

INTRODUCTION



Since its creation, Visual Basic (VB) has steadily grown into the world's most popular programming language. But popularity doesn't always mean respect, and for years the development community has been split between those who think Visual Basic is a revolutionary way to solve just about any programming problem and those who think VB should be sent to the bargain bin to make room for a return to "serious" C++ or Java coding. As a result, Visual Basic programmers have a reputation for being a slightly paranoid bunch.

Recently, Visual Basic has been through the greatest change of its life. It's morphed into a modern, object-oriented language that's built on Microsoft's .NET Framework—the same plumbing that powers such heavyweights as C#. Although most VB developers believe that the .NET Framework will eventually replace old-style Visual Basic 6, a surprising number haven't made the jump yet. Some don't trust the new technology (and the never-ending name changes). Others are too busy with real work to think about making a move. And a few are scared off by the radical new model and inevitable migration headaches.

Now Microsoft has introduced Visual Basic 2005, along with the second version of the .NET Framework. Microsoft's developers have expended considerable resources making Visual Basic 2005 easier to understand, use, and embrace, and they're earmarking this release as the version that will finally make die-hard classic VB-ers switch to .NET. So have they succeeded?

As you'll discover in this book, there's still no easy migration path—Visual Basic 2005 is entirely unlike Visual Basic 6, and there's no turning back now. However, if you're ready to step up to a new language—one that cleans out old cobwebs, levels the playing field between VB and other programming languages, and introduces an avalanche of elegant, flexible, and easy-to-use new features—Visual Basic 2005 fits the bill. In fact, it's the Visual Basic makeover many programmers have spent years waiting for.

This book provides a guided tour through the world of Visual Basic 2005. In it, you'll learn how you can use your existing VB skills and master the .NET way of thinking.

Who Should Read This Book

This book is aimed at Visual Basic 6 developers who want to shed some of their current habits and start learning about how the .NET platform works and thinks. We won't spend any time rehashing basic syntax, but we will spend a *lot* of time exploring new .NET concepts.

To get the most out of this book, you should have some experience developing with Visual Basic. You don't need to have tackled advanced subjects, such as Internet applications and object-oriented programming—these are well explained in the book—but you should be familiar with all the “Visual Basic basics,” such as variables, controls, loops, conditions, and functions. If you've never programmed with Visual Basic or another programming language like Java, this isn't the best book for you. (You might want to start with Wallace Wang's *Visual Basic 2005 Express: Now Playing*, also from No Starch Press.)

If you're a master programmer with an earlier version of .NET, you already know most of what there is to learn in this book. You may want to check out a book like my own *Visual Basic 2005: A Developer's Notebook*, which concentrates exclusively on new features that have been added to .NET 2.0.

If you're an experienced programmer who's new to .NET, welcome aboard! You'll soon get a handle on Visual Basic 2005's most exciting new innovations and pick up some invaluable tricks on the way.

What You Will Learn

Many of the chapters in this book could be expanded into complete books of their own. It's impossible to cover all the details of .NET, so this book strives to give you the essential facts and insights. The emphasis isn't on becoming a “language nerd” (learning every syntax trick in the book), but on gaining the

insights you'll need in order to understand .NET development and to continue learning on your own. We'll go about our journey in a lively, no-nonsense way.

Each chapter begins with a "New in .NET" section that gives experienced developers a quick introduction to what has changed since Visual Basic 6. The rest of the chapter takes a lightning tour through a single aspect of programming with VB 2005. The code examples are tightly focused on specific concepts—you won't find toy applications that are written just for the book. (Those tend to look great while flipping through the book in the bookstore, but end up being much less helpful once you get started.)

A "What Comes Next?" section at the end of every chapter provides some ideas about where you can find more information on the current topic and maybe even become a VB 2005 guru.

NOTE *No single book can teach you the entire .NET platform. The emphasis here is on introducing fundamental techniques and concepts, and giving you the resources you'll need in order to continue exploring the areas that interest you most. To accomplish all this, the text is complemented by code examples, references to additional online material, and helpful tips about planning, design, and architecture. For best results, try to read the chapters in order, because later examples will use some of the features introduced in earlier chapters.*

Code Samples

Practical examples often provide the best way to learn new concepts and see programming ideas in action. Following that principle, this book includes a wealth of code samples to help stimulate your mind and keep you awake. The design philosophy for these samples is straightforward: demonstrate, as concisely as possible, how a .NET developer thinks. This means that all examples are broken down to their simplest elements. The hope is that these code samples represent kernels of coding insight.

The code samples in this book are provided online, grouped by chapter, at www.prosetech.com. These examples aren't exactly the same as the code fragments in the book. For example, they might have a little extra code or user interface, which would just be a distraction in a printed example. These samples provide an excellent starting point for your own .NET experimentation.

Complaints, Adulation, and Everything in Between

While I'm on the subject of online support for the book, I should probably add that you can reach me via email at p2p@prosetech.com. I can't solve your Visual Basic 2005 problems or critique your own code creations, but I would like to hear what this book does right and wrong (and what it may do in an utterly confusing way). You can also send comments about the website and the online samples.

Chapter Overview

Here's a quick guide that describes what each chapter has to offer. Some of the later chapters build on concepts in earlier chapters, so it will probably be easiest to read the book in order, to make sure you learn the basics about Windows forms, object-oriented programming, and Visual Basic 2005 syntax changes before moving on to the more specialized topics such as web applications and database programming.

Chapter 1: The .NET Revolution

What is this thing called .NET, anyway? Learn why Microsoft decided to create a whole new framework for programming and what it threw in.

Chapter 2: The Design Environment

Visual Basic's integrated design environment (IDE), known as Visual Studio, is every programmer's home away from home. In VB 2005, it's been given a slick makeover and new features such as enhanced IntelliSense, macros, and a collapsible code display.

Chapter 3: VB 2005 Basics

I warned you that things had changed. Here you'll get your first real look at the .NET world, with an overview of language changes, an exploration of the class library, and an introduction to namespaces.

Chapter 4: Windows Forms

Windows forms are an example of the good getting better. Visual Basic has always made it easy to drag and drop your way to an attractive user interface, and with the revamped Windows Forms model you'll get some long-awaited extras, such as automatic support for resizable forms, a variety of new controls, and the ability to finally forget all about the Windows API.

Chapter 5: Object-Oriented Programming

At last, Visual Basic 2005 is a full object-oriented programming language. This chapter teaches you the basics of object-oriented development, the most modern and elegant way to solve almost any programming problem. VB 2005 is built almost entirely out of objects, and understanding them is the key to becoming a .NET expert.

Chapter 6: Mastering Objects

In this chapter, we'll continue to explore VB 2005's object-oriented features and advanced class construction techniques including interfaces and inheritance, the most anticipated Visual Basic enhancement ever.

Chapter 7: Assemblies and Components

Modern applications work best when designed as a collection of separate, collaborating components. In this chapter, you'll learn how to make your own components and get the essentials you need to know in order to transfer your applications to other computers.

Chapter 8: Bug Proofing

Visual Basic 2005 retains most of VB's legendary debugging tools, with a few refinements. This chapter describes debugging in the IDE, outlines some tips for making bug-resistant code, and introduces structured exception handling.

Chapter 9: Dealing with Data: Files, Printing, and XML

Traditional Visual Basic data-handling functions have been replaced with objects that let you manage files, serialize objects, print data, and manipulate XML. But the greatest enhancement may be the print preview control.

Chapter 10: Databases and ADO.NET

Visual Basic 2005 includes ADO.NET, a revamped version of ADO that allows you to connect to just about any database and extract the information you need (or make the changes you want) quickly and efficiently. Again, the .NET team has been up late at night tweaking things, and the changes are bound to surprise you.

Chapter 11: Threading

Visual Basic 2005 now goes where only C++ and other heavyweights could venture before: multithreading. But just because you can thread doesn't mean you should. In fact, threading is still the best way to shoot yourself squarely in the foot. Read this chapter for some advice about when to create threads (and when not to) and how to use them safely.

Chapter 12: Web Forms and ASP.NET

This chapter describes the basics of ASP.NET, Microsoft's all-in-one solution for creating web-based applications. Finally, after years of promises, creating scalable web applications with a rich user interface is just as easy as creating a desktop application.

Chapter 13: Web Services

Central to the .NET platform is the vision of software as a service, with worldwide web servers providing features and functions that you can seamlessly integrate into your own products. Read this chapter to start creating web services and, best of all, let .NET take care of all the plumbing.

Chapter 14: Setup and Deployment

Need a quick way to deploy an application or a full-fledged setup program complete with shortcuts, registry tweaking, and an uninstall feature? In this chapter you'll learn two ways to deploy your application: the streamlined web-based ClickOnce model, and the more comprehensive Visual Studio setup project.

What Comes Next?

If you've made it this far, I'll assume you're continuing for the rest of the journey. For best results, you should already have a copy of Visual Basic 2005. The professional edition is best (it includes support for every type of project), but you can also complete many of the examples in this book using a combination of the Visual Basic 2005 Express Edition (for Windows applications) and Visual Web Developer 2005 Express Edition (for web applications). You can get the details on these low-cost versions at <http://msdn.microsoft.com/vstudio/express>.

But first, before you touch any code, we'll start with Chapter 1—and clear up the cloud of jargon and hype that surrounds .NET. Along the way, you'll discover why so many people find Microsoft's new platform so exciting.