Developing ASP.NET Core Web Applications
5 Days

This course is a direct replacement of Legacy course 20486CC.

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

Who Can Benefit

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. The server-side development will use the C# language, and is an excellent follow-on course to our Programming in C# course. The client-side development will make use of JavaScript, CSS and HTML5, for which there is also a corresponding introductory course.

Prerequisites

- Experience with Microsoft Visual Studio and .NET.
- Understand programming in C# and concepts such as lambda expressions, asynchronous programming and LINQ.
- Some web development experience using HTML, CSS and JavaScript.
- Understanding of common data formats such as JSON and XML.

Course Outline

Module 1: Exploring ASP.NET Core
- Introducing Microsoft Web Technologies
- Getting Started with Razor Pages in ASP.NET Core
- Introducing ASP.NET Core MVC

Module 2: Exploring ASP.NET Core
- Understand the variety of technologies available in the Microsoft web stack.
- Describe the different programming models available for developers in ASP.NET.
- Describe the role of ASP.NET Core in the web technologies stack, and how to use ASP.NET Core to build web applications.

Module 3: Designing ASP.NET Core MVC Web Applications
- Development Methodologies
- Planning in the Project Design Phase
- Choosing between Razor Pages and MVC
- Designing Models, Controllers and Views

Module 4: Using Razor Pages and Middleware
- Using Razor Pages
- Configuring Middleware
- Configuring Services

Module 5: Developing Controllers
- Writing Controllers and Actions
- Configuring Routes
- Writing Action Filters

Module 6: Developing Views
- Creating Views with Razor Syntax
- Using HTML Helpers and Tag Helpers
- Reusing Code in Views

Module 7: Developing Models
Creating MVC Models
- Working with Forms
- Validating User Input

Module 8: Using Entity Framework Core in ASP.NET Core
- Introduction to Entity Framework Core
- Working with Entity Framework Core
- Using Entity Framework Core Database Providers

Module 9: Using Layouts, CSS and JavaScript in ASP.NET Core
- Using Layouts
- Using CSS
- Using JavaScript

Module 10: Client-Side Development
- Responsive Web Design
- Using Front-end Development Tools
- Looking at ASP.NET Core Blazor

Module 11: Testing and Troubleshooting

- Testing ASP.NET Core Applications
- Implementing an Exception Handling Strategy
- Logging ASP.NET Core Applications

Module 12: Managing Security
- Authentication in ASP.NET Core
- Authorization in ASP.NET Core
- Defending from Common Attacks

Module 13: Performance and Communication
- Implementing a Caching Strategy
- Managing State
- Supporting Two-way Communication

Module 14: Implementing Web APIs
- Introducing Web APIs
- Developing a Web API
- Calling a Web API