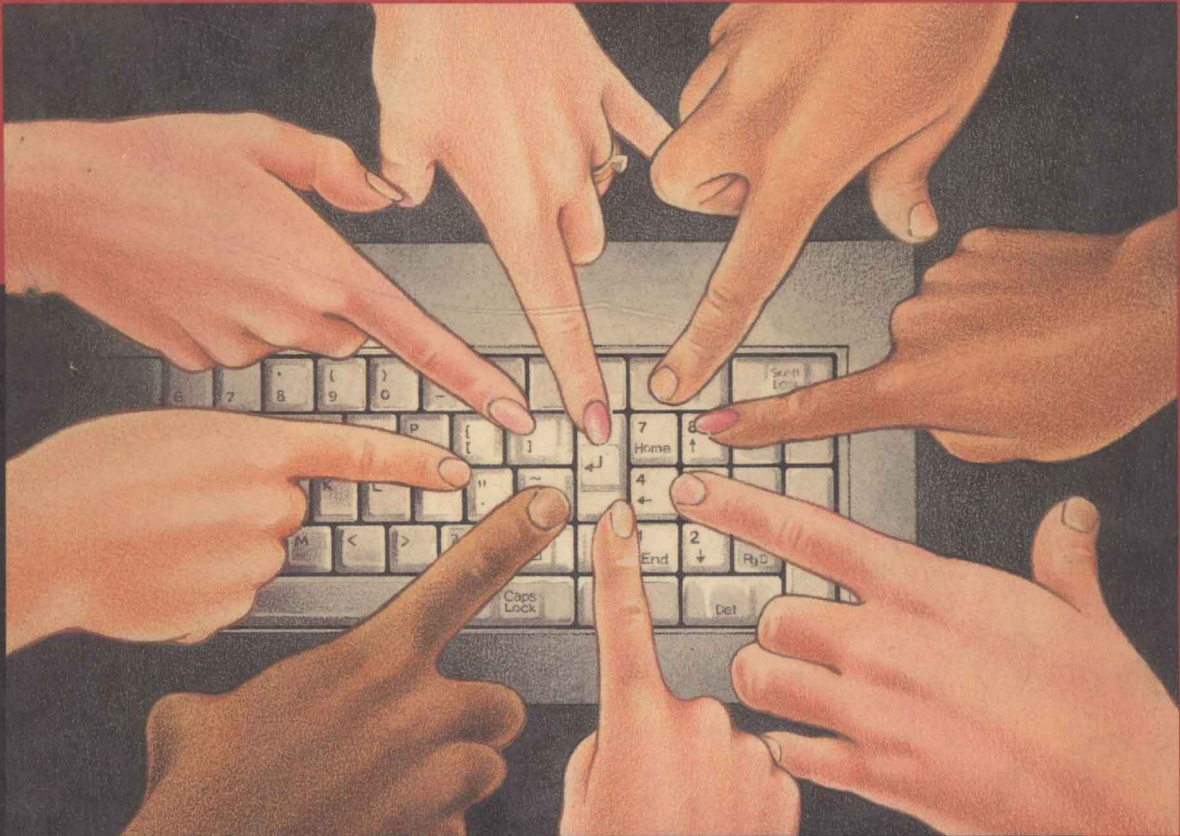


Computers: An Introduction



Donald D. Spencer

COMPUTERS

An Introduction

Donald D. Spencer

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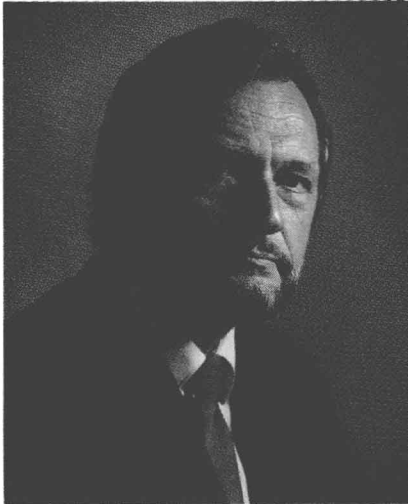
An Introduction

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THE AUTHOR



Donald D. Spencer is an internationally known computer science consultant, educator, and writer. He received his Ph.D. degree in computer science and has worked in the computer field for over 25 years. Dr. Spencer is the author of over 100 computer science books, including *Computers and Information Processing*, *An Introduction to Computers: Developing Computer Literacy*, *Principles of Information Processing*, *Computer Science Mathematics*, *Illustrated Computer Dictionary*, *Introduction to Information Processing* (third edition), *Learning Turbo Pascal: A Worktext*, and *Learning BASIC for Microcomputers: A Worktext*, published by Merrill Publishing Company.

Dr. Spencer has taught computer science in college and industry and has held computer-related positions in several industrial organizations. He currently lectures to international audiences and makes presentations to teachers and students in schools and colleges on computer topics of current interest and importance. Dr. Spencer is a member of several professional and educational societies including the Association for Computing Machinery (ACM), the National Council of Teachers of Mathematics (NCTM), the Association for Educational Data Systems (AEDS), the Data Processing Management Association, the Institute for Electrical and Electronics Engineers (IEEE), the World Future Society (WFS), and the Robotics International of the Society of Manufacturing Engineers (RI). Over two million copies of his books have been used by students, teachers, professionals, and general audience readers all over the world.

PREFACE

Computers are affecting almost every aspect of daily life and, hence, every area of the college curriculum. Students in every discipline area need to equip themselves with basic computer concepts and an understanding of computer applications if they are to make the most of their college education and effectively meet the challenges of their future careers.

Computers: An Introduction effectively exposes noncomputer students to basic computer fundamentals, as well as demonstrates the many different ways that computers are used in various career areas and fields of study. It is designed for an overview introductory course that covers such important topics as microcomputers, computers and society, the history of computers, hardware and software, and computer applications. The extensive coverage of applications software and the appendix on the BASIC programming language allows the instructors the flexibility to concentrate on each of these areas to the extent that they see fit.

This book is divided into fourteen chapters, including the social impact of the computer; history; computer hardware; the language of computers; advanced system concepts; word processing and computer graphics; electronic spreadsheets, database management systems, and data communications; computers in homes, schools, business, industry, medicine, arts, humanities, entertainment, and sports; other applications; a look at the future; and computers and careers. These self-contained chapters are separated into short, manageable topics to provide flexibility in the selection of topics to be taught.

FEATURES OF THIS TEXT

Computers: An Introduction and its supplements were thoroughly researched and carefully developed to meet the present instructional needs of teachers and students.

- ☐ **A conversational writing style enhances student interest.** Nontechnical language has been used and computer jargon has been carefully explained.

- ☐ **Extensive coverage of microcomputers is integrated throughout the text.** Increasingly, students will be using microcomputers in their home, school, and work environments. Therefore, in addition to the coverage of modern computer systems from microcomputers to supercomputers, emphasis is placed on microcomputers throughout the text. A special insert, "How to Buy a Personal Computer," is also included. This insert itemizes and illustrates the step-by-step process a person should follow to buy a personal computer that suits his or her individual needs.
- ☐ **Four-color art, photographs, and design are used throughout the text for educational emphasis as well as visual interest.** Wherever possible, equipment and concepts are illustrated by color photographs or diagrams. The use of color is intended as an educational as well as a visual enhancement.
- ☐ **Meets curricular recommendations.** Care has been taken so that the topical coverage and presentation of the text meet curricular recommendations of the Data Processing Management Association (DPMA) and the Association for Computing Machinery (ACM) for the basic computer introduction or computer literacy course for two-year and four-year degree programs in any academic discipline. The text meets guidelines for:
 - 1 **COMP 1** Introduction to Computer Applications (DPMA Academic Curriculum for Associate Degree Level Studies in Computer Information Studies, 1985)
 - 2 **CIS-86-1** Introduction to Computer Information Systems (DPMA Model Curriculum for Undergraduate Computer Information Systems, 1986)
 - 3 **CIS-1** Introduction to Computer Based Systems (DPMA Model Curriculum for Undergraduate Computer Information Systems Education, 1981)
 - 4 **IS1** Computer Systems Concepts (ACM Information Sciences Curriculum, 1981)
 - 5 **IS3** Systems and Information Concepts in Organization (ACM Information Sciences Curriculum, 1981)
- ☐ **Computer applications are covered in special chapters.** Important topics including word processing, computer graphics, electronic spreadsheets, database management systems, and data communications are emphasized. These applications are related to a wide range of contexts, in business, industry, education, science, and in personal life.

In addition to these features, the textual presentation is enhanced by learning aids that help students understand the materials.

- 1 A brief outline appears at the beginning of each chapter.
- 2 Objectives are listed at the beginning of each chapter.
- 3 Key terms are in boldface throughout the text.
- 4 Key terms are defined in the Glossary at the end of the book.

- 5 Marginal applications of special interest topics are placed throughout the text.
- 6 Each chapter contains a summary and review questions.

SUPPLEMENT PACKAGE

Several supplements have been prepared to make *Computers: An Introduction* sensitive to the needs of both part-time and full-time instructors.

- ☐ **Instructor's Manual** This manual provides instructors with assistance in the presentation of the text material. For each chapter, the manual will provide: student learning objectives, teaching suggestions and hints, lecture outline and tips, answers to review questions, supplemental exercises and project assignments, selected bibliography, and suggested visual aids.
- ☐ **Test Bank** The test bank is comprised of 1 500 computerized items organized by chapter with text page references for the answer. Included are true/false questions in alternate versions, multiple choice, and short answer items.
- ☐ **Color Slide Package** One hundred 35mm color slides with a corresponding script provide material for five lecture presentations of 20 slides each.
- ☐ **Color Transparencies** One set of 40 four-color transparencies will depict important illustrations. A second set of 40 two-color teaching transparencies will consist of illustrations divided into five lecture topics. Each set of transparencies will be accompanied by appropriate lecture notes.
- ☐ **Study Guide and Microcomputer Applications Exercise Manual** Corresponding to the material in the text, each chapter contains an overview, learning objectives, fact review, key terms, self tests, and answers. In addition, each chapter contains hands-on exercises with the software packages Lotus 1-2-3,[®] PFS: FILE,[®] and Multimate[®] with accompanying data diskettes. These exercises enable introductory students to master popular state-of-the-art software packages and reinforce concepts presented in the text.
- ☐ **Software** The BASIC tutorial and the Micro Payroll System are the two types of available software. The BASIC tutorial consists of three parts: (a) a file of BASIC programs that can be called up by name and then modified according to user's instructions; (b) computer-assisted instruction in BASIC; and (c) a self-paced testing and scoring section. This tutorial will be available in the form of IBM PC and Apple II diskettes.

The Micro Payroll System is a disk/workbook package that provides hands-on use with an applications software system. The concepts illustrated in this system include data entry and validation, word processing, spreadsheets, and computer graphics. The workbook is divided into ten lessons. Each lesson contains objectives, text, a laboratory assignment requiring use of the computer

with the micro payroll system, and a set of review and evaluation questions.

For instructors who desire more depth in specific programming and application areas, the following texts complement *Computers: An Introduction*:

Spencer	Learning BASIC for Microcomputers: A Worktext for the IBM PC, AT, and XT	20436-4
Spencer	Learning BASIC for Microcomputers: A Worktext for Apple II, IIc, and IIe	20435-6
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Ingalsbe	Lotus 1-2-3® for the IBM PC	20548-4
Ingalsbe	WordStar® for the IBM PC	20611-1
Harris and Kay	Introducing Pascal: Workbook and Exercises	20454-2
Thompson	BASIC: A Modular Approach, Second Edition	20280-9

The third edition of my book *Illustrated Computer Dictionary* also effectively supplements the computer terminology presented in the text.

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Many education and publishing professionals assisted in the design, editorial, graphics, and production phases of this text and its supplement package. The efforts of hundreds of people were used in producing the final product.

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