

# .NET CORE FUNDAMENTALS



## CURRICULUM

### » About the Course

ASP.Net MVC Core is the new web framework from Microsoft. ASP.NET Core is the framework you want to use for web development with .NET. It has been redesigned from the ground upwards to be fast, flexible, modern, and work across different programs. At the end this course, you will receive everything you need to embark on using ASP.NET Core and write an application that can create, edit, and view data from a database.

### » Building Console Apps with .NET Core

- Module Intro
- What to Install
- dotnet new
- dotnet restore, build, and run
- Create a .NET Core Console App in Visual Studio
- Visual Studio Calls the dotnet CLI
- How Code Executes with the .NET Framework
- How Code Executes with .NET Core
- Cross Platform and Open Source
- Modularity
- Project Uses All Files on Disk
- Default Package References from Microsoft.NETCore.App
- Adding Package References

### » ASP.NET Core Introduction

- Introduction
- What is ASP.NET Core?
- ASP.NET Core Features and its advantages.
- ASP.NET Core Framework Architecture
- SP.NET Core vs. ASP.NET MVC vs. ASP.NET Web Forms
- Choose between .Net Core and .Net Framework Runtime.
- Choose between ASP.NET Core and ASP.NET.

### Building Your First ASP.NET Core Application

- » ● Environment Setup and Configuration options for ASP.NET Core Application.
- Understanding of ASP.NET Core Project Layout.
- Introduction to .NET Command Line Interface (CLI).
- Understanding of .NET CLI Commands.
- Creating and Running Project using .NET CLI.
- Understanding of .NET Core development using Visual Studio Code Editor.
- Understanding steps involved in Request Life Cycle of ASP.NET Core.
- Working with Multiple Environment.

## » **Startup and Middleware**

- Introduction
- How Middleware Works
- Using IApplicationBuilder
- Showing Exception Details
- Middleware to Match the Environment
- Serving Files
- Setting up ASP.NET MVC Middleware
- Summary

## » **Controllers in the MVC Framework**

- Introduction
- The Model View Controller Design Pattern
- Routing
- Conventional Routes
- Attribute Routes
- Action Results
- Rendering Views
- Summary

## » **Models in the MVC Framework**

- Introduction
- Models and View Models
- Understanding ASP.NET Core MVC Validation
- Need of Server Side and Client-Side Validation
- Accepting Form Input
- POST Redirect GET Pattern
- Model Validation with Data Annotations
- Summary

## **Razor Views**

- » ● Introduction
- Understanding of Razor View Engine.
- Difference between Razor View Engine and Web Form Engine.
- Understanding of Razor Syntax.
- Understanding of passing data from View to Controller.
- Introduction to Razor Pages in ASP.NET Core
- Understanding and Creating View Component.
- Layout Views
- \_ViewStart
- \_ViewImports
- Partial Views
- Summary

## **Helpers**

- » ● Understanding Html Helpers
- Types of Html Helpers
- Built-In Html Helpers
- Tag Helpers
- Inline Helpers
- Custom Helpers
- Url helpers

## **Using the Entity Framework**

- » ● Introduction
- SQL Server LocalDB
- Installing the Entity Framework
- Implementing a DbContext

- Configuring the Entity Framework Services
- Entity Framework Migrations
- Up and Running
- Summary

#### » **Dependency Injection in ASP.NET Core**

- Understanding Dependency Injection.
- Advantages of Dependency Injection.
- Using of Dependency Injection in ASP.NET Core.

#### » **ASP.NET Core Authentication and Authorization**

- Introduction
- An Overview of ASP.NET Identity
- An Overview of OpenID Connect
- Using Secure Connections and Registering the App
- OpenID Connect Configuration
- Authentication Services and Middleware
- User Authorization
- Identities and Claims
- Summary

#### » **Front End Frameworks and Tools**

- Introduction
- Front End Tools
- Command Line vs. Visual Studio
- Setting up npm
- Serving File from node\_modules
- Styling with Bootstrap
- Enabling Client-side Validation
- Using CDNs and Fallbacks
- Summary
- Hosting and Deployment

#### » **Host ASP.NET Core on Windows with IIS**

- Host an ASP.NET Core app in a Windows Service
- Set up a hosting environment for ASP.NET Core on Linux with Nginx, and deploy to it
- Host ASP.NET Core in Docker containers
- Publish an ASP.NET Core web app to Azure App Service using Visual Studio



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