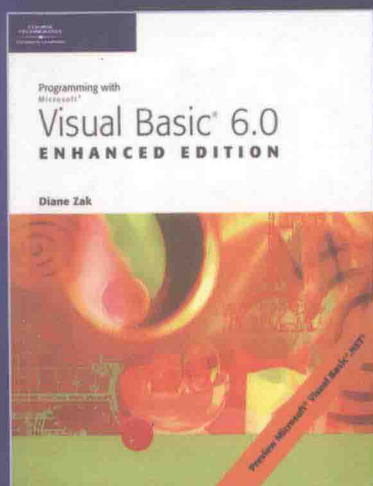


★ 美国卡内基梅隆大学 SSD 软件系统开发课程指定教材

Visual Basic 6.0 程序设计

Programming with Microsoft

Visual Basic 6.0, Enhanced Edition



英文改编版

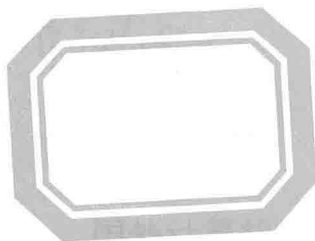
[美] Diane Zak 著

张云鹏 改编



电子工业出版社
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学教材系列

Visual Basic 6.0

程序设计

(英文改编版)

Programming with
Microsoft Visual Basic 6.0
Enhanced Edition

[美] Diane Zak 著

张云鹏 改编

电子工业出版社
PUBLISHING HOUSE OF ELECTRONICS INDUSTRY

北京 · BEIJING

内 容 简 介

这是一本详细讲解如何使用 Visual Basic 6.0 进行编程的英文版教材。根据国内教学的特点,该书在原书的基础上进行了较大幅度的删减。通过面向对象/事件驱动的技术,该书采用任务驱动的方式向学生逐步讲解 Visual Basic 编程的概念,让学生理解如何充分利用 Visual Basic 的强大功能,学会编写实际工作中遇到的应用程序。此外,该书还向学生介绍了 Visual Basic.NET 的基本功能。

该书是美国卡内基梅隆大学 SSD 软件系统开发课程指定教材,可作为大中专院校相关专业学生的教材和参考书,更可满足国内计算机双语教学的需要。

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出版说明

21世纪初的5至10年是我国国民经济和社会发展的关键时期,也是信息产业快速发展的关键时期。在我国加入WTO后的今天,培养一支适应国际化竞争的一流IT人才队伍是我国高等教育的重要任务之一。信息科学和技术方面人才的优劣与多寡,是我国面对国际竞争时成败的关键因素。

当前,正值我国高等教育特别是信息科学领域的教育调整、变革的重大时期,为使我国教育体制与国际化接轨,有条件的高等院校正在为某些信息学科和技术课程使用国外优秀教材和优秀原版教材,以使我国在计算机教学上尽快赶上国际先进水平。

电子工业出版社秉承多年来引进国外优秀图书的经验,翻译出版了“国外计算机科学教材系列”丛书,这套教材覆盖学科范围广、领域宽、层次多,既有本科专业课程教材,也有研究生课程教材,以适应不同院系、不同专业、不同层次的师生对教材的需求,广大师生可自由选择和自由组合使用。这些教材涉及的学科方向包括网络与通信、操作系统、计算机组织与结构、算法与数据结构、数据库与信息处理、编程语言、图形图像与多媒体、软件工程等。同时,我们也适当引进了一些优秀英文原版教材,本着翻译版本和英文原版并重的原则,对重点图书既提供英文原版又提供相应的翻译版本。

在图书选题上,我们大都选择国外著名出版公司出版的高校教材,如Pearson Education培生教育出版集团、麦格劳-希尔教育出版集团、麻省理工学院出版社、剑桥大学出版社等。撰写教材的许多作者都是蜚声世界的教授、学者,如道格拉斯·科默(Douglas E. Comer)、威廉·斯托林斯(William Stallings)、哈维·戴特尔(Harvey M. Deitel)、尤利斯·布莱克(Uyless Black)等。

为确保教材的选题质量和翻译质量,我们约请了清华大学、北京大学、北京航空航天大学、复旦大学、上海交通大学、南京大学、浙江大学、哈尔滨工业大学、华中科技大学、西安交通大学、国防科学技术大学、解放军理工大学等著名高校的教授和骨干教师参与了本系列教材的选题、翻译和审校工作。他们中既有讲授同类教材的骨干教师、博士,也有积累了几十年教学经验的老教授和博士生导师。

在该系列教材的选题、翻译和编辑加工过程中,为提高教材质量,我们做了大量细致的工作,包括对所选教材进行全面论证;选择编辑时力求达到专业对口;对排版、印制质量进行严格把关。对于英文教材中出现的错误,我们通过与作者联络和网上下载勘误表等方式,逐一进行了修订。

此外,我们还将与国外著名出版公司合作,提供一些教材的教学支持资料,希望能为授课老师提供帮助。今后,我们将继续加强与各高校教师的密切联系,为广大师生引进更多的国外优秀教材和参考书,为我国计算机科学教学体系与国际教学体系的接轨做出努力。

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Preface

Welcome to the Enhanced Edition of *Programming with Microsoft Visual Basic 6.0*. This updated version provides a preview of the Microsoft Visual Studio.NET programming environment and the Microsoft Visual Basic.NET programming language. Tutorial 9① introduce you to the newest features and updates to the software by exploring Beta 1 from Microsoft. To ease your transition to Visual Basic.NET, Course Technology gives you an advance glimpse of the next generation of this powerful programming tool before the final version of the software is released. Within these new lessons, you will plan and create your own interactive Windows applications, as well as as explore the power of Visual Basic.NET on the World Wide Web.

Programming with Microsoft Visual Basic 6.0, Enhanced Edition is designed for a beginning programming course. This book uses Visual Basic 6.0 for Windows 95 or 98, an object-oriented/event-driven language, to teach programming concepts. This book capitalizes on the energy and enthusiasm students naturally have for Windows-based applications and clearly teaches students how to take full advantage of Visual Basic's power. It assumes students have learned basic Windows skills and file management.

Organization and Coverage

Programming with Microsoft Visual Basic 6.0, Enhanced Edition contains 9 tutorials that present hands-on instruction. In these tutorials, students with no previous programming experience learn how to plan and create their own interactive Windows applications. Using this book, students will be able to do more advanced tasks sooner than they would using other introductory texts. By the end of the book, students will have learned how to write If...Then...Else, Select Case, Do...While, Do...Until, and For...Next statements, as well as how to create and manipulate sequential access files, random access files, and arrays. Students will also learn how to create executable files and how to include multiple forms in a project. GUI design skills are emphasized, and advanced skills such as accessing information in a database, creating and printing reports, referencing objects, and using OLE are taught. The text also introduces students to OOP terminology.

Approach

Programming with Microsoft Visual Basic 6.0, Enhanced Edition distinguishes itself from other Windows textbooks because of its unique two-pronged approach. First, it motivates students by demonstrating why they need to learn the concepts and skills. This book teaches programming concepts using a task-driven, rather than a command-driven, approach. By working through the tutorials—which are each motivated by a realistic case—students learn how to use programming applications they are likely to encounter in the workplace. This is much more effective than memorizing a list of commands out of context. Second, the content, organization, and pedagogy of this book exploit the Windows environment. The material presented in the tutorials capitalizes on Visual Basic's power to perform complex programming tasks earlier and more easily than was possible under DOS.

① 原书共分12章及4个附录,为减少篇幅,改编版删除了原书的Tutorial 8、Tutorial 9、Tutorial 12及全部附录。

Features

Programming with Microsoft Visual Basic 6.0, Enhanced Edition is an exceptional textbook because it also includes the following features:

- **Tutorial Cases** Each tutorial begins with a programming-related problem that students could reasonably expect to encounter in business, followed by a demonstration of an application that could be used to solve the problem. Showing the students the completed application before they learn how to create it is motivational and instructionally sound. By allowing the students to see the type of application they will be able to create after completing the tutorial, the students will be more motivated to learn because they can see how the programming concepts they are about to learn can be used and, therefore, why the concepts are important.
- **Step-by-Step Methodology** The unique Course Technology methodology keeps students on track. They click or press keys always within the context of solving the problem posed in the Tutorial Case. The text constantly guides students, letting them know where they are in the process of solving the problem. The numerous illustrations include labels that direct students' attention to what they should look at on the screen.
- **Help?** paragraphs anticipate the problems students are likely to encounter and help them resolve these problems on their own. This feature facilitates independent learning and frees the instructor to focus on substantive conceptual issues rather than on common procedural errors.
- **Tips** provide additional information about a procedure—for example, an alternative method of performing the procedure. They also relate the OOP terminology learned in the Overview to applications created in Visual Basic.
- **GUI Design Tips** contain guidelines and recommendations for designing applications that follow Windows standards, as outlined in *The Windows Interface Guidelines for Software Design*, published by Microsoft Press.
- **Questions and Exercises** Each lesson concludes with meaningful, conceptual Questions that test students' understanding of what they learned in the lesson. The Questions are followed by Exercises, which provide students with additional practice of the skills and concepts they learned in the lesson.
- **Discovery Exercises** Unlike DOS, the Windows environment allows students to learn by exploring and discovering what they can do. The Discovery Exercises are designated by the word "Discovery" in the margin. They encourage students to challenge and independently develop their own programming skills while exploring the capabilities of Visual Basic.
- **Debugging Techniques and Exercises** One of the most important programming skills a student can learn is the ability to correct problems in an existing application. The Debugging Techniques and Exercises at the end of tutorial 2 introduce the bug-detecting techniques and then provide an opportunity for students to apply the techniques to detect and correct errors in an existing application.

Resources for Instructors

- **Instructor's Manual** The Instructor's Manual has been written by the author and has been quality assurance tested. It is available in printed form and through the Course Technology Faculty Online Companion on the World Wide Web. (Call your customer service representative for the URL and your password.) ① The Instructor's Manual contains the following items:
 - Additional coverage of Visual Basic concepts such as Sorting and Binary Search.
 - Cases that can be assigned as semester projects.

① 可通过填写书后的“教学支持说明”表格免费获取教师手册及 Visual Basic 6.0 Working Model 安装程序。

- Answers to all of the questions and solutions to all of the exercises. Suggested solutions are also included for Discovery Exercises.
- Teaching Suggestions, which contain an outline of the lesson and additional information to cover during the lecture.
- Technical Notes, which include troubleshooting tips as well as information on how to customize the students' screens to closely emulate the screen shots in the book.
- **ExamView®** This textbook is accompanied by ExamView, a powerful testing software package that allows instructors to create and administer printed, computer (LAN-based), and Internet exams. ExamView includes hundreds of questions that correspond to the topics covered in this text, enabling students to generate detailed study guides that include page references for further review. The computer-based and Internet testing components allow students to take exams at their computers, and also save the instructor time by grading each exam automatically.
- **PowerPoint Presentations** This book comes with Microsoft PowerPoint slides for each tutorial. These are included as a teaching aid for classroom presentation, to make available to students on the network for chapter review, or to be printed for classroom distribution. Instructors can add their own slides for additional topics they introduce to the class.
- **Solutions Files** Solution Files contain every file students are asked to create or modify in the tutorials, Exercises, and Debugging Techniques and Exercises.
- **Student Files**^① Student Files, containing all of the data that students will use for the tutorials, Exercises, and Debugging Techniques and Exercises, are provided through Course Technology's Online Companion. A Help file includes technical tips for lab management.
- **Distance Learning** Course Technology is proud to present online courses in WebCT and Blackboard, as well as at MyCourse.com, Course Technology's own course enhancement tool, to provide the most complete and dynamic learning experience possible. When you add online content to one of your courses, you're adding a lot: self tests, links, glossaries, and, most of all, a gateway to the twenty-first century's most important information resource. We hope you will make the most of your course, both online and offline. For more information on how to bring distance learning to your course, contact your local Course Technology sales representative.

Acknowledgments

I would like to thank all of the people who helped to make this book a reality, especially Kim Crowley, M.T. Cozzola, Amanda Brodtkin (Development Editors), Jennifer Muroff (Senior Product Manager), and the very, very organized Jean Bermingham and Aimee Poirier (Production Editors).

Thanks also to Kristen Duerr, Publisher; John Bosco, Quality Assurance Manager and Nicole Ashton, Quality Assurance Engineer. I am grateful to the many reviewers who provided invaluable comments on the first edition of this book, in particular: Jon E. Juarez, Dona Ana Branch Community College; Ronald Burgher, Metropolitan Community College; Mary Amundson-Miller, Greenville Technical College; and Dave Cooper, New River Community College.

Finally, I dedicate this book to my father, Henry.

Diane Zak

① Student Files (Student Disk)可从 www.hxedu.com.cn 下载,也可按原书号 (0619062045)从 www.course.com/programming 获取。

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An Introduction to Visual Basic

TUTORIAL

1

Creating a Copyright Screen

case ► Interlocking Software Company, a small firm specializing in custom programs, hires you as a programmer trainee. In that capacity, you will learn to write Windows applications using the Visual Basic language, an object-oriented/event-driven programming language.

On your second day of work, Chris Statton, the senior programmer at Interlocking Software, assigns you your first task: create a copyright screen. The copyright screen will serve as a splash screen for each custom application created by Interlocking Software. A **splash screen** is the first image that appears when an application is run; it is used to introduce the application and to hold the user's attention while the application is being read into the computer's memory. The copyright screen you will create will identify the application's author and copyright year and will include the Interlocking Software Company logo. Although this first task is small, the copyright screen will give you an opportunity to learn the fundamentals of Visual Basic without having to worry about the design issues and programming concepts necessary for larger applications.

Previewing the Copyright Screen

Before starting the first lesson, you will preview a completed copyright screen that was created using Visual Basic.

tip

► You can download your Student Disk's files at www.hxedu.com.cn.

To preview the completed copyright screen:

- 1 If necessary, start Windows, then place your Student Disk in the appropriate disk drive. Click the Start button on the taskbar. The Start menu opens. Click Run on the Start menu. The Run dialog box opens. Click the Browse button in the Run dialog box. The Browse dialog box opens. You want to run the Copy (Copy.exe) file, which is located in the Tut01 folder on your Student Disk.
- 2 If necessary, click the Look in list arrow, and then click the drive containing your Student Disk. Click the Tut01 folder, and then click the Open button to open the Tut01 folder. Click copy (copy.exe) in the list of filenames. (Depending on how Windows 95 is set up on your computer, you may see the .exe extension on the filename. If you do, click the copy.exe filename.) Click the Open button. The Browse dialog box closes and the Run dialog box appears again. The Run box should display either A:\Tut01\copy.exe or B:\Tut01\copy.exe. Click the OK button. A copyright screen appears.
- 3 Click the Interlocking Software logo. The author's name and the copyright year appear, as shown in Figure 1-1.



Figure 1-1: Copyright screen

In lesson C you will learn how to display a special control, called an ActiveX control, in an interface. The ActiveX control that you will use will scroll the Interlocking Software company name across the bottom of the interface.

- 4 Click the Exit button. The application ends.

Now you will create your own copyright screen.

Tutorial 1 is designed to get you comfortable with the Visual Basic environment. You will also learn about the Visual Basic language. Remember, each tutorial contains three lessons and a Debugging section. You should complete a lesson in full and do the end-of-lesson questions and exercises before moving on to the next lesson.

ActiveX control

LESSON A

objectives

In this lesson you will learn how to:

- Start and exit Visual Basic
- Identify the components of the Visual Basic display
- Set the properties of an object
- Create, save, run, and stop a Visual Basic application
- Open both a new project and an existing project

tip

- ▶ The Microsoft Visual Basic 6.0 installation package and the Instructor's Manual are available freely from the publisher. They are prepared for instructors only.

Creating a New Project

Starting Visual Basic

Before you can begin creating your copyright screen, you must start Visual Basic.

To start Visual Basic:

- 1 If necessary, start Windows, then place your Student Disk in the appropriate disk drive. Click the **Start** button on the Windows 95 taskbar. The **Start** menu appears. Point to **Programs** on the **Start** menu. The **Programs** menu appears to the right of the **Start** menu. Point to **Microsoft Visual Basic 6.0** on the **Programs** menu. (If Microsoft Visual Basic does not appear on the **Programs** menu, then point to **Microsoft Visual Studio 6.0** on the **Programs** menu.) Click **Microsoft Visual Basic 6.0**. The Visual Basic copyright screen appears momentarily, and then the **New Project** dialog box appears as shown in Figure 1-2.

your options may differ

tip

- ▶ You use the **New** tab in the **New Project** dialog box to open a new project, the **Existing** tab to open an existing project, and the **Recent** tab to open a project that was opened recently.

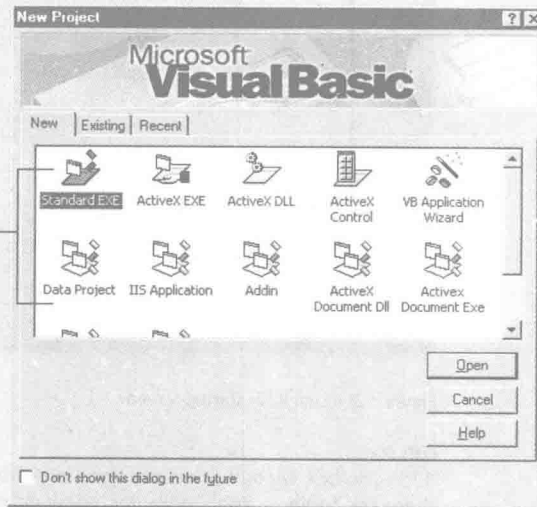


Figure 1-2: New Project dialog box

- 2 If necessary, click **Standard EXE** on the **New** tab, then click the **Open** button to open a new project. The Visual Basic startup screen appears.
- 3 Hide the Windows 95 taskbar. (If you don't know how to hide the Windows 95 taskbar, read the **HELP?** statement below.)

HELP? To hide the Windows 95 taskbar, click the Start button, point to Settings, and then click Taskbar to display the Taskbar Properties window. On the Taskbar Options tab, click the Auto hide check box. A check mark appears in the check box. Click the OK button to remove the Taskbar Properties window. The taskbar is now hidden from view; only a thin line appears in its place at the bottom of the screen. (Depending on how you have Windows 95 set up, your taskbar could be at the top, right, left, or bottom edge of the screen. The thin line will appear in the location of the taskbar. This book assumes that the taskbar is located at the bottom of the screen.) To display the hidden taskbar temporarily, move the mouse pointer to a location below the thin line at the bottom of the screen. To hide the taskbar again, move the mouse pointer back to a location above the thin line at the bottom of the screen.

The Visual Basic startup screen is shown in Figure 1-3. Your screen might not look identical to Figure 1-3, but it should have all the parts labeled in the figure.

Project Explorer window

main window (your menu titles and toolbar buttons may differ)

Toolbox window (your toolbox may contain other tools)

Form window

Properties window

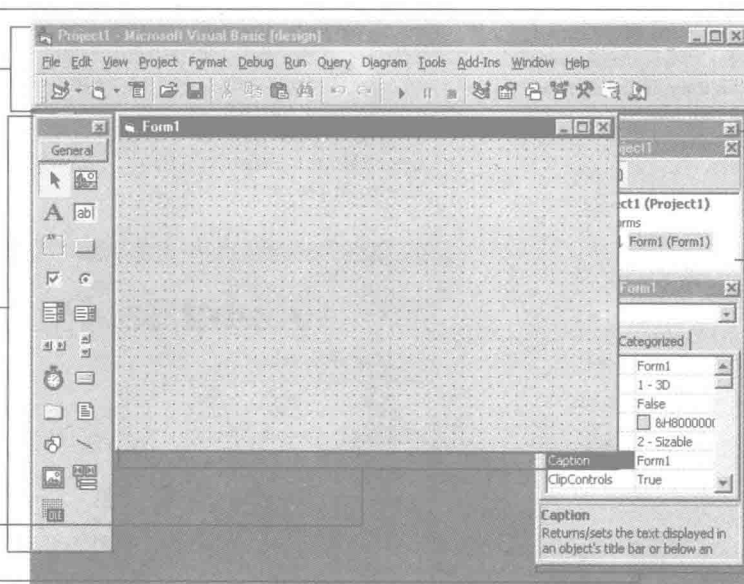


Figure 1-3: Visual Basic startup screen

HELP?

If the Toolbox window is not displayed on the screen, click View on the menu bar, then click Toolbox. Your Toolbox window may include other tools. If the Properties window is not displayed on the screen, click View, and then click Properties Window. If the Project Explorer window is not displayed, click View, and then click Project Explorer.