

Developing ASP.NET MVC 4 Web Applications

Course: 20486

Course Details

Audience(s): Developers

Technology: Cross-Platform Development

Duration: 40 Hours

ABOUT THIS COURSE

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 a web application. ASP.NET MVC will be introduced and compared with Web Forms so that students know when each should/could be used.

AUDIENCE PROFILE

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.

Course Content

Module 1: Exploring ASP.NET MVC4

Lessons

- Overview of Microsoft Web Technologies
- Overview of ASP.NET 4.5
- Introduction to ASP.NET MVC 4

Lab : Exploring ASP.NET MVC4

Module 2: Designing ASP.NET MVC 4 Web Applications

Lessons

- Planning in the Project Design Phase
- Designing Models, Controllers, and Views

Lab : Designing ASP.NET MVC 4 Web Applications

Module 3: Developing ASP.NET MVC 4 Models

Lessons

- Creating MVC Models
- Working with Data

Lab : Developing ASP.NET MVC 4 Models

Module 4: Developing ASP.NET MVC 4 Controllers

Lessons

- Writing Controllers and Actions
- Writing Action Filters

Lab : Developing ASP.NET MVC 4 Controllers

Module 5: Developing ASP.NET MVC 4 Views

Lessons

- Creating Views with Razor Syntax
- Using HTML Helpers
- Reusing Code in Views

Lab : Developing ASP.NET MVC 4 Views

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

Lessons

- Unit Testing MVC Components
- Implementing an Exception Handling Strategy

Lab : Testing and Debugging ASP.NET MVC 4 Web Applications

Module 7: Structuring ASP.NET MVC 4 Web Applications

Lessons

- Analyzing Information Architecture
- Configuring Routes
- Creating a Navigation Structure

Lab : Structuring ASP.NET MVC 4 Web Applications

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

Lessons

- Using Template Views
- Applying CSS to an MVC Application
- Creating an Adaptive User Interface

Lab : Applying Styles to ASP.NET MVC 4 Web Applications

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

Lessons

- Using AJAX and Partial Page Updates
- Implementing a Caching Strategy

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

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

Lessons

- Rendering and Executing JavaScript Code
- Using jQuery and jQueryUI

Lab : Using JavaScript and jQuery for Responsive MVC 4 Web Applications

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

Lessons

- Implementing Authentication and Authorization
- Assigning Roles and Membership

Lab : Controlling Access to ASP.NET MVC 4 Web Applications

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

Lessons

- Developing Secure Sites
- State Management

Lab : Building a Resilient ASP.NET MVC 4 Web Application

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

Lessons

- Introducing Windows Azure
- Designing and Writing Windows Azure Services
- Consuming Windows Azure Services in a Web Application

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

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

Lessons

- Developing a Web API
- Calling a Web API from Mobile and Web Applications

Lab : Implementing Web APIs in ASP.NET MVC 4 Web Applications

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

Lessons

- Using HTTP Modules and HTTP Handlers
- Using Web Sockets

Lab : Handling Requests in ASP.NET MVC 4 Web Applications

Module 16: Deploying ASP.NET MVC 4 Web Applications

Lessons

- Deploying a Web Application
- Deploying an ASP.NET MVC 4 Web Application

Lab : Deploying ASP.NET MVC 4 Web Applications

At This Course Completion

After completing this course, students will be able to:

- 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.