

ASP.NET Core MVC

Duration: 2 Days

Course Description:

This course provides a practical hands-on introduction to developing Web applications using ASP.NET Core 6.0 MVC and C#. This Web development framework from Microsoft emphasizes separation of concerns in the architecture and testability of applications. This course covers development on Microsoft's new .NET Core platform. The course is current to Visual Studio 2022 and .NET 6, which is the latest version of .NET Core and is the foundation for future Microsoft .NET development. A major restructuring of the .NET platform, .NET Core is cross-platform, open source, and modular designed for creating modern web applications and services, libraries and console applications. It is available on Windows, Mac and Linux. .NET now is a family of frameworks, including both the classical .NET available on Windows and the new .NET Core package-based frameworks that are cross-platform. This course covers the fundamentals of the Model-View-Controller design pattern and its implementation in ASP.NET Core MVC. This technology is compared with classical ASP.NET Web Forms. Visual Studio 2022 is used as a productive platform for creating MVC Web applications. After presenting the fundamentals of the technology with several examples, the main components of Model, Controller and View are covered in detail. The discussion of the Model incorporates Microsoft technologies for persisting data, including XML Serialization and ADO.NET with SQL Server 2019. The routing mechanism of ASP.NET MVC is covered. The course includes an introduction to ASP.NET Web API and deployment on the Azure cloud. Numerous programming examples and exercises are provided. The student will receive a comprehensive set of notes and all the programming examples.

Prerequisites:

The student should have a good working knowledge of C# and the .NET Framework.

Course Objectives:

- Gain a thorough understanding of the philosophy and architecture of Web applications using ASP.NET Core MVC
- Gain a practical understanding of .NET Core
- Acquire a working knowledge of Web application development using ASP.NET Core MVC and Visual Studio 2022
- Persist data with XML Serialization and ADO.NET with SQL Server 2019
- Create HTTP services using ASP.NET Core Web API
- Deploy ASP.NET Core MVC applications to the Windows Azure cloud

Course Outlines:

1. Introduction to ASP.NET Core MVC

- Review of ASP.NET Web Forms
- Advantages and Disadvantages of Web Forms
- Model-View-Controller Pattern
- ASP.NET Core 6.0
- Considerations in Using ASP.NET MVC
- Unit Testing

2. Getting Started with ASP.NET Core MVC

- ASP.NET Core MVC Testbed
- Using Visual Studio
- Configuring for ASP.NET Core MVC
- Rendering Views
- Razor View Engine
- Dynamic Output

3. NET MVC Architecture

- The Controller
- The View
- The Model
- Helper Methods for HTML
- Form Submission
- Model Binding
- Input Validation

4. The Model

- More Complex Models in MVC Programs
- Microsoft Technologies for Model Persistence
- Using XML Serialization
- NuGet Package Manager
- Using ADO.NET

5. The Controller

- Controller Base Class
- Actions
- Retrieving Data from a Request
- Action Results
- Action Attributes
- Serving Static Files
- Filters

6. The View

- View Responsibility
- Using ViewBag
- Using Dynamic Objects
- Html Helpers
- Validation Attributes

7. Routing

- Routing in ASP.NET Core MVC
- Properties of Routes
- Parameters in Routing
- Registering Routes
- Attribute Routing

8. NET Core Web API

- ASP.NET Core Web API
- Representational State Transfer
- REST and Web API
- HTTP Services Using Web API
- HTTP Testing Tools
- Using Postman
- HTTP Response Codes
- ASP.NET Web API Clients

9. NET Core and Azure

- What Is Windows Azure?
- A Windows Azure Testbed
- Deploying an Application to Azure
- Updating an Application on Azure

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