

ADVANCED MICROCOMPUTER APPLICATIONS

ROBERT GRAUER





Advanced Microcomputer Applications

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Advanced Microcomputer Applications

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Preface to the Instructor

The last several years have seen the emergence of an advanced microcomputer applications course. This book is designed for this new course. And because today's freshmen tend to be better prepared than those of only a few years ago—familiar with DOS, word processing, often even electronic spreadsheets—*Advanced Microcomputer Applications* can also be used in a more rigorous introductory course. Specifically, *Advanced Microcomputer Applications* equips students to:

- **Use DOS** and/or independent utility software to manage files and directories, create batch files and establish backup procedures, protect files from accidental erasure and/or the threat of virus infection.
- **Use a spreadsheet** to combine worksheet data, analyze results in graphic form, use WYSIWYG formatting effectively, create macros and/or user-defined menus.
- **Use a word processing program** coupled with principles of typography and graphic design to develop technical reports that include data in tabular form, graphics, and information imported from other applications.
- **Use a data management program** to create a file and/or database structure and export data to other applications; recognize the limitations of a flat file data manager and the requirements of a relational database.
- **Understand the Windows environment** and use its capabilities to transfer data between applications.

Distinguishing Features

The following features are employed to help teach students how to use microcomputer applications to solve real business problems and troubleshoot using the most current tools and techniques.

- **Real-world business scenarios** motivate students and stimulate classroom discussion. Each chapter is launched by “The Problem” followed by “The Issues,” which encourage students to evaluate alternatives and select the application package that provides them with the best solution.

- **Emphasis is on concepts over keystrokes**, and thus the text material is relevant to any software. This approach is essential, because students will encounter a great diversity of application programs in business and need to know how to adapt.
- **Modular organization** enables the individual chapters to be covered in whatever sequence best meets the instructor's specific course objectives.
- **Tips and techniques** for selecting, installing, and applying the most popular applications in today's business environment equip students with a handy reference. Practical advice is given in every chapter, such as doubling the warranty on a computer purchase, password-protecting a Lotus spreadsheet, or converting a dBASE file to a form suitable for a WordPerfect mail merge.
- **Current coverage** is given of a variety of topics, including computer viruses, presentation graphics, spreadsheet macros, user-defined menus, combining spreadsheets, batch files, memory management, mail merge, conversion of file formats, utility programs, DOS 5.0, Windows 3.1, and more.

Comprehensive Support Package ---

30+ Software Manuals from Mitchell/McGraw-Hill provide lab alternatives to supplement the generic approach of the text. These tutorials can be mixed and matched to support each instructor's unique software configuration.

Instructor's Manual includes solutions to all exercises in the text. There is also a detailed lecture outline for each chapter, teaching strategies, and a series of "emergency lectures."

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Advanced Microcomputer Applications

CHAPTER 1

Introduction

THE PROBLEM Your brother-in-law calls to say he is finally ready to buy a PC and (surprise, surprise) Charlie is actually asking for your advice. He is intrigued by Windows (especially the game of Solitaire) and thinks he wants to buy WordPerfect. Charlie is embarrassed, however, to admit that he knows very little about computers, and you suspect he knows even less than he thinks. You want to help him, but you also want to make him as self-sufficient as possible so that he doesn't call you incessantly after he has his system. What do you recommend?

- THE ISSUES**
1. What are the primary considerations in the purchase of a PC?
 2. What are the advantages and disadvantages of a mail-order versus a retail purchase?
 3. What does a novice user need to know about MS-DOS?
 4. What is the difference between a text-based and a graphics-based program?



OBJECTIVES

After reading this chapter, you will be able to

1. Define PC-compatible; describe the contribution of IBM, Microsoft, and Intel to the evolution of the PC.
2. List three considerations in the purchase of a computer system.
3. Distinguish between a graphics-based and a text-based program.
4. Format a disk with and without the system files; explain how to format a double-density disk in a high-density drive.
5. Use the DOS COPY command to duplicate a file from one disk to another; indicate how the file name, extension, and/or disk drive may be supplied as a default.
6. Define wild card as it pertains to PC-DOS file names; distinguish between the use of an asterisk and a question mark as the wild card character.
7. Describe the rationale for a local area network.

OVERVIEW

It was easy to buy a PC in 1981—there was only one model to choose and only one company from which to purchase it. Today, you can buy from literally hundreds of companies, retail or through the mail, with no such thing as a standard configuration. The microprocessor inside the system unit can be anything from the original 8088 to an 80586. You can pick a monochrome monitor, or a variety of color monitors, and can input data from one of many keyboards, a mouse, or even a touch screen. Floppy disks come in two sizes, 3½ inches and 5¼ inches, with different capacities for each size. Hard disks run anywhere from 20Mb to more than 200Mb. There are tape backup units and CD-ROM devices. The selection of software is equally overwhelming with a multitude of application programs from which to choose, as well as different versions of the same program to consider; e.g., the DOS and Windows versions of WordPerfect.

The objective of this introductory chapter is to bring order to chaos by providing you with guidelines for the purchase of a computer system. We begin with a brief historical perspective on the development of the IBM PC, focusing on the roles played by Intel and Microsoft, which have given rise to the host of PC-compatibles that dominate today's market. The second half of the chapter

reviews the essentials of **MS-DOS** and discusses the rationale for a **local area network**. The material is included in case you have forgotten it (or never learned it)—in which instance, you, like the mythical brother-in-law in the chapter opening, will benefit from the review.

The IBM PC

The IBM PC was announced in August 1981, and to quote one IBM executive, “No one dreamed that we would create a product that would spawn an industry.” What was initially a group of a dozen people, working on a machine that was estimated to sell a maximum of 250,000 units, has grown to a division of 10,000 employees producing more than \$15 billion in annual revenue for IBM alone.

In rushing its machine to market (the Apple II and Radio Shack TRS-80 were each three years old at the time), IBM broke a longstanding tradition by going to external sources for supporting hardware and software. The microprocessor inside the PC was produced by **Intel Corporation**, and the operating system was developed by **Microsoft Corporation**. In addition, IBM announced its machine would be sold through retail outlets, including Sears and Computerland.

In terms of today’s capabilities, the initial offering was hardly spectacular. The original PC had a standard memory of only 16Kb, and was expandable to just 256Kb. The system could accommodate two 160Kb floppy drives (hard disks were unavailable), and the dot matrix printer could print at only 80 characters per second. Systems for home or school use were sold without a disk drive (a tape cassette was used instead) and without a monitor (a TV was suggested). Software was practically nonexistent. Lotus 1-2-3 hadn’t been developed, and WordPerfect and dBASE were little-known programs, not yet modified to run on a PC.

Yet the PC, with little software and limited hardware, was an instant success for two reasons. The IBM name, and its reputation for quality and service, meant that corporate America could order the machine and be assured that it would perform as promised. Of equal, or even greater, significance was the PC’s open design, which meant that independent vendors could offer supporting products to enhance performance. In other words, by making the technical specifications of its computer public information, IBM was effectively inviting other companies to make its machine better.

This open design would, however, prove to be a mixed blessing for IBM. Yes, it quickly made the PC a corporate standard as outside innovations continually improved the original computer. At the same time, the open design made it possible for any other company to build a functionally equivalent computer. **PC-compatibles**, computers able to run the same software as the IBM PC, began to appear as early as 1982 and offered superior performance for less money. Companies and individuals who were once willing to pay a premium for the IBM name began ordering the “same” machine from other vendors.

The Microprocessor

The **microprocessors** used in the original IBM PC, its successors, and the various PC-compatible computers are manufactured by the Intel Corporation and are depicted in Figure 1.1. Each succeeding microprocessor is more powerful