

Building Web Applications with ASP.NET MVC: Hands-On - 4 Days

Course 977 Overview

- You Will Learn How To**
- Build and deploy secure, scalable web applications using the MVC 3 framework in ASP.NET
 - Develop powerful application controllers with practical URLs to ensure application robustness
 - Produce a clean, maintainable code base using the Model View Controller (MVC 3) architecture
 - Create flexible views for user interaction with view helpers
 - Design rich user interfaces with Ajax and jQuery
 - Secure applications using authentication and role-based authorisation
- Course Benefits** The Model View Controller Framework in ASP.NET provides a new way to develop web applications for the .NET platform. Differing completely from traditional ASP.NET development, ASP.NET MVC 3 facilitates a refined code structure, total control over content generation and full support for test-driven development. In this hands-on course, you gain the skills required to effectively use ASP.NET MVC 3 to build web applications.
- Who Should Attend** Anyone involved in the development of web applications using Microsoft technology and new to ASP.NET MVC. Programming experience in C# or Visual Basic at the level of Course 419, "C# Programming", or Course 503, "Visual Basic Programming for .NET", and a fundamental knowledge of HTML are assumed.
- Hands-On Training** You gain hands-on experience building scalable web applications with ASP.NET MVC 3. Exercises, completed in C# or Visual Basic, include:
- Creating a clean application architecture with MVC 3
 - Implementing robust controllers for smooth application flow
 - Testing controllers and views with test-driven development
 - Generating dynamic views with Razor
 - Validating user input with client and server-side rules
 - Building richer user interfaces with Ajax and jQuery
 - Restricting application access with role-based security

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Course 977 Outline

The MVC 3 Framework in ASP.NET

Architecture of ASP.NET MVC 3

- Identifying the components of MVC 3
- Benefits of an MVC 3 architecture
- Describing the MVC 3 request processing cycle

Preparing the environment

- Selecting the correct project type
- Structuring the project layout with areas
- Integrating test-driven development

Orchestrating Application Requests with Controllers

Defining controller architecture

- Differentiating controller types
- Delegating request processing to actions
- Initiating the response with action results
- Handling special cases with asynchronous controllers

Enhancing functionality

- Intercepting request processing through action filtering
- Generating advanced operations by extending core controllers
- Decorating actions with additional behaviours
- Testing controllers outside of the server

Mapping URLs for Request Routing

Formatting the MVC 3 URL

- Shortcomings of ASP.NET URLs
- Decoupling URLs from actions with routing
- Designing a URL schema to enforce consistency

Applying practical URL solutions

- Configuring static and dynamic routes
- Customising routing for search engine optimisation
- Verifying routing with test-driven development

Defining the Model

Navigating the model landscape

- Analysing the role of the model in different scenarios
- Constructing the N-tier architecture
- Improving application structure with dependency injection

Persisting the domain model

- Generating entity classes with Visual Studio Object Relational Designer
- Querying with LINQ to SQL
- Filtering data using properties

Generating the View with Razor

Streamlining view development with Razor

- Building compact, expressive views
- Integrating content and code
- Unit testing Razor views

Rendering the response with MVC 3 views

- Implementing dynamic views
- Streamlining the view structure with HTML helpers
- Creating custom HTML helpers
- Generating views using MVC 3 templates

Collecting data with forms

- Accessing submitted data
- Assigning validation rules to input fields
- Client-side vs. server-side data validation
- Reporting errors

Creating Responsive Interfaces with Ajax

The role of Ajax

- Building Web 2.0 functionality
- Benefiting from built-in support for Ajax

Leveraging the jQuery JavaScript library

- Bringing pages to life with jQuery
- Handling browser events asynchronously for faster responses
- Boost interactivity with special effects and animation

Communicating efficiently with JSON

- Serialising application data using JSON structures
- Developing JSON in controllers for Ajax
- Consuming JSON client-side in the view

Securing and Deploying the

Application

Controlling access with authentication

- Managing Windows-based authentication
- Gathering user credentials with HTML-based forms

Restricting application access

- Shielding sensitive URLs
- Integrating role-based security
- Accessing user and role information in controllers

Packaging and distributing options

- Enhancing application performance with cache configuration
- Publishing the completed application