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ASP.NET Core

Certification Training

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ASP.NET Core 6 Project Development Training

About the Course

ASP.NET Core 6 project development training course is primarily designed for .NET professionals who want to learn how to develop modern cloud-based app using ASP.NET Core. In this course, you will learn about .NET Core, middleware, MVC pattern, html helpers, tag helpers, custom helpers, built-in validation and custom validation, querying database using Entity Framework Core.

Further Discover to write Unit tests using XUnit and Moq frameworks. Learn to build an end-to-end project with recommended design patterns and practices.

Course objectives

At the completion of this course, attendees will be able to:
- Understand .NET Core architecture and Advantages.
- Understand ASP.NET Core middleware.
- Implement ASP.NET Core Fundamentals.
- Configure ASP.NET Core MVC.
- Use Dependency Injection in ASP.NET Core.
- Work with Entity Framework Core.
- Handle Errors in ASP.NET Core.
- Create REST Service using Web API.
- Understand and Implement Repository, Unit of Work and Dependency Injection Design Pattern.
- Unit Testing and Mocking using MS Test, xUnit and Mocking Frameworks.
- Learn to build end-to-end application using ASP.NET Core.
- Use ASP.NET Core Best Practices to build enterprise-grade application.
- Application Deployment on IIS and Cloud.

Who can do this course?

All .NET Beginner(s)/Professional(s) who are keen to develop modern, light weight and cloud-based web applications should go for this course.

Pre-requisites

Anyone who wants to learn Mastering ASP.NET Core should have a basic knowledge of C# and HTML.

Tools/IDE

Visual Studio 2022, VS Code, SQL Server 2016 or Higher, Postman

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Course Curriculum

Module 1

.NET Core

- Introduction to .NET Core
- .NET Core Features
- .NET Core Framework Architecture
- NET 5.0 vs. .NET 4.5
- .NET Core Supports
- Advantages of .NET Core
- .NET App Model

ASP.NET Core and MVC5

- Introduction to ASP.NET Core
- ASP.NET Core 3.1, 5.0 and 6.0 Features
- ASP.NET Core vs. ASP.NET MVC5
- Advantages of ASP.NET Core

Visual Studio Project Templates

- Understanding Visual Studio ASP.NET Core Templates
- Creating an ASP.NET Core project
- Understanding ASP.NET Core project folder structure
- Understanding configuration files

Module 2

Model, View, Controller & Actions

- Understanding Model, View and Controller
- Types of Views
- Creating Controller
- Understanding Actions
- Actions and Non-Actions Methods
- Understanding Action Results
- Communication between Controller and View

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Razor View Engine
- Understanding Razor View Engine
- Razor Syntax
- Razor Statements, Loops etc.

Routes & URLs
- Introduction to Routing
- Defining Routes
- Attribute Routing
- Need of attributes routing

Module 3

Helpers

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

Server-side Data Receiving Ways

- Action Parameters
- View Models/Objects
- IFormCollection

Reusable UI Components

- Partial View
- View Components

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Module 4

ViewModel & Validation

- Creating ViewModel
- Understanding ASP.NET Core MVC Validation
- Need of Server Side and Client-Side Validation
- Validation with Data Annotation
- Custom Validations

Data Passing Techniques

- ViewData
- ViewBag
- TempData
- Session
- Query String
- Cookies

Module 5

Entity Framework and EF Core

- What is ORM
- ORMs used with .NET
- EF6 vs. EF Core
- Advantages of Entity Framework

Database Modeling

- Defining Mapping using Data Annotation
- Implementing CRUD Operations
- Defining Mapping using Fluent API

Database Migrations

- Entity Framework Code First Migrations
- Updating Database when the Model Changes
- Rollback Db changes
- Migrations best practices
- Script Migration

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Database First Approach

- Understanding Db First Approach
- Reverse Engineering Approach
- Db First using EF Core Power Tool
- Updating Code using EF Core Power Tool

DB Procedures and Functions

- Creating and Sps and Functions
- Calling Stored Procedures
- Calling Db functions

Module 6

Repository Design Pattern and Unit of Work Design Patterns

- Understanding Repository and UOW Design Pattern
- Need of Repository Design Pattern
- Need to Unit of Work Design Pattern
- Implementing Repository and UOF Design Pattern

Dependency Injection

- Understanding Dependency Injection
- Need of Dependency Injection
- Implementing DI

Unit Testing (Self-paced)

- Understanding TDD Approach
- Unit Testing Frameworks
- Writing Unit Test Cases

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Module 7

Web API

- Introduction to SOAP
- Introduction to REST
- REST Principles
- Understanding Web API
- Choosing between WCF and WebAPI

Web API Controller & Actions

- Understanding Controller & Actions
- Creating Controller
- Creating Actions

Database Operations and Postman

- CRUD Operations using Web API
- Using Postman for testing Web API
- Consuming Web API using ASP.NET Core

Advanced Web API

- Implementing Content Negotiation
- Parameter binding
- Web API Versioning
- Securing WebAPI

Module 8

Authentication: ASP.NET Core Identity

- ASP.NET Core MVC Authentication Options
- Introduction to ASP.NET Core Identity
- Implementing Identity

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ASP.NET Core MVC Pipeline, Middleware and Filters

- Exploring ASP.NET Core Pipeline
- ASP.NET Core MVC Middleware
- ASP.NET Core MVC Filters
- Extending ASP.NET Core MVC Filters

Securing Web API

- Understanding Token based Security
- Implementing Token based Security
- Implementing Authorization

Module 9 (Project Development)

Discussing Project Architecture

- Understanding Application layers
- Discussing Application Entities Properties
- Discussing Relationship among Application Entities

Developing Project

- Designing Application Architecture
- Developing DAL layer using Entity Framework Core

Implementing Design Pattern

- Developing BAL layer
- Repository Design Pattern
- User Login Process
- Dependency Injection