET A HUNTER WHO TOLD YOU OF THE LEGEND OF A"
3070 PRINT "CASTLE "; : I=INT(RND(1)*C8)+1 : GOSUB 2700 : RETURN
3080 FOR I=1 TO 2000 : NEXT : PRINT
3090 PRINT "DO YOU WISH TO GO TO A NEW FOREST WITH THE SAME STRENGTH ";
3100 INPUT "AND MAGIC";A$ : IF A$="Y" THEN 3190
3110 PRINT "DO YOU WISH TO GO TO A NEW FOREST WITH A NEW STRENGTH AND ";
3120 INPUT " MAGIC";A$ : IF A$="Y" THEN RUN
3130 PRINT "DO YOU PLAN ON USING THE SAME STRENGTH AND MAGIC AGAIN"
3140 INPUT "SOME OTHER TIME (Y OR N)";A$ : IF A$="Y" THEN GOTO 3350
3150 PRINT : PRINT "ONCE AGAIN, YOU TREASURE TOTAL WAS";G
3160 IF G>G1 THEN G1=G
3170 IF G1<>0 THEN PRINT "THE LARGEST TREASURE TOTAL YOU GOT WITH THIS";
3180 PRINT "STRENGTH AND MAGIC WAS";G1 : PRINT : PRINT "BYE NOW" : END
3190 B8=0 : I=0 : READ I : FOR I=1 TO 11 : S(I)=0 : NEXT I : IF G1<>0 THEN GOTO
3200 C=0 : GOTO 140
3210 INPUT "COMBAT STRENGTH";C1
3220 IF C1<60 OR C1>200 THEN 3210
3230 INPUT "SLEEP SPELLS";S1 : INPUT "CHARMS";R1 : INPUT "INVISIBILITY";V1
3240 INPUT "PREVIOUS LARGEST TREASURE TOTAL";G1 : GOTO 140
3250 IF G>G1 THEN PRINT "YOU WON MORE TREASURE THIS TIME THAN BEFORE"
3260 IF G<G1 THEN PRINT "YOU DIDN'T OBTAIN AS MUCH TREASURE THIS TIME"
3270 RETURN
3280 PRINT "YOUR MAGIC TOTAL IS RATHER LARGE. DO YOU WISH TO CONVERT IT TO"
3290 INPUT "COMBAT POINTS";A$ : IF A$="N" THEN RETURN
3300 S1=S1-5 : R1=R1-3 : V1=V1-2 : IF S1<0 THEN S1=1
3310 IF R1<0 THEN R1=1
3320 IF V1<0 THEN V1=1
3330 S=S1 : R=R1 : V=V1 : C1=C1+100 : B=B+100 : PRINT "YOUR COMBAT STRENGTH IS";
3340 PRINT "PERMANENTLY INCREASED BY 100" : RETURN
3350 PRINT "COMBAT STRENGTH=";C1 : PRINT "SLEEP SPELLS=";S1 : PRINT "CHARMS=";R1
3360 PRINT "INVISIBILITY=";V1 : PRINT : RETURN
3370 DATA GOBLIN, 10 SILVER CROWNS (10 POINTS), 5, 10, MINOTAUR
3380 DATA A SWORD WHICH MIGHT BE ENCHANTED (25 POINTS), 15, 25
3390 DATA CYCLOPS, 50 SILVER COINS (50 POINTS), 20, 50, ZOMBIE
3400 DATA 100 GOLD PIECES (100 POINTS), 30, 100, GIANT
3410 DATA AN ENCHANTED BRACELET (75 POINTS), 40, 75, HARPY
3420 DATA A TREASURE CHEST (200 POINTS), 50, 200, GRIFFIN
3430 DATA A PEARL NECKLACE (50 POINTS), 60, 50, CHIMERA
3440 DATA A JEWELED CROWN (30 POINTS), 70, 30, DRAGON
3450 DATA A JAR OF RUBIES (75 POINTS), 80, 75, WYVERN
3460 DATA A BOX OF JEWELS (100 POINTS), 90, 100, BASILISK
3470 DATA A GOLD GOBLET (50 POINTS), 100, 50
3480 END
```

Monster Combat

```
  [illegible]
  [illegible]     COMBAT STRENGTH-        1719
  [illegible]     TREASURE TOTAL-         0
  [illegible]     MAGIC:
  [illegible]      SLEEP SPELLS-          2
  [illegible]      CHARMS-                1
  [illegible]      INVISIBILITY-          1
  [illegible]
  [illegible]     DAYS IN FOREST-         1.5
  [illegible]

 1 CYCLOPES ARE GUARDING 200 GOLD PIECES (100 POINTS)
DO YOU WISH TO (1)FIGHT (2)RUN (3)BARTER OR (4)CAST A SPELL?
HOW MANY COMBAT POINTS DO YOU WISH TO USE? 111
YOU BEAT THE CYCLOPES
YOU NOW HAVE 100 TREASURE POINTS
WHICH DIRECTION (PRESS 1 FOR THE MAP)? 8
WHAT DISTANCE? 5

  [illegible]
  [illegible]     COMBAT STRENGTH-        1590
  [illegible]     TREASURE TOTAL-         100
  [illegible]     MAGIC:
  [illegible]      SLEEP SPELLS-          2
  [illegible]      CHARMS-                1
  [illegible]      INVISIBILITY-          1
  [illegible]
  [illegible]     DAYS IN FOREST-         1.8
  [illegible]

YOU STUMBLE ON AN INN AND RECOVER YOUR STRENGTH
YOU PAID 5 TREASURE POINTS TO STAY THERE
YOU NOW HAVE 95 TREASURE POINTS
WHICH DIRECTION (PRESS 1 FOR THE MAP)? 8
WHAT DISTANCE? 7

  [illegible]
  [illegible]     COMBAT STRENGTH-        1836
  [illegible]     TREASURE TOTAL-         95
  [illegible]     MAGIC:
  [illegible]      SLEEP SPELLS-          2
  [illegible]      CHARMS-                1
  [illegible]      INVISIBILITY-          1
  [illegible]
  [illegible]     DAYS IN FOREST-         2.5
  [illegible]

 29 GOBLINS ARE GUARDING A JEWELLED SWORD (70 POINTS)
DO YOU WISH TO (1)FIGHT (2)RUN (3)BARTER OR (4)CAST A SPELL?
HOW MANY COMBAT POINTS DO YOU WISH TO USE? 40
THE GOBLINS KILLED YOU. YOU LOSE EVERYTHING
DO YOU WISH TO TRY AGAIN?N

SO LONG-BETTER LUCK NEXT TIME
```

Mu-Torere

Mu-Torere was written by Sandy Greenfield and originally appeared in Creative Computing, August 1982.

I can't tell you how to pronounce it or what it means, but I know that Mu-Torere was played as late as 1932 by the Ngati-Porou tribe of the Maoris of the East Cape district of New Zealand. How's that for exotic origin! There appears to be some mystery about it. The fact that it was limited to one small corner of New Zealand suggests that it couldn't have been there very long, and that it must have been introduced by Europeans or by Polynesian seafarers. However, (according to an article in *Zaslavsky*) no one has traced the game anywhere else.

The layout for Mu-Torere is a nine-pointed star (See Figure 1). The center circle is known as the *putahi*. The first player has four white stones which are initially placed at the ends of four adjacent arms of the star. The second player places four black stones at the ends of four adjacent arms. Players take alternate moves, playing one stone per move.

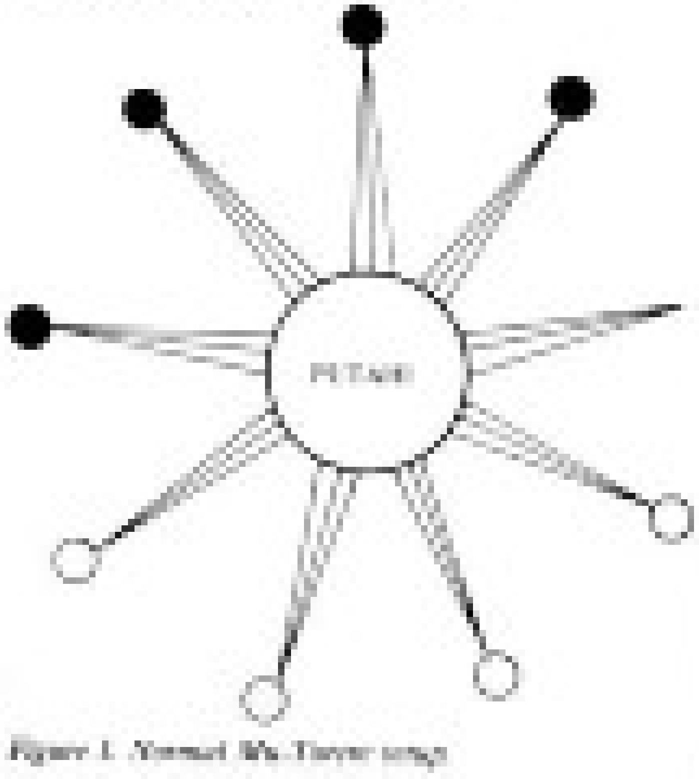


Figure 1. Normal Mu-Torere setup

At any point in the game, there are three possible types of moves:

1. Move sideways to the next arm if that point is vacant.
2. Move into the *putahi* if it is empty.
3. Move from the *putahi* to any unoccupied arm.

The game is won when an opponent is so placed that it is impossible to move any pieces. Despite the apparent simplicity, the game has a degree of subtlety that requires thinking ahead several moves in order to force the opponent into an unplayable position. One virtue of the game is its utter simplicity to create. It can be drawn on paper, sand, or almost anywhere.

Due to the ease of setup, I felt that a two-player version would be too simple and decided on a solitaire version. Also, since it is boring to lose everytime, I did not program the computer to play perfectly. Several situational strategies are built into the program. The program will also recognize one-move forced wins and avoid certain forced-loss situations. If none of the specific strategies applies, the program will select an arbitrary move, in some cases good and in others bad. In other words, it plays like most humans.

In order to keep the program adaptable for most micros, the star was converted to a linear arrangement of numbered squares (See Figure 2). The *putahi* became the zero square and the nine points of the star became the numbered squares, one through nine. The parallel to the original rules is as follows:

1. Move sideways to the next adjacent number if vacant. (One should be considered adjacent to two and nine.)
2. Any number can move into zero, the *putahi*, if it is empty.
3. Zero can move into any unoccupied number.

The human plays "X" and the computer plays "O". You have the choice of moving first or second. Good luck.

```
                ■
                0
X   X   X   X   ■   O   O   O   O
1   2   3   4   5   6   7   8   9
```

Figure 2. Video screen setup for Mu-Torere

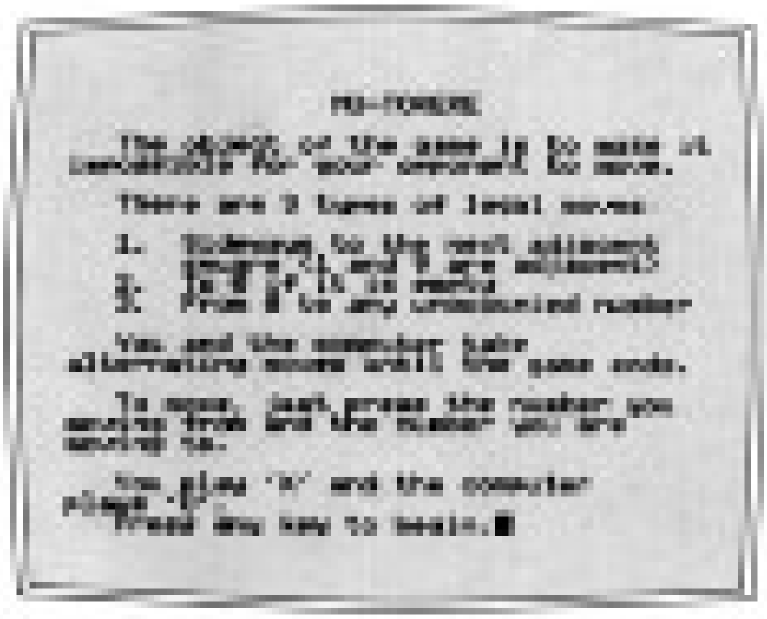
Mu-Torere

```
10 REM ********************************
20 REM *          MU-TORERE           *
30 REM *     in Microsoft BASIC       *
40 REM ********************************
50 DEF FN P(X)=X-8*[illegible]
60 DEF FN A(X)=A(FN P(X))
70 DEF FN R(X)=INT(1+8*RND(1))
80 GOTO 1000
90 REM *** Player's Move ***
100 PRINT:PRINT:PRINT "Your move: ";
110 A$=INKEY$:IF A$="" THEN 110
120 PRINT A$;",";:X=VAL(A$)
130 A$=INKEY$:IF A$="" THEN 130
140 PRINT A$;:Y=VAL(A$):PRINT
150 IF A(X)<>1 OR A(Y)<>0 THEN 170
160 IF X=0 OR Y=0 OR ABS(X-Y)=1 OR ABS(X-Y)=7 THEN 180
170 PRINT "Invalid move.  Try again: ";:GOTO 110
180 A(X)=0:A(Y)=1
190 BEEP
200 GOSUB 1250
210 P=1:GOSUB 770:P=-1
220 GOSUB 290
230 IF [illegible] THEN GOSUB 330
240 A(X)=0:A(Y)=-1
250 CLS:PRINT "   My move: ";:PRINT USING"#";X;:PRINT ",";:PRINT USING"#";Y:PRINT:GOSUB 1150:GOSUB 950:
GOSUB 770
260 GOSUB 1250
270 GOTO 100
280 REM *** Computer's  Move ***
290 IF A(0)<>0 THEN H=S(1):GOSUB 660
300 IF SW=1 THEN SW=0:RETURN
310 IF A(0)<>0 THEN H=S(2):GOSUB 660
320 ON (A(0)+2) GOTO 590,340,510
330 REM *** If 0 Square is Empty ***
340 IF FN A(H+2)+B(1)=1 OR FN A(S(2)+1)(1)=-1 THEN 370
350 IF FN A(H+2+7)=-1 THEN X=FN P(H+8):Y=0:RETURN
360 IF FN A(H+2+2)=-1 THEN X=FN P(H+1):Y=0:RETURN
370 H=[illegible]:IF FN A(H+7)=1 AND FN A(H+8)=-1 AND FN A(H+1)=1 THEN X=FN P(H+8):Y=0
380 IF FN A(H+2)=1 AND FN A(H+3)=1 AND Y=0 THEN 420
390 IF Y=0 THEN Y=0:RETURN
400 IF FN A(H+2)=1 AND FN A(H+1)=-1 AND FN A(H+3)=1 THEN X=FN P(H+1):Y=0
410 IF FN A(H+7)=1 AND FN A(H+6)=1 AND Y=0 THEN 430
420 IF Y=0 THEN Y=0:RETURN
430 I=0
440 I=I+1:IF I>8 THEN I=1
450 IF A(I)<>-1 OR FN R(I)<3 THEN 440
460 IF FN A(I+8)=0 AND FN R(I)<3 THEN X=I:Y=FN P(I+8):RETURN
470 IF FN A(I+1)=0 AND FN R(I)<3 THEN X=I:Y=FN P(I+1):RETURN
480 IF A(0)=1 AND FN R(I)<3 THEN X=I:Y=0:RETURN
490 GOTO 440
500 REM *** If 0 Square Contains an X
510 H=S(1):GOSUB 690:IF SW=1 THEN SW=0:RETURN
520 H=S(2):GOSUB 690:IF SW=1 THEN SW=0:RETURN
530 IF FN A(H+1)=0 AND FN R(H)<3 THEN X=FN P(H+1):Y=H:RETURN
540 IF FN A(H+8)=-1 AND FN R(H)<3 THEN X=FN P(H+8):Y=H:RETURN
550 IF A(H)=-1 AND FN R(H)<3 THEN X=0:Y=FN P(H):RETURN
560 IF H=S(1) THEN H=S(2):GOTO 530
570 H=S(1):GOTO 530
580 REM *** If 0 Square Contains an O
590 H=S(1):GOSUB 720:IF SW=1 THEN SW=0:RETURN
600 H=S(2):GOSUB 720:IF SW=1 THEN SW=0:RETURN
610 H=S(1):GOSUB 750:IF SW=1 THEN SW=0:RETURN
620 H=S(2):GOSUB 750:IF SW=1 THEN SW=0:RETURN
630 H=S(1):GOSUB 690:IF SW=1 THEN SW=0:RETURN
640 H=S(2):GOSUB 690:IF SW=1 THEN SW=0:RETURN
650 GOTO 330
660 IF FN A(H+8)=1 AND FN A(H+1)=-1 AND FN A(H+2)=1 THEN X=FN P(H+1):Y=H:SW=1:RETURN
670 IF FN A(H+1)=1 AND FN A(H+8)=-1 AND FN A(H+7)=1 THEN X=FN P(H+8):Y=H:SW=1:RETURN
680 RETURN
690 IF FN A(H+1)=-1 AND FN A(H+2)=-1 THEN X=FN P(H+1):Y=H:SW=1:RETURN
700 IF FN A(H+8)=-1 AND FN A(H+7)=-1 THEN X=FN P(H+8):Y=H:SW=1:RETURN
710 RETURN
720 IF FN A(H+8)=1 AND FN A(H+1)=-1 AND FN A(H+2)=0 THEN X=FN P(H+1):Y=FN P(H+2):SW=1:RETURN
730 IF FN A(H+1)=1 AND FN A(H+8)=-1 AND FN A(H+7)=0 THEN X=FN P(H+8):Y=FN P(H+7):SW=1:RETURN
740 RETURN
750 IF FN A(H+8)=1 AND FN A(H+1)=1 THEN X=0:Y=H:SW=1:RETURN
760 RETURN
770 IF A(0)=0 OR A(0)=-P THEN RETURN
```

Mu-Torere

```
780 X=A(1):GOSUB 880:IF Q THEN RETURN
790 X=A(2):GOSUB 880:IF Q THEN RETURN
800 PRINT:PRINT:PRINT
810 BEEP:BEEP:BEEP
820 IF P=1 THEN PRINT "YOU WIN!"
830 IF P=-1 THEN PRINT "THE COMPUTER WINS!"
840 PRINT:PRINT "Care to play again (Y or N) ?";
850 A$=INKEY$:IF A$="" THEN 850
860 IF A$="N" OR A$="n" THEN CLS:END
870 RUN
880 Q=0
890 IF A(9)=0 THEN Q=1:RETURN
900 IF X<>1 THEN IF A(X-1)=-P THEN Q=1:RETURN
910 IF X<>8 THEN IF A(X+1)=-P THEN Q=1:RETURN
920 IF X=1 THEN IF A(8)=-P THEN Q=1:RETURN
930 IF X=8 THEN IF A(1)=-P THEN Q=1:RETURN
940 RETURN
950 A(0)=-1:PRINT
960 FOR I=1 TO 9
970 PRINT TAB(L(I));
980 IF A(I)=1 THEN PRINT "X";
990 IF A(I)=-1 THEN PRINT "O";
1000 IF A(I)=0 THEN PRINT ".";
1010 IF Q=1 THEN RETURN
1020 NEXT I:RETURN
1030 DIM A(9),L(9)
1040 CLS:PRINT TAB(11);"MU-TORERE":PRINT
1050 PRINT "   The object of the game is to make it":PRINT "impossible for your opponent to move.":PRINT
1060 PRINT "   There are 3 types of legal moves:":PRINT:PRINT "   1.  Sideways to the next adjacent";
PRINT "      square (1 and 8 are adjacent)"
1070 PRINT "   2.  To 0 if it is empty":PRINT "   3.  From 0 to any unoccupied number"
1080 PRINT:PRINT "   You and the computer take":PRINT "alternating moves until the game ends."
1090 PRINT:PRINT "   To move, just press the number you":PRINT "moving from and the number you are";
PRINT "moving to."
1100 PRINT:PRINT "   You play 'X' and the computer":PRINT "plays 'O'."
1110 PRINT "   Press any key to begin";
1120 A$=INKEY$:IF A$="" THEN 1120
1130 CLS:FOR I=1 TO 4:A(I)=1:A(I+4)=-1:NEXT I
1140 A(0)=0:A(9)=0
1150 PRINT TAB(7);"0":PRINT TAB(7);:Q=1:I=0:GOSUB 950:Q=0:PRINT:PRINT:FOR I=1 TO 9:PRINT I;" ";:
NEXT I
1160 IF P=1 THEN P=-1:RETURN
1170 GOSUB 950:GOSUB 1250
1180 REM
1190 PRINT:PRINT:PRINT "Do you want to go first (Y or N) ?";
1200 A$=INKEY$:IF A$="" THEN 1200
1210 PRINT:IF A$<>"N" AND A$<>"n" THEN 130
1220 P=1
1230 IF P=1 AND A(1)=1 THEN [illegible]:GOTO 250
1240 [illegible]:GOTO 250
1250 Q=0:FOR I=0 TO 9:IF A(I)=0 THEN M(I)=1:Q=Q+1
1260 NEXT I:RETURN
```

Mu-Torere



MU-TORERE

The object of the game is to make it impossible for your opponent to move.

There are 3 types of legal moves:

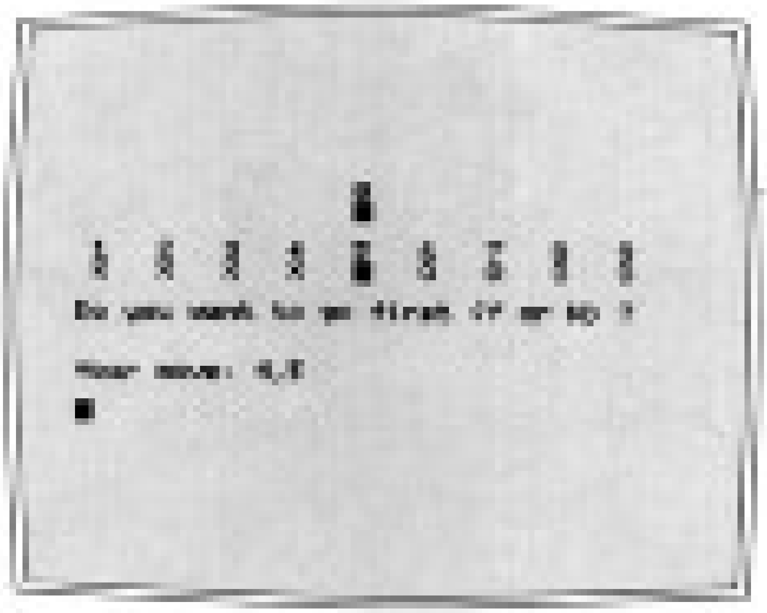
1. Sideways to the next adjacent number (1 and 9 are adjacent)
2. To 0 if it is empty
3. From 0 to any unoccupied number

You and the computer take alternating moves until the game ends.

To move, just press the number you are moving from and the number you are moving to.

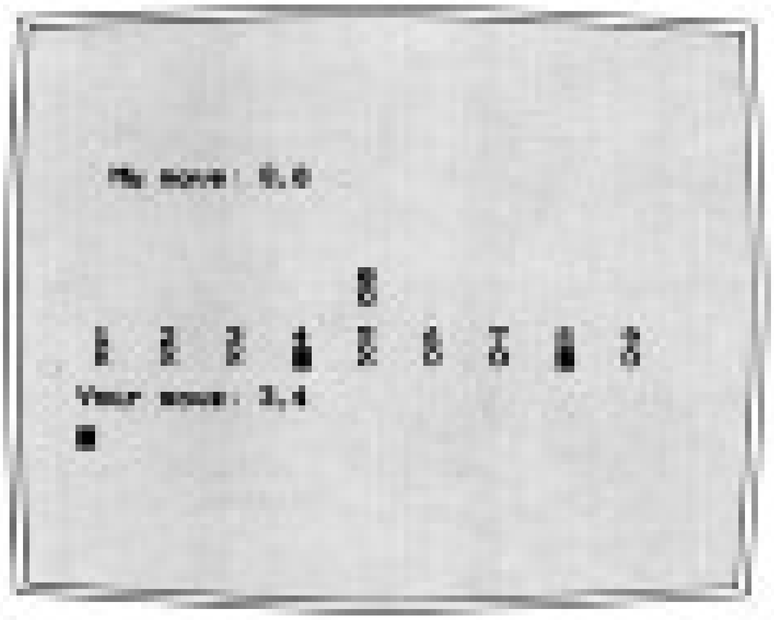
You play 'X' and the computer plays 'O'.

Press any key to begin.



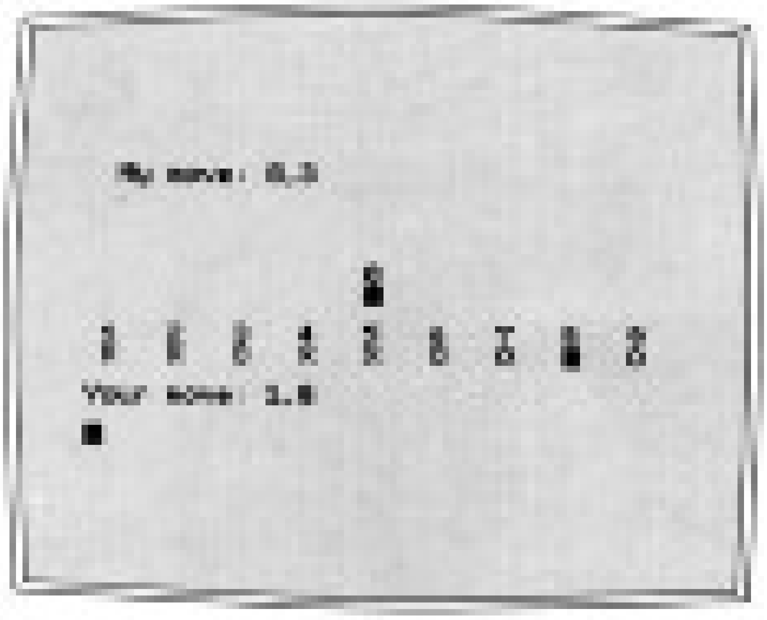
Do you want to go first (Y or N) ?

Your move: 4,0



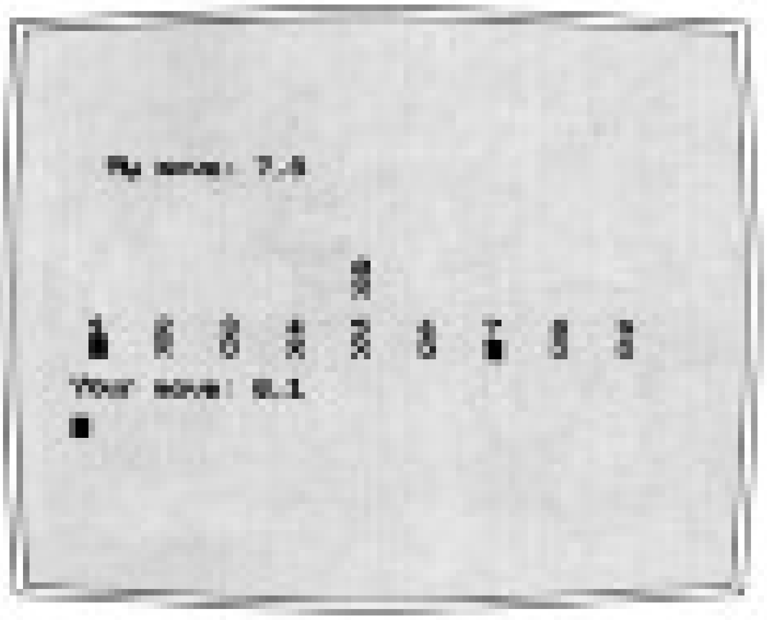
My move: 0,8

Your move: 3,4



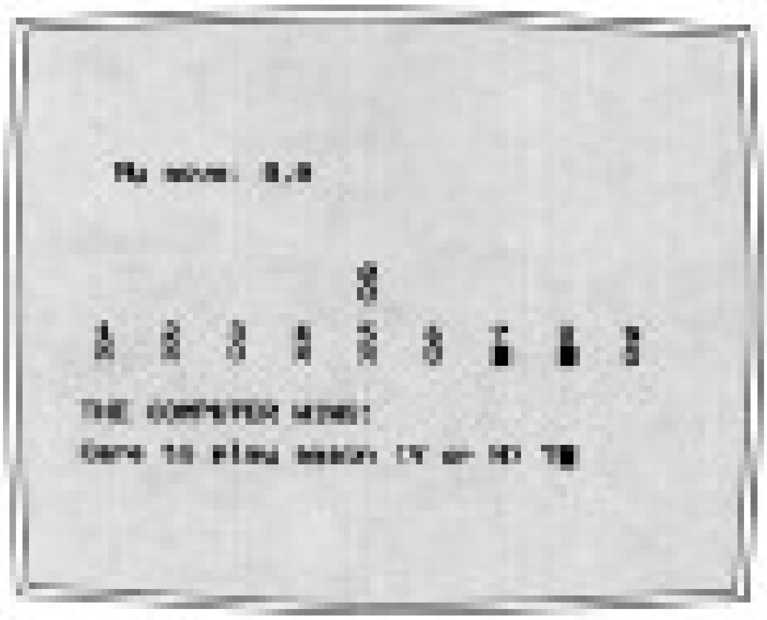
My move: 0,5

Your move: 1,0



My move: 7,0

Your move: 0,1



My move: 8,0

THE COMPUTER WINS!

Care to play again (Y or N) ?

Presidential Campaign

Presidential Campaign was written by Ralph G. White and originally appeared in Creative Computing, October, 1980.

Presidential Campaign is a simulation of the nine month period leading up to a national presidential election. You must make decisions regarding issues, expenditures, travel, and other campaign activities. It is assumed that you are the chosen candidate of your party, and that there is no primary battle.

The country is divided into six regions:
The New England states
The upper midwest and middle Atlantic states
The southern states
The great plains states
The southwest states
The northwest and west coast states

Issues, party affiliation, campaign activities, etc. affect each group of states differently. Some actions have an equal effect on all states while others do not. Thus, some people will be more pleased than others with your approach to political issues whereas some of your decisions may be highly unpopular in some areas.

The incumbent initially gets a 10% edge. A routine to determine the popularity of the president then adjusts the figure accordingly. Party affiliation of the user also affects the initial conditions.

Not only do you get to choose whether to be the incumbent or challenger and whether to be a Democrat or Republican, but also to determine which of six different issues will be the most important issue to your campaign and which issue will be the least important. All of these decisions can influence the effectiveness of your campaign. Which issues are chosen most important and least important do not affect initial conditions.

You have nine months in which to campaign. Status in an individual state can be improved by either campaigning in the state or spending campaign money in it. The influence you and your money have in each state varies. The major factor is the number of electoral votes. The number of days campaigning or the amount of money spent is also of importance. It costs $1,000 per day to visit each state, however, some of the days you plan to be in a state can be designated for fund raising as well as campaigning. Fund raising does not help your popularity in a state, but it funds the campaign treasury. Campaigning increases popularity, but depletes the treasury.

Aside from meeting campaign expenses, the money can be spent in each state to finance campaign committees. The maximum that can be spent in each state at one time is $50,000. You are allowed to visit as many states as time and money allow. You can spend as much money each month as you can afford.

At the end of each month, you will be given a report on the balance of the campaign treasury at the beginning of the month and at the end, the contributions and expenditures for the month, and the results of a political poll which will show your popularity status for a state chosen at random.

Before the beginning of the next month, a political event will happen. How the event affects you depends upon the conditions you set forth at the beginning of the program. Some of the events require you to make a decision and the course of actions taken influences your status. At the end of the campaign, the program calculates the results, state by state, of the popular vote, although only the electorial vote is shown.

Presidential Campaign

```
10 REM ********************************
20 REM * THE PRESIDENTIAL CAMPAIGN *
30 REM *     in Microsoft BASIC     *
40 REM ********************************
50 CLEAR [illegible]
60 [illegible]
70 [illegible]
80 D$="Your campaign fund has $###,###,###.##"
90 D1$="$###,###,###.##          $###,###,###.##"
100 D2$="Contributions = $####,###.##          Expenditures = $####,###.##"
110 FOR I=1 TO [illegible]:NEXT I
120 FOR I=1 TO [illegible]:NEXT I
130 FOR I=1 TO [illegible]:NEXT I
140 [illegible]
150 CLS:PRINT TAB(15)"*** THE PRESIDENTIAL CAMPAIGN ***"
160 PRINT:PRINT:INPUT "Please enter a number from 1 to 500";N
170 IF N<1 OR N>500 THEN 160
180 FOR I=1 TO N:[illegible]:NEXT I
190 FOR I=1 TO 2000:NEXT I
200 GOSUB [illegible]
210 CLS
220 PRINT "Conditions":PRINT:PRINT
230 PRINT "Choose the conditions that you wish to":PRINT "be true."
240 PRINT "In what year do you wish the election":INPUT "to take place";[illegible]:IF [illegible] THEN 240
250 IF [illegible] THEN 270
260 PRINT "That is not an election year.":GOTO 240
270 INPUT "Enter your name";N$
280 INPUT "Enter your opponent's name";O$
290 PRINT:PRINT"Do you wish to be 1) the incumbent or":INPUT"2) the challenger";P1
300 IF P1<1 OR P1>2 THEN 290
310 PRINT:PRINT "Do you wish to be 1) a Democrat or":INPUT "2) a Republican";P2
320 IF P2<1 OR P2>2 THEN 310
330 [illegible]
340 IF [illegible] THEN [illegible]
350 IF [illegible] AND [illegible] THEN [illegible]
360 IF [illegible] AND [illegible] THEN [illegible]
370 IF [illegible] AND [illegible] THEN [illegible]
380 IF [illegible] THEN [illegible]
390 IF [illegible] THEN [illegible]
400 FOR I=1 TO [illegible]:NEXT I
410 GOSUB [illegible]
420 [illegible]
430 IF [illegible] THEN 450
440 FOR I=1 TO [illegible]:NEXT I
450 GOSUB [illegible]
460 CLS:PRINT TAB(15);"I S S U E S":PRINT
470 PRINT "1) Unemployment    4) Social Adjustments"
480 PRINT "2) Inflation       5) Defense"
490 PRINT "3) Energy          6) Foreign Affairs"
500 PRINT:PRINT "Which is most important to your":INPUT "campaign";I1
510 IF I1<1 OR I1>6 OR INT(I1)<>I1 THEN 500
520 INPUT "Which is least important";I2
530 IF I2<1 OR I2>6 OR INT(I2)<>I2 THEN 520
540 FOR T=1 TO [illegible]
550 CLS:PRINT "Date: ";[illegible]:PRINT [illegible];"months before election"
560 [illegible]
570 PRINT USING [illegible]
580 INPUT "What state do you wish to visit";S$
590 PRINT "You have";[illegible];"unscheduled days":PRINT "left this month."
600 PRINT "How many days do you wish to stay":INPUT "there";DV
610 IF [illegible] THEN 600
620 [illegible]
630 PRINT "How many of the";DV;"days will be":INPUT "for fund raising";DF
640 INPUT "How many days for campaigning";DC
650 IF [illegible] THEN 630
660 RESTORE
670 READ ST$,EV,I,J
680 IF ST$<>"end" THEN 710
690 PRINT "You did not spell the state correctly."
700 [illegible]:GOTO 580
710 IF [illegible] THEN 670
720 [illegible]
730 [illegible]
740 IF [illegible] THEN [illegible]
750 PRINT "Do you wish to visit another":INPUT"state (yes/no)";[illegible]
760 [illegible]:IF [illegible] THEN [illegible]
770 IF [illegible] THEN [illegible]
780 CLS
```

Presidential Campaign

```
790 PRINT "Spend campaign money in which":INPUT "state";S$
800 PRINT USING F$;M
810 PRINT:INPUT "How much do you wish to spend";AS
820 IF AS<=50000! THEN 840
830 PRINT "The most you can spend at a single":PRINT "time is $50,000.":GOTO 810
840 IF [illegible] THEN 810
850 IF [illegible] THEN 800
860 M=M-AS:TM=TM+AS
870 RESTORE
880 READ ST$,EV,I,J
890 IF ST$<>"END" THEN 920
900 PRINT "You did not spell the state correctly."
910 M=M+AS:GOTO 790
920 IF ST$<>S$ THEN 880
930 ST(I,J)=ST(I,J)+INT((100-ST(I,J))*AS/[illegible])
940 IF M<=0 THEN 980
950 PRINT "Do you wish to spend money in another":INPUT "state (yes/no)";Y$
960 Y$=LEFT$(Y$,1):IF Y$="Y" OR Y$="y" THEN 790
970 IF Y$<>"N" AND Y$<>"n" THEN 950
980 CLS:PRINT "Monthly Report to the Election":PRINT "Committee":PRINT
990 PRINT "Beginning of Month                End"
1000 PRINT USING [illegible]:PRINT
1010 PRINT USING [illegible]
1020 PL=INT(RND(1)*20)+1:IF PL=0 THEN 1120
1030 RESTORE:FOR Z=1 TO PL:READ ST$,EV,I,J:NEXT Z
1040 IF ST(I,J)>50 THEN 1080
1050 IF ST(I,J)<50 THEN 1100
1060 PRINT:PRINT "Polls show you are even with";O$
1070 PRINT "in "ST$".":GOTO 1120
1080 PRINT:PRINT "Polls show you are ahead of ";O$
1090 PRINT "in "ST$;:PRINT ".  You have";ST(I,J);"% of the vote.":GOTO 1120
1100 PRINT:PRINT "Polls show "O$" ahead of you in"
1110 PRINT ST$;".":PRINT "You have";(100-ST(I,J));"% of the vote."
1120 PRINT:INPUT "Press <ENTER> to begin next month";Z$
1130 CLS:GOSUB 1420
1140 FOR Y=1 TO 4:[illegible]:NEXT Y
1150 FOR Y=1 TO 11:[illegible]:NEXT Y
1160 FOR Y=1 TO 9:[illegible]:NEXT Y
1170 INPUT "Press <ENTER>";Z$
1180 NEXT T
1190 CLS:PRINT TAB(5);"Election Night Results"
1200 PRINT TAB(13);"Electoral Votes":PRINT:PRINT TAB(25);"Your";TAB(31);"Opponent's"
1210 PRINT "State";TAB(15);"You";TAB(20);"Opp.";:PRINT
1220 PRINT TAB(24);"Total";TAB(31);"Total"
1230 RESTORE
1240 FOR X=1 TO 51
1250 READ ST$,EV,I,J
1260 IF ST(I,J)<50 THEN 1280
1270 [illegible]:GOTO 1290
1280 [illegible]
1290 PRINT ST$;TAB(15);EV;TAB(25);[illegible]
1300 FOR T=1 TO 750:NEXT T
1310 NEXT
1320 IF [illegible] THEN 1340
1330 [illegible]:GOTO 1350
1340 [illegible]
1350 PRINT:PRINT WN$;" is the winner of the":PRINT "presidential election."
1360 PRINT WN$;" has";[illegible];"electoral votes, more":PRINT "than his opponent, [illegible]."
1370 END
1380 FOR I=1 TO 4:ST(1,I)=ST(1,I)+C(1):ST(5,I)=ST(5,I)-C(1):NEXT I
1390 FOR I=1 TO 11:ST(2,I)=ST(2,I)+C(2):ST(4,I)=ST(4,I)-C(2):NEXT I
1400 FOR I=1 TO 9:ST(3,I)=ST(3,I)+C(3):ST(6,I)=ST(6,I)-C(3):NEXT I
1410 RETURN
1420 PR=INT(RND(1)*20):IF PR<>0 THEN 1630
1430 IF PR<>1 THEN 1530
1440 PRINT "The U.S. is the target of":PRINT "demonstrations in several middle east"
1450 PRINT "countries.  Several European countries":PRINT "have also been critical of":PRINT "our foreign
 policy."
1460 IF P=1 THEN C=C-1
1470 IF P=2 THEN C=C+1
1480 IF I=4 THEN C=C+1
1490 IF I=3 THEN C=C-1
1500 FOR Y=1 TO 4:C(Y)=C:NEXT Y
1510 GOSUB 1380
1520 GOTO [illegible]
1530 IF PR<>2 THEN 1670
1540 Z=1:IF INT(RND(1)*10)>5 THEN Z=2
1550 PRINT "The rate of inflation has ";
```

Presidential Campaign

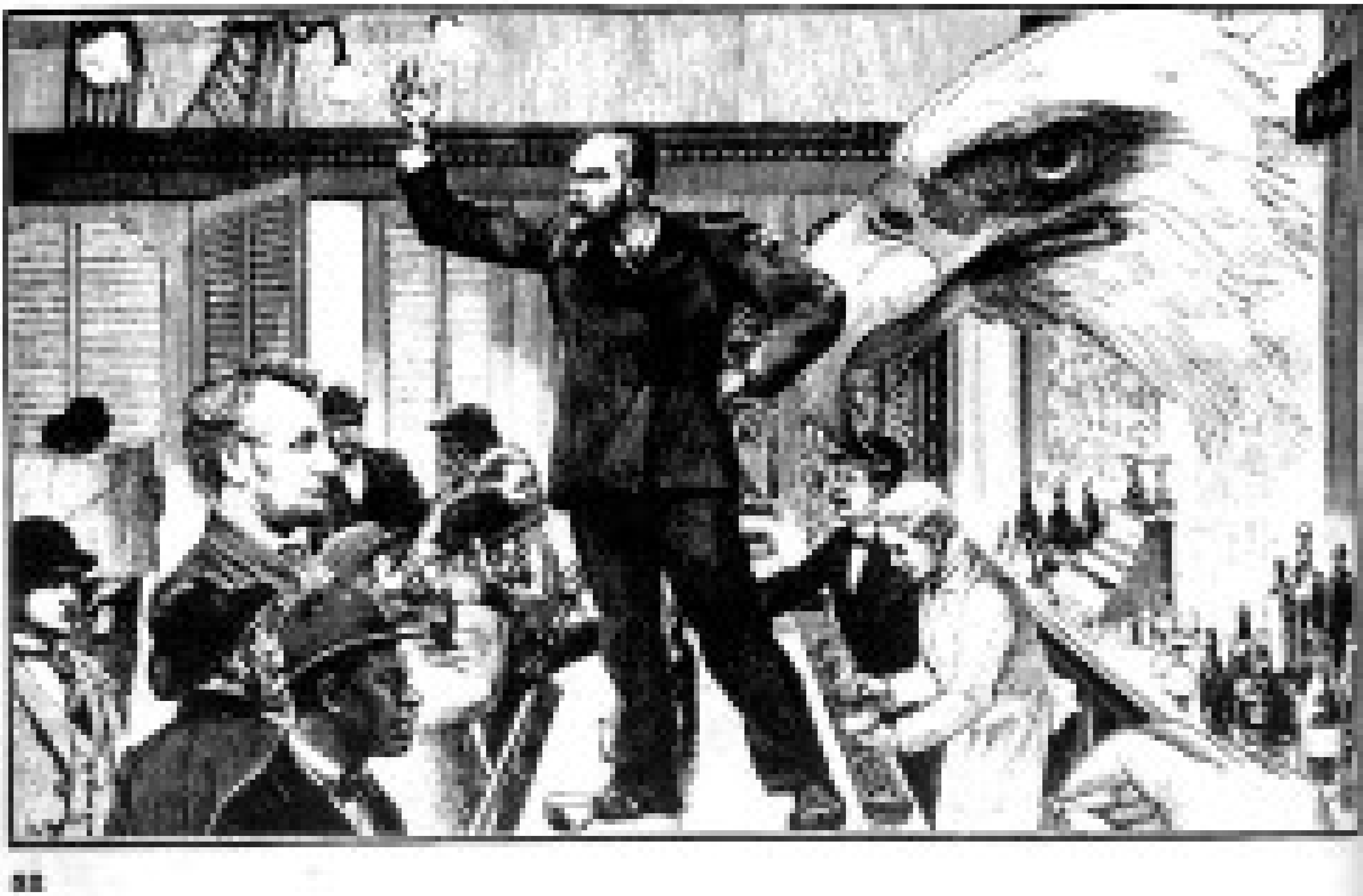
```
1560 IF I%=1 THEN I$="dropped.":GOTO 1580
1570 I$="risen."
1580 PRINT I$:C=0
1590 IF P(1)<>2 THEN 1670
1600 IF I(1)=1 THEN C=C+1
1610 IF I(2)=1 THEN C=C+1
1620 IF I(3)=1 THEN C=C+1
1630 IF I(1)=2 THEN C=C-1
1640 IF I(2)=2 THEN C=C-1
1650 FOR Y=1 TO 4:C(Y)=C(Y)+C:NEXT Y
1660 GOTO 2270
1670 IF P(1)<>3 THEN 1760
1680 PRINT "There is a shortage of all petroleum":PRINT "products, especially gasoline.  The"
1690 PRINT "reasons for the shortage are unclear":PRINT "at this time.":C=0
1700 IF I(1)=2 THEN C=C+1
1710 IF I(2)=2 THEN C=C+1
1720 IF P=1 THEN C=C-2
1730 FOR Y=1 TO 4:C(Y)=C(Y)-C:NEXT Y
1740 GOSUB 1380
1750 GOTO 2270
1760 IF P(1)<>4 THEN 1850
1770 PB=INT(RND(1)*5000)+2000
1780 PRINT "A political boss proposes to":PRINT "contribute";PB;"dollars to your":PRINT "campaign if you
 will appoint some of"
1790 PRINT "his friends to powerful positions if":PRINT "you win.  This contribution is not":
PRINT "legal."
1800 INPUT "Will you accept (yes/no)";C$
1810 YU$=LEFT$(C$,1):IF YU$="N" OR YU$="n" THEN 2270
1820 IF YU$<>"Y" AND YU$<>"y" THEN 1800
1830 F=F+1:D=D+PB
1840 GOTO 2270
1850 IF P(1)<>5 THEN 1960
1860 PRINT "Allegations have been made that you":PRINT "have accepted illegal campaign funds.":
PRINT "You are presently under investigation."
1870 IF F=0 THEN 1950
1880 IF F>3 THEN 1900
1890 PRINT "You have been found guilty and you":PRINT "lose";INT(100/(5-F));"% of your support":
PRINT "in each state.":GOTO 1910
1900 PRINT "You have been found guilty and thrown":PRINT "in the federal penitentiary at":PRINT "Leaven
worth, Kansas for twenty years.":END
1910 FOR Y=1 TO 4:ST(1,Y)=[illegible]:NEXT Y
1920 FOR Y=1 TO 4:ST(2,Y)=[illegible]:NEXT Y
1930 FOR Y=1 TO 4:ST(3,Y)=[illegible]:NEXT Y
1940 GOTO 2270
1950 PRINT "You have been found innocent.":GOTO 2270
1960 IF P(1)<>6 THEN 2190
1970 PRINT "You and ";O$;" agree to a televised":PRINT "debate."
1980 IF I(1)<>1 THEN 2000
1990 FOR Y=1 TO 4:ST(2,Y)=ST(2,Y)+INT(.05*(100-ST(2,Y)))
2000 IF I(1)<>2 THEN 2020
2010 FOR Y=1 TO 4:ST(4,Y)=ST(4,Y)+INT(.05*(100-ST(4,Y)))
2020 IF I(2)<>1 THEN 2040
2030 FOR Y=1 TO 4:ST(2,Y)=ST(2,Y)-INT(.05*ST(2,Y))
2040 IF I(2)<>2 THEN 2060
2050 FOR Y=1 TO 4:ST(4,Y)=ST(4,Y)-INT(.05*ST(4,Y))
2060 DB=INT(RND(1)*3)+1:IF DB=3 THEN 2090
2070 IF DB=2 THEN 2150
2080 IF DB=1 THEN 2120
2090 FOR Y=1 TO 4:[illegible]:NEXT Y
2100 FOR Y=1 TO 4:[illegible]:NEXT Y
2110 GOTO 2150
2120 FOR Y=1 TO 4:[illegible]:NEXT Y
2130 FOR Y=1 TO 4:[illegible]:NEXT Y
2140 FOR Y=1 TO 4:[illegible]:NEXT Y
2150 IF DB=1 THEN PRINT "You lost the debate."
2160 IF DB=2 THEN PRINT "The debate was a draw."
2170 IF DB=3 THEN PRINT "You won the debate."
2180 GOTO 2270
2190 IF P(1)<>7 THEN 2270
2200 PRINT "The president of a large union promises":PRINT "the support of the union's members if"
2210 PRINT "you make some pro-union campaign":PRINT "speeches."
2220 INPUT "Will you accept his help (yes/no)";C$
2230 YU$=LEFT$(C$,1):IF YU$="Y" OR YU$="y" THEN 2260
2240 IF YU$<>"N" AND YU$<>"n" THEN 2220
2250 C(1)=[illegible]:GOSUB 1380
2260 GOTO 2270
2270 C(1)=[illegible]:GOSUB 1380
2280 GOTO 2290
```

Presidential Campaign

```
2290 PRINT "Farmers and ranchers want you to";PRINT "campaign that they should receive";PRINT "higher
 prices for their products."
2300 PRINT "Keep in mind that consumers will not";PRINT "like this.";[illegible]
2310 PRINT "Will you support the farmers and";INPUT "ranchers (yes/no)";Y$
2320 Y$=LEFT$(Y$,1):IF Y$="Y" OR Y$="y" THEN 2340
2330 IF Y$<>"N" AND Y$<>"n" THEN 2310
2340 [illegible]:GOTO 2360
2350 [illegible]
2360 GOSUB 1790
2370 RETURN
2380 DATA Alabama,9,6,7
2390 DATA Alaska,3,5,4
2400 DATA Arizona,6,5,4
2410 DATA Arkansas,6,3,10
2420 DATA California,45,8,6
2430 DATA Colorado,7,4,7
2440 DATA Connecticut,8,8,7
2450 DATA Delaware,3,7,7
2460 DATA D.C.,3,0,10
2470 DATA Florida,17,3,7
2480 DATA Georgia,12,5,8
2490 DATA Hawaii,4,5,5
2500 DATA Idaho,4,4,4
2510 DATA Illinois,26,3,8
2520 DATA Indiana,13,3,8
2530 DATA Iowa,8,7,3
2540 DATA Kansas,7,3,5
2550 DATA Kentucky,9,5,3
2560 DATA Louisiana,10,4,11
2570 DATA Maine,4,1,1
2580 DATA Maryland,10,3,5
2590 DATA Massachusetts,14,7,7
2600 DATA Michigan,21,3,7
2610 DATA Minnesota,10,5,11
2620 DATA Mississippi,7,8,10
2630 DATA Missouri,12,4,10
2640 DATA Montana,4,5,4
2650 DATA Nebraska,5,3,4
2660 DATA Nevada,3,6,4
2670 DATA New Hampshire,4,1,3
2680 DATA New Jersey,17,3,5
2690 DATA New Mexico,4,6,7
2700 DATA New York,41,5,1
2710 DATA North Carolina,13,4,5
2720 DATA North Dakota,3,3,1
2730 DATA Ohio,25,3,6
2740 DATA Oklahoma,8,6,2
2750 DATA Oregon,6,5,7
2760 DATA Pennsylvania,27,5,8
2770 DATA Rhode Island,4,5,5
2780 DATA South Carolina,8,5,4
2790 DATA South Dakota,3,3,2
2800 DATA Tennessee,10,4,5
2810 DATA Texas,26,6,1
2820 DATA Utah,4,6,4
2830 DATA Vermont,3,1,2
2840 DATA Virginia,12,4,2
2850 DATA Washington,9,5,7
2860 DATA West Virginia,6,6,7
2870 DATA Wisconsin,11,5,10
2880 DATA Wyoming,3,5,7
2890 DATA end,0,0,0
2900 CLS:PRINT TAB(11);"S C E N A R I O":PRINT
2910 PRINT "     You have decided to run for";PRINT "president and have obtained nomination"
2920 PRINT "from your party.  The campaign begins"
2930 PRINT "nine weeks before the election.  You"
2940 PRINT "have the options of deciding which"
2950 PRINT "states to visit each month, how many";PRINT "days you wish to spend in the states"
2960 PRINT "you visit, and whether the visit is";PRINT "for campaigning (which wins popular"
2970 PRINT "votes) or fund raising (which wins";PRINT "no popular votes but brings in"
2980 PRINT "contributions to meet expenses and";PRINT "finance campaign activities in other"
2990 PRINT "states).  The money that is in the";PRINT "campaign treasury can be spent as you";PRINT "wish
 in any state."
3000 PRINT:INPUT "Press <ENTER> to continue";Z$
3010 PRINT "     At the beginning of the campaign,"
3020 PRINT "you are allowed to make some political"
3030 PRINT "decisions.  These will affect the";PRINT "initial attitudes of the voters with"
3040 PRINT "respect to you and your opponent."
```

Presidential Campaign

```
3050 PRINT "Throughout the campaign, you will have":PRINT "to make additional political decisions"
3060 PRINT "that will influence voter opinion.  As"
3070 PRINT "with all political decisions, whatever":PRINT "you decide will not please everyone."
3080 PRINT "In addition, some of your decisions":PRINT "will be compared to those made earlier":
PRINT "to determine your sincerity."
3090 PRINT "Therefore, try to weigh the conditions":PRINT "of each decision carefully.  In some"
3100 PRINT "cases, changing position during  a":PRINT "campaign can be the best strategy,"
3110 PRINT "while at other times, it may be":PRINT "disastrous."
3120 PRINT:INPUT "Press <ENTER> to continue";Z$:CLS
3130 PRINT "     At the end of each month, you":PRINT "will receive a report of the finances"
3140 PRINT "of the treasury.  You will be shown":PRINT "the balance at the beginning of the"
3150 PRINT "month, the balance at the end of the":PRINT "month, total contributions during the":
PRINT "month, and total expenditures during"
3160 PRINT "the month.":PRINT "     Campaigning is expensive not only"
3170 PRINT "because of advertising in states but":PRINT "also for your actual visits.  It is"
3180 PRINT "helpful to spend time fund raising."
3190 PRINT:INPUT "Press <ENTER> to continue";Z$:CLS
3200 PRINT "     There are a few campaign laws to":PRINT "consider:"
3210 PRINT "  1) You can not run the campaign":PRINT "treasury into debt."
3220 PRINT "  2) A $50,000 maximum is placed on":PRINT "each transaction."
3230 PRINT "  3) Unreported campaign contributions":PRINT "are illegal.  You may be tempted to"
3240 PRINT "accept some, but you may get caught.":PRINT "It may cost you the election or merely"
3250 PRINT "a few votes.":PRINT "  4) You may campaign as many days per":PRINT"month as you wish and
 visit as many"
3260 PRINT "states as you wish.  Each month is":PRINT "considered to have thirty days."
3270 PRINT:INPUT "Press <ENTER> to continue";Z$:CLS
3280 PRINT "     At the end of each month, you":PRINT "will be shown your status in each state"
3290 PRINT "as of the end of the month.  This is":PRINT "the only indication that you will"
3300 PRINT "receive on your progress."
3310 PRINT "     At the end of the campaign, the":PRINT "election is held and you will be shown"
3320 PRINT "the number of electoral college votes":PRINT "awarded to each state, to whom they":
PRINT "were awarded, and the totals of"
3330 PRINT "votes that you and your opponent":PRINT "received."
3340 PRINT:INPUT "Press <ENTER> to continue";Z$:CLS
3350 PRINT "     Be sure to spell each state":PRINT "correctly.  Do not use a dollar sign"
3360 PRINT "when entering amounts of money and do":PRINT "not use commas between number digits."
3370 PRINT:INPUT "Press <ENTER> to begin the campaign";Z$:CLS
3380 RETURN
```



Presidential Campaign

```
              S C E N A R I O
     You have decided to run for
president and have obtained nomination
from your party.  The campaign begins
nine months before the election.  You
have the options of deciding which
states to visit each month, how many
days you wish to spend in the states
you visit, and whether the visit is
for campaigning (which wins popular
votes) or fund-raising (which wins
no popular votes but brings in
contributions to meet expenses and
finance campaign activities in other
states).  The money that is in the
campaign treasury can be spent as you
wish in any state.

Press <ENTER> to continue? ■
```

```
     At the beginning of the campaign,
you are allowed to make some political
decisions.  These will affect the
initial attitudes of the voters with
respect to you and your opponent.
Throughout the campaign, you will have
to make additional political decisions
that will influence voter opinion.  As
with all political decisions, whatever
you decide will not please everyone.
In addition, some of your decisions
will be compared to those made earlier
to determine your integrity.
Therefore, try to weigh the conditions
of each decision carefully.  In some
cases, changing position during a
campaign can be the best strategy,
while at other times, it may be
disastrous.

Press <ENTER> to continue? ■
```

```
     At the end of each month, you
will receive a report of the finances
of the campaign.  You will be given
the balance at the beginning of the
month, the balance at the end of the
month, total contributions during the
month, and total expenditures during
the month.
     Campaigning is expensive not only
because of advertising in states but
also for your actual travel.  It is
helpful to spend time fund-raising.

Press <ENTER> to continue? ■
```

```
     There are a few campaign laws to
consider:
  1) You can not put the campaign
treasury into debt.
  2) A $10,000 maximum is placed on
each transaction.
  3) Unreported campaign contributions
are illegal.  You may be tempted by
secret money, but you may get caught.
It may cost you the election or merely
a few votes.
  4) You may campaign as many days per
month as you wish and visit as many
states as you wish.  Each month is
considered to have thirty days.

Press <ENTER> to continue? ■
```

```
     At the end of each month, you
will be shown your status in one state
as of the end of the month.  This is
the only indication that you will
receive on your progress.
     At the end of the campaign, the
election is held and you will be shown
the number of electoral college votes
awarded to each state, to whom they
were awarded, and the totals of
votes that you and your opponent
received.

Press <ENTER> to continue? ■
```

```
     Be sure to spell each state
correctly.  Do not use a dollar sign
when entering amounts of money and do
not use commas between number digits.

Press <ENTER> to begin the campaign? ■
```

```
Conditions

Choose the conditions that you wish to
be true.
In what year do you wish the election
to take place? 1988
Enter your name? Andrew Hardinge
Enter your opponent's name? Steve Willi
ams

Do you wish to be 1) the incumbent or
2) the challenger? 2

Do you wish to be 1) a Democrat or
2) a Republican? 2■
```

```
             I S S U E S
1) Unemployment   4) Social Entitlements
2) Inflation      5) Defense
3) Energy         6) Foreign Affairs

Which is most important to your
campaign? 2
Which is least important? 4■
```

```
Date: February
 9 Months before election
Your campaign fund has $    500,000.00

What state do you wish to visit? New Je
rsey
You have 30 unscheduled days
left this month.
How many days do you wish to stay
there? 3
How many of the 3 days will be
for fund raising? 2
How many days for campaigning? 1
Do you wish to visit another
state (yes/no)? no■
```

```
Spend campaign money in which
state? New Jersey
Your campaign fund has $    496,313.00

How much do you wish to spend? 4000.00
Do you wish to spend money in another
state (yes/no)? no■
```

```
Monthly Report to the Election
Committee

Beginning of Month              End
$    500,000.00         $    490,913.00

Contributions =     28,012.00
 Expenditures =     41,098.00

Polls show Steve Williams ahead of you
in
North Carolina
He has 51 % of the vote.

Press <ENTER> to begin next month? ■
```

```
The U.S. is the target of
demonstrations in several middle east
countries.  Several European countries
have also been critical of
our policies.
Press <ENTER>? ■
```

```
Spend campaign money in which
state? New York
Your campaign fund has $    581,040.00

How much do you wish to spend? 50000.00

Do you wish to spend money in another
state (yes/no)? no■
```

Presidential Campaign

```
Monthly Report to the Election
Committee:

Beginning of Month                End
$     [illegible]        $     [illegible]

Contributions =   [illegible]
 Expenditures =   [illegible]

Polls show Steve Williams ahead of you
in
Connecticut.
He has [illegible] % of the vote.

Press <ENTER> to begin next month? ■


The U.S. is the target of
demonstrations in several middle east
countries.  Several European countries
have also been critical of
our foreign policy.
Press <ENTER>? ■

Date: April
 7 Months before election
Your campaign fund has $    [illegible]

What state do you wish to visit? Florida
You have 30 unscheduled days
left this month.
How many days do you wish to stay
there? 20
How many of the 20 days will be
for fund raising? [illegible]
How many days for campaigning? 10
Do you wish to visit another
state (yes/no)? no■


Spend campaign money in which
state? Florida
Your campaign fund has $    [illegible]

How much do you wish to spend? 20000.00

Do you wish to spend money in another
state (yes/no)? no■


Monthly Report to the Election
Committee:

Beginning of Month                End
$     [illegible]        $     [illegible]

Contributions =   [illegible]
 Expenditures =   [illegible]

Polls show Steve Williams ahead of you
in
Arizona.
He has [illegible] % of the vote.

Press <ENTER> to begin next month? ■


The U.S. is the target of
demonstrations in several middle east
countries.  Several European countries
have also been critical of
our foreign policy.
Press <ENTER>? ■


Spend campaign money in which
state? Connecticut
Your campaign fund has $    [illegible]

How much do you wish to spend? [illegible]
Do you wish to spend money in another
state (yes/no)? no■


Monthly Report to the Election
Committee:

Beginning of Month                End
$     [illegible]        $     [illegible]

Contributions =   [illegible]
 Expenditures =   [illegible]
```

```
Polls show you are ahead of Steve Willi
ams
in Kansas.  You have [illegible] % of the vote.

Press <ENTER> to begin next month? ■


Farmers and ranchers want you to
campaign that they should receive
higher prices for their products.
Keep in mind that consumers will not
like this.
Will you support the farmers and
ranchers (yes/no)? yes■


Date: June
 5 Months before election
Your campaign fund has $    [illegible]

What state do you wish to visit? Kansas

You have 30 unscheduled days
left this month.
How many days do you wish to stay
there? 20
How many of the 20 days will be
for fund raising? [illegible]
How many days for campaigning? [illegible]
Do you wish to visit another
state (yes/no)? yes
What state do you wish to visit? Ohio
You have 10 unscheduled days
left this month.
How many days do you wish to stay
there? 10
How many of the 10 days will be
for fund raising? 10
How many days for campaigning? 0■


Spend campaign money in which
state? Kansas
Your campaign fund has $    [illegible]

How much do you wish to spend? 20000.00

Do you wish to spend money in another
state (yes/no)? yes
Spend campaign money in which
state? Ohio
Your campaign fund has $    [illegible]

How much do you wish to spend? 20000.00

Do you wish to spend money in another
state (yes/no)? no■


Monthly Report to the Election
Committee:

Beginning of Month                End
$     [illegible]        $     [illegible]

Contributions =   [illegible]
 Expenditures =   [illegible]

Polls show you are ahead of Steve Willi
ams
in Nebraska.  You have [illegible] % of the vote
.

Press <ENTER> to begin next month? ■


There is a shortage of all petroleum
products, especially gasoline.  The
reasons for the shortage are unclear
at this time.
Press <ENTER>? ■


Date: July
 4 Months before election
Your campaign fund has $    [illegible]

What state do you wish to visit? Texas
You have 30 unscheduled days
left this month.
How many days do you wish to stay
there? [illegible]
How many of the [illegible] days will be
for fund raising? [illegible]
How many days for campaigning? [illegible]
Do you wish to visit another
state (yes/no)? no■
```

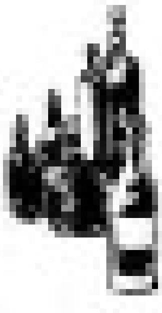
Presidential Campaign

```
Spend campaign money in which
state? Texas
Your campaign fund has $    333,233.00

How much do you wish to spend? 33233.00

Do you wish to spend money in another
state (yes/no)? no█


Monthly Report to the Election
Committee

Beginning of Month                End
$    333,233.00         $    300,000.00

Contributions =   $20,000.00
 Expenditures =   $53,233.00

Polls show Steve Williams ahead of you
in
Florida.
He has 52 % of the vote.

Press <ENTER> to begin next month? █


A political boss promises to
contribute [illegible] dollars to your
campaign if you will appoint some of
his friends to powerful positions if
you win.  This contribution is not
legal.
Will you accept (yes/no)? no
Press <ENTER>? █


Date: August
 3 Months before election
Your campaign fund has $    300,000.00

What state do you wish to visit? Maine

You have 30 unscheduled days
left this month.
How many days do you wish to stay
there? 30
How many of the 30 days will be
for fund raising? 0
How many days for campaigning? 30█


Spend campaign money in which
state? Maine
Your campaign fund has $    273,400.00

How much do you wish to spend? 10000.00

Do you wish to spend money in another
state (yes/no)? no█


Monthly Report to the Election
Committee

Beginning of Month                End
$    300,000.00         $    263,400.00

Contributions =    $6,400.00
 Expenditures =   $43,000.00

Polls show Steve Williams ahead of you
in
Mississippi.
He has [illegible] % of the vote.

Press <ENTER> to begin next month? █

You and Steve Williams agree to a television
debate.
Results:
You won the debate.
Press <ENTER>? █

Date: September
 2 Months before election
Your campaign fund has $    263,400.00

What state do you wish to visit? Califo
rnia
You have 30 unscheduled days
left this month.
How many days do you wish to stay
there? 30
How many of the 30 days will be
for fund raising? 0
How many days for campaigning? 30█
```

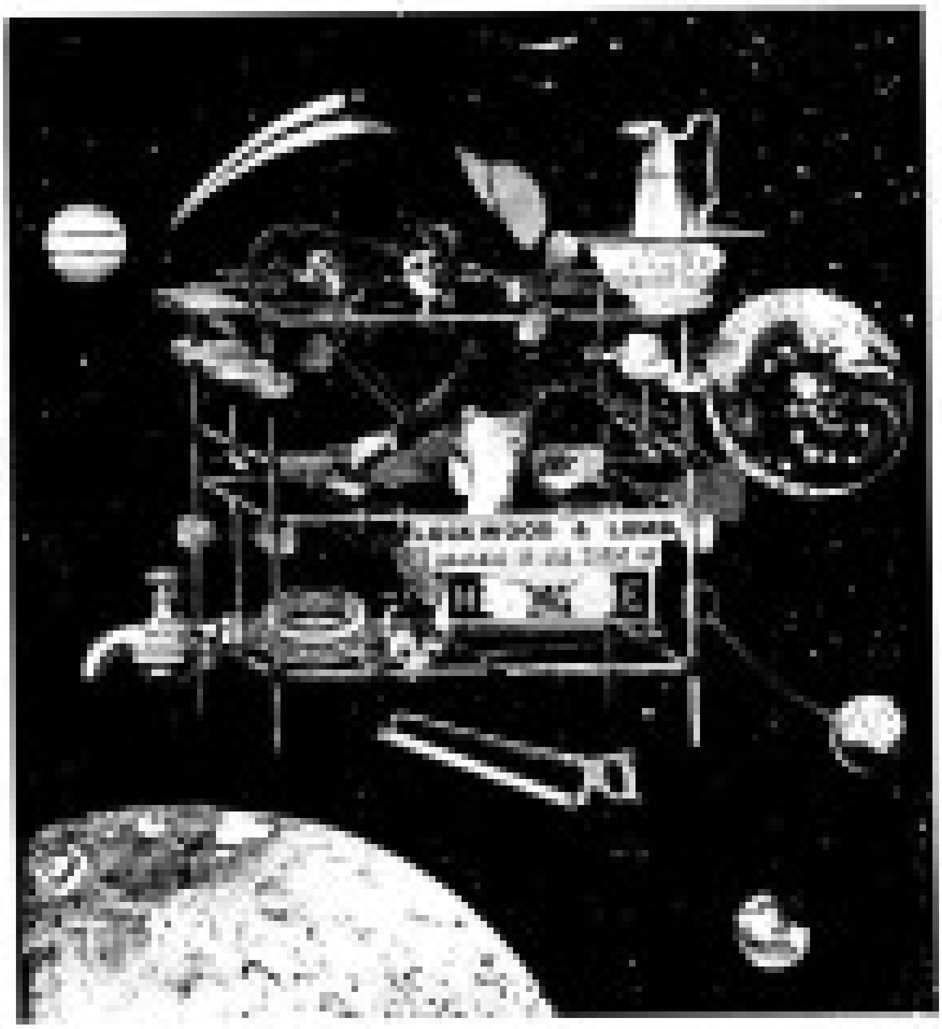
```
Date: September
 2 Months before election
Your campaign fund has $    263,400.00

What state do you wish to visit? Califo
rnia
You have 30 unscheduled days
left this month.
How many days do you wish to stay
there? 20
How many of the 20 days will be
for fund raising? 15
How many days for campaigning? 5
Do you wish to visit another
state (yes/no)? no█


Your campaign fund has $    277,400.00

How much do you wish to spend?
You did not spell the state correctly.
Spend campaign money in which
state?
Your campaign fund has $    277,400.00

How much do you wish to spend?
You did not spell the state correctly.
Spend campaign money in which
state?
Your campaign fund has $    277,400.00

How much do you wish to spend?
You did not spell the state correctly.
Spend campaign money in which
state? California
Your campaign fund has $    277,400.00

How much do you wish to spend? 7000.00
Do you wish to spend money in another
state (yes/no)? no█


Monthly Report to the Election
Committee

Beginning of Month                End
$    263,400.00         $    270,400.00

Contributions =   $20,000.00
 Expenditures =   $13,000.00

Polls show Steve Williams ahead of you
in
Ohio.
He has [illegible] % of the vote.

Press <ENTER> to begin next month? █


Farmers and ranchers want you to
promise that they should receive
higher prices for their products.
Keep in mind that consumers will not
like this.
Will you support the farmers and
ranchers (yes/no)? yes
Press <ENTER>? █


Spend campaign money in which
state? N.C.
Your campaign fund has $    237,400.00

How much do you wish to spend? 50000.00

Do you wish to spend money in another
state (yes/no)? no█


Monthly Report to the Election
Committee

Beginning of Month                End
$    270,400.00         $    187,400.00

Contributions =        $0.00
 Expenditures =   $83,000.00

Polls show Steve Williams ahead of you
in
North Carolina.
He has [illegible] % of the vote.

Press <ENTER> to begin next month? █
```

Presidential Campaign

```
The president of a large union promises
the support of the union's members if
you make some pro-union campaign
promises.
Will you accept his help (yes/no)? and
Press <RETURN>? ■


          Election Night Results
             Electoral Votes
                                  Your   Opponent
State               You  Rep.     Total  Total
Alabama                  [illegible]
Alaska                   [illegible]
Arizona                  [illegible]
Arkansas                 [illegible]
California               [illegible]
Colorado                 [illegible]
Connecticut              [illegible]
Delaware                 [illegible]
DC                       [illegible]
Florida             2    [illegible]
Georgia
Hawaii                   [illegible]
Idaho                    [illegible]
Illinois                 [illegible]
Indiana                  [illegible]
Iowa                     [illegible]
Kansas                   [illegible]
Kentucky            9    [illegible]
Louisiana
Maine                    [illegible]
Maryland                 [illegible]
Massachusetts            [illegible]
Michigan                 [illegible]
Minnesota                [illegible]
Mississippi              [illegible]
Missouri                 [illegible]
Montana                  [illegible]
Nebraska                 [illegible]
Nevada                   [illegible]
New Hampshire            [illegible]
New Jersey               [illegible]
New Mexico               [illegible]
New York                 [illegible]
North Carolina           [illegible]
North Dakota             [illegible]
Ohio                     [illegible]
Oklahoma                 [illegible]
Oregon                   [illegible]
Pennsylvania             [illegible]
Rhode Island             [illegible]
South Carolina           [illegible]
South Dakota             [illegible]
Tennessee                [illegible]
Texas               26.
Utah                     [illegible]
Vermont                  [illegible]
Virginia                 [illegible]
Washington               [illegible]
West Virginia            [illegible]
Wisconsin                [illegible]
Wyoming                  [illegible]
Steve Williams is the winner of the
 1984
presidential election.
Steve Williams has [illegible] electoral votes,
 more
than his opponent, Andrew Hardidge.
■
```



Star Merchant



Star Merchant was written by Lloyd Johnson and originally appeared in Creative Computing, August 1981.

Introduction

Star Merchant is a futuristic trade simulation game. When this article first appeared in the August 1981 issue of Creative Computing, I was negligent in not giving the game "Traveller" proper credit as a source for cargo names and base prices. "Traveller" is a role playing system set in the far future. Its rules cover many facets of life in the 57th century and are constantly being expanded. "Traveller" is available from hobby stores or from Game Designers' Workshop, Box 1646, Bloomington, IL 61701.

Historical Background

Early in the 26th century the 50XFTL drive was developed. This drive, when properly installed on a spaceship, would cause a controlled warping of space enabling the spaceship to travel at fifty times faster than light (50XFTL). Massive colonizations of the nearby stars took place in the following two centuries due to the crowded conditions on inhabitable planets of the solar system and the development of this drive.

By the mid-28th century, large orbiting space stations (starports) were constructed at the ten most populated star systems. These starports had facilities for docking and refueling starships as well as massive cargo storage capability. The construction of these starports was closely paralleled by a simplification of starship design. With the advent of the starports, it was no longer necessary for a starship to land on a planet. This eliminated the need for atmospheric streamlining, as well as the large reaction engines required to lift the starship from the planetary surface, while it substantially increased the cargo hold of starships.

The type of cargo which will be available for purchase at any particular starport is difficult to predict, since most of the cargos did not originate at that star system, but were brought there by other merchant starships. Coordination of trade routes to guarantee cargo availability at a starport had never occurred due to the independent nature of the star merchants and the slow communication between the star systems.

As trade developed between the starports, each starport was assigned a trade classification. Although the trade classification is useless in determining which cargos might be available for purchase, it is extremely useful in predicting the price of the cargo. As political and economic conditions change at a star system, the assigned trade classification may change slightly.

Game Description

The game has recently been modified from the original publication to include a two player option. When playing Star Merchant, the player or players will find themselves in command of a merchant starship. Their goal is to not only make enough money by trading cargos to stay in business and to regain the initial investment for the lease of the starship, but to make more money than the other player.

There are ten different starports where trade is conducted and thirty-six different types of cargos which may be traded. The different types of cargos range from agricultural produce and raw materials to industrially produced items, such as weapons and machinery. The price at which these cargos will be traded is dependent upon the trade classification of the starport where the item is being traded. For example, farm machinery might bring top dollar at a starport with an agricultural trade class, whereas the price of grain at this starport will probably be very low.

The starport distances and directions are all represented in two dimensions. This was done to simplify game play. Command 7, DISPLAY STARPORT MAP, will display the relative positions of these starports. This command is useful to the players when planning their trade routes.

Ship expenses must be paid every time a new starport is reached. If the player's account becomes negative after paying these expenses, he must sell enough cargo to make it positive before he can leave the starport. If he does not have enough cargo to do this, the game will end for the player. If two players are playing, the other player may continue the game as a one player game if desired.

The expenses which must be paid consist of a docking fee, fuel expenses, and crew salary. The docking fee will always be 20,000 credits. The fuel expenses are directly proportional to the distance traveled from the last starport. The cost of fuel per lightyear is 100,000 credits. The crew's salary is based on an annual salary of 500,000 credits and the amount of ship time that has passed since the crew was last paid. Ship time increases approximately .02 years (a week) for each lightyear traveled and approximately .003 years (a day) for each cargo transaction.

Before leaving a starport the player will be asked if he wants to purchase piracy insurance. This question is skipped if the player's account does not hold enough revenue to make this payment. The price of piracy insurance is ten percent of the total value of the cargo presently stored in the hold. If the cargo should be stolen by pirates, the player will be reimbursed for the last assessed value of his cargo. No reimbursement will take place if the player had not purchased piracy insurance.

The pirates are a highly technical organization which have found a loophole in the law of relativity. They utilize this loophole to empty a starship of cargo while it is in the warped space generated by the 50XFTL drive. With their ability to alter the rate of time, the pirates are able to rendezvous with a starship, board it and take its cargo, leave an insulting message, and disappear all within a time interval too short to be measured by the starship's chronometers.

The true origin of the pirates is still unknown, however investigations are being undertaken. Although a major breakthrough in this investigation had occurred when several lots of stolen cargo were identified at one of the starports, the player can still expect to have his cargo stolen from him approximately ten percent of the time.

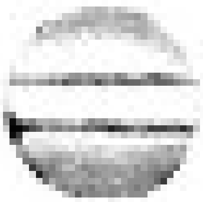
As the player's fortune grows, the probability will increase that the crew will go on strike for a higher salary. When a strike occurs the crew presents their salary demands and the player is asked for a counter-offer. The probability that the counter offer will be accepted depends upon the amount that was offered and the number of counter-offers that have been rejected previously. Once the crew has rejected ten counter-offers, they will accept only their original salary demands or higher. For this reason an early strike settlement is desirable.

The lease on a player's ship will expire after two years of ship time. At this time, the player will be asked to renew his lease if he has enough money to do so. It will cost 2,000,000 credits for another two year lease. If the player does not renew his lease, the game will end for him and his final game results will be displayed. The other player will be allowed to continue playing until his lease expires.

Star Merchant

```
10 REM ************************************
20 REM *          STAR MERCHANT           *
30 REM *       in Microsoft BASIC         *
40 REM ************************************
50 REM Initialization
60 DIM A$(20),B$(8),A(9),C(9),D(13)
70 DIM E(20,8),F(16),G(16),I(16)
80 CLS:PRINT TAB(12)"STAR MERCHANT"
90 PRINT:PRINT "You have just spent 2 million credits"
100 PRINT "on a 2 year lease for a merchant"
110 PRINT "starship.  This leaves you with 2"
120 PRINT "million credits operating capital."
130 PRINT
140 PRINT "Your ship can hold a total of 20 cargos";
150 PRINT "with a total cargo weight of 200 tons."
160 PRINT "The fuel capacity of your ship is great";
170 PRINT "enough such that travel between any 2"
180 PRINT "starports is possible without"
190 PRINT "refueling."
200 PRINT
210 PRINT "You are presently traveling from Alpha"
220 PRINT "Centauri to Sol.  You are carrying no"
230 PRINT "cargo."
240 PRINT:PRINT "Press any key to continue.";
250 A$=INKEY$:IF A$="" THEN 250
260 CLS:PRINT "The starport trade classification"
270 PRINT "determines the cargo price but does not";
280 PRINT "determine which cargos are available."
290 PRINT
300 PRINT "Abbreviations used for trade class are"
310 PRINT "as follows:"
320 PRINT "    R=Rich; P=Poor; I=Industrial;"
330 PRINT "    NI=Nonindustrial; A=Agricultural;"
340 PRINT "    NA=Nonagricultural"
350 PRINT
360 PRINT "Press any key to continue.";
370 A$=INKEY$:IF A$="" THEN 370
380 CLS:PRINT "Commands available are as follows:":PRINT
390 GOSUB 3620
400 FL=1
410 PRINT
420 PRINT "Enter a random number between 1"
430 INPUT "and 500 ";I
440 PRINT
450 FOR J=1 TO I
460 XX=RND(1)
470 NEXT J
480 DEF FN A(R)=INT(6*RND(1))+1
490 DEF FN B(R)=INT(3*RND(1))-1
500 DEF FN C(R)=FN A(R)+FN A(R)
510 R$="[illegible]"
520 D=[illegible]
530 G=0
540 E1=80000!
550 E2=100000!
560 E3=2000000!
570 HD=76
580 MO=10
590 WT=200
600 W2=1
610 FOR I=1 TO 20
620 H(I,1)=0
630 NEXT I
640 GOSUB 3480
650 FOR I=1 TO 16
660 READ P(I)
670 NEXT I
680 TP=0
690 S1=0
700 T1=0
710 GOSUB 2110
720 REM Main Logic
730 IF RND(1)>.01-DD-CONDS/E3 THEN 760
740 GOSUB 1120
750 PRINT
760 PRINT "   Account balance:";:PRINT USING"##,###,###";E2:PRINT " Empty cargo
spaces         ";:PRINT USING"###";W2
770 PRINT TAB(9)"Ship time:";INT(T/1000)/1000;"years"
```

CHINA
GLASS
QUEENS WA



Star Merchant

```
780 PRINT:INPUT "Enter command";C1:PRINT
790 IF C1>0 AND C1<7 AND C1=INT(ABS(C1)) THEN 820
800 GOSUB 3620
810 GOTO 780
820 ON C1 GOSUB 1310,1480,1680,1950,2090,2180
830 [illegible]
840 IF B1<0 THEN 960
850 IF [illegible] THEN 720
860 PRINT
870 PRINT "The lease has expired on your ship."
880 IF B1<2000000 THEN 960
890 PRINT "Another lease will cost 2 million"
900 PRINT "credits."
910 INPUT "Do you wish to renew your lease (Y/N)";A$
920 IF A$="N" OR A$="n" THEN 960
930 B1=B1-2000000
940 T5=T5+1
950 GOTO 720
960 REM End Program
970 B1=(B2-4000000)/Y1
980 A$="lose"
990 IF B1<0 THEN 1010
1000 A$="gain"
1010 IF B2>0 THEN 1050
1020 PRINT
1030 PRINT "You no longer have sufficient funds to":PRINT"operate your ship."
1040 PRINT
1050 PRINT "You began with 4 million credits and"
1060 IF B2<0 THEN 1090
1070 PRINT "now have";B2;"credits."
1080 PRINT "Cargo in the hold is worth";T1
1090 PRINT
1100 PRINT "This represents a ";A$;" of";ABS(INT(B1*1000)/1000):PRINT "credits per year."
1110 GOTO 3470
1120 REM Strike sub
1130 PRINT
1140 PRINT "The crew has gone on strike.  You are"
1150 PRINT "currently paying them";E5;"credits":PRINT "anually.  ";
1160 E6=E5+.5*RND(0)*E5
1170 PRINT "They are asking for";E6;"credits."
1180 [illegible]
1190 E8=E5+RND(0)*(E6-E5)/10
1200 PRINT
1210 INPUT "Enter counter offer";E7
1220 IF E7>=E6 THEN 1280
1230 IF E7<E5 THEN 1250
1240 IF (E6-E7)/(E6-E5)<(RND(0)) THEN 1280
1250 PRINT "Offer rejected - try again"
1260 [illegible]
1270 GOTO 1170
1280 PRINT "Offer accepted."
1290 E5=E7
1300 RETURN
1310 REM List Hold
1320 PRINT "Cargo stored in hold:"
1330 IF H0<>0 THEN 1360
1340 PRINT "All partitions are empty."
1350 RETURN
1360 PRINT "Pt Description      AMT    Price     $"
1370 FOR I=1 TO 20
1380 RESTORE
1390 IF H(I,1)=0 THEN 1460
1400 FOR J=1 TO (H(I,1))
1410 READ A$
1420 NEXT J
1430 READ A$
1440 PRINT USING"##";I;:PRINT TAB(3);A$;TAB(20);:PRINT USING"###";H(I,2);
1450 PRINT TAB(25);:PRINT USING"########";H(I,3);:PRINT TAB(35);:PRINT USING"###";H(I,4)
1460 NEXT I
1470 RETURN
1480 REM List Cargo for Sale
1490 PRINT "Cargos available for purchase:"
1500 IF N1>0 THEN 1530
1510 PRINT "All available cargos have been bought."
1520 RETURN
1530 PRINT "No Description      AMT     Price     $"
1540 FOR I=1 TO 5
1550 RESTORE
```

Star Merchant

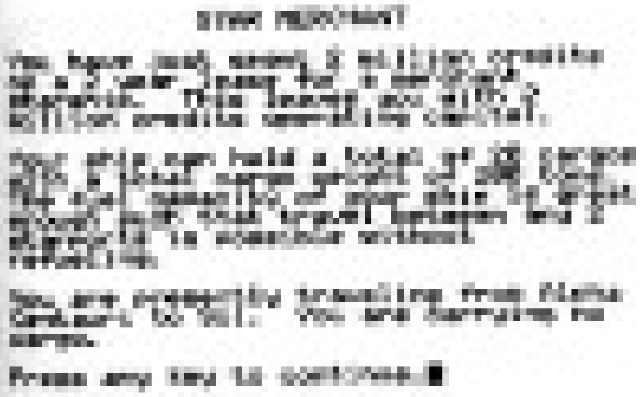
```
1560 IF A(I,1)=0 THEN 1620
1570 FOR J=1 TO 19*A(I,1)
1580 READ P$
1590 NEXT J
1600 READ P$
1610 PRINT USING"##";I;:PRINT TAB(5);P$;TAB(20);:PRINT USING"###";A(I,3);
1620 PRINT TAB(30);:PRINT USING"########";A(I,2);:PRINT TAB(45);:PRINT USING"###
";A(I,4)
1630 NEXT I
1640 RETURN
1650 REM Buy Cargo Sub
1660 PRINT "Enter the lot number of cargo that you":INPUT "want to purchase";X
1670 IF X=ABS(INT(X)) AND X>0 AND X<6 THEN 1700
1680 PRINT "Invalid lot number."
1690 RETURN
1700 IF A(X,1)<>0 THEN 1730
1710 PRINT "Lot";X;"has already been purchased."
1720 RETURN
1730 IF A(X,2)<=M2 THEN 1760
1740 PRINT "You can not buy cargo on credit."
1750 RETURN
1760 IF A(X,3)<=W3 THEN 1790
1770 PRINT "You do not have sufficient cargo space."
1780 RETURN
1790 FOR I=1 TO 20
1800 IF H(I,1)=0 THEN 1840
1810 NEXT I
1820 PRINT "All 20 cargo partitions are occupied."
1830 RETURN
1840 FOR J=1 TO 4
1850 H(I,J)=A(X,J)
1860 NEXT J
1870 A(X,1)=0
1880 W3=W3-H(I,3)
1890 M2=M2-H(I,2)
1900 T=T+20-H3
1910 H1=H1-1
1920 PRINT:PRINT "Transaction completed"
1930 PRINT "Cargo stored in partition";I
1940 RETURN
1950 REM Sell Cargo Sub
1960 INPUT"Enter partition of cargo to be sold";X
1970 IF X=ABS(INT(X)) AND X>0 AND X<21 THEN 2000
1980 PRINT "Invalid partition number"
1990 RETURN
2000 IF H(X,1)<>0 THEN 2030
2010 PRINT "Cargo partition is empty."
2020 RETURN
2030 M2=M2+H(X,2)
2040 W3=W3+H(X,3)
2050 T=T-20-H3
2060 H(X,1)=0
2070 PRINT "Transaction completed"
2080 RETURN
2090 REM List Starports Sub
2100 PRINT "No.  Name                Trade Cl.  Dist Kt."
2110 RESTORE
2120 FOR I=1 TO 17
2130 READ A$,B$
2140 PRINT USING"##";I;:PRINT TAB(5);A$;TAB(17);B$;
2150 PRINT TAB(25);:PRINT USING"##.##";D(I);:PRINT TAB(35);:PRINT USING"###";T(I)
2160 NEXT I
2170 RETURN
2180 REM Travel Sub
2190 IF H1=0 THEN 2220
2200 PRINT "You can not leave starport until all":PRINT "debts are cleared."
2210 RETURN
2220 PRINT "Enter destination star number";
2230 INPUT I
2240 IF I<>S1 THEN 2270
2250 PRINT "You are already at";S
2260 RETURN
2270 IF I=ABS(INT(I)) AND I>0 AND I<18 THEN 2300
2280 PRINT "Invalid star number"
2290 RETURN
2300 S1=I
2310 REM Get Star Trade & Location Data
2320 GOSUB 3510
```

Star Merchant

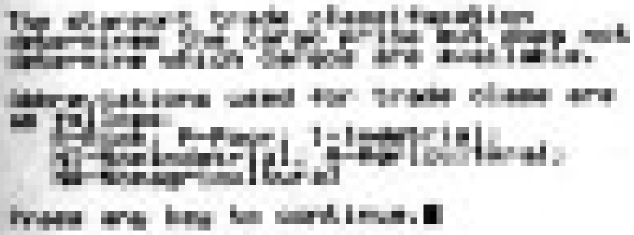
```
2330 IF S1=1 THEN 2370
2340 FOR I=1 TO 10*(S1-1)
2350 READ D$
2360 NEXT I
2370 READ X2,Y2,N
2380 FOR I=1 TO N
2390 R2=2^(N-I)
2400 B(I)=INT(R1/R2)
2410 R1=R1-B(I)*R2
2420 NEXT I
2430 REM Appraise Cargo in Hold
2440 T1=0
2450 FOR I=1 TO 20
2460 IF H(I,1)=0 THEN 2660
2470 GOSUB 3580
2480 IF H(I,1)=1 THEN 2520
2490 FOR J=1 TO (H(I,1)-1)*8
2500 READ D$
2510 NEXT J
2520 R2=0
2530 FOR J=1 TO 6
2540 READ R1
2550 R2=R2+R1*B(J)
2560 NEXT J
2570 READ R1
2580 F2=FN C(R1)+R2-1
2590 IF F2>1 THEN 2610
2600 F2=1
2610 IF F2<14 THEN 2630
2620 F2=14
2630 H(I,4)=P(F2)*100
2640 H(I,2)=P(F2)*R3*H(I,3)
2650 T1=T1+H(I,2)
2660 NEXT I
2670 REM Set Cargos for Sale
2680 K1=0
2690 FOR I=1 TO 5
2700 R2=0
2710 T2=FN R(20)
2720 A(I,1)=T2
2730 GOSUB 3580
2740 IF T2=1 THEN 2780
2750 FOR J=1 TO (T2-1)*8
2760 READ D$
2770 NEXT J
2780 FOR J=1 TO 6
2790 READ R1
2800 R2=R2+R1*B(J)
2810 NEXT J
2820 F2=FN C(R1)+R2-1
2830 IF F2>1 THEN 2850
2840 F2=1
2850 IF F2<14 THEN 2870
2860 F2=14
2870 A(I,4)=P(F2)*100
2880 READ R1,Q1
2890 Q2=1
2900 IF T2<17 THEN 2940
2910 Q2=8
2920 IF T2<20 THEN 2940
2930 Q2=10
2940 Q3=0
2950 FOR J=1 TO Q1
2960 Q3=FN R(6)*Q2+Q3
2970 NEXT J
2980 IF Q3>200 THEN Q3=200
2990 A(I,3)=Q3
3000 A(I,2)=-R1*Q3*P(F2)
3010 NEXT I
3020 REM Dist. and Direction of Stars
3030 RESTORE
3040 GOSUB 3510
3050 FOR I=1 TO 10
3060 READ X1,Y1,D$
3070 X3=X1-X2
3080 Y3=Y1-Y2
3090 IF X3<>0 THEN 3150
3100 IF Y3<0 THEN 3130
3110 T(I)=90
3120 GOTO 3220
3130 T(I)=270
3140 GOTO 3220
3150 T(I)=ATN(Y3/X3)*180/3.14159
3160 IF X3>0 THEN 3180
3170 T(I)=T(I)+180
3180 IF T(I)<360 THEN 3200
3190 T(I)=T(I)-360
3200 IF T(I)>0 THEN 3220
3210 T(I)=T(I)+360
3220 D(I)=SQR(X3^2+Y3^2)
3230 NEXT I
3240 REM Arrival Expenses and Star Name
3250 T8=T8+.02804+.02
3260 E4=(T8-T7)*63
3270 T7=T8
3280 RESTORE
3290 IF S1=1 THEN 3330
3300 FOR I=1 TO S1-1
3310 READ A$,B$
3320 NEXT I
3330 READ A$,B$
3340 PRINT
3350 CLS:PRINT "You have arrived at ";A$;".":PRINT
3360 PRINT "Expenses have been deducted as follows:":
3370 PRINT TAB(7)"Docking fee:";:PRINT USING"##,###,###";E1
3380 PRINT TAB(14)"Fuel:";:PRINT USING"##,###,###";E2*E4
3390 PRINT TAB(7)"Crew salary:";:PRINT USING"##,###,###";E4
3400 E0=E0-(E1+E2*E4+E4)
3410 RETURN
3420 PRINT "Command";TAB(12);"Description"
3430 PRINT TAB(4)"1";TAB(12)"List cargo in hold"
3440 PRINT TAB(4)"2";TAB(12)"List cargo which":PRINT TAB(12)
"may be purchased"
3450 PRINT TAB(4)"3";TAB(12)"Buy cargo"
3460 PRINT TAB(4)"4";TAB(12)"Sell cargo"
3470 PRINT TAB(4)"5";TAB(12)"List starports"
3480 PRINT TAB(4)"6";TAB(12)"Travel to new star"
3490 PRINT "  Other";TAB(12)"List available commands"
3500 RETURN
3510 REM Restore to Star Data Sub
3520 RESTORE
3530 FOR L=1 TO (2*S3+42)
3540 READ A$
3550 NEXT L
3560 IF X0=1 THEN X0=0:GOTO 3600
3570 RETURN
3580 REM Restore to Cargo Data Sub
3590 X0=1:GOTO 3510
3600 FOR L=1 TO 1960
3610 READ D$
3620 NEXT L
3630 IF L0=1 THEN L0=0:GOTO 3670
3640 RETURN
3650 REM Restore to Price Data Sub
3660 L0=1:GOTO 3590
3670 FOR L=1 TO 8860
3680 READ D$
3690 NEXT L
3700 RETURN
3710 REM Star Names
3720 DATA "Lalande 21185","RD,F"
3730 DATA "Alpha Centauri","RD,I"
3740 DATA "Sirius","R"
3750 DATA "Barnards Star","I,F"
3760 DATA "Sol","R"
3770 DATA "Ross 154","RD,RM"
3780 DATA "Epsilon Eridani","R,F"
3790 DATA "Luyten 726-8","RA"
3800 DATA "Luyten 789-6","R,RI,F"
3810 DATA "Ross 248","A,I"
3820 REM Cargo Names
3830 DATA "Crystals"
3840 DATA "Radioactives"
3850 DATA "Alloys"
3860 DATA "Medicine"
3870 DATA "Guns"
```

Star Merchant

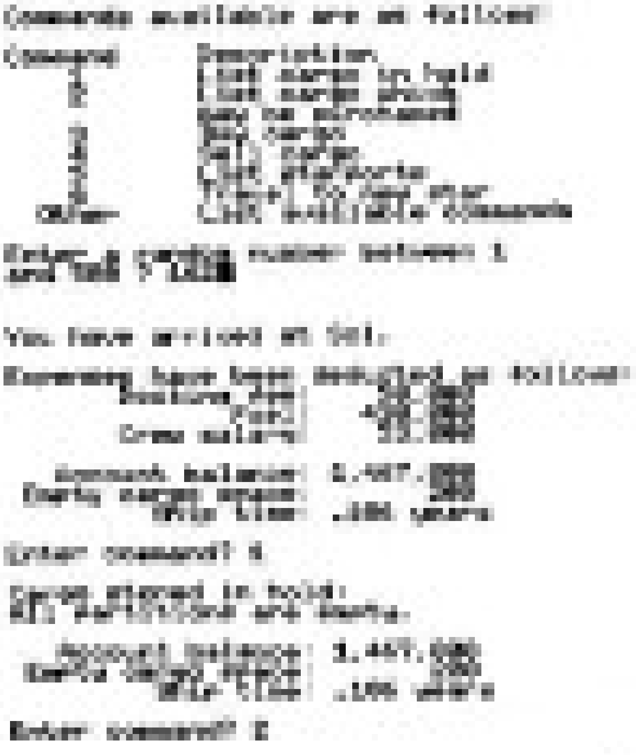
```
3880 DATA "Aircraft"
3890 DATA "Grav sleds"
3900 DATA "Computers"
3910 DATA "ATV"
3920 DATA "AFV"
3930 DATA "Firearms"
3940 DATA "Ammunition"
3950 DATA "Plasma guns"
3960 DATA "Tools"
3970 DATA "Body armor"
3980 DATA "Farm machinery"
3990 DATA "Liquor"
4000 DATA "Silver"
4010 DATA "Spices"
4020 DATA "Electronics"
4030 DATA "Mechanical parts"
4040 DATA "Cybernetic parts"
4050 DATA "Computer parts"
4060 DATA "Machine tools"
4070 DATA "Space suits"
4080 DATA "Fruit"
4090 DATA "Textiles"
4100 DATA "Polymers"
4110 DATA "Meat"
4120 DATA "Petrochemicals"
4130 DATA "Grain"
4140 DATA "Wood"
4150 DATA "Copper"
4160 DATA "Tin"
4170 DATA "Steel"
4180 DATA "Aluminum"
4190 REM Star Data
4200 DATA 0.00,-7.36,20
4210 DATA -3.6,-3.86,9
4220 DATA 8.18,9.93,2
4230 DATA -6.1,0,24
4240 DATA 0,0,22
4250 DATA -8.87,2.05,5
4260 DATA 8.45,6.65,19
4270 DATA 2.99,7.49,1
4280 DATA -4.43,9.3,97
4290 DATA -.09,10.26,10
4300 REM Cargo Data
4310 DATA 3,-3,2,-3,0,-4,20000,1
4320 DATA 0,1,4,-3,0,-3,1000000,1
4330 DATA -3,0,-4,6,1,-3,500000,1
4340 DATA -1,4,-4,3,-3,0,100000,1
4350 DATA 4,-3,4,-5,-1,1,1000000,1
4360 DATA -3,4,-3,3,1,-1,1000000,1
4370 DATA 3,0,-1,1,0,0,6000000,1
4380 DATA 1,0,-3,0,0,0,10000000,1
4390 DATA -3,3,-3,1,1,0,500000,1
4400 DATA 0,3,-3,0,0,1,500000,1
4410 DATA -3,4,-4,1,0,0,50000,2
4420 DATA -3,6,-5,0,0,0,20000,2
4430 DATA -1,3,-2,0,0,0,200000,2
4440 DATA -4,7,-8,4,3,0,10000,2
4450 DATA -3,6,-4,1,0,0,50000,2
4460 DATA -3,3,-6,0,6,-4,150000,1
4470 DATA 3,5,-1,6,-5,0,10000,1
4480 DATA 3,-1,3,-1,0,-3,50000,1
4490 DATA 4,-2,5,-1,-5,0,6000,1
4500 DATA 0,0,-5,6,1,1,100000,1
4510 DATA 0,1,-3,3,4,1,75000,1
4520 DATA 1,0,-4,3,1,0,200000,1
4530 DATA -1,0,-3,3,0,0,150000,1
4540 DATA 1,0,-3,1,0,0,750000,1
4550 DATA -1,3,-3,3,3,0,400000,1
4560 DATA 1,3,3,3,-4,-4,2000,2
4570 DATA 3,0,-3,1,-8,-3,3000,2
4580 DATA -3,0,3,3,0,0,7000,4
4590 DATA 0,0,3,3,-5,5,1500,4
4600 DATA 3,0,4,-3,3,0,10000,4
4610 DATA 0,0,1,5,-5,4,300,8
4620 DATA 0,0,1,2,-7,3,1000,3
4630 DATA -3,0,3,-3,-1,-4,2000,3
4640 DATA 2,3,3,-4,-1,-3,4000,3
4650 DATA -3,3,4,0,0,0,500,4
4660 DATA -1,1,3,-3,0,-3,3000,5
4670 REM Price Data
4680 DATA .4,.5,.7,.8,.9,1,1.1,1.2,1.3,1.5,1.7,2,3,4
4690 END
```



```
              STAR MERCHANT

You have just spent 2 million credits
as a 3 year lease for a merchant
starship.  This leaves you with 1
million credits operating capital.

Your ship can hold a total of 20 cargo
units of a total cargo weight of 200 tons.
The fuel capacity of your ship is great
enough such that travel between any 2
starports is possible without
refueling.

You are presently traveling from Alpha
Centauri to Sol.  You are carrying no
cargo.

Press any key to continue.█
```



```
The starport trade classification
determines the cargo price and does not
determine which cargos are available.

Abbreviations used for trade class are
as follows:
   R=Rich, P=Poor, I=Industrial,
   N=Nonindustrial, A=Agricultural,
   NA=Nonagricultural

Press any key to continue.█
```



```
Commands available are as follows:

Command       Description
   1          List cargo in hold
   2          List cargo space
   3          [illegible]
   4          Buy cargo
   5          Sell cargo
   6          List starports
   7          Travel to new star
 Other        List available commands

Enter a command number between 1
and 7 ? 1█

You have arrived at Sol.

Expenses have been deducted as follows:
      Docking fee:    10,000
             Fuel:    40,000
      Crew salary:    33,000

    Account balance:  1,497,000
  Empty cargo space:        200
          Trip time:  .100 years

Enter command? 1

Cargo stored in hold:
All partitions are empty.

    Account balance:  1,497,000
  Empty cargo space:        200
          Trip time:  .100 years

Enter command? 2
```

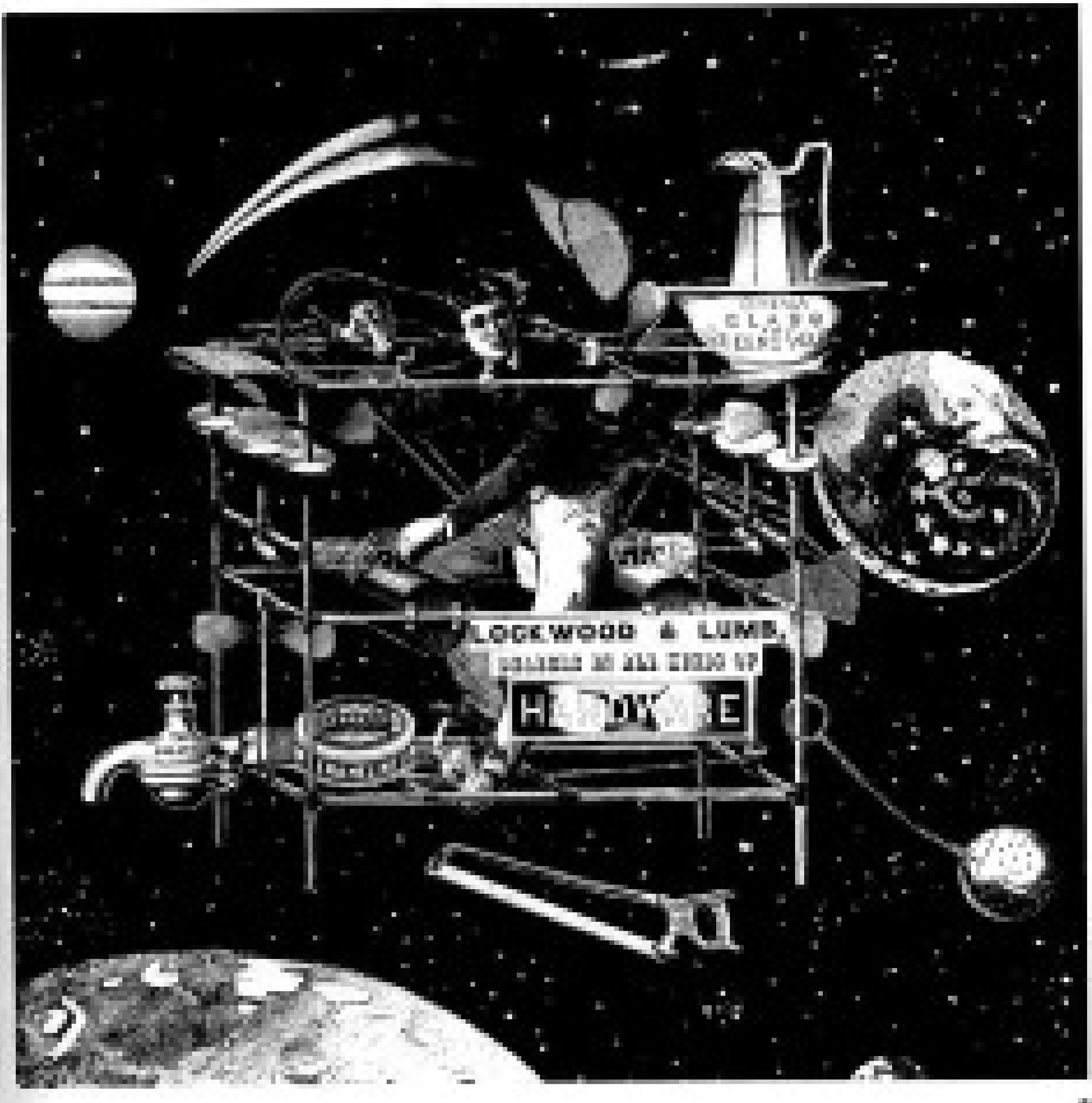
Star Merchant

```
Cargo available for purchase:
No Description          Amt     Price    [illegible]
 1 Mechanical parts     [illegible] [illegible] [illegible]
 2 Steel                [illegible] [illegible] [illegible]
 3 Silver               [illegible] [illegible] [illegible]
 4 Machine tools        [illegible] [illegible] [illegible]
 5 Mechanical parts     [illegible] [illegible] [illegible]

   Account balance:  1,4[illegible]
 Empty cargo space:  [illegible]
         Ship time:  .1[illegible] years

Enter command? 3

Enter the lot number of cargo that you
want to purchase? 1

Transaction completed
Cargo stored in partition 1

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .10[illegible] years

Enter command? 3

Enter the lot number of cargo that you
want to purchase? 2

Transaction completed
Cargo stored in partition 2

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .112 years

Enter command? 5

No.  Name              Range (l)   [illegible]
 1   Lalande 21185,    [illegible] [illegible]
 2   Alpha Centauri    [illegible] [illegible]
 3   Sirius            [illegible] [illegible]
 4   Barnard's Star    [illegible] [illegible]
 5   [illegible]       [illegible] [illegible]
 6   Ross 154          [illegible] [illegible]
 7   Epsilon Eridani   [illegible] [illegible]
 8   Luyten [illegible] [illegible] [illegible]
 9   Luyten [illegible] [illegible] [illegible]
10   Ross 248          [illegible] [illegible]

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .112 years

Enter command? 6

Enter destination star number? 2

You have arrived at Alpha Centauri.

Expenses have been deducted as follows:
       Docking fee:  [illegible]
              Fuel:  [illegible]
       Crew salary:  [illegible]

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .217 years

Enter command? 1

Cargo stored in hold:
No Description          Amt     Price    [illegible]
 1 Mechanical parts     [illegible] [illegible] [illegible]
 2 Steel                [illegible] [illegible] [illegible]

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .217 years

Enter command? 2

Cargo available for purchase:
No Description          Amt     Price    [illegible]
 1 [illegible]          [illegible] [illegible] [illegible]
 2 [illegible]          [illegible] [illegible] [illegible]
 3 [illegible]          [illegible] [illegible] [illegible]
 4 Tin                  [illegible] [illegible] [illegible]
 5 [illegible]          [illegible] [illegible] [illegible]
 6 [illegible]          [illegible] [illegible] [illegible]

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .217 years

Enter command? 4

Enter partition of cargo to be sold? 2
Transaction completed

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .2[illegible] years

Enter command? 4

Enter partition of cargo to be sold? 1
Transaction completed

   Account balance:  1,[illegible]
 Empty cargo space:  [illegible]
         Ship time:  .2[illegible] years

Enter command? 3

Enter the lot number of cargo that you
want to purchase? 4

Transaction completed
Cargo stored in partition 1

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .2[illegible] years

Enter command? 5

No.  Name              Range (l)   [illegible]
 1   Lalande 21185,    [illegible] [illegible]
 2   Alpha Centauri    [illegible] [illegible]
 3   Sirius            [illegible] [illegible]
 4   Barnard's Star    [illegible] [illegible]
 5   [illegible]       [illegible] [illegible]
 6   Ross 154          [illegible] [illegible]
 7   Epsilon Eridani   [illegible] [illegible]
 8   Luyten [illegible] [illegible] [illegible]
 9   Luyten [illegible] [illegible] [illegible]
10   Ross 248          [illegible] [illegible]

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .2[illegible] years

Enter command? 6

Enter destination star number? 1

You have arrived at Lalande 21185.

Expenses have been deducted as follows:
       Docking fee:  [illegible]
              Fuel:  [illegible]
       Crew salary:  [illegible]

   Account balance:  -[illegible]
 Empty cargo space:  [illegible]
         Ship time:  .2[illegible] years

Enter command? 1

Cargo stored in hold:
No Description          Amt     Price    [illegible]
 1 Tin                  [illegible] [illegible] [illegible]

   Account balance:  -[illegible]
 Empty cargo space:  [illegible]
         Ship time:  .2[illegible] years

Enter command? 4

Enter partition of cargo to be sold? 1
Transaction completed

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .2[illegible] years

Enter command? 2

Cargo available for purchase:
No Description          Amt     Price    [illegible]
 1 [illegible]          [illegible] [illegible] [illegible]
 2 [illegible]          [illegible] [illegible] [illegible]
 3 [illegible]          [illegible] [illegible] [illegible]
 4 [illegible]          [illegible] [illegible] [illegible]
 5 [illegible]          [illegible] [illegible] [illegible]
 6 [illegible]          [illegible] [illegible] [illegible]
 7 [illegible]          [illegible] [illegible] [illegible]

   Account balance:  [illegible]
 Empty cargo space:  [illegible]
         Ship time:  .2[illegible] years

Enter command? 3

Enter the lot number of cargo that you
want to purchase? 2

Transaction completed
Cargo stored in partition 1
```

Star Merchant

```
     Account balance:    251,488
  Empty cargo space:         50
          Ship time:  .302 years

Enter command? 3

No.   Name              [illegible]
 1    Lalande 21185     [illegible]
 2    Alpha Centauri    [illegible]
 3    Sirius            [illegible]
 4    Barnards Star     [illegible]
 5    Sol               [illegible]
 6    Ross 154          [illegible]
 7    [illegible]       [illegible]
 8    [illegible]       [illegible]
 9    [illegible]       [illegible]
10    Ross 248          [illegible]

     Account balance:    251,488
  Empty cargo space:         50
          Ship time:  .302 years
```

```
Enter command? 4

Enter destination star number? 3

You have arrived at Alpha Centauri.

Expenses have been deducted as follows:
            Docking fee:     10,000
                   Fuel:     [illegible]
            Crew salary:     [illegible]

You no longer have sufficient funds to
operate your ship.

You began with 4 million credits and
now have 0 credits.
Cargo in the hold is worth 125000

This represents a loss of [illegible]
credits per year.
OK
```



Streets of the City

Streets of the City was written by Kenneth E. [illegible] and originally appeared in the April 1981 issue of Creative Computing.

Congratulations! You have been named Transportation Director of River City, Michigan. River City is a central city with a declining population which is now at 185,000 persons. Budget problems over the past decade have resulted in a severely deteriorated road system and inadequate bus service.

Prior to your being hired, the City Commission approved a ten-year transportation improvement plan that will now be your responsibility to complete. In the Street Fund, the plan calls for reconstructing 44 miles of main streets, called primaries, and 16 miles of interstate. At the same time, you have to significantly improve the overall street conditions and traffic safety. For the Transit Authority, an aging bus fleet needs to be expanded and modernized, and ridership must be expanded.

Your success will be measured in two ways. The first is how well you progress each year in meeting the overall goal. Second is your ability to maintain a majority vote of the City Commission. Each influences the other.

Goals to be Achieved

In the introduction of the simulation, the initial conditions are randomly set. This includes the first budgets, street mileage and conditions, the traffic safety index, fleet size and age, and transit performance. The goals that you must achieve are as follows:

Goals	Standard
Primary Street Reconstruction	Reconstruct 44 Miles
Interstate Highway Construction	Build 16 Miles
Street Conditions Index	Reduce 60 Percent
Traffic Safety Index	Reduce 60 Percent
Bus Fleet Age	Reduce 60 Percent
Bus Ridership	Increase 4 Times
Fleet Downtime Index	Reduce 60 Percent
On-Schedule Performance Index	Reduce 60 Percent

Highway Construction: The costs are initially set at random. Each year, costs will increase because of inflation. An inadequate maintenance program will also cause the construction costs to rise.

Street Conditions: A street condition index is randomly set; the higher the index, the worse the con-

dition. Each year the index is adjusted according to street mileage (rural streets will be added in relation to inflationary pressures on development) and how well you budget for street maintenance. Your maintenance costs are determined by street mileage, street conditions, labor negotiations, and inflation.

Traffic Safety: A traffic safety index is also set randomly again, the higher the index, the worse the traffic accident rate. This index is adjusted each year according to changes in the street conditions and how well you meet your maintenance and safety budget. The safety needs are determined by street mileage, the traffic safety index, labor negotiations, and inflation.

Age of Bus Fleet: The size and age of the fleet are randomly set and are incremented each year according to your sale and acquisition of buses. Sale is assumed on the basis of the oldest buses being sold first. Sale and purchase prices are influenced by inflation.

Ridership: Ridership is initially determined randomly. It is then affected by decisions on the number of routes, the hours of service, the days of service, and bus fare. The performance measures of downtime and on-schedule performance (referred to as service delay) and strikes will also affect ridership.

Fleet Downtime: This is measured by an index; the higher the index, the greater the downtime. The index is adjusted according to the age of the fleet and how well you meet your maintenance budget. The maintenance needs are determined by the size and age of the fleet, the level of service, labor negotiations, and inflation.

Service Delay: The higher the service delay index, the poorer your on-schedule performance. This index is determined by the size of the fleet relative to the number of routes, downtime, and meeting your operational budget. Operating needs are affected by the number of routes, hours and days of operation, labor negotiations, and inflation. You should not let the average number of buses per route drop below three.

Transit Authority Service Decisions

In this phase you determine the level of transit service you will have for the year. Your decisions and ranges are as follows:

Service	*Initial Value*	*Range of Options*
Routes	6	6 to 25
Hours of Operation Per Day	12	12, 18, or 24
Days of Operation	6	6 or 7
Fare	$.35	$.25 to $1.00

Bonding

In years 3 and 7, you will have the option of seeking authority to borrow money (in the form of bonds) for street construction. In year 3, the bond limit is $1.5 million, and in year 7, it is $2.0 million, each per year. You do not have to request the entire amount. The City Commission will decide what size of a bond issue to put to a vote of the citizens. The Commission decision will depend upon the size of the bond requested and your support among the Commission members. Once the issue is submitted to a vote, you will be asked to make certain pledges to the Coalition of Neighborhood Associations. Making the pledges will improve the chance of passage, however. If you fail to keep your pledges, you will be penalized severely.

Property Taxes

In this phase you will ask the City Commission to levy up to ten mils of property tax for street and transit operation. The amount that is approved will depend upon your support of the Commission and the size of the levy requested. The tax that is approved must then be divided between streets and transit. If you are too greedy, the chances that the Commission will approve a less-than-adequate property tax increase.

The amount of the property tax base is set at the start of the simulation. Each year it changes according to inflation, street improvements, and bus ridership. The theory is that with streets and more bus riders, property values will increase. Conversely, with poorer streets and fewer riders, property values will decrease.

Street Fund Budget

Once the tax levy is determined, you must decide how much to spend from the Street Fund on maintenance, safety, and construction. You will be able to transfer money from the operating account to the capital account and vice versa. The percentage that you can shift will change according to the amount of bonds you have issued. Your operating revenue, which includes funds left over from the previous year, gasoline taxes, and tax levy, is automatically adjusted to delete bond payments. Gasoline tax revenue is initially calculated at the start of the simulation based on street mileage and vehicle miles, then adjusted according to mileage changes and inflation. It is not a variable over which you have control. The construction budget, exclusive of bonds, is similarly set.

In making your maintenance and safety decisions, you should remember that the needs shown are the minimum amounts necessary to keep the maintenance and safety indices approximately the same. Reducing the indexes requires more than the minimum appropriation.

Transit Budget

You have a similar set of decisions to make on the Transit Authority budget. Operating revenues include rider fare (ridership times fare), a federal subsidy which is automatically set at half of the operating and maintenance needs for the year and tax revenues. The capital budget consists of revenues from the sale of buses and from occasional federal grants. You may transfer up to 25% of the operating revenues to acquisition, but you may not use the capital fund for operations. By random determination, you may receive a federal grant for fleet acquisition. In those years you cannot transfer funds from the operating account. Your decision whether to buy and/or sell buses depends upon your fleet needs. Remember that buses add to maintenance costs, whether you need them or not. A rule of thumb is that three buses are needed per route. Again, the operating and maintenance needs are minimums necessary to hold the indexes about the same.

Labor Negotiations

The final phase of decision making is labor negotiations for the next year. The outcome of the negotiations directly affects your operating and maintenance budget for streets and the Transit Authority.

There will be between two and six rounds of negotiations, with the Union making the first offer. Subsequent union offers will depend upon how willing you are to bargain in good faith. If you reach settlement, excellent. If you do not reach settlement, you risk a strike. The possibility of a strike depends upon the beginning and ending positions of the two parties and how much each has changed its position. A strike negatively affects your performance for the year in which it occurs, so you should not risk one lightly.

Performance Review

Once you have completed the decision process, you will be given a comparison of the effects of your decisions this year against the past year and against the fiscal plan. You will also be shown a graphic display of the status of your street construction. Your general performance will be evaluated and you will be told the strengths and weaknesses of your performance. Depending on your performance, you can gain or lose support among the Commissioners. You begin the game with the unanimous support of all eleven Commissioners.

End of the Game

The game can end in one of three ways. The most desirable, and the one requiring the most political acumen, is for you to satisfactorily complete the transportation plan. The second way is to serve out the ten years but not complete the plan, which results in a demotion for you. The third ending is that you will be asked to resign. This will happen if you fail to keep the support of at least six Commissioners. And, it's easier to lose votes than it is to gain them.

Good luck on your new job!

Streets of the City

```
1 [illegible]
2 [illegible]
3 CLS:PRINT @ 234,"Streets of the City"
4 PRINT @ 471,"Creative Computing"
5 PRINT @ 298,"by Kenneth P. Murray"
16 FOR X=1 TO 1500:NEXT
100 CLS:PRINT"CONGRATULATIONS! YOU HAVE BEEN NAMED TRANSPORTATION"
105 PRINT"DIRECTOR OF RIVER CITY, MICHIGAN, A CENTRAL CITY WITH"
110 PRINT"A DECLINING POPULATION AND WHICH HAS SUFFERED DETERIORATION"
115 PRINT"OF ITS TRANSPORTATION SERVICES OVER THE LAST SEVERAL YEARS.":PRINT
120 PRINT"PRIOR TO YOUR BEING HIRED, THE CITY COMMISSION ADOPTED"
125 PRINT"A TEN-YEAR TRANSPORTATION PLAN TO RESTORE SERVICES FOR"
130 PRINT"BOTH STREETS AND BUSES TO AN ADEQUATE LEVEL. IT WILL BE"
135 PRINT"YOUR RESPONSIBILITY TO CARRY OUT THIS PLAN.":PRINT
140 PRINT"FOR THE STREET FUND, YOU WILL NEED TO CONSTRUCT SEVERAL"
145 PRINT"MILES OF INTERSTATE HIGHWAYS AND RECONSTRUCT MAJOR LOCAL"
150 PRINT"STREETS (CALLED PRIMARIES). YOU WILL ALSO NEED TO IMPROVE"
155 PRINT"STREET CONDITIONS AND TRAFFIC SAFETY.":PRINT
810 A$(1)="RIDERSHIP":A$(2)="FLEET AGE":A$(3)="DOWNTIME":A$(4)="SERVICE DELAY"
815 A$(5)="FLEET SIZE"
820 T$(1)="PRIMARY ST. MILEAGE":T$(2)="INTERSTATE MILEAGE"
825 T$(4)="STREET CONDITION INDEX":T$(3)="TRAFFIC SAFETY INDEX"
830 T$(5)="LOCAL ST. MILEAGE":T$(6)="VEHICLE MILES"
1000 F$=[illegible]
1001 FOR R=1 TO 5
1002 FOR C=1 TO 2
1004 READ A(R,C)
1005 NEXT C
1006 NEXT R
1007 DATA [illegible]
1008 DATA [illegible]
[illegible]
2040 INPUT"PRESS ENTER";X:CLS:PRINT"FOR THE TRANSIT AUTHORITY, YOU MUST REPLACE A"
2041 PRINT"DILAPIDATED BUS FLEET, INCREASE RIDERSHIP, REDUCE THE"
2042 PRINT"MAINTENANCE DOWNTIME, AND IMPROVE ON-SCHEDULE PERFORMANCE"
2043 PRINT"(ALSO REFERRED TO AS SERVICE DELAY).":PRINT
2044 PRINT"FOR ALL INDICES USED, THE HIGHER THE INDEX VALUE THE"
2045 PRINT"BETTER THE CONDITION INDICATED.  THE BUDGET NEEDS LISTED"
2046 PRINT"ARE THE MINIMUMS NEEDED TO MAINTAIN THE INDEX AT ITS "
2047 PRINT"PRESENT LEVEL; IMPROVING THE LEVEL REQUIRES AMOUNTS THAT"
2048 PRINT"ARE HIGHER THAN THE MINIMUM NEEDS.":PRINT@480,"PRESS ENTER";:INPUT X
2049 CLS:PRINT:PRINT"YOUR GOALS FOR THE PLAN ARE AS FOLLOWS:":PRINT
2050 PRINT"STANDARD";TAB(15)"PRESENT";TAB(25)"GOAL"
2051 PRINT
2052 FOR X=1 TO 6:PRINT T$(X);[illegible]:NEXT X
2053 PRINT
2054 FOR X=1 TO 5
2055 IF X=1 THEN 2058
2056 PRINT A$(X);[illegible]:NEXT X
2057 GOTO 2060
2058 PRINT A$(X);[illegible]
2059 PRINT USING F$;[illegible]:NEXT X
2060 PRINT:PRINT"GOOD LUCK!":PRINT@480,"PRESS ENTER";:INPUT X
2065 YR=YR+1
```

Streets of the City

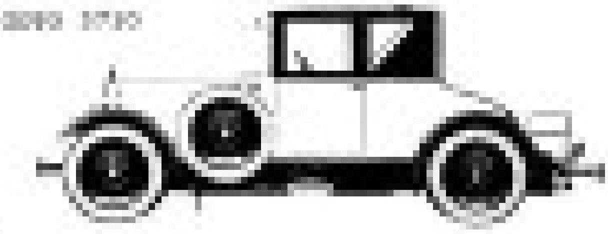
```
[illegible]
```

Streets of the City

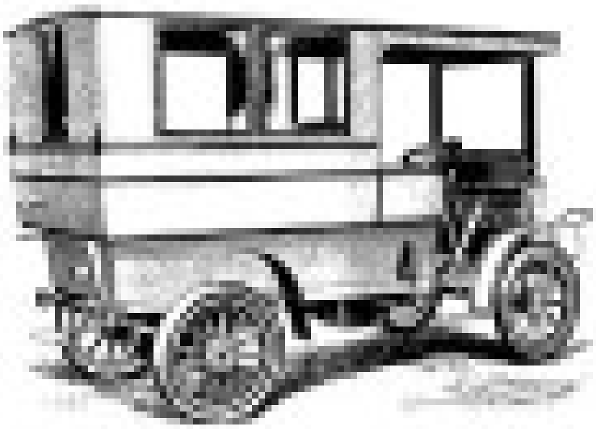
```
3288 IF [illegible] AND [illegible] THEN [illegible]
3289 IF [illegible] AND [illegible] THEN [illegible]
3291 IF [illegible] AND [illegible] THEN [illegible]
3292 IF [illegible] AND [illegible] THEN [illegible]
3293 IF [illegible] AND [illegible] THEN [illegible]
3294 IF [illegible] AND [illegible] THEN [illegible]
3295 IF [illegible] AND [illegible] THEN [illegible]
3296 IF [illegible] AND [illegible] THEN [illegible]
3297 IF [illegible] THEN [illegible]
3298 IF [illegible] THEN [illegible]
3299 IF [illegible] THEN [illegible]
3300 IF [illegible] THEN [illegible]
3301 [illegible]
3303 IF [illegible] THEN [illegible]
3304 IF [illegible] THEN [illegible] ELSE [illegible]
3305 CLS:PRINT TAB(1?)"STREET FUND BOND PROPOSAL":PRINT
3310 PRINT"YOU MAY PROPOSE BONDING OF UP TO";:PRINT USING [illegible]
3311 PRINT"SUBJECT TO"
3315 PRINT"APPROVAL OF THE CITY COMMISSION AND A VOTE OF THE"
3320 PRINT"CITIZENS.  HOW MUCH DO YOU WISH TO PROPOSE (IN"
3325 INPUT"THOUSANDS, TYPE "0" IF NONE)";B
3326 IF [illegible] THEN 3415
3330 [illegible]:IF [illegible] OR [illegible] THEN [illegible]
3335 IF [illegible] THEN [illegible]
3340 IF [illegible] THEN [illegible]
3345 PRINT:PRINT"THE COMMISSION HAS APPROVED A BOND REFERENDUM"
3350 PRINT"FOR";
3355 PRINT USING [illegible]
3360 PRINT"EACH YEAR.":PRINT:PRINT:INPUT"PRESS ENTER";Z$
3365 CLS:PRINT:PRINT"THE COALITION OF NEIGHBORHOOD ASSOCIATIONS HAS ASKED"
3366 PRINT
3367 PRINT"YOU TO MAKE THE FOLLOWING PLEDGES FOR THE NEXT THREE"
3370 PRINT"YEARS.  WILL YOU MAKE ANY OF THEM (Y/N)?"
3375 IF [illegible] THEN [illegible] ELSE [illegible]
3380 IF [illegible] THEN [illegible]
3381 IF [illegible] THEN [illegible] ELSE [illegible]
3390 IF [illegible] THEN [illegible]
3395 IF [illegible] THEN [illegible] ELSE [illegible]
3400 IF [illegible] THEN [illegible] ELSE [illegible]
3405 PRINT TAB(5)"1.  IMPROVE STREET CONDITION INDEX TO";[illegible]
3410 PRINT TAB(5)"2.  IMPROVE SAFETY INDEX TO";[illegible]
3415 PRINT TAB(5)"3.  CONSTRUCT";[illegible]"MILES OF FREEWAYS";
3420 PRINT TAB(5)"4.  CONSTRUCT";[illegible]"MILES OF BOULEVARDS";
3425 PRINT@[illegible],"PLEDGE 1";TAB(15)"PLEDGE 2";TAB(30)"PLEDGE 3"
3426 PRINT TAB(45)"PLEDGE 4"[illegible]
3427 PRINT@[illegible],;
3428 INPUT I$
3430 IF I$<>"Y" AND I$<>"N" THEN [illegible]
3435 IF I$="N" THEN [illegible]
3438 PRINT@[illegible]
3440 PRINT@[illegible],;
3442 INPUT I$
3445 IF I$<>"Y" AND I$<>"N" THEN [illegible]
3450 IF I$="N" THEN [illegible]
3454 PRINT@[illegible]
3455 PRINT@[illegible],;:INPUT I$
3460 IF I$<>"Y" AND I$<>"N" THEN 3455
3465 IF I$="N" THEN [illegible]
3467 PRINT@[illegible]
3470 PRINT@[illegible],;:INPUT I$
3475 IF I$<>"Y" AND I$<>"N" THEN [illegible]
3480 IF I$="N" THEN [illegible]
3485 PRINT@[illegible],"PRESS ENTER FOR ELECTION RESULTS";
3490 INPUT Z$:CLS:PRINT TAB(20)"BOND ELECTION RESULTS"
3495 PRINT:PRINT"ISSUE";TAB(20)"YES";TAB(30)"NO";TAB(40)"PCT. YES";TAB(50)"PCT. NO"
3496 PRINT:[illegible]
3500 IF [illegible] THEN Y1=[illegible] ELSE Y1=[illegible]
3505 IF [illegible] AND [illegible] THEN Y1=Y1+500
3510 IF [illegible] AND [illegible] THEN Y1=Y1+500
3515 IF [illegible] THEN [illegible]
3520 IF [illegible] THEN Y1=Y1+500
3525 GOTO [illegible]
3530 IF [illegible] THEN Y1=Y1+500
3535 IF [illegible] THEN Y1=Y1+500
3540 IF [illegible] THEN Y1=Y1+500
3545 IF [illegible] THEN Y1=Y1+500
3550 IF [illegible] THEN Y1=Y1+500
3555 [illegible]
```

Streets of the City

```
3560 FOR X=1 TO 5
3565 IF X<>2 THEN 3580
3570 X1=X1+RND(1000)
3580 GOSUB [illegible]
3585 X1=C(1,1)+RND(1000)
3586 IF X1>2000 THEN X1=2000
3590 X6=(2000-X1)/[illegible]
3591 PRINT TAB(7);X;TAB([illegible]);X1;TAB([illegible]);[illegible]
3600 FOR Y=1 TO 500:NEXT Y
3607 NEXT X
3610 IF X5<=Y6 THEN 3650
3615 PRINT:PRINT"CONGRATULATIONS.  THE BOND ISSUE HAS APPROVED BY"
3620 PRINT"THE VOTERS.  YOUR ANNUAL DEBT PAYMENT WILL BE";
3625 [illegible]
3630 PRINT USING F$;D2
3635 [illegible]
3640 INPUT"PRESS ENTER";Z:GOTO 3680
3650 PRINT"THE REFERENDUM HAS FAILED."
3651 IF [illegible] THEN 3675
3652 PRINT"BECAUSE OF THE MARGIN OF DEFEAT, YOU HAVE LOST"
3653 PRINT"THE VOTE OF A COMMISSIONER.";:[illegible]
3655 IF [illegible] THEN [illegible]
3660 [illegible]
3670 PRINT:INPUT"PRESS ENTER";Z
3680 CLS:PRINT TAB(15)"PROPERTY TAX LEVY"
3681 [illegible]
3685 PRINT TAB(20)"STREET FUND";TAB(45)"TRANSIT AUTHORITY"
3690 PRINT"OPERATING NEEDS";TAB(20);:PRINT USING F$;[illegible];:PRINT TAB(45);
3691 PRINT USING F$;[illegible]
3695 PRINT"NON-TAX REVENUE";TAB(20);:PRINT USING F$;[illegible];:PRINT TAB(45);
3696 PRINT USING F$;[illegible]
3700 PRINT"PROPERTY TAX NEEDED (MILLS)";:PRINT TAB(20);
3701 PRINT USING F$;[illegible];:PRINT TAB(45);
3702 PRINT USING F$;[illegible]
3705 T9=INT([illegible]):PRINT
3706 PRINT"TOTAL PROPERTY TAX NEEDED (IN MILLS) =";T9
3710 PRINT@640,"WHAT PROPERTY TAX LEVY (0-15 MILLS) DO YOU PROPOSE";
3711 INPUT T(2,Y0):PRINT@960,E$;
3715 IF T(2,Y0)>=0 AND T(2,Y0)<=15 THEN 3725
3720 PRINT@960,"YOU CANNOT EXCEED THE LIMITS";:PRINT@640,E$:GOTO 3710
3725 IF T(2,Y0)<=T(2,Y0-1) THEN [illegible]
3730 X1=0:X2=0
3735 FOR X=1 TO 13
3740 IF [illegible] THEN [illegible]
3741 IF [illegible] THEN [illegible] ELSE [illegible]
3742 GOTO [illegible]
3743 IF [illegible] THEN [illegible]
3744 IF X>1 AND [illegible] THEN [illegible]:IF [illegible] THEN [illegible]
3745 IF [illegible] THEN X1=X1+1 ELSE X2=X2+1
3750 NEXT X
3755 IF X1<=6 THEN 3801
3800 IF [illegible] THEN [illegible] ELSE [illegible]
3801 [illegible]
3805 PRINT@704,"THE CITY COMMISSION HAS APPROVED A LEVY OF";T(2,Y0);"MILLS"
3810 PRINT@768,"HOW MANY MILLS ARE FOR THE STREET FUND";:INPUT T9:PRINT@960,E$;
3815 IF T9<=T(2,Y0) THEN 3825
3820 PRINT@960,"YOU CANNOT ALLOCATE MORE THAN YOU ARE AUTHORIZED";:PRINT@768,E$
3821 GOTO 3810
3825 [illegible]
4000 [illegible] 4020
4010 Z=1
4020 CLS:PRINT TAB(15)"STREET FUND BUDGET DECISIONS FOR YEAR";Y0
4030 PRINT"OPERATIONS:";TAB(33)"CONSTRUCTION:"
4040 PRINT TAB(5)"AVAILABLE:";
4041 PRINT USING F$;[illegible];
4050 PRINT TAB(38)"AVAILABLE:";:PRINT USING F$;[illegible]
4060 PRINT TAB(5)"MAINT. NEED-";:PRINT USING F$;[illegible];
4070 PRINT TAB(38)"COST PER HALF MILE UNIT:"
4080 PRINT TAB(5)"SAFETY NEED-";:PRINT USING F$;[illegible];
4090 PRINT TAB(38)"PRIMARY ART.-";:PRINT USING F$;[illegible]
4100 PRINT TAB(38)"INTERMEDIATE-";:PRINT USING F$;[illegible]
4110 PRINT:IF Z=1 THEN [illegible]
4150 PRINT"YOU MAY TRANSFER UP TO ";[illegible];"% FROM ONE ACCOUNT"
4160 PRINT TAB(15)"1.  OPERATIONS TO CONSTRUCTION"
4170 PRINT TAB(15)"2.  CONSTRUCTION TO OPERATIONS"
4180 PRINT TAB(15)"3.  NO TRANSFER"
4190 INPUT Z:IF Z<>1 AND Z<>2 AND Z<>3 THEN [illegible]
4195 IF Z=3 THEN [illegible] ELSE [illegible]
```



Streets of the City

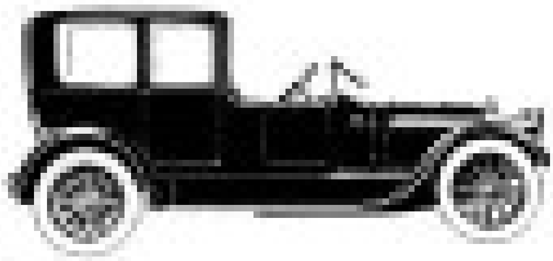


```
4100 INPUT"HOW MUCH DO YOU WANT TO TRANSFER (IN THOUSANDS, WITHOUT $ SIGN)";T
4101 T=T*1000
4110 IF I=1 AND [illegible] THEN 4002
4120 IF I=2 AND [illegible] THEN 4002
4130 IF I=3 THEN 4210
4140 [illegible]
4150 [illegible]
4260 PRINT"ENTER CONSTRUCTION IN THE NUMBER OF HALF MILE UNITS?"
4261 PRINT"ENTER MAINTENANCE AND SAFETY BY THOUSAND DOLLAR UNITS."
4270 PRINT"DO NOT USE COMMAS OR DOLLAR SIGNS"
4280 PRINT:PRINT TAB(13)"PRIMARIES"[illegible]"INTERSTATE";TAB(35)"MAINTENANCE";
4281 PRINT TAB(53)"SAFETY"
4290 PRINT"LAST YR";TAB(12)[illegible]
4300 PRINT TAB(35);
4301 PRINT USING [illegible]
4305 PRINT TAB(50);
4306 PRINT USING [illegible]
4313 PRINT"THIS YR";
4315 PRINT@[illegible];
4316 INPUT PC
4317 PRINT@[illegible];
4318 IF [illegible] THEN 4390
4319 IF [illegible] THEN 4392
4320 PRINT@[illegible];
4321 INPUT IC
4322 PRINT@[illegible];
4323 IF [illegible] THEN 4393
4324 IF [illegible] THEN 4395
4325 IF [illegible] THEN 4397
4326 PRINT@[illegible]
4327 PRINT@[illegible]
4328 IF ZZ$="Y" THEN 4330
4329 ZZ$="Y":PRINT@[illegible]:GOTO 4315
4330 PRINT@[illegible]
4332 [illegible]
4334 [illegible]
4335 [illegible]
4336 IF [illegible] THEN 4340
4337 GOTO 4440
4390 PRINT@[illegible],"YOU MUST ENTER A WHOLE NUMBER.";
4391 PRINT@[illegible]:GOTO 4315
4392 PRINT@[illegible],"YOU CAN BUILD ONLY";[illegible];" MORE HALF MILE UNITS";:GOTO 4391
4393 PRINT@[illegible],"YOU MUST ENTER A WHOLE NUMBER.";
4394 PRINT@[illegible]:GOTO 4320
4395 PRINT@[illegible],"YOU CAN BUILD ONLY";[illegible];"MORE HALF MILE UNITS.";
4396 GOTO4394
4397 PRINT@[illegible],"YOUR CONSTRUCTION PROGRAM EXCEEDS YOUR BUDGET.";
4398 PRINT@[illegible]:GOTO 4315
4399 PRINT@[illegible];:PRINT@[illegible],"ARE YOU SURE (Y/N)";
4400 INPUT ZZ$:IF ZZ$<>"Y" AND ZZ$<>"N" THEN 4399
4401 RETURN
4402 PRINT@[illegible];:PRINT@[illegible],"ARE YOU SURE (Y/N)";
4403 INPUT ZZ$:IF ZZ$<>"Y" AND ZZ$<>"N" THEN 4402:IF ZZ$="Y" THEN 4102
4404 PRINT@[illegible]:GOTO 4100
4405 PRINT@[illegible],"YOUR MAINTENANCE AND SAFETY BUDGET EXCEEDS YOUR FUNDS";
4406 PRINT@[illegible]:GOTO 4315
4440 [illegible]
4450 [illegible]
4460 [illegible]
4465 [illegible]
4470 PRINT@[illegible],"PRESS ENTER";:INPUT Z
5000 [illegible]
5010 IF [illegible] THEN [illegible]
5020 [illegible]
5030 IF [illegible] THEN [illegible]
5050 IF [illegible] THEN [illegible]
6000 [illegible]:GOTO 6000
6010 CLS
6020 PRINT:PRINT TAB(15)"TRANSIT BUDGET FOR YEAR";YR
6030 PRINT"OPERATIONS";TAB(33)"BUS FLEET"
6040 PRINT TAB(3)"AVAILABLE";:PRINT USING [illegible];:PRINT TAB(38)"AVAILABLE";
6050 PRINT USING [illegible]
6060 PRINT TAB(3)"MAINT. NEED-";:PRINT USING [illegible];:PRINT TAB(38)"COST PER BUS";
6080 PRINT TAB(3)"OPERATIONS NEED-";:PRINT USING [illegible]
6090 PRINT TAB(38)"ACQUISITION-";:PRINT USING [illegible]
6100 PRINT TAB(38)"SALE-";:PRINT USING [illegible]
6110 IF I=1 THEN 6140
6120 IF [illegible] THEN PRINT@[illegible],"BECAUSE OF THE FEDERAL GRANT, YOU CAN'T TRANSFER FROM
```

```
6131 PRINT@704,"OPERATIONS TO THE BUS FLEET":FOR X=1 TO 750:NEXT:GOTO 6300
6140 PRINT@640,"YOU MAY TRANSFER UP TO 25% FROM OPERATIONS TO ACQUISITION"
6141 PRINT@960,A$;
6150 PRINT@704,"HOW MANY THOUSANDS DO YOU WANT TO TRANSFER (NO $ SIGN)";
6151 INPUT Z:Z=Z*1000:IF Z>B(1,YR)/4 THEN 6160 ELSE 6190
6160 PRINT@640,C$:PRINT@704,A$:GOTO 6140
6190 B(1,YR)=B(1,YR)-Z:B(2,YR)=B(2,YR)+Z
6200 PRINT@640,C$:PRINT@704,A$
6210 PRINT@640,"HOW MANY BUSES DO YOU WISH TO SELL";:INPUT BS
6211 IF BS>S(1,YR) OR BS<0 OR INT(BS)<>BS THEN 6230 ELSE 6240
6230 PRINT@832,A$:GOTO 6210
6240 IF BS=0 THEN 6300
6250 FOR X=1 TO BS:CD=99999
6270 FOR X1=1 TO 100:IF AP(X1)=0 THEN 6310
6280 IF AP(X1)<CD THEN 6300
6290 CD=AP(X1):XX=X1
6300 NEXT X1:AP(XX)=0:NEXT X
6305 S(1,YR)=S(1,YR)-BS
6310 B(2,YR)=B(2,YR)+(BS*F1):GOTO 6340
6340 PRINT:PRINT"ENTER BUDGETS IN THOUSAND DOLLAR UNITS, DO NOT"
6350 PRINT"USE COMMAS OR DOLLAR SIGNS"
6360 PRINT:PRINT TAB(22)"MAINTENANCE";TAB(36)"OPERATIONS";TAB(50)"NEW BUSES"
6370 PRINT"LAST YEAR";TAB(20);:PRINT USING F$;B(2,YR-1);:PRINT TAB(35);
6371 PRINT USING F$;B(3,YR-1);:PRINT TAB(53);BN
6375 PRINT"THIS YEAR";
6400 PRINT@724,;:INPUT BM:PRINT@960,A$:BM=BM*1000
6401 IF BM<0 THEN GOSUB 6690
6402 IF BM<0 THEN 6400
6403 IF BM>100000 THEN GOSUB 6600 ELSE 6410
6404 IF ZZ="Y" THEN 6410
6405 ZZ="Y":PRINT@960,A$:GOTO 6400
6410 IF LEN(STR$(BM))-LEN(STR$(INT(BM)))<>0 THEN 6400
6420 PRINT@740,;:INPUT BO:PRINT@960,A$:BO=BO*1000
6421 IF BO<0 GOSUB 6690
6422 IF BO<0 THEN 6420
6423 IF BO>100000 GOSUB 6630 ELSE 6430
6424 IF ZZ="Y" THEN 6430
6425 PRINT@960,C$:GOTO 6420
6430 IF LEN(STR$(BO))-LEN(STR$(INT(BO)))<>0 THEN 6420
6440 IF BO+BM>B(1,YR) THEN 6660
6450 PRINT@756,;:INPUT BN:PRINT@960,A$
6460 IF BN>INT(B(2,YR)/F1) THEN 6680
6470 IF BN<0 THEN GOSUB 6690
6471 IF BN<=0 THEN 6450
6472 PRINT@960,C$:GOTO 6450
6475 IF INT(BN)<>BN THEN 6710
6480 IF BN*F1>B(2,YR) THEN 6700
6490 IF BN=0 THEN 6580 ELSE X=0
6500 FOR X=1 TO BN
6510 FOR X1=1 TO 100
6520 IF AP(X1)<>0 THEN 6540
6530 AP(X1)=.5
6540 X=X+1
6550 IF X=BN THEN 6580
6560 NEXT X1
6570 NEXT X
6580 B(2,YR)=B(2,YR)-(F1*BN):B(1,YR)=B(1,YR)-(BO+BM)
6585 S(1,YR)=S(1,YR)+BN
6590 AP=0:BM=0:FOR X=1 TO 100:IF AP(X)=0 THEN 6598
6597 MA(X)=(1000*AP(X))/(BM+1000*AP(X))
6598 NEXT X:S(2,YR)=INT(S(1,YR)/(B(3,YR)/S(1,YR))*100)*.1:IF CN=0 THEN 3010
6599 GOTO 4790
6600 PRINT@960,"ARE YOU SURE (Y/N)";:INPUT ZZ
6610 IF ZZ<>"Y" AND ZZ<>"N" THEN 6620:IF ZZ="N" THEN 6410
6620 PRINT@704,A$:GOTO 6600
6630 PRINT@960,"ARE YOU SURE (Y/N)";:INPUT ZZ
6640 IF ZZ<>"Y" AND ZZ<>"N" THEN 6650: IF ZZ="Y" THEN 6440
6650 PRINT@960,A$:GOTO 6630
6660 PRINT@960,"YOUR OPERATING AND MAINTENANCE BUDGETS EXCEED YOUR FUNDS";
6670 PRINT@704,C$:PRINT@832,C$:PRINT@896,C$:GOTO 6400
6680 PRINT@960,"YOU CAN PURCHASE ONLY";INT(B(2,YR)/F1);"BUSES";:GOTO 6450
6690 PRINT@960,"YOU CANNOT ENTER A NEGATIVE NUMBER";:RETURN:END
6700 PRINT@960,"YOUR PROPOSED ACQUISITION EXCEEDS YOUR BUDGET";:PRINT@832,C$
6701 GOTO 6450
6710 PRINT@960,"YOU MUST ENTER A WHOLE NUMBER";:PRINT@832,C$:GOTO 6450
6750 S(3,YR)=S(1,YR)-(INT((100-M1)/M2)*(S1*.1))
6751 IF S(3,YR)<S(1,YR)-(S1*.1) THEN S(3,YR)=S(1,YR)*.2
6752 IF S(3,YR)<1 THEN S(3,YR)=1
```

Streets of the City

```
6715 J(4,P6)=J(4,P6)-[illegible]
6716 IF J(3,P6)[illegible]
6717 IF J(3,P6)[illegible] THEN J(4,P6)=J(4,P6)[illegible]
6718 IF J(4,P6)<0 THEN J(4,P6)=0
6760 J(1,P6)=J(1,P6)[illegible]
10000 REM SALARY NEGOTIATIONS
10040 [illegible]
10060 [illegible]
10070 PRINT"YOUR PRESENT WAGE IS";S;"DOLLARS PER HOUR"
10110 PRINT"THE UNION'S INITIAL OFFER IS FOR A";U(1);"PERCENT INCREASE"
10120 INPUT"WHAT IS YOUR RESPONSE";M(1)
10130 CLS
10140 PRINT"PRESENT SALARY:";S
10160 PRINT:PRINT"UNION","MANAGEMENT"
10170 PRINT"POSITION","POSITION"
10180 PRINT
10190 PRINT U(1),M(1)
10200 FOR X=2 TO 50
10210 IF X<>50 THEN 10240
10220 PRINT"THIS IS THE LAST ROUND OF NEGOTIATIONS.  FAILURE"
10230 PRINT"TO SETTLE COULD RESULT IN A STRIKE"
10240 DC=U(X-1)-M(X-1):IF [illegible] THEN 10250 ELSE 10270
10250 U(X)=M(X-1):[illegible]
10260 GOTO 10440
10270 IF M(X-1)-M(X-2)>5 THEN X2=1
10280 IF M(X-1)-M(X-2)<5 THEN X2=2
10290 IF M(X-1)-M(X-2)<3 THEN X2=3
10300 IF M(X-1)-M(X-2)<1 THEN X2=4
10310 IF DC>5 THEN [illegible]
10320 IF DC<10 OR DC>5 THEN [illegible]
10330 IF DC<15 THEN [illegible]
10340 IF DC<20 THEN [illegible]
10350 IF U(X)<M(X-1) THEN U(X)=M(X-1)
10360 U(X)=INT(U(X)*100)*.01
10370 [illegible]
10380 PRINT U(X),
10390 IF U(X)=M(X-1) THEN 10440
10400 INPUT M(X)
10410 IF U(X)=M(X) THEN 10440
10420 NEXT X
10430 IF [illegible] THEN 10490
10440 S=INT(S*[illegible])*.01
10450 PRINT"YOU HAVE REACHED AGREEMENT ON A ";U;"PERCENT"
10460 PRINT"WAGE INCREASE.  YOUR HOURLY WAGE RATE IS NOW $";S
10470 GOTO 10540
10490 IF [illegible] THEN 10580
10500 [illegible]
10501 GOTO 10440
10502 CLS
10503 PRINT@[illegible],"WORKERS";:[illegible]
10504 FOR [illegible]
10505 PRINT@[illegible]:NEXT X1:NEXT X
10510 FOR [illegible]
10540 IF [illegible] THEN [illegible] ELSE [illegible]
10550 [illegible]
10560 [illegible]
10590 [illegible]"THE STRIKE LASTED FOR";[illegible];"DAYS.  THE ARBITRATOR"
10600 PRINT"HAS ORDERED A SETTLEMENT OF";[illegible];" PERCENT."
10610 PRINT"THIS RESULTS IN A WAGE OF";
10620 S=INT(S*[illegible]:PRINT [illegible]
10621 PRINT"AS A RESULT OF THE STRIKE YOUR";PRINT
10623 GOSUB 10634
10624 [illegible]" HAS INCREASED BY";[illegible]
10625 GOSUB 10634
10626 [illegible]" HAS INCREASED BY";[illegible]
10627 IF [illegible] THEN [illegible]:IF [illegible] THEN [illegible] ELSE GOTO [illegible]
10628 PRINT TAB(5)"CONSTRUCTION PROGRAM LOST ONE MILE":GOTO [illegible]
10629 [illegible]:PRINT TAB(5)"CONSTRUCTION PROGRAM LOST 1/2 MILE"
10630 PRINT:[illegible]" HAS INCREASED BY";[illegible]
10631 GOSUB 10634:[illegible]" HAS INCREASED BY";[illegible]
10633 PRINT:GOTO 10540
10634 IF [illegible] THEN [illegible] ELSE [illegible]
10635 RETURN:END
10640 INPUT"ENTER WAGE SCALE";S
11700 CLS:PRINT TAB(15)"PERFORMANCE FOR YEAR";[illegible]
11710 PRINT
11720 PRINT [illegible]"YEAR";[illegible]"YEAR";[illegible]"PLAN"
11730 PRINT
```



Streets of the City

```
11040 FOR X=1 TO 5
11050 PRINT TB(X);[illegible]
11060 NEXT X
11070 PRINT:INPUT"PRESS '1' TO REVIEW THE STREET MAP, ELSE PRESS ENTER";I
11071 IF(I)=1 THEN 13000 ELSE 13330
13000 [illegible]
13010 FOR K=1 TO 8
13020 IF K<3 THEN [illegible]
13030 IF K<3 THEN [illegible]
13040 IF K=4 OR K=6 THEN 13120
13050 FOR Y=P(K,1) TO A(K,2) STEP 64
13060 [illegible]
13070 IF [illegible] PRINT@Y,"*";
13080 IF [illegible] PRINT@Y,"-";
13090 NEXT Y
13100 NEXT K
13110 GOTO 13170
13120 FOR Y=P(K,1) TO A(K,2) STEP 65
13130 [illegible]
13140 IF [illegible] PRINT@Y,"*";
13150 IF [illegible] PRINT@Y,"#";
13160 GOTO 13090
13170 PRINT@10,"I-194";
13180 PRINT@35,[illegible]
13190 PRINT@45,[illegible]
13200 PRINT@[illegible]
13210 PRINT@[illegible]
13220 PRINT@[illegible]
13230 PRINT@[illegible],"I-90";
13240 PRINT@[illegible]
13250 PRINT@[illegible]
13260 PRINT@[illegible]
13270 PRINT@[illegible]
13280 PRINT@[illegible]
13290 PRINT@747,"*=";[illegible]
13300 PRINT@811,"#=";[illegible]
13310 PRINT@960,"*,# = COMPLETE     -,# = INCOMPLETE";
13320 PRINT@1004,"PRESS ENTER";:INPUT I
13330 CLS:PRINT TAB(15)"PERFORMANCE REVIEW FOR YEAR";YR:PRINT
13340 PRINT TAB(5)[illegible]
13350 FOR X=1 TO 5
13351 IF X=4 THEN 13360
13352 PRINT TB(X);TAB(20);:PRINT USING [illegible]
13353 PRINT USING [illegible]
13360 PRINT TB(X);TAB([illegible]
13370 NEXT X
13380 PRINT:INPUT"PRESS ENTER";I
14000 IF [illegible] THEN 15100
14005 IF [illegible] THEN 15100
14010 IF [illegible] THEN 15100
14015 IF [illegible] THEN 15000
14020 IF [illegible] THEN 15000
14025 IF [illegible] THEN 15000
14030 IF [illegible] THEN 15000
14035 IF [illegible] THEN 15000
14040 CLS:PRINT CHR$(23):PRINT:PRINT"CONGRATULATIONS!"
14045 PRINT:PRINT"YOU HAVE SUCCESSFULLY COMPLETED THE TRANSPORTATION"
14046 PRINT"PLAN IN";YR;" YEARS.":PRINT
14050 IF YR>7 THEN 14080
14055 PRINT"YOUR PERFORMANCE HAS BEEN SO GOOD THAT YOU HAVE BEEN"
14056 PRINT"OFFERED A HIGHER-PAYING [illegible] JOB IN THE PUBLIC SECTOR!"
14057 PRINT" ******* CONGRATULATIONS *******"
14060 FOR WAIT=1TO2000:NEXT
14070 CLS
14080 PRINT"DO YOU WISH TO PLAY AGAIN (Y/N)";
14090 INPUT Z$:IF Z$<>"N" THEN RUN ELSE PRINT"THANKS FOR PLAYING":END
```

Streets of the City

```
Streets of the City
Creative Computing
by Kenneth P Murray
CONGRATULATIONS! YOU HAVE BEEN NAMED TRANSPORTATION
DIRECTOR OF RIVER CITY, MICHIGAN, A CENTRAL CITY WITH
A DECLINING POPULATION AND WHICH HAS SUFFERED DETERIORATION
OF ITS TRANSPORTATION SERVICES OVER THE LAST SEVERAL YEARS.

PRIOR TO YOUR BEING HIRED, THE CITY COMMISSION ADOPTED
A TEN-YEAR TRANSPORTATION PLAN TO RESTORE SERVICES FOR
BOTH STREETS AND BUSES TO AN ADEQUATE LEVEL. IT WILL BE
YOUR RESPONSIBILITY TO CARRY OUT THIS PLAN.

FOR THE STREET FUND, YOU WILL NEED TO CONSTRUCT SEVERAL
MILES OF INTERSTATE HIGHWAYS AND RECONSTRUCT MAJOR LOCAL
STREETS (CALLED PRIMARIES). YOU WILL ALSO NEED TO IMPROVE
STREET CONDITIONS AND TRAFFIC SAFETY.

PRESS RETURN?
FOR THE TRANSIT AUTHORITY, YOU MUST REPLACE A
DILAPIDATED BUS FLEET, INCREASE RIDERSHIP, REDUCE THE
MAINTENANCE DOWNTIME, AND IMPROVE ON-SCHEDULE PERFORMANCE
(ALSO REFERRED TO AS SERVICE DELAY).

FOR ALL INDICES USED, THE HIGHER THE INDEX VALUE THE
WORSE THE CONDITION INDICATED.  THE BUDGET NEEDS LISTED
ARE THE MINIMUMS NEEDED TO MAINTAIN THE INDEX AT ITS
PRESENT LEVEL; IMPROVING THE LEVEL REQUIRES BUDGETS THAT
ARE HIGHER THAN THE MINIMUM NEEDS.
PRESS RETURN?

YOUR GOALS FOR THE PLAN ARE AS FOLLOWS:

STANDARD                         PRESENT        GOAL

PRIMARY ST. MILEAGE               107            151
INTERSTATE MILEAGE                0              16
STREET CONDITION INDEX            10.6           8
TRAFFIC SAFETY INDEX              8.9            5

RIDERSHIP                           888,883      2,400,000
FLEET AGE                         10.7           6
DOWNTIME                          11.4           6
SERVICE DELAY                     12.7           5

GOOD LUCK!
PRESS RETURN? ?
 [illegible]
?
YOUR TRANSIT AUTHORITY SERVICE OPTIONS ARE:

     1.   ROUTES
     2.   HOURS OF OPERATION
     3.   DAYS OF SERVICE
     4.   FARE
     5.   TO CONTINUE

WHAT IS YOUR CHOICE? 4
THE FARE MAY BE CHANGED IN NICKEL UNITS, WITH A
MINIMUM FARE OF $.25 AND A MAXIMUM OF $1.00
DO NOT ENTER DOLLAR SIGN
CURRENT FARE = .35
NEW FARE =? .50
YOUR TRANSIT AUTHORITY SERVICE OPTIONS ARE:

     1.   ROUTES
     2.   HOURS OF OPERATION
     3.   DAYS OF SERVICE
     4.   FARE
     5.   TO CONTINUE

WHAT IS YOUR CHOICE? 5
                    PROPERTY TAX LEVY
                                 STREET FUND    TRANSIT AUTHORITY
OPERATING NEEDS                  $7,217,000.    $1,418,170.
NON-TAX REVENUE                  $2,645,570.    $1,596,290.
PROPERTY TAX NEEDED (DOLLAR)     $4,571,430.     -$178,120.
```

Streets of the City

```
TOTAL PROPERTY TAX NEEDED (IN MILLS) = 3.3
WHAT PROPERTY TAX LEVY (IN MILLS) DO YOU PROPOSE? 7
THE CITY COMMISSION HAS APPROVED A LEVY OF 7 MILLS
HOW MANY MILLS ARE FOR THE STREET FUND? 5
            STREET FUND BUDGET DECISIONS FOR YEAR 1
                                       CONSTRUCTION:
OPERATIONS:                                 AVAILABLE: $1,480,000.
       AVAILABLE: $6,790,330.               COST PER HALF MILE UNIT:
       MAINT. NEED= $5,322,390.             PRIMARY RDS.=  $115,000.
       SAFETY NEED= $1,894,740.             INTERSTATES=   $625,000.

YOU MAY TRANSFER UP TO  50 % FROM AN ACCOUNT
            1.  OPERATIONS TO CONSTRUCTION
            2.  CONSTRUCTION TO OPERATIONS
            3.  NO TRANSFER
? 3
            STREET FUND BUDGET DECISIONS FOR YEAR 1
                                       CONSTRUCTION:
OPERATIONS:                                 AVAILABLE: $1,480,000.
       AVAILABLE: $6,790,330.               COST PER HALF MILE UNIT:
       MAINT. NEED= $5,322,390.             PRIMARY RDS.=  $115,000.
       SAFETY NEED= $1,894,740.             INTERSTATES=   $625,000.

ENTER CONSTRUCTION BY THE NUMBER OF HALF MILE UNITS.
ENTER MAINTENANCE AND SAFETY IN THOUSAND DOLLAR UNITS.
DO NOT USE COMMAS OR DOLLAR SIGNS.

            PRIMARIES INTERSTATES     MAINTENANCE      SAFETY
                                      $5,322,390.    $1,894,740.
LAST YR.        0          0
THIS YR? 1
? 1
? 5400
? 1900
?
? 1800
YOUR MAINTENANCE AND SAFETY BUDGET EXCEEDS YOUR FUNDS
0
? 3
ARE YOU SURE (Y/N)? Y
? 5
ARE YOU SURE (Y/N)? Y
TRANS REPORT
                 TRANSIT BUDGET FOR YEAR 1
                                     BUS FLEET
OPERATIONS                              AVAILABLE          80.
       AVAILABLE $1,238,380.            COST PER BUS:
       MAINT. NEED=   $540,370.         ACQUISITION=   $140,000.
       OPERATIONS NEED= $1,074,780.     SALE=    $75,000.

OPERATIONS TO THE BUS FLEET


HOW MANY BUSES DO YOU WISH TO SELL? 0
                 TRANSIT BUDGET FOR YEAR 1
                                     BUS FLEET
OPERATIONS                              AVAILABLE          80.
       AVAILABLE $1,238,380.            (COST PER BUS):
       MAINT. NEED=   $541,370.         ACQUISITION=   $140,000.
       OPERATIONS NEED= $1,074,780.     SALE=    $75,000.

ENTER BUDGETS IN THOUSAND DOLLAR UNITS. DO NOT
USE COMMAS OR DOLLAR SIGNS

                          MAINTENANCE  OPERATIONS   NEW BUSES
                           $531,895.   $1,074,780.       0
LAST YEAR
THIS YEAR? 500
? 1300
? 0
YOUR PRESENT WAGE IS 7.41 DOLLARS PER HOUR
THE UNION'S INITIAL OFFER IS FOR A 14 PERCENT INCREASE
WHAT IS YOUR RESPONSE?
```

Survival

Survival was written by [illegible] and originally appeared in Creative Computing, January 1982.

It is the year 1991. You have crash landed on the moon and have only 180 minutes of oxygen and 250 units of power remaining. You are at Mare Serenitatis and observe the long, eerie shadows being cast by the distant mountains across the barren landscape. The realization sinks in that you are in big trouble.

Game Description

Survival is an "adventure" type of game. With logic, skill, persistence, and a little bit of luck, it is possible to survive. The action takes place on the surface of the moon where you must assess the situation, explore the surroundings, avoid potential hazards, and gather needed resources.

It is a race against time. Many explorations are required before the total situation is revealed, and the resources and life-threatening hazards are discovered. Only then, can the process of determining an optimum course of action begin.

Once you succeed in surviving, there is then the challenge to plan new survival sequences to minimize the total elapsed time.

The commands to move are NORTH, SOUTH, EAST, WEST, UP, and DOWN. These commands may be spelled out or entered as a single letter—N, S, E, W, U, and D.

Other commands consist of an action verb followed by a noun. Examples of these commands are:

GET ILLUMINATOR
DROP KNIFE
INVENTORY

The set of commands is relatively small, hence you may have to try several alternatives to find the one that works. All commands may be abbreviated to the first three letters. To exit the program, you may enter END or QUIT. There is no provision for saving a partially completed game.

Program Design

The program is relatively small as it was originally written to fit in a computer with 8K of memory.

The program is directed by a move matrix M. There is one vector for each location P in the game. Table 1 lists the significance of each vector in the matrix M.

If the vector element (1-6) contains a value of "0," then the move requested in that direction is invalid. If the vector element contains a "99," then the game is terminated.

The T$ vector contains the textual description of all of the various locations. As an example, the first three elements in the vector contain the description for location 1 in the M matrix. Looking at the line 9001, the seventh and eighth data items correspond to M(1,7) which has a value of 1, and M(1,8) which has a value of 2.

Table 2 lists the variables used in the program.

Table 3 lists each of the objects used in the program which are contained in the O vector. Normally the vector element in O, for a given object, contains either the P location of that item, or a value of 99 indicating that the player is carrying that item.

Locations 1-18, and 28 normally require oxygen. All other locations are within the space station or the space craft. Locations 1-21, and 28 require a power unit or pack. All other locations are within the space station.

Changing the Complexity of the Game

Normally, the program permits the player to carry four items. One way the difficulty can be increased is by permitting only three items to be carried. In this case, a longer survival time results, and the following statements must be updated:

```
 350 LET T2 = 275
 360 LET P1 = 320
 370 LET P2 = 75
 530 IF T1 >=485 THEN 2980
 540 IF T1 >= 380 THEN 3040
2270 IF C >=2 THEN 2590
```

Conclusion

This program, unlike other Adventures, contains no random events. The emphasis is on determining optimum move scenarios, resulting in minimum times and resource use. Each location described corresponds to an actual moon location taken from a National Geographic map of the moon.

We wish you many happy hours of exploration. As a benchmark, the author's best survival time is 583 minutes, with a four-item carry limit. Here's to your survival!

Table 1.
M(P,1)— location to go to if direction is NORTH
M(P,2)— location to go to if direction is SOUTH
M(P,3)— location to go to if direction is EAST
M(P,4)— location to go to if direction is West
M(P,5)— location to go to if direction is UP
M(P,6)— location to go to if direction is DOWN
M(P,7)— pointer to first print line in T$ vector
M(P,8)— pointer to last print line in T$ vector

Table 2.
P - The current location.
R - The previous location (P for the previous location).
T1 - The current elapsed time.
T2 - the amount of oxygen remaining in the oxygen module.
P1 - The amount of power remaining in the power unit.
P2 - The amount of power remaining in the power pack.
V - The number of visits to the control centre.
C - The number of items being carried.
F0 - Flag: oxygen in use.
F1 - Flag: Meteor shower.
F2 - Flag: Shed open.
F6 - Flag: Illuminator on.
F7 - Flag: Bomb deactivated.
F9 - Flag: Oxygen required in station.

Table 3.
O(1) - An electronic key.
O(2) - Sealant.
O(3) - An oxygen module.
O(4) - An Illuminator.
O(5) - A robot.
O(6) - A deactivator.
O(7) - A nuclear bomb.
O(8) - A transporter unit.
O(9) - Dilithium crystals.
O(10) - A computer message.
O(11) - A power unit.
O(12) - A mirror.
O(13) - A coded badge.
O(14) - A power pack.

Survival

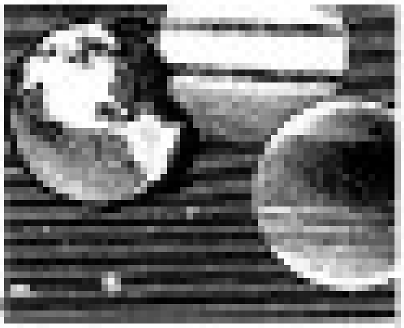
```
1 REM
5 REM MOON SURVIVAL PROGRAM
6 REM WRITTEN BY STEWART [illegible] 3/12/81
8 REM
10 DIM T$(40)
20 DIM M(42,8)
30 DIM O(16)
40 DIM S(5)
50 DIM U(5)
60 REM
70 REM INITIALIZE TEXT AND MOVE MATRICES
80 REM
90 PRINT"WELCOME TO THE GAME OF SURVIVAL, WOULD
100 PRINT"YOU LIKE INSTRUCTIONS?"
110 INPUT Q$
120 IF Q$="Y" THEN GOSUB 5000
112 FOR I=1 TO 16
114 READ O(I)
116 NEXT I
130 FOR I=1 TO 40
140 READ T$(I)
150 NEXT I
160 FOR I=1 TO 42
170 FOR J=1 TO 8
180 READ M(I,J)
190 NEXT J
200 NEXT I
205 RESTORE
210 REM
220 REM PROGRAM VARIABLE DEFINITION
230 REM P  = CURRENT POSITION          F0 = CHECKER IN USE
240 REM T1 = CURRENT ELAPSED TIME      F1 = OPEN DOOR
250 REM T2 = OXYGEN REMAINING          F2 = METEOR SHOWER
255 REM                                F3 = LASER DEFLECTED
260 REM V  = NO. OF COMPUTER READS     F4 = ILLUMINATOR ON
270 REM P1 = PWR IN POWER UNIT         F5 = GRAVITATION EXPOSED
275 REM P2 = PWR IN POWER PACK         F7 = BOMB DEACTIVATED
280 REM C  = NO. OF ITEMS CARRIED      F8 = OXYGEN REQ'D IN STATION
290 REM
300 P=1
330 C=0
340 T1=0
350 T2=180
360 P1=120
370 P2=10
380 V=0
390 F0=0
400 F1=0
450 F2=0
500 F3=0
550 F4=0
570 F5=0
600 F7=0
610 F8=0
620 REM
630 REM DISPLAY CURRENT STATUS AND LOCATION INFO
640 REM
650 PRINT"ELAPSED TIME: ";T1;"MINUTES"
660 IF O(1)=99 THEN PRINT"POWER UNIT: ";P1;"UNITS"
670 IF O(16)=99 THEN PRINT"POWER PACK: ";P2;"UNITS"
680 T1=T1+1
690 IF O(1)=99 AND P1>0 THEN P1=P1-1
700 IF O(16)=99 AND P2>0 THEN P2=P2-1
710 IF O(1)=99 AND P1=0 THEN 1600
720 IF O(16)=99 AND P2=0 THEN 1600
730 IF T1>480 THEN 2100
740 IF T1>300 THEN 2040
750 IF T1>200 THEN 2140
760 IF F8=1 THEN T2=T2-5
770 IF T2<0 THEN T2=0
780 IF F8=0 THEN 800
790 IF T2>0 THEN 800
800 IF F8=0 THEN 810
810 IF P>11 THEN 1500
820 IF P<10 THEN 1500
830 IF P=10 THEN 1700
840 IF P=11 THEN 1400
850 IF F8=1 THEN PRINT "OXYGEN REMAINING: ";T2;"MINUTES"
```

Survival

```
800 PRINT "PRESENT LOCATION SHAPES, YOU ARE"
810 FOR I=B(P,7) TO B(P,8)
820 PRINT T$(I)
830 NEXT I
840 PRINT "##"
850 REM
860 REM DISPLAY ANY OBJECTS PRESENT
870 REM
880 IF P=2 THEN 1010
890 FOR I = 1 TO 14
900 IF C(I)<>P THEN 950
910 GOSUB 4610
920 PRINT "THERE IS ";O$;" HERE.
930 NEXT I
1000 GOTO 1040
1010 REM
1020 REM READ AND PROCESS KEYBOARD RESPONSE
1030 REM
1040 INPUT R$
1050 I=0
1060 IF LEN(R$)<>1 GOTO 1300
1070 IF R$="N" THEN I=1
1080 IF R$="S" THEN I=2
1090 IF R$="E" THEN I=3
1100 IF R$="W" THEN I=4
1110 IF R$="U" THEN I=5
1120 IF R$="D" THEN I=6
1130 IF R$="Q" THEN 9999
1140 IF I=0 THEN 1270
1150 IF M(P,I)=0 THEN 1270
1160 IF M(P,I)=99 THEN 2560
1170 P=M(P,I)
1180 IF P=11 THEN 1660
1190 IF P=13 THEN 3100
1200 IF P=12 THEN 3110
1210 IF P=22 THEN 3410
1220 IF P=19 THEN 3470
1230 P=P
1240 P=Q
1250 GOTO 810
1270 PRINT"YOU CAN'T GO IN THAT DIRECTION"
1280 GOTO 1040
1290 REM
1300 REM PROCESS 2 OR MORE CHARACTER COMMANDS
1310 REM
1320 C$=R$
1321 C$=LEFT$(C$,3)
1330 IF C$="LOO" THEN 800
1340 IF C$="DIR" THEN 800
1350 IF C$="GET" THEN 2190
1360 IF C$="TAK" THEN 2190
1370 IF C$="KEE" THEN 2190
1380 IF C$="DRO" THEN 2500
1390 IF C$="LEA" THEN 2500
1400 IF C$="PUT" THEN 2500
1410 IF C$="INV" THEN 2700
1420 IF C$="QUI" THEN 9999
1430 IF C$="END" THEN 9999
1440 IF C$="TRA" THEN 1730
1450 IF C$="USE" THEN 1840
1460 IF C$="FIR" THEN 4000
1470 IF C$="REA" THEN 4250
1480 IF C$="REA" THEN 3090
1490 IF C$="BLA" THEN 4110
1510 IF C$="UP" THEN 1640
1520 IF C$="DOW" THEN 1640
1530 IF C$="NOR" THEN 1640
1540 IF C$="SOU" THEN 1640
1550 IF C$="EAS" THEN 1640
1560 IF C$="WES" THEN 1640
1570 PRINT"INVALID COMMAND!"
1580 GOTO 1040
1590 PRINT"I CAN'T PROCESS YOUR REQUEST!"
1600 GOTO 1040
1640 C$=R$
1650 R$=C$
1660 GOTO 1070
1670 REM
```

```
1680 REM PROCESS ENTRY TO HANGER FROM AIR LOCK
1690 REM
1700 IF P<>10 THEN 1590
1710 GOTO 800
1720 REM
1730 REM PROCESS TRANSPORT COMMAND
1740 REM
1750 IF P<>16 THEN 1800
1760 IF C(8)=99 THEN 1310
1770 F=B(2)
1780 PRINT"BEAMING IN PROGRESS
1790 GOTO 800
1800 IF P<>C(8) THEN 1590
1810 P=16
1820 GOTO 2700
1830 REM
1840 REM PROCESS USE COMMAND
1850 REM
1860 IF P<>18 THEN 1590
1870 C(8)=18
1880 GOTO 800
1890 REM
1900 REM DROP ILLUMINATOR IF AT OVERLOOK
1910 REM
1920 IF C(4)<>99 THEN 910
1930 C(4)=100
1940 PRINT"YOU DROPPED YOUR ILLUMINATOR YOU"
1950 PRINT"CANNOT RETRIEVE IT."
1960 GOTO 800
1970 REM
1980 REM PROCESS ROBOT
1990 IF C(5)=20 THEN C(5)=15
2000 IF C(5)=15 THEN C(5)=20
2010 IF C(5)=41 THEN C(5)=42
2020 IF C(6)=27 THEN C(6)=41
2030 IF C(6)=21 THEN C(6)=27
2040 IF C(5)<>15 THEN 2060
2050 IF P<>15 THEN 1010
2060 M(15,1)=23
2070 GOTO 1010
2080 IF C(5)<>21 THEN 1010
2090 IF P<>21 THEN 1010
2100 C(5)=99
2110 IF C(1)=99 THEN 1010
2120 PRINT"ROBOT FAILS TO RECOGNIZE YOU, IT
2130 PRINT"FIRES A PHASOR WEAPON AT YOU!
2140 GOTO 2990
2150 REM
2160 REM PROCESS GET OR TAKE COMMAND
2170 REM
2190 GOSUB 4500
2200 IF I<0 THEN 2260
2210 IF I=0 THEN 2240
2220 PRINT"I DON'T RECOGNIZE ";MID$(R$,J+1);"."
2230 GOTO 1040
2240 PRINT"WHAT ITEM?
2250 GOTO 1040
2260 IF C(I)<>P THEN 2370
2270 IF C>3 THEN 2390
2280 IF I=7 THEN 2410
2290 IF I=10 THEN 2430
2300 IF I=11 THEN 2430
2310 IF I=14 THEN 2390
2320 C=C+1
2330 C(I)=99
2340 IF I=1 THEN P=4
2350 PRINT"O.K.
2360 GOTO 1040
2370 PRINT"THERE IS NO ";MID$(R$,J+1);" HERE!"
2380 GOTO 1040
2390 PRINT"YOU CAN'T CARRY ANY MORE
2400 GOTO 1040
2410 PRINT"YOU CAN'T CARRY A ROBOT!
2420 GOTO 1040
2430 PRINT"YOU CAN'T GET THE MESSAGE, IT'S
2440 PRINT"ON THE TERMINAL SCREEN.
2450 GOTO 1040
2460 IF C(14)=99 THEN 1520
```

```
2470 O(11)=99
2480 GOTO 1120
2490 IF O(12)<>99 THEN 1510
2500 O(12)=99
2510 GOTO 1120
2520 PRINT"YOU CAN'T HAVE MORE THAN ONE
2530 PRINT"POWER SUPPLY.
2540 GOTO 1040
2550 REM
2560 REM PROCESS DROP OR LEAVE COMMAND
2570 REM
2580 GOSUB 4010
2590 IF I=0 THEN 2610
2600 IF I<0 THEN 2140
2610 GOTO 1120
2620 IF O(I)<>99 THEN 1610
2630 I=I-1
2640 O(I)=P
2650 IF I=1 THEN F5=0
2660 IF I=11 THEN 1710
2670 IF I=12 THEN 1710
2680 GOTO 1280
2690 PRINT"YOU DON'T HAVE ";STR$(L,J+1);"."
2700 GOTO 1040
2710 IF P<11 THEN 2870
2720 IF P>19 THEN 2870
2730 IF F5=1 THEN 2870
2740 GOTO 2070
2750 REM
2760 REM PROCESS INVENTORY COMMAND
2770 REM
2780 FOR I=1 TO 14
2790 IF O(I)<>99 THEN 2820
2800 GOSUB 4410
2810 PRINT"YOU HAVE ";N$;"."
2820 NEXT I
2830 GOTO 1040
2840 REM
2850 REM PROGRAM TERMINATION PROCESSING
2860 REM
2870 PRINT"YOU HAVE NO POWER OR POWER PACK.
2880 PRINT"YOU HAVE FROZEN TO DEATH.
2890 GOTO 2980
2900 PRINT"OXYGEN REQUIRED HERE, NONE AVAILABLE.
2910 GOTO 2980
2920 PRINT"A NUCLEAR DETONATION HAS JUST OCCURED.
2930 GOTO 2980
2940 PRINT"YOU HAVE FALLEN TO YOUR DEATH.
2950 GOTO 2980
2952 PRINT"YOU HAVE BEEN ZAPPED BY THE LASER.
2954 GOTO 2980
2960 PRINT"THE MOON BASE HAS JUST BEEN DESTROYED
2970 PRINT"BY A LARGE ASTEROID.
2980 PRINT"YOU HAVE FAILED TO SURVIVE.
2990 PRINT"DO YOU WISH TO TRY AGAIN?
3000 INPUT D$
3010 IF D$="Y" THEN 110
3020 GOTO 9999
3030 REM
3040 REM PROCESS METEOR SHOWER
3050 REM
3060 IF M(P,1)<>11 THEN 1120
3070 IF F1=1 THEN 1270
3080 PRINT"THERE IS A METEOR SHOWER. YOUR SPACE
3090 PRINT"SUIT HAS DEVELOPED A LEAK.
3100 GOSUB 4010
3110 IF I<>2 THEN 2900
3120 PRINT"YOUR SUIT IS NOW REPAIRED.
3130 F1=1
3140 GOTO 1120
3150 REM
3160 REM PROCESS LOCKED DOOR
3170 REM
3180 IF M(P,1)<>12 THEN 1120
3190 IF F2=1 THEN 1270
3200 PRINT"THE DOOR IS LOCKED!
3210 GOSUB 4010
3220 IF I<>1 THEN 3260
3230 PRINT"YOU ARE IN THE SHED AIR LOCK.
3240 F2=1
3250 GOTO 1120
3260 PRINT"YOUR ATTEMPT FAILS "
3270 GOTO 1040
3280 REM
3290 REM PROCESS DARK VENTILATOR SHAFT
3300 REM
3310 IF M(P,1)<>13 THEN 1120
3320 IF F3=1 THEN 1120
3330 PRINT"IT IS DANGEROUS TO PROCEED IN THE DARK!
3340 GOSUB 4010
3350 IF I<>6 THEN 2940
3360 PRINT"THE SHAFT IS NOW ILLUMINATED.
3370 F3=1
3380 GOTO 1120
3390 REM
3400 REM PROCESS SHAFT WITH NO ILLUMINATION
3410 REM
3420 IF O(6)<>99 THEN 2940
3430 GOTO 1120
3440 REM
3450 REM PROCESS LASER BEAM
3460 REM
3470 IF M(P,1)<>17 THEN 1120
3480 IF F4=1 THEN 1120
3490 PRINT"THERE IS A LASER BEAM HERE, PASSAGE NOT
3500 PRINT"POSSIBLE WITH BEAM PRESENT.
3510 GOSUB 4010
3520 IF I<>12 THEN 2952
3530 PRINT"THE BEAM IS NOW DEFLECTED.
3540 F4=1
3550 GOTO 1280
3560 REM
3570 REM PROCESS BLOWN SEAL IN SPACE STATION
3580 REM
3590 IF B<>20 THEN 800
3600 IF F6=0 THEN 610
3610 F6=1
3620 PRINT"YOU HAVE JUST BLOWN THE AIR SEAL IN
3630 PRINT"THE SPACE STATION.
3640 GOTO 800
3650 REM
3660 REM POWER REQUIRED TESTING
3670 REM
3680 IF P<11 THEN 2870
3690 IF F5=1 THEN 2870
3700 GOTO 740
3710 REM
3720 REM REPORT DEACTIVATED
3730 REM
3740 IF F7=1 THEN 760
3750 M(2,7)=M(2,7)+2
3770 M(14,8)=M(14,7)
3780 M(14,4)=0
3790 F8=1
3800 GOTO 740
3810 REM
3820 REM DETONATE BOMB
3830 REM
3840 GOTO 740
3850 REM
3870 REM DEACTIVATE BOMB
3880 REM
3890 IF O(6)<>99 THEN 3940
3900 IF O(7)<>99 THEN 3960
3910 F7=1
3920 PRINT"BOMB IS NOW DEACTIVATED.
3930 GOTO 1040
3940 PRINT"YOU HAVE NOTHING TO DO IT WITH!
3950 GOTO 1040
3960 PRINT"THERE IS NOTHING TO DO IT TO!
3970 GOTO 1040
3980 PRINT"YOU CAN'T DO IT FROM HERE!
3990 GOTO 1040
4000 REM
4010 REM FIND OBJECT
4020 REM
```



Survival

```
4020 IF F<>19 THEN 1090
4030 IF O(3)<>19 THEN 1940
4040 O(3)=99
4050 PRINT"FUEL IS NOW LOADED.
4060 GOTO 1040
4070 REM
4080 REM BLASTOFF PROCESSING
4090 REM
4100 IF F<>21 THEN 2500
4110 IF O(11)<>21 THEN 4200
4120 IF F7=1 THEN 4160
4130 PRINT"REPAIRS NOT YET COMPLETE.
4140 GOTO 1040
4150 PRINT"CONGRATULATIONS, YOU HAVE JUST BLASTED
4160 PRINT"OFF AND ARE ON YOUR WAY TO EARTH.
4170 PRINT"YOUR ESCAPE TIME:"; T1;"MINUTES."
4180 GOTO 2100
4190 PRINT"YOUR SPACE CRAFT HAS NO FUEL!
4200 GOTO 1040
4210 REM
4220 REM COMPUTER READOUT PROCESSING
4230 REM
4240 IF F<>10 THEN 1090
4250 GOSUB 4590
4260 IF I<>10 THEN 2940
4270 IF F<>8 THEN 4300
4280 PRINT"SOME DEACTIVATOR LOCATED SOMEWHERE EAST"
4290 PRINT"OF SPACE STATION, ON MOON'S SURFACE.
4300 GOTO 4360
4310 IF F<>11 THEN 4350
4320 PRINT"LOCAL FUEL SOURCE: DILITHIUM CRYSTAL."
4330 GOTO 4360
4340 PRINT"DILITHIUM FOUND IN SOFT SURFACES."
4350 IF F7=1 THEN PRINT"SPACECRAFT REPAIRS COMPLETED.
4360 F9=1
4370 GOTO 1040
4380 REM
4390 REM SUBROUTINE TO DESCRIBE ITEMS AT LOCATION
4400 REM
4410 IF I=1 THEN B$="AN ELECTRONIC KEY"
4420 IF I=2 THEN B$="SEALANT"
4430 IF I=3 THEN B$="AN OZONE MODULE
4440 IF I=4 THEN B$="AN ILLUMINATOR
4450 IF I=5 THEN B$="A ROBOT
4460 IF I=6 THEN B$="A DEACTIVATOR
4470 IF I=7 THEN B$="A NUCLEAR BOMB
4480 IF I=8 THEN B$="A TRANSPORTER UNIT
4490 IF I=9 THEN B$="DILITHIUM CRYSTALS
4500 IF I=10 THEN B$="A COMPUTER MESSAGE
4510 IF I=11 THEN B$="A POWER UNIT
4520 IF I=12 THEN B$="A RIBBON
4530 IF I=13 THEN B$="A CODED BADGE
4540 IF I=14 THEN B$="A POWER PACK
4550 RETURN
4560 REM
4570 REM SUBROUTINE TO CONVERT AN ITEM TO A NUMERIC
 VALUE
4580 REM
4590 FOR J=1 TO LEN(B$)
4600 IF MID$(B$,J,1)=" " THEN 4640
4610 NEXT J
4620 I=0
4630 RETURN
4640 C$=MID$(B$,J+1,3)
4650 I=0
4660 IF C$="ELE" THEN I=1
4670 IF C$="KEY" THEN I=1
4680 IF C$="SEA" THEN I=2
4690 IF C$="OZO" THEN I=3
4700 IF C$="MOD" THEN I=3
4710 IF C$="ILL" THEN I=4
4720 IF C$="ROB" THEN I=5
4730 IF C$="DEA" THEN I=6
4740 IF C$="NUC" THEN I=7
4750 IF C$="BOM" THEN I=7
4760 IF C$="TRA" THEN I=8
4770 IF C$="DIL" THEN I=9
4780 IF C$="CRY" THEN I=9
4790 IF C$="COM" THEN I=10
4800 IF C$="MES" THEN I=10
4810 IF C$="UNI" THEN I=11
4820 IF C$="RIB" THEN I=12
4830 IF C$="BAD" THEN I=13
4840 IF C$="PAC" THEN I=14
4850 RETURN
4860 REM
4870 REM SUBROUTINE TO PROCESS TRY COMMAND
4880 REM
4890 INPUT B$
4900 C$=B$
4910 IF C$="YES" THEN 4950
4920 IF C$="Y" THEN 4950
4930 I=0
4940 RETURN
4950 GOSUB 4590
4960 IF I=0 THEN 1050
4970 IF O(I)=99 THEN RETURN
4980 PRINT"YOU DON'T HAVE ";MID$(B$,J+1)
4990 GOTO 4930
5000 PRINT"YOUR ATTEMPT FAILS!
5010 GOTO 4930
5020 REM
5030 REM PRINT INSTRUCTIONS
5040 REM
5050 PRINT"YOU HAVE CRASH LANDED ON THE
5060 PRINT"EARTH'S MOON. YOU HAVE LIMITED
5070 PRINT"SUPPLIES AND TIME IN WHICH TO
5080 PRINT"SURVIVE. TO TRAVEL, YOU MAY
5090 PRINT"ENTER DIRECTIVES SUCH AS NORTH
5100 PRINT"OR N, AS WELL AS S, E, W AND
5110 PRINT"U, AND D (UP AND DOWN). YOU
5120 PRINT"WILL ENCOUNTER VARIOUS ITEMS
5130 PRINT"AND SITUATIONS DURING YOUR
5140 PRINT"TRAVELS. TO COMMUNICATE, ENTER
5150 PRINT"COMMANDS (VERBS) FOLLOWED BY
5160 PRINT"OBJECT NAMES (IF APPLICABLE).
5170 PRINT"FOR EXAMPLE, GET KEY, LEAVE,
5180 PRINT"USE, AND INVENTORY.
5190 PRINT " "
5200 PRINT"ONCE YOU HAVE SURVIVED, THE
5210 PRINT"OBJECT THEN IS TO ACHIEVE THE
5220 PRINT"OPTIMUM SURVIVAL TIME.
5230 PRINT"    *** GOOD LUCK ***
5240 RETURN
6000 REM
6001 REM OBJECT LOCATIONS
6002 REM
6010 DATA 21,13,99,06,02,05,21
6020 DATA 25,08,97,99,11,14,27
7000 REM
7001 REM
7010 REM TEXT LOCATION DESCRIPTIONS
8001 DATA"AT MARE SERENITATIS. LONG EERIE SHADOWS
8002 DATA"FROM DISTANT MOUNTAINS AND CRATERS CAST
8003 DATA"THEMSELVES ACROSS THE BARREN LANDSCAPE.
8004 DATA"ON A PROMONTORY POINT ON THE RIM OF THE
8005 DATA"CRATER POSIDONIUS. ONLY HALF VISIBLE."
8006 DATA"THERE IS TOTAL DARKNESS TO THE EAST."
8007 DATA"BETWEEN THE CRATERS OF GAUSS AND KLEIN
8008 DATA"AT A BASE IN THE MOUNTAINS OF HAEMUS."
8009 DATA"AT A STEEP BASE OF THE CRATER PROCLUS."
8010 DATA"AT MARE VAPORUM. THE APENNINES MTNS."
8011 DATA"RISE ONWARDS TO THE NORTH AND WEST."
8012 DATA"AT THE BASE OF THE HAEMUS MT. SURFACE,"
8013 DATA"INSIDE THE CRATER OF MENELAUS. THE"
8014 DATA"CRATER FLOOR IS LITTERED WITH ROCKS."
8015 DATA"IN LACUS SOMNIORUM. NORTH OF POSIDONIUS"
8016 DATA"AND NORTH EAST OF MARE SERENITATIS.
8017 DATA"AT THE BASE OF THE BURG CRATER IN LACUS"
8018 DATA"MORTIS. THE SURFACE IS VERY SOFT HERE."
8019 DATA"AT THE BASE SIDE OF THE VAST MARE OF"
8020 DATA"IMBRIUM. TO THE NORTH THE LOW AREAS OF"
8021 DATA"THE SUN CASTS EERIE SHADOWS ON THE SOFT
8022 DATA"SURFACE AND DISTANT MOUNTAINS TO THE
8023 DATA"EAST. TO THE WEST, THE MARE DISAPPEARS
8024 DATA"OUT OF SIGHT TO THE HORIZON.
```

Survival

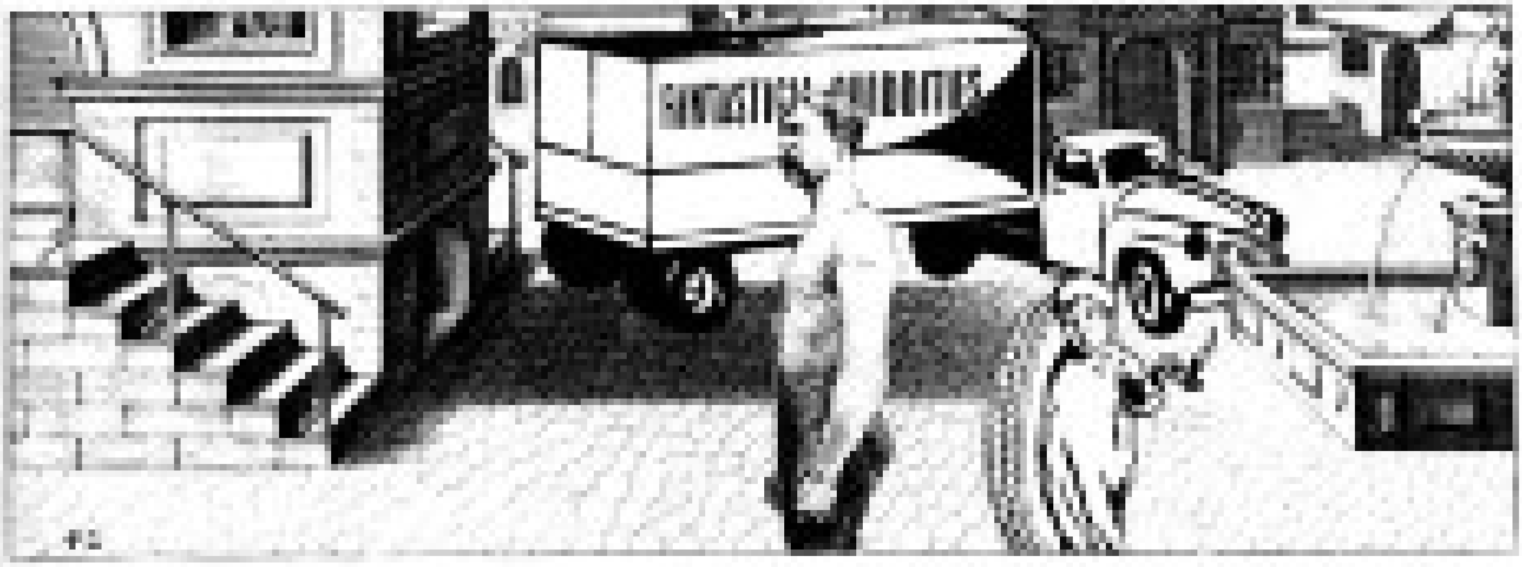
```
8825 DATA"AT THE BASE OF THE CENTER OF PLATO. A
8826 DATA"SHINY OBJECT IS SEEN TO THE WEST.
8827 DATA"STANDING BEFORE A SMALL METAL SHED. A
8828 DATA"ROCK BEACH. VENTILATOR SHAFT #2.
8829 DATA"SOMEWHERE EAST OF MARE SERENITATIS.
8830 DATA"THERE IS TOTAL DARKNESS.
8831 DATA"AT THE CRASH SITE OF A SPACE CRAFT.
8832 DATA"THE SHIP ENTRANCE IS BEFORE YOU.
8833 DATA"AT THE CENTER OF MARE IMBRIUM.
8834 DATA"IN THE AIR LOCK CHAMBER OF THE SHIP.
8835 DATA"IN THE AFT CARGO AND FUEL STORAGE ROOM.
8836 DATA"IN THE ENGINE ROOM OF THE SPACECRAFT.
8837 DATA"IN THE CONTROL ROOM. THE SHIP'S CONSOLE
8838 DATA"IS BEFORE YOU.
8839 DATA"INSIDE A DARK SHED. A LADDER LEADS DOWN
8840 DATA"INTO A LARGE METAL SHAFT.
8841 DATA"IN A VENTILATOR PASSAGE.
8842 DATA"AT A VENTILATOR OPENING. THROUGH THE
8843 DATA"OPENING A LIT PASSAGEWAY CAN BE SEEN.
8844 DATA"IN A LIGHTED SPACE STATION CORRIDOR.
8845 DATA"IN THE SPACE STATION INFIRMARY.
8846 DATA"IN THE RECREATION ROOM AND LIBRARY.
8847 DATA"IN THE MESS HALL. ABANDONED FOOD TRAYS
8848 DATA"ARE STILL ON THE TABLES.
8849 DATA"IN THE STORAGE ROOM AND SUPPLY AREA.
8850 DATA"IN THE SLEEPING QUARTERS.
8851 DATA"IN AN ELEVATOR AT SUBSURFACE LEVEL.
8852 DATA"IN AN ELEVATOR AT SURFACE LEVEL.
8853 DATA"IN THE STATION CONTROL CENTER.
8854 DATA"IN THE TRANSPORTER ROOM.
8855 DATA"IN THE SPACE STATION LABORATORY.
8856 DATA"IN THE HANGER AREA. THE LAUNCH AREA
8857 DATA"IS JUST SOUTH OF HERE.
8858 DATA"IN AN AIR LOCK CHAMBER BETWEEN THE
8859 DATA"CHANGING AREA AND THE HANGER.
8860 DATA"IN A SPACE SUIT CHANGING AREA.
8900 REM
8901 REM MOVEMENT AND TEXT POINTER MATRIX
8902 REM
9001 DATA [illegible]
9002 DATA [illegible]
9003 DATA [illegible]
9004 DATA [illegible]
9005 DATA [illegible]
9006 DATA [illegible]
9007 DATA [illegible]
9008 DATA [illegible]
9009 DATA [illegible]
9010 DATA [illegible]
9011 DATA [illegible]
9012 DATA [illegible]
9013 DATA [illegible]
9014 DATA [illegible]
9015 DATA [illegible]
9016 DATA [illegible]
9017 DATA [illegible]
9018 DATA [illegible]
9019 DATA [illegible]
9020 DATA [illegible]
9021 DATA [illegible]
9022 DATA [illegible]
9023 DATA [illegible]
9024 DATA [illegible]
9025 DATA [illegible]
9026 DATA [illegible]
9027 DATA [illegible]
9028 DATA [illegible]
9029 DATA [illegible]
9030 DATA [illegible]
9031 DATA [illegible]
9032 DATA [illegible]
9033 DATA [illegible]
9034 DATA [illegible]
9035 DATA [illegible]
9036 DATA [illegible]
9037 DATA [illegible]
9038 DATA [illegible]
9039 DATA [illegible]
9040 DATA [illegible]
9041 DATA [illegible]
9042 DATA [illegible]
9999 END
```

```
WELCOME TO THE GAME OF SURVIVAL. WOULD
YOU LIKE INSTRUCTIONS?
? Y
YOU HAVE CRASH LANDED ON THE
EARTH'S MOON. YOU HAVE LIMITED
SUPPLIES AND TIME IN WHICH TO
SURVIVE. TO TRAVEL, YOU MAY
ENTER DIRECTIONS SUCH AS NORTH
OR N, AS WELL AS S, E, W AND
U, AND D (UP AND DOWN). YOU
WILL ENCOUNTER VARIOUS ITEMS
AND SITUATIONS DURING YOUR
TRAVELS. TO COMMUNICATE, ENTER
COMMANDS (VERB) FOLLOWED BY
OBJECT NAMES (IF APPLICABLE).
FOR EXAMPLE, GET KEY, LEAVE,
USE, AND INVENTORY.
ONCE YOU HAVE SURVIVED, THE
OBJECT THEN IS TO ACHIEVE THE
OPTIMUM SURVIVAL TIME.
    *** GOOD LUCK ***
ELAPSED TIME:  0 MINUTES
POWER UNIT:  [illegible] UNITS
OXYGEN REMAINING:  180 MINUTES
PRESENT LOCATION STATUS: YOU ARE
AT MARE SERENITATIS. LONG EERIE SHADOWS
FROM DISTANT MOUNTAINS AND CRATERS CAST
THEMSELVES ACROSS THE BARREN LANDSCAPE.
**
? N
ELAPSED TIME:  4 MINUTES
POWER UNIT:  [illegible] UNITS
OXYGEN REMAINING:  176 MINUTES
PRESENT LOCATION STATUS: YOU ARE
AT THE BASE OF THE APENNINE MT. RANGES.
**
? N
ELAPSED TIME:  10 MINUTES
POWER UNIT:  [illegible] UNITS
OXYGEN REMAINING:  170 MINUTES
PRESENT LOCATION STATUS: YOU ARE
INSIDE THE CRATER OF ARISTOTELES. THE
CENTER FLOOR IS LITTERED WITH ROCKS.
**
? N
ELAPSED TIME:  17 MINUTES
POWER UNIT:  [illegible] UNITS
OXYGEN REMAINING:  163 MINUTES
PRESENT LOCATION STATUS: YOU ARE
AT THE BASE OF THE DOME CENTER IN LACUS
MORTIS. THE SURFACE IS VERY SOFT HERE.
**
? DIG
THERE IS DILITHIUM CRYSTALS HERE.
? GET CRYSTALS
O.K.
```

Survival

```
> INVENTORY
YOU HAVE AN OXYGEN VESSEL.
YOU HAVE DILITHIUM CRYSTALS.
YOU HAVE A POWER UNIT.
> E
ELAPSED TIME:  10 MINUTES
POWER UNIT:  150 UNITS
OXYGEN REMAINING:  150 MINUTES
PRESENT LOCATION STATUS: YOU ARE
AT MARS DESERTSCAPE. LONG EERIE SHADOWS
FROM DISTANT MOUNTAINS AND CRATERS CAST
THEMSELVES ACROSS THE BARREN LANDSCAPE.
█
> S
ELAPSED TIME:  15 MINUTES
POWER UNIT:  145 UNITS
OXYGEN REMAINING:  145 MINUTES
PRESENT LOCATION STATUS: YOU ARE
AT A PASS IN THE MOUNTAINS OF MARS.
█
> E
ELAPSED TIME:  20 MINUTES
POWER UNIT:  140 UNITS
OXYGEN REMAINING:  140 MINUTES
PRESENT LOCATION STATUS: YOU ARE
AT A STEEP BANK OF THE CRATER [illegible].
█
>
```

Trucker



Trucker was written by Richard R. Galbraith and first appeared in the March 1981 issue of Creative Computing.

Trucker is a program which simulates the problems facing a long-haul truck driver. Ideally, you can make a good living hauling freight coast-to-coast without exceeding the legal load limit. If all goes well, you can obey the speed limits and stop each night for eight hours sleep and still make the time schedule. On a good trip you will be able to earn well over $1,000. However, even the best drivers run into occasional streaks of bad luck and may barely break even.

Bad weather, road construction, or a flat tire can place you behind schedule and cut up your profits. You may try to increase your profits by skimping on sleep, driving fast, or carrying an overweight load. However, pushing too hard raises the risk of a traffic accident, and you will be fined if you are caught breaking the law.

Your Truck

You are driving an 18-wheel tractor-trailer combination that can hold 50,000 pounds of cargo (18,000 pounds more than the legal limit). You are buying your truck through a bank loan that requires payment of $1,955 per month, or $85 for each working day. This amount includes reserves for taxes and insurance.

Your truck has a 200-gallon fuel tank and gets 4.5 miles per gallon of diesel fuel. Your mileage decreases when you drive faster or slower than 55 miles per hour. Your fuel gauge is accurate to within 5 gallons and your speedometer is accurate to within 3 miles per hour.

Accidents

It is extremely unlikely that you will be involved in a traffic accident in good weather if you drive at a reasonable speed and get enough rest. The danger increases dramatically if you drive at an excessive rate of speed, fail to slow down in fog or a blizzard, or continue driving after you have become fatigued. An exhausted driver speeding through a snow storm is asking for trouble.

There is always the danger of losing time due to a flat tire. This danger can be reduced by purchasing retreads or more expensive tires before you start your trip, and by promptly replacing your spare tire after a flat.

Speeding

The speed limit is 55 miles per hour unless otherwise posted. Generally, Smokey will allow some leeway before pulling you over, but the faster you go the more likely you are to attract his attention. There are also a couple of places along the way where a radar speed trap may be in operation with strict enforcement.

Whenever you get a traffic ticket, you will lose time as you wait to pay your fine at the Justice of the Peace. If you receive more than three traffic tickets, you lose your Interstate Commerce Commission driver's license.

Truck Stops

Every three or four hours you will approach a truck stop. Each stop will take at least one hour while you get coffee, fuel and a spare tire if necessary. The price of diesel fuel and tires will vary unpredictably; diesel fuel will average about $1.00 per gallon.

Truck stops are also the only places where you can sleep. You may choose when to sleep, but, if you attempt to sleep during the day, you will be disturbed by traffic noise.

Cargo

You can select one of three types of cargo to haul for each trip.

1. U.S. Mail. This contract will pay $.0475 per pound, or $1,900 for a 40,000 pound load upon delivery.
2. Freight Forwarding. This contract pays $.05 pound, or 2,000 for a load. However, there is a 10% penalty that is subtracted if you are more than 12 hours late in delivering your freight.
3. Oranges. This contract will pay $.065 per pound of good oranges delivered to New York, which amounts to $2,600 for a standard load. You are required to run the air-conditioning unit in your trailer in order to keep the oranges from rotting or freezing. This uses 7 gallons of diesel fuel per hour while you sleep.

Routes

You can choose one of three routes: the northern route, the middle route or the southern route. Let's look at each route in detail.

Northern Route

This route is the shortest but also the riskiest. You will leave from Los Angeles on Interstate 15 and drive through Las Vegas and Denver. You then take Interstate 80 through Nebraska, northern Ohio and Pennsylvania. The total mileage is 2,710. You will pay a total of $185 in tolls and have one chance in eight of avoiding weighing stations. The danger of bad weather is high, and the speed limit is vigorously enforced.

Middle Route

The middle route follows old Route 66 from Los Angeles through northern Arizona and Oklahoma into St. Louis. Then you cut over to the Pennsylvania Turnpike and follow through to New York. The total distance to New York is 2,850 miles. The toll road portions will cost you $240 in fees. This route has fewer Smokies watching your speed and the weather conditions are much more favorable than the Northern route. However, watch the weight in your trailer since there are usually several truck scales in operation.

Southern Route

This route takes you from Los Angeles on Interstate 10 through Arizona, New Mexico, and Texas. You then follow Interstate 20 to Atlanta before heading north to Washington, D.C. The last leg of your journey follows Interstate 95 up the Atlantic coast. The mileage is 3120, much longer than the other routes. However, it is the safest route because you avoid much of the bad weather. Tolls amount to only $95 and you will run into fewer police and fewer truck scales. If you cannot resist the temptation to take on an over-weight cargo or if you have a lead foot, this is the best route for you to take.

Trucker

```
10 REM--INDEPENDENT TRUCKER SIMULATION
20 REM--BY CREATIVE COMPUTING
30 REM--[illegible]
70 DIM [illegible]
80 CLS
85 PRINT"                    INDEPENDENT TRUCKER SIMULATION"
90 WE$(1)="First":WE$(2)="Second":WE$(3)="Third":WE$(4)="Fourth"
95 DA$(0)="Monday":DA$(1)="Tuesday":DA$(2)="Wednesday"
96 DA$(3)="Thursday":DA$(4)="Friday":DA$(5)="Saturday":DA$(6)="Sunday"
100 PRINT@704,"DO YOU WANT TO SEE INSTRUCTIONS";
110 INPUT A$:IF LEFT$(A$,1)="N" OR LEFT$(A$,1)="n" THEN 1000 ELSE 4000
1000 CLS:[illegible]
1010 PRINT@128," "
1020 PRINT"You are at the Los Angeles Trucking Terminal"
1030 PRINT"Three types of cargo are available:"
1040 PRINTTAB(5)"1--ORANGES  (highest profit if they don't spoil)"
1050 PRINTTAB(5)"2--FREIGHT FORWARDING  (penalty for late delivery)"
1060 PRINTTAB(5)"3--U.S. MAIL  (lowest rate, but no hurry to arrive)"
1070 PRINT"The cargo is due in New York by 4 pm on Thursday."
1075 INPUT"Which type of cargo do you want";CT
1080 IF CT<1 OR CT>3 PRINT"Pick a number: 1, 2, or 3":GOTO1075
1090 INPUT"How many pounds will you carry (40000 is the legal limit)";WL
1100 IF WL<20000 PRINT"You can't make a living on half a load.":GOTO 1090
1110 PRINT:PRINTTAB(5)"They are loading your truck now."
1120 RESTORE
1140 FOR XT=0 TO 3
1150 READ NR, PT(XT)
1160 FOR I=1 TO NR
1170 READ WP(XT,I), WD(XT,I), WA(XT,I), WR(XT,I)
1180 NEXT I,XT
1190 [illegible]
1200 IF WL>50000 THEN WL=50000 ELSE 1220
1210 PRINT"50,000 pounds of cargo has filled your trailer!"
1211 FOR I=1 TO [illegible]:NEXT I
1220 [illegible]
1225 PRINT"You have nearly a full tank (cost of fuel: $ 200).":PRINT
1230 INPUT"Two of your tires are worn.  Do you want replacements";I$
1240 IF LEFT$(I$,1)="N" OR LEFT$(I$,1)="n" THEN 1350
1250 PRINT"A NEW tire costs $200.   A RETREAD costs $100.":PRINTTAB(5);
1260 INPUT"Which type do you want";Z$:PRINTTAB(5);:Z$=LEFT$(Z$,1)
1270 INPUT"How many";T
1280 IF T>2 IF Z$="R" OR Z$="r" THEN [illegible]
1290 IF T<0 OR T>2 THEN 1330
1300 IF T=0 THEN 1350
1310 IF Z$="N" OR Z$="n" THEN [illegible]
1320 IF Z$="R" OR Z$="r" THEN [illegible]
1330 PRINT"I did not understand your answers.":PRINT"Let's try again"
1340 PRINTTAB(5);:GOTO1230
1350 PRINT:PRINT"You may choose the Northern, Middle or Southern route."
1360 INPUT"   Which route do you choose";Z$:Z$=LEFT$(Z$,1)
1365 IF Z$="N" OR Z$="n" THEN [illegible]:GOTO 1400
1370 IF Z$="M" OR Z$="m" THEN [illegible]:GOTO 1400
1375 IF Z$="S" OR Z$="s" THEN [illegible]:GOTO 1400
1380 PRINT"Please, answer: NORTH, MIDDLE, or SOUTH !"
1390 GOTO1360
1400 [illegible]
1410 [illegible]
1420 [illegible]
1430 [illegible]
1440 [illegible]
1450 [illegible]
1460 [illegible]
1470 [illegible]
1480 [illegible]
1490 [illegible]
1500 [illegible]
1510 [illegible]
1520 [illegible]
1530 FOR I=1 TO 250:NEXT I
1550 [illegible]
1560 PRINT@64,"Approximate funds:";[illegible]
1570 PRINTTAB(8)"Odometer:";[illegible]"miles to go:";[illegible]
1580 PRINT
1590 PRINT"  MILEPOST
1600 IF [illegible] GOTO 2000 ELSE PRINT"Cruising on ";[illegible]
1610 GOSUB 3000:PRINT"You are feeling ";[illegible]
1620 GOSUB 3500:PRINT"Current weather: ";[illegible]
1630 [illegible] GOSUB 1700
```

```
1640 INPUT"How fast do you wish to go";SP
1650 IF SP< 10 THEN PRINT"YOU HAVE TO GO AT LEAST 10 -- ";:GOTO 1640
1660 IF SP> INT(1.1*SL) THEN SP= INT(1.1*SL) ELSE 1670
1665 PRINT"You can only get the old rig to go";SP;"mph on this road."
1670 GOTO 1400
1700 REM''
1710 INPUT"TRUCK STOP AHEAD.   Do you want to stop";S$
1720 IF LEFT$(S$,1)="n" OR LEFT$(S$,1)="N" THEN ND=1:ND=ND+1:RETURN
1730 IF LEFT$(S$,1)<>"Y" AND LEFT$(S$,1)<>"y" INPUT"YES or NO";S$:GOTO1720
1740 F= RT +INT(5*RND(1))
1750 PRINT"Diesel fuel costs";F;"cents a gallon."
1760 INPUT"    How many gallons do you want";FG
1770 IF FG>0 PRINT"PAY";:PRINTUSING"$###.##";F*FG/100:DO=DO+F*FG/100:WF=WF+FG
1780 PRINT"So far, you have spent ";:PRINT "$";DO
1790 IF WF > 200 PRINT"The tank holds 200 gallons--";INT(WF-200);"gallons spilled!
1795 WF=200
1800 IF TD=0 THEN 1900
1810 TC= 100 +INT(10*RND(1)):TI=100 +INT(50*RND(1))
1820 PRINT"A NEW tire costs $";TC;"    A RETREAD costs $";TI
1830 INPUT"    Do you want to buy a tire";S$
1840 IF LEFT$(S$,1)="N" OR LEFT$(S$,1)="n" THEN 1900
1850 INPUT"    Choose:  New or Retread";S$
1860 IF LEFT$(S$,1)="N" OR LEFT$(S$,1)="n" THEN DO=DO+TC:TD=TD-1:GOTO1900
1870 IF LEFT$(S$,1)="R" OR LEFT$(S$,1)="r" THEN DO=DO+TI:TR=TR+1:GOTO1900
1880 PRINT"I DID NOT UNDERSTAND YOUR ANSWER.":GOTO1850
1900 GET Z$:TN=0
1910 INPUT"Do you want to get some sleep";S$
1920 IF LEFT$(S$,1)="N" OR LEFT$(S$,1)="n"  GOSUB 2100:GOTO 2010
1930 INPUT"    How many hours of sleep";T
1940 IF T<1 GOTO 2010
1945 IF T>12 THEN PRINT"NOBODY NEEDS THAT MUCH SLEEP" GOTO 1930
1946 FOR DE = 1 TO 2000:NEXT:GOSUB2100
1950 DH= DH -24*INT(DH/24)
1960 DH= DH+T:IF(DH)[illegible] THEN [illegible]
1965 IF(DH)<6 THEN WT=T:GOTO1970
1970 IF(DH)<21 OR DH>12 THEN GOTO 1980
1975 T=INT(T/2+.5)
1976 PRINT"Thanks to the daytime noise, you got only";T;"hours of real sleep."
1980 ST=ST+T
1990 IF T>3 THEN HL=0 ELSE HL=HL/2
2010 GOSUB2100:PRINT"Time to hit the road again."
2015 PRINT"You now have ";WF;"gallons of fuel."
2016 INPUT"Do you want to buy more";S$
2017 IF LEFT$(S$,1)="Y" OR LEFT$(S$,1)="y" THEN 1740
2020 IF SL<55 PRINT"REMEMBER, the current speed limit is";SL;"mph."
2025 RETURN
2100 REM** DISPLAY DAY & TIME
2110 DH=DH+T
2120 DD=INT(DH/24):DH=DH -24*DD
2130 IF DH<0 THEN DD=DD-1:DH=DH+24
2140 DM$="am"
2150 IF DH=12 THEN DM$="noon":GOTO 2200
2160 IF DH>12 THEN DH=DH-12:DM$="pm"
2170 IF DH=0 THEN DH=12:DM$="midnight"
2200 P1=PEEK(46820):P2=PEEK(46821)
2210 PRINT@0,"                Day: ";[illegible];"Time:";DH;DM$
2220 POKE 46820,P1:POKE 46821,P2
2230 RETURN
2300 REM** SPEEDING
2310 IF (SP-SL-5)/SL< RND(1) RETURN
2320 PRINT"SMOKEY is behind you with his lights on.    PULL OVER!"
2330 NT=NT+1:PRINT"See the JUSTICE of the PEACE for your ";NT;" offense"
2340 PRINT"    Wait";SH;"hours for your hearing"
2370 HH=HH+SH:HL=HL+SH
2380 IF NT>3 THEN 2430
2390 F=10*INT(5*RND(1))+ 3*(SP-SL)*RND(1)
2400 PRINT"    FINE is ";:PRINTUSING"$###";F;
2401 PRINT" plus $";TS;"for each MPH over the limit."
2410 PRINT"    PAY $";:PRINT F+TS*(SP-SL):DO=DO+F+TS*(SP-SL)
2420 FOR I=1 TO 1000:NEXT:RETURN
2430 PRINT"  You are sentenced to 30 days in jail for reckless driving."
2440 FOR I=1 TO 500:NEXT I
2450 PRINT"Your I.C.C. Driver's License is revoked !"
2460 GOTO5000
2500 REM** OUT OF GAS
2510 TI=TI+WF/WF*ML:WF=0
2520 T=(4.5 -3.5*RND(1))*MI:[illegible]
2530 PRINT"After";MI;"more miles, you ran out of fuel  (DUMMY !!)"
```

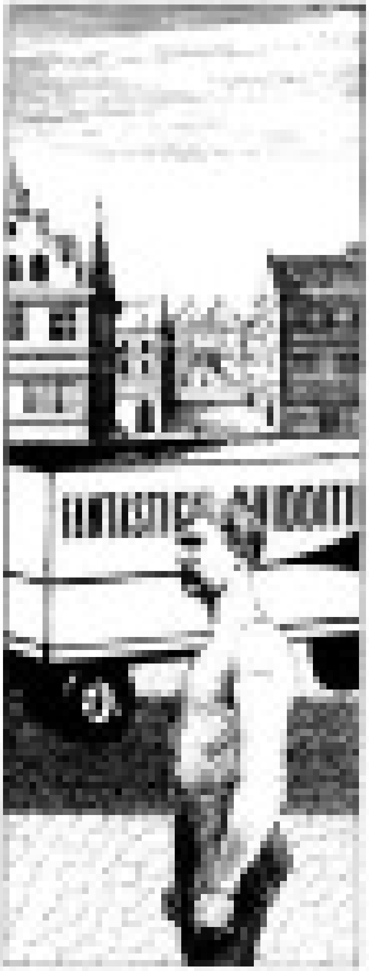
Trucker

```
2540 PRINT"   It cost $ 200 to get a barrel of diesel delivered."
2550 [illegible]
2560 [illegible]"   You also wasted";[illegible];"hours by your carelessness."
2570 IF CU=1 THEN [illegible]
2575 PRINT"   Idling with the reefer unit off is damaging the oranges."
2580 FOR I=1 TO 500:NEXT
2590 RETURN
2600 REM**  FLAT TIRE
2620 PRINT"You just blew a tire !!"
2630 IF TS=0 THEN 2700
2640 [illegible]
2650 T=RND(1):IF T<.5 THEN T$="outside" ELSE T$="inside"
2660 PRINT"   It took";T;"hours to change the ";T$;" tire.":[illegible]
2670 FOR I=1 TO 750:NEXT:RETURN
2700 REM  NO SPARE
2710 PRINT"Since your spare has already been used, you have to call a tow ";
2711 PRINT"truck from town to deliver a new tire to you."
2720 PRINT"   This service cost $ 400 and took 4 hours."
2730 [illegible]
2740 FOR I=1 TO 1500:NEXT:RETURN
2800 REM**  ROAD CONDITIONS
2810 [illegible] GOTO 2870,2870,2930
2820 IF AP<3100 AND [illegible] THEN 2960
2830 IF AP<4010 THEN 2960
2840 IF AP<4020 THEN 2970
2850 IF AP<3830 THEN 2970
2860 GOTO 2980
2870 IF AP<2620 AND CU<10 THEN 2960
2880 IF AP<4900 THEN 2965
2890 IF AP<4100 THEN 2970
2900 IF AP<4200 OR RND(1)<.5 THEN 2975 ELSE 2950
2905 GOTO 2985
2910 IF AP<6000 AND CU<10 THEN 2960
2920 IF AP<5700 THEN 2965
2930 IF AP<5300 THEN 2970
2940 IF AP<6400 THEN 2980
2950 GOTO 2985
2960 CU=1:C$="CLEAR & DRY":RETURN
2965 CU=2:C$="B-L-I-Z-Z-A-R-D !!":RETURN
2970 CU=3:C$="FOG -- limited visibility":RETURN
2975 CU=4:C$="LIGHT SNOW":RETURN
2980 CU=5:C$="RAIN":RETURN
2985 CU=6:C$="CLEAR, but roadway is wet":RETURN
3000 REM**  CONDITION OF DRIVER
3010 IF HL>19 OR [illegible] THEN [illegible]:RETURN
3020 IF HL<3 AND [illegible] THEN CD=1:CD$="RESTED & READY TO GO.":RETURN
3030 IF HL<6 AND [illegible] THEN CD=2:CD$="FINE":RETURN
3040 IF HL<12 AND [illegible] THEN CD=3:CD$="  B O R E D":RETURN
3050 IF HL<16 AND [illegible] THEN CD=4:CD$="  T I R E D  !!":RETURN
3060 CD=5:CD$="EXHAUSTED...You're getting sleepy":RETURN
3100 REM***  MILEPOST
3110 PRINT"You have just passed ";[illegible]
3120 [illegible]
3130 ON [illegible] GOSUB [illegible]
3140 [illegible]:IF [illegible] THEN [illegible] ELSE [illegible]
3150 PRINT"Time Zone changes -- Set clock ahead one hour"
3160 [illegible]
3170 RETURN
3210 [illegible]
3220 PRINT"STOP!    Pay toll of ";[illegible]
3230 [illegible]
3240 RETURN
3260 IF RND(1)> [illegible] RETURN
3270 PRINT"CONSTRUCTION AHEAD !!":FOR I=1 TO 500:NEXT
3280 PRINT"SLOW DOWN -- SPEED limit 35 mph":SL=35
3290 RETURN
3400 IF RND(1)> [illegible] RETURN
3420 [illegible]
3430 PRINT"You were just clocked by RADAR at";[illegible];"MPH"
3440 IF [illegible] GOSUB [illegible] ELSE PRINT"    No ticket this time."
3450 RETURN
3500 IF [illegible] IF RND(1)<.5 THEN 3520 ELSE RETURN
3510 IF RND(1)> [illegible] RETURN
3520 PRINT"WEIGHING STATION OPEN  --  TRUCKS MUST STOP":FOR I=1 TO 500:NEXT
3530 PRINT"Scale weighs truck with cargo, fuel & driver: ";
3540 [illegible]
3550 PRINT USING "##,###";T;:PRINT" POUNDS."
3560 [illegible]
```

Trucker

```
3570 IF T<1 PRINT"      You're O.K.":RETURN
3580 IF [illegible] THEN [illegible]
3590 T1=[illegible]:PRINT"    Overweight fine is $ 200 plus";T1;"cents/pound"
3600 [illegible]/100
3610 PRINT"Pay fine of";:PRINT 200+[illegible]/100
3620 RETURN
3630 REM
3640 PRINT"You are not allowed to enter Louisiana with that load."
3650 PRINT"    Take a 200 mile detour through Arkansas with 45 mph limit."
3660 SL=45:PRINT,[illegible]"Arkansas country roads"
3670 FOR I=12 TO 15:[illegible]:NEXT
3680 [illegible]+200
3690 RETURN
3700 IF RND(0)> [illegible] RETURN
3710 H=RND(6)
3720 PRINT"A ROCK SLIDE has blocked the Allegheny Tunnel entrance"
3730 PRINT"    The Highway Department will have it cleared in";H;"hours"
3740 [illegible]
3750 IF T<1 THEN [illegible]
3760 IF [illegible] THEN [illegible]
3770 [illegible]
3780 PRINT"    While waiting, you got";[illegible];"hours of sleep"
3790 GOSUB 3130:RETURN
3800 PRINT"    You ran out of gas while waiting":[illegible]
3810 RETURN
3860 IF [illegible] RETURN
3870 IF RND(0)> [illegible] RETURN
3880 PRINT"The trailer refrigeration unit has failed endangering the cargo"
3890 PRINT"    Repairs take 2 hours and cost $ 100"
3900 [illegible]
3910 GOSUB 2000
3920 RETURN
4000 REM""
4020 FOR I=1 TO 5
4030 CLS:FOR J=1 TO 40:NEXT J
4040 PRINT@[illegible]"C R A S H  !!"
4050 FOR J=1 TO 50:NEXT J,I
4060 PRINT
4070 IF [illegible] PRINT"You fell asleep at the wheel":GOTO4130
4080 [illegible]PRINT"You drove into a [illegible] ditch.":GOTO4130
4090 IF [illegible] PRINT"You rearended a pickup with no tail lights":GOTO 4130
4100 IF [illegible] PRINT[illegible]"SPEED KILLS !":END
4110 IF [illegible] PRINT"You hit a slick spot and skidded off the road.":GOTO4130
4120 PRINT"A truck driver saved your life":PRINT[illegible]"TOUGH LUCK !"
4130 PRINT:[illegible]:NEXT I
4140 PRINT"You lose your truck & profits":PRINT
4150 PRINT:INPUT"Do you want to start over";[illegible]
4160 IF [illegible]="N" OR [illegible]="n" THEN CLS:END
4170 [illegible]:GOTO 1000
5000 REM""
5010 FOR I=1 TO 3
5020 CLS:FOR J=1 TO 40:NEXT J
5030 PRINT@[illegible],"WELCOME";[illegible],"TO";[illegible],"NEW YORK"
5040 FOR J=1 TO 50:NEXT J,I
5050 FOR I=1 TO 150:NEXT I:CLS
5100 [illegible]
5110 [illegible]:IF [illegible] THEN 5140
5120 PRINT"The warehouse is closed for the night.  Come back tomorrow."
5130 [illegible]:FOR I=1 TO 1500:NEXT I:GOSUB 3100
5140 [illegible]
5150 PRINT"You completed the trip in";[illegible];"days";
5160 IF [illegible] PRINT" &";[illegible];"hours." ELSE PRINT
5170 PRINT"    Trip expenses totaled ";:PRINT [illegible]
5175 IF [illegible] THEN [illegible]
5180 [illegible]:PRINT"    Truck payments, insurance & taxes cost ";:PRINT [illegible]
5190 [illegible]:PRINT
5200 ON [illegible] GOTO 5220,5310,5360
5220 [illegible]:IF [illegible] THEN [illegible]
5230 [illegible]PRINT"Your oranges have spoiled. Take them away!":[illegible]
5240 PRINT"Collect six-and-a-half cents per pound for good oranges."
5250 [illegible]:PRINT"    Total for the load: ";:PRINT [illegible]
5260 IF [illegible] THEN 5400
5270 PRINT"    Part of the load is damaged.  Subtract ";:PRINT [illegible]
5280 [illegible]:PRINT"    Net Payment is ";:PRINT [illegible]
5290 GOTO5400
5310 [illegible]:PRINT"Collect five cents a pound for freight."
5320 PRINT"    Total for load = ";:PRINT [illegible]
5330 [illegible] THEN 5400
```

```
3380 CX=1:PRINT"     You're late!!  Subtract ten percent penalty.":GOSUB3280
3390 PRINT"Postmaster pays 4.75 cents per pound on delivery.":NP=.0475*WL
3395 CX=0:GOSUB3280
3400 PRINT:NT=NT-SC:XX=XX+NT:IF NT<0 THEN 3470
3410 PRINT"Your net profit this trip was ";:PRINT NT
3420 IF NT>1000 PRINT"   G O O D   W O R K !!"
3430 IF XN>1 PRINT"   Your average profit has been";:PRINT XX/XN
3440 IF XX<200 OR XX/XN<150 PRINT"   You'd make more money washing dishes !"
3450 PRINT:PRINT:INPUT"Do you want to make another trip";Z$
3460 IF LEFT$(Z$,1)<>"Y" AND LEFT$(Z$,1)<>"y" THEN END ELSE CLS:END
3470 PRINT"BAD TRIP. . . YOU LOST";:PRINT ABS(NT)
3480 IF NX>0 GOTO 3410
3490 PRINT"     YOU ARE BANKRUPT !!!"
3500 REM -- LOSE TRUCK, END GAME
3510 PRINT:PRINT"Your rig has been repossessed."
3520 PRINT:END
3530 FOR I=1 TO 1100*TD:NEXT:RETURN
4000 CLS
4010 PRINTTAB(5)"This is a simulation of the problems facing a long haul"
4020 PRINT"truck driver.  Ideally, you can make a good living hauling"
4030 PRINT"freight coast-to-coast without exceeding the legal load limit,"
4040 PRINT"if all goes well, you can obey the speed limits, stop for"
4050 PRINT"8 hours sleep each night and still meet the schedule.":PRINT
4060 PRINTTAB(5)"Bad weather, road construction or flat tires may throw"
4070 PRINT"you behind schedule & eat up your profits.  You may try to"
4080 PRINT"increase your profits by skimping on sleep, driving fast, or"
4090 PRINT"carrying an overweight load.  However, pushing too hard raises"
4100 PRINT"the risk of a traffic accident, and you will be fined if you"
4110 PRINT"are caught breaking the law.":PRINT
4120 GOSUB8900:CLS
4130 PRINTTAB(20)"YOUR TRUCK":PRINT
4140 PRINTTAB(5)"You are driving an 18-wheel tractor trailer combination"
4150 PRINT"that can hold 70,000 pounds of cargo (15,000 more than the"
4160 PRINT"legal limit).  You are buying your truck through a bank loan"
4170 PRINT"that requires payment of $ 1,500 per month (including"
4180 PRINT"reserves for taxes & insurance).  This works out to $ 65 for"
4190 PRINT"each working day."
4200 PRINTTAB(5)"You have a 100 gallon fuel tank and get 4.5 miles per"
4210 PRINT"gallon of diesel oil.  Your mileage decreases when you drive"
4220 PRINT"either faster or slower than 55.  Your fuel gauge is accurate"
4230 PRINT"to within 5 gallons, and your speedometer is accurate to"
4240 PRINT"within 3 miles per hour.":PRINT
4250 GOSUB 8910:CLS
4260 PRINTTAB(20)"ACCIDENTS":PRINT
4270 PRINTTAB(5)"It is extremely unlikely that you will be involved in"
4280 PRINT"a traffic accident in good weather if you drive at a reasonable"
4290 PRINT"speed and get enough rest.  The danger increases dramatically"
4300 PRINT"if you drive at an excessive rate of speed, fail to slow down"
4310 PRINT"in fog or a blizzard, or continue driving after you become"
4320 PRINT"fatigued.  An exhausted driver speeding through a snow storm"
4330 PRINT"is asking for trouble."
4340 PRINTTAB(5)"There is always the danger of losing time because of"
4350 PRINT"a flat tire.  You can reduce the danger by starting the trip"
4360 PRINT"buying some retreads or more expensive new tires, and"
4370 PRINT"promptly replacing your spare after a flat."
4380 GOSUB 8920:CLS
4390 PRINTTAB(20)"SPEEDING":PRINT
4400 PRINTTAB(5)"The speed limit is 55 unless posted otherwise.  Generally,"
4410 PRINT"the police allow some leeway before pulling you over.  The"
4420 PRINT"faster you go the more likely you are to attract Smokey's"
4430 PRINT"attention.  There are also a couple of places along the way"
4440 PRINT"where a radar speed trap may be in operation with strict"
4450 PRINT"enforcement.":PRINT
4460 PRINTTAB(5)"Whenever you get a ticket, you will lose time as you wait"
4470 PRINT"to pay your fine at the Justice of the Peace.  Also, if you"
4480 PRINT"collect more than 3 tickets your Interstate Commerce"
4490 PRINT"commission driver's license will be revoked."
4500 GOSUB 8910:CLS
4510 PRINTTAB(18)"TRUCK STOPS":PRINT
4520 PRINTTAB(5)"Every three or four hours, you will approach a truck"
4530 PRINT"stop.  Each stop will take at least 1 hour, to get coffee,"
4540 PRINT"fuel, and a spare tire if necessary.  The price of diesel"
4550 PRINT"fuel and tires will vary unpredictably, but diesel will"
4560 PRINT"average about one dollar per gallon.":PRINT
4570 PRINTTAB(5)"Truck stops are also the only places where you can"
4580 PRINT"stop to sleep.  You may choose when to sleep, but attempts"
4590 PRINT"to sleep during the day will be interrupted by the traffic"
4600 PRINT"noise."
```

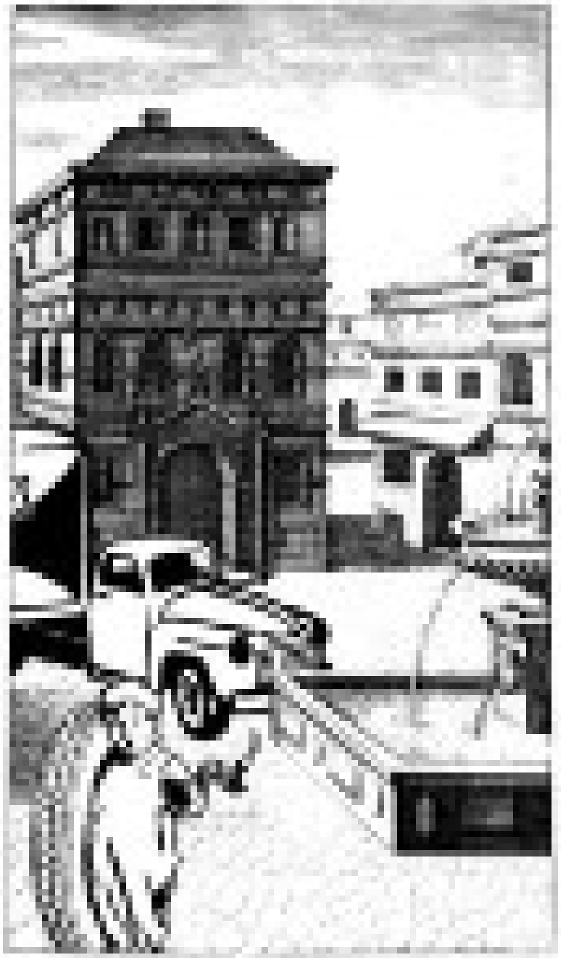


Trucker

```
6610 GOSUB 8910:CLS
6620 PRINTTAB(20)"CARGO":PRINT
6630 PRINT"You can choose one of three types of cargo for each trip:"
6640 PRINTTAB(5)"U.S. MAIL: The contract pays 4.75 cents per pound,"
6650 PRINT" or $ 1,900 for a 40,000 lb. load, whenever you deliver."
6660 PRINTTAB(5)"FREIGHT FORWARDING: Pays five cents a pound, or"
6670 PRINT"$ 2,000 for a load. However, there is a ten percent penalty"
6680 PRINT"subtracted if you are more than 12 hours late."
6690 PRINTTAB(5)"ORANGES: Require running the air-conditioning unit in"
6700 PRINT"your trailer to keep them from freezing or rotting, so you"
6710 PRINT"will burn 7 gallons of diesel per hour while you sleep."
6720 PRINT"You will be paid six-and-one-half cents per pound of good"
6730 PRINT"oranges delivered in New York. That's $ 2,600 for a standard"
6740 PRINT"load."
6750 GOSUB 8900:CLS
6760 PRINTTAB(17)"ROUTES":PRINT
6770 PRINT"You can choose one of three routes. The Northern is the"
6780 PRINT"shortests, but riskiest. The Southern is the longest and"
6790 PRINT"safest.":PRINT
6800 PRINTTAB(11)"NORTHERN ROUTE"
6810 PRINTTAB(5)"Leave Los Angeles on Interstate 15. Drive through"
6820 PRINT"Las Vegas, & Denver. Then follow Interstate 80 through"
6830 PRINT"Nebraska, northern Ohio & Pennsylvania. Total distance is"
6840 PRINT"2,710 miles. You will pay $ 195 in tolls, and have you"
6850 PRINT"chance in sight of avoiding weighing stations. The danger"
6860 PRINT"of bad weather is high and the speed limit is vigorously"
6870 PRINT"enforced."
6880 GOSUB 8910:CLS
6890 PRINTTAB(11)"MIDDLE ROUTE":PRINT
6900 PRINTTAB(5)"The middle route follows old Route 66 through"
6910 PRINT"northern Arizona and Oklahoma into St. Louis. From there"
6920 PRINT"you cut over to the Pennsylvania Turnpike. Total distance"
6930 PRINT"to New York is 2,900 miles. The toll road portions will cost"
6940 PRINT"you an extra $ 102 in fees. This route has fewer police"
6950 PRINT"watching your speed and better weather than the Northern"
6960 PRINT"route. However, watch your weight because there are"
6970 PRINT"signific several truck scales in operation."
6980 GOSUB 8910:CLS
6990 PRINTTAB(11)"SOUTHERN ROUTE":PRINT
7000 PRINTTAB(5)"The southern route takes you on Interstate 10 through"
7010 PRINT"Arizona, New Mexico & Texas. Then you follow Interstate 20"
7020 PRINT"to Atlanta before heading north to Washington D.C. The"
7030 PRINT"last leg of your journey follows Interstate 95 up the Atlantic"
7040 PRINT"seaboard. This route is the longest, at 3110 miles."
7050 PRINT"However, you avoid most of the bad weather and pay only $ 45"
7060 PRINT"in tolls. You also will run into fewer police and fewer"
7070 PRINT"truck scales. If you can't resist the temptation to take on"
7080 PRINT"an over-weight cargo or if you have a lead foot, then the"
7090 PRINT"southern route offers your best bet."
7100 GOSUB 8910:CLS
7110 PRINTTAB(20)"FINAL TIPS"
7120 PRINTTAB(5)"You've seen a long explanation and may be confused"
7130 PRINT"by now. But don't worry, the game is easy to play. After"
7140 PRINT"you have tried a few trips, you may want to review the"
7150 PRINT"explanations again to pick up hints for improving your"
7160 PRINT"profits. On a good trip you will be able to earn over $1,000."
7170 PRINT"However, even the best drivers will run into occasional"
7180 PRINT"streaks of bad luck and barely break even."
7190 PRINTTAB(5)"When you play, the computer reports current conditions"
7200 PRINT"and events, and asks you to make decisions. You simply"
7210 PRINT"type your answer then hit 'ENTER'. For word answers, you"
7220 PRINT"can save time by typing only the first letter of the word."
7230 GOSUB 8910
7240 GOTO 1000
7990 END
8900 REM**
8910 PRINT@916,"PRESS ENTER TO CONTINUE";
8920 Z$=INKEY$:IF Z$=""THEN 8920 ELSE RETURN
9000 REM**  DATA
9030 DATA 21,2650
9040 DATA 90,BARSTOW,I-15 in California,7.80
9050 DATA125,NEEDLES,I-40 in California,1
9060 DATA 480,FLAGSTAFF,I-40 in Arizona,1.65
9070 DATA 630,GALLUP,I-40 in Arizona,5,5
9080 DATA 760,ALBUQUERQUE,I-40 in New Mexico,3.15
9090 DATA 930,TUCUMCARI,I-40 in New Mexico,3
9100 DATA 1040,AMARILLO,I-40 in Texas,7.80
9110 DATA 1255,OKLAHOMA border,I-40 in Texas,5.3
```

Trucker

```
9120 DATA 1305,OKLAHOMA CITY,I-40 in Oklahoma,2.95
9130 DATA 1530,MISSOURI Border,Oklahoma Turnpike,2.40
9140 DATA 1815,ST. LOUIS,I-44 in Missouri,0
9150 DATA 1980,TERRE HAUTE,I-70 in Illinois,5.5
9160 DATA 2050,INDIANAPOLIS,I-70 in Indiana,0
9170 DATA 2115,OHIO Border,I-70 in Indiana,1
9180 DATA 2220,COLUMBUS,I-70 in Ohio,5.5
9190 DATA 2350,WHEELING West Virginia,I-70 in Ohio,4.25
9200 DATA 2410,NEW STANTON,I-70 in Pennsylvania,4.75
9210 DATA 2570,HARRISBURG,Pennsylvania Turnpike,5.75
9220 DATA 2740,NEW JERSEY Border,Pennsylvania Turnpike,2.95
9230 DATA 2840,HOLLAND TUNNEL,I-95 in New Jersey,2.40
9240 DATA 9999,NEW YORK,New York Streets,0
9250 DATA 18,2718
9260 DATA 80,BARSTOW,I-15 in California,7.40
9270 DATA 245,LAS VEGAS,I-15 in California,1
9280 DATA 365,UTAH BORDER,I-15 in Nevada,0
9290 DATA 500,end of Interstate,I-15 in Utah,1.40
9300 DATA 595,SALINA,US-89 in Utah,4.50
9310 DATA 760,GRAND JUNCTION,I-70 in Utah,4.40
9320 DATA 1010,DENVER,I-70 in Colorado,1.75
9330 DATA 1190,NEBRASKA Border,I-76 in Colorado,1
9340 DATA 1450,OMAHA,I-80 in Nebraska,3.50
9350 DATA 1590,DESMOINES,I-80 in Iowa,4.75
9360 DATA 1750,ILLINOIS Border,I-80 in Iowa,7.5
9370 DATA 1910,GARY,I-80 in Illinois,2.50
9380 DATA 2050,OHIO Border,Indiana Turnpike,1.45
9390 DATA 2215,CLEVELAND,Ohio Turnpike,2.80
9400 DATA 2300,PENNSYLVANIA Border,I-80 in Ohio,4.10
9410 DATA 2615,EAST STROUDSBURG,I-80 in Pennsylvania,3.25
9420 DATA 2675,WASHINGTON BRIDGE,I-80 in New Jersey,2.25
9430 DATA 9999,NEW YORK,City Streets,0
9450 DATA 25,3120
9460 DATA 75,PALM SPRINGS,I-10 in California,0
9470 DATA 225,BLYTHE,I-10 in California,1
9480 DATA 375,PHOENIX,I-10 in Arizona,0
9490 DATA 495,TUCSON,I-10 in Arizona,7.5
9500 DATA 650,LORDSBURG,I-10 in Arizona,5.75
9510 DATA 795,EL PASO,I-10 in New Mexico,0
9520 DATA 965,PECOS,I-20 in Texas,1
9530 DATA 1080,ODESSA,I-20 in Texas,0
9540 DATA 1250,ABILENE,I-20 in Texas,1.80
9550 DATA 1435,DALLAS,I-20 in Texas,0
9560 DATA 1610,LOUISIANA Border,I-20 in Texas,4.00
9570 DATA 1785,VICKSBURG,I-20 in Louisiana,0
9580 DATA 1965,ALABAMA Border,I-20 in Mississippi,1
9590 DATA 2100,BIRMINGHAM,I-20 in Alabama,4.25
9600 DATA 2200,GEORGIA Border,I-20 in Alabama,0
9610 DATA 2285,ATLANTA,I-20 in Georgia,0
9620 DATA 2520,CAROLINA Border,I-85 in Georgia,5.75
9630 DATA 2585,GREENSBORO,I-85 in North Carolina,1.80
9640 DATA 2680,VIRGINIA Border,I-85 in North Carolina,7.10
9650 DATA 2775,RICHMOND,I-85 in Virginia,0
9660 DATA 2880,WASHINGTON D.C.,I-95 in Virginia,0
9670 DATA 2920,BALTIMORE,I-95 in Maryland,2.30
9680 DATA 2990,NEW JERSEY Border,I-95 in Delaware,2.25
9690 DATA 3110,HOLLAND TUNNEL,New Jersey Turnpike,2.45
9700 DATA 9999,NEW YORK,City Streets,0
```



```
                    CROSS-COUNTRY TRUCKER SIMULATION
DO YOU WANT TO SEE INSTRUCTIONS? N
              Day: Monday                 Time: 8 am

You are at the Los Angeles Trucking Terminal
Three types of cargo are available:
     1--BANANAS  (highest profit if they don't spoil)
     2--[illegible] [illegible]    (penalty for late delivery)
     3--U.S. Mail  (lowest rate, but no hurry to arrive)
The cargo is due in New York at 4 pm on Thursday.
Which type of cargo do you want? 1
How many pounds will you carry (40000 is the LEGAL limit)? 40000

     They are loading your truck now.
              Day: Monday                 Time: 9 am

You have nearly a full tank (cost of fuel: $ 190).
```

Trucker

```
Two of your tires are worn.
     Do you want replacements? Y
A new tire costs $200.   A retread costs $100.
     Which type do you want? N
     How many? 2

You may choose the northern, middle or southern route.
   Which route do you choose? M
Cruising on I-15 in California
You are feeling RESTED & READY TO GO.
Current weather: CLEAR & DRY
How fast do you wish to go? 65
            Day: Monday                Time: 10 am
Approximate FUEL: 167                 SPEED: 65
 .      Odometer: 65           Miles to go: 2765

Cruising on I-15 in California
You are feeling FINE
Current weather: CLEAR & DRY
How fast do you wish to go? 65
            Day: Monday                Time: 11 am
Approximate FUEL: 137                 SPEED: 65
        Odometer: 130          Miles to go: 2700

You have just passed BARSTOW
Cruising on I-40 in California
You are feeling FINE
Current weather: CLEAR & DRY
How fast do you wish to go? 70
            Day: Monday                Time: 12 noon
Approximate FUEL: 103                 SPEED: 70
        Odometer: 200          Miles to go: 2630

Cruising on I-40 in California
You are feeling FINE
Current weather: CLEAR & DRY
TRUCK STOP AHEAD.    Do you want to stop? N
How fast do you wish to go? 60
            Day: Monday                Time: 1 pm
Approximate FUEL: 84                  SPEED: 60
        Odometer: 260          Miles to go: 2570

You have just passed NEEDLES
Time zone changes -- Set clock ahead one hour
            Day: Monday                Time: 2 pm
Cruising on I-40 in Arizona
You are feeling FINE
Current weather: CLEAR & DRY
How fast do you wish to go? 65
            Day: Monday                Time: 3 pm
Approximate FUEL: 61                  SPEED: 65
        Odometer: 325          Miles to go: 2505


Cruising on I-40 in Arizona
You are feeling   B O R E D
Current weather: CLEAR & DRY
How fast do you wish to go? 55
            Day: Monday               Time: 4 pm
Approximate FUEL: 52                 SPEED: 55
       Odometer: 380          Miles to go: 2450

Cruising on I-40 in Arizona
You are feeling   B O R E D
Current weather: CLEAR & DRY
TRUCK STOP AHEAD.    Do you want to stop? Y
Diesel fuel costs 91 cents a gallon.
     How many gallons do you want? 150
PAY $136.50
So far, you have spent $ 536.5
Do you want to get some sleep? N
           Day: Monday                Time: 5 pm
How fast do you wish to go? 55
           Day: Monday                Time: 6 pm
Approximate FUEL: 186                SPEED: 55
       Odometer: 435          Miles to go: 2395

Cruising on I-40 in Arizona
You are feeling   B O R E D
```

```
Current weather: CLEAR & DRY
How fast do you wish to go? 65
             Day: Monday                  Time: 7 p
Approximate FUEL: 167                      SPEED: 65
        Odometer: 500            Miles to go: 233

You have just passed FLAGSTAFF
Cruising on I-40 in Arizona
You are feeling   B O R E D
Current weather: CLEAR & DRY
How fast do you wish to go? 63
             Day: Monday                  Time: 8 p
Approximate FUEL: 139                      SPEED: 63
        Odometer: 563            Miles to go: 226

Cruising on I-40 in Arizona
You are feeling   T I R E D  !!
Current weather: CLEAR & DRY
How fast do you wish to go? 60
             Day: Monday                  Time: 9 p
Approximate FUEL: 113                      SPEED: 60
        Odometer: 623            Miles to go: 220

You have just passed GALLUP
WEIGHING STATION OPEN  --  TRUCKS MUST STOP
Scale weighs truck with cargo, fuel & driver:
    83,350 POUNDS.
    Overweight fine is $ 200 plus 5 cents/poun
Pay fine of 367.5
Cruising on I-40 in New Mexico
You are feeling   T I R E D  !!
Current weather: CLEAR & DRY
TRUCK STOP AHEAD.    Do you want to stop? Y
Diesel fuel costs 85 cents a gallon.
    How many gallons do you want? 177
PAY $150.45
So far, you have spent $ 1054.45
The tank holds 200 gallons-- 90 gallons spille
Do you want to get some sleep? Y
    How many hours of rest? 8
             Day: Tuesday                 Time: 6 a
Time to hit the road again.
You now have  200 gallons of fuel.
Do you want to buy more? N
How fast do you wish to go? 65
             Day: Tuesday                 Time: 7 a
Approximate FUEL: 178                     SPEED: 65
        Odometer: 688           Miles to go: 214

Cruising on I-40 in New Mexico
You are feeling RESTED & READY TO GO.
Current weather: CLEAR & DRY
How fast do you wish to go? 65
             Day: Tuesday                 Time: 8 a
Approximate FUEL: 149                     SPEED: 65
        Odometer: 753           Miles to go: 207

Cruising on I-40 in New Mexico
You are feeling RESTED & READY TO GO.
Current weather: CLEAR & DRY
How fast do you wish to go? 70
You can only get the old rig to go 62 mph on
    this road.
             Day: Tuesday                 Time: 9 a
Approximate FUEL: 126                     SPEED: 62
        Odometer: 815           Miles to go: 201

You have just passed ALBUQUERQUE
CONSTRUCTION AHEAD !!
SLOW DOWN -- SPEED LIMIT 35 mph
Cruising on I-40 in New Mexico
You are feeling FINE
Current weather: CLEAR & DRY
How fast do you wish to go? 61
You can only get the old rig to go 52 mph on
    this road.
             Day: Tuesday                 Time: 10 a
Approximate FUEL: 89                      SPEED: 52
        Odometer: 867           Miles to go: 196
```

Trucker

```
Cruising on I-40 in New Mexico
You are feeling FINE
Current weather: CLEAR & DRY
TRUCK STOP AHEAD.   Do you want to stop? Y
Diesel fuel costs 96 cents a gallon.
   How many gallons do you want? 111
Pay $106.56
So far, you have spent $ 1429.81
The tank holds 200 gallons-- 4 gallons spilled!
Do you want to get some sleep? N
                Day: Tuesday                  Time: 11 am
How fast do you wish to go? 90
You can only get the old rig to go 82 mph on
   this road.
                Day: Tuesday                  Time: 12 noon
Approximate FUEL: 161                       SPEED: 82
        Odometer: 969           Miles to go: 1881

You have just passed TUCUMCARI
Time zone changes -- Set clock ahead one hour
                Day: Tuesday                  Time: 1 pm
Cruising on I-40 in Texas
You are feeling FINE
Current weather: CLEAR & DRY
How fast do you wish to go? 80
SMOKEY is behind you with his lights on.
PULL OVER!
Go the JUSTICE of the PEACE for your first offense
   Wait 1 hours for your hearing
   Fine is $ 30 plus $ 2 for each MPH over the limit.
   Pay $ 70
                Day: Tuesday                  Time: 3 pm
Approximate FUEL: 138                       SPEED: 80
        Odometer: 1049          Miles to go: 1801

You have just passed AMARILLO
Cruising on I-40 in Texas
You are feeling FINE
Current weather: CLEAR & DRY
How fast do you wish to go? 65
                Day: Tuesday                  Time: 4 pm
Approximate FUEL: 91                        SPEED: 65
        Odometer: 1114          Miles to go: 1736

Cruising on I-40 in Texas
You are feeling   T I R E D
Current weather: CLEAR & DRY
How fast do you wish to go? 65
                Day: Tuesday                  Time: 5 pm
Approximate FUEL: 70                        SPEED: 65
        Odometer: 1174          Miles to go: 1676

You have just passed OKLAHOMA border
WEIGHING STATION OPEN  --  TRUCKS MUST STOP
Scale weighs truck with cargo, fuel & driver:
   14,490 POUNDS.
   Overweight fine is $ 100 plus 4 cents/pound
Pay fine of $69.60
Cruising on I-40 in Oklahoma
You are feeling   T I R E D
Current weather: CLEAR, but roadway is wet
TRUCK STOP AHEAD.   Do you want to stop? Y
Diesel fuel costs 101 cents a gallon.
   How many gallons do you want? 116
Pay $117.16
So far, you have spent $ 1220.75
Do you want to get some sleep? NO
                Day: Tuesday                  Time: 6 pm
How fast do you wish to go? 65
                Day: Tuesday                  Time: 7 pm
Approximate FUEL: 172                       SPEED: 65
        Odometer: 1244          Miles to go: 1606

Cruising on I-40 in Oklahoma
You are feeling   T I R E D
Current weather: CLEAR & DRY
How fast do you wish to go? 65
                Day: Tuesday                  Time: 8 pm
Approximate FUEL: 149                       SPEED: 65
        Odometer: 1309          Miles to go: 1541

You have just passed OKLAHOMA CITY
STOP!   PAY TOLL of $05.00
Cruising on Oklahoma Turnpike
You are feeling   T I R E D
Current weather: CLEAR & DRY
How fast do you wish to go? 70
                Day: Tuesday                  Time: 9 pm
Approximate FUEL: 115                       SPEED: 70
        Odometer: 1379          Miles to go: 1471

Cruising on Oklahoma Turnpike
You are feeling   T I R E D  !!
Current weather: CLEAR & DRY
How fast do you wish to go? 60
                Day: Tuesday                  Time: 10 pm
Approximate FUEL: 94                        SPEED: 60
        Odometer: 1439          Miles to go: 1411

Cruising on Oklahoma Turnpike
You are feeling   T I R E D  !!
Current weather: CLEAR, but roadway is wet
TRUCK STOP AHEAD.   Do you want to stop? Y
Diesel fuel costs 115 cents a gallon.
   How many gallons do you want? 106
Pay $121.90
So far, you have spent $ 1197.41
The tank holds 200 gallons-- 1 gallons spilled!
Do you want to get some sleep? Y
   How many hours of sleep? 8
                Day: Wednesday                Time: 7 am
Time to fill the tank again.
You now have  200 gallons of fuel.
Do you want to buy more? N
How fast do you wish to go? 65
                Day: Wednesday                Time: 8 am
Approximate FUEL: 172                       SPEED: 65
        Odometer: 1504          Miles to go: 1346

Cruising on Oklahoma Turnpike
You are feeling RESTED & RARING TO GO.
Current weather: CLEAR & DRY
How fast do you wish to go? 65
                Day: Wednesday                Time: 9 am
Approximate FUEL: 151                       SPEED: 65
        Odometer: 1569          Miles to go: 1281

You have just passed MISSOURI border
STOP!   PAY TOLL of $40.00
Cruising on I-44 in Missouri
You are feeling RESTED & RARING TO GO.
Current weather: CLEAR, but roadway is wet
How fast do you wish to go? 65
                Day: Wednesday                Time: 10 am
Approximate FUEL: 127                       SPEED: 65
        Odometer: 1634          Miles to go: 1216

Cruising on I-44 in Missouri
You are feeling FINE
Current weather: CLEAR & DRY
How fast do you wish to go? 65
                Day: Wednesday                Time: 11 am
Approximate FUEL: 97                        SPEED: 65
        Odometer: 1699          Miles to go: 1151

Cruising on I-44 in Missouri
You are feeling FINE
Current weather: CLEAR & DRY
TRUCK STOP AHEAD.   Do you want to stop? N
How fast do you wish to go? 65
                Day: Wednesday                Time: 12 noon
Approximate FUEL: 72                        SPEED: 65
        Odometer: 1764          Miles to go: 1086

Cruising on I-44 in Missouri
You are feeling FINE
Current weather: CLEAR & DRY
How fast do you wish to go? 65
```

Trucker

```
                 Day: Wednesday              Time: 1 pm
Approximate FUEL: 46                        SPEED: 65
        Odometer: 1829          Miles to go: 1021

You have just passed ST. LOUIS
Cruising on I-70 in Illinois
You are feeling FINE
Current weather: RAIN
How fast do you wish to go? 55
                 Day: Wednesday              Time: 2 pm
Approximate FUEL: 32                        SPEED: 55
        Odometer: 1884          Miles to go: 966

Cruising on I-70 in Illinois
You are feeling   B O R E D
Current weather: CLEAR & DRY
TRUCK STOP AHEAD.   Do you want to stop? Y
Diesel fuel costs 122 cents a gallon.
    How many gallons do you want? 148
PAY $173.06
So far, you have spent $ 2415.09
Do you want to get some sleep? N
                 Day: Wednesday              Time: 3 pm
How fast do you wish to go? 65
                 Day: Wednesday              Time: 4 pm
Approximate FUEL: 174                       SPEED: 65
        Odometer: 1949          Miles to go: 901

Cruising on I-70 in Illinois
You are feeling   B O R E D
Current weather: CLEAR & DRY
How fast do you wish to go? 65
                 Day: Wednesday              Time: 5 pm
Approximate FUEL: 167                       SPEED: 65
        Odometer: 2014          Miles to go: 836

You have just passed TERRE HAUTE
WEIGHING STATION OPEN  --  TRUCKS MUST STOP
Scale weighs truck with cargo, fuel & driver:
    83,311 POUNDS.
    Overweight fine is $ 200 plus 6 cents/pound
Pay fine of $11.46
Cruising on I-70 in Indiana
You are feeling   B O R E D
Current weather: FOG -- Limited visibility
How fast do you wish to go? 55
                 Day: Wednesday              Time: 6 pm
Approximate FUEL: 159                       SPEED: 55
        Odometer: 2069          Miles to go: 781

You have just passed INDIANAPOLIS
Cruising on I-70 in Indiana
You are feeling   B O R E D
Current weather: CLEAR & DRY
How fast do you wish to go? 65
                 Day: Wednesday              Time: 7 pm
Approximate FUEL: 151                       SPEED: 65
        Odometer: 2134          Miles to go: 716

You have just passed Ohio border
Time Zone changes -- Set clock ahead one hour
                 Day: Wednesday              Time: 8 pm
Cruising on I-70 in Ohio
You are feeling   T I R E D  !!
Current weather: CLEAR & DRY
TRUCK STOP AHEAD.   Do you want to stop? Y
Diesel fuel costs 115 cents a gallon.
    How many gallons do you want? 90
PAY $103.50
So far, you have spent $ 2528.05
Do you want to get some sleep? Y
    How many hours of rest? 8
                 Day: Thursday               Time: 5 am
Time to hit the road again.
You now have  230 gallons of fuel.
Do you want to buy more? N
How fast do you wish to go? 65
                 Day: Thursday               Time: 6 am
Approximate FUEL: 176                       SPEED: 65
```

```
        Odometer: 2199          Miles to go: 651

Cruising on I-70 in Ohio
You are feeling SUPERB & RARING TO GO.
Current weather: CLEAR & DRY
How fast do you wish to go? 65
                 Day: Thursday               Time: 7 a
Approximate FUEL: 168                       SPEED: 65
        Odometer: 2264          Miles to go: 586

You have just passed COLUMBUS
Cruising on I-70 in Ohio
You are feeling SUPERB & RARING TO GO.
Current weather: D-R-I-Z-Z-L-E  !!
How fast do you wish to go? 55
                 Day: Thursday               Time: 8 a
Approximate FUEL: 152                       SPEED: 55
        Odometer: 2319          Miles to go: 531

Cruising on I-70 in Ohio
You are feeling FINE
Current weather: CLEAR, but roadway is wet
How fast do you wish to go? 65
                 Day: Thursday               Time: 9 a
Approximate FUEL: 137                       SPEED: 65
        Odometer: 2384          Miles to go: 466

You have just passed WHEELING WEST VIRGINIA
You were just clocked by radar at 64 mph
SMOKEY is behind you with his lights on.
PULL OVER!
See the JUSTICE of the PEACE for your second
    offense
    Wait 1 hours for your hearing
    FINE is $ 30 plus $ 4 for each MPH over th
    limit.
    PAY $ 66
Cruising on I-70 in Pennsylvania
You are feeling FINE
Current weather: RAIN
TRUCK STOP AHEAD.   Do you want to stop? N
How fast do you wish to go? 82
SMOKEY is behind you with his lights on.
    PULL OVER!
See THE JUSTICE of the PEACE for your third
    offense
    Wait 2 hours for your hearing
    FINE is $ 30 plus $ 9 for each MPH over th
    limit.
    PAY $ 273
                 Day: Thursday               Time: 2 p
Approximate FUEL: 79                        SPEED: 82
        Odometer: 2466          Miles to go: 384

You have just passed NEW STANTON
Cruising on Pennsylvania Turnpike
You are feeling   B O R E D
Current weather: CLEAR & DRY
How fast do you wish to go? 65
                 Day: Thursday               Time: 4 p
Approximate FUEL: 46                        SPEED: 65
        Odometer: 2531          Miles to go: 319

Cruising on Pennsylvania Turnpike
You are feeling   T I R E D  !!
Current weather: CLEAR & DRY
How fast do you wish to go? 65
                 Day: Thursday               Time: 5 p
Approximate FUEL: 18                        SPEED: 65
        Odometer: 2596          Miles to go: 254

You have just passed HARRISBURG
Cruising on Pennsylvania Turnpike
You are feeling   T I R E D  !!
Current weather: CLEAR, but roadway is wet
TRUCK STOP AHEAD.   Do you want to stop? Y
Diesel fuel costs 115 cents a gallon.
    How many gallons do you want? 182
PAY $209.30
```

trucker

```
So far, you have spent $ 1485.51
Do you want to get some sleep? N
          Day: Thursday                Time: 6 pm
How fast do you wish to go? 65
          Day: Thursday                Time: 7 pm
Approximate FUEL: 173                 SPEED: 65
     Odometer: 1661         Miles to go: 189

Cruising on Pennsylvania Turnpike
You are feeling   T I R E D  !!
Current weather: CLEAR. but roadway is wet
How fast do you wish to go? 60
          Day: Thursday                Time: 8 pm
Approximate FUEL: 155                 SPEED: 60
     Odometer: 1721         Miles to go: 129

Cruising on Pennsylvania Turnpike
You are feeling   T I R E D  !!
Current weather: RAINY & COLD
How fast do you wish to go? 65
          Day: Thursday                Time: 9 pm
Approximate FUEL: 138                 SPEED: 65
     Odometer: 1786         Miles to go: 64

You have just passed NEW JERSEY Border
STOP   PAY TOLL of $15.00
Cruising on I-78 in New Jersey
You are feeling FATIGUED...You're getting sleepy
Current weather: CLEAR & DRY
How fast do you wish to go? 64
          Day: Thursday                Time: 10 pm
Approximate FUEL: 120                 SPEED: 64
     Odometer: 1850         Miles to go: 0

You have just passed HOLLAND TUNNEL
STOP   PAY TOLL of $40.00
Cruising on New York Streets
You are feeling FATIGUED...You're getting sleepy
Current weather: CLEAR & DRY
[illegible]   Do you want to stop? N
```

```
How fast do you wish to go? 30
WELCOME
TO
NEW YORK
WELCOME
TO
NEW YORK
WELCOME
TO
NEW YORK
WELCOME
TO
NEW YORK
WELCOME
TO
NEW YORK
                Day: Thursday              Time: 11 pm

You completed the trip in 3 days & 15 hours.
     Trip expenses totaled  2635.51
     Truck payments, Insurance & Taxes cost  420

Collect five cents a pound for freight.
     Total for load =  1700

BAD TRIP. . . You lost 1355.51
     You are BANKRUPT !!!

Your rig has been repossessed.
```

FANTASTIC COMMODITIES

How To Write An Adventure Game

by Greg Hassett

As I gazed back at the crystal bridge that I had just crossed, I could hear water rushing nearby. My brass lantern was getting dim, and I knew that I would have to rest soon. The wisps of white mist danced before my eyes as if alive, and a sudden cold chill ran up my spine. I had with me a diamond necklace which I was determined to keep. A nasty dwarf emerged from the gloom. He threw a sharp knife at me! I grabbed my axe and heaved it at him. His body vanished in a cloud of greasy black smoke. My lamp was now out; I would have to search for batteries tomorrow in the dark. So I put my necklace in my small leather sack and called it a day.

I did not lie down on the cavern floor and go to sleep. I merely turned off my home computer. I had been play a game called "Adventure." In this game, you explore a network of caves and pits in search of priceless treasure. This game is not the type of game which is mastered in an hour. It may take days, weeks, or even months to complete an Adventure.

This "original Adventure," developed at Stanford University a few years back by Willie Crowther and Don Woods, required large amounts of disk storage space. This made it very difficult to convert to run on a personal computer. However, other versions of Adventure have sprung up in the past year that are specifically designed to fit in the smaller machines.

To play Adventure, you enter commands to the computer in one- or two-word sentences in what seems to be English. A typical command might be "INSERT COIN" or "GET NECKLACE." To move about, you use commands such as "GO NORTH" to enter a new "location," and a new room description will be displayed. An example of such a description might be:

I AM IN A RADIANT CAVERN FORTY FEET HIGH. THE WALLS AND FLOORS ARE MADE OF SMOOTH MARBLE. THE POOLS OF CLEAR WATER ON THE FLOOR INDICATE AN OPENING HIGH ABOVE ME. UP ON THE CEILING GLOWS AN EERIE RED LIGHT.

AROUND ME I SEE: POOLS OF WATER. SMALL PLASTIC VIAL. . . .

Later on in the game, the vial might come in handy for holding some liquid, etc., so in this situation it might be wise to "GET VIAL."

The one thing that I feel makes Adventuring so interesting is the clues that are given as you explore.

Knowing that clues exist is one thing; isolating them and figuring out what they mean is quite another. In Adventure, clues exist everywhere. They are in the room descriptions, the object descriptions. Let's say you enter a room where there are many stalactites, but no stalagmites on the floor. This in itself is clue. If you think about it, stalagmites could be worn off if creatures lived there and walked through the cavern.

But statuettes would not be destroyed because most creatures cannot reach them.

Then there are the type of clues which have to be decoded. As an example, take the clue "MAGIC BREAK WORD BOTTLE BIMBO." This clue makes no sense at first glance. But then you notice that if you read alternate words of the clue, it deciphers into "MAGIC WORD BIMBO" and "BREAK BOTTLE."

Magic words are very popular in Adventures. A common use for these words is movement. They might be the only way to get to a completely different area of the Adventure. For example, in one Adventure the magic word "BIMBO" will magically take you from being lost in a maze of caves to a small jungle on the other side of an island. And there is no other way to get there.

In this way, Adventure is like a good mystery novel, with you being the ace detective. On the other hand, Adventure can be nerve-wracking, frustrating, and the source of serious insomnia! Adventure is a sort of puzzle . . . you have to fit all the pieces together to make it work.

I was first introduced to Adventure a few years back on a Digital Equipment Corporation PDP-11/70. I took an immediate liking to the game, but I didn't own a computer. When I purchased my Radio Shack TRS-80, I immediately set out to write an Adventure. The result was my first original Adventure, *Journey to the Center of the Earth*. When I found out I could sell this, I wrote six other Adventures: *The House of Seven Gables*, *Entry into King Tut's Tomb*, *Sorcerer's Castle*, *Voyage to Atlantis*, *Enchanted Island*, and *Enchanted Island-Plus* (a machine-language version with additional features).

If there's one thing that's more habit-forming than playing Adventures, it's writing them.

Writing Adventures

What follows is an attempt to outline the basic structure of the way an Adventure can be written in Basic.

The first step in writing a Basic Adventure is coming up with the plot. This means answering the questions:

"Where will the Adventure take place?"

"What will be the main purpose of the Adventure?"

"In what kind of world is this supposedly happening?"

"What types of obstacles will the player have to overcome?"

"How is the player going to get by these obstacles?"

Once these five questions are answered in your mind, you begin to draw the map of the Adventure. The general form of the map is shown in Figure 1. Once you have about 40 rooms (more if you are in machine language), you are ready to begin keying in the DATA. The way I do this is in the form:

line# DATA "room description",n,e,s,w,u,d

where line# is the Basic statement number, "room description" is the description of the room, n is the room north of it, e is the room east of it, s is the room south of it, etc. If n,e,s,w,u,or d are set to zero, then there is no way to go from that room in the corresponding direction.

The objects are set up somewhat differently. They are in the form:

line# DATA "object", (room),(value)

where line# is the Basic statement number, "object" is the description of the object, (room) is the room where the object resides at the start of the Adventure, and (value) [if the Adventure has treasures and points] is the number of points that the object is worth. If (room) is set to zero, then the object is currently nowhere. For instance, if a trap door is only revealed after the command "MOVE RUG" is executed, the starting room for the "TRAP DOOR" is zero. Later on, after the rug is moved, the trap door's room gets set to some number other than zero.

During the initial setup of the Adventure, the program READs all of this DATA into arrays P$(x), P(x,y), OB$(x), and OB(x,y). P$(x) holds the room description of room x. P(x,y) holds the room adjacent to room x in direction y. Direction 1 = North, direction 2 = East, direction 3 = South, direction 4 = West, direction 5 = Up, and direction 6 = Down. Also, after all of the room and object DATA has been read, the program proceeds to READ the vocabulary tables into arrays NO$(x) and VB$(x). The vocabulary is stored in this manner:

line# DATA noun1,noun2,noun3,
noun4, . . . noun x
line#2 DATA verb1, verb2, verb3,
verb4, . . . verbz

where line# and line#2 are Basic statement numbers, noun1–nounx are the vocabulary entries to be read into NO$(x) [nouns], and verb1–verbz are the vocabulary entries to be read into VB$(x) [verbs].

When the player enters a new room, the short routine in Listing 1 is executed. This will print the room description, its contents, and all possible directions leading out.

Parsing

Now that the Data Structure has been discussed, it becomes necessary to explain the parsing routine. This is the routine which will take the player's input, divide it into a verb/noun combination, compare it with the vocabulary tables, and returns with two numbers, stored in the variables VB and NO, each representing the offset in the vocabulary array. For instance, let's assume that "EAT" is verb number 28 [VB$(28)="EAT"] and "CHAIR" is noun number 12 [NO $(12)= "CHAIR"]. If the player inputs "EAT CHAIR" as his command, the parsing routine would get called, and upon return, NO would equal 12 and VB would equal 28. The main part of the program would then deal with these two numbers. Depending on the number stored in VB upon return from the parsing routine, the main part of the program would then jump to a verb routine.

Verb Routines

Each verb has its own special "verb routine" which is called by a large ON GOTO statement executed after the parsing routine. For each verb, there are usually only a few nouns which would make sense. For instance, for the "EAT" routine, "CHAIR" would have no meaning. In all probability, only the noun "FOOD" would make any sense with "EAT." If any other noun was entered, the message "DON'T BE RIDICULOUS" would be output, and control would return to the input/parsing routine. If the noun was "FOOD," then the room# for the food would be set to zero [the food is nonexistent once it has been eaten] and the message "MMM, GOOD," would be output. Control would then be transferred back to the input/parsing routine.

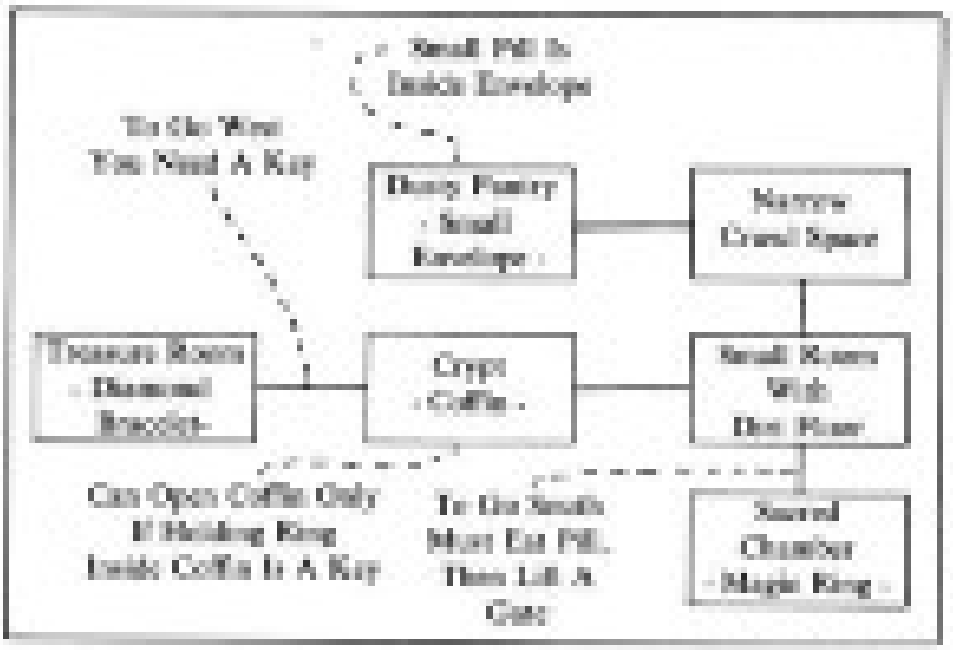
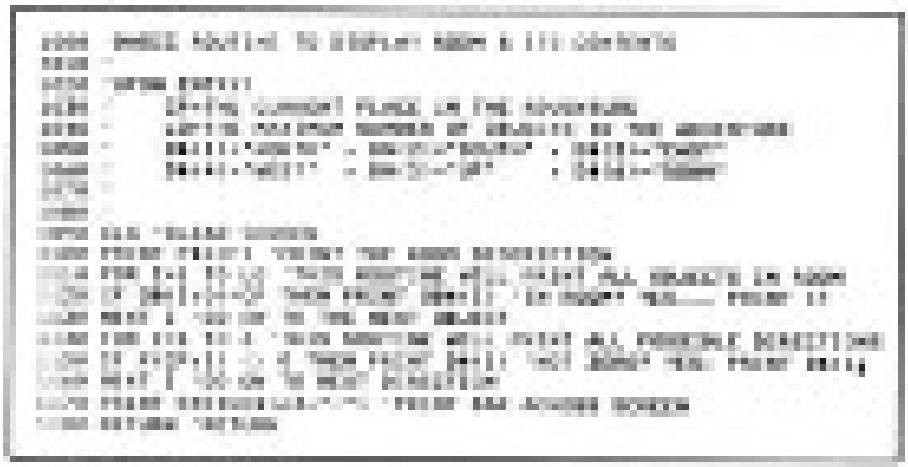

Small Pill Is Inside Envelope
To Go West You Need A Key
Dusty Pantry - Small Envelope -
Narrow Crawl Space
Treasure Room - Diamond Bracelet -
Crypt - Coffin -
Small Room With Dirt Floor
Can Open Coffin Only If Holding Ring Inside Coffin Is A Key
To Go South Must Eat Pill, Then Lift A Gate
Sacred Chamber - Magic Ring -

Figure 1: A typical portion of an Adventure map. Note that to get into the treasure room for the diamond bracelet, you must get the magic ring. To get the magic ring, you must eat the pill, then lift a gate. To eat the pill, you must open the envelope found in the dusty pantry.



Listing 1 – Basic listing of how the "display room" routine works. Note that all arrays must be set up as described in the text. The OB(x) array holds the room # of object x. Note line 1170, where this value is compared with the current room number. Each object is "tested" in this fashion.

Adventures in Videoland

by David Lubar

Frame One: *Editorial meetings, luck runs out, and a romp through the digital stables.*

With the right amount of eye contact, it's possible to survive a meeting intact and leave without any onerous assignments. The meeting in question was almost over when the words, "I've been saving the best assignment for last," put a choke hold on my spirit of survival. No doubt, the phrase was aimed in my direction. Realizing that the meaning of "best" varies considerably, depending on who is doing the lending, I tore my gaze from the toy robots on the bookshelf and waited to see what the boss had in mind. Since previous assignments had run the range from covering conferences to reviewing printers, there was no way to predict what might come. The suspense was short-lived.

"I want you to write a videodisc adventure," the boss said in the casual manner usually associated with phrases such as "please pass the butter."

"Need it by tomorrow?" I asked.

"For January." End of topic.

Could be fun, I thought, though I had never written an adventure or toyed with the fringes of video technology. This project would require three-part harmony between an Apple computer, a Pioneer Laserdisc player, and an Aurora Systems Interface. A vague suspicion that I was in over my head prompted a stroll down to the software department. After trying all available personnel, it was obvious that no one there could be talked into whitewashing the fence. Looked like the job was mine. Since the November issue was still under construction, I put the video project on temporary hold, hoping the subconscious would start the work.

Frame Two: *Distorted disc, death of procrastination, and the birth of a framework.*

November doesn't last forever. The harbinger of flying time came in the form of a memo. While I had been blithely trying to forget the project, the boss had been busy. He had taken side one of the movie *Rollercoaster* and compiled two pages of notes listing the frame numbers for every scene. At this point, it dawned on me that he really wanted the program. I got down to work, keeping an eye open for an easy way out.

The first problem was figuring a way to write the program in Basic while avoiding the long delays associated with that language. Taking a shot at modular programming, I started by writing units that would handle essential tasks, such as gathering and parsing input, in an efficient manner. Since actual work with the disc player and interface would require a trip to the boss's house, I wanted to finish as much of the programming as possible before taking the act up to the Fortress of Solitude. This situation, coupled with the eternal search for the easy way out, gave birth to the adventure framework, described at the end of this chapter. Since the idea is fairly simple, and has most likely been developed more than once in the past, I make no claims of great originality here.

The framework handles all the procedures that are common to most adventures. It is, in essence, a guide, keeping track of a player's moves and the location of objects, and handling common commands such as "GET" and "DROP." By plugging in a couple buckets full of variables, any adventurous realm could be defined. The task of creating a specific adventure now seemed less monstrous (and next year, when they invent the neutrino disc, I'll be able to write a neutrino adventure in record time).

Frame Three: *Onward to Olympus, empathy for hermits, and getting down to the hard stuff.*

I hit the mansion on the hill early one Monday morning, ready to wrestle with technology. The boss flipped a handful of switches, powering up computer, disc player, television, and stereo, while dimming lights throughout the neighborhood. After showing me how to use the interface and disc player, the boss left for the office, and I was on my own. Being alone in someone else's house is a rather strange experience, which I will not dwell on here. It should suffice to say that I trod gently so as not to risk breaking the carpet.

The first and easiest task was watching the movie. This not only helped pass the time, but gave me a glimpse of scenes that could be used in the adventure. *Rollercoaster,* for those of you who missed the movie, concerns an extortionist who plants bombs on rollercoaster tracks, merry-go-rounds, and other fun places. The movie occupies five sides of three discs. The side used for the adventure contains good scenes of carnival rides and explosions, making it highly suitable for an action adventure.

Having checked out the scenery, I started getting acquainted with the interface. The software included a short machine-language driver that could be called from Basic. Instructions went from computer to interface via the USR command. As the video-disc obeyed my commands, I felt like Archimedes lunging from the tub. This was POWER. I was the demigod of the disc, making it fulfill my every whim. It all seemed too easy. I could search for frames, play sequences, switch from computer to video display, do almost anything except make it roll over and beg.

As is the way in life, there was rain on this parade. Since the precipitation occurred later that day, I won't go into it now. With spirits still undampened, I started mapping the adventure, trying to create a scenario that could best exploit the available video. Thanks to the framework, the rooms and objects were plugged in fairly quickly. While the game wouldn't have the magnitude of Crowther and Wood's colossal cave, it would have enough locations to allow the player to get lost once or twice before catching on.

Frame Four: *The problem with adventures, an emergency guide to dairy substitutes, and the coming of the rain.*

The problem with the average adventure is that it is linear, frustrating, and ultimately boring. The first one is fun, the second entertaining, but after that the novelty wears thin. I realized I could either put a lot of hard work behind my feelings on the subject and produce a different sort of adventure, or rely on the novelty of the video to save the day. Following the sage advice of Occam's Razor and other convenient laws of laziness, I took the easy way out and stuck with the standard adventure format.

This sort of work definitely called for vast quantities of coffee, which led to the following discovery. If you are ever out of milk and sugar, but have peppermint stick ice cream in the freezer, try some in the coffee. It's not bad.

Having mapped the adventure, I was ready to add some video. As a start, I decided to display a still frame or sequence for each location. I wrote a short parser that would take strings of command codes and send them to the interface. The routine can be found starting at line 40000 in the main program. (If the code at 40000 is replaced with a RETURN, the game can be played without a videodisc, though lack of visuals makes it as exciting as watching salt dissolve.)

Once the visuals were defined, I tried a test run. After giving instructions, the game displayed a scene of the carnival midway. So far, so good. I went east. The disc player whirred. The wrong picture came up. A few tests produced the following realization: the computer is a lot faster than the disc player. If you send commands to search for frame 12345, you might get frame 135. To compensate for this, I added delays to the video parser. Now that the disk had time to digest the whole command, another problem appeared. Commands are not buffered by the interface; they are executed immediately. Sinking into the mind of the disc player, the process goes something like this: *Hey, I gotta search for frame 20123. O.K., I'm on my way. Half-way there. Getting closer. Almost there. Hey, a PLAY command. Here goes.* Thus Mr. Disc doesn't care if the search is finished. The PLAY command takes priority, giving whatever scene was under the beam at the moment. Enter more delay loops. End result: no matter how quickly the main code executes, there are inevitable delays associated with calling frames from the videodisc.

Frame Five: *Meat on the bones, shooting ducks, and an end to modularity.*

With the rooms mapped out and the video stuffed in, the next task was to add all those conditional actions that turn an adventure from a Sunday drive into a real game. In the real world, most problems have more than one solution. In an ideal adventure, any intelligent input should be greeted with an intelligent response. Any attempt to introduce such reality into a program would probably lead to either insanity or an OUT OF MEMORY error. Keeping this in mind, I first added routines to check for any commands that were required for the player to win. Any such input

This information, stored in an array called RS, serves not only to determine where a person would end up, but also for printing visible exits.

There are two other string arrays associated with rooms. The RM$ array contains a brief description of each room. RD$ contains a complete description. By separating them, it is possible to print a full description the first time a person enters a room, and a short description if he returns. (I ended up printing the full description each time since most weren't that long.)

Objects are also held in an array, OB$, and another array, OB, contains the location of each object. OB holds either a room number, a zero if the person has the object, or a negative number if the object is out of play. This is the same sort of technique used in most Basic adventures.

One further concept was the use of variables for what I consider "furniture." This would cover objects that can't be taken but can be examined. Furniture is contained in the array FR$, its description is in FD$, and FL contains it location. If the value of FL is zero, that furniture can occur in any location. For example, if all rooms have walls, FR$ would be WALL, FD$ might be "IT IS MADE OF STONE AND CONTAINS NO CRACKS OR MARKINGS" and FL would be 0. Since the routines for LOOK and TAKE check through both objects and furniture, these two sets of arrays must have the same value, even if the higher numbers of one set aren't used.

The rest is reasonably straightforward. Once rooms and objects have been taken care of, routines need only be added to handle special situations. Note that the LOOK routine checks to see whether an object is either in the player's possession or in the same room as he. This avoids the frustration encountered when a player wants to examine something and is told he isn't carrying it. The general framework, with dummy room and object definitions, is given in Listing 2 for those who might want to construct their own adventures.

The Roller Coaster Game Explained

by David H. Ahl

"Over my dead body you will!" This was the response I got from David Lubar when I suggested running a map of the *Rollercoaster* game with the information as to what is found in each spot.

His reasoning was that the game could be played by someone whether they had a videodisc player or not. The only difference is that a person with a videodisc player and interface would be able to see the motion sequences where other players would merely have them described by the computer program.

My reasoning was that this is the first computer/videodisc game ever published and that if it is going to be part of the entertainment wave of the future, we ought to share as much information about it as possible.

My reasoning prevailed and, thus, you are reading this article. Mr. Lubar was last heard saying, "Mutter, mutter, you're the publisher."

Flash Back

Ever since I saw an experimental videodisc player from Phillips/MCA in 1975 and published three articles about video discs in March of 1976, I have been enthusiastic about the medium. More recently, I have gotten very excited about the possibilities for computer programs which take advantage of the videodisc. Many educators and people involved in industrial training are working in similar directions. However, my thoughts were more in the area of home entertainment.

In particular, I imagined an adventure-type game based on the movie *Jaws*. I haven't quite worked out the entire scenario, however, I envision a scene where a shark is about to attack and is swimming toward you with his jaws wide open when the screen goes blank and you are asked for a decision. Make the right decision, and the shark would back off, probably in reverse slow motion and you would see it recede into the ocean. Make the wrong decision and, of course, you get eaten and lose the game. Or, you might invoke magic which would transform you to an entirely different time and place. If you did this, you might or might not lose some of the objects you have gained and you might be posed with an entirely different yet of problems based on your new location.

I envisioned using portions of the soundtrack with only the computer output visible on the screen. I also saw opportunities for the player to put in his own search coordinates (a frame number) not knowing, of course, what was there beforehand. Based on what he finds in a particular location, he must continue the game from that point. Thus, I envisioned a very open-ended type of game as opposed to the completely structured adventures and other games that exist today.

Can it all be done? I think so. We are, of course, starting in a much more structured way. However, I believe that this game will give you some idea of what the capabilities are of marrying the computer with the videodisc.

How the Game Works

After showing the appropriate title graphics, the player is told that a madman has planted a bomb on a rollercoaster. At this point a 10-second scene of the caused the program to jump to the appropriate subroutine. Had all this been planned out beforehand, these subroutines would be neatly organized into meaningful groups. Since I was creating as I went along, the structure of the program suffered somewhat.

To add a bit of spice to the game, I tossed in some more video scenes to go along with special actions. If the player tries his hand at the shooting gallery, he sees metal ducks being flattened. If he tampers with a certain box, he is rewarded with a view of the rollercoaster being blown off the tracks.

By the end of the second day, the game was approaching finished form. All correct moves were recognized, and some incorrect moves produced special responses. So much for the easy part.

Frame Six: *Error checks, custom changes, and the true meaning of déjà vu.*

While the programmer in the role of game creator must try to anticipate various inputs, the programmer in the role of debugger has to create all possible situations. This can be a rather tedious process. Seeing the same scenes over and over is rather akin to drowning. Eventually, self-preservation overcame perfectionism, and I decided that all the bugs were eliminated. Though this is never true, the thought can be comforting. Leaving the message "Play me" on the diskette sleeve, I packed it in for the day.

I was eager to learn the boss's reaction to the program. "Not bad," he told me the next day, "though I do have a few changes to suggest."

I looked at the three pages of notes, feeling some empathy for the ancient mariner, Sisyphus, and other bearers of long sentences. A close inspection reavealed that most of the changes would not be difficult. "I'll take a shot at it," I told him, trying not to give signs of relief.

Back at the Fortress, I plugged in the changes and started another round of error checks. By the end of the afternoon, I could close my eyes and see rollercoasters. But the program was finished. In an odd way, the project had almost been fun.

Frame Seven: *Conclusions, the future of video, and the meaning of it all.*

Naturally, there is a post natal pleasure associated with the completion of any programming task. After the glow dims, some questions remain. Was the project worth doing? Did it accomplish the desired functions? The main goal was to try an experiment with a fairly new technology. Here I feel partial failure. The new medium was used in an old way. Beyond the video scenes, the program is just another adventure. It was as if I had been given Vulcan's forge and used it to produce a souped-up Ford Pinto. Despite the racing stripes and whitewalls, it's still a compact car. But the exercise has convinced me of the potential power of the video–computer connection. The fusion of these two devices will produce some spectacular results. Rather than add to existing concepts, people will create applications that open new areas, merging computers and video rather than just tacking picture to program. The rollercoaster ride has just begun.

An Adventure Framework

There are two key parts to the framework; the input routine and the partial parser. Rather than use an INPUT statement, each character is obtained with GET. This has several advantages. First, each character can be checked on entry. Second, commas won't cause an EXTRA IGNORED error message. Finally, there is plenty of time between each character to process the preceding one. With INPUT, the program receives the whole phrase at once and any processing has to be done after the user has hit return. To separate a two-word phrase, the program would have to search through the input string for a space, adding to the delay time. On the other hand the GET routine can immediately identify a space and define anything prior to it as the first word of input. The rest of the routine just traps illegal characters and checks for controls such as the back arrow or return. For back arrows, the routine erases characters as the cursor crosses them.

The input routine accepts one or two words, but no more. In its present form, it accepts only letters. It could be easily modified to recognize other characters if required. Upon returning from the input routine, there is a horrendous ON A GOSUB command with twenty-six parameters for the variable A. This causes the program to branch to different lines depending on the first letter of the command. While such a solution might be considered inelegant, it cuts down the delay considerably. Once the branch has been made, the program has just a few possible keywords for which to check.

Next, I took the basic concepts encountered in an adventure (moving, picking up, and dropping objects, examining objects, and looking at a location), and designed the framework in such a way that objects and rooms could be changed with little effort. For movement, I limited the program to four directions; adding up and down would be easy if required later. The rooms were given two identifiers, a number from 1 to 26 and the corresponding letter of the alphabet. For each room, there is a string containing the rooms that can be reached by going north, east, south, and west. Disallowed directions are marked by a null character.

bomb being planted is shown. A message flashes back which states that you, the player, are being sent to stop the saboteur. At this point a 10-second sequence of a plane landing is shown followed by some additional introductory messages.

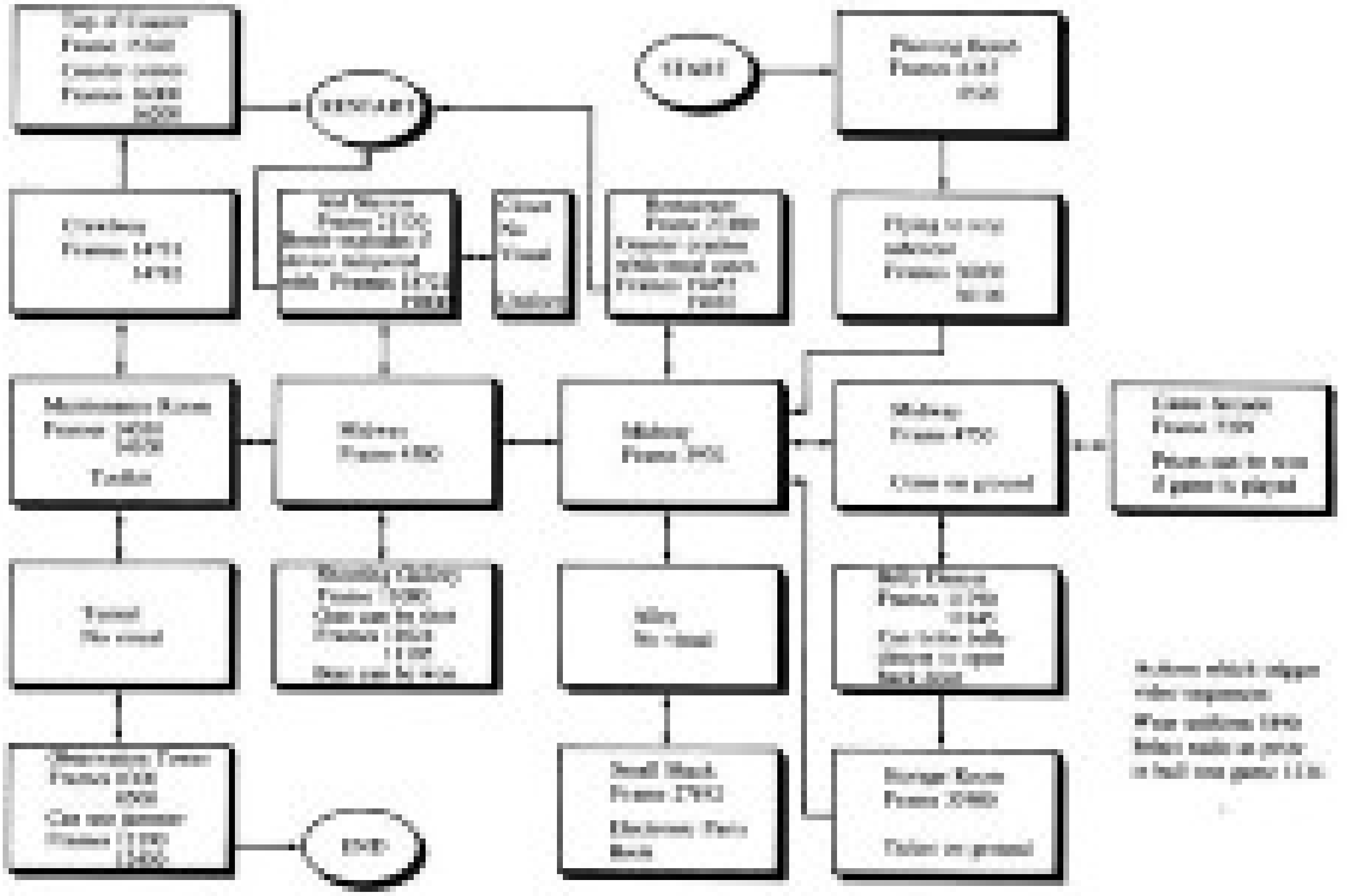
After this, you find yourself in a central area of the midway. (See diagram.) Some of the video sequences (both still frames and motion sequences) are activated by going to a new place in the game-playing area. Other video sequences are activated by picking up an object or giving some other command. For example, the command " 'Wear Uniform' triggers a still frame of the groundskeeper in a uniform.

Still other video sequences are triggered as part of a sequence of events over which a player has no control. For example, if you crawl too far out on the coaster track, you are shown a scene of the empty track followed by a computer message that says "The sound of the coaster is getting very loud." This is immediately followed by a scene of the coaster passing by after knocking you unconscious. This triggers one of the alternate end-of-game routines and you are given the opportunity to play again.

Possible Extensions

The mind boggles with the possible extensions to a videodisc/computer game. For example, the way the game is written now, the bomb explodes if the player tampers with the electronic device in the Aid Station. A possible alternative: by turning the knob on the device you discover that it is an alien time warp machine and that it reverses time for ten seconds. You might see the rollercoaster going backwards or people walking backwards on the midway for the next ten seconds. Used in the adventure, you might have to find a detonator, take it to the Aid Station and explode the bomb, make time go backwards and un-explode the bomb in order to find out on what frequency the detonator works so that you are able to construct a jammer.

Of course, there are many, many possible extensions. One side of the videodisc has over 50,000 individual frames on it and the disc of *Rollercoaster* that we used for this adventure, has over 120 separate motion sequences on the first side. Thus, it should be apparent that we are just scratching the surface with the game as it currently exists.



Location Map of Rollercoaster Videodisc/Computer Game

```
[illegible]
```

Adventures in Videoland

```
15000 IF (A$="PUT" OR A$="PLACE") AND AFLAG THEN 25000
15010 IF A$="PLAY" AND L=4 THEN 43000
15020 IF A$="PLAY" AND L=14 THEN 45000
15030 IF (A$="PUSH BUTTON" OR A$="PRESS BUTTON") AND L=2 THEN 33000
15099 KA=0: RETURN
15700 IF A$="QUIT" THEN
        END
15799 KA=0: RETURN
16000 IF (A$="READ BOOK") AND (IB(4)=0 OR IB(4)=L) THEN
        PRINT "YOU NOW KNOW HOW TO MAKE A": PRINT "JUMPER FROM A BATTERY [illegible]
        RETURN
16010 IF A$="READ TICKET" THEN
        A$="LOOK TICKET": GOTO 27000
16099 KA=0: RETURN
17000 IF A$="S" THEN
        D=2: GOTO 20000
17010 IF A$="SHOOT" THEN 43000
17020 IF A$="SHOW TICKET" AND L=14 THEN 46000
17099 KA=0: RETURN
18000 IF A$="TAKE" AND AFLAG THEN 25000
18010 IF (A$="TURN KNOB" OR A$="TURN DIAL") AND L=2 THEN 33000
18099 KA=0: RETURN
19000 IF A$="USE JUMPER" THEN 54000
19099 KA=0: RETURN
19300 IF A$="VISIT DANCER" THEN
        PRINT "SHE DOESN'T WANT TO SEE YOU": RETURN
19399 KA=0: RETURN
19500 IF A$="W" THEN
        D=4: GOTO 20000
19510 IF (A$="WEAR UNIFORM") AND (IO(?)=0 OR IO(?)=L) THEN
        VC$="UNIFORM": GOSUB 40000
        FOR I=1 TO 1000:
        NEXT I:
        VC$="": GOSUB 40000: PRINT "IT FITS WELL AND MAKES A GOOD": PRINT
        "DISGUISE": GOTO [illegible]: RETURN
19599 KA=0: RETURN
19699 KA=0: RETURN
19799 KA=0: RETURN
19800 PRINT [illegible] INPUT OF 2 STEPS PROGRAM
19900 REM  PARSER FOR DIRECTION
19910 D=INSTR(1,[illegible])
      IF NOT D THEN
        PRINT "I NEED A DIRECTION.": RETURN
20000 REM MOVE ROUTINE [illegible] PRESENT LOCATION
20010 P=ASC(MID$(M$(L),D,1))-64
20020 IF NOT P THEN
        PRINT "YOU CAN'T GO THAT WAY": RETURN
20030 L=P
20040 IF [illegible] AND A$="LOOK" THEN
        VC$="[illegible]"
        FOR J=1 TO LEN(V$(L))
          [illegible]
          FOR I=1 TO 400:
          NEXT I:
        NEXT J:
        FOR I=1 TO 4000:
        NEXT I:
        [illegible]
20045 IF V$(L)<>"" THEN
        VC$=V$(L): GOSUB 40000
        FOR I=1 TO 4000
        NEXT I:
        V$(L)="": VC$="": GOSUB 40000
20100 PRINT "YOU ARE IN ";
20110 PRINT R$(L): PRINT R1$(L): PRINT "THIS LOCATION CONTAINS ";: F1=0
20120 FOR I=1 TO NO
20130   IF OB(I)=L THEN
          PRINT OB$(I): F1=1
20140 NEXT I:
      IF NOT F1 THEN
        PRINT "NOTHING"
20150 PRINT "VISIBLE EXITS ";
20160 FOR I=1 TO 6
20170   IF MID$(M$(L),I,1)<>"@" THEN
          PRINT DR$(I);" ";: F1=1
20180 NEXT I:
      IF NOT F1 THEN
        PRINT "DON'T EXIST"
20190 PRINT
      IF L=8 THEN 41000
20191 IF L=10 THEN 47000
20192 IF L=11 THEN 47500
20193 IF L=13 THEN
        PRINT
        "YOU FOLLOW A WINDING PATH. FINALLY      RETURNING TO FAMILIAR GROUND":
        L=12: GOTO 20000
20195 IF L=9 THEN 48000
20199 RETURN
24000 PRINT: PRINT "YOU ARE CARRYING:"
      FOR I=1 TO NO
```

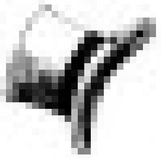
Adventures in Videoland

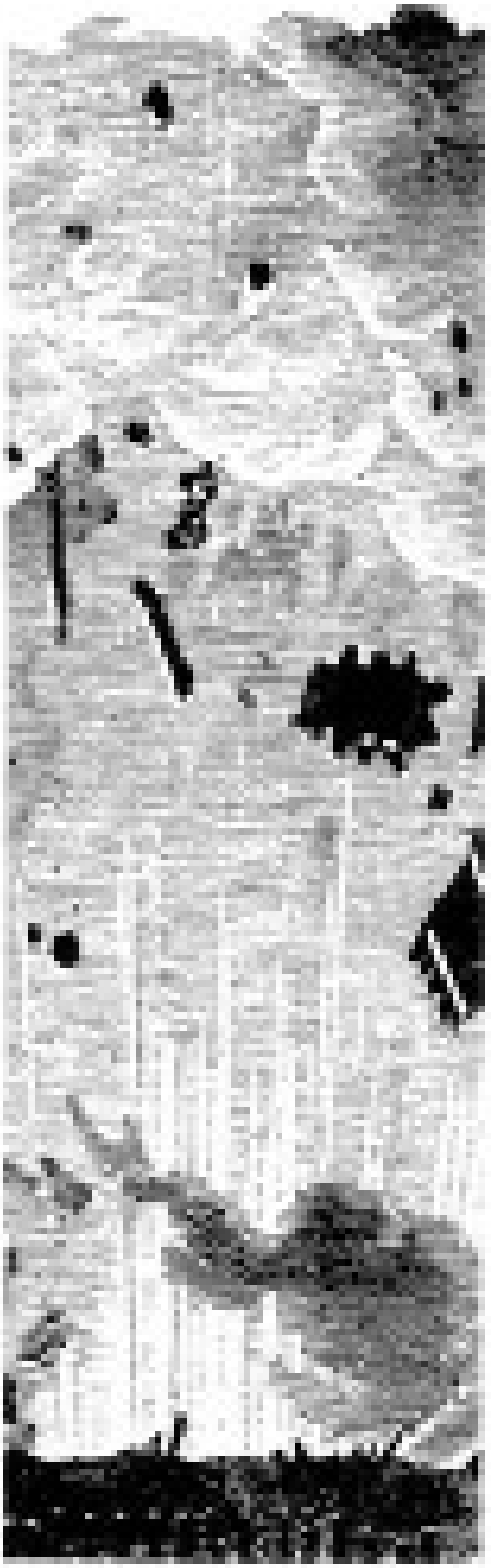
```
[illegible]   IF [illegible] THEN
                PRINT [illegible]
[illegible] NEXT I
            IF NOT [illegible] THEN
              PRINT "NOTHING"
[illegible] RETURN
[illegible] [illegible]
            FOR I=1 TO NO
[illegible]   IF [illegible] AND [illegible] THEN
                PRINT "YOU ALREADY HAVE THE [illegible]: RETURN
[illegible]   IF [illegible] OR [illegible]="ALL" OR [illegible]="EVERYTHING") AND [illegible] THEN
                [illegible] PRINT [illegible]" TAKEN": [illegible]
[illegible]   IF [illegible] THEN
                [illegible]
[illegible] NEXT I
[illegible] IF [illegible] AND [illegible] AND [illegible]="ALL" AND [illegible]="EVERYTHING" THEN
              PRINT "I CAN'T TAKE THE [illegible]: RETURN
[illegible] IF [illegible] AND [illegible] THEN
              PRINT "THERE IS NOTHING HERE I CAN TAKE."
[illegible] IF [illegible] AND [illegible] THEN
              PRINT "I DON'T SEE IT HERE."
[illegible] RETURN
[illegible] [illegible]
            FOR I=1 TO NO
[illegible]   IF [illegible] OR [illegible]="ALL" OR [illegible]="EVERYTHING") AND [illegible]
                THEN [illegible]
[illegible] NEXT I
[illegible] IF NOT [illegible] THEN
              PRINT "YOU CAN'T DROP WHAT YOU AREN'T CARRYING!": RETURN
[illegible] PRINT "OK": RETURN
[illegible] [illegible]
            FOR I=1 TO NO
[illegible]   IF [illegible] OR [illegible] AND [illegible] THEN
                [illegible] PRINT [illegible]
                IF [illegible] THEN
                  PRINT "I SEE NOTHING SPECIAL.": RETURN
[illegible]   IF [illegible] OR [illegible] AND [illegible] THEN
                [illegible] PRINT [illegible]
                IF [illegible] THEN
                  PRINT "NOTHING EXTRAORDINARY HERE": RETURN
[illegible]   IF [illegible] THEN
                RETURN
[illegible] NEXT I
[illegible] PRINT "I CAN'T DESCRIBE THAT"
[illegible] RETURN
[illegible] FOR I=1 TO NO
[illegible]   IF [illegible] OR [illegible] THEN
                NEXT I
                PRINT "YOU AREN'T CARRYING THE [illegible]: RETURN
[illegible] PRINT [illegible]
[illegible] [illegible]
[illegible] GOSUB [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] IF [illegible] THEN [illegible]
[illegible] IF [illegible] AND [illegible] THEN
              PRINT "I CAN'T GO THAT": RETURN
[illegible] [illegible]
[illegible] IF [illegible] AND [illegible] THEN
              [illegible]
[illegible] IF [illegible] OR [illegible] THEN [illegible]
[illegible] FOR I=1 TO NO
[illegible]   IF [illegible] OR [illegible] AND [illegible] THEN
                NEXT I:
                PRINT "THE [illegible] DON'T [illegible]": RETURN
[illegible] PRINT "OK"
            IF [illegible] OR [illegible] AND [illegible] THEN
              [illegible]
[illegible] RETURN
[illegible] DIM [illegible]
            [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
```

```
[illegible] [illegible]="NORTH": [illegible]="SOUTH": [illegible]="EAST": [illegible]="WEST"
[illegible] [illegible]=
     "[illegible] STRETCHES TO THE EAST AND WEST. A RESTAURANT IS TO THE NORTH"
[illegible] [illegible]=
     "[illegible] STRANGE EQUIPMENT. LIGHTS   FLASH FROM AN ELECTRONIC BOX"
[illegible] [illegible]=
     "[illegible] IS TO THE NORTH. THE     SOUND OF [illegible] COMES FROM A SH
     [illegible] GALLERY TO THE SOUTH."
[illegible] [illegible]="THERE'S A DOOR TO THE SOUTH YOU HEAR [illegible]"
[illegible] [illegible]="THE ROOM IS CROWDED BUT YOU SEE AN EMPTY TABLE IN THE CORNER"
[illegible] [illegible]="A SIGN READS "5 SHOTS FOR 25 CENTS""
[illegible] [illegible]=
     "THERE ARE DOORS TO THE NORTH AND SOUTH. THE NORTHERN DOOR IS OPEN. YOU C
     AN HEAR THE ROLLER COASTER."
[illegible] [illegible]="[illegible] AND LOOKS AT YOU"
[illegible] [illegible]="A DANGEROUS PLACE TO BE."
[illegible] [illegible]
     "THERE IS A DOOR LEADING TO A SMALL ROOM TO THE SOUTH"
[illegible] [illegible]
     "BELOW, YOU CAN SEE THE WHOLE CARNIVAL.  THE TOP OF THE ROLLER COASTER IS
     [illegible]"
[illegible] [illegible]=
     "THE PASSAGE LEADS NORTH TO THE TOP OF   THE ROLLER COASTER. THE NOISE IS
     QUITE LOUD"
[illegible] [illegible]=
     "THE DOOR IS LOCKED BEHIND YOU. BUT THERE IS A WINDOW TO THE WEST"
[illegible] [illegible]=
     "THE ROOM IS LITTERED WITH FRAGMENTS OF  ELECTRONIC PARTS. BUT NONE OF IT
     IS    [illegible]. A GUARD BLOCKS YOUR PATH"
[illegible] [illegible]
[illegible] [illegible]="THE PASSAGE LEADS SOUTH TO THE TOP OF   THE OBSERVATION TOWER"
[illegible] [illegible]
     "IT CONTAINS [illegible] FOR SMALL ELECTRONIC REPAIRS"
[illegible] [illegible]="THE TITLE IS [illegible]
     "IT IS VERY HEAVY" [illegible]
     [illegible]
     "WHEN YOU PUSH THE BUTTON ON ITS BACK, IT SAYS "I [illegible]""
[illegible] [illegible]=
     "IT SAYS, 'GOOD FOR 1 FREE GAME AT THE   HALL. COURTESY OF CREATIVE
          COMPUTING, THE #1 MAGAZINE OF SOFTWARE AND APPLICATIONS.''"
[illegible] [illegible]
     "IT IS FIRMLY ATTACHED TO THE TABLE. THERE ARE KNOBS AND A BUTTON ON IT'S
     [illegible]"
[illegible] [illegible]="IT IS CHAINED TO THE COUNTER"
[illegible] [illegible]="IT IS CHAINED TO THE COUNTER"
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] IF [illegible] THEN
      PRINT "[illegible]": POKE [illegible]: POKE [illegible]: POKE [illegible]
[illegible] RETURN
[illegible] [illegible]
     [illegible]
[illegible] PRINT "WHAT IS YOUR FIRST NAME"; [illegible]
[illegible] PRINT: PRINT "YOU HAVE JUST RECEIVED AN ANONYMOUS"; PRINT
     "TIP THAT A BOMB HAS BEEN PLANTED"; PRINT "ON A ROLLER COASTER.";
     FOR I=1 TO 1000
     NEXT I
[illegible] [illegible]
     FOR I=1 TO [illegible]
     NEXT I
     [illegible]
     FOR I=1 TO [illegible]
     NEXT I
[illegible] [illegible]
[illegible] PRINT: PRINT "YOU ARE CALLED TO INVESTIGATE AND [illegible]"; PRINT
     "TRY TO STOP THE SABOTEUR."
     FOR I=1 TO 1000
     NEXT I
[illegible] [illegible]
     FOR I=1 TO [illegible]
     NEXT I
     [illegible]
     FOR I=1 TO [illegible]
     NEXT I
[illegible] [illegible]
[illegible] PRINT
[illegible] PRINT "HE WAS GOOD. HE HAD THE BRILLIANCE OF"; PRINT
     "[illegible]"; PRINT
     "WHO ARE DETERMINED TO SEE THAT YOU FAIL."
[illegible] PRINT: PRINT "ON YOUR SIDE, YOU HAVE CUNNING, "; PRINT
     "TRAINING, AND DEDICATION"
[illegible] PRINT: PRINT "YOU HAVE INFILTRATED THE PARK. WITH"; PRINT
     "THE KNOWLEDGE THAT THE SABOTEUR"; PRINT "WILL STRIKE SOMETIME TONIGHT";
     PRINT: PRINT "ALL YOU NEED TO DO IS STOP HIM."
[illegible] PRINT: [illegible] PRINT "PRESS ANY KEY TO CONTINUE"; GET [illegible]
```

```
38000 PRINT "BY GIVING THE RIGHT COMMANDS, YOU CAN ": PRINT
      "MOVE, EXAMINE OBJECTS, AND PERFORM ": PRINT "OTHER ACTIONS"
38010 PRINT "I UNDERSTAND TWO-WORD COMMANDS SUCH AS": PRINT
      "'OPEN DOOR' OR 'TAKE KNIFE'.": PRINT
      "TO MOVE, YOU CAN SIMPLY ENTER 'N' FOR": PRINT "NORTH, ETC."
38020 PRINT: PRINT "AT TIMES, I WILL AWAIT YOUR COMMAND": PRINT
      "IN OTHER SITUATIONS, I WILL PRESENT YOU": PRINT
      "WITH A CHOICE OF ANSWERS": PRINT "BUT SUCCESS OR FAILURE IS UP TO YOU."
38030 PRINT: PRINT: PRINT "PRESS ANY KEY TO BEGIN, MAY LUCK BE": PRINT
      "WITH YOU.": [illegible]: GET AN$: PRINT: RETURN
40000 FOR I=1 TO LEN(A$)
        [illegible]MID$(A$,I,1)
40010   IF MID$(A$,I,1)="." AND I>1 THEN
          FOR J=1 TO 1000
          NEXT J
40020   FOR J=1 TO 400
        NEXT J
      NEXT I
      RETURN
41000 PRINT: PRINT "A WAITER APPROACHES AND ASKS IF YOU": PRINT
      "WOULD LIKE A SEAT": PRINT: PRINT "SINCE YOU MISSED LUNCH TODAY, YOU":
      PRINT "ARE HUNGRY"
41010 PRINT: PRINT "DO YOU WANT TO EAT?": GOSUB 5000
41020 IF AN$<>"NO" AND AN$<>"YES" THEN
        PRINT "PLEASE ANSWER YES OR NO": GOTO 41010
41025 PRINT
41030 IF AN$="NO" THEN
        PRINT "THE WAITER CALLED YOU A STIFF": PRINT "AND THREW YOU OUT": L=3:
        GOTO 22000
41040 PRINT: PRINT "YOU ARE SERVED A DELICIOUS MEAL": PRINT
      "UNFORTUNATELY, THE SERVICE IS": PRINT "RATHER SLOW": VO$="[illegible]":
      GOSUB 45000
      FOR J=1 TO 12000
      NEXT J
      VO$="": GOSUB 45000
41045 PRINT
41050 PRINT "THE BOMB WENT OFF AND THE BOMBER ESCAPED"
      FOR J=1 TO 3000
      NEXT J
      GOTO 50000
43000 IF OB(17)<>16 THEN
        PRINT "THE MAN BEHIND THE COUNTER YELLS": PRINT
        "HEY, IF YOU AREN'T BUYING, GET OUT!": RETURN
43010 PRINT "YOU HAND OVER THE COUPON AND ARE": PRINT "UP THE SLOT": OB(17)=[illegible]
43020 VO$="[illegible]": GOSUB 45000
      FOR J=1 TO 3000
      NEXT J
      VO$="": GOSUB 45000
43030 PRINT "GOOD SHOOTING": PRINT "HE HANDS YOU A TEDDY BEAR": OB(3)=[illegible]
43035 PRINT "A PASSERBY LOOKS AT THE BEAR AND": PRINT
      "SAYS, 'GOODEN GRACIOUS, WHAT [illegible]      SUPPOSED TO SIMPLE STUFFED ANIMAL
      LET": PRINT "HE SHAKES HIS HEAD AND LEAVES."
43040 RETURN
47000 PRINT
      IF OB(3)<>16 THEN
        PRINT "SHE SAYS YOU CAN'T COME IN UNLESS YOU HAVE A PRESENT FOR HER":
        PRINT "SHE PUSHES YOU OUT.": L=4: GOTO 22000
47005 IF OB(3)=-2 THEN
        PRINT
        "SHE SAYS, 'YOU THINK ONE MEASLY PRESENT ENTITLES YOU TO COME IN HERE ANY TIME
        YOU WANT?'": PRINT "SHE PUSHES YOU BACK AND SLAMS THE DOOR.": RETURN
47010 PRINT "SHE LETS YOU IN AND EYES THE BEAR.": PRINT
      "DO YOU WANT TO GIVE IT TO HER?": GOSUB 5000
47020 PRINT
      IF AN$<>"Y" AND AN$<>"YES" THEN
        PRINT "SHE THROWS YOU OUT": L=4: GOTO 22000
47030 OB(3)=-2: PRINT "SHE UNLOCKS THE DOOR TO THE SOUTH"
47040 RETURN
47100 IF OB(7)<>16 THEN
        PRINT "HE SAYS, 'EMPLOYEES ONLY'" AND THROWS YOU OUT": L=11: GOTO 22000
47110 PRINT "HE SEES YOUR UNIFORM AND LETS YOU IN"
47120 RETURN
48000 IF OB(3)<>16 THEN
        PRINT "YOU CAN'T AFFORD THE GAME": RETURN
48010 PRINT "YOU HAND OVER THE TICKET AND SPIN THE WHEEL": PRINT "CLICK...":
      PRINT "IT'S A WINNER.": PRINT "YOU HAVE A CHOICE OF YOUR PRIZES"
48020 PRINT "A LAMP, TOWEL, RADIO, OR POSTER."
48030 PRINT "WHICH DO YOU WANT?": GOSUB 5000
48040 AN$=LEFT$(AN$,LEN(AN$)-1)
      FOR I=1 TO 33
48050   IF OB(I)=-6 THEN
          OB(I)=16: PRINT: PRINT "IT'S YOURS":
          IF AN$="RADIO" THEN
            VO$="[illegible]": GOSUB 45000
            FOR J=1 TO 3000
            NEXT J
            VO$="": GOSUB 45000: RETURN
48060 NEXT I
      PRINT: PRINT "PLEASE ANSWER WITH LAMP, RADIO OR TOWEL.": GOTO 48030
```

```
[illegible]
```





Adventure Framework

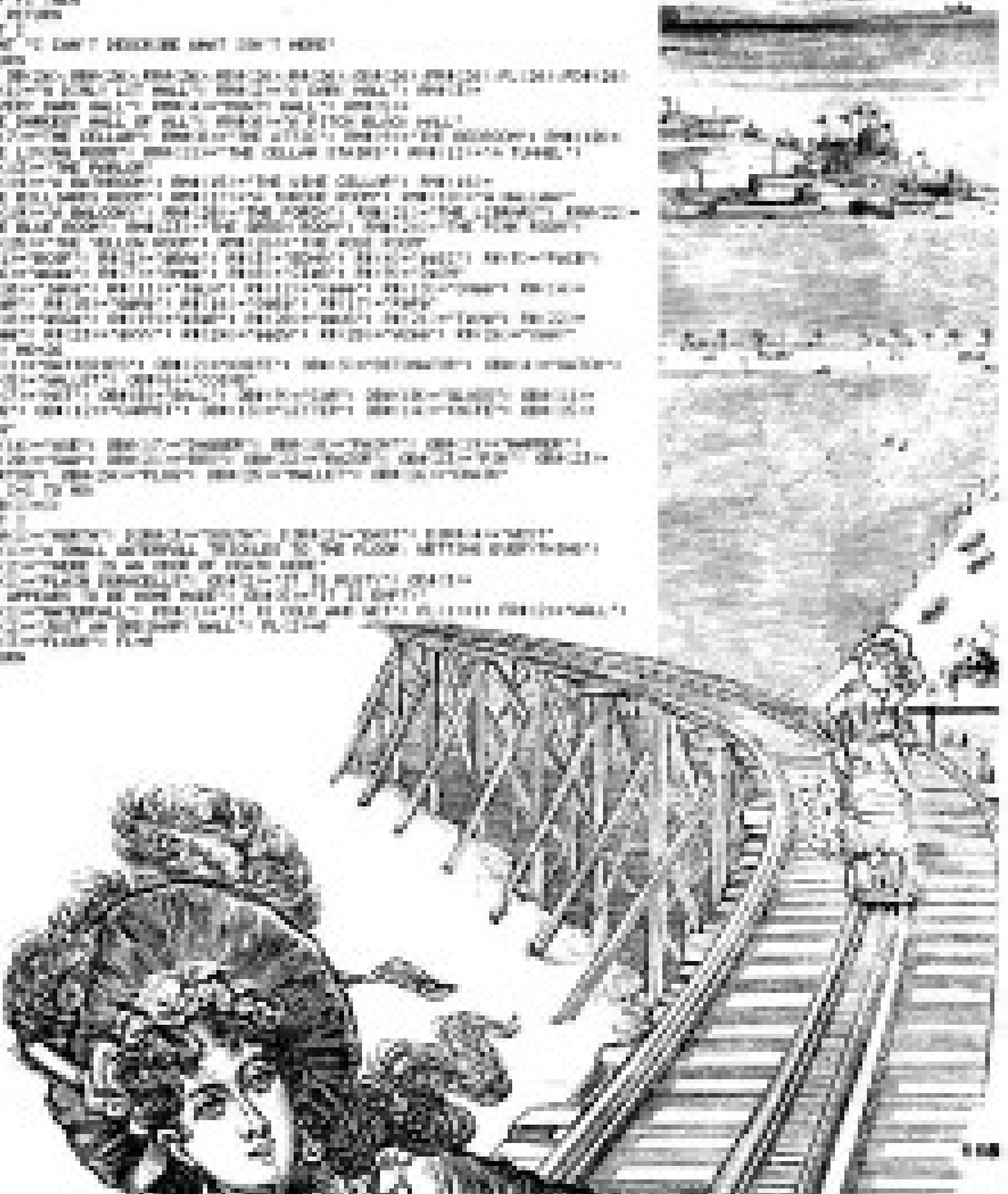
This is not a playable game as is. It is a framework handling common Adventure features.

```
[illegible]
```

```
10400 IF V$="DROP" AND NFLAG THEN 26000
10450 RETURN
10500 IF N$="E" THEN
        D=3: GOTO 20000
10600 IF V$="EXAMINE" AND NFLAG THEN 27000
10650 RETURN
10680 RETURN
10700 IF V$="GO" THEN 20000
10750 RETURN
10800 RETURN
10900 IF N$="I" OR N$="INV" OR N$="INVENTORY" THEN 24000
10950 RETURN
11000 RETURN
11100 RETURN
11200 IF V$="LOOK" THEN 21000
11210 IF V$="LOOK" AND NFLAG THEN 27000
11220 RETURN
11300 RETURN
11400 IF N$="N" THEN
        D=1: GOTO 20000
11450 RETURN
11500 RETURN
11600 RETURN
11700 RETURN
11800 RETURN
11900 IF N$="S" THEN
        D=2: GOTO 20000
11950 RETURN
12000 IF V$="TAKE" AND NFLAG THEN 25000
12050 RETURN
12100 RETURN
12200 RETURN
12300 IF N$="W" THEN
        D=4: GOTO 20000
12350 RETURN
12400 RETURN
12500 RETURN
13000 REM* [illegible] INPUT OF 2 STORE PROGRAM
20000 REM ROUTINE FOR GO DIRECTION
20010 [illegible]
      IF NOT D THEN
        PRINT "I NEED A DIRECTION.": RETURN
20060 REM MOVE ROUTINE:D=DIRECTION:N=ROOM MOVED INTO:L=PRESENT LOCATION
20050 N=ASC(MID$(R$(L),D,1))-64
20070 IF NOT N THEN
        PRINT "YOU CAN'T GO THAT WAY": RETURN
20080 L=N
21000 REM LOOK ROUTINE
21005 PRINT "YOU ARE IN ";
21010 PRINT RM$(L): PRINT RD$(L): PRINT "THE ROOM CONTAINS ";: F1=0
21020 FOR I=1 TO NO
21030    IF OB(I)=L THEN
           PRINT OB$(I): F1=1
21040 NEXT I
      IF NOT F1 THEN
        PRINT "NOTHING"
21050 PRINT "POSSIBLE EXITS: ";
21060 FOR I=1 TO 4
21070    IF MID$(R$(L),I,1)<>"@" THEN
           PRINT D$(I);" ";: F1=1
21080 NEXT I
      IF NOT F1 THEN
        PRINT "DON'T EXIST"
21090 RETURN
24000 F1=0: PRINT "YOU ARE CARRYING:"
      FOR I=1 TO NO
24010    IF OB(I)=0 THEN
           PRINT OB$(I): F1=1
24020 NEXT I
      IF NOT F1 THEN
        PRINT "NOTHING"
24030 RETURN
25000 F1=0: F2=0
      FOR I=1 TO NO
25005    IF N$=OB$(I) AND OB(I)=0 THEN
           PRINT "YOU ALREADY HAVE THE ";N$: RETURN
25010    IF (N$=OB$(I) OR N$="ALL" OR N$="EVERYTHING") AND (OB(I)=L) THEN
           OB(I)=0: PRINT OB$(I)" TAKEN": F1=1
25020    IF N$=OB$(I) THEN
           F2=1
25025 NEXT I
25030 IF F1=0 AND F2=0 AND N$<>"ALL" AND N$<>"EVERYTHING" THEN
        PRINT "I DON'T KNOW THE ";N$: RETURN
25035 IF F1=0 AND F2=0 THEN
        PRINT "THERE IS NOTHING HERE I CAN TAKE."
25040 IF F1=0 AND F2=1 THEN
        PRINT "I DON'T SEE IT HERE."
25050 RETURN
26000 F1=0
      FOR I=1 TO NO
```

Adventures in Videoland

```
2910   IF (OB$(I)=OB$ OR OB$="ALL" OR OB$="EVERYTHING") AND (OB(I)=-1) THEN
          OB(I)=RM: F1=1
2920 NEXT I
2930 IF NOT F1 THEN
       PRINT "YOU CAN'T DROP WHAT YOU AREN'T CARRYING!": RETURN
2940 PRINT "OK": RETURN
2700 F1=0
     FOR I=1 TO NO
2710   IF (OB$(I)=OB$ OR OB(I)=-1) AND (OB(I)=RM) THEN
          F1=1: PRINT DS$(I)
          IF DS$(I)="" THEN
            PRINT "I SEE NOTHING IMPORTANT.": RETURN
2720   IF (FS$(I)=...) OR FL(I)=RM) AND (FR(I)=RM) THEN
          F1=1: PRINT FD$(I)
          IF FD$(I)="" THEN
            PRINT "NOTHING EXTRAORDINARY HERE!": RETURN
2730   IF F1 THEN
          RETURN
2740 NEXT I
2750 PRINT "I CAN'T DESCRIBE WHAT ISN'T HERE"
2760 RETURN
3000 DIM [illegible]
3001 RM$(1)="A DIMLY LIT HALL": RM$(2)="A DARK HALL": RM$(3)=
     "A VERY DARK HALL": RM$(4)="DARKEST HALL": RM$(5)=
     "THE DARKEST HALL OF ALL": RM$(6)="A PITCH BLACK HALL"
3002 RM$(7)="THE CELLAR": RM$(8)="THE ATTIC": RM$(9)="THE BEDROOM": RM$(10)=
     "THE LIVING ROOM": RM$(11)="THE CELLAR STAIRS": RM$(12)="A TUNNEL":
     RM$(13)="THE PARLOR"
3003 RM$(14)="A BATHROOM": RM$(15)="THE WINE CELLAR": RM$(16)=
     "THE BILLIARD ROOM": RM$(17)="A [illegible] ROOM": RM$(18)="A GALLERY"
3004 RM$(19)="A BALCONY": RM$(20)="THE PORCH": RM$(21)="THE LIBRARY": RM$(22)=
     "THE BLUE ROOM": RM$(23)="THE GREEN ROOM": RM$(24)="THE PINK ROOM":
     RM$(25)="THE YELLOW ROOM": RM$(26)="THE RED ROOM"
3010 [illegible]
3011 [illegible]
3012 [illegible]
3020 [illegible]
3030 [illegible]
3031 [illegible]
3032 [illegible]
3040 FOR I=1 TO NO
       [illegible]
     NEXT I
3050 [illegible]
3060 [illegible] "A SMALL WATERFALL TRICKLES TO THE FLOOR, WETTING EVERYTHING":
     [illegible] "THERE IS AN ODOR OF [illegible]"
3070 [illegible]
     "IT APPEARS TO BE [illegible]"
3080 [illegible] "IT IS COLD AND WET": [illegible]
     [illegible]
3090 [illegible]
3100 RETURN
```



Helpful Tips For Playing Adventure Games

If an Adventure is getting you very frustrated, the best thing to do is shut down the machine and try again a little bit later. If you are determined to get by the frustrating obstacle, call up a friend. He/she might have some ideas which you would never think of. If no friends are available, apply as much common sense as possible. If this fails as well, try obscure reasoning and make irrational decisions.

Watch out for any words in "quotes" or with *stars* around them. These usually are clues. Any clue can be figured out if enough thought is put into it. Try reversing all of the letters of a particular clue. It can transform something as obscure as ARBADAC ARBA into something meaningful like "ABRA CADABRA."

Remember that not every obstacle can be overcome. A window that cannot be opened or broken is probably just there to confuse the player. So, if it seems impossible to get by, it probably is.

Another reason why you may not be able to get by an obstacle is that you do not have the necessary treasure! For instance, to break a window, you may need a hammer! If you have never encountered the hammer before, you may not even know that it exists, and you may spend more time trying to get by it without the hammer than you will spend finding the hammer!

Do not be afraid to try things that are seemingly stupid! In many cases a command that seems dumb turns out to be the way to overcome the obstacle.

Periodically (every 15 minutes or so) save your game out to tape or disk with the command "SAVE" or "SAVE GAME." This will insure that in the case of a fatal accident you only lose about 15 minutes Adventuring. Make absolutely sure that you save your game before trying things with unknown results, such as drinking strange bubbling liquids or jumping off a cliff.

Computer Games

$9.95

BIG COMPUTER GAMES

FROM CREATIVE COMPUTING

The #1 magazine of computer applications and software

Third in the *Creative Computing* series of best-selling computer games books, *Big Computer Games* contains 12 challenging games for solo and group play—*Lost & Forgotten Island*, *Trucker*, *Dukedom*, *Cribbage*, *Star Merchant*, *Mu-Torere*, *Streets of the City*, *Eliza*, *Presidential Campaign*, *Monster Combat*, *Survival*, and *Rollercoaster*. Also included are sections on how to write your own adventure game and how to integrate action video with your computer games.

Program listings, sample runs, and descriptions are presented with each game, and all games are written in standard Microsoft Basic, which is adaptable to most micro-computers.

David H. Ahl is the editor-in-chief and founder of *Creative Computing* magazine.

Creative
Computing
Press

ISBN 0-916688-40-2