

Course Outline | Microsoft Developing ASP.NET Applications with C#

5 day(s)

Overview

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 a 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. Using XML for Visual Basic Developers demystifies XML and allied technologies. Reading and writing XML data, using DOM, ADO.NET integration with XML, SQL Server XML features, applying XSLT stylesheets, SOAP, web services, and configuration systems are some of the topics that this course explores in detail. Real-world examples will help you understand the practical use of the topic under consideration.

Prerequisites

Experience with developing applications using VB.NET

Course Outline

Introducing XML and the .NET Framework

- What Is XML?
- Benefits of XML
- XML-Driven Applications
- Rules of XML Grammar
- DTDs and XML Schemas
- Parsing XML Documents
- XSLT
- XPath
- The .NET Framework
- .NET and XML
- Working with Visual Studio

Manipulating XML Documents by Using the Document Object Model

- Using the DOM Parser
- Knowing When to Use DOM
- Opening an Existing XML Document for Parsing
- Navigating Through an XML Document
- Looking for Specific Elements and Nodes
- Modifying XML Documents
- Adding New Content
- Using Helper Methods
- Understanding Events of the XmlDocument Class

Reading and Writing XML Documents

- What Are XML Readers and Writers?
- Opening XML Documents
- Reading Attributes, Elements, and Values
- Improving Performance by Using Name Tables
- Dealing with Namespaces
- Moving Between Elements
- Moving Between Attributes
- Reading Content

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- Writing XML Documents
- Exporting Columns As Elements
- Exporting Columns As Attributes
- Formatting the Output
- Serializing Data
- Unserializing Data

Accessing XML Documents by Using the XPath Data Model

- Overview of XPath
- Location Path
- Axis
- Node Tests
- Predicates
- XPath Functions
- The XPath Data Model

Validating XML Documents

- Providing Structure for XML Documents
- Document Type Definitions (DTDs)
- XML Data Reduced Schemas (XDR Schemas)
- XML Schema Definition Language
- Schemas (XSD Schemas)
- Creating the DTD
- Creating the XSD Schema
- Creating Schemas by Using the Schema Object Model (SOM)
- The Core SOM Classes
- Creating an XSD Schema by Using the SOM
- Validating XML Documents Against DTDs and XSD Schemas

Transforming XML with XSLT

- Overview of XSLT
- Applying Templates
- Branching
- Transforming Elements and Attributes
- Performing Transformations by Using XslCompiledTransform
- Passing Arguments to a Transformation
- Using Script Blocks in an XSLT Style Sheet
- Using Extension Objects

XML in ADO.NET

- Overview of ADO.NET Architecture
- Connected Data Access
- Disconnected Data Access
- ADO.NET Data Providers
- Basic ADO.NET Classes
- XML and Connected Data Access
- XML and Disconnected Data Access
- Generating Menus Dynamically Based On an XML File
- Reading Only the Schema Information
- Creating a Typed DataSet
- The XmlDataDocument Class
- Converting Between DataRow and XmlElement

XML Serialization

- Understanding the Flavours of Serialization

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- Classes Involved in the Serialization Process
- Serializing and Deserializing Objects by Using XML Format
- Handling Events Raised During Deserialization
- Serializing and Deserializing Complex Types
- Serialization and Inheritance
- Customizing the Serialized XML
- Serializing Data in SOAP Format
- Customizing SOAP Serialization

XML Web Services

- What Are Web Services?
- Creating and Consuming Web Services
- Creating a Proxy for a Web Service
- Creating a Form That Consumes a Web Method
- Calling a Web Method Asynchronously
- Understanding SOAP
- Using SOAP Header
- Understanding the WSDL Document

XML in SQL Server

- Using XML Extensions to the SELECT Statement
- The FOR XML Clause
- Using OPENXML
- Using SQLXML Features
- Inserting, Modifying, and Deleting XML Data
- XML Data Modification Language (XML DML)
- XQuery Support in the XML Data Type
- Native Web Services

Use of XML in the .NET Framework

- Understanding Remoting
- Remoting Architecture
- Object Activation
- Channels and Formatters
- Flavors of Marshalling
- Remoting Assemblies and Namespaces
- Creating a Remoting-Enabled Application
- Using XML in ASP.NET
- The XML Data Source Control
- Working with Site Maps
- Using the XML Control
- Using the .NET Framework Configuration System
- Documentirms
- Choosing between Code behind and Pages with Inline Code

Designing Your Web Pages

- Why Do You Need CSS?
- Problems of HTML Formatting
- How CSS Fixes Formatting Problems
- An Introduction to CSS
- The Style Sheet
- Adding CSS to Your Pages
- Working with CSS in Visual Web Developer
- Applying Styles

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- Managing Styles

Working with ASP.NET Server Controls

- Introduction to Server Controls
- Defining Controls in Your Pages
- Types of Controls
- The ASP.NET State Engine

Programming Your ASP.NET Web Pages

- Organizing Code
- Methods
- The App_Code Folder
- Organizing Code with Namespaces
- Writing Comments
- Object Orientation Basics
- Important OO Terminology
- Events

Creating Consistent Looking Web Sites

- Consistent Page Layout with Master Pages
- Creating Master Pages
- Creating Content Pages
- Using a Centralized Base Page
- An Introduction to the ASP.NET Page Life Cycle
- Implementing the Base Page
- Creating Reusable Page Templates
- Themes
- Skins

Navigation

- Different Ways to Move around Your Site
- Understanding Absolute and Relative URLs
- Understanding Default Documents
- Using the Navigation Controls
- Architecture of the Navigation Controls
- Examining the Web.sitemap File
- Using the Menu Control
- Using the TreeView Control
- Using the SiteMapPath Control
- Programmatic Redirection

User Controls

- Introduction to User Controls
- Creating User Controls
- Adding User Controls to a Content Page or Master Page
- Site-Wide Registration of User Controls
- Adding Logic to Your User Controls
- Implementing View State Properties

Validating User Input

- Gathering Data from the User
- Validating User Input in Web Forms
- Understanding Request Validation
- Processing Data at the Server
- Sending Email from Your Web Site

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- Reading from Text Files

ASP.NET AJAX

- Introducing Ajax
- Using ASP.NET AJAX in Your Projects
- Creating Flicker-Free Pages
- Providing Feedback to Users
- The Timer Control

Displaying and Updating Data

- Data Controls
- Data-bound Controls
- Data Source Controls
- Other Data Controls
- Data Source and Data-bound Controls Working Together
- Displaying and Editing Data with GridView
- Inserting Data with DetailsView
- Storing Your Connection Strings in web.config
- Filtering Data
- Customizing the Appearance of the Data Controls
- Updating and Inserting Data

LINQ and the ADO .NET Entity Framework

- Introducing LINQ
- LINQ to Objects
- LINQ to XML
- LINQ to ADO.NET
- Introducing the ADO.NET Entity Framework
- Mapping Your Data Model to an Object Model
- Introducing Query Syntax
- Using Server Controls with LINQ Queries
- Using Data Controls with the Entity Framework

Security in Your ASP.NET Web Site

- Introducing Security
- Authentication
- Authorization
- An Introduction to the ASP.NET Application Services
- Introducing the Login Controls
- Configuring Your Web Application
- The Role Manager
- Managing Users with the WSAT
- Configuring the Web Application to Work with Roles
- Programmatically Checking Roles

Tracing

- Different Types of Errors
- Global Error Handling and Custom Error Pages
- Tracing Your ASP.NET Web Pages
- Using the Standard Tracing Capabilities
- Adding Your Own Information to the Trace

Deploying Your Web Site

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- Preparing Your Web Site for Deployment
- Avoiding Hardcoded Settings
- The web.config File
- Expression Syntax
- The WebConfigurationManager Class
- Copying Your Web Site
- Creating a Simple Copy of Your Web Site
- Publishing Your Web Site