ASP.NET Web Forms Programming Using C#

Duration: 35 hours

Prerequisites: Prior experience with a scripting or programming language is required.

Course Description: This course provides students with hands on experience using Visual Studio to create dynamic Web sites with ASP.NET Web Forms and the .NET Framework using C#. The class starts with a thorough introduction to the C# programming language, including coverage of the essentials of the C# programming language, built in data types, operators, control structures, classes and methods, collections and exception handling.

Students then learn how to leverage the power of the .NET Framework to build Web user interfaces. Students will learn to use the power of ASP.NET Web server controls combined with HTML5 to design Web pages. They will use ASP.NET Validation controls to provide both client-side and server-side data validation for user input. Students will learn how to use master pages to enforce a consistent look and feel across a set of Web pages, as well as how to use user controls to reuse smaller pieces of HTML across multiple pages.

Students explore the complexities of state management in ASP.NET Web Forms and how to use session and view state objects to manage state between HTTP requests.

Students spend time exploring how to use ADO.NET to interact with databases by running SQL queries and executing stored procedures. They will also learn how to read/write XML files using DataSets and DataTables. Students learn how to use ASP.NET Web Forms data binding to easily display data in list controls, the GridView control and the DetailsView control.

Microsoft provides support for Ajax-enabled Web Forms applications using the ASP.NET AJAX Framework. Students will learn how to use some of the server-side features to make asynchronous postbacks from the browser, perform partial page updates using the UpdatePanel, use CSS to dim a page during postback and use the Timer to fetch data from the server asynchronously.

Other topics include: using a Web.config file to control application configuration; working with the query string; working with cookies; reading and writing files; and deploying ASP.NET web applications. Comprehensive labs provide the students with extensive experience creating and deploying dynamic ASP.NET Web Form applications.

Students Will Learn

- Introduction to .NET Architecture
- Creating Web Sites using Visual Studio
- C# Basic Data Types, Variables and Scoping Rules
- Defining a C# Class
- Working with Objects
- Converting Between Types
- Overview of LINQ
- Overview of Object-Oriented Programming
- Creating ASP.NET Web Forms Applications
- Using ASP.NET Server Controls
- Handling Events
- Using ASP.NET Server Controls
- Using ASP.NET Validation Controls

Operators and Expressions

- Formatting Output
- Conditional Constructs (if, if/else, switch)
- Looping (while, do/while, foreach, break)
- Exception Handling
- Working with Arrays
- .NET Collections
- User-Defined Data Types
- Reusing Design: User Controls and Master Pages
- Maintaining State
- Overview of ADO.NET
- Using XML
- Using Data Binding
- Introduction to ASP.NET AJAX
- Deploying ASP.NET Applications

Overview

Introduction to .NET

- Overview of the .NET Framework
- How .NET is Different from Traditional Programming
- Common Language Runtime (CLR)
- Common Language Specification (CLS)
- Common Type System (CTS)
- .NET Assemblies
- Microsoft Intermediate Language (CIL)
- .NET Namespaces
- .NET Framework Class Library

Introduction to Visual Studio

- Creating a Project
- Using the Code Editor
- Correcting Syntax Errors
- Setting Project Properties
- Adding References
- Compiling a Program
- Running a Program
- Debugging a Program
- Using the MSDN (Help)

Language Fundamentals

- C# Program Structure
- Defining Namespaces
- Understanding C# Data Types
- Defining Variables and Constants
- Comparing Value Types vs. Reference Types
- Working with Operators and Expressions
- Performing Type Conversions
- Using Console I/O
- Formatting Numbers, Date and Times

Conditionals and Looping

- `if/else`
- `switch`
- `while` and `do/while`
- `for`
- `foreach`

Methods and Parameters

- Defining Static and Instance Methods
- Passing Parameters by value and by reference
- Overloading Methods
- Using Variable Length Parameter Lists

Exception Handling

- What are Exceptions?
- .NET Exception Hierarchy
- Catching Exceptions
- Throwing Exceptions
- Managing Resources with Finally

Collections

- Defining and Using Arrays
- Understanding `System.Array`
- .NET Collections vs Generic Collections
- Working with Lists

Object-Oriented Programming

- Overview of Object-Oriented Programming
- Building Classes
- Defining Properties
- Using Auto-Implemented Properties

Working with Dictionaries
- Using LINQ to Objects

Defining Methods
- Understanding Constructors
- Extending .NET Classes via Inheritance
- Defining and Implementing Interfaces
- Understanding the Role of Interfaces in .NET

Overview of ASP.NET Web Forms

- ASP.NET Technologies
- Web Forms vs. MVC
- Understanding the HTTP Request and Response Cycle
- Client-Side vs. Server-Side Code Execution
- Exploring an ASP.NET Web Form
- Understanding the Life-Cycle of an ASP.NET Page Object

Creating ASP.NET Web Forms Applications

- Building ASP.NET Web Forms Applications Using Visual Studio
- Understanding a Web Form Application Project Structure
- Designing Web Forms
- Incorporating CSS into the Web Application
- Understanding the Page Directive
- Working with the Code-Behind Model
- Understanding `Web.config`
- Transformational Config Files

Using ASP.NET Server Controls

- Working with Web Server Controls
- Using Hyperlinks and Button-Based Controls
- Using Label and Textbox Controls
- Using List Controls
- Using the Image Control
- Exploring Other Web Server Controls

Handling Events

- Working with Page-Based Event Handlers
- Writing Control Event Handlers
- Sharing Event Handlers
- Understanding PostBack vs. Non-PostBack Events
- Handling Application-Based Events in `Global.asax`

Using ASP.NET Validation Controls

- Understanding ASP.NET Validation Controls
- Performing Client-Side Validation
- Performing Server-Side Validation
- Using the Required Field Validator
- Using the Comparison and Range Validators
- Using the Regular Expression Validator
- Customizing Validation
- Working with Validation Groups
- Unobtrusive Validation
- Using the NuGet Package Manager to Download `AspNet.ScriptManager.jQuery`

Reusing Design: User Controls and Master Pages

- Reusing HTML Snippets with User Controls
- Designing a User Control
- Embedding a User Control on a Page
- Understanding the Master Page Architecture
- Designing a Master Page
- Designing Content Pages

Maintaining State

- Maintaining State within ASP.NET Web Forms Applications
- Using the `Session` Object
- Using the `ViewState` Object
- Reading and Writing Cookies
- Using the Query String

ADO.NET

- Understanding the ADO.NET Object Model
- Connected vs. Disconnected Access
- Using a Connection to Connect to a Data Source
- Using a Command to Execute Queries and Stored Procedures
- Using a DataReader to Work with Cursors
- Using a DataSet with Disconnected Data
- Using DataAdapters with DataSets

Using XML

Using Data Binding

Introducing XML and XML Schemas
- Writing XML Schemas with a DataSet
- Reading XML Schemas with a DataSet
- Writing XML Data with a DataSet
- Reading XML Data with a DataSet

Introduction to ASP.NET AJAX
- Understanding Ajax
- Enabling ASP.NET AJAX with the ScriptManager
- Configuring Partial Page Updates with the UpdatePanel
- Displaying a Progress Indicator Using UpdateProgress
- Making Periodic Postbacks Using the Timer
- Using the NuGet Package Manager to Download jQuery

Understanding ASP.NET Data Source Controls
- Configuring Data Sources
- Examining ASP.NET Data Bound Controls
- Using List Controls
- Using the `GridView` Control
- Using the `DetailsView` Control
- Exploring Other Data Bound Controls

Deploying ASP.NET Applications
- Configuring IIS for Deployment
- Configuring an ASP.NET Web Form Application for Deployment
- Using Publish to Deploy a ASP.NET Web Application

Related Bootcamps

Track	Duration	Price
Microsoft .NET Developer: C#	5-course track 6-course track 7-course track 8-course track 9-course track	$6,000 $7,200 $8,400 $9,600 $10,800
Web Developer	119 hours	$3,580

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