
Developing ASP.NET MVC 4 Web Applications

Duration: 5 Days **Course Code: M20486**

Overview:

In this course, students will learn to develop advanced ASP.NET MVC applications using .NET Framework 4.5 tools and technologies. The focus will be on coding activities that enhance the performance and scalability of the Web site application. ASP.NET MVC will be introduced and compared with Web Forms so that students know when each should/could be used. This course will also prepare the student for exam 70-486.

Target Audience:

This course is intended for professional web developers who use Microsoft Visual Studio in an individual-based or team-based, small-sized to large development environment. Candidates for this course are interested in developing advanced web applications and want to manage the rendered HTML comprehensively. They want to create websites that separate the user interface, data access, and application logic.

Objectives:

- Describe the Microsoft Web Technologies stack and select an appropriate technology to use to develop any given application.
 - Design the architecture and implementation of a web application that will meet a set of functional requirements, user interface requirements, and address business models.
 - Create MVC Models and write code that implements business logic within Model methods, properties, and events.
 - Add Controllers to an MVC Application to manage user interaction, update models, and select and return Views.
 - Create Views in an MVC application that display and edit data and interact with Models and Controllers.
 - Run unit tests and debugging tools against a web application in Visual Studio 2012 and configure an application for troubleshooting.
 - Develop a web application that uses the ASP.NET routing engine to present friendly URLs and a logical navigation hierarchy to users.
 - Implement a consistent look and feel, including corporate branding, across an entire MVC web application.
 - Use partial page updates and caching to reduce the network bandwidth used by an application and accelerate responses to user requests.
 - Write JavaScript code that runs on the client-side and utilizes the jQuery script library to optimize the responsiveness of an MVC web application.
 - Implement a complete membership system in an MVC 4 web application.
 - Build an MVC application that resists malicious attacks and persists information about users and preferences.
 - Describe how to write a Windows Azure web service and call it from an MVC application.
 - Describe what a Web API is and why developers might add a Web API to an application.
 - Modify the way browser requests are handled by an MVC application.
 - Describe how to package and deploy an ASP.NET MVC 4 web application from a development computer to a web server for staging or production.
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Prerequisites:

- A minimum of two to three years of experience developing web-based applications by using Microsoft Visual Studio and Microsoft ASP.NET, proficiency in using the .NET Framework, and some familiarity with the C# language.

Testing and Certification

- This course helps prepare candidates for exam 70-486.
 - Exam 70-486: Developing ASP.NET MVC 4 Web Applications: counts as credit toward the following certification(s):
 - MCSD: Web Applications
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Content:

Module 1: Exploring ASP.NET MVC 4

- Overview of Microsoft Web Technologies
- Overview of ASP.NET 4.5
- Introduction to ASP.NET MVC 4
- Exploring a Photo Sharing Application
- Exploring a Web Pages Application
- Exploring a Web Forms Application
- Exploring an MVC Application

Module 2: Designing ASP.NET MVC 4 Web Applications

- Planning in the Project Design Phase
- Designing Models, Controllers, and Views
- Planning Models
- Planning Controllers
- Planning Views
- Architecting an MVC Application

Module 3: Developing ASP.NET MVC 4 Models

- Creating MVC Models
- Working with Data
- Creating an MVC Project and Adding a Model
- Creating a New SQL Azure Database in Visual Studio
- Adding Properties and Methods to MVC Models
- Using Display and Edit Annotations in MVC Models

Module 4: Developing ASP.NET MVC 4 Controllers

- Writing Controllers and Actions
- Writing Action Filters
- Adding an MVC Controller and Writing the Actions
- Writing the Action Filters in a Controller
- Using the Photo Controller

Module 5: Developing ASP.NET MVC 4 Views

- Creating Views with Razor Syntax
- Using HTML Helpers
- Reusing Code in Views
- Adding a View for Photo Display
- Adding a View for New Photos
- Creating and Using a Partial View
- Adding a Home View and Testing the Views

Module 6: Testing and Debugging ASP.NET MVC 4 Web Applications

- Unit Testing MVC Components
- Implementing an Exception Handling Strategy
- Performing Unit Tests
- Configuring Exception Handling

Module 7: Structuring ASP.NET MVC 4 Web Applications

- Analyzing Information Architecture
- Configuring Routes
- Creating a Navigation Structure
- Using the Routing Engine
- Building Navigation Controls

Module 8: Applying Styles to ASP.NET MVC 4 Web Applications

- Using Template Views
- Applying CSS to an MVC Application
- Creating an Adaptive User Interface
- Using Template Views
- Applying a Consistent Look and Feel to an MVC Application
- Adapting Webpages for Different Browsers

Module 9: Building Responsive Pages in ASP.NET MVC 4 Web Applications

- Using AJAX and Partial Page Updates
- Implementing a Caching Strategy
- Using Partial Page Updates
- Configuring ASP.NET Caches

Module 10: Using JavaScript and jQuery for Responsive MVC 4 Web Applications

- Rendering and Running JavaScript Code
- Using jQuery and jQueryUI
- Using jQuery to Respond to Users
- Using jQueryUI to Build a User Interface

Module 11: Controlling Access to ASP.NET MVC 4 Web Applications

- Implementing Authentication and Authorization
- Assigning Roles and Membership
- Configuring Authentication
- Controlling Access to Resources
- Providing User Account Facilities

Module 12: Building a Resilient ASP.NET MVC 4 Web Application

- Developing Secure Sites
- State Management
- Storing User Preferences
- Using User Preferences in the Photo Gallery

Module 13: Using Windows Azure Web Services in ASP.NET MVC 4 Web Applications

- Introduction to Windows Azure
- Designing and Writing Windows Azure Services
- Consuming Windows Azure Services in a Web Application
- Creating and Coding a Windows Azure Service
- Consuming Data from a Windows Azure Service

Module 14: Implementing Web APIs in ASP.NET MVC 4 Web Applications

- Developing a Web API
- Calling a Web API from Mobile and Web Applications
- Developing a Web API in MVC 4
- Adding Routes and Controllers to Handle REST Requests
- Calling RESTful services from Client-Side Code

Module 15: Handling Requests in ASP.NET MVC 4 Web Applications

- Using HTTP Modules and HTTP Handlers
- Using Web Sockets
- Writing a Web Handler that Uses Web Sockets
- Building a Chat Room in the Photo Sharing Application

Module 16: Deploying ASP.NET MVC 4 Web Applications

- Deploying Web Applications
- Deploying MVC 4 Applications
- Deploying an Application to Windows Azure
- Testing the Completed Application

Further Information:

For More information, or to book your course, please call us on 00 20 (0) 2 2269 1982 or 16142

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