
Introducing PC-DOS and MS-DOS

A Guide for Beginning and Advanced Techniques

Thomas Sheldon



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Introduction

*Man is a tool using animal . . .
Without tools he is nothing,
with tools he is all.*

These words, spoken by Thomas Carlyle, apply well to the subject of computers. The computer can be considered a tool, and like other tools it must have features that allow people to use it: hammers have handles, telephones have receivers and speakers, and computers have operating systems. Operating systems provide the link between human beings and the computer, giving them the means to turn a pile of metal, plastic, and silicon into one of the most powerful tools yet devised.

This book is about the IBM Personal Computer Disk Operating System, or PC-DOS as it is more commonly referred to, and is also about MS-DOS, the Microsoft version of PC-DOS that runs on most IBM compatible microcomputers. Throughout this book we will refer to both operating systems as simply DOS, and we will often refer to your computer as "the PC."

Who This Book Is For

The level or stage you are at with your computer doesn't matter as far as this book is concerned. You will find many things of interest and value throughout the book whether you are a beginner or an advanced user. If you are a beginner, you should start at the beginning of the tutorial and work your way through each chapter. If you've had your computer for a while and would like to know more about DOS, you can simply skim through the first few chapters and pick up at the level at which your expertise begins.

Part 2 of this book is for those who have been through the tutorial and for advanced users. We introduce many DOS routines and techniques that you can use to perform useful tasks such as data management and word processing. These routines may eliminate the need to buy prepackaged

software. Part 2 is also filled with useful tips, techniques, and tricks that we have learned through many hours of using DOS and training other people on it. We pass them on to you here.

Because of the advanced nature of the second half of the book, we recommend that you proceed through the tutorial one chapter at a time if you are a new user. Each chapter is designed to build upon the others, and you will learn by working your way through each step and performing the example exercises. The examples in this book apply to normal day-to-day operations you will be performing with DOS.

We will build files that you will use every day such as the telephone list in Chap. 10 or the data management routines in Chaps. 26 and 27. We will also show you how to organize your system with help screens and menus that guide you when you're having trouble or when you need to see how a command is entered. Owners of fixed-disk systems will appreciate the chapters covering fixed-disk organization.

This book is more than a tutorial. As you progress through the chapters, you will be building a working environment and a collection of software "tools" that you can use every day. In the last chapter we will bring all the techniques and tools together by building a desktop workstation diskette.

What is an Operating System?

PC-DOS is a set of programs supplied on a disk that are ready to run on your PC. When you place the DOS disk in the disk drive and turn the computer on, the operating system is automatically loaded into your computer's memory. From there, you can use any of the programs and utilities on the disk.

For the most part, DOS is invisible. It does most of its work inside the machine, acting as a foreman, directing the flow of work to be done, and controlling the way your computer acts. DOS could be considered the "personality" of your computer and is used to establish a working environment within the computer when it is loaded. After setting up this environment, the operating system waits for a command from you, the operator. At first, you may not consider DOS's personality to be so friendly, but after working with it for a while and learning its peculiarities, you will soon realize its powerful features and ease of use.

Operating systems in general share many features. Some of the most important ones are the management of files on diskettes and the acceptance of commands from the user. As commands are entered, it is the job of the operating system to interpret and execute them. Operating systems also provide a standard link that allows software developers to easily write programs that will run on your computer. These programs include pre-written applications such as word processors, electronic spreadsheets,

data managements systems, and games. The operating system gives these programs a standard way of interacting internally with the computer and externally with devices such as printers, disk drives, keyboards, and video monitors.

DOS consists of a set of tools and utilities that exist as programs on the DOS disk. With these utilities you can get started with your computer right away without buying other software. Many of these utilities are devoted to the handling of diskette files, which can be compared to the paper files used in offices everywhere. You can write these files on the screen with the keyboard and save them on a disk for later use. You can read these files, search through them, sort them, and print them at any time with DOS. DOS also contains a set of tools that is used to prepare diskettes for use on your computer and another set that is used to handle devices attached to your computer, such as printers and plotters.

History

The different versions of DOS help illustrate its growth and expansion. PC-DOS was first introduced with the announcement of IBM's Personal Computer in 1981 and was known as PC-DOS version 1.0. This version was almost immediately updated to version 1.1.

In March of 1983, IBM announced its XT Personal Computer. This computer contained a 10 megabyte hard-disk storage unit and other hardware improvements over the original PC. At the same time IBM introduced IBM PC-DOS 2.0, an enhanced version of its PC operating system. This new operating system was designed for the IBM XT and was capable of supporting a hard-disk storage device. It also provided additional commands and support that are normally found on more advanced operating systems, such as the UNIX system.

In August of 1984, IBM announced DOS 3.0 and 3.1, operating systems designed to run on their new line of Advanced Technology (AT) machines. These newest operating systems are very similar to their predecessors (DOS 2.0 and 2.1) but have the ability to address higher amounts of memory and storage and provide the means to tie many IBM computers together in a network. Computers linked into networks can share files and communicate with one another over interconnected cables.

In this book we refer to versions 2.0 and 2.1 as DOS-2 and versions 3.0 and 3.1 as DOS-3.

Which Version Should You Have?

If you own versions 1.0 or 1.1, we recommend that you upgrade to one of the newer version of DOS. You may want to refer to some of the chapters

in this book, such as the one on batch files, to see the capabilities of DOS-2 and DOS-3 that are not available in earlier versions.

Why switch? DOS-2 and DOS-3 contain many new features, an important one being their ability to store more information on diskettes than previous versions. The new DOSs also provide advanced batch processing features and have special files that allow you to easily control the start-up configuration of your system and add special hardware devices. Many features of more sophisticated operating systems such as UNIX have been implemented in the latest versions. These features include tree-structured filing, input/output redirection, filters, and piping.

DOS Documentation

DOS is extensively documented in the IBM PC-DOS manual and in other manuals, but it may not be immediately comprehensible to beginning users because these manuals are meant for reference. The operator's manual of a car does not tell you how to drive. It shows you the location of the oil stick and how to control the windshield wipers, but driving instructions are left to a qualified instructor. The instructor guides the student through real-life driving situations, thereby increasing the student's skills. We have written this book as a hands-on tutorial so that you can develop your DOS skills. Exercises are given throughout the book that are directly related to your day-to-day use of the computer.

You should be familiar with some aspects of your computer before starting this book. We will not discuss disk handling and printer paper loading; your computer operator's manual should cover these topics. We assume that the computer is already set up and ready to go.

You should browse through the introductory sections of your DOS manual before starting this book. You'll find an explanation of diskettes and how to handle them and an explanation of how to start your system. Some systems come with a diskette that will introduce you to the keyboard, providing an excellent way to get started.

Most DOS manuals supplied with systems are extensive and will serve as excellent reference tools in the future. You should, however, avoid certain sections as a beginner. The sections on DEBUG and LINK can be skipped, as well as the sections on drivers, interrupts, and control blocks. These chapters are meant for programmers. Owners of fixed-disk systems such as the IBM XT should refer to the chapters entitled "Fixed Disk" and "Directories" in their operator's guides.

How to Read This Book

Throughout this book, we will be working with practice diskettes, so you won't have to worry about making mistakes and ruining files. After the

tutorial, you can erase the diskettes and use them for other tasks. Making mistakes on a computer is sometimes useful because under certain conditions the computer will tell you what you did wrong. It is better to discover how mistakes are made now instead of later when you are working with valuable data or under the pressure of deadlines.

Chapter 1 starts the tutorial. The first thing you will need to do before beginning an actual hands-on session is to prepare a working diskette. You will find this information in Chap. 2. Remember to follow the tutorial in sequence so that you can take full advantage of the way this book is structured.

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Part

1

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