COMPUTERS IN TODAY'S WORLD

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COMPUTERS IN TODAY'S WORLD

The Irwin Series
in Information and Decision Sciences
Consulting Editors Robert B. Fetter
Yale University
Claude McMillan
University of Colorado

To Bill, Brent, and Buff
and their families

PREFACE

The overall purpose of this book is to provide students with an up-to-date and comprehensive introduction to computers in today's world. This book and the accompanying student and instructor aids are intended for the first course in computers and data processing. Previous course work and computer-related experience are not required. Every effort has been made to make the "package" one of the most effective on the market today.

FEATURES OF THE TEXT

A number of features have been built into this book to make it easier to use and a more effective learning tool. Some of these features are summarized below:

Integrative Approach

To facilitate learning, the text uses an integrative approach. There is a logical flow from one topic to the next. Whenever possible, the material in one section is related to and integrated with material in other sections. Students are asked to take an active role in the learning process.

Flexible

The text has been designed to be extremely flexible. The first part serves as an introduction to the rest of the book. After Part I is covered, any other part may be read in any order. Each part starts with an outline of the topics to be covered and a statement of purpose.

A Complete Learning Package

Each chapter is designed to be a complete learning package. Every chapter starts with a chapter outline, followed by several learning objectives. Each chapter contains ample illustrations and pictures, and the writing style is simple and concise. A detailed summary is at the end of every chapter, followed by a list of key terms and concepts and a list of questions and exercises.

Nontechnical Coverage

This book assumes no previous knowledge of computer systems. It can be used by students majoring in business, science, engineering, liberal arts, and many other fields. The approach is to present the material in nontechnical terms. This is not a book on electronics or electrical engineering.

Student and Instructor Input

A large number of instructors and students have provided input to this book. Their suggestions and comments can be seen on every page. The result is a superior book. I would like to thank the many students and instructors who have helped me.

Interesting Presentation

The use of computers in today's world is anything but boring. The computer industry is dynamic and full of controversy and intrigue. The use of computers has changed our society and world forever. I have tried to make the material and presentation as alive and interesting as the computer industry itself. Students will find many unique examples and useful information about computers they can use today.

Up-to-Date Material

This book contains the most up-to-date material possible. In addition, we actually used advanced computer systems and procedures to produce it. It was written, edited, modified, and produced using computer systems. Because less time was required to produce the book, I had more time to work on the content.

Reading Level and Writing Style

A team of editors helped make this book easier to read and understand. The Flesch reading level index was used to help us get the correct reading level, and a number of editors reviewed the manuscript for clarity and readability. Students and instructors also helped.

BASIC Appendix

A minicourse in BASIC is contained in an appendix. This appendix was taken from *Programming in BASIC,* a very popular book on BASIC programming. Over the years, this book has been refined and improved. Now we have rewritten it to be included in an appendix at the end of this book.

Comprehensive Coverage of Micros

Without question, microcomputers or personal computers have had a profound impact on our society and a comprehensive coverage of them has been integrated throughout the book. A special symbol has been placed in the margin as a quick reference to microcomputer coverage. A complete chapter on microcomputers is in Part IV. Finally, an appendix looks at popular microcomputer and mainframe applications, covering word processing, worksheet or spreadsheet analysis, data base systems, data communications, graphics, and integrated software. These are topics that many students can use today to their benefit. Although the emphasis is on micros or personal computers, some of the applications discussed can also work with mainframe computers. Many application packages have versions that work on both micro and mainframe computers.

The Use of Color

As you flip through the pages of this book, you can see that we used full color. Whenever possible, we used color as an educational tool in addition to making the book more attractive. Many of the charts and graphic illustrations used color to give them more meaning and to allow students to understand the concepts quickly and more accurately.

The Use of Color and Display Screens

Color was used in showing various applications on display screens or CRTs (cathode ray tubes). This will help students identify output from the

computer, input to the computer, input or output important to the current discussion in the book, and special notes. In most cases, we used the following color scheme for display screens:

Computer output	**Green**
User input	**Blue**
Input or output important to the current discussion	**Red**

The Use of Color in the BASIC Appendix and in BASIC Programs

Like display screens, we also used color in the BASIC appendix and in other BASIC programs in the book to make concepts easier for students to understand. The following color scheme was used for BASIC programs.

Description	Color
Output from a BASIC program	**Green**
The program and user inputs	**Blue**
Important BASIC statement or concept	**Red**

The American Express Feature and Interviews

To help students learn how all of the components of a computer system work together, we have featured American Express in every part to show how one successful company uses computers to its benefit. We also included interviews with American Express vice presidents on a number of important issues, like how to make the most out of school, how to get a good job, keys to a successful career, preventing computer crime and the invasion of privacy, and much more.

Articles and Items of Interest

Many other companies, organizations, and individuals are also discussed in articles and items of interest in most chapters. These articles and items of interest reveal interesting and important computer uses and misuses.

OTHER COMPONENTS OF THE PACKAGE

In addition to the text, there are a number of other components that complete the package. The major components are listed below:

The Instructor's Resource Manual

The instructor's resource manual includes the following:

1. A detailed lecture guide.
2. Answers to all questions and exercises.
3. Additional questions and exercises and their answers.
4. Answers to all study guide questions and exercises.
5. Additional material.
6. In-class exercises and group exercises.
7. Cases and their solutions.
8. Transparency masters and cartoon transparency masters keyed to the lecture guide.
9. Color transparencies keyed to the lecture guide.
10. Course schedules.
11. Selected journals and periodicals.

Test Bank

The test bank contains thousands of true-false and multiple choice questions. Teletest and computest (a microcomputer test generator) are available.

Study Guide

The study guide includes matching, true-false, multiple choice, and fill-in-the blank questions and exercises. Selected answers have been included in the study guide. The study guide also contains cases, microcomputer differences, and additional BASIC statements and concepts.

Language Supplements

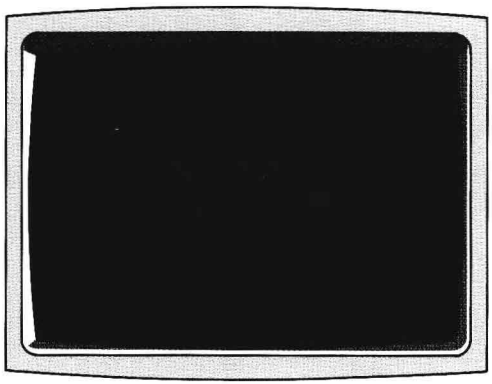
A number of language supplements can also be used with the text. The languages include BASIC, FORTRAN, COBOL, and Pascal.

Personal Computer Software

A number of software products can be used with the book. They include word processing and data base programs. A personal computer study guide, a BASIC tutorial, and a separate testing system are also available. Contact Irwin for a complete list of personal computer software.

A NOTE TO STUDENTS ON HOW TO USE THE TEXT AND SUPPLEMENTS

For some of you, this will be your first encounter with computers. You will probably always remember the first time you actually made a computer do something. One of my early encounters with computers was at the University of New Orleans in a computer lab with Tom O'Connor. It was late at night, and Tom was using the computer to analyze some research results. The campus was dead, and we were the only two people in the computer lab. We had several terminals going at the same time. All of the terminals stopped. Then all at the same time, they printed I WILL KILL IN TEN MINUTES. A few moments later they started printing results again.



You can imagine how we felt. Later we learned that the human operator had that message typed on all active terminals. The operator was going to turn off or shut down the computer in 10 minutes. To him, KILL was the same as TURN THE COMPUTER OFF or SHUT THE COMPUTER DOWN.

In learning about computers, you will encounter many new terms and concepts. In most cases, these terms and concepts are not difficult. Here are some ways to help you learn more about computers using this book.

1. **Study the chapter outline.** This will give you an overview of the major topics that will be discussed in the chapter.
2. **Read and make a note of the learning objectives.** At the end of the chapter, you will be expected to have accomplished these objectives.
3. **Place your own notes in the margin.**
4. **Review the key terms and concepts.**
5. **Do all of the end-of-chapter questions and exercises.**

6. **Make a final review.** The best way to do this is to review the chapter outline, the learning objectives, the questions, and the key terms and concepts. The review process will help you retain the material for future use.
7. **If you find that you need additional work as a result of the review process, study the additional material.**

Your learning should not be limited to this text or the courses you are taking. Take an active part in your education. Read newspaper and magazine articles that describe how the computer has been used in your field. Computer manufacturers are willing to supply students with information on a number of subjects related to data processing and computers. If the local branch does not have the information, ask for the address and phone number of the national office. These companies realize that you may be future customers, and they are usually willing to help you in learning more about computers. You may also want to talk to several local companies about how they use computers in their business. This could give you some excellent contacts for future employment.

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AMERICAN EXPRESS

The concepts presented in any introductory course are many and varied. This is certainly true of any introductory course in computers. It can be very difficult for students to pull these concepts together. It can also be difficult for students to comprehend how various concepts and materials are applied in actual organizations. To overcome these difficulties, we will show you how a large and successful organization has efficiently and effectively employed data processing facilities.

The company we feature in this book is American Express Travel Related Services Company, Inc. (referred to here as American Express). In most chapters, you will see how the concepts you are learning have been implemented by American Express. This will give you the unique opportunity to see how one company uses hardware, software, data bases, data processing personnel, and operational procedures to its benefit. You will also be able to read interviews I conducted with three vice presidents and two senior vice presidents on such issues as careers, privacy and crime, the future, and many other issues.

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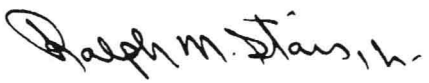

CONTENTS

CONTENTS