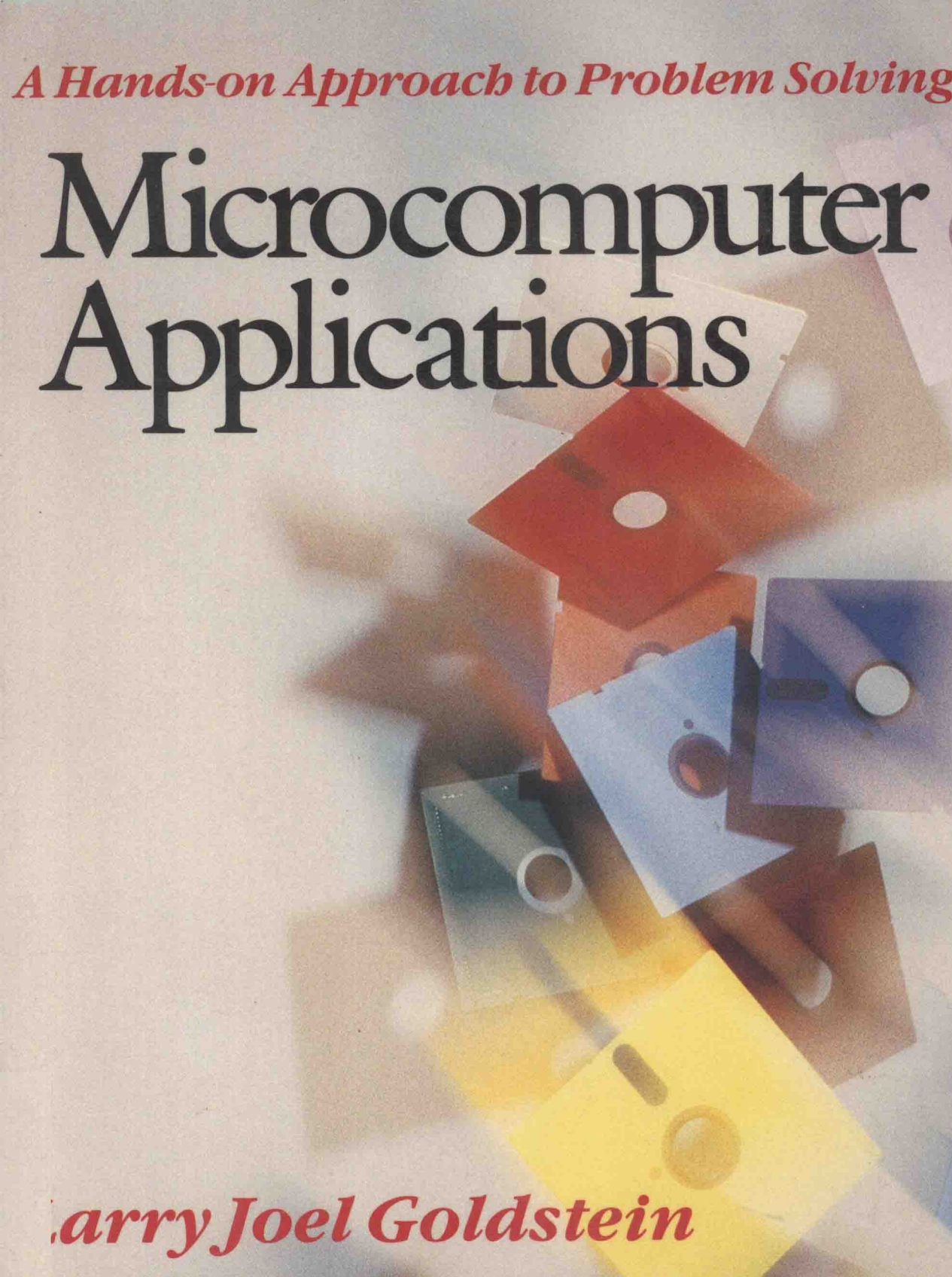
A Hands-on Approach to Problem Solving

Microcomputer Applications



Larry Joel Goldstein

APPLICATIONS

A HANDS-ON APPROACH TO PROBLEM SOLVING

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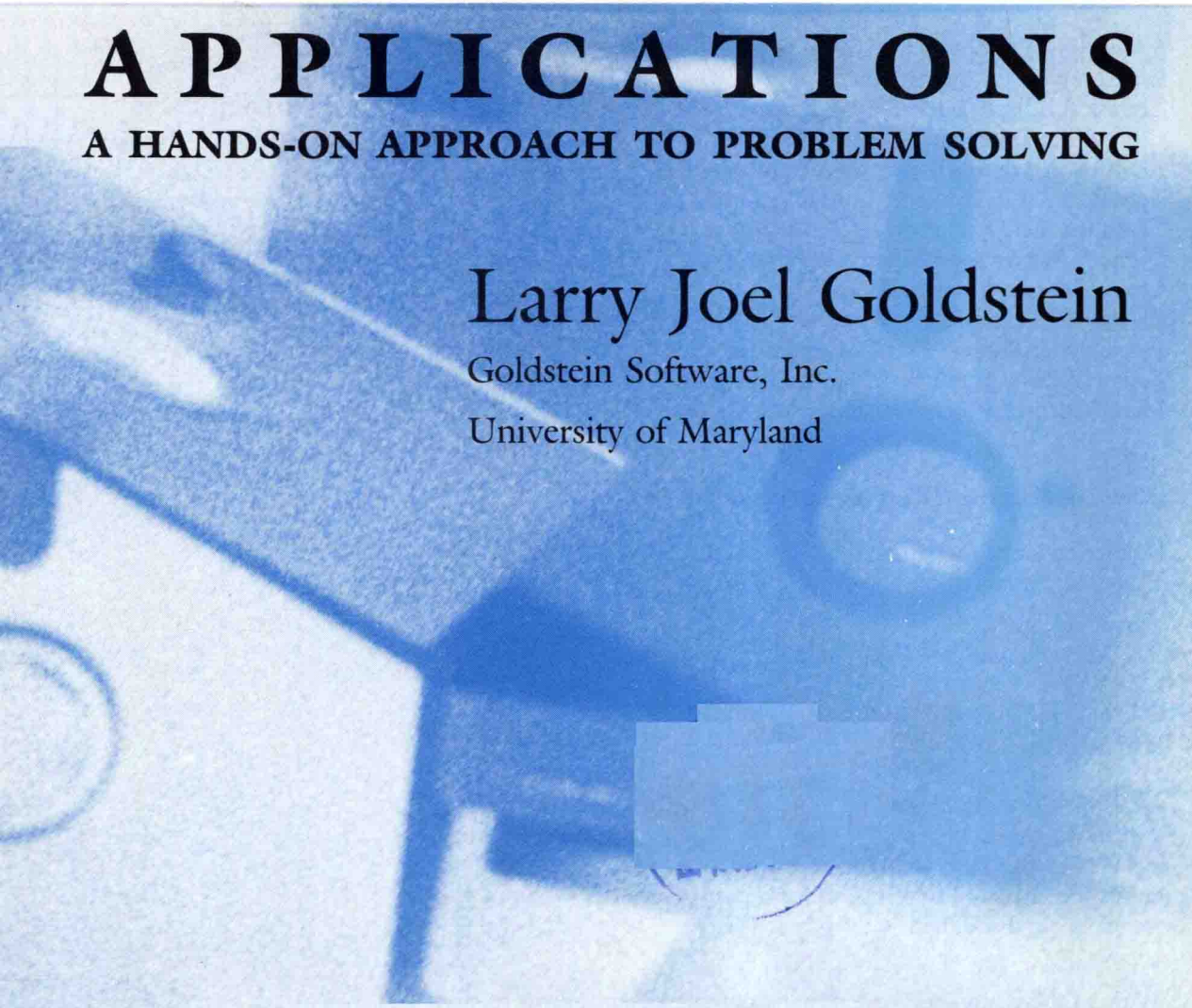

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For Sandy,
who brings sunlight and
music into my life

PREFACE

The Purpose of This Book

In the span of a decade, the microcomputer has developed from a sophisticated plaything to a problem-solving tool of incredible significance—such significance, in fact, that today's students in all disciplines are required to be computer-literate, with increasing emphasis on microcomputers and their applications. This book is meant to provide such microcomputer literacy.

In this book I have attempted to tell the story of the microcomputer revolution and to describe contemporary microcomputers as problem-solving tools. To be sure, I have described microcomputers in terms of the traditional hardware–software dichotomy. However, I have heavily emphasized the role of application software in solving problems, especially in a business context.

In reading this book the student will learn the history of the microcomputer revolution, microcomputer hardware and how it functions, and the main categories of application software (word processors, spreadsheets, and database managers). The book emphasizes hands-on use of the programs to solve actual problems.

It seems to me that too many textbooks on microcomputing place an undue emphasis on learning technical skills necessary to master one or more particular software packages. This emphasis is unfortunate, since rapid change in the microcomputer world will make most of these packages obsolete very quickly—perhaps even before the student has a chance to apply knowledge of the packages in a business setting. Instead, beginning microcomputer courses that emphasize the general principles of microcomputing and the generic strategies for applying microcomputers to the solution of problems will help students to better grasp the ideas behind all software packages, and will give them much more flexibility in the real world. That flexible approach is taken in this book.

However, this is not to say that microcomputer courses should be so general that they exclude hands-on experience with software packages. "Learning by doing" is an important strategy in any microcomputing course, and accordingly I have included hands-on exercises, application projects, and command descriptions for a number of the most popular software packages.

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SOFTWARE OPTIONS

Word Processors

GoldWord™, a "what you see is what you get," full-function word processor.

Features

- automatic paragraph reform
- command-driven for rapid typing
- italics and boldface displayed on screen (with graphics card)
- extensive document formatting options
- complete set of block operations
- search and replace function
- supports most popular printers
- user-friendly command structure
- on-screen help available

Requirements

- 256k IBM PC or compatible
- one disk drive or hard disk
- graphics card needed to display italics

Wordstar 3.3 Educational Version, developed by MicroPro, has all the regular word processing features of full-function WordStar, including access to file management commands while editing, advanced search and replace options, and write excerpt to a new file. Limited to a maximum document length of five pages; does not support CorrectStar, StarIndex, SpellStar or MailMerge.

Spreadsheets/Integrated Packages

GoldSpread™, a powerful integrated package supplying spreadsheet, data management, and graphics.

Features

- 8096 rows by 256 columns
- full support for financial, scientific, data management, and logical functions
- macro capability
- easy-to-use pop-up menu design
- on-screen help
- supports all Lotus 1-2-3 release 1-A commands and functions; allows you to read Lotus 1-2-3 worksheets
- produces output that can be input to Lotus 1-2-3 release 2
- allows you to use templates (including macros) designed for use with Lotus 1-2-3.

Requirements

- 256K IBM PC or compatible
- one disk drive or hard disk
- graphics card needed to display graphics

Preview II, an on-line tutorial introduction to the most important applications on the microcomputer: word processing, spreadsheets, database management, and business graphics. The thoroughly class-tested package shows how to create and print up to five-page documents, use a 16-column by 25-row spreadsheet, build a database with up to 10 entries, and create bar charts and line graphs. Available in Apple and IBM versions, Preview II is free to all adopters of this book.

Database Management

dBASE III Plus, Educational Version, free to adopters of this book. This package handles a broad range of applications—mailing lists, labels, accounting systems, and inventory management systems. The package offers the choice of either Assistant, a pull-down menu system featuring context-sensitive help, or dBASE, the powerful procedural programming language. Although files cannot exceed 31 records, up to 10 database files can be opened at once, thereby demonstrating the capabilities of a fully relational system.

REVIEWERS

Thank You

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NOTE TO THE STUDENT

This book was written with you, the student, in mind. It has many features designed to assist you in learning about microcomputers and application software. Before beginning to read, you should pause to look at the organization of the book and its various study aids.

How This Book Is Organized

This book is organized as a text for a course. However, you may use it for self-study as well.

The book is divided into three parts. Part I covers microcomputer hardware and operating systems, illustrates how microcomputers work, and prepares you to run application programs.

Part II discusses the main categories of application software: word processing, spreadsheets, and database management. The features of application software are described, as well as the operation of several commercially available software packages, including the software packages you can purchase with the text.

Part III discusses additional application software, including graphics and special utilities, as well as such important issues in microcomputing as data security and copy protection.

Study Aids

Section Study Aids. You will find the following helpful study aids included in each numbered section:

- *Test Your Understanding,* a series of questions located at the end of each section, helps you check your understanding of the material discussed in the section.
- *Hands-on Exercises,* designed to develop your problem-solving ability using an application software package, are contained, where appropriate, at the end of the chapter.
- *Margin Maxims,* placed throughout each section, summarize main points of the discussion and give you helpful guidelines on good microcomputing habits.

- *Command Tables,* located throughout the chapters relating to application software, summarize commands for sample programs. You can use the tables as quick references when studying or working at your microcomputer, or to compare structures of different programs.

Chapter Study Aids. Each chapter begins with a vignette describing a real-life application of microcomputers.

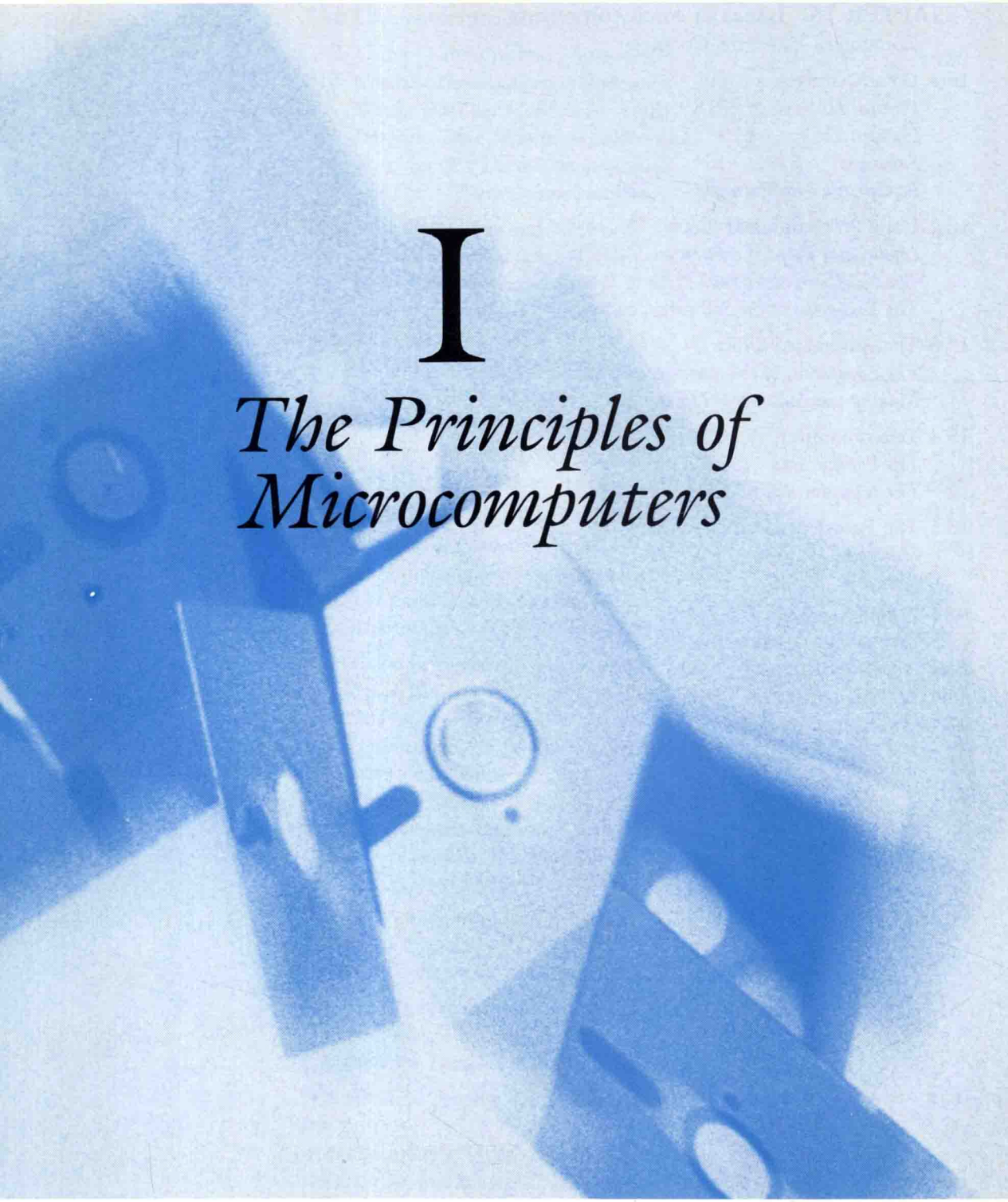
At the end of each chapter, you will find these learning aids:

- *Chapter Review Questions,* cumulative questions that recap the material in the entire chapter.
- *Key Terms,* a list of all important terms introduced in the chapter. For definitions of these terms, consult either the text of the chapter or the glossary.
- *Discussion Questions,* extensive, open-ended questions that your instructor may use as essay assignments or for class discussion.
- *Application Projects,* hands-on projects you can carry out using an application software package. Whereas the Hands-on Exercises at the ends of sections stress mastery of technical details of application software operation, the Application Projects are open-ended and give you an opportunity to solve problems from beginning to end.

The Hands-on Approach to Microcomputing

While you read, study, and work at your microcomputer, do as many of the Hands-on Exercises and Application Projects as you can. In order to learn about application software, you must use it to solve problems. The more hands-on experience you have, the better. Feel free to experiment with the software and to use it to solve problems that come up at school, at home, or on the job. You, too, can be a part of the microcomputer revolution!

L.J.G.



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The Principles of Microcomputers

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