Preface

Web development is very exciting. There's nothing like the feeling you have after you place your first dynamic web site online, and see your little toy in action while other people are actually using it!

Web development with ASP.NET is particularly exciting. If you've never created a dynamic web site before, I'm sure you'll fall in love with this area of web development. If you've worked with other server-side technologies, I expect you'll be a little shocked by the differences.

ASP.NET really is a unique technology, and it provides new and extremely efficient ways to create web applications using the programming language with which you feel most comfortable. Though it can take some time to learn, ASP.NET is simple to use. Whether you want to create simple web forms, or feature-rich shopping carts, or even complex enterprise applications, ASP.NET can help you do it. All the tools you'll need to get up and running are immediately available and easy to install, and require very little initial configuration.

This book will be your gentle introduction to the wonderful world of ASP.NET, teaching you the foundations step by step. First, you'll learn the theory; then, you'll put it in practice as we work through practical exercises together. To demonstrate some of the more complex functionality, and to put the theory into a cohesive, realistic context, we'll develop a project through the course of this book. The project—an intranet site for a company named Dorknozzle—will allow us to see the many components of .NET in action, and to understand through practice exactly how .NET works in the real world.

We hope you'll find reading this book an enjoyable experience that will significantly help you with your future web development projects!

Who Should Read this Book?

This book is aimed at beginner, intermediate, and advanced web designers looking to make the leap into server-side programming with ASP.NET. We expect that you'll already feel comfortable with HTML and a little CSS, as very little explanation of these topics is provided here.

By the end of this book, you should be able to successfully download and install ASP.NET and the .NET Framework, configure and start your web server, create and work with basic ASP.NET pages, install and run SQL Server 2005, create

database tables, and work with advanced, dynamic ASP.NET pages that query, insert, update, and delete information within a database.

All examples provided in the book are written in both Visual Basic and C#, the two most popular languages for creating ASP.NET web sites. The examples start at beginners' level and proceed to more advanced levels. As such, no prior knowledge of either language is required in order to read, understand, learn from, and apply the knowledge provided in this book. Experience with other programming or scripting languages (such as JavaScript) will certainly grease the wheels, though, and should enable you to grasp fundamental programming concepts more quickly.

What's in this Book?

This book comprises the following chapters. Read them from beginning to end to gain a complete understanding of the subject, or skip around if you feel you need a refresher on a particular topic.

Chapter 1: Introducing ASP.NET
Before you can start building your database-driven web presence, you must ensure that you have the right tools for the job. In this first chapter, you'll learn how to find, download, and configure the .NET Framework. You'll learn where the web server is located, and how to install and configure it. Next, we'll walk through the installation of the Microsoft database solution: SQL Server 2005. Finally, we'll create a simple ASP.NET page to make sure that everything's running and properly configured.

Chapter 2: ASP.NET Basics
In this chapter, you'll create your first useful ASP.NET page. We'll explore all of the components that make up a typical ASP.NET page, including directives, controls, and code. Then, we'll walk through the process of deployment, focusing specifically on allowing the user to view the processing of a simple ASP.NET page through a web browser.

Chapter 3: VB and C# Programming Basics
In this chapter, we'll look at two of the programming languages that are used to create ASP.NET pages: VB and C#. You'll learn about the syntax of the two languages as we explore the concepts of variables, data types, conditionals, loops, arrays, functions, and more. Finally, we'll see how the two languages accommodate Object Oriented Programming principles by allowing you to work with classes, methods, properties, inheritance, and so on.

Chapter 4: Constructing ASP.NET Web Forms

Web forms are the ASP.NET equivalent of web pages but, as we'll see, the process of building ASP.NET web forms is a lot like composing a castle with Lego bricks! ASP.NET is bundled with hundreds of controls—including HTML controls, web controls, and so on—that are designed for easy deployment within your applications. This chapter will introduce you to these building blocks, and show how to lock them together. You'll also learn about master pages, which are a very exciting new feature of ASP.NET 2.0.

Chapter 5: Building Web Applications

A web application is basically a group of web forms, controls, and other elements that work together to achieve complex functionality. So it's no surprise that when we build web applications, we must consider more aspects than when we build individual web forms. This chapter touches on those aspects, beginning with a hands-on tour of the free IDE from Microsoft, called Visual Web Developer 2005 Express Edition. Next, we configure your web application, learn how to use the application state, user sessions, and cookies, explore the process for debugging errors in your project, and more.

Chapter 6: Using the Validation Controls

This chapter introduces validation controls. With validation controls, Microsoft basically eliminated the headache of fumbling through, and configuring, tired, reused client-side validation scripts. First, we'll learn how to implement user input validation on both the client and server sides of your application using Microsoft's ready-made validation controls. Then, we'll learn how to perform more advanced validation using regular expressions and custom validators.

Chapter 7: Database Design and Development

Undoubtedly one of the most important chapters in the book, Chapter 7 will prepare you to work with databases in ASP.NET. We'll cover the essentials you'll need to know in order to create a database using SQL Server Express Edition. Also in this chapter, we'll begin to build the database for the Dorknozzle intranet project.

Chapter 8: Speaking SQL

This chapter will teach you to speak the language of the database: Structured Query Language, or SQL. After a gentle introduction to the basic concepts of SQL, which will teach you how to write `SELECT`, `INSERT`, `UPDATE`, and `DE-LETE` queries, we'll move on to more advanced topics such as expressions, conditions, and joins. Finally, we'll take a look at how we can reuse queries quickly and easily by writing stored procedures.

Chapter 9: ADO.NET

The next logical step in building database-driven web applications is to roll up our sleeves and dirty our hands with a little ADO.NET—the technology that facilitates communication between your web application and the database server. This chapter explores the essentials of the technology, and will have you reading database data directly from your web applications in just a few short steps. We'll then help you begin the transition from working with static applications to those that are database-driven.

Chapter 10: Displaying Content Using Data Lists

Taking ADO.NET further, this chapter shows you how to utilize the `DataList` control provided within the .NET Framework. `DataList`s play a crucial role in simplifying the presentation of information with ASP.NET. In learning how to present database data within your applications in a cleaner and more legible format, you'll gain an understanding of the concepts of data binding at a high level.

Chapter 11: Managing Content Using GridView and DetailsView

This chapter explores two of the most powerful data presentation controls of ASP.NET: `GridView` and `DetailsView`. `GridView` supersedes ASP.NET 1.x's `DataGrid`, and is a very powerful control that automates almost all tasks that involve displaying grids of data. `DetailsView` completes the picture by offering us the functionality needed to display the details of a single grid item.

Chapter 12: Advanced Data Access

This chapter explores a few of the more advanced details involved in data access, retrieval, and manipulation. We'll start by looking at direct data access using ADO.NET's data source controls. We'll then compare this approach with that of using data sets to access data in a disconnected fashion. In this section, you'll also learn to implement features such as paging, filtering, and sorting using custom code.

Chapter 13: Security and User Authentication

This chapter will show you how to secure your web applications with ASP.NET. We'll discuss the various security models available, including IIS, Forms, Windows, and Passport, and explore the roles that the Web.config and XML files can play. This chapter will also introduce you to the new ASP.NET 2.0 membership model, and the new ASP.NET 2.0 login controls.

Chapter 14: Working with Files and Email
In this chapter, we'll look at the task of accessing your server's file system, including drives, files, and the network. Next, the chapter will show you how to work with file streams to create text files, write to text files, and read from text files stored on your web server. Finally, you'll get first-hand experience in sending emails using ASP.NET.

Appendix
Included in this book is a handy web control reference, which lists the most common properties and methods of the most frequently used controls in ASP.NET.

The Book's Web Site

Located at http://www.sitepoint.com/books/aspnet2/, the web site that supports this book will give you access to the following facilities.

The Code Archive

As you progress through this book, you'll note a number of references to the code archive. This is a downloadable ZIP archive that contains complete code for all the examples presented in the book. You can get it from the book's web site.[1]

The archive contains one folder for each chapter of this book. Each folder contains CS and VB subfolders, which contain the C# and VB versions of all the examples for that chapter, respectively. In later chapters, these files are further divided into two more subfolders: Lessons for standalone examples presented for a single chapter, and Project for files associated with the Dorknozzle Intranet Application, the project that we'll work on throughout the book.

Updates and Errata

No book is perfect, and we expect that watchful readers will be able to spot at least one or two mistakes before the end of this one. The Errata page on the book's web site will always have the latest information about known typographical and code errors, and necessary updates for new releases of ASP.NET and the various web standards that apply.

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[1] http://www.sitepoint.com/books/aspnet2/code.php

The SitePoint Forums

If you'd like to communicate with us or anyone else on the SitePoint publishing team about this book, you should join SitePoint's online community.[2] The .NET forum, in particular, can offer an abundance of information above and beyond the solutions in this book.[3]

In fact, you should join that community even if you don't want to talk to us, because a lot of fun and experienced web designers and developers hang out there. It's a good way to learn new stuff, get questions answered in a hurry, and just have fun.

The SitePoint Newsletters

In addition to books like this one, SitePoint publishes free email newsletters including *The SitePoint Tribune* and *The SitePoint Tech Times*. In them, you'll read about the latest news, product releases, trends, tips, and techniques for all aspects of web development. If nothing else, you'll get useful ASP.NET articles and tips, but if you're interested in learning other technologies, you'll find them especially valuable. Sign up to one or more SitePoint newsletters at http://www.sitepoint.com/newsletter/.

Your Feedback

If you can't find your answer through the forums, or if you wish to contact us for any other reason, the best place to write is `books@sitepoint.com`. We have a well-manned email support system set up to track your inquiries, and if our support staff members are unable to answer your question, they will send it straight to us. Suggestions for improvements, as well as notices of any mistakes you may find, are especially welcome.

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[2] http://www.sitepoint.com/forums/
[3] http://www.sitepoint.com/forums/forumdisplay.php?f=141