20486 Developing ASP.NET MVC 5 Web Applications

Course Overview

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This is a 5-day class

In this 5-day course, the professional web developers will learn to develop advanced ASP.NET Core MVC applications using .NET Core tools and technologies. The focus will be on coding activities that enhance the performance and scalability of the Web site application. This course will also prepare the student for exam 70-486.

Who Should Attend

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 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. - Configure the pipeline of ASP.NET Core web applications using middleware, and leverage dependency injection across MVC application. - Add Controllers to an MVC Application to manage user interaction, update models, and select and return Views. - Develop a web application that uses the ASP.NET Core routing engine to present friendly URLs and a logical navigation hierarchy to users. - Create Views in an MVC application that display and edit data and interact with Models and Controllers. - Create MVC Models and write code that implements business logic within Model methods, properties, and events. - Connect an ASP.NET Core application to a database using Entity Framework Core. - Implement a consistent look and feel across an entire MVC web application. - Write JavaScript code that runs on the client-side and utilizes the jQuery script library to optimize the responsiveness of an MVC web application. - Add client side packages and configure Task Runners. - Run unit tests and debugging tools against a web application in Visual Studio 2017. - Write an MVC application that authenticates and authorizes users to access content securely using Identity. - Build an MVC application that resists malicious attacks. - Use caching to accelerate responses to user requests. - Use SignalR to enable two-way communication between client and server. - Describe what a Web API is and why developers might add a Web API to an application. - Describe how to package and deploy an ASP.NET Core MVC web application from a development computer to a web server.

Other Prerequisites

Before attending this course, students must have 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.

Course Outline

1 Exploring ASP.NET Core MVC

Overview of Microsoft Web Technologies
Overview of ASP.NET4.x
Introduction to ASP.NET Core MVC
Lab : Exploring ASP.NET Core MVC

2 Designing ASP.NET Core MVC Web Applications

Planning in the Project Design Phase
Designing Models, Controllers and Views
Lab : Designing ASP.NET Core MVC Web Applications

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3 Configure Middlewares and Services in ASP.NET Core

Configuring Middlewares
Configuring Services
Lab : Configuring Middleware and Services in ASP.NET Core

4 Developing Controllers

Writing Controllers and Actions
Configuring Routes
Writing Action Filters
Lab : Developing Controllers

5 Developing Views

Creating Views with Razor Syntax
Using HTML Helpers and Tag Helpers
Reusing Code in Views
Lab : Developing Views

6 Developing Models

Creating MVC Models
Working with Forms
Validate MVC Application
Lab : Developing Models

7 Using Entity Framework Core in ASP.NET Core

Introduction to Entity Framework Core
Working with Entity Framework Core
Use Entity Framework Core to connect to Microsoft SQL Server
Lab : Using Entity Framework Core in ASP.NET Core

8 Using Layouts, CSS and JavaScript in ASP.NET Core MVC

Using Layouts
Using CSS and JavaScript
Using jQuery
Lab : Using Layouts, CSS and JavaScript in ASP.NET Core

9 Client-Side Development

Applying Styles
Using Task Runners
Responsive design
Lab : Client-Side Development

10 Testing and Troubleshooting

Testing MVC Applications
Implementing an Exception Handling Strategy
Logging MVC Applications
Lab : Testing and troubleshooting

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11 Managing Security

Authentication in ASP.NET Core
Authorization in ASP.NET Core
Defending from Attacks
Lab : Managing Security
Use Identity

12 Performance and Communication

Implementing a Caching Strategy
Managing State
Two-way communication
Lab : Performance and Communication

13 Implementing Web APIs

Introducing Web APIs
Developing a Web API
Calling a Web API
Lab : Implementing Web APIs

14 Hosting and Deployment

On-premise hosting and deployment
Deployment to Microsoft Azure
Microsoft Azure Fundamentals
Lab : Hosting and Deployment