ASP.NET Using C# (Visual Studio)

Course Topics

LEARNING OBJECTIVES:

· Gain a thorough understanding of the philosophy and architecture of Web applications using ASP.NET
· Acquire a working knowledge of Web application development using Web Forms and Visual Studio 2017
· Optimize an ASP.NET Web application using configuration, security, and caching
· Access databases using ADO.NET, LINQ and the Entity Data Model
· Use newer features in ASP.NET
· Implement rich client applications using ASP.NET AJAX
· Create Web applications using the Model-View-Controller design pattern
· Create HTTP services using ASP.NET Web API
· Deploy an ASP.NET Web application to the Azure cloud

AUDIENCE:

This course is designed for experienced application developers and architects responsible for Web applications in a Microsoft environment.

PRE-REQUISITES:

The student should have a good working knowledge of C# and the .NET Framework. Some familiarity with JavaScript is recommended for the AJAX chapter.

COURSE OUTLINE:

1. Introduction to ASP.NET
Web Application Fundamentals
Using Internet Information Services
Web Forms
ASP.NET MVC
Web Services
ASP.NET Features

2. Web Forms Architecture
Page Class
Web Forms Life Cycle
Web Forms Event Model
Code-Behind

3. ASP.NET and HTTP
Request/Response Programming
HttpRequest Class
HTTP Collections
HttpResponse Class
Redirection
HttpUtility Class

4. Web Applications Using Visual Studio
Using Visual Web Developer
Visual Studio Forms Designer
Using Components
Shadow Copying
Using the Global.asax File
Data Binding

5. State Management and Web Applications

Session State
Application State
Multithreading Issues
Cookies

6. Server Controls
HTML Server Controls
Web Forms Server Controls
Rich Controls
Validation Controls
User Controls

7. Caching in ASP.NET
What Is Caching?
Page-Level Caching
Page Fragment Caching
Optimizing Your ASP.NET Application
Application Caching

8. ASP.NET Configuration and Security Fundamentals
Configuration Overview
Authentication and Authorization
Forms Authentication
Windows Authentication
Security and ASP.NET

9. Debugging, Diagnostics and Error Handling
Debugging
Application Tracing
Page Tracing
Error Handling

10. More Server Controls
Newer ASP.NET Controls
Menus
Master Pages

11. ADO.NET and LINQ
ADO.NET Overview
.NET Data Providers
Connections
Commands
DataReaders and Connected Access
Data Sets and Disconnected Access
Language Integrated Query

12. Data Controls and Data Binding
Data Source Controls
Connection String Storage
GridView
DetailsView
FormView
Object Data Sources
ListView
DataPager
Entity Data Model
EntityDataSource

13. ASP.NET AJAX
Rich Client Applications
AJAX
ScriptManager

UpdatePanel
AJAX Client Library
Remote Method Calls

14. ASP.NET MVC
Model-View-Controller Pattern
What is ASP.NET MVC?
ASP.NET MVC versus Web Forms
ASP.NET MVC Projects in Visual Studio
Controllers
Action Methods and Routing
Views
Strongly-Typed Views
Model Binding
Validation

15. ASP.NET Web API
Web API
Representational State Transfer
REST and Web API
HTTP Services Using Web API
Using Fiddler
Web API Clients

16. ASP.NET and Azure
What Is Windows Azure?
A Windows Azure Testbed
Deploying an Application to Azure
Updating an Application on Azure

Appendix A. Learning Resources
Appendix B. Hosting in IIS 7.5
Installing IIS 7.5
IIS Manager
ASP.NET with IIS 7.5