

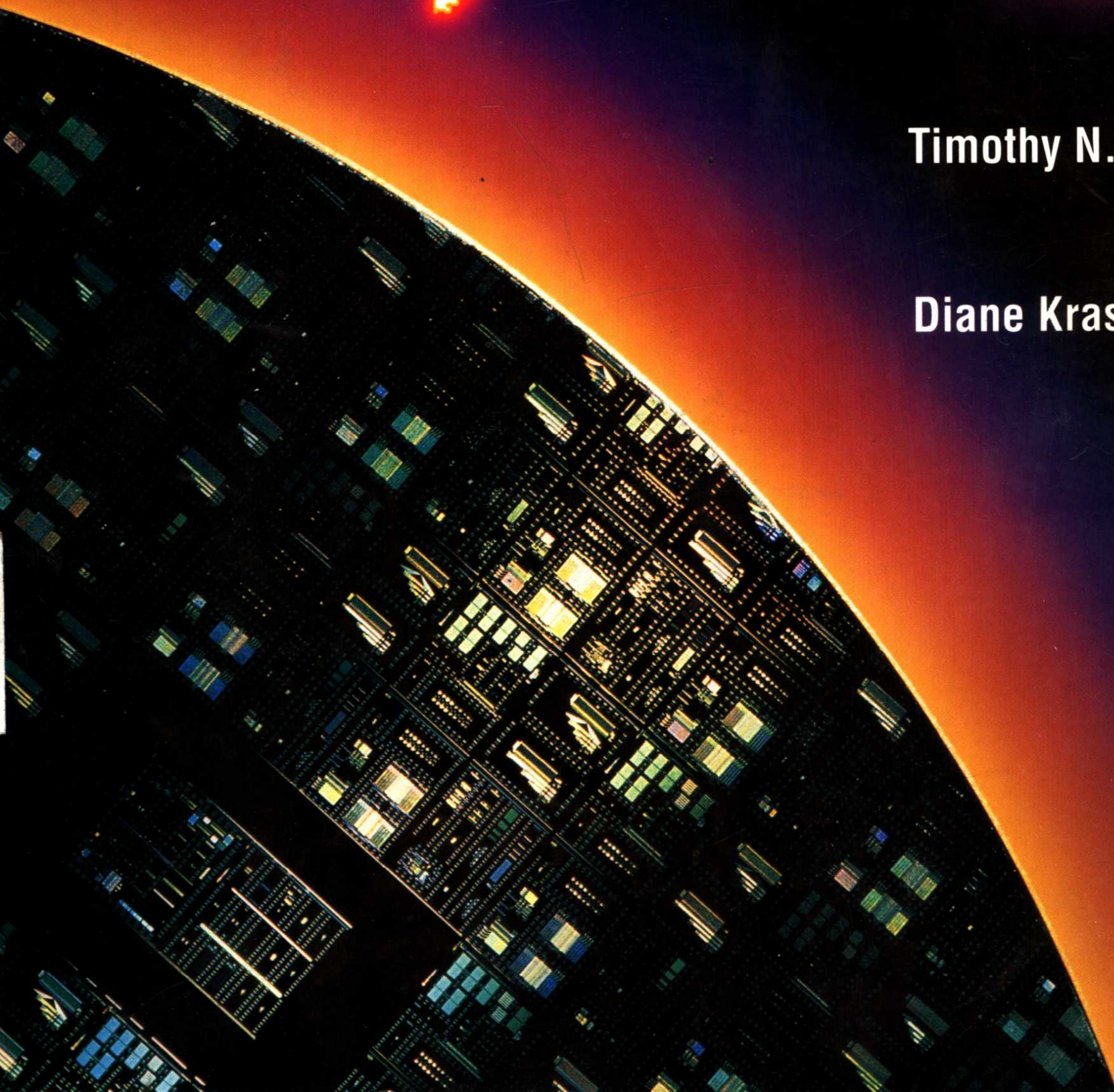
# Computers!

FIFTH  
EDITION



Timothy N. Trainor

Diane Krasnewich





# Computers!

**Timothy N. Trainor**  
**Diane Krasnewich**

*The McGraw-Hill Companies, Inc.*

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# Preface

**A**s we prepared to write the fifth edition of *Computers!*, we were again reminded of the speed at which technological change takes place. Expanding interest in the Internet and the new Windows 95 operating system has forced us to rethink how and when we embrace changes to our classrooms. Graphical user interfaces are the standard as local area networks become commonplace. This technological revolution has changed the core knowledge demanded of the productive worker and informed citizen. These issues and others are addressed in the fifth edition of *Computers!*

*Computers!* is designed to help you convey to students *why* certain knowledge is essential, *what* is important, and *how* this information can be applied. The wealth of information available can be overwhelming. *Computers!* will help you show students how this information is relevant. It is written to be easy to understand by people young and old who have little or out-of-date technological experience. To these people, your students, we hope to provide an up-to-date guide to information technology.

## NEW TO THIS EDITION

We see in our own computer labs how often network concepts such as login procedures are intertwined with basic computer concepts like booting a PC. Furthermore, fax machines, electronic and voice mail, and tales from the Internet have become so commonplace that students need an early introduction to this aspect of information technology.

### ■ Earlier Introduction to Networks

In the past, network and related issues have been relegated to a chapter at the end of the hardware unit. *Computers! 5e* places the network and data communication chapter in the introductory unit. The technical discussions of specialized communication hardware and related protocols are found later in the chapter on storage and communication hardware.

### ■ Windows 95

We were a part of Microsoft's beta-testing program for Windows 95 and have incorporated screen captures, feature-by-feature comparisons to Windows 3.1 and



Macintosh's System 7.5 (A Closer Look, chapter 3), and a hands-on tutorial (Appendix C) you can use to introduce Windows 95. However, the focus of this book is not Windows 95, nor any specific software package or hardware. As with earlier editions of *Computers!*, the focus is on common features, how things work, and ways that computers make you more productive.

### **Buyer's Guide to Personal Computers**

The appendices link *Computers!* 5e to hands-on work with personal computers. An updated guide to buying a PC is now Appendix A. Appendix B provides a hands-on Windows 3.1 tutorial that introduces the same features shown in the Windows 95 tutorial (Appendix C). MS-DOS/PC-DOS is introduced in a similar way in Appendix D.

### **Switching the Hardware and Software Units**

The fifth edition of *Computers!* returns the detailed look at hardware concepts to Unit II, followed by the overview of common software tools, such as word processing and electronic spreadsheets, in Unit III. The first two editions successfully used this design, and moving hardware concepts forward facilitates an earlier introduction of network and data communication issues.

### **Software Explorations**

New with this edition are 16 software tutorials, called *Explorations*, that build on themes introduced in the text. For example, Exploration 4 walks students through a simulated Internet session while chapter 4 introduces the Internet and related network concepts. The complete set of 16 Explorations is available to adopters through our World Wide Web site (<http://mgh.willamette.edu/mgh/>) or on the Instructor's CD-ROM for distribution to students.

### **Electronic Study Guide**

The Windows-based *Interactive Study Guide for Computers!* can be bundled with the text for students. This guide provides a concise review of key concepts and terms along with crossword puzzles, drag-and-drop problem solving, and other interactive exercises. All of the Explorations are easily incorporated with the reviews and exercises provided by the guide. A powerful progress management program is also included to help students track their progress and pinpoint specific areas of difficulty.

### **Visual Basic and QBASIC Supplements**

The fifth edition of *Computers!* is slimmer than earlier editions. This was accomplished, in part, by replacing the BASIC appendix with programming supplements written by Jeff Stipes. These materials take an innovative approach to teaching Visual Basic (*A Quick Look at Visual Basic*) or QBASIC/QuickBASIC (*A Quick Look at QBASIC*) in six hours of class time or supervised lab time. Students learn to code by creating forms and subprograms that complete a campground registration program.



## KEY FEATURES

Educators who have used earlier editions of *Computers!* have said that its enduring strengths lie in its readability, comprehensive coverage, and modular design. We have tried to build on these strengths in the following ways.

### ■ Flexible Design

This textbook contains much more than just explanations of current computer concepts. You can deliver this information to your students by using different chapter combinations and a variety of teaching tools. A practical guide to purchasing a personal computer system is found in Appendix A. Hands-on introductions to Windows 3.1, Windows 95, and DOS round out the appendices. The Explorations provide a computer-based interactive learning experience which reinforces basic computer concepts. Furthermore, the Visual Basic and QBASIC supplements, along with more than three dozen tutorial lab manuals for popular application packages and user interfaces, can be integrated with the concepts covered in *Computers!*.

### ■ Pedagogy

As in previous editions, *Computers!* emphasizes the integration of terms and concepts with the students' need to apply this information to their present and future work. Each chapter contains the following pedagogical features to support this goal:

- ◆ Chapter Opener—topical outline of the chapter
- ◆ From the User's Point of View—aids students' continuous search for relevance in what they are asked to learn
- ◆ Chapter Facts—succinct presentation of the most important information in each chapter
- ◆ Terms to Remember—listing of key words and phrases
- ◆ Mix and Match—asks students to fill in key terms that fit related definitions
- ◆ Review Questions—objective questions about the principal points in the chapter, easily answerable from the text
- ◆ Applying What You've Learned—questions and projects requiring creative thought and independent research by the student

Additional exercises using Terms to Remember and Review Questions are provided in the *Interactive Study Guide for Computers!* and the printed *Student Study Guide*. Together, these materials will help to motivate and reinforce student learning.

### ■ Real-World Applications and Examples

The fifth edition includes many scenarios using technology in real situations. This alerts students to how all-encompassing technology really is. In addition, three features of special interest appear in each chapter:

**Did You Know?** These are short sidebar articles that highlight topics of practical or special interest to students.



**Who's Who?** Each dossier presents a brief look at the people responsible for the technological innovations that change our lives:

- ◆ Chapter 1: Blaise Pascal; Steve Jobs and Steve Wozniak
- ◆ Chapter 2: John W. Mauchly and J. Presper Eckert
- ◆ Chapter 3: William "Bill" Gates
- ◆ Chapter 4: Mitch Kapor
- ◆ Chapter 5: John Bardeen, Walter Brattain, and William Shockley;  
Robert Noyce, Marcian Hoff, and George (Gilbert) Hyatt; Jack Kilby
- ◆ Chapter 6: Joseph Marie Jacquard
- ◆ Chapter 7: Herman Hollerith; George Boole
- ◆ Chapter 8: Bruce Bastian and Alan Ashton
- ◆ Chapter 9: Daniel Bricklin and Robert Frankston
- ◆ Chapter 10: Douglas Englebart
- ◆ Chapter 11: Dr. Edgar F. Codd
- ◆ Chapter 12: Thomas John Watson Sr.
- ◆ Chapter 13: Charles Babbage; Augusta Ada Byron
- ◆ Chapter 14: John G. Kemeny and Thomas E. Kurtz; Grace Murray Hopper
- ◆ Chapter 15: Peter Norton
- ◆ Chapter 16: Karl Alex Müller and J. Georg Bednorz

**A Closer Look at...** Every chapter wraps up with an in-depth and graphical investigation of a topic presented in that chapter:

- ◆ Chapter 1: Personal Computing
- ◆ Chapter 2: Buying a Computer System
- ◆ Chapter 3: Windows 3.1, Windows 95, and the Macintosh OS
- ◆ Chapter 4: The Internet
- ◆ Chapter 5: Manufacturing a Chip
- ◆ Chapter 6: Environmentally Conscious Computing
- ◆ Chapter 7: Upgrading a Personal Computer
- ◆ Chapter 8: Selecting a Word Processing Package
- ◆ Chapter 9: Designing a Better Worksheet
- ◆ Chapter 10: Computer Art
- ◆ Chapter 11: Hypermedia
- ◆ Chapter 12: Presentation Software
- ◆ Chapter 13: Project Management Software
- ◆ Chapter 14: Programming Languages
- ◆ Chapter 15: Privacy—Is It Still Possible?
- ◆ Chapter 16: Emerging Technologies

The result, *Computers! 5e*, is a comprehensive, flexible multimedia package designed to help you introduce computer concepts and promote computer awareness to students with various backgrounds and needs.



## **SUPPLEMENTARY MATERIALS**

The following supplementary materials were developed to help customize *Computers!* to your unique teaching style and course objectives.

### **Complete Instructor's Manual**

The *Instructor's Manual* for this edition contains detailed support material for each chapter:

- ◆ Lecture outline
- ◆ Additional material for lectures not found in the text
- ◆ Teaching tips
- ◆ Definitions of Terms to Remember and related page numbers
- ◆ Complete answers to the Review Questions
- ◆ Suggestions for related lab assignments and class projects not included in the *Student Study Guide*
- ◆ Bibliographic list for additional research

### **Instructor's CD-ROM**

The accompanying CD-ROM combines electronic versions of material found in the *Instructor's Manual* with multimedia support materials, including PowerPoint presentations and stand-alone software explorations.

- ◆ PowerPoint presentations for each chapter
- ◆ Exploration software for each chapter
- ◆ Authors' lecture notes with teaching tips
- ◆ Answers to chapter Review Questions

### **Student Study Guides**

The printed *Student Study Guide* includes space for answering in-text Review Questions, projects with related worksheets, crossword puzzles, Mix and Match exercises, and references for each chapter. Answers are printed in the back of the *Student Study Guide*.

The *Interactive Study Guide* provides a concise review of key concepts and terms on disk, plus crossword puzzles, drag and drop problem solving, and other interactive exercises.

### **Computerized and Printed Test Bank**

More than 2,000 true/false, multiple-choice, and fill-in questions correspond to the Terms to Remember and Review Questions in the text. These are available in printed form and on disk with MicroTest's Windows-based test generator.



### ■ Internet Home Page

Look us up on our World Wide Web home page at <http://mgh.willamette.edu/mgh/>. The *Computers!* Web site contains up-to-date information related to the text, updates on assignments and exercises, and provides a way to communicate with the authors.

### ■ Broadcast Quality Videotapes

Ten 10-minute “lecture launcher” video clips on today’s hottest computer topics and issues are available to adopters. Taken from the popular series by PCTV, Inc., *The Computer Chronicles*, they offer an exciting cutting-edge introduction to any lecture.

### ■ Application Software Tutorials

A variety of hands-on tutorials are available, covering current versions of PC and Macintosh operating systems; word processing, spreadsheet, database, presentation, and integrated software; and commercial software and shareware. For a current list of these materials, contact your McGraw-Hill sales representative.

## **SPECIAL ACKNOWLEDGMENTS**

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