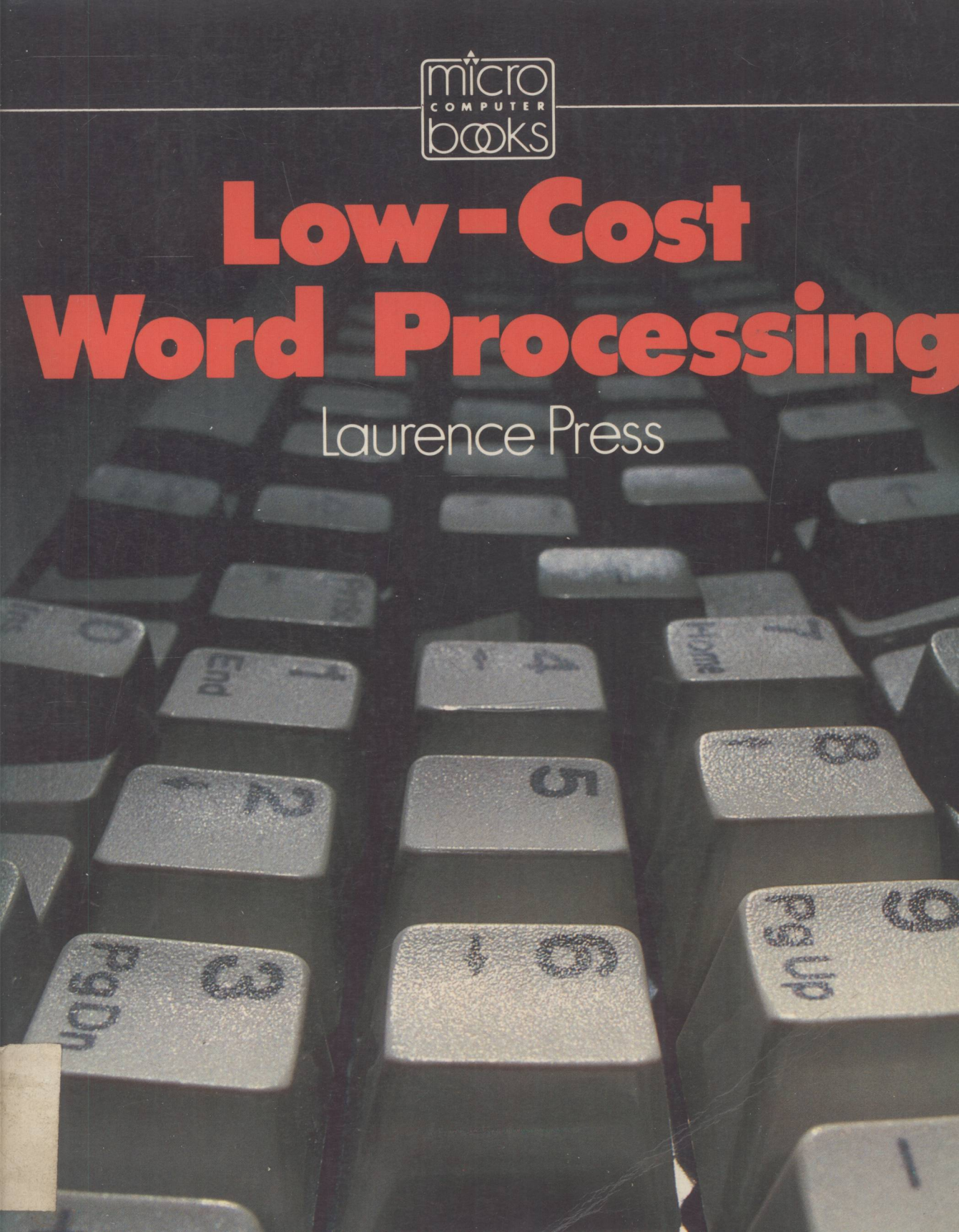
micro COMPUTER books

Low-Cost Word Processing

Laurence Press



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LAURENCE PRESS

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To my parents, Lillian and Joseph Press.
First they made sure that I learned how to do it,
then they said, "Be a good boy and write a book."

Preface

You probably already have some idea how a word processor might help you. It might increase office efficiency by cutting down on typing and retyping, or by helping to automate mass mailing. Perhaps you are thinking of using a word processor to write a screenplay, term paper, technical report, poem, novel, letter to a friend, or a business plan.

If you spend much time writing, you cannot afford to ignore word processors. You owe it to yourself to take a look at them, even though you might conclude that you cannot give up the smooth feeling of a #2 pencil on a yellow pad after finishing your research. The same advances in electronic technology that gave us Pac Man and $10 calculators have brought the cost of word processors down to the point where individuals are buying them and corporations are putting them (like telephones) on every desk.

There are two ways to get a word processor. You can buy a dedicated system from a traditional "word processing" company, or a personal computer that has been programmed to do word processing. We will discuss both alternatives, but in either case, a word processor is a computer that has been programmed to do word processing. Therefore this is a beginner's book on computers as well as word processing.

I have written the book for anyone interested in low-cost, single-user word processors. Other than curiosity, there are no prerequisites. Although it is a beginner's book, it is complete and it does not patronize you by glossing over technical concepts. Whenever a new technical term is introduced, it appears in boldface and it is explained in that section. In-

stead of relying on a glossary, you can look up a term in the index and find it explained in context.

The most important step in choosing a word processor is to decide how you will use it (the best system for one person may be inappropriate for another), so Chapter 1 gives a general introduction to word processors and their applications. Chapters 2 through 6 concentrate on hardware and will give you a good start at understanding small computers, regardless of how you plan to use them. Each of the components of a computer system is described and explained. Your options are spelled out and, by the time you finish this section, you will know what computer hardware is and what you need.

The most difficult choices will not be in choosing hardware (your applications will roughly dictate that), but in choosing a program—the software. Chapters 7 through 9 deal with word-processing software. First, overall design characteristics are discussed, and then available features and options are spelled out. This section lets you know what is available so that you can choose a word processor that provides the functions you need.

Since a word processor is a computer, it can be programmed to do things other than process words. It could be used to check for spelling and style errors, or to generate an index and table of contents for a report. These are closely related to word processing, but others, for instance, financial modeling or maintaining data files, are not. Chapter 10 discusses these other ways to use your system, and the other types of software that are available.

Chapter 11 covers factors that go beyond your word processor. You may extend your reach by using it for remote communications or to prepare input for a typesetter. There are even portable machines you should look at. Practical things like shopping, maintenance, costs, benefits, and tax savings are also covered in this chapter.

When you have finished all that, you will have an understanding of what a computer is, what hardware and software you will need for your word-processing applications, and where and how to get it. My guess is that you will never go back to your #2 pencil and yellow pad again.

Acknowledgments

Many people have contributed, knowingly or not, to this project. Jim Warren first suggested that I give the seminar that formed the basis for the book. Tom Bell started the ball rolling and his good humor and helpful suggestions have kept it moving. David Miller has managed the production details so well that I've barely noticed them. Tom Burke was thorough and intelligent in his review of the first draft, and nearly all of his suggestions have been incorporated. I even feel as though I have gotten to know the anonymous copy editor who has given me a friendly grammar lesson. Writing even a modest book requires moral support as well as practical help. I've had a good time doing it, and credit for that has to go to people like Lew, Nate, my wife, Marcela, and the kids: John, Samantha, Natalia, Roberto, and Carla (in order of appearance).

Contents

CHAPTER 1

What Is Word Processing?

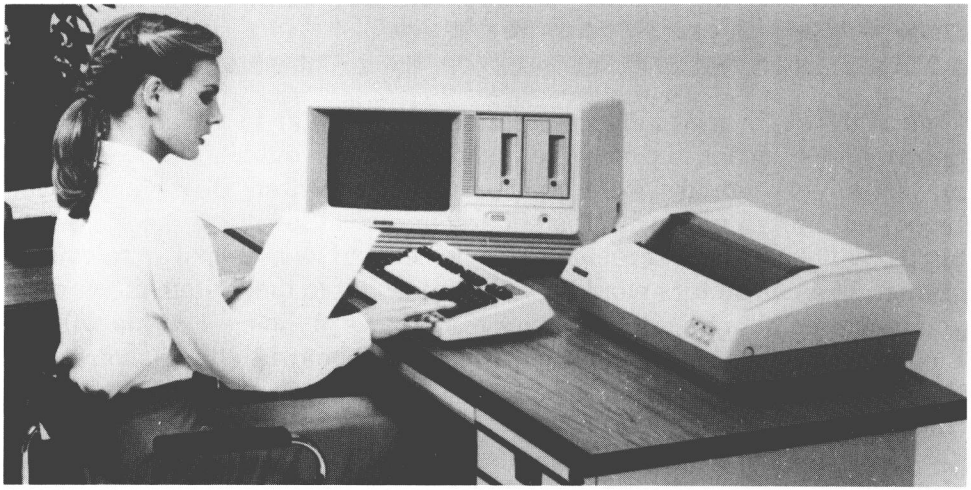
Have you ever worked with a word processor or seen one demonstrated? If not, this chapter will provide a general description of what a word processor is and how it works. Once you have read this introductory chapter, you should arrange to get a hands-on demonstration of a word processor. Even if you have seen one in action, you should skim the chapter in order to pick up the terms and concepts that are defined.

The phrase **word processing** was coined by IBM in 1968 in conjunction with the introduction of their magnetic tape selectric typewriter (see Figure 1.1). Those machines were similar to standard office typewriters, but when you typed, the characters were stored on magnetic tape in addition to being printed on the paper. Once a document, perhaps a letter, was completely keyed in, the operator could print it out as often as desired. Furthermore, if corrections or changes had to be made to a portion of the document, it was only necessary to enter those changes onto the tape. The modified document could then be printed out without having to retype the unchanged portions.

Figure 1.2 shows a photograph of a modern word processor, which evolved from IBM's early machines. As you see in the accompanying diagram, Figure 1.3, it consists of six functional units: the **keyboard, video display screen, printer, disk drive, memory,** and **CPU.** Each of these is discussed in detail in subsequent chapters, but for now let's take a general look at how they would be used.

Photo courtesy of IBM.

Fig. 1.1 IBM introduced their magnetic tape selectric typewriter in 1968. Information that was typed was captured on magnetic recording tape in addition to being printed, and the phrase "word processing" was coined. The model shown here was used to compose material for printing.



Courtesy of Toshiba.

Fig. 1.2 This photograph shows a modern word processor. You can see the keyboard, printer, video display screen, and disk drives. The CPU and memory are inside the unit with the disk drives and display.

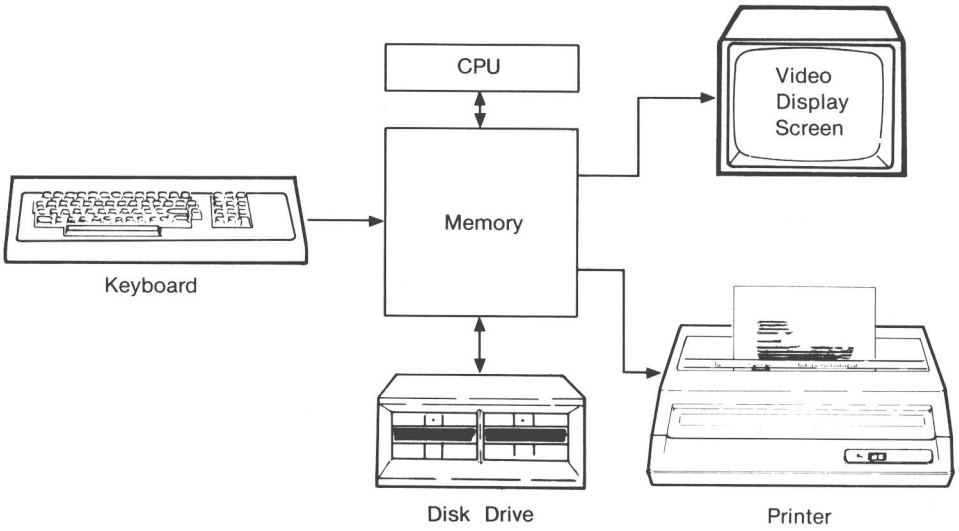


Fig. 1.3 This diagram shows how the various components of a word processor work together. As text is keyed into the memory, it is displayed on the video display screen. It may also be printed. For permanent storage, text may be transferred from memory to disks and subsequently reloaded. The CPU controls the operation of the system.

How Does a Word Processor Work?

Look at the keyboard in Figure 1.2. It is quite similar to a typewriter keyboard, and, in order to prepare a document, you would begin by keying it in, just as you would with a conventional typewriter. However, as you typed, nothing would print. Instead, each character would be displayed on the video display screen, which looks and works like a television screen. The characters would also be entered into the system memory as you typed them. In fact, if you check the arrows in Figure 1.3, you will see that what you type is transmitted from the keyboard to the memory, and the video display screen merely shows what is in the memory at any given time.

Let's see what would happen if you decided to type in the text of the Gettysburg Address for your first test of a word processor. After you type the first sentence, the screen will look like Figure 1.4, and the memory will contain those same characters. As you are typing, you will notice two curious things. First, it is not necessary to hit the carriage return key at the end of each line. The displayed text automatically moves to the next line whenever necessary. This is called automatic **word wrap,** and virtually all modern word processors perform this function. At first it might seem awkward, but you will soon grow to like automatic word wrap. You will also notice that there is an unusual symbol, perhaps a blinking rectangle about the size of a character on the screen, at the end of the sentence. This symbol is called the **cursor,** and it always shows where the next character you type will go. It continues to move as you type in new characters.

If you continue typing a bit more, you might make an error or two. In order to fix the error, you simply move the cursor to the place where you made the mistake and type in the correction. Then, to continue entering the text, you move the cursor back. How do you move the cursor? The method of cursor movement will vary from system to system, but many word processors add special **function keys** to the standard typewriter keyboard. Some of these may be used for cursor movement and others may be provided for other common word-processing operations. Figure 1.5 shows five function keys that might be used to move the cursor up, down, left, right, and to the upper left-hand corner of the screen. Using these keys, you can point to any place on the screen. By the way, there

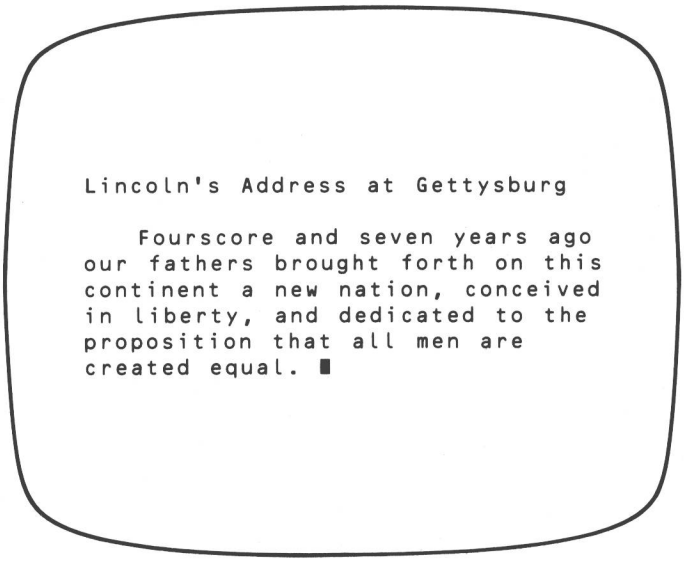


Fig. 1.4 This is what the video display would show after the first sentence to the Gettysburg Address had been keyed into memory. Each line would be automatically broken after the last word, and the cursor would show the operator where the next character would be entered.

Fig. 1.5 Special function keys are often added to the standard typewriter keyboard for moving the cursor up, down, left, or right on the screen. The "home" key would usually be programmed to move the cursor directly to the upper left-hand corner of the screen. Some systems may have ten or more special function keys for cursor movement and other operations that are specific to word processing.

will probably be other special function keys; for example, for moving the cursor directly back to the end of the document after you have made a change.

As you continue keying in the Gettysburg Address, an interesting thing will happen—the screen will fill up. If you continue to type after the screen is full, the new characters will be displayed at the bottom of the screen, and, in order to make room for them, everything else will be

shifted up one line. This obviously means that the top line will be lost. This apparent movement of the screen is called **scrolling.**

It is important to note that everything you type is entered into the system memory, even though only part of it fits on the screen at any time. As Figure 1.6 illustrates, the video display screen may be thought of as a window through which a portion of the text is seen. As you enter text, scrolling occurs automatically; however, your word processor also provides some means by which you can control the "movement" of the screen, for instance, moving back to a prior page or skipping straight to the first or last page.

This sounds great so far, but what happens if you fill up the memory? At that point, the **disk drives** come into play. The text that did not fit in the memory would be written out on a **disk.** In some systems this procedure occurs automatically, and in others some operator action would be necessary. But wait—just what is a disk drive and what is a disk?

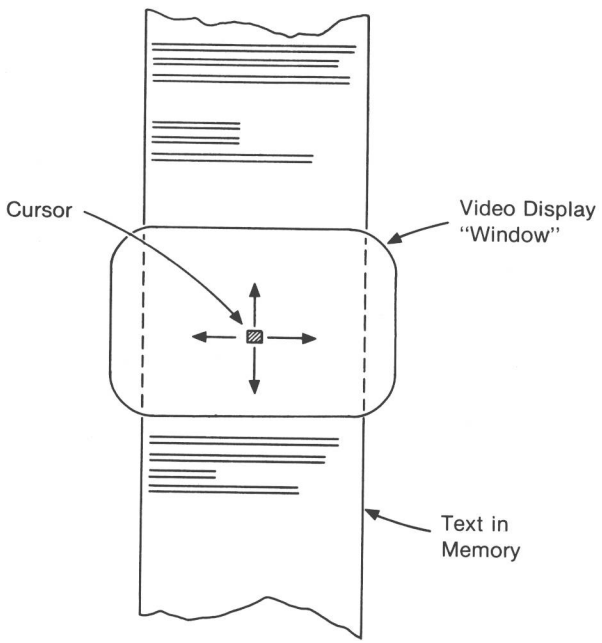


Fig. 1.6 The video display screen may be thought of as a window through which the operator can see part of the text in memory. Moving the window in order to see a different portion of the text is called scrolling. Once the desired text is on the screen, the cursor may be moved to point to any character.

A disk drive is similar to a tape recorder, but instead of recording information on a tape cassette, it records it on a magnetic disk. The disk is made of material similar to that used in recording tape, but it is round, like a small phonograph record, instead of long and thin like a tape. Figure 1.7 shows a disk inside its protective cover. When using a disk, you merely insert it into a slot in the front of the disk drive and close the door. The disk rotates in the drive, and information is read and written through the opening in the cover.

In reality, the memory on all word processors is large enough to hold the entire text of the Gettysburg Address without ever filling up; however, you still need a disk drive in order to save permanent copies of documents that you have keyed in. For example, if you wish to stop work in the middle of typing in the Gettysburg Address, you can copy the text already in memory onto a disk, turn off the machine, and go home. The next day, you can turn the machine on, insert the disk into the drive, read the text back into the memory, and resume work where you left off.

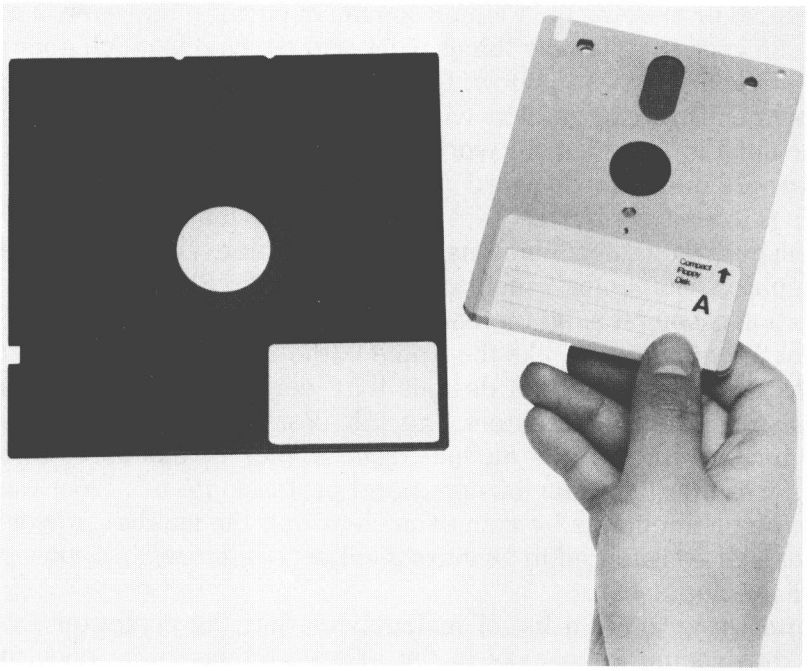


Fig. 1.7 These are magnetic disks, sealed in their protective covers. During operation, the recording media rotates inside the cover. Note the opening through which the read-write head contacts the disk.