Table of Contents: A Brief Synopsis

Chapter 1: Introduction to C#

If you're a beginner and you've never programmed in C#, this chapter is for you. In this chapter, you'll be introduced to C#. You'll learn how to write and compile C# programs, and you'll explore C# syntaxes, data types, control flow, classes and their members, interfaces, arrays, and exception handling.

Chapter 2: Introduction to Windows Forms

In this chapter, you'll learn how to write a Windows Forms application in a text editor and run it from the command line. The chapter then walks you rapidly through creating a simple Windows Forms application graphically using the Visual Studio .NET IDE. You'll also be introduced to the powerful Windows common controls and you'll learn how to use them in your application.

Chapter 3: Overview of ADO.NET

This chapter provides an overview of ADO.NET. In this chapter, you'll learn the basics of ADO.NET and its advantages over current data access technologies. You'll briefly cover ADO.NET classes and namespaces and how to use them to write simple database applications with Visual Studio .NET. Microsoft Visual Studio .NET provides tremendous support to write database applications in no time through the use of its wizards and utilities.

Chapter 4: Data Components in Visual Studio .NET

The Visual Studio .NET IDE provides design-time support to work with data components. In this chapter, you'll learn how to use these data components in the Visual Studio .NET IDE at design time to create database applications. In this chapter, you'll learn how to use various tools such as Server Explores and Data Form Wizard.

Chapter 5: ADO.NET Data Providers and Disconnected Classes

This chapter is divided into two parts: "ADO.NET Data Providers" and "ADO.NET Disconnected Classes." It provides a broad view of ADO.NET architecture and the basic building blocks of ADO.NET and ADO.NET data providers. The "ADO.NET Disconnected Classes" section of this chapter covers DataTable, DataColumn, DataRow, DataSet, and related classes, and "ADO.NET Data Providers" section covers OleDb and Sql data provider connection, command, data adapter, data reader, transaction, and other related classes.

Chapter 6: Working with XML

The programming world is moving more and more toward the Web, and XML is an essential part of Web-based programming. This chapter begins with basic definitions of HTML, XML, and other Web-related technologies. You'll then take a look at the .NET Framework library namespaces and classes that provide XML functionality in the .NET Framework. This chapter also explains how to read, write, and navigate XML documents using XML and DOM .NET classes, followed by a discussion of XML transformations. You'll learn the relationship between ADO.NET and XML, and how to mix them up and use rich ADO .NET database components to display and manipulate XML data. At the end of this chapter, you'll explore the XPathNavigator class, which is used to navigate XML documents.

Chapter 7: Developing Web Applications Using ADO.NET

As the programming world moves toward the Internet, developing Web applications and Web services are likely to become important tasks for developers. The Microsoft .NET Framework is designed to provide support to develop, maintain, and deploy reliable, high-performance Web applications and Web services. In this chapter, you'll first develop a simple Web application and see how the ASP.NET model works with C# and other .NET languages. After that, you'll concentrate on ASP.NET and you'll learn how to write some real-world database Web applications using ADO.NET and C#.

Chapter 8: Using Web Services with ADO.NET

Web services provide a way to run a service on the Web and access its methods using standard protocols. These protocols include SOAP, XML, WSDL, and HTTP. The uses of a Web service may range from credit card validation, to searching for data in a database, to inserting an order into a shopping cart, to updating a guest list. Actually, the sky is the limit on what you can have your Web service do on your server. Web services under .NET can be run by invoking methods in the service directly through the HTTP or SOAP protocol, so someone wanting to run your Web service from his or her box at home can simply send an HTTP call to your service, passing the parameters in a standard URL. You'll discover how to do so in this chapter.

Chapter 9: Handling ADO.NET Events

In this chapter, you'll learn how you can handle events for ADO.NET objects. This chapter shows developers how they can develop database applications where they need to handler data events. It covers all ADO.NET components that have events such as DataTable, DataSet, DataAdapter, and so on.

Chapter 10: Different Flavors of ADO.NET

In this chapter, you'll learn how to write database applications using the power of stored procedures, views, and triggers. You'll also cover COM interoperability issues and explore how to use existing COM-based database technologies in managed code through ADO.NET data providers. Other topics discussed in this chapter include using ADO Recordset, ADOX, and ADOMD in managed code using ADO.NET.

Chapter 11: Working with the ODBC .NET Data Provider

The ODBC data provider is a recent addition to ADO.NET. This chapter shows you how to use the ODBC data provider to access various ODBC data sources, such as Oracle, Sybase, MySQL, Excel, and text.

Appendix A: Relational Databases: Some Basic Concepts

This appendix covers database issues such as normalization, transactions, concurrency, cursors, and locking.

Appendix B: Commonly Used SQL Statements

SQL statements are used frequently by database developers. This appendix is useful for nondatabase developers who are not familiar with SQL statements.