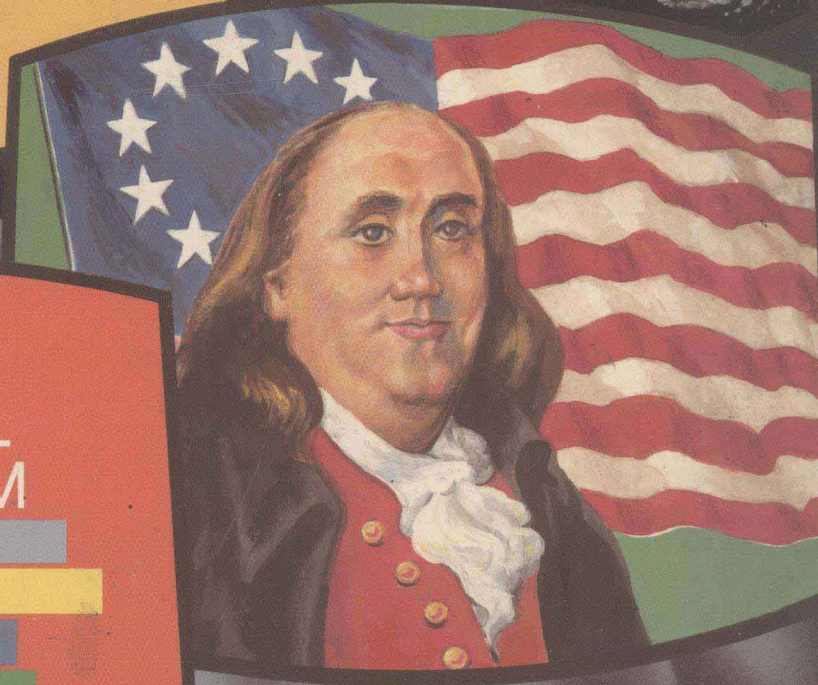
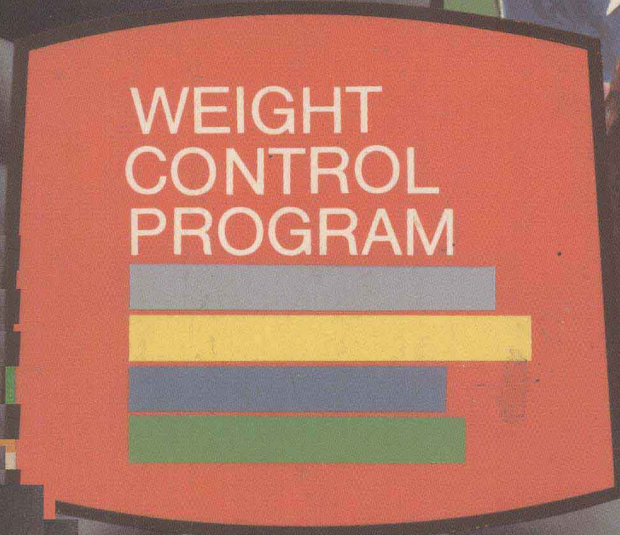
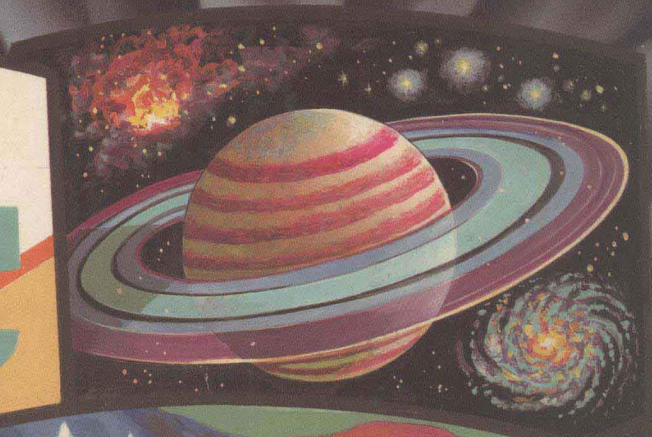
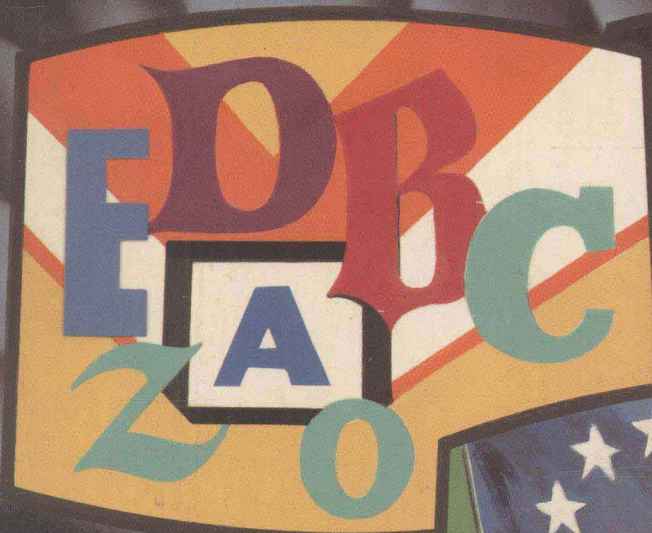


# 1001 THINGS TO DO WITH YOUR IBM PC<sup>®</sup>

BY MARK R. SAWUSCH & TAN A. SUMMERS



# **1001 THINGS TO DO WITH YOUR IBM PC<sup>®</sup>**

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# Preface

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Every good book begins with a bit of historical perspective, as does this one, although it does not necessarily follow that this is a good book. However, the phenomenal success of *1001 Things To Do With Your Personal Computer*, with over 100,000 copies in print, indicates a need for the information it has provided. Since the time of publication of the first book, nothing short of a revolution has taken place. Personal computers have joined the American love affair with the television and automobile and now occupy a coveted spot in more than five

million homes. Many of the applications in my first book are now commercially available programs; the home computer software market now includes some 50,000 entries, a bewildering assortment of programs for those from every walk of life.

The continued unawareness of the large number of applications a personal computer can be used for has prompted me to prepare this expanded second book, which is fully updated and includes many new BASIC programs and ideas.

# Acknowledgments

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and have incorporated these changes whenever possible.

The following firms also provided illustrative material for the book: AMI Corp., Bally Manufacturing, Colorado Video, Inc., Compucolor Corp., Computer Portraits, Inc., Video Brain Corp., ECD Corp., Interstate Electronics Corp., RCA, Magnavox, and Apple Computer Corp.



# Introduction

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“What can it do for me?” This is probably one of the most common yet subtly annoying questions asked by the would-be customer of the personal computer salesman, sometimes leaving him speechless. It is a difficult question, to be sure. It’s certainly much easier and lucrative to expound on the advantages of this computer versus that one “because it has 64K.” Enter this book—a unique, comprehensive guide to the marvelous (yet scarcely explored elsewhere) home computer applications that in the words of the media, “will greatly change the way you live and work.” It’s not just a “how-to-do-it” book, but a “what to do” book; over 1000 different imaginative ideas are presented and explained herein on the premise that one idea spawns another.

Not only the salesman, but the personal computer manufacturers themselves are often insecure about just *what* can be done with their product. The standard, meager manual on BASIC and perhaps a few sample programs come with their computer, but little of reassurance about applications is included, leaving the buyer in a quandary. Something is missing from the whole brave new world he had

breathlessly imagined. No, the video display, keyboard, cables, papers, and other paraphernalia is probably all there and functional. It’s the *applications* that are missing. You didn’t buy a computer as a conversation piece, to keep up with the Joneses, or because it had 64K; you bought it as a gadget of the future, an appliance of the mind, the ultimate game machine, an adult pacifier, or a business partner; you got it to save the world from another computer illiterate, or you wanted it to save something—be it time, effort, headaches, or money.

There is good news. Among the seemingly endless numbers of personal computing books available today, this book remains a unique browser’s catalog of potential applications for your computer. Allow it to spawn, identify, and tailor new uses for your system and to serve as an operator’s manual for *the* appliance that is your mind. It provides the background you need to become more adept, more versatile, and more creative in using your computer’s problem-solving capabilities. As an *idea* book, it will stimulate your

own creativity, helping you stretch your own limits and those of your system; the usefulness of your computer will be limited only by your ingenuity. I venture to say that virtually all the uses to which personal computers are being put today are discussed briefly or illustrated within this cookbook, save the *pate de foie de volaille*, that is, the more restricted, specialized uses (although there are many of those inside, too).

Lest I be accused of exaggeration, I'll amend the above claim to "virtually *almost* all of the applications . . ." and invite readers to send in their latest mousetrap, regardless of whether or not the world is beating a path to their door.

This book should appeal to anyone interested in or owning a microcomputer—on three levels. The *skeptical buyer* may use it in deciding whether the possible applications will justify the cost of a computer, or he may use it to decide between various brands of computers on the basis of the software available for a listed application. The *person interested in using computers* but not in programming can use this book as a source of applications that may warrant further investigation, or he can type in the many BASIC programs for his computer included within. The *advanced personal computer user* has the opportunity to sharpen his programming skills using the many useful, interesting, and often challenging program suggestions found throughout the book or to develop commercial software for the burgeoning microcomputer market.

Your computer is an extension of your mind, a mind appliance. Use it to do complex calculations you would not have previously done manually (for example, the amateur or professional photographer may calculate more precise values for camera settings to achieve a certain effect). Examples of simple formulas are presented herein and are intended to be part of larger, more complex programs to be written for your own personal application. In some cases, due to space regulations, the advanced reader is left to find the information necessary to write a program based on an idea given; all information should be readily available at a local library. In other cases, the program itself or the formulas

and methods necessary to write the program are provided to illustrate an idea and set you on the right track. Analyze and adapt the program within; learn to write an applied program.

Some of the program ideas are intended not only for microcomputers, but for programmable calculators as well. Although anyone who has programmed a calculator will realize the tremendous advantages of a microcomputer system, the programmable calculator does have its place. For those applications where portability is important (for example, marine navigation), the calculator comes in handy.

Promises, promises—that's all you can hear from the alluring ads and articles generating countless wonders from a personal computer at the tap of a key. Everything from tending your garden to filling out form 1040 has been claimed as a time- or cost-justifying excuse to buy a computer. Yet these applications are often genuinely easier, faster, or cheaper to do by hand. This has led to the claim by newspaper and magazine critics that computers are not the common man's electronic panacea and are, at best, toys for the man who has everything, the computer hacker, the math wiz, or the gadget freak. There is a bit of truth to this assertion. It's certainly possible that you don't need a personal computer at all (skip ahead if you've already taken the plunge). The time-honored means of managing a household—typewriter, file folders, index cards, address book, check-book, bulletin board—can often perform just as well as or better than their computerized equivalents. It's senseless to patiently spend 15 minutes loading and reloading programs, referencing commands, and remembering keywords, only to eventually call up your spouse's birthday. Likewise, it wouldn't be practical to use a \$2000 computer for the purpose of computing your automotive miles per gallon or to store a couple dozen recipes; miles per gallon can easily be computed in your head; index cards are much better for storing a typical small collection of recipes and can be thumbed with wet or sticky hands. A checkbook can be carried along and filled out on the spot—not an easy match for a home computer.

“But,” you say, “I see some of those applications listed in this book,” and you may have the urge to fold, spindle, or mutilate this page. The answer to this seeming contradiction is that these applications are practical uses of a computer for *some* people. For instance, if you ran a delivery service, a miles per gallon calculating program that included statistical analysis for each truck and driver could be useful in improving efficiency. If you happen to be a professional chef or gourmet cook, you might need a computer program that could automatically organize hundreds of recipes and even calculate the amount of each ingredient necessary for a given number of people. Using a computer to balance a checkbook would be a case of electronic overkill. However, a program fed with your financial data on a regular basis could serve as your personal accountant, giving you a rundown on clothing costs for each individual family member, a comparison of monthly utility bills, and a complete year-end list of tax-deductible expenditures—and yes, your bank balance.

Impractical programs thus become practical in specialized applications, as interesting, educational examples of programming, and as idea stimulators

for better applications. Therefore they are included in this book, but with a warning that they can often be considerably more time and effort consuming than the old-fashioned way.

It is when the size of your project or hobby becomes large enough that computing can offer solutions. The typewriter is a simple, easy tool for creating short memos; the word processor becomes useful in preparing 100 page theses. When your application demands many mathematical calculations, it's important to consider computing power. However, to many hobbyists, the writing of a program, whether or not it has any real value, is an end in itself. To them, the computer is the most enticing combination crossword puzzle, chess game, Rubik's cube, and balsa-wood airplane kit yet devised.

Within these pages you can discover and exploit the virtually boundless potential inherent in your personal computer. Move *ahead* of the times, extend your reach, open up new avenues of personal growth, enjoy! It is my intention to help you expand your horizons and to answer the paramount question, “What can it do for me?”

# Contents

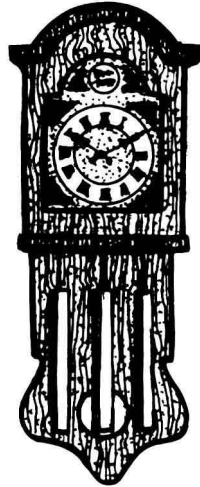
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# Chapter 1



## Applications for Everyone

In this increasingly complex world, a personal computer is most useful in organizing and simplifying the minutia of everyday life. In this chapter you will find an eclectic collection of applications for everyone, each designed to streamline daily life.

### PERSONAL REFERENCE SOURCE

Reference information that is often referred to but too complex to memorize could be stored for instant retrieval. Possibilities are endless, but examples of charts, tables, and lists that have been stored in personal computers include

1. Calories and nutritional content of selected foods.
2. Appointment itinerary.
3. Important articles and books (stored by author, title, topic, and date).
4. Sports statistics, amateur or professional.
5. Product sources, specifications, and prices from various suppliers for comparison.
6. Names, addresses, and phone numbers.
7. Stock market data including name, symbol, shares, price, and historical data.
8. Recipes and shopping lists.
9. Postal and shipping rates, requirements, and regulations for the businessman.
10. Metric conversions and information.
11. Time differences and phone rates between cities.
12. Words commonly misspelled or misused (as a quick reference writer).
13. Ham Radio log of contacts, locations, and times.
14. Collection inventory, including name of item, age, values, and identifying information.
15. Private pilot flight planning data.
16. Household inventory for insurance and financial purposes.
17. Astronomical and astrological data.
18. Things to be done, ordered, or checked with times available and deadlines.
19. Fishing log.
20. Quotations by topic and source.

21. References from literature, the Bible, and so on.
22. Dates of birthdays, anniversaries, and other special occasions.
23. Automotive service information, especially for business car fleets.
24. Patient laboratory data over time, differential diagnoses, or drug for physicians.
25. Credit cards, with numbers to call in the event of theft.
26. Safety deposit box contents.
27. Physical contents, chemical data, formulae.
28. Emergency phone numbers.
29. Poison antidotes.
30. Computer software/hardware comparisons.
31. Cumulative weather data.
32. Abbreviations.
33. Wire information for the the connoisseur.
34. Horse racing statistics.
35. Anecdotal material for those obliged to make speeches.
36. Insurance policy inventory including coverage, cost, account numbers, and deductibles for house, car, health, and other kinds of insurance.

This list isn't exhaustive, and only a few of these applications may be of use to you, but it serves to illustrate the multiple possibilities primarily involving the storage of information. How would you store this information? Use the *Electronic Memorandum* program Listing 1-1, or the *Data Base Demonstration* program, Listing 1-12, for your own tailor-made application.

## THE ELECTRONIC MEMORANDUM PROGRAM

In Listing 1-1 you will find a program that

should be useful to everyone; think of it as a memory extension. The program allows you to store any type of information (household, business, financial) under a "keyword" for instant retrieval at a later date. For instance, if you had an appointment on a certain date, the pertinent information could be stored under the keyword "9/11/85;" on that date you would simply type "9/11/85" to receive a printout of all appointments or reminders stored under that keyword. Likewise, a remainder for an annual occasion could be entered under a keyword specifying only the month and day. Keywords may be dates or words such as "MARKS BIRTHDAY." Telephone numbers, business contacts, important dates, and many other bulletin-board type scraps of information could be stored so that they could not be forgotten or misplaced. This information could include the number and expiration date of your driver's license, the serial numbers of credit cards (and who to notify if they are lost), expense account information, information about insurance policies, warranty information on all appliances, names and addresses of dealers, magazine subscription dates, handy home repair tips (for example, the size of the air conditioner filter), lock combinations, special codes, the method of resetting a digital watch, Christmas gifts and to whom they were given, eyeglass prescription, and so on *ad infinitum*. Additionally, information may be stored under more than one keyword to ensure the ability to retrieve it.

This program is designed for use with floppy disks. It could be changed for use with a cassette, but this would be undesirable because of the amount of time needed to access the information. The program requires 6.3K of memory.

### Listing 1-1: The Electronic Memorandum Program.

```

10 DEF SEG=&H40
20 POKE &H17,(PEEK(&H17) OR 64):REM SETS CAPS LOCK TOGGLE TO 'ON'
  WITHOUT DISTURBING OTHER SETTINGS
30 DEF SEG:REM RETURNS SEGMENT POINTER TO BASIC DATA SEGMENT
40 PRINT "ELECTRONIC MEMORANDUM"
50 REM E$=FLAG TO INDICATE WHETHER DATA ID HAS BEEN USED
60 REM Z=ID NUMBER FOR ENTRY

```

```

70 REM M AND M$ USED TO COUNT ITEMS PRINTED TO SCREEN
80 CLEAR 3000:KEY OFF
90 CLS 'CLEAR SCREEN
100 PRINT "SELECT AN OPTION:"
110 PRINT "COMMAND","FUNCTION"
120 PRINT "INPUT","INPUT A NEW ITEM"
130 PRINT "CAT","GENERATE A CATALOG OF COMMON ENTRIES"
140 PRINT "FIND","FIND A PREVIOUSLY STORED ITEM"
150 PRINT "REDO","EDIT A PREVIOUSLY STORED ITEM"
160 PRINT "DEL","DELETE A PREVIOUSLY STORED ITEM"
170 PRINT "END","END THE PROGRAM"
180 INPUT A$
190 IF A$="INPUT" THEN 270
200 IF A$="CAT" THEN 660
210 IF A$="FIND" THEN 960
220 IF A$="REDO" THEN 460
230 IF A$="DEL" THEN 1140
240 IF A$="END" THEN CLOSE:END
250 PRINT "ILLEGAL COMMAND--PLEASE ENTER ONE OF THE FOLLOWING:"
260 GOTO 110
265 REM routine to input data
270 INPUT "ENTER A KEYWORD (MAY BE UP TO 20 LETTERS LONG)";B$
280 IF LEN (B$)>20 THEN 270
285 REM lines 290-310 are for verification of cata when inputting;
you may wish to delete these lines to save time when inputting
290 PRINT "IS THIS CORRECT (1=YES,2=NO)";B$
300 INPUT D
310 IF D><1 THEN 270
320 INPUT "ENTER THE DATA FOR THIS RECORD (MAY BE UP TO 105 LETTERS
LONG--DO NOT USE COMMAS IN YOUR ENTRY)";C$
330 IF LEN(C$)>105 THEN 320
340 D$=LEFT$(B$,1)+".TXT"
350 CLOSE
360 OPEN "R",1,D$:Z=1 'OPENING RANDOM ACCESS FILE
370 FIELD #1,3 AS E$,20 AS F$,105 AS G$
380 GET #1,Z 'finding unused record number
390 IF E$="999" THEN Z=Z+1:IF Z=LOF(1)/128+1 THEN 400 ELSE 380
400 LSET F$=B$
410 LSET G$=C$
420 LSET E$="999" 'labelling this record number as used
430 PUT #1,Z 'STORING ENTRY
440 CLOSE
450 GOTO 90
455 REM routine to edit data
460 INPUT "ENTER THE KEYWORD FOR THE DATA TO BE EDITED";B$
470 D$=LEFT$(B$,1)+".TXT"
480 CLOSE:Z=1
490 OPEN "R",1,D$:IF LOF(1)=0 THEN PRINT "FILE END":CLOSE:GOTO 100
500 FIELD #1,3 AS E$,20 AS F$,105 AS G$
510 IF Z=LOF(1)/128+1 THEN PRINT "FILE END":CLOSE:GOTO 100

```

```

520 GET#1,Z
530 IF E$<>"999" THEN Z=Z+1:GOTO 500      'IF NO ENTRY GO ON
540 IF LEFT$(F$,LEN(B$))><B$ THEN Z=Z+1:GOTO 500      'IF NO MATCH
GO ON
550 CLS      'CLEAR SCREEN
560 PRINT "MEMORANDUM:"
570 PRINT G$:PRINT
580 INPUT "DO YOU WISH TO EDIT THIS ITEM (1=YES, 2=NO)";Y
590 IF Y<>1 THEN Z=Z+1:GOTO 500
600 INPUT "RE-ENTER ALL DATA: ",C$
610 IF LEN (C$)>105 THEN PRINT "DATA TOO LONG--MUST BE LESS THAN
105 LETTERS."GOTO 600
620 LSET G$=C$:LSET F$=B$:LSET E$="999"
630 PUT #1,Z
640 INPUT "EDIT ANOTHER ITEM WITH THIS KEYWORD (1=YES, 2=NO)";Y
650 Z=Z+1:IF Y<>1 THEN CLOSE:GOTO 100 ELSE 500
655 REM routine to list catalog of entries
660 PRINT "SELECT: 1)LIST A CATALOG OF ALL ITEMS ON FILE"
670 INPUT "          2)LIST ALL ITEMS WITH A SPECIFIED KEYWORD";Y
680 ON Y GOTO 810,690
690 INPUT "ENTER THE KEYWORD";H$
700 D$=LEFT$(H$,1)+".TXT"
710 CLOSE:Z=1:M=1:PRINT:PRINT "ITEM #","ITEM"
720 OPEN "R",1,D$:IF LOF(1)=0 THEN PRINT "FILE END":CLOSE:GOTO 100
730 FIELD#1,3 AS E$,20 AS F$,105 AS G$
740 GET #1,Z
750 IF Z=LOF(1)/128+1 THEN PRINT "-----":PRINT:CLOSE:
GOTO 100
760 IF E$<>"999" THEN Z=Z+1:GOTO 730
770 PRINT Z,F$:M=M+1
780 IF INT(M/17)=M/17 THEN INPUT "MORE TO COME; PRESS ENTER WHEN
READY: ",M$
790 Z=Z+1
800 GOTO 730
810 CLS      'CLEAR SCREEN
820 PRINT "RECORD #","KEYWORD"
830 X=65
840 J$=CHR$(X)
850 D$=J$+".TXT"
860 Z=1
870 CLOSE
880 OPEN "R",1,D$:IF LOF(1)=0 THEN X=X+1:IF X<=90 THEN GOTO 840
ELSE CLOSE:GOTO 100
890 FIELD #1,3 AS E$,20 AS F$,105 AS G$
900 IF Z=LOF(1)/128+1 THEN X=X+1:IF X<=90 THEN GOTO 840 ELSE
CLOSE:GOTO 100
910 GET #1,Z
920 IF E$<>"999" THEN Z=Z+1:GOTO 890
930 PRINT Z,F$
940 Z=Z+1
950 GOTO 890

```



```

960 CLS:REM routine to find selected data
970 INPUT "ENTER KEYWORD";B$
980 D$=LEFT$(B$,1)+".TXT"
990 CLOSE:Z=1
1000 OPEN "R",1,D$:IF LOF(1)=0 THEN PRINT "FILE END":CLOSE:GOTO 100
1010 IF Z=LOF(1)/128+1 THEN PRINT "FILE END":INPUT "PRESS ENTER TO
CONTINUE",M$:CLOSE:CLS:GOTO 100
1020 FIELD #1,3 AS E$,20 AS F$,105 AS G$
1030 GET #1,Z
1040 IF LEFT$(F$,LEN(B$))=B$ THEN 1080
1050 IF E$<>"999" THEN Z=Z+1:GOTO 1010
1060 Z=Z+1
1070 GOTO 1010
1080 PRINT "KEYWORD: ";F$,"ITEM #: ";Z
1090 PRINT G$
1100 PRINT
1110 Z=Z+1:M=M+1
1120 IF INT(M/5)=M/5 THEN INPUT "MORE TO COME; PRESS ENTER WHEN
READY",M$
1130 GOTO 1010
1140 CLS      'DELETE A RECORD
1150 INPUT "ENTER KEYWORD,RECORD NUMBER: ",B$,Z
1160 D$=LEFT$(B$,1)+".TXT"
1170 CLOSE
1180 OPEN "R",#1,D$      'OPENING RANDOM ACCESS FILE
1190 FIELD #1,3 AS E$,20 AS F$,105 AS G$      'DEFINE INPUT FIELD
1200 GET #1,Z
1210 IF LEFT$(F$,LEN(B$))><B$ THEN PRINT "KEYWORD AND ITEM NUMBER
DON'T MATCH":CLOSE:GOTO 100
1220 CLS      'CLEAR SCREEN
1230 PRINT "KEYWORD";F$
1240 PRINT G$
1250 PRINT
1260 INPUT "IF YOU WANT TO DELETE THIS RECORD TYPE '1'";Y
1270 IF Y><1 THEN CLOSE:GOTO 100
1280 FIELD #1,3 AS E$,20 AS F$,105 AS G$      'DEFINE OUTPUT FIELD
1290 LSET E$=""      'ERASING
1300 LSET G$=""      'INFORMATION
1310 LSET F$=""      'FROM THIS RECORD
1320 PUT #1,Z
1330 CLOSE
1340 GOTO 100

```

## AN INDEX TO YOUR LIBRARY

How often do you remember reading an important article or chapter, yet you can't remember the name or date of the magazine or book? A personal computer can easily organize and cross-reference your books and articles for instant re-

trieval using only the name, subject, author, or other parameter to retrieve the entries you are interested in. With the wealth of personal computer magazines available, an index to pertinent articles will ease the difficulty of finding that special patch or program.

A program to accomplish indexing could store information regarding items as a continuous string of data, each string being composed of several "fields," and each field separated by a comma. An example of a string with fields describing a magazine article could be as follows:

|                          |              |                        |           |
|--------------------------|--------------|------------------------|-----------|
| <u>The Stock Market,</u> |              | <u>Business Today,</u> |           |
| name of article/book     |              | name of magazine/book  |           |
| <u>5,</u>                | <u>6/84.</u> | <u>I,</u>              | <u>S.</u> |
| volume                   | date         | category               | category  |
| no.                      |              | #1                     | #2        |
| <u>1,</u>                |              | <u>Smith</u>           |           |
| storage                  |              | author                 |           |
| location                 |              |                        |           |

If data is formatted on disk in a manner similar to this example, *random access* disk commands will allow the computer to search through a selected field to find all entries with a given field. For example, the user could specify a search for all entries having an author named "Smith." The computer would then search through the entire disk file examining all the fields containing author's names (the last field in the above example) and printing all those with "Smith" as the author. The disk commands used for random access for the above format are shown in Listing 1-2.

Likewise, the computer could examine more than one field to limit the search to more specific entries. As an example, you could request a list of all articles published after 1980 concerning the stock market. The computer would search both the category and date fields for data meeting these

#### Listing 1-2: The Random Access Sample Routine.

```

10 KEY OFF:CLS:REM OPEN A FILE FOR RANDOM ACCESS ("R") USING
  BUFFER #1 NAMED "FILE"
20 OPEN "R",1,"B:FILE"
30 REM FORMAT BUFFER #1 AS 30 LETTERS FOR THE NAME OF THE
  ARTICLE/BOOK, 30 LETTERS FOR THE NAME OF MAGAZINE
40 REM TWO LETTERS FOR VOLUME NO., 5 LETTERS FOR DATE, 1 FOR
  CATEGORY#1,1 FOR CATEGORY 2, 1 FOR STORAGE LOCATION
50 REM AND 10 FOR AUTHOR NAME
60 FIELD 1,30 AS NME$,30 AS MAG$,2 AS VOLUME$,5 AS DTE$,1 AS C1$,1
  AS C2$,1 AS WHERE$,10 AS AUTHOR$
65 REM SET FILE COUNTER TO 1 TO BEGIN AT BEGINNING OF FILE
67 X=1:GOTO 120
70 REM IF REACH END OF FILE, THEN END SEARCH
80 IF EOF(1) THEN GOTO 500
90 REM INCREMENT FILE COUNTER
100 X=X+1
110 REM READ THE NEXT ENTRY INTO BUFFER #1
120 GET 1,X
130 REM IS THE AUTHOR "SMITH"? IF SO, PRINT OUT THAT ENTRY
140 IF AUTHOR$="SMITH" THEN PRINT NME$;MAG$;VOLUME$;DTE$;C1$;C2$;
  WHERE$;AUTHOR$
150 REM INCREMENT COUNTER
160 X=X+1:GOTO 80
500 CLOSE:REM CONTINUE PROGRAM FROM HERE...
```

requirements. A listing of all the information concerning each item would be outputted at the conclusion of the search. Floppy disks or high-speed random access cassettes are best-suited for this application.

## WORD PROCESSING

Pencil and paper have never been the ideal servants of the mind. Paper refuses to accept instant changes at the whim of the writer. Instead, the writer must resort to erasing, inserting, cutting, and pasting.

But no longer are we restricted to pencil and paper. Word-processing programs can allow rearrangement of words at the touch of a finger; erasures are of the past. Correction fluid has likewise been replaced by the DELETE key. Word processors give you the ability to write spontaneously. *Whereas most people try to edit their words before committing them to paper*, the advent of word processors allows you to type as you think, and later rearrange words, sentences, and paragraphs in a painless fashion. Thus, the writer can make his ideas concrete by displaying them on the video screen and later concern himself with the grammatical aspects, before printing out a manuscript. Many writers feel that this enhances their creativity and makes writing easier and more enjoyable.

After your manuscript, letters, or documents are corrected on the video screen, you may assign various codes determining page widths, page lengths, page numbering, margins, and so on; the printer will reproduce the document perfectly, as you have specified. You can then edit the document and print it out again, without having to devote time and effort to retyping it. Additionally, this information can be stored on a floppy disk for later review and retrieval.

Anyone who writes professionally or composes a letter each day, should investigate the use of a word processor. Most are very easy to use and can be tremendous time, labor, and money savers. Many experts consider this application one of the most useful for personal computer owners.

With most word processors you can:

- **Block Move.** This feature lets you move pieces of

your text—from a word to several paragraphs—around like blocks. You can also delete a block at whatever point you designate, and the rest of the text will fill in the “hole.” Or, conversely, you can add new blocks at any point. Think of a word processor as a word processor of writing, capable of slicing, chopping, and dicing the language with ease.

- **Word Wrap.** As you type on a word processor you can forget hitting the carriage return key at the end of each line, as the computer automatically puts as many words as possible on one line and then starts a new one. This, in computerese, is called *word wrap*.
- **Search and Replace.** You can instruct the word-processor program to search the entire text or a portion of it for the occurrence of a particular word or phrase. Suppose you would like to correct a misspelled name throughout a six page letter: just type in the name as you misspelled it and again as spelled correctly; the program will automatically correct this error throughout the text. The search command may also be used to rapidly locate a section in a large manuscript.
- **Typeover.** When you want to substitute one word or phrase for another, you can type your change right over the existing text, and the unwanted letters will vanish as the new ones appear to fill their places.
- **Justify.** Some programs will automatically adjust the spacing between words or letters so that each line can be printed out at the same length. This process is called *right justification*. Left justification simply means that the lines are aligned at the left margin as usual, although some programs can create special effects by aligning text only at the right margin or by centering all text.

These are the most basic features found on word processing programs. Many other special features come with certain word-processing packages. For example, a *mouse* can be used to position the cursor at any point on the screen to facilitate editing. An automatic directory program can check the spelling of each word you write against its vocabulary and make corrections. An automatic thesaurus program can, at your command, display

five to ten synonyms for thousands of common English words. Other programs are designed to correct faulty grammar—for those who don't mind having a computerized English teacher—or allow you to design type fonts and integrate graphs and pictures with your text. Several typesetting firms will also accept word processor output directly via modem or floppy disk for instant, money-saving typesetting jobs.

## LETTER WRITING

A specialized text editor, designed to edit and format your letters, could expedite the process considerably. For example, if you are writing a business letter, the address of the recipient could

be stored when it is typed at the beginning of the letter and later recalled to print the envelope. If you are writing the same letter to several people, the body could be stored in the computer. You need type only the addresses and other personalized information, and this information would be integrated with the text to form a complete letter. Additionally, the editing features of a word processor facilitate the correction of mistakes while you are entering the body of the letter or the personalized information. A mailing list program can be integrated with such a program to automatically produce personalized letters. A program to prepare a personalized form letter is presented in Listing 1-3.

### Listing 1-3: The Specialized Word-Processor Program

```

10 PRINT" SPECIALIZED WORD PROCESSOR--WRITES LETTERS"
20 CLEAR 5000
30 DIM A$(500)
40 PRINT "CHANGE LINES 490 - 530 TO PERSONALIZE PROGRAM":PRINT
50 LINE INPUT "ENTER THE DATE ",D$
60 INPUT "ENTER RECIPIENT'S NAME ",D1$
70 LINE INPUT "ENTER COMPANY NAME OR TITLE (PRESS ENTER IF NONE) ",C$
80 INPUT "ENTER STREET ADDRESS ",N1$
90 LINE INPUT "ENTER TOWN, STATE ZIP ",T1$
100 INPUT "ENTER NAME FOR LETTER ADDRESS (E.G. DEAR ----) ",A1$
110 PRINT "ENTER SUCCESSIVE LINES FOR THE BODY. IF YOU MAKE AN ERROR ON"
120 PRINT "A LINE AND WOULD LIKE TO CORRECT IT ENTER '#' AND THE NUMBER"
130 PRINT "OF THE LINE (E.G. #5) AS ANY OTHER LINE."
140 PRINT "TYPE 'END' TO PRINT OUT A COPY"
150 FOR X=1 TO 500
160 PRINT "#";X
170 LINE INPUT A$(X)
180 IF LEFT$(A$(X),1)="#" THEN 540
190 IF A$(X)="END" OR A$(X)="end" THEN 210
200 NEXT X:X=X-1
210 PRINT:INPUT "READY PRINTER TO OUTPUT LETTER";G$
220 LPRINT:LPRINT:LPRINT:LPRINT
230 LPRINT TAB(55) D$
240 READ N$,A$,T2$,A2$
250 LPRINT TAB(55) T2$
260 LPRINT TAB(55) A2$
270 LPRINT:LPRINT
280 LPRINT TAB(5) D1$
290 IF C$<>"" THEN LPRINT TAB(5)C$
300 LPRINT TAB(5) N1$
310 LPRINT TAB(5) T1$

```