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Information Processing Today

with Applications
and BASIC



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Information Processing Today with Applications and BASIC

Thomas Owens

Perry Edwards



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Preface

OUR APPROACH

Most prefaces read as if they were crafted by the same Madison Avenue copywriter—“this is not just another ‘intro’ book, but a refreshing new approach with new ideas, written for instructors who are instructors, etc.” We’ve long suspected that instructors skip over prefaces because they expect to find little of substance in them. For this reason, rather than merely repeat advertising copy, we would like to focus on why we wrote this book, how it is shaped, and direct your attention to those features of the text and support materials that will ensure a successful teaching and learning experience.

The 1980s have been a time of radical change in all aspects of our business and personal lives, including the onset and growth of the personal computer industry. This is evidenced by the changes we have experienced as teachers of the “intro” course in information and business data processing. At the beginning of a term, we are accustomed to jotting down a list of ten to fifteen concepts we want our students to have learned by the end of the course. Over the last ten years, our lists of objectives have had a common core of hope that our students would come to see how computers help people and businesses better manage their affairs. We emphasize that computers are bought for a purpose—to ensure that businesses and organizations run more productively, efficiently, and in the case of business, profitably. In the realm of personal use, we stress how computers can expand lives by offering more efficient means of communication and information handling, along with new forms of learning and entertainment. With an emphasis on currency and comprehensiveness, we have shaped a balanced presentation, taking into consideration mainframe and mini-computers while covering the increasing role of personal computers in the office, as well as at home.

THE TEXT AND VIEW VIDEO

INFORMATION PROCESSING TODAY reflects the way we teach our students now. We show—not tell—readers how computers are an integral part of their personal and business lives. Rather than talk about computers in general terms, we use a timely and motivational case study to get down to specifics early. This case study focuses on View Video, an actual home entertainment videocassette rental firm and an example of one of the fastest growing small businesses in this country. View Video rents tapes and like most videotape rental stores keeps its records on paper. The text traces this business as it falters from too much paper and not enough information about the store's operation. Throughout the conceptual core of the text, Chapters 1 through 11, students follow the owners as they review their need for computers and the hardware and software required to get the job done. In the applications module, Chapters 12 through 16, students see how the owners take control of their information with word processors, spreadsheets and graphics, database managers, and integrated software. In the BASIC versions of this text, Appendixes A and B illustrate techniques using View Video programs written in BASIC. We hope that students will see that disks, printers, memory, data security, and automation are very real problems to businesses today, and not solely academic topics. And we hope students will learn the programming language more easily by seeing its use in the development of a relevant business system.

As a realistic case, View Video works. It provides students with the practical knowledge necessary to understand the complex role of computers in our world. In the classroom, we've found it helpful as a launching point for discussions of automation, careers, personal business computer selection, and a number of the important social issues of the 1980s—computer crime, privacy, and the changing nature of work. These issues are discussed in Chapters 17 through 20. The text stresses the productivity gains that computers can provide as well as the value of information in today's complex world. In addition to View Video, a number of other applications are examined in detail, varying from a small floral shop to a large networked computer system.

SPECIAL FEATURES

Explaining a concept or an idea in conversation or lecture is often quite different than committing it to paper. Both vehicles of communication can be tough, but probably the most difficult is

writing, particularly in a textbook. In a conversation or lecture, a question can be posed and addressed almost immediately. With a textbook it is generally just the student facing a page alone. For this reason we've taken special pains to mitigate the aloneness with a friendly, conversational, direct writing style. Over and above exposition, special motivators have been built in to ease and expand the learning process.

PEOPLE FOCUS . . . PRODUCT FOCUS

As instructors, we find it extremely valuable to supplement our discussion of concepts and applications with information about the women and men responsible for the development of computers. Likewise, our students tell us that these historical vignettes are more valuable to learn from if supplemented with an "update," that is, a discussion of the relevance of these innovations today.

Each chapter of INFORMATION PROCESSING TODAY contains a "People Focus" and a corresponding "Product Focus" section isolated from the main text in high-interest sidebars. Written by noted computer writer and sociologist David Owen Arnold, "People Focus" sections profile information processing innovators and developers from Atanasoff and Lovelace to Von Neumann and Watson. "Product Focus" sections describe a range of topics from artificial intelligence and BASIC to voice input and Word-Star 2000. These sections bring historical innovations up-to-date and contain the most recent material available at press time.

PRODUCTIVITY SOFTWARE APPLICATIONS

Today's students expect an opportunity to use the variety of software introduced in their text. As instructors, we've experienced the nightmares created by copyright restrictions and site licensing problems of commercial and "educational" software. In an effort to eliminate these problems for instructors and to provide the widest freedom of choice, the productivity software module, "Applications," Chapters 12 through 16, deals generically with word processing, spreadsheets and graphics, database managers, data communications, and integrated software. This enables instructors to use the text with a variety of software and be certain that students understand the fundamentals of popular software types.

COMPUTER APPLICATIONS: USING INTRO-SOFTWARE®

Special applications software accompanies the text. Intro-Software® offers free, unrestricted, copyable software to teachers. Intro-Software® offers students a hands-on experience with the concepts and operation of the central productivity tools of a spreadsheet (Intro-Calc®), a database management system (Intro-File®), and word processing (Intro-Word®). They learn basic operations and applications through self-paced and carefully guided workbook assignments that reinforce concepts learned in *INFORMATION PROCESSING TODAY*. Available for the IBM PC and compatibles as well as the Apple II series, each application contains an easy-to-use menu and operating instructions and can work in a networked or standalone computing environment.

Intro-Software® was created by Fred Beisse of the University of Oregon. He wrote the programs and **COMPUTER APPLICATIONS**, the workbook which accompanies the text. As an instructor of an introductory course emphasizing information and data processing concepts, BASIC programming, and applications software, Fred took into consideration the pressures on instructors to balance the presentation of concepts, programming, and applications in one term. To maximize value to the student and instructor, Intro-Software uses a few simple commands that demonstrate typical capabilities and features contained in major commercial programs, and assumes that this is the emphasis given to applications software by instructors at the introductory level. In our course we ask our students to whet their appetites on the software, work out any phobias about using productivity tools, and master one or more specific products on their own.

CHAPTER LEARNING AIDS

INFORMATION PROCESSING TODAY not only covers the most current topics, but includes proven pedagogical devices that make the text easy to teach and learn from.

- *Chapter Outline* A concise outline guides the reader to the most important elements of each chapter.
- *Learning Goals* Specially constructed learning goals clarify expectations.
- *Key Terms* Important terms are listed at the beginning of each chapter to emphasize terminology to be mastered.
- *Italics* Italicized key terms are defined in context and listed when introduced in the margin of each page.

-
- *Diagrams and Photographs* Diagrams have been constructed and photographs selected to both instruct and stimulate further thought. The use of color reinforces the text material and concepts.
 - *Chapter Summaries* Student-oriented summaries review key terms and important concepts learned.
 - *Review Questions* End-of-chapter review questions are ranked by three levels of difficulty from information queries about the text to thought-provoking inquiries about concepts.
 - *References* Selected references list further reading to invite students to explore areas of special interest as the basis of research material for chapter and term assignments.
 - *Glossary Items* Cross-referenced indicating where terms are first introduced in the text.
 - *Comprehensive Index* Each version of the text has a single index including as appropriate, concepts and terminology from the BASIC appendixes.

TEACHING AND LEARNING SUPPLEMENTS

INFORMATION PROCESSING TODAY is surrounded by a complete teacher-student support package. These materials include a student Study Guide, Instructor's Manual, Flowchart Supplement, Transparency Masters, Transparency Acetates, printed Test Bank, computerized Test Bank, and software encompassing the View Video data bank, a BASIC tutorial, and Intro-Software®. Additionally, selected software is also available utilizing the Cauzin Systems Softstrip® format.

STUDY GUIDE

This important student support was written by David Owen Arnold to reinforce and integrate concepts presented in the text through a planned combination of study guide and workbook techniques. The Study Guide includes:

- outlines to enable students to review major concepts from each chapter
- lists of learning objectives that reflect major ideas and concepts
- thorough summaries that provide students with capsule highlights of each chapter and module

PREFACE

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- a key term review for students to test their definition retention and ability to use fundamental words and concepts correctly
 - self-tests allowing students to evaluate their mastery of chapter and module material and as a preparation for examinations
 - answers to self-tests are provided so that students receive immediate feedback in gauging their progress

Additionally, the Study Guide covers Appendixes A and B on BASIC programming.

INSTRUCTOR'S MANUAL

In so many cases, writing the Instructor's Manual to accompany a text is either left until last or placed in the hands of others. Knowing the importance of this teacher support element for *INFORMATION PROCESSING TODAY*, we wrote the Instructor's Manual in parallel with the text. Our teaching experience and the teaching experience of others, both on our own campus and across the country, was utilized in its preparation. Realizing that there is often a direct relationship between the success of a teaching situation and the resources available to the teacher, the Instructor's Manual includes many helpful features:

- instructor-oriented summary of central concepts
- teaching suggestions and lecture tips
- answers to review questions
- additional exercise suggestions to give variety to the classroom experience
- a listing of suggested project assignments
- an expanded annotated bibliography
- commentary on using the View Video case and database
- references to the package of Transparency Masters
- teaching tips and strategies in presenting BASIC, sample solutions to the programming problems and exercises found in the BASIC version of the text.

FLOWCHART SUPPLEMENT

For those instructors who emphasize flowcharting in their presentation of BASIC, there is available a supplementary package of flowchart diagrams to support lecture/demonstration and project assignment.

TRANSPARENCY MASTERS AND ACETATES

A full set of Transparency Masters from the text, sized for effective and convenient use, is available along with additional material and instructional commentary on the use of the package. The Transparency Master package is also available in acetate form.

PRINTED AND COMPUTERIZED TEST BANK

The Test Bank is available in two versions with over 2500 multiple-choice, true/false, fill-in, and matching questions of graded difficulty to help verify student mastery of terms and concepts and to ease the chores of test preparation and grading. Version One is in printed form and Version Two is part of the Burgess computerized testing system, TEST ONE, for the IBM PC/compatibles and the Apple IIe.

SOFTWARE

With the increasing use of software in teaching labs, we felt two additional “pieces” would round out students’ experiences and complement Intro-Software.

- *View Video* To bring View Video to life as an active learning device, a database with the BASIC source code is available for both the IBM PC/compatibles and the Apple II series.
- *BASIC programming tutorial* For users of the BASIC version of the text, a tutorial paralleling the BASIC appendixes provides active reinforcement with ready-to-run data sets of listings from selected problems and examples. It is designed for use with the IBM PC/compatibles and the Apple II series.

In addition, selected programs, templates, and listings from the software components are available in the Cauzin Systems Soft-strip® format.

Acknowledgments

Writing this text and preparing the student and instructor support package took a tremendous effort on the part of many people. In manuscript form, our book was reviewed by instructors

from a variety of colleges and universities. We wish to offer a special “thank you” to these selected reviewers:

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In addition to crafting forty special focus sections, David Owen Arnold of Sonoma State University brought his teaching experience in computers to bear on the Study Guide, and his training and teaching as a sociologist to bear on a most provocative Chapter 20, “Social Issues.” Dave is a truly talented and multi-disciplined fellow! Thank you.

Special thanks are due to the creative staff of Burgess Communications, especially Brete Harrison, Philip Cecchettini, Larry Lazopoulos, and Barbara Pickard. Extra-special *thank yous* are due Jenny Forbes for her photo and company research, and Ron Albrecht and Sharon Doyel for their promotional campaign. The book’s designer, Bruce Kortebein of Design Office in San Francisco, produced a book with the “understated elegance” we hoped for, but feared was impossible in this age of “color wars” among publishers of introductory data processing books. To all, thank you!

Thomas Owens
Perry Edwards
Rocklin, California
February 1986

To our wives, Lynn and Kathleen, and to our children, Jessica, Davon, Jennifer, Sarah, and Benjamin who went with unanswered questions and unfinished chores but who gave us encouragement and shared in our efforts, you deserve our loudest and most heart-felt thank yous.

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