

I found the approach taken by a knowledge engineer, the person who is the kingpin in putting the expert system together, particularly interesting. First a specialist in a given field must be convinced to spend a lot of time with the knowledge engineer. Both work together on a substantial problem in the specific field. Often the specialist first gives the textbook version of the solution. The expert system written on this basis generally doesn't work well. Next the knowledge engineer watches how the specialist actually manipulates the data - not how he says he does it, how he actually does it. This is where the difficult part, the heuristic part, (where to go by the book and where to ignore the usual) comes in.

The knowledge engineer's job is so difficult and critical that many believe it must be automated if expert systems are to succeed in general.

Where does the Japanese challenge come in? The Japanese have a ten year plan to build a fifth generation computer which includes these expert systems and the ability to be programmed in a natural language. Other Japanese challenges have certainly displaced workers in autos and electronics, but resulted in a more efficient marketplace with a wider choice of products for consumers. Is this challenge different?

The authors argue persuasively that the results of this race are much more important and will drastically affect leadership in the information society to come. Or perhaps more important, they and we may be the ones to lose our jobs this time. In the future, our country could lose one of the few areas of excellence we have left. Some interesting statistics: Japan has five times the engineers, 1/20 the lawyers, 1/7 the accountants as the U.S. on a per capita basis.

To put the book in perspective, I tried to interest my better half in reading it, but the immediate demands of changing plans for her Brownie troop took precedence. A ten year competition is hard to take seriously; the Brownie troop is much more immediate. All views on sweeping national and world forces and future events are certainly arguable, but this is an interesting book to read. I recommend it highly.

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MS-DOS and PC-DOS User's Guide by Peter Norton

Robert J. Brady Co., 1984, 250 p., \$15.95
Routes 197 & 450, Bowie, MD 20715
Reviewed by Harry E. Pence*

Microsoft's microcomputer disk operating system, MS-DOS, is not only widely used on IBM-PCs under the name PC-DOS but is also a common operating system on many of the other 8088/8086 based personal computers. The new versions of MS-DOS, such as DOS-2.0 and DOS-2.1, include many new features that have improved the power and flexibility of DOS but have also made it more complicated for the novice to learn. This book is intended to teach the fundamentals of DOS and also to suggest ways in which the system can be employed most effectively.

Norton's book has been designed to satisfy a broad range of DOS users. It discusses not only the IBM version of the operating system, but also the alternative forms of the various commands that are found on other IBM compatible personal computers, such as Columbia, Compaq, etc. In addition, commands that appear only in the 2.x versions of DOS are placed in bold-faced type, to accommodate readers who are still using older DOS versions such as 1.10 or 1.25.

Norton utilizes the analogy of an office worker's desk very effectively to introduce the basic concepts which are needed to understand DOS. The disk storage is explained as being like a filing cabinet, the computer memory like the desk top, etc. These explanations are very clear and important ideas are reinforced by cartoons, some of which are rather clever. Unfortunately, I did not find the book encourages the type of hands-on approach that I prefer. Even though the author suggests that the reader should try various techniques on the computer, the text does not provide the type of assistance that is normally needed by someone who is working with a computer for the first time.

In the Introduction, the author promises that the book will not only describe how to get started with DOS but will also provide practical advice about how to use a personal computer and what types of software are best to buy. Peter Norton is an experience computer consultant who is well known both for the Norton Utilities software package for the IBM-PC as well as because of his many articles in computer magazines, and so his opinions deserve careful consideration. He covers topics such as how to choose software, copy protection, advantages of hard disks over floppies, and the best programming language to use. Most of his suggestions are not profound, but they should provide helpful guidance to someone just beginning to work with a computer as well as some interesting food for thought for all users.

The book offers an excellent coverage of some of the advanced features of DOS. Potentially one of the most useful sections of the book is the discussion of batch files. Batch files can replace a number of DOS instructions with a single command, and so they are a convenient way to save a great deal of typing. More important, they can be set up to provide some protection against incorrect commands that can cause the loss of data. There is good discussion of some of the new UNIX-type features, such as re-direction, filters, and pipelines. Norton provides a description of EDLIN, the DOS text editor, that should be quite adequate for most purposes. However, he suggests that readers should use a better editor than EDLIN.

Since this book seems to be rather clearly aimed at beginners, it is no surprise that not all of the advanced DOS techniques are equally well discussed. Topics related to hard disks are scattered throughout the book, rather than being grouped together in one or two places, and the explanations would be clearer if they included more specific examples to show how the techniques actually work. In certain circumstances, it can be very valuable to reconfigure the system, but Norton doesn't discuss how this can be done with the new versions of DOS.

Norton has written a clear description of the important features of DOS that will probably be useful to a broad range of computer users, but in order to achieve this breadth, he has sacrificed some specificity. The strongest features of the book are the use of everyday analogies to clarify basic concepts of DOS and the equally down-to-earth advice on how to set up a new computer system. If you are using PC-DOS 2.0 or 2.1 on an IBM machine, you may well wish to consider a book that deals specifically with your system, but if you cannot find a book that fits your situation, or if you are a beginner and wish to obtain a general understanding of how DOS works, this is a book that you should consider.

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PC ODS User's Guide
by Chris Devoney
Que Corporation, 1984, 330 p., \$12.95
7960 Castleway Drive
Indianapolis, IN 46250
Reviewed by Harry E. Pence*

This book was designed with a specific purpose in mind: to teach a beginner how to use both basic and advanced features of PC-DOS version 2.0 on an IBM personal computer. Throughout most of the book, the author uses what I would consider to be a true hands-on approach. He explains what the reader should type in at the keyboard as well as what response is expected from the computer, using different type fonts to identify which is which. There is even an explanation of the common error messages at the back of the book to make it easier to correct mistakes.

Like many other authors I have read, Devoney urges all users to change to the new versions of DOS in the 2.x series. He suggests several reasons for this, including the increase in minifloppy disk storage, the greater convenience of the new commands, and the improved speed of disk operations. In addition, the newest software products will probably utilize the more powerful features of the latest DOS releases, and so will require the changeover.