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Nancy Stern

An Introduction to Computers and Information Processing

An Introduction to Computers and Information Processing

formerly **Principles of Data Processing**

Robert A. Stern

Nancy Stern



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**An Introduction
to Computers
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Processing**

To Melanie and Lori

About the Authors

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We renamed this textbook *An Introduction to Computers and Information Processing* for two reasons. First, this is not simply a new edition of a previous book with appropriate revisions. Rather, this book incorporates a new approach, one that combines an established pedagogic format with an up-to-date, realistic, and totally new look at computer processing.

The second reason for the new title is the emphasis on information processing. The major topics of hardware and software are presented as tools that are used to achieve efficient, effective, and practical information systems. This book focuses, therefore, on an applications-oriented approach to the computer field.

Objectives

The primary purpose of this book is to provide the student with an understanding of hardware and software concepts and how they are used in information systems.

Unlike other texts, which often give an idealistic view of computers, this book presents a realistic account of computer processing, one that stresses the major problems in this field as well as the major advantages of computerization. Topics highlighted throughout are the need for improved communication between user and computer professional, the need for better controls in programs and systems, and the need for standards in the computing field.

Emphasis has been placed on a sound approach to teaching the subject, one that has been tested on a broad spectrum of undergraduates. Rather than publishing a reference book without a particular orientation, we have written a book that can be effectively used in a standard introductory course.

Our pedagogic approach, used so successfully in the previous versions of the book, has been enhanced with the following:

1. Clear and concise chapter outlines and chapter objectives that provide the key concepts for each chapter.
2. A realistic, up-to-date, highly readable approach to each topic.
3. Self-evaluating quizzes that help students to understand thoroughly the important concepts and ideas.
4. An emphasis on illustrations, figures, and tables to highlight specific points.
5. Applications at the end of each chapter, with key questions, to reinforce and place in perspective the chapter discussion.
6. Chapter summaries to reinforce the material presented in each chapter.

7. Review questions that can be assigned by the instructor as homework.

The book is augmented by supplementary materials that make *An Introduction to Computers and Information Processing* a truly unique package. These materials are:

1. *Study Guide to Accompany An Introduction to Computers and Information Processing*. This combined study guide and workbook includes chapter outlines, which the student can use for review, definitions of key terms, a broad spectrum of questions and answers, and key summaries and reviews.
2. *Transparencies to Accompany An Introduction to Computers and Information Processing*. The transparency package is coordinated with each chapter. We have selected key illustrations from the text and augmented them with tables and figures *not* in the text that are designed both to interest students and to point up key concepts.
3. *Instructor's Manual to Accompany An Introduction to Computers and Information Processing*. The comprehensive instructor's manual includes course outlines, chapter summaries, additional case studies, hints for classroom discussion, additional teaching aids, and many other features.
4. *Tests to Accompany An Introduction to Computers and Information Processing*. A test bank of more than 3000 questions.
5. *Autotest to Accompany An Introduction to Computers and Information Processing*. A computerized version of the tests.

The Uniqueness of This Book

1. The Order of Presentation

The presentation is ideally suited for college students. In particular, the discussion of information systems from an applications-oriented point of view throughout the text and again as a unit near the end of the book effectively brings together the major concepts presented.

2. BASIC

The chapter on BASIC explains the fundamentals of this language in a clear manner. After reading this chapter, and discussing it in class, students will be able to write simple and some intermediate-level programs with no need for a supplemental text.

3. Emphasis on Micros and Minis

Throughout the book, we indicate how minis can be used as an alternative to larger systems. Chapter 8 focuses on micros and minis and places them in the proper perspective vis-à-vis the more traditional systems.

4. The Impact of Computers on Society

The book begins and ends with a discussion about the impact of computers. Our primary purpose at the beginning is to provide students with a basic understanding of how computers are used in society in general. In the last chapter we explore in more depth some of the legal, social, and ethical issues relating to computers. In contrast to the discussion in the first chapter, the last chapter is on “computers past, present, and future.” We have included this comprehensive chapter at the end because we believe that students must have a firm grasp of what computer processing is before they can really understand the process of change and development that has occurred during the last 30 years, and that is likely to occur in the future.

5. An Appendix Entitled “A Guide to Resources and Journals in the Computing Field”

Unlike a chapter-by-chapter bibliography, which is often obsolete before it is published, this guide is designed to help students identify key associations and journals in the computing field. This knowledge will help them better prepare for term papers and will also serve them well as computer professionals.

6. Data Communications and On-line Processing Have Replaced a More Card-Oriented Focus

From the very beginning of the discussion, terminal equipment is emphasized. Several chapters explore the uses of this equipment as an alternative to card processing, for word processing, point-of-sale systems, electronic funds transfer systems, and numerous other applications.

7. Management Information Systems Concepts Are Emphasized

Here, again, the applications-oriented approach of the text is demonstrated by a unit on MIS, one that examines decision support systems, cost benefit analysis, equipment selection criteria, distributed data processing, and the like.

8. Many Test Questions and Applications Designed to Test Students’ Understanding and to Reinforce the Material Are Presented

The applications at the end of each chapter not only reinforce the preceding chapter discussion but provide “real world” illustrations and highlight innovations in the computing field.

The self-evaluating questions at the end of each chapter and at the end of each unit within a chapter also reinforce the material presented and provide an excellent method for students to assess how well they have understood the material.

At the end of each chapter there are review questions without solutions that instructors can assign as homework.

The study guide has approximately 1300 questions that include matching, true-false, multiple-choice, fill-ins, and application questions, of which 650 have solutions (the other 650 are answered in the instructor’s manual). The instructor’s manual has still other questions of this kind as does the test bank.

Prior to writing this book, we performed an exhaustive survey of the needs of college professors. We believe that this textbook will meet, and may even surpass, those needs and expectations. This book will be updated every 2 to 3 years to provide users with an even better tool. For this, we welcome your comments and suggestions. Please feel free to contact us.

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