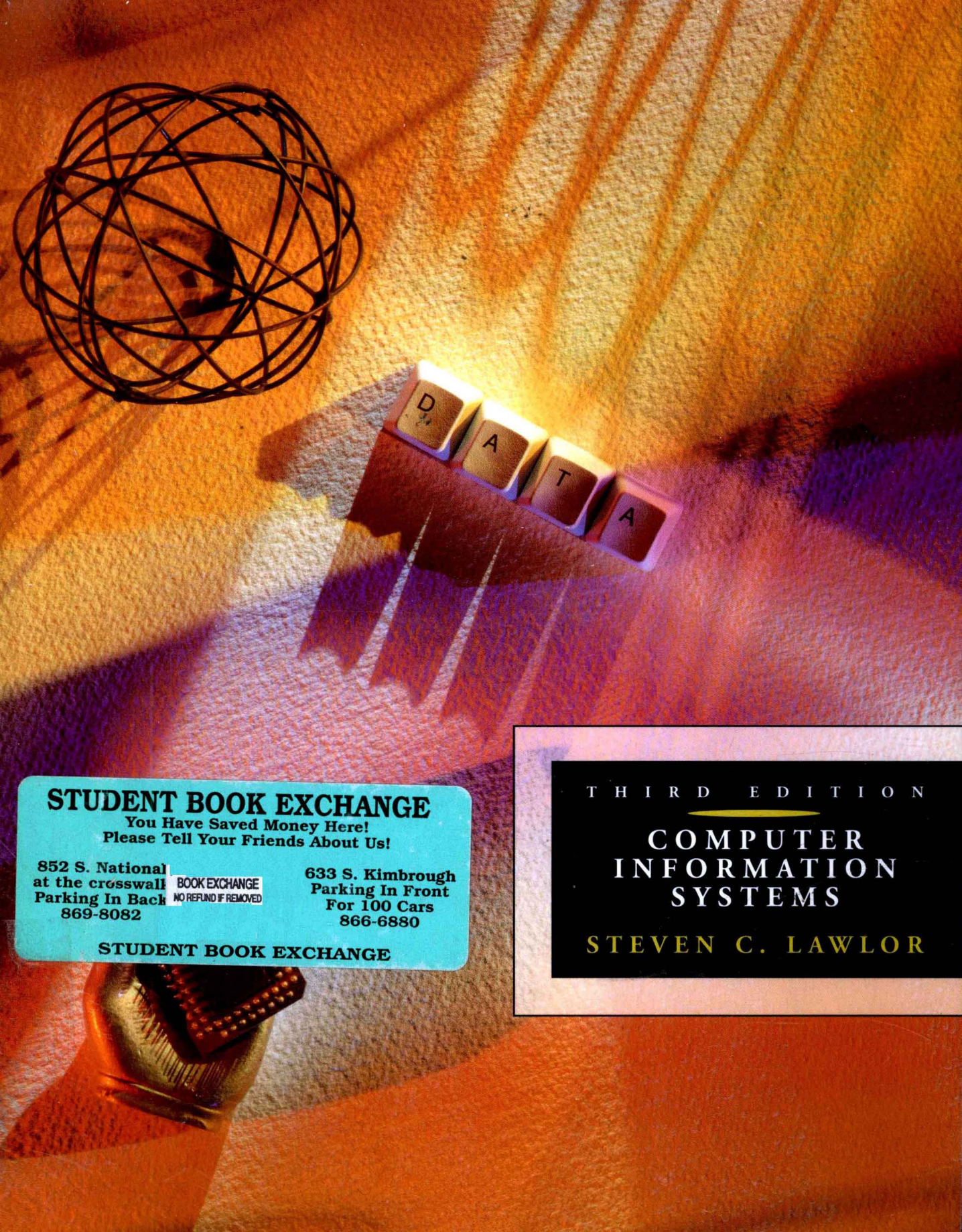

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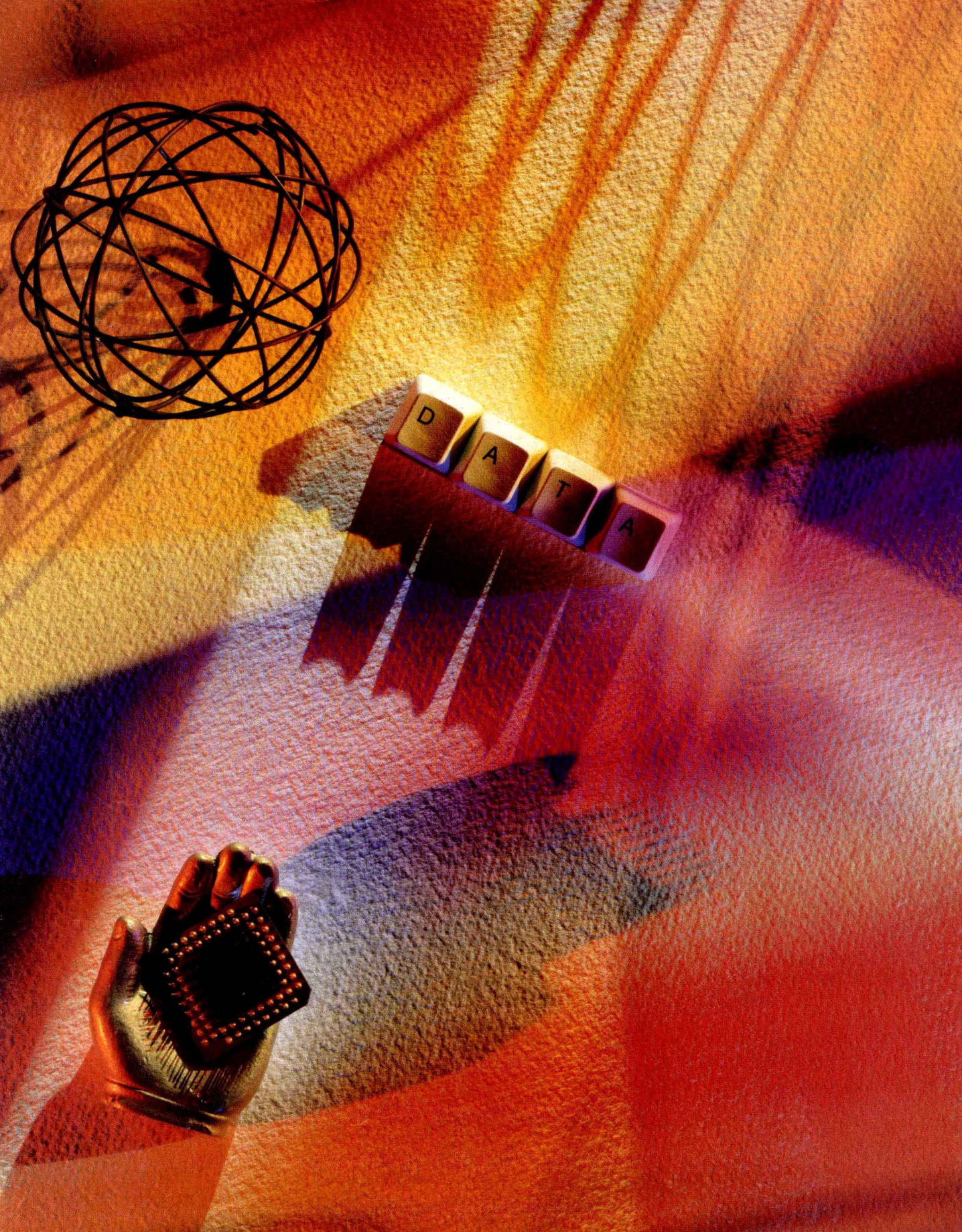
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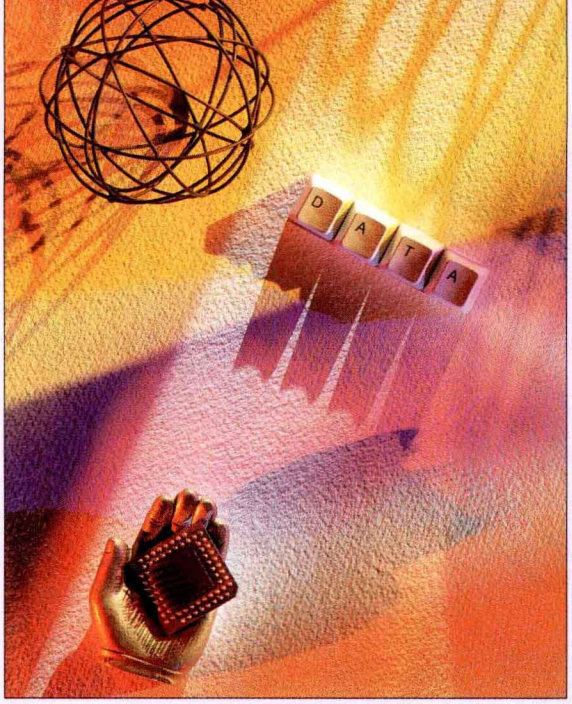

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Preface

Never has an industry moved as fast as the computer and information industry. The technology is changing at an amazing rate, and the pace seems hardly to be slowing. But the technological changes are only part of the picture. We are also changing in the ways we develop and use information. Today's user is a far different person from yesterday's. The modern user is not just expected to make good use of the information provided but is also expected to participate in the development of it. With networking and communications, information is delivered to the user's desk top, but the user is also provided with a smorgasbord of tools with which to develop new information. The user is expected to be much more knowledgeable of computers and information.

The difficulty in preparing users in this climate is that we must prepare tomorrow's users. That means that we must be current in both technology and method, and we must give a solid conceptual base so that today's student will be able to follow any unanticipated twists and turns that will shape tomorrow's user. The third edition of *Computer Information Systems* is current and, in keeping with the tradition of the first two editions, provides an ordered foundation of concepts assembled in a flexible teaching package so we may be assured that tomorrow's new method or buzzword will not be a mystery to today's student.

Development of the Third Edition

This package is the culmination of experience gained from the author's teaching of Computer Information Systems at Foothill College in Silicon Valley for the past 14 years and the insight gained from the reception of the first and second editions. Both the original manuscript and the previous editions have been thoroughly class tested by the author and his colleagues, and each stage of the new manuscript has been reviewed for technical accuracy, breadth of content, and effectiveness of presentation. This extensive reviewing and class testing has allowed us to improve on an already successful book and ancillary package.

Features of the Text

Information processing depends on the smooth operation of a quite complicated system. Thousands of pieces of hardware and lines of software, as well as the many people and procedures to guide them, must work together to make the system effective. We must know about the individual parts of the system, but to understand one part we must relate it to the entire system. The all-too-common way to address this issue has been what might be called the "dictionary approach," where those who take this approach tend to "lay on the table" a great many concepts, terms, and definitions, and hope that students will be able to assemble them into a comprehensible whole. Lawlor's approach is to lay a solid base of concepts and build on those to develop a real understanding of information systems. The features that made the previous editions of *Computer Information Systems* successful in achieving that objective have been retained in the third edition.

A Systems Approach

Computer Information Systems emphasizes a two-tier presentation. Module 1 presents the overall information system in everyday terms. Once a system foundation is established, the individual pieces are discussed in greater detail in Modules 2 through 5.

A Top–Down Modular Design

Since virtually everyone who designs information systems and programs uses top-down modular design methods, our teaching system uses the same principles. Module 1 is the overall, controlling module. Modules 2 through 5 and Appendix A act as submodules, each treating a major part of the overall system.

Modular Flexibility

The effective modular design of the textbook allows modules to be treated independently. After Module 1, "The World of Information," modules may be taught in any order. Modular flexibility is further enhanced by the treatment of applications software—word processing, spreadsheets, and databases. Because depth of treatment varies greatly from course to course, we have reserved our specific treatment of software packages to a self-contained appendix, while incorporating coverage of their vital role and many uses into our systems approach throughout the book.

End-User Perspective

Computer Information Systems presents computers and information systems from the perspective of the end user, rather than that of the computer professional. Such an approach is especially important for business students who need to know what to expect of a good system and to understand what kinds of information are needed to serve this system.

This end-user perspective is also valuable for beginning students who decide to pursue a career in information systems. Those students will eventually be providing or processing information for end-users and must understand the needs, wants, and frustrations of that audience.

Conceptual Orientation

Computer Information Systems lays broad, careful foundations for conceptual understanding, then builds individual concepts upon those bases. Terms are defined and used in context and in a glossary.

Engaging, Lively Writing Style

A book that is difficult to read tends not to be read. *Computer Information Systems* is presented in an accessible, informal manner that will not intimidate the novice computer user. Technically sophisticated concepts are presented in everyday language and computer jargon is used only where it has become part of the language. In conformity with industry standards, programming language acronyms are presented in upper and lower case (Basic, for example, instead of BASIC).

An Integrated Approach to Microcomputers

Virtually all of the students in the courses for which this book is intended will primarily face microcomputers—both as stand-alone systems and as gateways to

larger information systems. *Computer Information Systems* stresses microcomputers but does not present them in isolation. As we develop each concept, we are always careful to relate it to all applicable computers. But since students are most familiar with microcomputers, we usually use a microcomputer application or example.

Photo Essays

To enhance the technical coverage, *Computer Information Systems* contains five full-color, self-contained photo essays: "The History of Computers," "The Making of an Integrated Circuit," "Microcomputers," "Computer Hardware," and "Computer Graphics and Art."

Chapter Components

Each chapter begins with a short *Preview* that introduces students to the subject of the chapter and lists the various concepts to be learned. *Boxes* drawn from current literature reinforce concepts.

Nearly *200 four-color photographs* and *150 pieces of line art* provide visual examples and explanations of textual material. Each chapter includes a *Summary* and *Key Terms* with page references. A *Glossary* provides formal definitions of terms.

Finally, *Computer Information Systems* has three sets of questions at the end of each chapter: *Review Questions* test recall of the terms and concepts; *Think about It* requires students to apply concepts; and *Challenges* call for students to do outside research to devise a solution.

Features New to the Third Edition

- *Delbert Freed Help Boxes.* The role of the Delbert Freed character has been expanded. He not only introduces students to the world of information but also appears in problem-solving vignettes.
- *Case-Oriented Boxes.* Ninety percent of the boxed inserts are new, and the boxes focus on real-world business examples.
- *3-D Line Art.* The book contains all new line art, with each piece drawn in three-dimensional perspective.
- *New treatment of MIS.* The subject of information systems in management has been divided into two chapters, with a concise overview of the management aspect of computers in Chapter 3 and a detailed discussion in Chapter 14.
- *Spreadsheets.* The coverage of spreadsheet operations in Chapter 15 has been expanded.
- *Database Management.* The coverage of database management in Chapter 15 has been expanded.
- *Multimedia.* The discussion of multimedia integrated throughout the textbook has been expanded.
- *Networking.* The coverage of communications and connectivity has been expanded, with a focus on networks and networking technology.
- *PC Buying Guide.* A new Appendix presents an overall strategy for purchasing a PC.

For the Student

Programming Languages

- **BASIC.** *Introducing BASIC,* by Steven C. Lawlor.
- **QBASIC.** *QBASIC: A Short Course in Structured Programming,* by Gary W. Martin.
- **Pascal.** *Structured Programming Using TURBO PASCAL: A Brief Introduction,* Second Edition, by Margaret Anderson.

Multimedia Tutorial Software

Multimedia tutorial software is available for use in computer labs. This program presents important concepts of hardware, software, information systems, and computers in society. Microsoft Windows is required.

Applications Software Lab Manuals

Through the Dryden Exact™ program, any combination of software-specific lab manuals can be bound with *Computer Information Systems,* Third Edition. Contact your Dryden representative for specific lab manual availability.

Case Manuals

- **Narrative Cases.** *Management Information Systems: A Casebook,* by Karen A. Forcht.
- **Applications Cases.** The publisher offers adopters practical applications cases for spreadsheet operations and database management. See your Dryden Press sales representative for details.

Study Guide

The *Student Study Guide* can be used to reinforce the concepts in the chapters as well as to provide a good yardstick for measuring the student's grasp of those concepts. For each chapter in the textbook, the *Student Study Guide* contains the following: (1) a chapter synopsis; (2) an outline; (3) three types of exercises; (4) true-false, multiple-choice, and applied study questions; and (5) answers to all *Student Study Guide* exercises and questions.

For the Instructor

Instructor's Manual

The *Instructor's Manual* provides the following material: (1) suggested course outlines, including sample syllabi; (2) a bibliography of literature; (3) an annotated list of media resources; (4) a chapter synopsis; (5) a suggested teaching outline; (6) a "Topics for Expansion" section containing suggestions and resources for discussion; (7) answers to all questions and exercises; and (8) transparency masters. The *Instructor's Manual* also includes a section on *Introducing BASIC.*

Instructional Software

The Dryden Press offers three software programs to assist in lecture presentation:

1. *Presentation Software and Laser Disk* features a lecture outline, video segments, and overhead transparencies. *Lecture-Active* software allows the instructor to

arrange all components of the laser disk for presentation in the classroom and features customizable "cue cards" to remind the instructor what points should be highlighted. The program is available in Macintosh or Windows.

2. *Graphic Demonstration Software* shows computer concepts in action. The programs are meant to be used as a lecture adjunct. While an instructor talks about a concept, it can be dynamically illustrated on a computer screen.
3. *Basic Demonstration Programs* allow instructors to lead students through a program. Because the demonstrations are self-guiding and self-explanatory, students also can run the programs on a personal computer.

Test Bank

The test bank for *Computer Information Systems* contains nearly 2,500 problems, including true-false, multiple-choice, and short-answer questions. The test bank is available both in hard-copy form and in a computerized version for the IBM or Macintosh.

Transparencies

A packet of 100 full-color transparencies is available to adopters. In addition, the *Instructor's Manual* contains transparency masters of the flowcharts in *Introducing BASIC.*

Videos

The Dryden Press has an extensive list of videos to accompany *Computer Information Systems* and will provide single tapes or a series of tapes free to adopters. Minimum purchase requirements apply. See your Dryden Press representative for further details.

Electronic Bulletin Board

An electronic bulletin board is available free of charge to instructors who adopt the text. Instructors can download supporting software, including the computerized test bank and adopters can communicate directly with Steve Lawlor, the author, through E-mail.

Acknowledgments

A revised edition is in many ways more difficult than the first. The author has the task of identifying and maintaining the strengths of the previous editions while reacting to changing technology and suggestions for improvements. No author could do all this without a lot of help. I am grateful to the adopters of the first and second editions and the thousands of students, both mine and those at other schools, who used the first and second editions for their many helpful suggestions and constructive criticisms.

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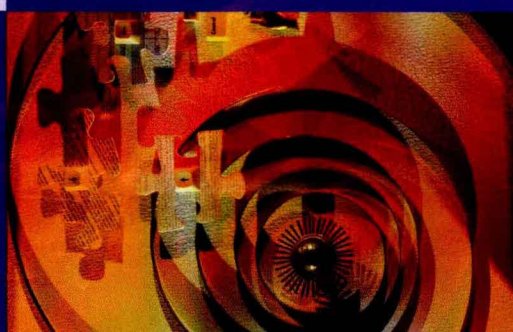

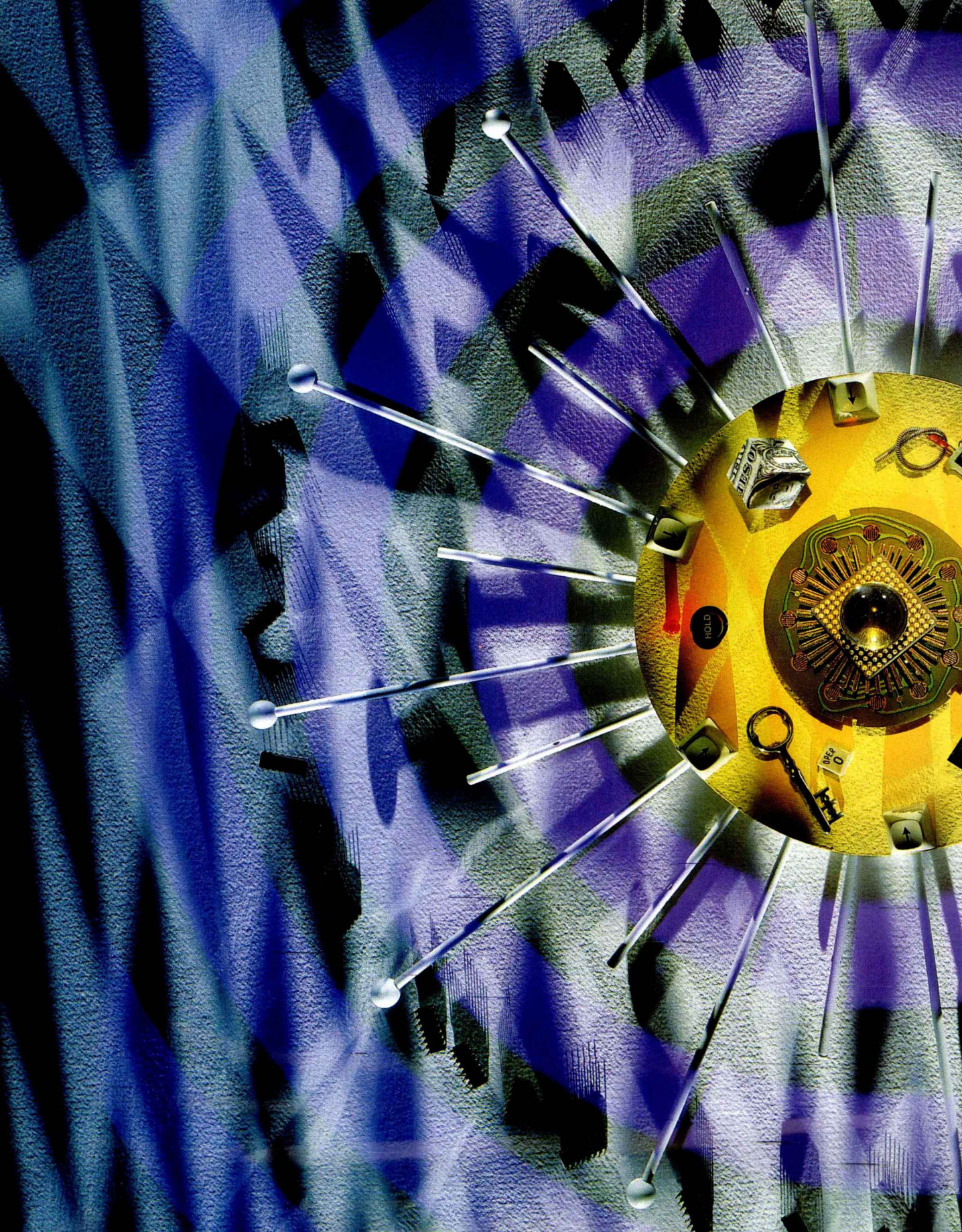
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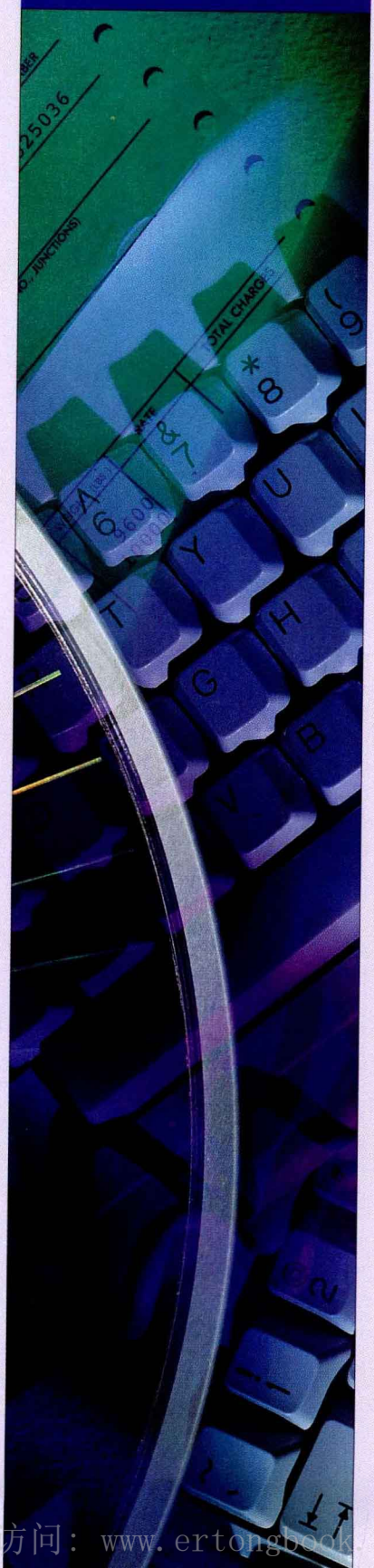

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