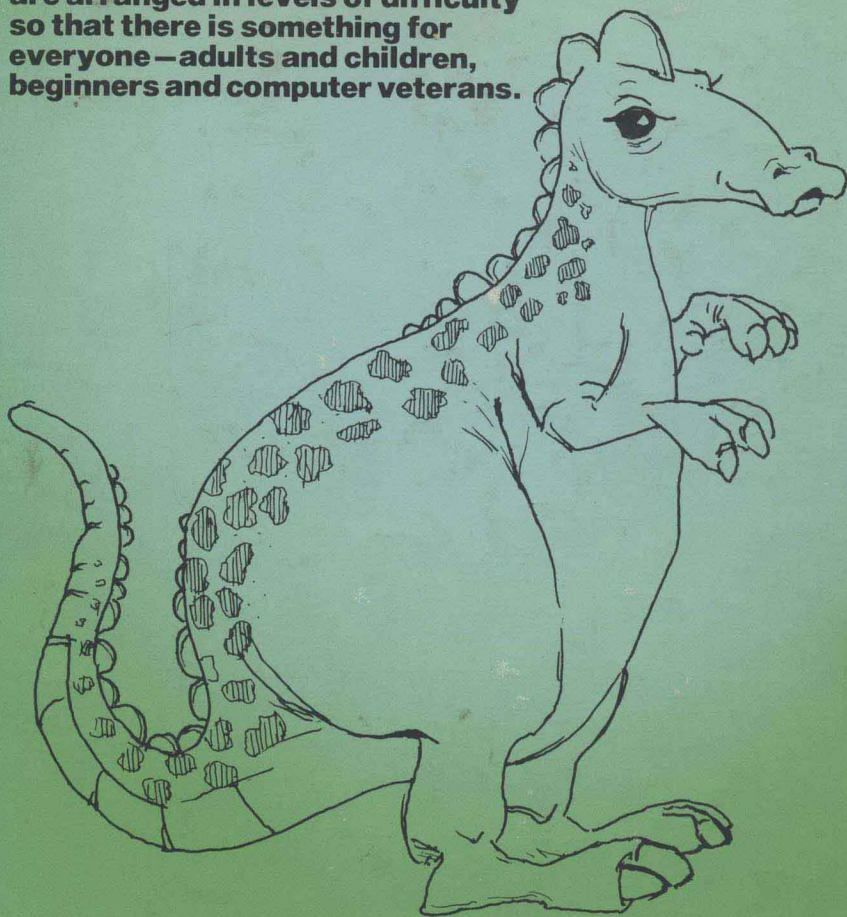# PET
## GAMES AND RECREATIONS

**A variety of challenging and entertaining diversions for you and your computer! The games are arranged in levels of difficulty so that there is something for everyone—adults and children, beginners and computer veterans.**

# Mac Oglesby
# Len Lindsay
# Dorothy Kunkin

# PET Games and Recreations

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Len Lindsay
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# PET Games
# and Recreations

# Acknowledgments

# Contents

# How to Use This Book
# for Fun and Learning

Welcome to the world of PET Games and Recreations. Your Playmasters, Mac Oglesby and Len Lindsay, have invented, imagined, and adapted a mixed bag of old and new games for your enjoyment and enlightenment. This book is designed to provide diversion for readers of all ages and occupations, in the home or in the classroom. We've arranged the entertainment in a way that we hope will enable you to select what you like and to develop your own logical learning path through the book. Of course, we also encourage you to try the other alternative: start anywhere and play away!

## THE GAMES

We organized the games and recreations into five categories: plan-ahead games, games of deductive reasoning, games of chance, language and counting skills games, and the recreations.

The games within each category proceed consecutively from least difficult to most difficult. In many cases, you can control the complexity of the game by taking advantage of the user options provided. Six- to eight-year-olds can comfortably begin with the first games in each chapter. Conversely, all the games are designed to be fun for everybody. If you're an adult, you can still enjoy *Qwert*, *Stars*, and other beginner-level games. And many younger readers are more than capable of tackling the challenges that lie ahead.

As a rule-of-thumb, we divided the games into three levels of difficulty: A for (relatively) easy; B for medium difficulty; and C for the brainstretchers. Use these evaluations to help gauge your progress through the book as your game-playing skills develop—and don't take it too seriously.

The *Plan-Ahead Games* test your ability to plan out strategies with which to meet your objectives. Your ability to play well depends on your capacity to think ahead. Every move has conse-

quences—some of which won't become apparent until several moves later. These games resemble chess in the sense that you can't win by fighting skirmishes. You have to work out a battle plan. One of the many challenges that these games offer is that winning is only part of the fun. There's always a better strategy you can develop.

*Games of Deductive Reasoning* place you in the role of detective. You're given a certain amount of information. To win the game, you must use this information to work out the solution. These games will take you to the stars, set you in pursuit of a mythical beast, send you to outer space, and last but not least, test your potential as an apprentice spy-codebreaker.

*Games of Chance* are to give you some relaxation from all this exciting brainwork. Visit Las Vegas via your PET computer and gamble away all your hard-earned stakes. On the other hand, you may emerge the winner in this contest of good fortune between you and the computer.

*Words and Numbers* are games of counting and language skills. They're also fun. Make up your own crossword puzzle. If you have access to a printer, every player can take away his or her creation.

The *Recreations* are clever tricks your PET will perform for you, if you follow the Playmasters' instructions. Then sit back and watch your PET bounce balls and do wild and crazy things.

## THE GAME WRITE-UPS

Each game listing is preceded by a short introduction. The purpose of these introductions is to give you the flavor of the game so you can decide which one you want to sample and when. We've also provided supplementary information to enhance your enjoyment of the game. Each game write-up includes:

- A short description of the game and your objective in playing it.
- A summary of instructions for play—what you do and what the computer does.
- The level of difficulty.
- The PET models you can use to play. These games were designed for all PET users. In some cases, however, you may have to modify the listings according to the model you own. For example, owners of PET 8K machines may have to leave the REM statements out of their listings to save memory for some of the longer games. Owners of the Business Model PET may have to adapt some of the graphics.

- What you can learn from the game—the particular skills, challenge, or subject matter the game involves.
- Some background on the game—its history and additional readings and variations.
- Where the Playmasters permit it, some strategy hints. We solemnly promise, however, never to give you more than hints. It's you, your brain, and the computer.

## THE LISTINGS

Program listings in this book were prepared for reproduction by the staff of *COMPUTE!* magazine. We use an "intelligent" Spinwriter interface designed to allow us to obtain a high quality image while still handling the special "graphics" characters of the **PET**. Figure 1 shows a sample reproduction of "normal" **PET** printer output, using graphics characters, on a dot matrix printer. Figure 2 shows the same output after processing by our "intelligent" interface. Our method allows us to produce quite readable, evenly formatted program listings.

```
605 OPEN1,0:PRINTZG$:PRINTTAB(9)"XMXDISK
    RECOVERY PROGRAM
610 PRINT"XM    PUT DISK FOR RECOVERY IN  XDRIVE■ X
615 PRINT"XMM    HIT ANY KEY WHEN XDISK■ IS IN PLACI
620 PRINT"X    (DISK WILL THEN BE
    INITIALIZED)":GOSUB4000
625 PRINT#15,"I1":EL=625:GOSUB5100
630 PRINT"XMX START: TRACK X17■ (DOWN)
    OR X19■ (UP)? X17■■IX";:INPUT#1,SR:PRINT
635 IFSR<>17ANDSR<>19THENPRINT".TTT":GOTO630
640 PRINTTAB(7)"XEND SEARCH AT TRACK:        I■■■IX";
    :INPUT#1,SP:PRINT
645 IFSR=17THENIFSP<1ORSP>16THENPRINT
    ".TTT":GOTO640
650 IFSR=19THENIFSP<20ORSP>35THENPRINT
    ".TTT":GOTO640
655 CLOSE1:FORJ=0TO1000:NEXT
```

Figure 1.  Standard **PET** Program Listing Containing
Graphics and Cursor Control Symbols

```
605 OPEN1,0:PRINTZG$:PRINTTAB(9)"↓↓rDISK
    ¬ RECOVERY PROGRAM
610 PRINT"↓↓    PUT DISK FOR RECOVERY IN ¬
    ¬ rDRIVEȓ rl
615 PRINT"↓↓↓    HIT ANY KEY WHEN rDISKȓ ¬
    ¬IS IN PLACE.
620 PRINT"↓    (DISK WILL THEN BE ¬
    ¬INITIALIZED)":GOSUB4000
625 PRINT#15,"Il":EL=625:GOSUB5100
630 PRINT"↓↓ START: TRACK rl7ȓ (DOWN) ¬
    ¬OR rl9ȓ (UP)? rl7ȓ<<r";:INPUT#1,
    ¬SR:PRINT
635 IFSR<>17ANDSR<>19THENPRINT"↑↑↑":
    ¬GOTO630
640 PRINTTAB(7)"↓END SEARCH AT TRACK:
    ¬        <<<<r";:INPUT#1,SP:PRINT
645 IFSR=17THENIFSP<1ORSP>16THENPRINT"↑↑
    ¬↑":GOTO640
650 IFSR=19THENIFSP<20ORSP>35THENPRINT"↑
    ¬↑↑":GOTO640
655 CLOSE1:FORJ=0TO1000:NEXT
```

Figure 2. Program Segment From Figure 1 After Formatting for Reproduction

Figure 3 shows the translation table for cursor control characters. These will appear, embedded in the source code of listings, as the symbol shown.

```
h=HOME         ,  ȟ=CLEAR SCREEN
↓=DOWN CURSOR ,  ↑=UP CURSOR
>=RIGHT CURSOR,  <=LEFT CURSOR
r=REVERSE      ,  ȓ=REVERSE OFF
```

Figure 3. Cursor Control Characters

Many of the programs in this book contain a line where a string variable is set equal to a bunch of DELETES. To set ZZ$ equal to forty DELETES:
- first, type ZZ$="
- second, type one delete (the quotation mark will disappear)
- third, type a second quotation mark
- fourth, press the insert key 40 times

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- fifth, press the delete key 40 times
- sixth, type a final quotation mark

Alternatively, this code does the same job:
FOR J9 = 1 to 4𝟶: ZZ$ = ZZ$ + CHR$(2𝟶): NEXT J9

The special graphics character set of the **PET** (the graphics characters or capital letters you obtain by shifting to "upper case") appear as the shifted symbol with an underbar. (See Figure 2.)

One final note, and you're ready to go:

- The "∿", where encountered in program listings, represents the backarrow character of the PET, and the "⌐" is used in our listings in two ways. It serves as a flag to indicate the *beginning* of a continuation line (a line we've broken entirely for formatting purposes), and also appears as the *last character* of any line that ends with a space. By attending to this flag, you can tell how many blank spaces need to be inserted while keying in a line. Remember, "⌐ " is only a flag, e.g., it is not part of the actual program itself; so when you encounter it, use it as a reminder that the line you're keying in "keeps going."

## BASIC FOR BEGINNERS

Our games book can be used as a companion piece with beginning BASIC books. Have fun while you learn the language. As your programming skills develop, analyze the listings to see how our two Playmasters put them together. Add your own embellishments for your private playing enjoyment.

There are a number of excellent Beginning BASIC books. We recommend *PET BASIC I: Training Your PET Computer* by Ramon Zamora, Bob Albrecht, and Bill Scarvie (Reston, Virginia: Reston Publishing Company, Inc., 1981). If you're ready to explore into the further reaches of computer science, however, proceed to our Honorary C.W.S. Degree.

## SPECIAL GUEST LECTURES

Exclusive Feature for Readers of *PET Games Recreations*:

*Professor Wacko's Lecture Series
on Computer Wacko Science (C.W.S.)*

These lectures are extracurricular extravaganzas into the inner workings of your PET and PET BASIC. Only those with a sense of humor need apply! Dr. Wacko shows you how to POKE around inside your PET, make question marks and cursors disappear, ride the Loop-de-Loop, and purposely make mistakes, culminating in planned chaos and confusion.

## GAMES BIBLIOGRAPHY

Games are as old as the human race. If you're interested in pursuing their make-up and history, we've provided a bibliography of additional reading on games in general and some of our games in particular. This bibliography is far from all-inclusive. We've tried to include some interesting background reading and reference works on the genesis of games.

Now—LET THE GAMES BEGIN!

A Note About COMPUTE! Magazine:

*COMPUTE!* is a monthly magazine that presents application articles, programs, and other useful information to owners and users of 6502 microprocessor-based computers. Our emphasis is one of helping brand new beginners, as well as experienced users. U.S. subscription price is $20. Address inquiries to *COMPUTE!* Magazine, P.O. Box 5406, Greensboro, NC 27403

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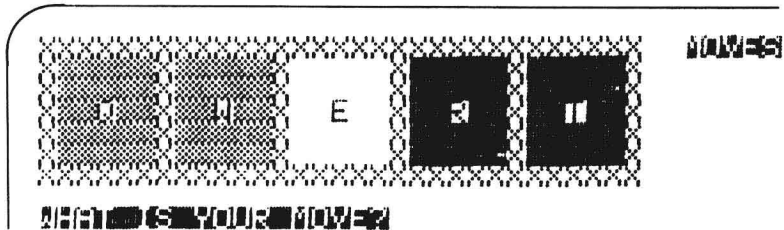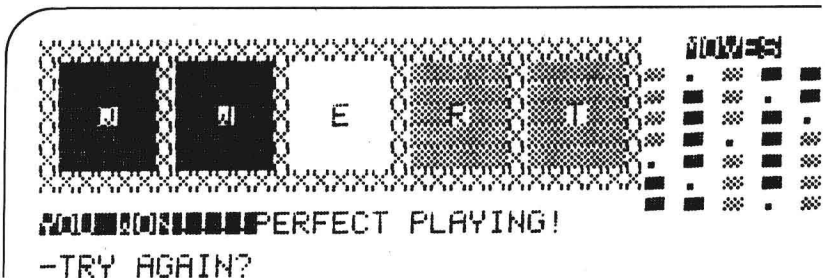
# Plan-Ahead Games

### Qwert

*by Len Lindsay*

*Qwert* is a tantalizing little puzzle with which to begin your PET play.

You're given five boxes in a row:



You win when you've reversed their order to look like:

**Here's how:** This puzzle is based on the keys that move your pieces. These are:

## Q W E R T

To move the first box on your screen, hit the "Q" key. To move the second box, hit the "W" key. Need we say more? (By now, you'll have figured out how Len got the name for this game.)

Here's the catch—at any given time, there's only one blank box on the screen, whose location shifts as you play the game. You can only move a piece into this blank space by jumping over another piece into the blank space or by moving your piece into the blank space next to it. It's not hard to win—the challenge is to win in the least number of moves: 8 (eight) moves. Your PET will reward you by displaying:

## "PERFECT PLAYING!"

on your screen.

For your convenience, your past moves are recorded graphically on the screen in the upper right-hand corner. Illegal moves are simply ignored—just try again.

To evaluate your puzzle-playing potential:

GENIUS: 5 (five) minutes or less
EXCELLENT: 10 (ten) minutes or less
AVERAGE: 20 (twenty) minutes or less.

You can play this game on all PET models, including 80-column machines. However, owners of *business models* may have to substitute some of the graphic characters. As an example:

### GRAPHICS FOR BUSINESS MODELS

Shift & is a gray box. Substitute #.
Shift " is a half-white box. Substitute shift Q.
Shift ( is a half-gray box. Substitute *.
*Qwert* is an A-level game.

```
0 REM*** WORKS ON ORIGINAL PET 2001-8,
      ¬ NEW PET/CBM, BASIC 4.0, & CBM ¬
      ¬8032 & 8016
1 REM***QWERT - PUZZLE
2 REM***ORIGINAL PROGRAM
3 REM***(C) 1980
4 REM***LEN LINDSAY
5 REM***01-30-80
9 REM***USES MAIN SUBROUTINES 10100,
      ¬ 10300
10 POKE59468,12
15 XQ=RND(-TI):XQ=0
20 PRINT"ĥ";
50 REM
51 ZZ$="
      ¬":REM 40 DELETE
52 ZD$="↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓↓":
      ¬REM 23 DOWN
54 ZR$="➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤➤
      ¬➤➤➤➤➤➤➤➤➤":REM 40 RIGHT
56 ZL$="◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀◀":
      ¬REM 30 LEFT
58 ZS$="                              ";
      ¬REM 30 SPACE
60 P$(0)="     ◀◀◀◀◀↓     ◀◀◀◀◀↓  ➤  ¬
      ¬◀◀◀◀◀↓     ◀◀◀◀◀↓     r̂"
62 P$(1)="&&&&&◀◀◀◀◀↓&&&&&◀◀◀◀◀↓&&➤&&◀◀◀
      ¬◀◀↓&&&&&◀◀◀◀◀↓&&&&&"
64 P$(2)="r"+P$(0)
66 RM$="ĥ"+LEFT$(ZD$,8)+ZS$+ZL$
90 PRINT"↓DO YOU NEED INSTRUCTIONS?"
92 GOSUB10130
94 IFXA$="Y"THENGOSUB5000:GOTO100
96 IFXA$<>"N"THEN92
100 P(1)=1:P(2)=1:P(3)=0:P(4)=2:P(5)=2:
      ¬REM SET UP START POSITIONS
105 P(0)=3:P(6)=3:P(7)=3:REM BORDER ¬
      ¬POSITIONS
110 MV=0:REM INIT
130 GOSUB6000:REM DRAW BOARD
140 GOSUB7000:REM DRAW PIECES
200 PRINTRM$;"rWHAT IS YOUR MOVE?r̂";
202 GOSUB10130
```

```
210  XM$="QWERT":GOSUB10300
220  IFXF=0THEN202
230  P=P(XF):REM PIECE TO MOVE?
240  IFP=0THEN200
250  GOSUB1000:REM CHECK MOVE & MOVE IT
260  GOTO200:REM ASK FOR NEXT MOVE
1000 IFP(XF+1)=0THENP(XF+1)=P:P(XF)=0:
     ¬GOTO3000
1010 IFP(XF+2)=0THENP(XF+2)=P:P(XF)=0:
     ¬GOTO3000
2000 IFP(XF-1)=0THENP(XF-1)=P:P(XF)=0:
     ¬GOTO3000
2010 IFXF>1THEN IF P(XF-2)=0THENP(XF-2)=
     ¬P:P(XF)=0:GOTO3000
2020 RETURN
3000 MV=MV+1:REM INCREMENT MOVE
3005 GOSUB7000:REM DRAW PIECES
3020 IFP(1)=2ANDP(2)=2ANDP(4)=1ANDP(5)=1
     ¬THEN8000:REM WINNER
3025 IFMV>22THENPRINTRM$"YOU SEEM LOST ¬
     ¬- TRY AGAIN?";:GOTO8010
3030 GOSUB9000
3040 PRINT"h"+LEFT$(ZD$,MV)+LEFT$(ZR$,
     ¬31)+MV$
3099 RETURN
4999 END
5000 PRINT"ñ";:REM INSTRUCTIONS
5010 PRINT"WELCOME TO rQWERTî - A ¬
     ¬PUZZLE FOR YOUR"
5020 PRINT"♥THOUGHTS. YOU HAVE 5 BOXES ¬
     ¬IN A LINE:"
5030 PRINT"♥& & W r î r î  - THIS IS ¬
     ¬THE STARTING"
5040 PRINT"♥POSITION. YOU TRY TO ¬
     ¬REVERSE THEIR"
5050 PRINT"♥ORDER FOLLOWING THESE RULES:
     ¬♥♥♥"
5060 GOSUB10100
5100 PRINT"ñYOU CAN SLIDE ANY MARKER TO ¬
     ¬AN ADJACENT"
5110 PRINT"♥BLANK SPOT. OR YOU MAY JUMP ¬
     ¬OVER ONE"
```