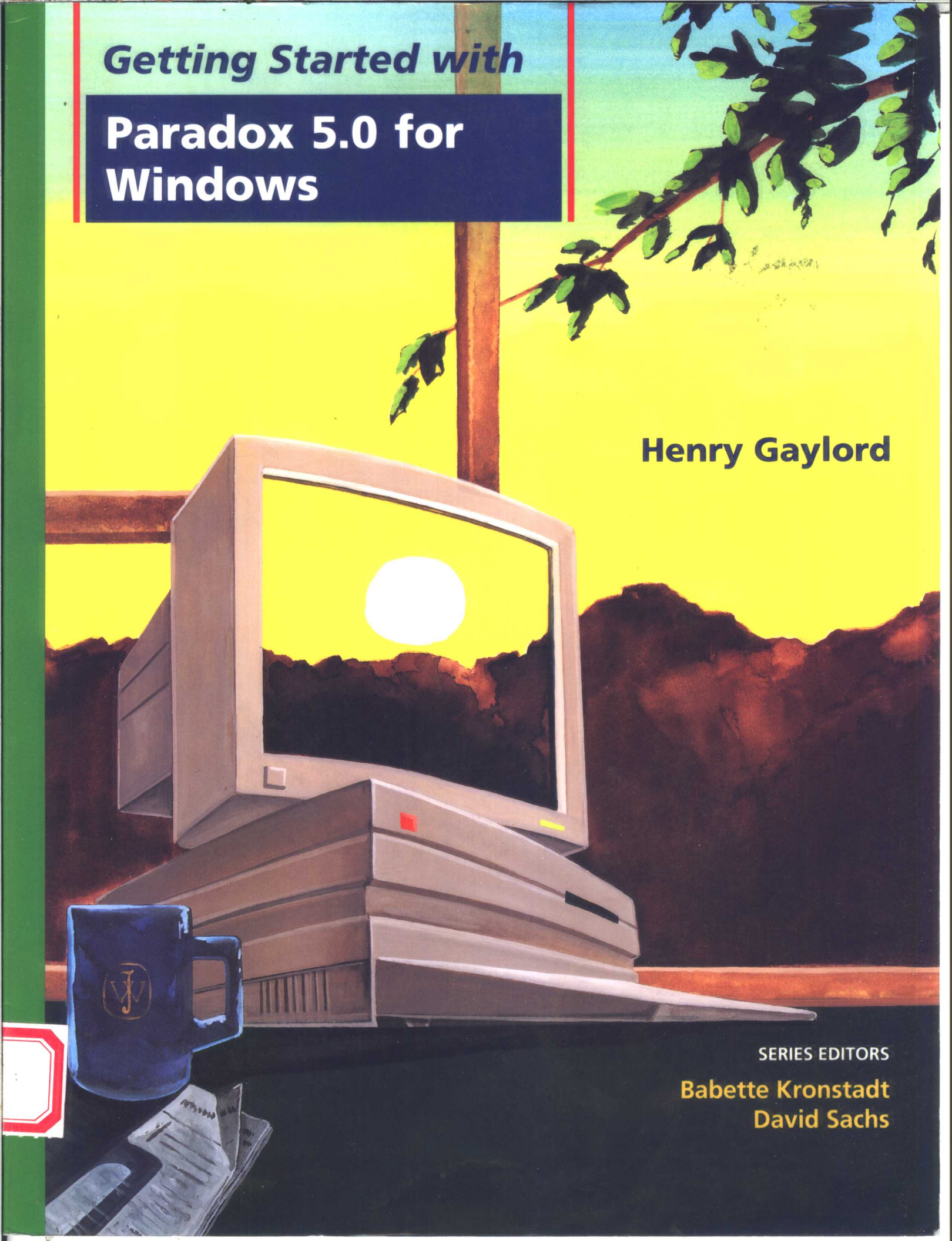


Getting Started with

Paradox 5.0 for Windows

Henry Gaylord



SERIES EDITORS

Babette Kronstadt
David Sachs

=

Getting Started With Paradox 5.0 For Windows

Henry Gaylord

*Pace Computer Learning Center
School of Computer Science and Information Systems
Pace University*

Babette Kronstadt

David Sachs

*Series Editors
Pace Computer Learning Center
School of Computer Science and Information Systems
Pace University*



JOHN WILEY & SONS, INC.

New York / Chichester / Brisbane / Toronto / Singapore

Trademark Acknowledgments:

Microsoft is a registered trademark of Microsoft Corporation
Excel for Windows is a trademark of Microsoft Corporation
Windows is a trademark of Microsoft Corporation
Word for Windows is a trademark of Microsoft Corporation
Microsoft Access is a registered trademark of Microsoft Corporation
1-2-3 is a registered trademark of Lotus Development Corporation
WordPerfect is a registered trademark of WordPerfect Corporation
IBM is a registered trademark of International Business Machines Corporation
Paradox is a registered trademark of Borland International, Inc.

Portions of this text were adapted from other texts in this series and from Pace University Computer Learning Center manuals.

Copyright © 1995 by John Wiley & Sons, Inc.

All rights reserved.

Reproduction or translation of any part of this work beyond that permitted by Sections 107 and 108 of the 1976 United States Copyright Act without the permission of the copyright owner is unlawful. Requests for permission or further information should be addressed to the Permissions Department, John Wiley & Sons, Inc.

ISBN 0-471-12069-3

Printed in the United States of America

10 9 8 7 6 5 4 3 2

Preface

Getting Started with Paradox 5.0 for Windows provides a step-by-step, hands-on introduction to *Paradox*. It is designed for students with basic PC and Windows skills who have little or no experience with *Paradox*. Basic skills are taught in short, focused activities which build to create actual applications.

Key Elements

Each lesson in *Getting Started with Paradox 5.0 for Windows* uses eight key elements to help students master specific database concepts and skills and develop the ability to apply them in the future.

- **Learning objectives**, located at the beginning of each lesson, focus students on the skills to be learned.
- **Project orientation** allows the students to meet the objectives while creating a real-world application. Skills are developed as they are needed to complete projects, not to follow menus or other artificial organization.
- **Motivation** for each activity is supplied so that students learn *why* and *when* to perform an activity, rather than how to follow a series of instructions by rote.
- **Bulleted lists of step-by-step general procedures** introduce the tasks and provide a handy, quick reference.
- **Activities with step-by-step instructions** guide students as they apply the general procedures to solve the problems presented by the projects.
- **Screen displays** provide visual aids for learning and illustrate major steps.
- **Independent projects** provide opportunities to practice newly acquired skills with decreasing level of support.
- **Feature reference** at the end of the book allows students to have a single place to look for commands to carry out the activities learned in the book.

Stop and Go

The steps for completing each *Paradox* feature introduced in this book are covered in two ways. First they are described clearly in a bulleted list, which can also be used for reference. Then the steps are used in a hands-on Activity. Be sure to wait until the Activity to practice each feature on the computer.

Taking Advantage of Windows

Getting Started with Paradox 5.0 for Windows provides a balanced approach to using a Windows application. The use of the mouse and buttons for carrying out commands is emphasized. However, familiarity with the menus is developed so that students can take advantage of the wider range of options available in menu commands. Shortcut keys are

introduced when appropriate. The convenient **Feature Reference** at the end of the book summarizes menu commands and mouse and keyboard shortcuts for each of the features covered in the lessons. Students can use this both to review procedures or learn alternate ways of carrying out commands.

Flexible Use

Getting Started with Paradox 5.0 for Windows is designed for use in an introductory computer course. As a “getting started” book, it does not attempt to cover all of the features of the software. However, the topics included in later lessons allow instructors to provide opportunities for individualized or extra credit assignments or use the book in short courses focused specifically on *Paradox*. While designed to be used in conjunction with lectures or other instructor supervision, basic concepts are explained so that students can use the book in independent learning settings. Students should be able to follow specific instructions with minimal instructor assistance.

Data Disk

Data disks are provided to the instructors for distribution to the students. A few of the projects use files from the data disk so that the focus of the lesson is on the new skills being learned in each project. Initial projects require that students develop applications from the beginning, and later projects build on those applications. Enough explanation is always included so that students understand the full application that they are building.

Acknowledgments

While the author has written the words, this book represents the work and effort of many individuals and organizations. Babette Kronstadt provided energetic leadership and orchestrated the production of not only this book but all of Pace’s books in the *Getting Started* series. Nancy Treuer and Matthew Poli worked miracles with the layout and text formatting. Janet Smith patiently and exhaustingly examined the text and activities, locating many of my errors and offering innumerable suggestions.

I received enormous institutional support from Pace University and the School of Computer Science and Information Systems (CSIS). In particular, much personal support and personal leadership for the work has come from the Dean, Dr. Susan Merritt.

From another perspective, this book is also a product of the Pace Computer Learning Center which is a loose affiliation of approximately 15 faculty and staff who have provided more than 7,000 days of instruction to over 60,000 individuals in corporate settings throughout the United States and around the world during the past nine years. My shared experiences in the development and teaching of these non-credit workshops, as well as credit bearing courses through the Pace University School of Computer Science and Information Systems, was an ideal preparation for writing this book. In addition, none of the books for Wiley would have been possible without the continuing support of Dr. David Sachs, the director of the Computer Learning Center.

The *Getting Started* series has received many invaluable comments and suggestions from instructors at other schools who were kind enough to review our earlier books and offer their suggestions for the current books. My thanks go to Jack D. Cundiff, Horry-Georgetown Technical College; Pat Fenton, West Valley College; Sharon Ann Hill, University of Maryland; E. Gladys Norman, Linn-Benton Community College; and Barbara Jean Silvia, University of Rhode Island.

My thanks also go to the many people at Wiley who provided needed support and assistance. The editor, Beth Lang Golub, and editorial program assistant, David Kear,

have been very responsive to concerns, and supportive of all of the Pace Computer Learning Center's writing projects. Andrea Bryant was invaluable in her management of all aspects of the production of this book.

Henry Gaylord

April, 1995
White Plains, New York

Contents

INTRODUCTION

1

Objectives	1
Purpose of the Introduction	1
What is <i>Paradox For Windows</i> ?	1
Getting Started	1
The Paradox Welcome Screen	2
The Paradox For Windows Screen	4
The Paradox Desktop	4
The Title Bar	4
The Menu Bar	5
The Status Bar	5
The Scroll Bar	5
The Toolbar	5
The Mouse Pointer	7
Using the Menu	7
Dialog Boxes	8
Using the Toolbar Buttons	11
Terms	13
The Help System	13
Exiting from Paradox	19
Summary	20
Key Terms	20
Conventions Followed in this Book	21
Independent Projects	21
Independent Project 1.1: The Coaches	21

1 CREATING TABLES

25

Objectives	25
Project Description	25
The Working Directory	25
Creating A Table	27
Filling in the Table Dialog Box	28
Data Types	28
Saving the Design	32
Entering Data in a Table	33
Modifying a Table	36
Key Fields	37
Printing a Table	38
Summary	39
Key Terms	39
Independent Projects	40
Independent Project 1.1: The School Newspaper	40
Independent Project 1.2: The Bookstore	42
Independent Project 1.3: The Real Estate Office	44
Independent Project 1.4: The Veterinarian	46

2 WORKING WITH A TABLE'S DATA

49

Objectives	49
Project Description	49
Moving About Within a Table	50
Sizing Fields	53
Moving Fields	55
Editing a Table's Data	56
Searching for Records	59
Wildcards	60
Deleting Records	62
Summary	63
Key Terms	63
Independent Projects	63
Independent Project 2.1: The School Newspaper	63
Independent Project 2.2: The Bookstore	64
Independent Project 2.3: The Real Estate Office	66
Independent Project 2.4: The Veterinarian	67

3 ALTERNATIVE VIEWS OF ONE OR MORE TABLES

69

Objectives	69
Project Description	69
The Project Viewer	69
Opening Multiple Tables	71
Ordering the Records	73
Indexing the Records	74
A Relational System of Tables	80
Creating a Form	82
Using a Form	86
A Multi-Table Form	88
Summary	96
Key Terms	96
Independent Projects	97
Independent Project 3.1: The School Newspaper	97
Independent Project 3.2: The Bookstore	99
Independent Project 3.3: The Real Estate Office	101
Independent Project 3.4: The Veterinarian	103

4 QUERIES

105

Objectives	105
Project Description	105
Querying a Table	105
A Single Table Query	106
Selecting the Fields	107
Sorting the Answer	108
Sorting the Answer By Other Fields	110
Saving a Query Design	112
Selecting Matching Records with a Query	114
The Inequality Symbols in Queries	115
Print a Query Result	116
Text Criteria in a Query	117
Date Criteria in a Query	118
Summary	120

Key Terms.....	120
Independent Projects.....	120
Independent Project 4.1: The School Newspaper	120
Independent Project 4.2: The Bookstore	122
Independent Project 4.3: The Real Estate Office.....	124
Independent Project 4.4: The Veterinarian	126

5 MULTIPLE CRITERIA AND MULTI-TABLE QUERIES

127

Objectives	127
Project Description.....	127
Multiple Criteria	127
Additional Query Operators	130
Entries Between Two Values	132
The Not Operator	133
The Blank Operator.....	134
WildCards	134
Multiple Table Queries	137
Summary	143
Key Terms.....	143
Independent Projects.....	143
Independent Project 5.1: The School Newspaper	143
Independent Project 5.2: The Bookstore	144
Independent Project 5.3: The Real Estate Office.....	146
Independent Project 5.4: The Veterinarian	148

6 REPORTS

149

Objectives	149
Project Description.....	149
Designing a Report	150
The Data Model/Layout Diagram Method	151
Sorting the Records in a Report.....	156
Saving a Report Design	157
Changing the Objects in a Report Design.....	159
Opening an Existing Report Design	164
Using Grouping in a Report	168
Subtotals	170
Multi-Table Reports.....	175
The Label Expert.....	179
Summary	185
Key Terms.....	185
Independent Projects	185
Independent Project 6.1: The School Newspaper	185
Independent Project 6.2: The Bookstore	187
Independent Project 6.3: The Real Estate Office.....	189
Independent Project 6.4: The Veterinarian	190

Appendix: Features Reference	191
------------------------------------	-----

Index	195
-------------	-----



Introduction

Objectives

In this lesson you will learn:

- What a database is
 - How to start *Paradox for Windows*
 - The parts of the screen
 - How to use the menus and dialog boxes in *Paradox for Windows*
 - How to use the toolbar in *Paradox for Windows*
 - Database terminology
 - How to use the Help System
 - How to exit from *Paradox for Windows*
 - The typographical conventions used in this book
-

PURPOSE OF THE INTRODUCTION

Unlike the other lessons in this book, which contain specific steps to complete database projects, this introduction will discuss databases and *Paradox for Windows* in general. It will start with how to get *Paradox for Windows* running, review the Windows aspects of *Paradox*, point out the features that are different from other Windows programs you may have used, and examine the Help system. It will also explain several terms that are used in database work. The final section describes the typographical conventions used by this book.

WHAT IS PARADOX FOR WINDOWS?

Every business and institution needs to keep lists of facts. A customer list, an inventory list, a sales invoice list, and a list of course enrollments would be but four examples. Such lists are called *databases*, and the facts and figures they contain are called *data*. To work with these databases on the computer, businesses and institutions, as well as individuals, use database programs. One such program is *Paradox for Windows*.

Paradox for Windows is a powerful, yet remarkably straightforward, database tool. It is a *RDBMS*, or Relational Database Management System, which means it handles multiple lists of data simultaneously. It allows you to organize, edit, search for, report on, and calculate with your data. Since most people despise keeping and working on long lists of data on paper, using *Paradox* on a computer makes an otherwise tedious job quick and painless; many would say fun.

GETTING STARTED

Paradox for Windows is a Windows program. That is good news, because if you know how to start and work with any other Windows program, you already know a portion of how to work with *Paradox for Windows*. This book assumes you have previously used a mouse, and that you know how to run Windows on the computer you are using, as well as the fundamentals of operating Windows. Any basic procedures that are unique to *Paradox for Windows* will be discussed in this introduction.

Because *Paradox for Windows* is a Windows program, and both *Paradox for Windows* and Windows can be customized in various ways, there might be small differences between the appearance of your screen and the illustrations in this book. For example, the thickness of the

frames around the windows can be changed in Windows from the normal 3 dots wide to a larger or smaller value. If someone made the frames 20 dots thick, the frame lines would look peculiar in every Windows program, including *Paradox for Windows*. They would still work the same way, however. By simply setting the frame width back to 3, all would appear normal again.

Like any Windows program, there are ways to perform operations with the mouse and with the keyboard. While *Paradox for Windows* was designed for a mouse, often a key combination is easier. This book will favor whichever method is easier, although both ways will be described.



The steps for completing each *Paradox* feature introduced in this book are covered in two ways. First, they are described in a **bulleted** list, that can also be used for reference. The steps are used in a hands-on *Activity*. Be sure to wait until the **numbered** instructions in the *Activity* to practice each feature on the computer.

To start *Paradox for Windows*:



- Turn on the computer and start Windows.
- Locate the *Paradox for Windows* icon that represents the program.
- Double-click on the *Paradox for Windows* icon or name. Alternatively, click once to highlight the icon's name, then press the **ENTER** key.

Activity 1.1: Starting *Paradox for Windows*

1. Turn on the computer and start Windows.
2. Locate the *Paradox for Windows* icon. To find the icon you may need to open the program group that contains the icon by double-clicking on the group icon, or clicking once on the group icon and choosing **Restore** from the control menu that appears.

*The Paradox for Windows icon could be in almost any program group, but the likely candidates would be groups named **Paradox for Windows** or **Windows Apps**. If neither of those groups contains Paradox for Windows, consult your instructor or lab assistant.*

3. Run *Paradox for Windows* by double-clicking on the *Paradox for Windows* icon or clicking once to highlight the name and pressing the **ENTER** key.

As it takes a few moments to load all of Paradox for Windows, the progress will be monitored in a box in the middle of the screen.

THE PARADOX WELCOME SCREEN

When *Paradox for Windows 5.0* first begins, you **may** see a “Welcome to Paradox” screen like Figure 1 - 1. While you might want to explore on your own the use of the “Coaches” as an introduction to several beginning topics (and see Independent Project I.1), once you have worked with *Paradox for Windows* for a while you will already know most of the information that the Coaches offer.

At the bottom middle of that screen (see Figure 1 - 1) is a box that can be checked so it will not be displayed the next time *Paradox for Windows* is run. If anyone who previously used the computer you are now using checked that box when they used *Paradox for Windows*, this screen will not appear. (Also, if you are using an earlier version than 5.0 of *Paradox for Windows*, this screen will not appear.) Do not worry if it didn't appear as you do not need the Welcome screen; we do not do anything with it. In fact, the next thing we will do is close it if it is showing.

Closing the Welcome screen:

- If the “Welcome to Paradox” screen is displayed, click the mouse near the lower left corner of the screen on the gray button that says **Paradox**.

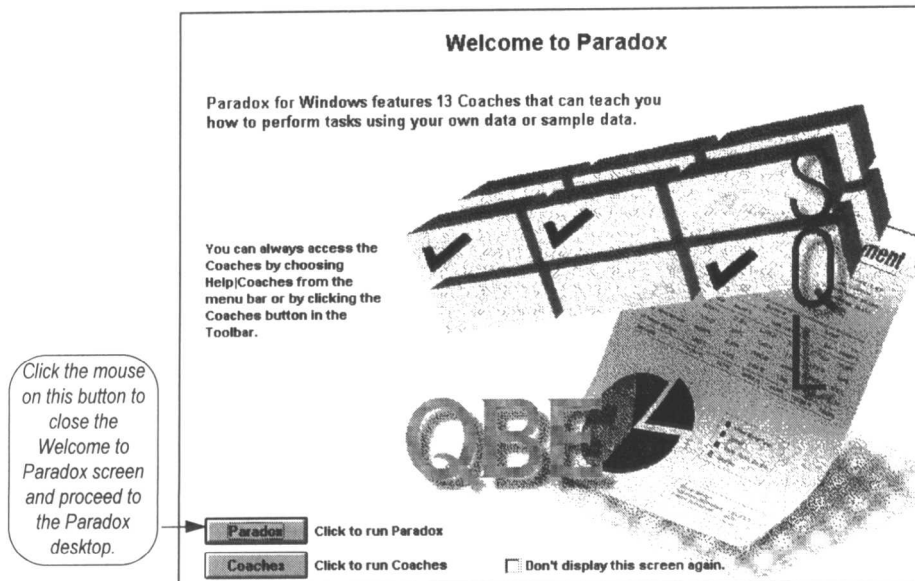


Figure I - 1

Activity I.2: Closing the Welcome screen

1. If the "Welcome to Paradox" screen is not displayed, skip directly to step 3.
2. Click the left mouse button once on the **Paradox** button near the lower left corner of the screen.
3. If the window that contains *Paradox for Windows* is not covering the entire screen, click the **Maximize** button (see Figure I - 2) to make the *Paradox* workspace as large as possible.

The **Maximize Button** is the button with the upward pointing triangle at the extreme right end of the line that says *Paradox for Windows*. If the window is already maximized (covering the entire screen), however, the **Maximize** button is replaced by the **Restore** button, a button showing a pair of triangles, one pointing up, the other pointing down. The **Restore** button puts the program back into a less-than-full-screen window.

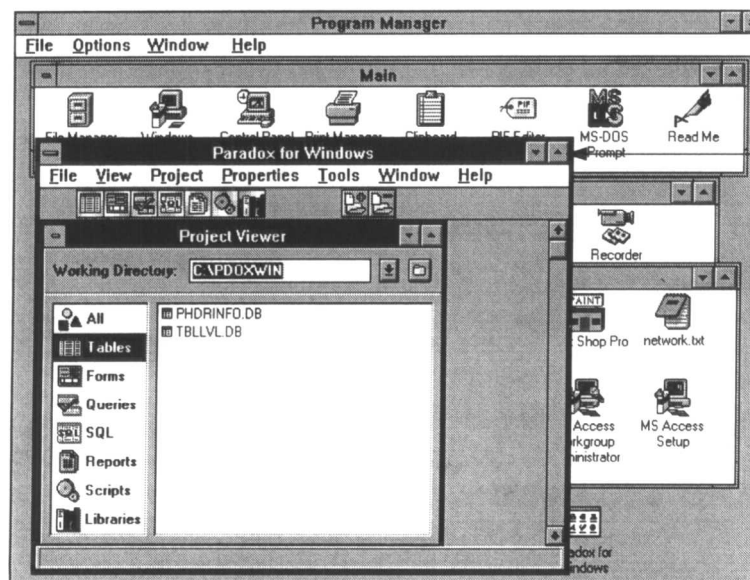


Figure I - 2

THE PARADOX FOR WINDOWS SCREEN

Once the Welcome screen is out of the way, you will see the *Paradox for Windows desktop* (see Figure I - 3). The Project Viewer will probably be open. While we will use the Project Viewer later in these lessons, we would like to concentrate on the remainder of the screen at this moment. Thus, we will close the Project Viewer window.

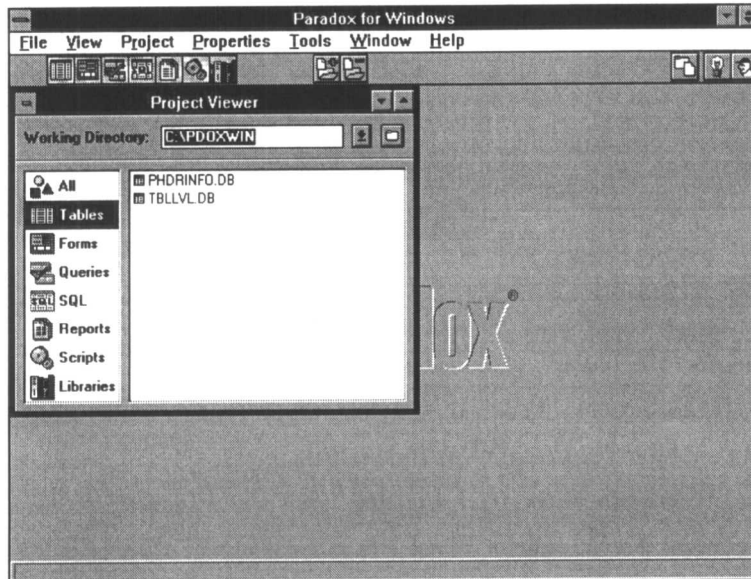


Figure I - 3

To close the Project Viewer:

- Choose **Close All** in the **WINDOW** menu or **Close** in the **FILE** menu.

Activity I.3: Closing the Project Viewer

1. If the Project Viewer window is not open on your screen, skip to the paragraph that follows step 3.
2. Move the mouse pointer so it points at the **WINDOW** menu and click the left mouse button once to open that menu.
3. Click the left mouse button on **Close All** within that menu.

THE PARADOX FOR WINDOWS DESKTOP

The *desktop* should resemble a typical Windows screen (see Figure I - 4) with a *title bar* at the top, the *menu bar* on the second line, the *toolbar* on the third line, and the *status bar* at the bottom. (If your screen resembles but doesn't look exactly like Figure I - 4, we will adjust it in the next section so it matches.)

The Title Bar

The *title bar* is the colored bar at the very top of *Paradox's* window. It contains the name of the program in the center, the *Application Control Menu* at the left end, and the *Minimize* button and *Restore* button at the right end (see Figure I - 4). These are all common to every Windows program.

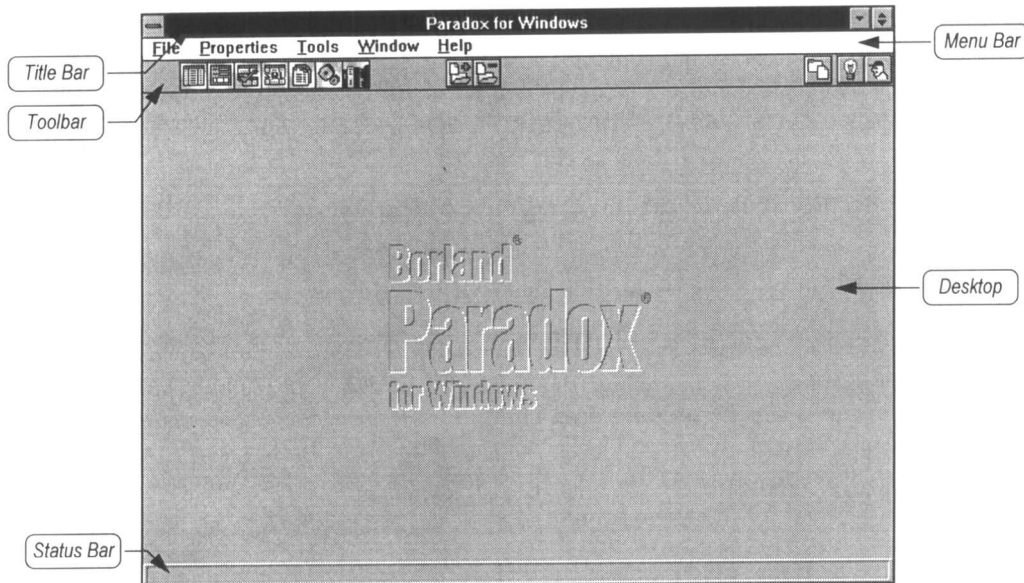


Figure I - 4

The Menu Bar

The second line contains the *menu bar* (see Figure I - 4). There are different menu bars for working on different items. *Paradox for Windows* automatically displays the appropriate menu bar. Since no data has been opened on the desktop, there is nothing to work on, and *Paradox* is currently displaying a minimal menu bar. The menu bar is common to all major Windows programs.

The Status Bar

The bottom line of the window is the *status bar* (see Figure I - 4). Its left section displays various messages about the current operation. Two of the more useful messages are the name of the toolbar button that the mouse pointer is on top of and the current position within a data table. On the right end of the status bar in indented boxes, *Paradox* will display the current modes. It is important to read the status bar during operations in *Paradox* to obtain such information.

The Scroll Bars

When the length of the listings in any *Paradox for Windows* list extends beyond the size of the window that displays those listings, *scroll bars* will automatically appear at the right side of the list, the bottom of the list, or both (see Figure I - 10 for an example). To operate the scroll bars, click the mouse on the arrow that points in the desired direction of movement at one end or the other of the scroll bar. The listings in the window will scroll. Continue clicking until the desired listings or columns scroll into view. The box within the scroll bar will travel along it to indicate the position of the listings that currently show relative to the entire set of listings.

The Toolbar

The third line at the top of the window is the *toolbar* (see Figure I - 4). It contains buttons that provide shortcuts to the most frequently used activities in *Paradox for Windows*. The toolbar will automatically switch among the different built-in toolbars to supply the appropriate tools for the item you are currently working on.

The last person to use this copy of *Paradox for Windows* might have hidden the toolbar or changed it to a floating toolbar. If so, you will see in the following Activity how to adjust it or make it reappear. It is normally displayed on the third line at the top of the window.

To display the toolbar on the third line of the window:

- Click the left mouse button once on the **PROPERTIES** menu.
- Pick **Desktop** by clicking the left mouse button once on that choice within the open menu.
- In the **Toolbar:** section (see Figure I - 5), neither **Floating** nor **Hidden** should have an X in the box to its left. If either one does, click the left mouse button once on top of the box to remove the X.
- Click on the **OK** button to close the **Desktop Properties** box.

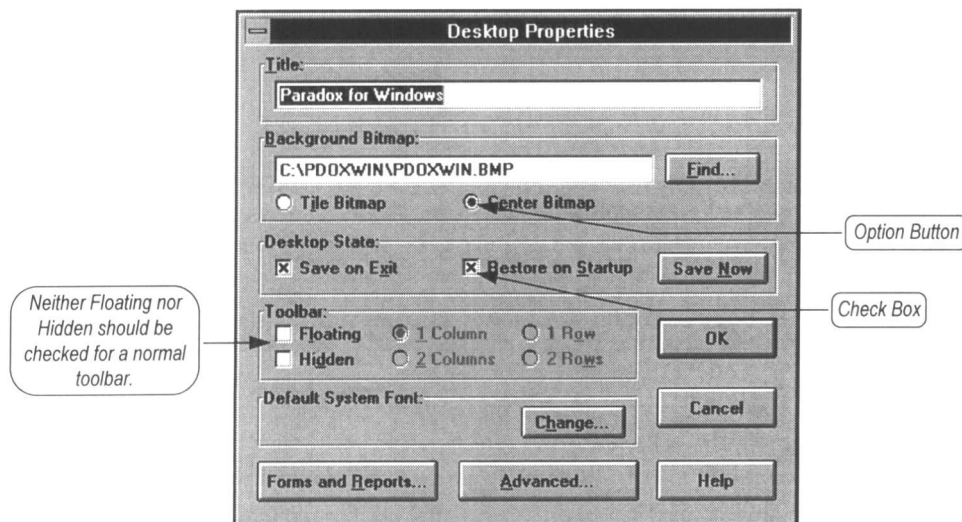


Figure I - 5

Activity I.4: Displaying the toolbar





We will verify that the toolbar is displayed on the third line at the top of the desktop.

1. Move the mouse pointer on top of the **PROPERTIES** menu and click the left mouse button once to open that menu.
2. Within the open menu, move the mouse pointer on top of **Desktop** and click the left mouse button once to open the Desktop Properties options.
3. If either of the choices **Floating** or **Hidden** has an X in the box to its left, click the left mouse button once on top of the box to remove the X.
4. When neither box contains an X, click on the **OK** button to close the **Desktop Properties** box.

Your screen should now match Figure I - 5.

THE MOUSE POINTER

There are several different shapes for the mouse pointer, depending on what tool or item the mouse pointer is on top of. First, you must not confuse the mouse pointer with the text cursor. The text cursor is a blinking vertical bar that will be seen within text only while you are typing or ready to type. Clicking the mouse button while the mouse pointer is on top of some text will cause the text cursor to move to that spot. Otherwise, there is no relationship between the two.

The various mouse pointer shapes include the regular diagonal arrow () for choosing items on the screen like a menu, the I beam () to position the text cursor, various hollow double-headed arrows (for example ) for sizing items, and the hourglass () for those occurrences when an operation will take a little time. These mouse pointers will be described at each place in the book when they are encountered. For the moment, simply be ready to see many different shapes.

USING THE MENU

The menu in *Paradox for Windows* works exactly the same way any other Windows program's menu operates. That is, you push the mouse until the mouse pointer is on top of the desired choice on the menu bar and click the left mouse button once to open that menu. You then click on the particular choice within the menu to initiate an action. The choices within the menus are commands.

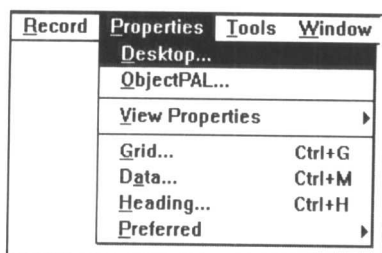


Figure I - 6

Three things can happen when you click on a command. If the choice within the menu has a triangle to the right of its name (see Figure I - 6), a submenu will open (see Figure I - 7) and you may pick from its choices. If the command name ends with an elipsis (...) like most of the commands in the **PROPERTIES** menu that is shown in Figure I - 6, a *dialog box* will appear for the selection of options pertaining to that command. Dialog boxes will be fully described in the next section. If just the command name appears on the line within the menu, the command will be carried out directly. If the command is displayed in pale letters it is currently unavailable; it will become available when the proper items are open on the desktop. Clicking on a pale command will accomplish nothing.

Occasionally you will see a check mark to the left of a menu choice. The check means that command option has been activated. It will remain active as long as the check remains. Clicking a command that is checked deactivates that action and removes the check mark. Of course, you can click that command yet again to reactivate it.

Also, there are some key combinations that will initiate certain menu commands. Those keys are named at the right of any command that has a keyboard equivalent, like the three shown in the **PROPERTIES** menu in Figure I - 4.

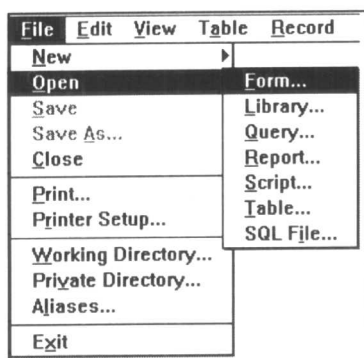


Figure I - 7

To initiate any menu command:

- Push the mouse until the mouse pointer is on top of the desired menu.
- Click the left mouse button once to open that menu.
- In the open menu, move the mouse on top of the desired choice.
- Click the left mouse button once to initiate that command.
- If a submenu opens, choose from it by clicking on the desired command.
- If a dialog box opens, fill out the various items as described in the next section.

KEYBOARD ALTERNATIVE: Press the **ALT** key to activate the menu bar, then tap the underlined letter in the desired menu name to open that menu. Within the menu, tap the underlined letter or digit in the desired command name. Note that in both cases the underlined letter is not necessarily the first letter of the menu or command name.

To close a menu:

- Click the left mouse button again on the menu name. The quickest keyboard method is to press the **ALT** key.

DIALOG BOXES

A dialog box is the Windows tool you use to select options for a command. For example, if the menu command you pick is to open a database table, which table do you want, on which disk drive is it recorded, and in which directory?

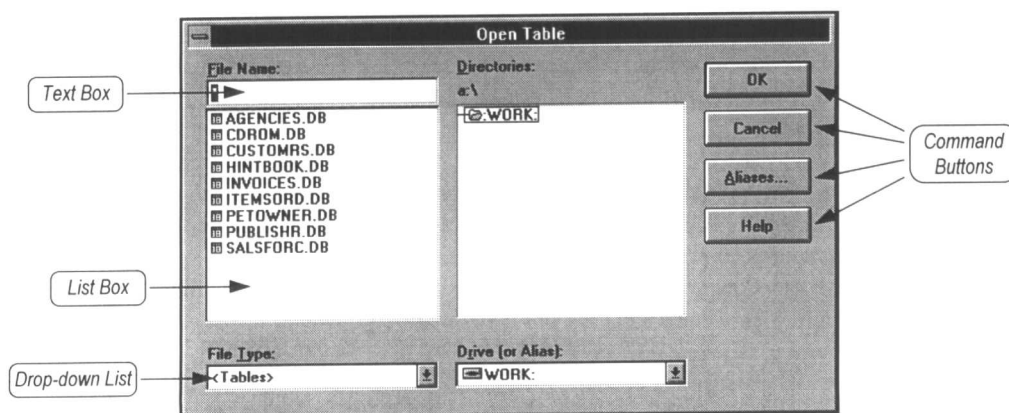


Figure I - 8