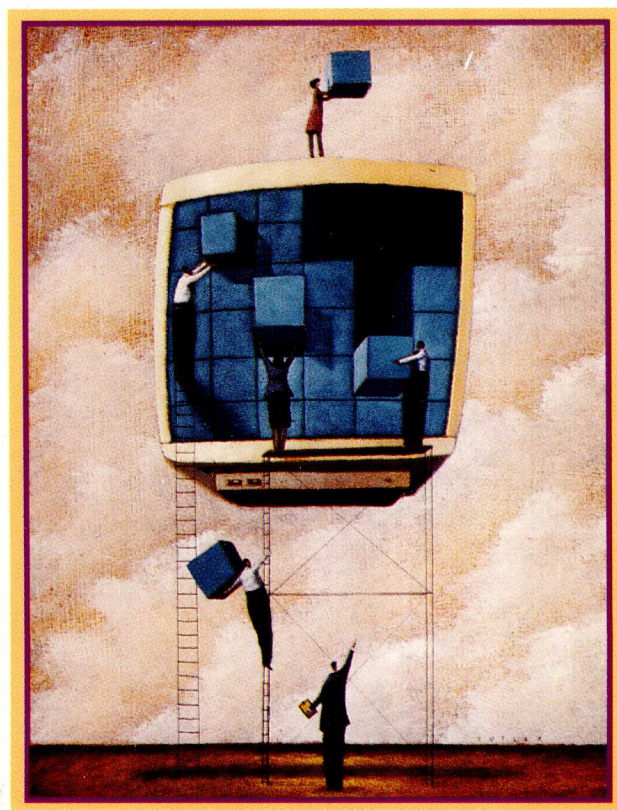


Paradox[®] for Windows

BUILDING ACCOUNTING SYSTEMS

A Transaction Cycle Approach



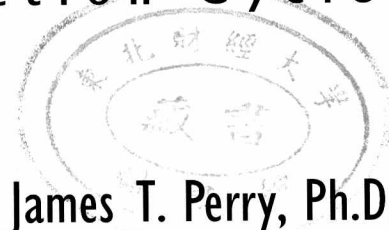
Perry & Schneider



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BUILDING ACCOUNTING SYSTEMS

A Transaction Cycle Approach



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To Tilden Wayne Perry, Ph.D., Professor Emeritus:

You have shown the path, provided the model, and lived the example.
Thank you for all you have taught.

PREFACE

TO THE STUDENT

Traditional methods of recording economic events and accumulating accounting information are giving way to database technology in today's accounting information systems. Organizations depend heavily on databases to provide mission-critical information for making many kinds of crucial decisions. Accounting information systems play a central role in delivering this information to decision makers. As a professional accountant, you will play a central role in ensuring that accounting systems deliver timely, accurate, and complete information. This book will help you learn how to perform that role effectively.

This text describes how you can use database management systems to design and build accounting systems. The text will explain how database systems are a part of your everyday life and will help you develop a basic understanding of relational database management systems. From that foundation, you will learn how to build the elements of accounting systems using database management software.

We have divided the text into two parts. Part I explains how to use the Windows operating environment, reviews the history and theory of relational database systems, and describes practical uses of the Paradox for Windows database management system. Part II explains transaction cycles and then shows you how to use the database theory and tools you learned in Part I to build accounting systems for each of the four main transaction cycles.

Part I begins by covering the fundamentals of the Windows system. This may be a review for some of you; for others, this will be your first hands-on introduction to Windows. Chapter 2 introduces the Paradox for Windows database management software. You will learn about using tables, displaying database information, finding answers to questions with database queries, using forms, and printing database reports. Chapter 3 presents a concise, yet thorough, discussion of database theory. You will learn how to structure your data to avoid redundancy or data loss by following normalization rules. User views and entity-relationship modeling are also introduced. Finally, you will learn how to perform the three basic database operations: select, project, and join. These operations enable you to locate subsets of data table rows or columns and to collect and display information from several related data tables. Chapter 4 parallels Chapter 2's topics. In Chapter 4, however, you *create* tables, queries, forms, and reports

yourself—we provide step-by-step guidance. You will be happy to know that you can perform all of these database functions *without writing a single line of program code*. When you have finished Chapter 4, you will have all of the database skills you need to create accounting systems.

Part II applies database concepts and techniques to the specific task of building accounting information systems. Chapter 5 explains the differences between database accounting systems and double-entry bookkeeping systems, then discusses the advantages of studying the database approach. You will learn how to classify business activities by level of complexity. You will also learn to identify the business activities that constitute the four main transaction cycles we use in this book. In Chapter 6, you will begin your walk through the accounting transaction cycles with the revenue cycle. You will learn how to use database tools to record revenue cycle events such as sales orders, shipments, and cash collections. Chapter 7 focuses on purchase cycle activities, which include creating purchase orders, recording the receipt of goods ordered, and paying vendors. In Chapter 8, you will learn how to build database tables, queries, and reports that handle the many details of payroll accounting. You will learn how to combine records of time worked with employee information to calculate gross pay, deductions, and net pay. Chapter 9, the production cycle, discusses how to build accounting database elements that track materials, labor, and overhead costs into production using job-order cost accumulation examples. You will also learn how to extend these examples to build process, hybrid, and activity-based cost accounting database systems. Chapter 10 concludes the book by showing you how to add icing to the accounting systems “cake.” These enhancements include custom buttons for simplifying database operations and custom menus that replace the Paradox for Windows menu.

We have assumed that you will be an active participant in both reading the text and working through the step-by-step examples. You will retain what you have read by practicing it on a computer. To reinforce your learning, we have included three types of review questions at the end of each chapter:

- Multiple-choice questions, which refresh your memory about key points in the text
- Discussion questions, which are more general and intended to provoke small group discussion
- Exercises that challenge you to use the computer to create your own accounting databases or extend the examples in the text

By studying the text carefully, working through the examples, and using the end-of-chapter materials to reinforce your knowledge, you will learn how to use database management software to design and build accounting systems—systems that can deliver timely and accurate information to managers and financial statement users.

Many accounting professors feel that the accounting information systems course is the greatest teaching challenge in the curriculum. One of our goals in writing this book was to help make your job of teaching accounting systems easier. Accounting practice has evolved from manual journals and ledgers to database accounting systems, even in very small firms. At the same time, many introductory accounting courses have shifted to financial statement user or managerial decision maker orientations. Accounting majors, however, still need to understand how accounting systems record, classify, and aggregate economic events. This book gives you a powerful tool that you can use to give your students a solid introduction to database principles *and* valuable hands-on experience in constructing accounting systems. By using object-based software that has an intuitive graphic user interface, Paradox for Windows, this book vastly reduces the amount of class time you must spend on non-accounting systems matters. The text's step-by-step instructions are designed to reduce your time and drudgery in the computer lab. The time you do spend in the computer lab will not be wasted on mundane "click here and then click there" instructing.

We are convinced that there are at least as many different ways of teaching the accounting systems course as there are professors teaching it. Therefore, this book was designed for flexible use. In a junior- or senior-level course the book can effectively supplement any accounting information systems text currently on the market. Most of these texts are organized around transaction cycles that are identical or similar to the transaction cycles we use in this book. Some instructors may wish to use this book as the main course text, supplementing it with readings from the current literature on internal control and systems design issues.

Many accounting systems courses include a systems design project. This book can serve as an effective prelude to such a project. Students can extend the book's examples or use them as analogs for the real-world systems in their projects. Students will feel better prepared to take on the challenge of a systems design project after they have experienced successes creating the example accounting systems in this book.

Although this book was written with the needs of the undergraduate accounting systems class in mind, it is flexible enough to be used in other settings. Many community colleges now offer a computer accounting course. This book would serve well as either the main text or a supplement in such a course. Instructors of graduate accounting systems courses may wish to assign this book as a supplement for those students who lack undergraduate systems coursework, or whose undergraduate systems exposure is dated.

The book includes a number of distinguishing features that will make your teaching easier:

- A concise introduction to database theory in Chapter 3 that includes discussions of normalization and entity-relationship modeling
- An exposition of the database approach to accounting systems in Chapter 5 that includes a comparison to double-entry bookkeeping procedures
- Step-by-step instructions that guide the student through each exercise and example
- Numerous figures that show the computer screen at important points in each example and show finished forms and printed reports
- A Companion Disk Set that contains tables, files, queries, forms, reports, and other information to help students complete the exercises and follow along with the examples in the text

We have taken special care to include “before” and “after” versions of the database tables, forms, reports, and other objects so that the student can begin with any chapter. You will find that the tables of information are comprehensive and of significant size. By supplying tables with several hundred rows, we hope to give students an experience that resembles working with real-life databases.

An Instructor’s Manual is available to adopters; it includes solutions to all the end-of-chapter questions and exercises, lecture suggestions for each chapter, transparency masters, and additional test questions. The Instructor’s Manual also includes an Instructor’s Disk, which contains solutions to all computer exercises in the form of Paradox for Windows tables, forms, queries, and reports. The Instructor’s Disk also includes the text of the Instructor’s Manual to make it easy for you to customize your lecture outlines, transparencies, and test questions.

ORGANIZATION OF THE BOOK

The text contains ten chapters and is organized in two parts. Part I introduces Windows, Paradox for Windows, and database modeling. Part II shows students how to use the database theory and tools from Part I to build accounting systems.

Part I comprises Chapters 1 through 4. Chapter 1 is an overview of Windows and emphasizes fundamental operations such as launching programs and manipulating groups and windows. Certain minimal Windows proficiency is required to use any Windows database product. Chapter 2 familiarizes the student with the database management system. All major objects managed by the database are discussed, including tables, queries, forms, and reports. Chapter 3 presents a brief history of databases; describes the requirements for databases to be in first, second, and third normal forms; and gives students just enough

database theory to create well-designed, anomaly-free databases. Chapter 4 provides the student with hands-on experience building tables, simple to complex queries, elegant forms, and informative reports.

Part II includes Chapters 5 through 10. Since most students using this book will have a solid understanding of double-entry bookkeeping, Chapter 5 describes how database accounting is different and why firms are using database accounting systems in computerized environments. Chapter 5 identifies firms as service, merchandising, or manufacturing and discusses transaction cycles. We use four transaction cycles in this book: revenue, purchases, payroll, and production. We have defined the revenue cycle to include cash receipts and the purchases cycle to include cash disbursements. Chapter 6 shows students how to track customer information and record sales orders, shipments, and cash receipts. In Chapter 7, students get to see the purchases cycle as a mirror image of the revenue cycle. They track vendor information and record purchase orders, receipt of goods ordered, and cash disbursements. Chapter 8 presents students with a simplified example payroll system, which they can easily extend to accommodate realistic levels of complexity. Chapter 9, the production cycle, shows students how to track materials, labor, and overhead costs in a job order cost accumulation system. Chapter 9 also includes many suggestions for extending the job order examples to process, hybrid, and activity-based cost accounting database systems. Chapter 10 contains instructions for enhancing accounting systems with form buttons and custom menus. These enhancements do require the student to write ObjectPAL methods. However, we provide step-by-step instructions that should make this a pleasant exercise. Even the most computer-phobic accounting student should find writing these short ObjectPAL code snippets tolerable.

PATHS THROUGH THE BOOK

The chapters need not be assigned in sequence. You can follow several alternative paths through the book. If your students are familiar with Windows and feel comfortable in that environment, then skip Chapter 1 or assign it as review reading. Chapters 2, 3, and 4 should be assigned sequentially, since Chapter 4 integrates the Chapter 2 introduction to Paradox for Windows with Chapter 3's treatment of database principles.

You should include Chapter 5, since it includes the rationale for using a database approach to accounting systems and introduces Part II of the book.

Chapter 5 builds on concepts covered in Chapter 3. Many instructors will want to cover all four of the transaction cycles, assigning Chapters 6, 7, 8, and 9 in sequence. However, we have talked with instructors who like to focus on one or two transaction cycles each semester. Chapter 6, the revenue cycle, and

Chapter 7, the purchase cycle, are ideal candidates for such a focus. You can go directly to Chapter 7 from Chapter 5 if you wish. Chapters 8 and 9 are also independent, but students will find them easier if they have worked through Chapter 7 first. Although Chapter 9 includes an introduction to cost accounting concepts, most students will find it easier if they have already had a cost accounting course.

Chapter 10 may be covered if time is available. It includes advanced database software techniques that students can use to enhance the accounting systems they build. If your students are comfortable with Windows computing—particularly if they have had some spreadsheet macro-writing exposure before this course—you may want to cover Chapter 10 immediately after Chapter 4.

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