



transforming performance through learning

Building Effective ASP.NET 4.0 Web Sites using Visual Studio 2010 - QAASPNET-40

Course Details

Days 5
Course code QAASPNET-40

Course Outline

Overview

This course provides the necessary skills and techniques to design and write scalable, robust and secure Web applications using Microsoft Visual Studio 2010 and the ASP.NET 4.0 Framework.

You will gain in-depth technical knowledge of ASP.NET and its related technologies and obtain practical insights into developing enterprise-scale, data-driven Web applications. Throughout the course you will be building a fully functional ASP.NET 4.0 web solution, using best practices including writing secure code to protect against potential malicious attacks.

The course is presented as a mixture of lectures and hands-on exercises. Instructions and solutions are provided in both C# 4.0 and Visual Basic 2010, enabling you to work with your choice of language. (Before attending, delegates must already know one of these .NET languages.)

Prerequisites

- Delegates should have basic knowledge of HTML and web page creation. These skills can be obtained by attending QA's Building an Effective Web Site course
- Delegates should have an existing knowledge of a .NET programming language (C#3.0/4.0 or VB 2008/2010).
- Delegates without these skills would benefit from attending a QA .NET programming language course.
- Delegates should have existing knowledge of ADO.NET, Entity Framework, LINQ, XML data manipulation including LINQ to XML and ADO.NET Data Services. These skills can be obtained by attending QA's Building an Effective Data Tier using Microsoft ADO.NET 4.0 and Visual Studio 2010 course. (QAADONET-4)

- Note that existing ASP.NET 1.x developers should attend the QA course. "Accelerated Migration to ASP.NET 4.0" (QAASPMIG-40). This does not exclude them from the other pre-requisites.

Delegates will learn how to

- Create file- and HTTP-based web projects using Visual Studio 2008
- Use validation techniques to ensure input data accuracy
- Use Master Pages and CSS to enforce design principles
- Personalise web applications using profiles, themes and skins
- Create modular user interfaces using web parts and user controls
- Implement menus, wizards and other site navigation mechanisms
- Use routing to simplify URLs within your ASP.NET 4.0 web application
- Diagnose problems and implement a coherent error handling architecture
- Create data-driven and data-bound user interfaces using XML, relational data sources, and LINQ
- Use the Chart control to display high-quality business metric and trends within your ASP.NET 4.0 Web Application
- Use ASP.NET Dynamic Data to quickly create data-driven web applications
- Understand and manage state across and within page transitions
- Implement authentication, authorisation and role based security using the ASP.NET 4.0 membership system and the login controls
- Extend the pipeline using custom modules and handlers
- Create and use simple ASP.NET Web Services and WCF services
- Describe and implement ASP.NET AJAX functionality to provide a richer UI experience

Course Outline

Module 1: Fundamentals

- Internet fundamentals review
- Application configuration

- Processing model
- Page execution
- Event lifecycle
- Object model overview

Module 2: Using Visual Studio 2010

- Creating a Web Site
- Project and solution structures
- ASP.NET folder structure
- Essential features for Web development
- Understanding code separation
- Copying and Publishing a Web Site
- One-click Publish for Web Applications

Module 3: Designing your web site

- Overview of layout options
- Creating common layout with Master Pages
- Server controls overview
- CSS functionality
- HTML & JScript Snippets
- JScript IntelliSense Enhancements
- Themes and Skins

Module 4: Validation and Error Handling

- The need for validation
- Validation on the Client and Server
- ASP.NET validation controls
- Ensuring correctness in posted data
- Exception handling in ASP.NET

Module 5: Site Navigation

- Navigation scenarios
- Basic navigation
- Crosspage postbacks
- Accessing the previous page
- Creating Wizards; Templating Wizards.
- The Navigation API and Controls

Module 6: User controls and Web Parts

- Introduction to Usercontrols
- Overview of Custom Controls
- Building common page parts
- Web Parts

Module 7: Components and Architecture

- Web architecture considerations
- Component based development
- Data access issues
- Distributed architectural issues

Module 8: Databinding and Presentation - Part 1 - The Databinding Controls

- Data source controls
- GridView, FormView, DetailsView
- ListView, DataPager
- Treeview

Module 9: Databinding & Presentation - Part 2 - Charting

- Charting in Business Web Applications
- Using the Chart Control
- Advanced functionality using Ajax

Module 10: Databinding & Presentation - Part 3 - Dynamic Data

- What is Dynamic Data?
- Data Model
- Fields and Validation
- DynamicDataManager
- Binding Controls and Dynamic Data

Module 11: Caching

- Cache API
- Caching data
- Managing data refreshing - Cache dependencies
- Output caching and substitution
- Cache Providers
- Cache Extensibility

Module 12: State Management

- Managing state within a page
- Managing state across pages
- Managing state within a single visit
- Managing long-term state across visits

Module 13: Security for Web Applications

- IIS authentication/authorization
- ASP.NET authentication/authorization
- Security objects
- Scenario based best practice
- Custom (Forms) authentication
- Using the Membership and Roles APIs
- Membership controls

Module 14: Under the covers

- ASP.NET pipeline
- Writing Custom ASP.NET modules
- Writing Custom ASP.NET handlers

Module 15: Routing

- Why Routing?
- Routing and Web Forms
- RouteTable and PageRouteHandler
- RouteData
- Expression Builders
- Parameters

Module 16: ASP.NET Web & WCF Services

- Exposing a simple Web Service
- Consuming a simple Web Service
- Creating a WCF service
- Consuming a WCF service

Module 17: Introduction to ASP.NET AJAX

- AJAX Scenarios
- Infrastructure
- ASP.NET AJAX controls
- Introduction to ASP.NET AJAX script library
- Consuming a Web Service from the client
- ASP.NET AJAX Application Services

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