

KOENIG SOLUTIONS • COURSE OUTLINE

Full Stack ASP.NET Core 6 Development with Angular

Learn to build, secure and deploy full-stack web applications using ASP.NET Core 6 and Angular with TypeScript.

5 Days

40 HOURS

10

MODULES

110

TOPICS

COURSE OVERVIEW

The Full Stack ASP.NET Core 6 Development with Angular course is designed to equip learners with the knowledge and skills needed to build robust, modern web applications using ASP.NET Core 6 and Angular. Through a comprehensive curriculum spanning ten modules, students will delve into various aspects of both frameworks, from setting up the development environment to deploying full-fledged applications to the cloud. By exploring ASP.NET Core 6, learners will gain insights into its architecture, MVC pattern, and essential features like middleware, Routing, and Security. They will also learn how to build and consume Web APIs, work with Entity Framework Core 6 for data access, and implement advanced features like SignalR for real-time communication. On the Angular side, students will master TypeScript, Components, Services, Routing, and other key Angular concepts, allowing them to create dynamic and responsive front-ends. The course is rounded out with practical lessons on integrating Angular with ASP.NET Core 6, handling Authentication and Authorization, and employing best practices for Testing, Debugging, and Deploying applications. This holistic approach ensures that graduates are well-prepared to tackle the challenges of full-stack development in today's tech landscape.

Who Should Attend

Learn Full Stack ASP.NET Core 6 Development with Angular to master web development from server to UI for diverse applications.

Software Developers transitioning to Full Stack development

Experienced ASP.NET Developers expanding to Angular and ASP.NET Core 6

Front-End Developers moving towards Full Stack roles

Back-End Developers incorporating front-end development with Angular

IT Professionals aiming to learn modern web application development

Computer Science graduates specializing in .NET technologies

Web Developers upgrading skills to the latest .NET Core and Angular versions

Technical Leads managing Full Stack projects

Freelancers seeking to offer comprehensive web solutions

Entrepreneurs creating their own tech products or startups

System Architects designing Full Stack solutions

DevOps Engineers integrating deployment processes for Full Stack apps

Quality Assurance Specialists focusing on testing Full Stack applications

Technical Project Managers overseeing Full Stack development teams

LEARNING OBJECTIVES

- Explain the architecture and MVC pattern of ASP.NET Core 6
- Build and consume Web APIs with ASP.NET Core 6
- Apply Entity Framework Core 6 for data access and migrations
- Develop Angular components and services using TypeScript
- Implement Angular routing, forms, pipes and directives
- Integrate Angular front-ends with ASP.NET Core 6 back-ends
- Configure authentication and authorization with IdentityServer4 and OAuth2
- Deploy ASP.NET Core 6 and Angular applications to Azure

10 Modules, 110 Topics

01

Introduction to ASP.NET Core 6

Module 1: Introduction to ASP.NET Core 6 is an introductory course for Full Stack ASP.NET Core 6 Development with Angular. It covers the basics of ASP.NET Core 6, including the fundamentals of the .NET Core framework, the MVC pattern, and the Razor view engine. It also covers the basics of Angular, including components, services, and routing. Finally, it covers the basics of Entity Framework Core, including database migrations and LINQ queries.

TOPICS

- Overview of ASP.NET Core 6
- Setting up the Development Environment
- Exploring the ASP.NET Core 6 Framework
- Working with Controllers and Views
- Working with Models and Data
- Working with Services and Dependency Injection
- Working with Authentication and Authorization
- Working with Configuration and Logging
- Working with Middleware
- Working with Static Files and Bundling
- Working with Routing
- Working with Caching
- Working with Localization
- Working with Security
- Working with Web APIs
- Working with SignalR
- Working with Hosting and Deployment

02

Building Web APIs with ASP.NET Core 6

Module 2 of the Full Stack ASP.NET Core 6 Development with Angular course focuses on building web APIs with ASP.NET Core 6. It covers topics such as creating a web API, configuring routing, using dependency injection, and creating custom middleware. Additionally, students will learn how to use Entity Framework Core to access data from a database, and how to secure their web APIs with authentication and authorization.

TOPICS

- Introduction to ASP.NET Core 6 Web APIs
- Setting up the ASP.NET Core 6 Web API Project
- Configuring Routes and Controllers
- Working with Data Models and Entity Framework Core
- Implementing Authentication and Authorization
- Creating and Consuming Web API Services
- Testing and Debugging ASP.NET Core 6 Web APIs
- Deploying ASP.NET Core 6 Web APIs
- Securing ASP.NET Core 6 Web APIs
- Optimizing Performance of ASP.NET Core 6 Web APIs

03

Working with Entity Framework Core 6

Module 3 of the Full Stack ASP.NET Core 6 Development with Angular course focuses on working with Entity Framework Core 6. This module covers topics such as creating and configuring a database, creating models and mapping them to the database, and querying and updating data. Additionally, students will learn how to use Entity Framework Core 6 to create and manage relationships between entities.

TOPICS

- Introduction to Entity Framework Core 6
- Configuring Entity Framework Core 6
- Creating and Mapping Entities with Entity Framework Core 6
- Querying Data with Entity Framework Core 6
- Updating Data with Entity Framework Core 6
- Working with Relationships in Entity Framework Core 6
- Optimizing Performance with Entity Framework Core 6
- Using Migrations with Entity Framework Core 6
- Deploying Entity Framework Core 6 Applications
- Troubleshooting Entity Framework Core 6 Applications

04

Building Angular Applications with TypeScript

Module 4 of the Full Stack ASP.NET Core 6 Development with Angular course focuses on building Angular applications with TypeScript. It covers topics such as setting up a TypeScript development environment, creating components, services, and modules, and using TypeScript to create a fully functional Angular application. Additionally, the module covers debugging and testing Angular applications with TypeScript.

TOPICS

- Introduction to TypeScript
- Setting up a TypeScript Development Environment
- Working with TypeScript Classes and Interfaces
- Using TypeScript Modules and Decorators
- Working with Angular Components and Services
- Using TypeScript to Create Angular Forms
- Working with Angular Routing and Navigation
- Using TypeScript to Create Angular Pipes
- Working with Angular Animations
- Using TypeScript to Create Angular Directives
- Working with Angular HTTP Services
- Debugging TypeScript Applications
- Deploying Angular Applications with TypeScript

05

Working with Angular Components and Services

Module 5 of the Full Stack ASP.NET Core 6 Development with Angular course covers the fundamentals of working with Angular components and services. Students will learn how to create components, use services to share data between components, and use the Angular CLI to generate components and services. Additionally, students will learn how to use the Angular Router to create navigation between components.

TOPICS

- Introduction to Angular Components
- Creating and Configuring Components
- Working with Component Templates
- Working with Component Styles
- Working with Component Inputs and Outputs
- Working with Component Lifecycle Hooks
- Introduction to Angular Services
- Creating and Configuring Services
- Working with Dependency Injection
- Working with Service Providers
- Working with Service Consumers
- Working with Service Lifecycle Hooks

06

Integrating Angular with ASP.NET Core 6

Module 6 of the Full Stack ASP.NET Core 6 Development with Angular course covers how to integrate Angular with ASP.NET Core 6. This module will teach you how to use the Angular CLI to create an ASP.NET Core 6 project, how to use the Angular Router to create routes, and how to use the ASP.NET Core 6 API to communicate with a database. You will also learn how to use the Angular HttpClient to make HTTP requests to the ASP.NET Core 6 API.

TOPICS

- Setting up the ASP.NET Core 6 Project
- Configuring the Angular Project
- Integrating Angular with ASP.NET Core 6
- Using the Angular CLI with ASP.NET Core 6
- Deploying an ASP.NET Core 6 and Angular Application
- Debugging an ASP.NET Core 6 and Angular Application
- Working with Data in an ASP.NET Core 6 and Angular Application
- Securing an ASP.NET Core 6 and Angular Application
- Performance Tuning an ASP.NET Core 6 and Angular Application
- Unit Testing an ASP.NET Core 6 and Angular Application

Working with Authentication and Authorization

Module 7 of the *Full Stack ASP.NET Core 6 Development with Angular* course covers the fundamentals of authentication and authorization in ASP.NET Core 6. It covers topics such as setting up authentication, using IdentityServer4, and implementing authorization policies. Additionally, the module covers how to secure APIs and how to use external authentication providers such as Google and Facebook.

TOPICS

- Introduction to Authentication and Authorization
- Setting up Authentication and Authorization in ASP.NET Core
- Implementing Authentication and Authorization in Angular
- Working with IdentityServer4
- Securing APIs with OAuth2 and OpenID Connect
- Implementing Role-Based Access Control
- Working with Claims-Based Authorization
- Implementing Multi-Factor Authentication
- Best Practices for Authentication and Authorization

Deploying ASP.NET Core 6 and Angular Applications

Module 8 of the *Full Stack ASP.NET Core 6 Development with Angular* course covers the deployment of ASP.NET Core 6 and Angular applications. It covers topics such as deploying to Azure, configuring Azure App Services, and deploying to IIS. It also covers topics such as configuring SSL certificates, setting up custom domains, and configuring custom error pages.

TOPICS

- Preparing the Development Environment
- Setting up the ASP.NET Core 6 Backend
- Creating the Angular Frontend
- Integrating the Backend and Frontend
- Deploying the Application to Azure
- Configuring Continuous Integration and Delivery
- Troubleshooting Deployment Issues
- Securing the Application with Authentication and Authorization
- Optimizing Performance for Production Deployments
- Automating Deployment with Azure DevOps

Testing and Debugging ASP.NET Core 6 and Angular Applications

Module 9 of the Full Stack ASP.NET Core 6 Development with Angular course covers the fundamentals of testing and debugging ASP.NET Core 6 and Angular applications. It covers topics such as unit testing, integration testing, debugging, and performance testing. It also provides an overview of the tools and techniques available for testing and debugging ASP.NET Core 6 and Angular applications.

TOPICS

- Introduction to Testing and Debugging ASP.NET Core 6 and Angular Applications
- Setting Up Unit Tests for ASP.NET Core 6 and Angular Applications
- Writing Unit Tests for ASP.NET Core 6 and Angular Applications
- Debugging ASP.NET Core 6 and Angular Applications
- Automated Testing with Selenium and Protractor
- End-to-End Testing with Cypress
- Performance Testing with JMeter
- Troubleshooting and Debugging Tips for ASP.NET Core 6 and Angular Applications
- Best Practices for Testing and Debugging ASP.NET Core 6 and Angular Applications

Advanced Topics in ASP.NET Core 6 and Angular Development

Module 10 of the Full Stack ASP.NET Core 6 Development with Angular course covers advanced topics in ASP.NET Core 6 and Angular development. It covers topics such as authentication and authorization, advanced routing, advanced data access, and advanced Angular components. It also covers topics such as deploying to Azure, using Azure DevOps, and using Azure App Services.

TOPICS

- Building a Secure Authentication System with ASP.NET Core 6 and Angular
- Creating a Reactive User Interface with ASP.NET Core 6 and Angular
- Implementing Advanced Data Access with Entity Framework Core 6 and Angular
- Developing Cross-Platform Mobile Apps with ASP.NET Core 6 and Angular
- Creating a Real-Time Web Application with ASP.NET Core 6 and Angular
- Integrating Third-Party APIs with ASP.NET Core 6 and Angular
- Building a Serverless Application with ASP.NET Core 6 and Angular
- Creating a Progressive Web App with ASP.NET Core 6 and Angular
- Optimizing Performance with ASP.NET Core 6 and Angular
- Deploying an ASP.NET Core 6 and Angular Application to the Cloud

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

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