# Beginning XML with C# 2008

## From Novice to Professional

Bipin Joshi

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**Beginning XML with C# 2008: From Novice to Professional**



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*This work is dedicated to Lord Shiva, who, I believe,*
*resides in each one of us as pure consciousness.*

# Contents at a Glance

About the Author . . . . . xv
About the Technical Reviewer . . . . . xvii
Acknowledgments . . . . . xix
Introduction . . . . . xxi

**CHAPTER 1** Introducing XML and the .NET Framework . . . . . 1
**CHAPTER 2** Manipulating XML Documents by Using the Document Object Model . . . . . 29
**CHAPTER 3** Reading and Writing XML Documents . . . . . 61
**CHAPTER 4** Accessing XML Documents by Using the XPath Data Model . . . . 91
**CHAPTER 5** Validating XML Documents . . . . . 119
**CHAPTER 6** Transforming XML with XSLT . . . . . 159
**CHAPTER 7** XML in ADO.NET . . . . . 185
**CHAPTER 8** XML Serialization . . . . . 229
**CHAPTER 9** XML Web Services . . . . . 263
**CHAPTER 10** XML in SQL Server . . . . . 295
**CHAPTER 11** Use of XML in the .NET Framework . . . . . 333
**CHAPTER 12** Creating Services by Using Windows Communication Foundation . . . . . 403
**CHAPTER 13** Working with LINQ to XML . . . . . 421
**APPENDIX A** Creating Custom XmlReader and XmlWriter Classes . . . . . 457
**APPENDIX B** Case Study: A Web Service–Driven Shopping Cart . . . . . 481
**APPENDIX C** Resources . . . . . 503

**INDEX** . . . . . 505

# Contents

About the Author . . . . . xv
About the Technical Reviewer . . . . . xvii
Acknowledgments . . . . . xix
Introduction . . . . . xxi

**CHAPTER 1 Introducing XML and the .NET Framework** . . . . . 1

What Is XML? . . . . . 1
Benefits of XML . . . . . 2
XML-Driven Applications . . . . . 3
Rules of XML Grammar . . . . . 5
Markup Is Case Sensitive . . . . . 6
A Document Must Have One and Only One Root Element . . . . . 6
A Start Tag Must Have an End Tag . . . . . 6
Start and End Tags Must Be Properly Nested . . . . . 6
Attribute Values Must Be Enclosed in Quotes . . . . . 6
DTDs and XML Schemas . . . . . 7
Parsing XML Documents . . . . . 7
XSLT . . . . . 8
XPath . . . . . 9
The .NET Framework . . . . . 10
.NET and XML . . . . . 11
Assemblies and Namespaces . . . . . 11
The Classic XML Parsing Model of the .NET Framework . . . . . 13
The LINQ-Based Parsing Model of the .NET Framework . . . . . 13
.NET Configuration Files . . . . . 14
ADO.NET . . . . . 16
ASP.NET Server Controls . . . . . 16
XML Serialization . . . . . 17
Remoting . . . . . 18
Web Services . . . . . 18
XML Documentation . . . . . 19
SQL Server XML Features . . . . . 21

Working with Visual Studio . . . . . 21
Creating Windows Applications . . . . . 21
Creating Class Libraries . . . . . 25
Summary . . . . . 28

CHAPTER 2 Manipulating XML Documents by Using the Document Object Model . . . . . 29

Using the DOM Parser . . . . . 29
Knowing When to Use DOM . . . . . 31
A Sample XML Document . . . . . 32
Opening an Existing XML Document for Parsing . . . . . 33
Navigating Through an XML Document . . . . . 35
Looking for Specific Elements and Nodes . . . . . 36
Retrieving Specific Elements Using the GetElementBy TagName() Method . . . . . 37
Retrieving Specific Elements Using the GetElementById() Method . . . . . 38
Selecting Specific Nodes Using the SelectNodes() Method . . . . . 41
Selecting a Single Specific Node Using the SelectSingleNode() Method . . . . . 43
Modifying XML Documents . . . . . 44
Navigating Between Various Nodes . . . . . 46
Modifying Existing Content . . . . . 47
Deleting Existing Content . . . . . 48
Adding New Content . . . . . 49
Using Helper Methods . . . . . 51
Dealing with White Space . . . . . 52
Dealing with Namespaces . . . . . 55
Understanding Events of the XmlDocument Class . . . . . 57
Summary . . . . . 60

CHAPTER 3 Reading and Writing XML Documents . . . . . 61

What Are XML Readers and Writers? . . . . . 61
When to Use Readers and Writers . . . . . 62
Reader Classes . . . . . 62
The XmlTextReader Class . . . . . 62
The XmlValidatingReader Class . . . . . 62
The XmlNodeReader Class . . . . . 63

Reading Documents by Using XmlTextReader . . . . . 63
Opening XML Documents . . . . . 63
Reading Attributes, Elements, and Values . . . . . 65
Improving Performance by Using Name Tables . . . . . 68
Dealing with Namespaces . . . . . 69
Moving Between Elements . . . . . 69
The ReadSubTree() Method . . . . . 69
The ReadToDescendant() Method . . . . . 70
The ReadToFollowing() Method . . . . . 70
The ReadToNextSibling() Method . . . . . 71
The Skip() Method . . . . . 71
Moving Between Attributes . . . . . 72
Reading Content . . . . . 73
The ReadInnerXml() Method . . . . . 73
The ReadOuterXml() Method . . . . . 74
The ReadString() Method . . . . . 74
Writing XML Documents . . . . . 74
Exporting Columns As Elements . . . . . 78
Exporting Columns As Attributes . . . . . 79
Specifying Character Encoding . . . . . 79
Formatting the Output . . . . . 80
Including Namespace Support . . . . . 83
Dealing with Nontextual Data . . . . . 85
Serializing Data . . . . . 86
Unserializing Data . . . . . 87
Summary . . . . . 89

**CHAPTER 4 Accessing XML Documents by Using the XPath Data Model** . . . . . 91

Overview of XPath . . . . . 91
Location Path . . . . . 92
Axis . . . . . 92
Node Tests . . . . . 93
Predicates . . . . . 93
Putting It All Together . . . . . 93
XPath Functions . . . . . 94

The XPath Data Model ..... 95
Creating XPathNavigator ..... 95
Navigating an XML Document by Using XPathNavigator ..... 97
Selecting Nodes ..... 100
Navigating Between Attributes ..... 104
Retrieving Inner and Outer XML ..... 105
Getting an XmlReader from XPathNavigator ..... 107
Getting an XmlWriter from XPathNavigator ..... 110
Editing XML Documents with the XPathNavigator Class ..... 112
Summary ..... 118

**CHAPTER 5 Validating XML Documents** ..... 119

Providing Structure for XML Documents ..... 119
Document Type Definitions (DTDs) ..... 120
XML Data Reduced (XDR) Schemas ..... 120
XML Schema Definition Language (XSD) Schemas ..... 120
Creating Structure for an XML Document ..... 120
The Structure of Employees.xml ..... 120
Creating the DTD ..... 121
Creating the XSD Schema ..... 123
Creating Schemas by Using the Schema Object Model (SOM) ..... 137
The Core SOM Classes ..... 137
Creating an XSD Schema Using the SOM ..... 138
Validating XML Documents Against DTDs and XSD Schemas ..... 146
Inline DTD ..... 146
External DTD ..... 147
Inline Schema ..... 148
External Schema ..... 148
Adding Frequently Used Schemas to the Schema Cache ..... 149
Using the XmlReader Class to Validate XML Documents ..... 150
Using XmlDocument to Validate XML Documents Being Loaded ..... 153
Using XPath Navigator to Validate XML Documents ..... 156
Summary ..... 156

CHAPTER 6 Transforming XML with XSLT ..... 159

Overview of XSLT ..... 159
Applying Templates by Using <xsl:apply-templates> ..... 163
Branching by Using <xsl:if> ..... 165
Branching by Using <xsl:choose> and <xsl:when> ..... 166
Transforming Elements and Attributes ..... 168
The XslCompiledTransform Class ..... 171
Performing Transformations by Using XslCompiledTransform ..... 172
Passing Arguments to a Transformation ..... 174
Using Script Blocks in an XSLT Style Sheet ..... 177
Using Extension Objects ..... 181
Compiling XSLT Style Sheets ..... 182
Summary ..... 184

CHAPTER 7 XML in ADO.NET ..... 185

Overview of ADO.NET Architecture ..... 185
Connected Data Access ..... 185
Disconnected Data Access ..... 186
ADO.NET Data Providers ..... 187
Basic ADO.NET Classes ..... 189
XML and Connected Data Access ..... 190
Using the ExecuteXmlReader() Method ..... 190
XML and Disconnected Data Access ..... 193
Understanding DataSet ..... 193
Understanding DataAdapter ..... 195
Working with DataSet and DataAdapter ..... 197
Saving DataSet Contents As XML ..... 204
Reading XML Data into DataSet ..... 210
Generating Menus Dynamically Based On an XML File ..... 213
Reading Only the Schema Information ..... 216
Creating a Typed DataSet ..... 218
Using Visual Studio to Create a Typed DataSet ..... 219
Using the xsd.exe Tool to Create a Typed DataSet ..... 223
The XmlDataDocument Class ..... 224
Using the XmlDataDocument Class ..... 224
Converting Between DataRow and XmlElement ..... 226
Summary ..... 228

CHAPTER 8 XML Serialization ..... 229

Understanding the Flavors of Serialization ..... 230
Classes Involved in the Serialization Process ..... 230
Serializing and Deserializing Objects by Using XML Format ..... 231
Handling Events Raised During Deserialization ..... 235
Serializing and Deserializing Complex Types ..... 237
Serialization and Inheritance ..... 246
Customizing the Serialized XML ..... 249
Serializing Data in SOAP Format ..... 255
Customizing SOAP Serialization ..... 259
Summary ..... 262

CHAPTER 9 XML Web Services ..... 263

What Are Web Services? ..... 263
Creating and Consuming Web Services ..... 264
Creating a Web Service ..... 265
Creating a Proxy for a Web Service ..... 277
Creating a Form That Consumes a Web Method ..... 279
Calling a Web Method Asynchronously ..... 281
Understanding SOAP ..... 283
Using SOAP Headers ..... 284
Understanding the WSDL Document ..... 289
The Messages ..... 292
The Type Definitions ..... 292
The Port Types ..... 293
The Binding ..... 293
The Service ..... 293
A Summary of WSDL ..... 293
Summary ..... 294

CHAPTER 10 XML in SQL Server ..... 295

Using XML Extensions to the SELECT Statement ..... 295
The FOR XML Clause ..... 296
Using OPENXML ..... 304
Using SQLXML Features ..... 306
The SQLXML Managed Classes ..... 307

The XML Data Type ..... 321
Creating a Table with an XML Column ..... 321
Inserting, Modifying, and Deleting XML Data ..... 322
Methods of the XML Data Type ..... 323
XML Data Modification Language (XML DML) ..... 325
XQuery Support in the XML Data Type ..... 326
Native Web Services ..... 326
Creating a Stored Procedure ..... 327
Creating an HTTP Endpoint ..... 327
Creating a Proxy for the Endpoint ..... 329
Consuming the Native Web Service ..... 329
Summary ..... 331

**CHAPTER 11 Use of XML in the .NET Framework** ..... 333

Understanding Remoting ..... 333
Remoting Architecture ..... 334
Object Activation ..... 335
Channels and Formatters ..... 335
Flavors of Marshalling ..... 336
Remoting Assemblies and Namespaces ..... 336
Creating a Remoting-Enabled Application ..... 337
Using XML in ASP.NET ..... 346
Web Form Code Models ..... 347
XML and ASP.NET ..... 347
The XML Data Source Control ..... 357
Working with Site Maps ..... 365
Using a SiteMapPath Control ..... 368
Using a SiteMapDataSource Control ..... 369
Using the XML Control ..... 369
Using the .NET Framework Configuration System ..... 372
Structure of the web.config File ..... 373
Inheritance and web.config ..... 374
Common Configuration Tasks ..... 374
The ASP.NET Provider Model ..... 378
Displaying Custom Error Pages ..... 391
Documenting XML Code ..... 394
Creating a Class Library ..... 394
Generating Documentation ..... 398
Summary ..... 402

**CHAPTER 12 Creating Services by Using Windows Communication Foundation** ..... 403

Understanding WCF Vocabulary ..... 404
Creating and Consuming a WCF Service ..... 404
Creating the Service ..... 405
Hosting the Service ..... 409
Consuming the Service ..... 412
Testing the Host and Client ..... 415
Hosting a WCF Service in IIS ..... 416
Understanding the Role of XML in WCF Services ..... 418
Using the XmlFormatter and XmlSerializer Classes ..... 418
Using XmlSerializer Instead of XmlFormatter ..... 418
Summary ..... 419

**CHAPTER 13 Working with LINQ to XML** ..... 421

Overview of LINQ Technology ..... 421
Working with LINQ Queries ..... 422
Classic XML Technologies vs. LINQ to XML ..... 428
LINQ to XML Class Hierarchy ..... 430
Opening an Existing XML Document for Parsing ..... 430
Navigating Through an XML Tree ..... 432
Looking for Specific Elements and Attributes ..... 434
Modifying XML Data ..... 438
Events of the XElement Class ..... 443
Dealing with White Space ..... 445
Dealing with Namespaces ..... 447
Validating XML Documents ..... 450
Transforming XML Trees ..... 452
Summary ..... 456

**APPENDIX A Creating Custom XmlReader and XmlWriter Classes** ... 457

**APPENDIX B Case Study: A Web Service–Driven Shopping Cart** ..... 481

**APPENDIX C Resources** ..... 503

**INDEX** ..... 505

# About the Author

**BIPIN JOSHI** is a software consultant and mentor by profession and runs his own firm, BinaryIntellect Consulting. Bipin has been programming since 1995 and has worked with .NET ever since its beta release. He has written hundreds of articles for his community websites—BipinJoshi.net, DotNetBips.com, and BinaryIntellect.net. He also contributes to printed magazines and other popular websites. He is the author or coauthor of half a dozen books, including his *Developer's Guide to ASP.NET 3.5*. Bipin is a Microsoft MVP and a member of ASPInsiders. Having adopted a yoga way of life, he has also studied naturopathy and believes that both are boons to mankind. When away from computers, he remains absorbed in deep meditation. He also teaches Kriya Yoga to interested individuals via his web site BipinJoshi.org. His blog at BipinJoshi.com is his place to jot down thoughts about technology and life. He can also be reached there.

# About the Technical Reviewer

**FABIO CLAUDIO FERRACCHIATI** is a senior consultant and a senior analyst/developer. He works for Brain Force (`http://www.brainforce.com`) in its Italian branch (`http://www.brainforce.it`). He is a Microsoft Certified Solution Developer for .NET, a Microsoft Certified Application Developer for .NET, and a Microsoft Certified Professional, and he is a prolific author and technical reviewer. Over the past ten years, he's written articles for Italian and international magazines and coauthored more than ten books on a variety of computer topics. You can read his LINQ blog at `http://www.ferracchiati.com`.

# Acknowledgments

Though my name alone appears as the author, many have contributed directly or indirectly to this book. When I got a nod from Apress to begin this book, I was a bit worried because I had only five months in hand, and there were many activities going on at my end, including training programs, writing for my websites, and development work. Today I feel satisfied to see the task accomplished on time.

First of all, I must express my feeling of devotion toward Lord Shiva. His yogic teachings have made me understand the real meaning of life. Without His blessings, this would not have been possible. I am also thankful to my parents and brother for their help and support in my activities at all levels.

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# Introduction

The Internet has brought a huge difference in the way we develop and use software applications. Applications are becoming more and more distributed, connecting heterogeneous systems. With such a radical change, the role of XML is highly significant. XML has already established itself as a standard way of data encoding and transfer. No wonder that Microsoft's .NET Framework provides such strong support for XML. Data access, raw parsing, configuration, code documentation, and web services are some of the examples where .NET harnesses the power and flexibility of XML.

The .NET Framework comes with a plethora of classes that allow you to work with XML data. This book demystifies XML and allied technologies. Reading and writing XML data, using DOM, ADO.NET integration with XML, SQL Server XML features, applying XSLT style sheets, SOAP, web services, and configuration systems are some of the topics that this book explores in detail. Real-world examples scattered throughout the book will help you understand the practical use of the topic under consideration. The book will also act as a handy reference when developers go on the job.

## Who Is This Book For?

This book is for developers who are familiar with the .NET Framework and want to dive deep into the XML features of .NET. This book will not teach you XML manipulation using non-Microsoft tools. All the examples in this book are presented in C#, and hence working knowledge of C# is also assumed. In some chapters, familiarity with LINQ, ADO.NET, and SQL Server is necessary, though I have provided a brief overview along with the respective topics.

## Software Required

I have used Visual Studio 2008 as the IDE for developing various applications. However, for most of the examples, you can use Visual C# Express Edition. In some samples, you also need Visual Web Developer Express Edition, SQL Server 2005 or SQL Server 2008, and the Sandcastle help file generation tool.

## Structure of This Book

The book is divided into 13 chapters and three appendixes. Chapters 1 to 4 talk about navigating, reading, and writing XML documents by using classes from the `System.Xml` namespace. In these chapters, you will learn to use classes such as `XmlDocument`, `XmlReader`, `XmlWriter`, and `XPathNavigator`.

Manipulating XML data is just one part of the story. Often you need to validate and transform it so that it becomes acceptable to your system. Chapters 5 and 6 deal with the issues of validating XML documents and applying XSLT transformations to them, respectively.

The .NET Framework itself uses XML in many places. This is often under the hood, but for any XML developer, knowing where this occurs is essential. To that end, Chapters 7 to 9 cover topics such as ADO.NET integration with XML, XML serialization, and XML web services.

Microsoft has not limited the use of XML only to areas such as ADO.NET and web services. SQL Server incorporates many XML-related features. These features are discussed in Chapter 10. Though this topic isn't strictly one of the XML features of .NET, many developers will find it useful, because many real-world projects developed by using the .NET Framework make use of SQL Server as a data store. Chapter 11 covers many other areas where the .NET Framework uses XML. Some of them include configuration files, ASP.NET server controls, and C# XML comments.

In the .NET Framework 3.5, Microsoft added a new component-development framework called Windows Communication Foundation (WCF). WCF allows you to develop service-oriented applications by using a unified programming model. It also uses XML heavily as a format of communication. Thus it is worthwhile to peek into this new framework, and Chapter 12 does exactly that.

Another exciting addition to the .NET Framework is Language INtegrated Query (LINQ). LINQ to XML is an especially cool new addition for XML developers. Chapter 13 is dedicated to this new programming model. Here, you will learn about core LINQ to XML features including parsing and loading XML trees the LINQ to XML way and validating and projecting XML data. Considering that LINQ has a big role to play in the .NET Framework, this chapter is a must for keeping yourself updated with the latest features.

Finally, the three appendixes supplement what you learned throughout the book by providing real-world case studies and resources.

# Downloading the Source Code

The complete source of the book is available for download at the book's companion website. Just visit `http://www.apress.com`, and download the zip file containing the code from the Source Code/Download area.

# Contacting the Author

You can reach me via my blog at `http://www.bipinjoshi.com`.