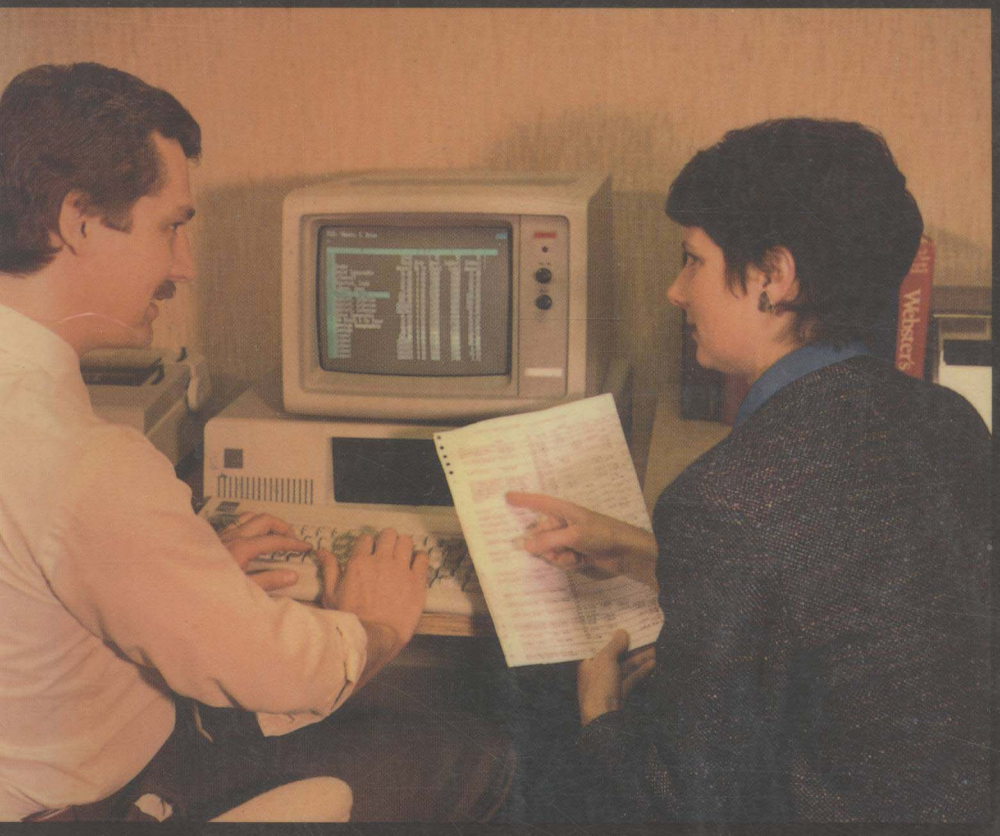
BUSINESS APPLICATIONS USING THE IBM PC



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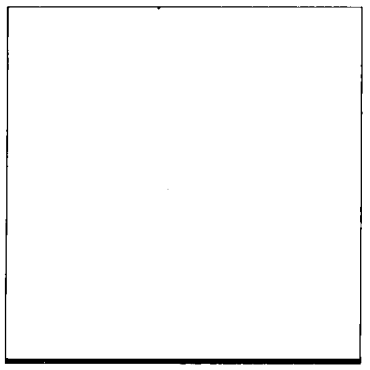
Using: Word Star®, Lotus 1-2-3®, dBASE II, III, III+ ®, and Data Transfer Between Applications



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PREFACE

Computing has moved from the world of the mysterious and the technically oriented to the realm of the end user.

Your challenge, as today's end user, is not to understand the technical inner workings of microcomputers or even the intricacies of programming. It is to efficiently and effectively integrate these powerful yet easy-to-use tools into the everyday operational and problem-solving activities of the business world.

Helping you meet this challenge is the primary reason for this book.

Who should use this book, and why?

Business Applications Using the IBM PC is designed for use with an IBM PC or compatible. It was written to help students in a microcomputer applications course meet these primary objectives:

- to learn how to operate a microcomputer, use operating system software, and maximize computing resources by becoming a knowledgeable end user
- to become an effective user of the most popular full-power commercial software for word processing (WordStar), electronic spreadsheet (Lotus 1-2-3), and database (dBASE II/III/III PLUS) applications
- to apply with confidence these productivity tools to solve simple to more advanced real-world problems within business settings
- to multiply the power and usefulness of WordStar, Lotus 1-2-3, and dBASE II/III/III PLUS software by integrating these packages into one comprehensive business tool
- to gain an easy-to-use yet comprehensive reference guide that will be useful well into your business career

Organization and scope

This book consists of five self-contained modules. Each module uses examples from The Answering Company, a telephone answering service, to demonstrate the application software in a realistic business situation.

This case study will help you become a more effective user of application software for two reasons. First, by presenting the capabilities of each package within the context of a business, you not only learn how to use these packages, but when and why to use them to successfully perform business applications

and solve common business problems. Secondly, this common thread shows you how the applications of word processing, spreadsheets, and database are related in the real world.

Module 1 stresses the practical uses of microcomputers. You are introduced to microcomputer hardware and common computing terminology. You learn how to care for the hardware. Step-by-step, hands-on tutorials teach you how to "boot" the computer, install software, and create backup copies of data. This first module discusses the role of the DOS operating system and your responsibilities as a user. Some of the legal issues regarding the copying of software are presented as well.

Module 2 covers the most practical and immediately useful application of microcomputers: word processing. Using WordStar, you learn how to write a business letter, develop business stationery, create an advertising flier, produce a multi-page business report, and even produce invoices which can be used individually or with MailMerge data files.

Module 3 illustrates how to set up, store, manipulate, and retrieve data quickly in a variety of formats. Using dBASE III, one of the most powerful data management programs available, you learn how to plan for and design a database. Soon you will be creating a customer information database (that later you will expand to include billing information), calculating customer charges, and generating sales reports and logs of daily transactions.

Module 4 teaches you how to run the most widely used electronic spreadsheet, Lotus 1-2-3, as a financial tool. In this module, you create a monthly sales report (that later you will expand with graphs), develop an integrated spreadsheet that combines the Chart of Accounts, General Ledger, Income Statement, and Balance Sheet for The Answering Company. The monthly journal entries for several months will be added, each month applying more advanced spreadsheet techniques.

Module 5 draws on the files created in the earlier modules or obtained from your instructor's data disk. This "capstone" module illustrates how software packages can be integrated to maximize processing power. Procedures are developed to add information into the WordStar business report, to generate database sales information which can be manipulated with a spreadsheet, to add data from other sources to the database, and to sort word processing files.

How to use this manual

First of all, it's easy. Once you have an IBM PC (or compatible microcomputer) with two disk drives and a minimum of 256K of RAM, this manual provides you with step-by-step, hands-on tutorials to quickly and easily master three of the most powerful commercial software packages available today.

Below are some of the features of this manual that were designed to help you learn.

Flexibility: You may use some or all of Modules 2 through 4, and in any order. They are completely independent.

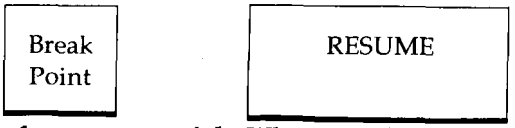
Conceptual introduction: Each module begins with an introduction to the strengths and potential uses of the particular type of application software.

Task sections: Each module is divided into sections containing the instructions for executing a particular application.

Numbered steps: All hands-on instructions are numbered.

Breakpoints: Lengthier sections of the text are divided into short, easily managed work sessions. You should be able to comfortably finish a work session during a 50-minute class period. A *Breakpoint* symbol is used to

indicate convenient stopping places, and *Resume* symbols contain needed instructions for picking up where you left off.



Separate reference material: When needed, software features and commands are described and boxed off from the rest of the text for future reference.

Ample illustrations: 50 to 70 screen displays per module allow you to monitor your progress.

Simple to challenging: Each module progresses from simple to more advanced commands and features. If you opt to skip the advanced topics in Modules 2 through 4, you can still use Module 5 to create an integrated business system. Simply copy the files you would have created in Module 2 through 4 from your instructor's data disk.

Command summaries: Each section concludes with a summary of the commands learned in that section.

Practice exercises: "Practice what you've learned" exercises in each section reinforce the material that has just been covered.

Projects: Each module includes four to six projects, ranging in difficulty from simple to challenging. These projects build on what you've learned and develop skills for future use.

Additional commands: In addition to Projects, each module contains a list of commands and features not covered in the manual should you choose to explore the software further on your own.

Glossary and index: The manual concludes with a list of terms defined in relation to their use in a particular application as well as a comprehensive and easy-to-reference index.

Acknowledgements

The completion of a book such as this one is accomplished only with the guidance of professionals and the enthusiastic support of friends, peers, and family, for which we are grateful.

Thanks are due to the following teachers who provided helpful comments and suggestions each step of the way: Gary Armstrong, Shippensburg University; Joyce Dick, Northeast Iowa Technical Institute; Ralph Duffy, North Seattle Community College; Brett Ellis, University of Wisconsin at Eau Claire; Tom Haresing, Long Island University; Fred Kohun, Robert Morris College; Judy Scheeren, Westmoreland County Community College; John Schrage, Southern Illinois University at Edwardsville; Al Schroeder, Richland College; Dennis Severance, University of Michigan; Bill Spezeski, North Adams State College; Richard Tersine, University of Oklahoma; Ed Weihruch, Community College of Allegheny County; and Jeanne Wilequet, Houston Community College.

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Carolyn Meinhardt
Ralph Verno

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1 INTRODUCING MICROCOMPUTERS IN BUSINESS

1. Entering the world of microcomputers

You are about to enter the world of microcomputers. If this is your first venture, you may feel some fear of the unknown as well as some excitement. Your fear will pass quickly, as you discover the friendly world of microcomputers and the terrific software that makes them so useful.

Until very recently, computers cost thousands of dollars, and people needed years of training to learn to operate them. Microtechnology has changed all that by making a complete computer available for a low price. Many small businesses now find microcomputers a cost-effective way to manage information and perform many office functions. What remains is for business personnel to discover the potentials of the microcomputer, and that will happen as they become familiar with the machines and the software that can be used with them.

How this book can help you learn about microcomputers

This book teaches the basics of using an IBM-PC microcomputer (or a compatible) with some of the most powerful general application programs available today. It is intended for business students who are learning about computers and information systems. The book has five modules. The first introduces the microcomputer, and the next three teach the use of three important types of software: a word processor, a spreadsheet, and a database. The fifth module shows how to use the three software programs together to expand their potential. Carefully read and use Module 1 first. You can explore Modules 2, 3, and 4 in any order. Module 5 provides additional information for advanced integration applications.

Since this book is intended for people who are interested in business, you will apply what you learn to an imaginary firm called The Answering Company. You will use many of the features of each kind of software to create business records or perform office functions for The Answering Company. The additional exercises and projects in each module give more real-life practice in using the computer and software in a small business.

Each module is divided into several sections. Numbered steps indicate the order in which the work in each section should be done. Always follow the numbered steps and always complete one section before continuing with the

next - if you go ahead and "start in the middle" you will probably discover the instructions are assuming that you have already completed an earlier item and you will experience trouble getting caught up.

Features of the software products are introduced in the boxed paragraphs which appear throughout each module. These explanatory paragraphs can be used later for reference. Included in the exercises for each section are instructions for storing summary information about each of the new features introduced in that section. If you complete all of these exercises, by the end of the module you will have a complete quick-reference list.

Illustrations throughout the text clarify the instructions or indicate what you should see on the computer screen at that point. Each module contains a list of additional software features not covered in detail in the module. For more information on those additional features, refer to the user's manuals that accompany the software packages. Also, a glossary of terms is included at the end of the book.

Hardware and software

Many beginning computer users are intimidated by computer jargon. In just these first paragraphs, you may have seen a few unfamiliar words. Here are a few introductory definitions.

Microcomputer: A *microcomputer* is a complete computer, able to receive information, process that information, and make it available to the user in some form. It has a microprocessor that can handle both text and numbers. A microcomputer differs from larger computers not only because it is smaller (it fits on an ordinary desk) but also because it is cheaper, (it usually costs under $4,000 complete), can be used all by itself, (it is not dependent on other computers), and has a smaller internal memory. (This term is explained in the section on memory devices.)

Computers are changing and improving at a phenomenal rate. The above "1987" definition helps to differentiate microcomputers from *minicomputers*, which have larger capacities and are able to do more. However, some of today's microcomputers would have been called minicomputers just three or four years ago. As computers become more powerful, less expensive, and smaller, the perception of what is a "microcomputer" changes as well.

IBM-PC and compatibles: This book is intended to be used with the IBM-PC, described in greater detail in the section "Hardware and Software Requirements." Rival companies have used the IBM-PC as a standard for developing many other microcomputers, often called IBM *compatibles*, or just compatibles for short. These compatibles either simply copy the IBM-PC design or improve some part of it. A resulting problem is that these improvements make the final product different from the IBM-PC in some respect. When programmers write software for use with the IBM-PC, they make sure that the software works perfectly on a standard IBM-PC. A compatible may be better than the IBM-PC in some ways, but the differences may also create problems with certain software.

The instructions in this book were verified by testing the software and the examples on both an IBM-PC and a compatible, the Leading Edge microcomputer. Most microcomputers that claim 100 percent or even 90

percent compatibility have no trouble running software intended for the IBM-PC, but not always. So buyers, beware! Insist on seeing a software package run on the machine you want to use before you spend the money for either.

You've already seen the words *hardware* and *software*. Here are some definitions.

Hardware: *Hardware* is any piece of equipment used as part of a computer system. It includes the microcomputer, add-on optional computer parts, printers, memory storage devices, and other physical equipment. Printed and wired circuit boards that may contain permanent instructions are also hardware (instructions of this type are sometimes called *firmware*).

Software or programs: Computers are completely useless unless you tell them what to do. The sets of instructions a computer follows are called *programs* or *software*. The instructions are written in a programming language and usually stored permanently on a memory device. When the computer "reads" the software, the instructions are changed into electrical currents that cause the computer to respond in a predetermined way.

You can think of the software as analogous to a phonograph record. The music corresponds to the program. Each is stored on a physical device. The music is translated into grooves on a record, and the program is translated into magnetic charges on a memory storage device, such as a floppy disk. When you buy the record, your intent is to buy the music stored on the record; when you buy software, you are buying a floppy disk that contains the software program. (The term *floppy disk* is explained in the section on memory devices.) The phonograph plays the record much as the microcomputer reads the floppy disk.

In summary, microcomputers are machines that process information. They are designed to do essentially the same kind of tasks as larger computers, called minicomputers or mainframes, but microcomputers have less capacity, are generally smaller, are less complex to use, and cost less. The physical parts, including the firmware, are called hardware, and the stored instructions are called software.

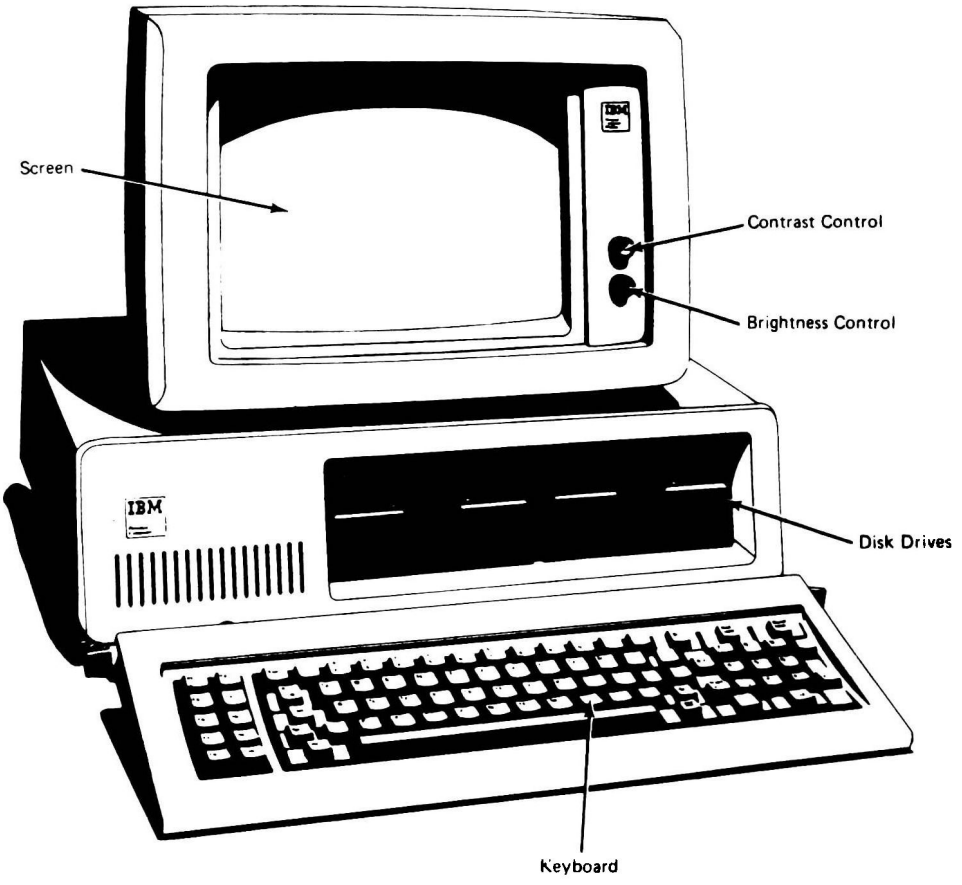
Practice what you've learned

1. Using recent issues of newspapers or magazines, list ten brands of microcomputers.
2. Indicate which of the microcomputers are IBM-PC compatibles.
3. Using recent issues of newspapers and magazines, list the names of ten software products.
4. List the purpose of each product and indicate with which computers it is meant to be used.

2. Person, meet your microcomputer

Getting to know your microcomputer is much like meeting an unfamiliar person. First impressions are important. If you get off to a bad start or are never properly introduced, you may put off getting to know the newcomer better. Although the computer is exceptionally dependable, it does not always respond in the way you might expect. You must learn to "speak its language." It will usually tell you immediately if it doesn't understand what you are trying to tell it to do. Remember, there is virtually nothing you can do to harm it just by pressing its keys. Begin by learning about the parts of a microcomputer. The following description is of the IBM-PC, but you will have no trouble finding the corresponding parts on a compatible. The picture shows the outside of a typical IBM-PC system.

IBM-PC System with printer



The computer system from the outside

As you read this section, try to find each part on your microcomputer.

The computer body: All of the working parts of the computer are contained in the box which is called the computer *body*. The heart of the computer, called the *central processing unit* or *CPU*, is located on a circuit board inside the body. The two *disk drives*—the parts that read the floppy disks—are incorporated into the body, but in some other IBM models and