

MICRO COMPUTERS IN BUSINESS

wordstar
dBASE II & III
Lotus 1-2-3

SPENCE &
WINDSOR

MICRO COMPUTERS IN BUSINESS

**WORDSTAR,
dBASE II AND III,
AND LOTUS 1-2-3**

**J. WAYNE SPENCE
JOHN C. WINDSOR**

BOTH AT NORTH TEXAS STATE UNIVERSITY



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To Jan, Pat, and Cari. Thanks for your help, interest, and patience. Now—how about a vacation?

J.W.S.

To Eileen, Laura, and Rachel. Thanks for all your encouragement and support. We will go fishing this weekend.

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The Intended Audience for This Book

We wrote *Microcomputers in Business: WordStar, dBASE II and III, and Lotus 1-2-3* for a practical, hands-on, first course on how to use the microcomputer as a business problem-solving tool. This course is typically taught at the freshman or sophomore level in two- or four-year colleges and is typically aimed at business majors, information systems majors, and MBAs. Our book assumes no previous knowledge of the three software packages.

Why We Wrote This Book

Several years ago our consulting work indicated increasing demand for microcomputer application systems and for instruction on microcomputers and software packages. In response to this trend, we developed one of the first college-level courses designed to provide students with hands-on use of computers.

A book was originally written for our course to fill the void that the then-available books couldn't fill. It began as a locally produced software manual, and, through extensive class testing and marketing-based development, it evolved into a business-oriented microcomputer concepts and specific applications textbook, *Using Microcomputers: Applications for Business*. For those courses that teach only WordStar, dBASE II and III, and Lotus 1-2-3, we wrote this text, *Microcomputers in Business*.

While we were writing our book, a number of competing books were published. We've taken great care to ensure that our book does not have the deficiencies present in these currently available competitors. We specifically note the following:

Some Books Don't Address Specific Packages

A generic approach is fine for nonbusiness majors who need to "get their feet wet." Most businesses, however, now expect prospective employees to know how to use the

popular packages to solve business problems.

Few Books Have a Business Orientation

When they do have any, it's "tacked on" in the form of exercises or boxed features. In general, our competitors do not integrate a business problem-solving theme, but instead concentrate on package commands.

Why We Think You Should Use This Book

Put quite simply, it works! The materials in our book have either been directly classroom tested or based on a classroom-tested model. Furthermore, much of this text has been used at North Texas State and in seminars for business professionals, employees of governmental agencies, and members of professional associations. We have taught from this material, located its weaknesses, and altered its presentation so that it meets the following educational objective:

To Emphasize Business Applications and a Problem-solving Orientation

Each Module focuses on solving a problem associated with searching for and finding a job. The strength of this approach is that students see how business problems are solved, rather than simply learning a list of commands.

How to Use This Book

The Modules are self-contained and as such may be taught in any order without loss of continuity. We do recommend, however, that Module Two be taught before Module Three.

Modules

The Modules provide a step-by-step approach to solving business problems. Each software package presentation is preceded by background information and an *Introduction* that identifies the details of the business problem to be solved. Each Module can be discussed in the classroom (ideally with a live demonstration), or students can work through each Module in the lab. Each Module concludes with a *Summary*, which contains a general review of package features, a discussion of uses, and a checklist for evaluating software of that application type. Appendix B contains questions and problems that test students' knowledge of the specific commands of each software package and students' ability to use the software to solve business problems.

The Job Hunting Problem

As mentioned above, realistic business examples are found throughout the book. The Job Hunting Problem is used throughout the Modules. Solving the same problem with different packages offers a building-block approach not found in other texts.

Additional business problems to solve can be found in the Student Lab Manual that accompanies our text. These problems encourage student interest, reinforce concepts, and promote a problem-solving approach.

Additional Options

Microcomputer concepts are often taught in combination with computer concepts and/or BASIC programming. Thus this text may be used with:

- A computer concepts text
- A BASIC programming text

Times Mirror/Mosby's two offerings in this area are Floyd, *Essentials of Data Processing* (1987), and Cohen-Alger-Boyd, *Business BASIC for the IBM PC with Cases* (1987).

Long Version of Our Text

A version of our text that contains generic chapters and additional modules for operating systems, word processing, spreadsheets, database, graphics, and integrated software is available from Times Mirror/Mosby.

Supplements

This text has a direct, practical approach. Likewise, our supplements package reflects a clear, useful business-oriented theme. The supplements can be used with both versions of our book.

Instructor's Manual

Our Instructor's Manual provides the most complete assistance currently available to instructors of introductory microcomputing courses. Further, this guide was designed to allow instructors to add their own teaching notes and so tailor it for their use. It includes:

- Notes on establishing and managing a microcomputer laboratory facility.
- A series of course syllabus suggestions for:
 - semester/quarter-oriented courses
 - courses with limited/extensive software use
 - courses to be supplemented by other material
- Approximately 100 Transparency Masters, which include:

- key graphics that appear in the book
- adaptations of text graphics
- completely new illustrations
- Chapter components include:
 - teaching tips and notes
 - Transparency Master guide for each chapter
 - answers to all Chapter Questions
- Module components include:
 - teaching tips and notes
 - Transparency Master guide for each Module
 - answers/solutions to all Module Questions and Problems
 - additional Module Problems with solutions
- Sign-up sheet for those instructors wishing to be notified of Module Updates

Student's Laboratory Manual

This supplement, designed to facilitate students' use of the laboratory, is composed of:

- Hardware configuration guide—to record the types and locations of hardware available
- Software inventory—to keep track of the software packages and versions
- Restatement of all Module Problems with the appropriate data for each exercise
- "Test Yourself"—fill-in-the-blank and matching review questions and answers
- Quick response form—to be completed and submitted to the instructor for each exercise solved (minimizes amount of printout produced)
- Additional Module exercises, with the accompanying data for each exercise

- “Where do I find?” guide—to identify where items such as microcomputer magazines, hardware vendors, software vendors, and so on may be found
- Software summary sheets for each of the software packages presented in the text indicating the organization and structure of menus and commands (reduces the need to have both text and lab manual in the lab at the same time)

Data Diskettes

A set of three data diskettes contains data sets for the Module Job Hunting Problem and the four additional problems in the Student Lab Manual as well as solutions for all Module exercises.

Testbank and Computerized Testing Package

This includes over 1000 items with an average of over 50 items for each Chapter, an average of 20 items for each Module, and an average of 20 items that require knowledge of multiple Modules. The questions are predominately multiple choice, with the remainder distributed between true/false and matching. The testbank includes correct answers keyed to the appropriate Chapter or Module. This supplement is available to adoptors in printed and diskette version.

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J. Wayne Spence

John C. Windsor

Preface

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OVERVIEW: MICROCOMPUTER APPLICATIONS IN BUSINESS

Welcome to the world of computers, especially microcomputers! You are about to learn how to use a computer to solve problems.

In the following modules, you will become familiar with three of the most popular microcomputer packages available today.

Module 1 covers the **word processing** program WordStar. If you have to write textual material and want to be able to change it easily, a word processing program can solve the problem. As a student, you might want to use word processing to write letters, prepare class papers, or create outlines to assist you in studying for an exam.

dBASE II and III, database software, is covered in Module 2. If you find it necessary to keep a list of many items and then

search that list for particular entries (or combinations of entries), a database program can help you. For example, you could create a list containing all of your credit card accounts and names and addresses of persons to notify in case the cards are lost or stolen. You could create a household inventory that could be reported to an insurance company in the event of theft or damage by fire. You could record expenses in particular categories to assist you in preparing your federal or state income tax.

Module 3 explores Lotus 1-2-3, a **spreadsheet** program. Spreadsheets are used to solve problems dealing with sets of interrelated numbers. For example, you might want to keep track of your progress in the courses you are taking by creating a spreadsheet that computes course averages

based on exam scores and grades on other assignments. You could also use a spreadsheet to maintain a personal budget and keep track of expenses. Thus, whereas word processing deals with words, spreadsheets generally deal with numbers.

Sometimes “a picture is worth a thousand words”; therefore, it is often better to use a visual representation of data that words or numbers cannot adequately describe. Lotus 1-2-3 has the capability of presenting information pictorially—by the use of charts. Perhaps you want a visual representation of how you spend your money each month. You could produce a spreadsheet table that shows you, with numbers, where your money went, or you could produce a pie chart that demonstrates how your money was used. Perhaps you want to track your total income from year to year. One way of illustrating this type of comparison is to use a line or bar chart.

We have already identified a few personal uses of microcomputers and computer programs. Table 1 illustrates these and more. You will notice that the table lists a number of occupations or professions. Although the list is not exhaustive, see if your planned profession is in the list. Whether it is or not, you should examine the complete table; not only will you get an idea of how computers are being used in other occupations or professions, you might also get some new ideas about how computers could be used in your chosen career.

A computer program is a piece of software or a instruction set that tells the computer hardware what to do. In other words, computers are made to work for you through the use of software. For this reason, no introduction would be complete

without a quick overview of computer software.

Historical Development of Software

Starting with the abacus, **software** was being developed along with calculating and computing equipment. During the early years, software was the set of procedures or instructions followed by the individual using a machine. [As advances were made in the design of these machines, more of the instruction processing was shifted from the individual (user) to the machine.] However, no major advances were made in software until 1804, when Joseph Jacquard transformed some of the instructions for a weaving loom into punched holes in paper cards.

Jacquard's punched cards were the first example of instructions put on a medium (or device) usable by a machine; by changing the program, one could change what the machine did. The principles behind the punched cards were used by Augusta Ada Byron, Countess of Lovelace, in the early 1840s to code the instructions for Charles Babbage's Analytical Engine, which was capable of doing certain types of mathematical computations. Lady Lovelace has since become known as the world's first programmer, and the codes she developed have been called the first software.

No further advances were made in software development until John von Neumann published his paper detailing the theory needed for the stored-program concept. The idea was to store instructions in the machine and change those instructions directly rather than write a new set each time the desired function changed. As the stored-program concept became better un-

TABLE 1 Using Microcomputers: A List of Occupations or Professions and Possible Uses of Application Programs

Occupation or Profession	Word Processing (Using Words)	Spreadsheets (Manipulating Numbers)	Database (Maintaining Lists)
Auto service/repair	Customer service report	Repair estimates	Appointment list, common problems list
Broadcasting (radio and TV)	Script preparation	Projecting advertising revenues	Advertising client list
Commercial and residential construction	Project description and specifications	Project cost estimates	Project materials requirements list ordering
Country club or pro shop	Member newsletter	Golf handicap computation	Membership list
Educator	Preparing exams, lesson plans, student worksheets	Analysis of grades	Classroom inventory, assignment of textbooks
Engineer	Project reports	Structural stress analysis	Parts list, bill of materials
Entertainment (movie production)	Script preparation and modification	Project cost estimates	Prop management, scene requirements
Equipment rental services	Customer contracts	Project cost estimates	Link to other rental services
Farmer	Financial report to bank	Crop rotation and planting mix analysis	Acreage inventory and historical crop performance
Health and fitness studio	Membership renewal notices, advertising	Member performance analysis	Member profiles, membership list
Hotel/motel management	Registration confirmations	Conference/banquet cost projections	Reservations, property inventory
Investments and financial consultant	Investment portfolio	Analysis of investment performance	Client investment portfolio management

Using Microcomputers (continued)

Occupation or Profession	Word Processing (Using Words)	Spreadsheets (Manipulating Numbers)	Database (Maintaining Lists)
Janitorial service	Advertising, brochures	New client cost estimates	Type of services by client
Journalist or reporter	Story preparation and production	Numerical analysis, expense reporting	Story-line items
Law enforcement	Neighborhood Watch program preparation	Call frequency analysis	Crime incidence data
Legal	Contracts, wills, brief preparation	Client charges	Case disposition, client list
Limousine or taxi service	Vehicle operators guide book	Fleet cost analysis	Client list, reservations
Medical	Patient charts	Office budget	Diagnostic codes, insurance payment history
Preschool and day care center	Report to parents	Operating cost analysis	Client medical and emergency data
Property management	Tenant contracts	Utility usage tracking per unit	Occupancy information
Real estate sales	Property description	Estimating client costs	List of available properties
Religious organization	Member newsletters, special program announcements	Operating budget analysis	Membership list
Social worker	Case reports	Client financial needs analysis	Case assignment list and history
Travel/tourism agency	Tour package preparation and advertising	Package cost projection, cost per party member	Customer contact