

Full Stack ASP.NET Core 6 Development with React

Course outline

Module 1: 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 React. 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 React, including components, props, and state. Finally, it covers the basics of setting up a development environment and deploying an ASP.NET Core 6 application.

Lessons

- Overview of ASPNET Core 6
- Setting up the Development Environment
- Working with Controllers and Views
- Working with Models and Data
- Working with React Components
- Integrating React with ASPNET Core 6
- Working with Services and Dependency Injection
- Working with Authentication and Authorization
- Working with Configuration and Logging
- Deploying ASPNET Core 6 Applications

After completing this module, students will be able to:

- Understand the fundamentals of ASP.NET Core 6 and its components
- Create a basic ASP.NET Core 6 application with React
- Utilize the ASP.NET Core 6 framework to build a web application
- Implement authentication and authorization in an ASP.NET Core 6 application with React

Module 2: Building a RESTful API with ASP.NET Core 6

Module 2 of the Full Stack ASP.NET Core 6 Development with React course focuses on building a RESTful API with ASP.NET Core 6. This module covers topics such as setting up the project, creating models and controllers, and using Entity Framework Core to interact with a database. Additionally, students will learn how to use Swagger to document their API and how to secure their API with authentication and authorization.

Lessons

- Introduction to ASP.NET Core 6 and RESTful APIs
- Setting up the ASP.NET Core 6 Project
- Designing the API Endpoints
- Implementing the API Endpoints
- Testing the API Endpoints
- Securing the API with Authentication and Authorization
- Deploying the API to Production
- Consuming the API with React Components
- Optimizing the API Performance
- Troubleshooting and Debugging the API

After completing this module, students will be able to:

- Understand the fundamentals of building a RESTful API with ASP.NET Core 6
- Develop a secure and robust API using ASP.NET Core 6
- Utilize the latest features of ASP.NET Core 6 to create a scalable and maintainable API
- Integrate React with ASP.NET Core 6 to create a modern web application

Module 3: Working with Entity Framework Core 6

Module 3 of the Full Stack ASP.NET Core 6 Development with React 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 a secure and efficient data access layer for their applications.

Lessons

- Introduction to Entity Framework Core 6
- Configuring Entity Framework Core 6
- Working with Database Contexts
- Querying Data with LINQ
- Creating and Updating Data
- Working with Relationships
- Advanced Entity Framework Core 6 Features
- Performance Tuning with Entity Framework Core 6
- Deploying Entity Framework Core 6 Applications
- Troubleshooting Entity Framework Core 6 Issues

After completing this module, students will be able to:

- Understand the fundamentals of Entity Framework Core 6 and how to use it to create and manage data models.
- Implement Entity Framework Core 6 in an ASP.NET Core 6 application.
- Utilize Entity Framework Core 6 to query and manipulate data in a database.

- Create and manage database migrations using Entity Framework Core 6.

Module 4: Building a React Front-End with ASP.NET Core 6

Module 4 of the Full Stack ASP.NET Core 6 Development with React course focuses on building a React front-end with ASP.NET Core 6. This module covers topics such as setting up a React project, creating components, using props and state, and integrating with ASP.NET Core 6. Additionally, students will learn how to use React Router and Redux to create a complete web application.

Lessons

- Setting up the React Project
- Working with Components
- Using Props and State
- Working with Forms and Events
- Integrating with ASPNET Core 6
- Working with APIs
- Implementing Authentication and Authorization
- Deploying the React Front-End
- Optimizing Performance
- Troubleshooting and Debugging

After completing this module, students will be able to:

- Understand the fundamentals of React and how to use it to create a dynamic user interface.
- Utilize the ASP.NET Core 6 framework to create a back-end API for the React front-end.
- Implement authentication and authorization using ASP.NET Core Identity.
- Deploy the full-stack application to a cloud hosting provider.

Module 5: Authentication and Authorization with ASP.NET Core 6

Module 5 of the Full Stack ASP.NET Core 6 Development with React course covers authentication and authorization with ASP.NET Core 6. It covers topics such as setting up authentication, using IdentityServer4, and implementing authorization policies. It also covers how to secure APIs and how to use external authentication providers such as Google and Facebook.

Lessons

- Introduction to Authentication and Authorization with ASPNET Core 6
- Setting up Authentication and Authorization with ASPNET Core 6
- Implementing Role-Based Authorization with ASPNET Core 6
- Securing APIs with Authentication and Authorization in ASPNET Core 6
- Working with Claims-Based Authentication in ASPNET Core 6
- Integrating Third-Party Authentication Providers with ASPNET Core 6
- Troubleshooting Authentication and Authorization Issues in ASPNET Core 6
- Best Practices for Authentication and Authorization with ASPNET Core 6

After completing this module, students will be able to:

- Understand the concepts of authentication and authorization in ASP.NET Core 6.
- Implement authentication and authorization using ASP.NET Core 6 Identity.
- Create custom authorization policies and roles.
- Secure ASP.NET Core 6 applications using authentication and authorization.

Module 6: Deploying an ASP.NET Core 6 Application

Module 6 of the Full Stack ASP.NET Core 6 Development with React course covers the process of deploying an ASP.NET Core 6 application. This module will teach students how to deploy their application to a web server, configure the server, and troubleshoot any issues that may arise. Additionally, students will learn how to use Azure DevOps to automate the deployment process.

Lessons

- Preparing the Application for Deployment
- Configuring the Application for Deployment
- Deploying the Application to a Web Server
- Configuring the Web Server for the Application
- Troubleshooting Deployment Issues
- Automating Deployment with Continuous Integration
- Securing the Application for Production
- Monitoring and Logging in Production
- Updating the Application in Production

After completing this module, students will be able to:

- Understand the fundamentals of deploying an ASP.NET Core 6 application to a production environment.
- Utilize the Azure App Service to deploy an ASP.NET Core 6 application.
- Configure an ASP.NET Core 6 application for deployment to a production environment.
- Troubleshoot and debug any issues that arise during the deployment process.

Module 7: Working with Azure Services

Module 7 of the Full Stack ASP.NET Core 6 Development with React course covers working with Azure Services. Students will learn how to use Azure services such as Azure App Service, Azure Storage, Azure Cosmos DB, and Azure Functions to build and deploy their applications. They will also learn how to use Azure DevOps to manage their application's lifecycle.

Lessons

- Introduction to Azure Services
- Setting up an Azure Account
- Deploying an ASPNET Core 6 Application to Azure
- Configuring Azure Storage for React Applications

- Working with Azure App Services
- Integrating Azure Active Directory with React Applications
- Working with Azure Cognitive Services
- Using Azure Functions for Serverless Computing
- Working with Azure DevOps for Continuous Integration and Delivery
- Monitoring and Troubleshooting Azure Applications

After completing this module, students will be able to:

- Understand the fundamentals of Azure services and how to use them in a .NET Core application.
- Implement authentication and authorization using Azure Active Directory.
- Create and deploy a web application to Azure App Service.
- Utilize Azure Storage to store and retrieve data from the cloud.

Module 8: Working with Docker and Kubernetes

Module 8 of the Full Stack ASP.NET Core 6 Development with React course covers the fundamentals of working with Docker and Kubernetes. Students will learn how to create and deploy Docker containers, as well as how to use Kubernetes to manage and scale their applications. Additionally, students will learn how to use Docker Compose to orchestrate multiple containers and how to use Kubernetes to deploy and manage applications in the cloud.

Lessons

- Introduction to Docker and Kubernetes
- Setting up a Docker Container
- Working with Kubernetes Clusters
- Deploying ASPNET Core Applications with Docker and Kubernetes
- Managing Containers with Kubernetes
- Scaling Applications with Kubernetes
- Integrating React with Docker and Kubernetes
- Troubleshooting Docker and Kubernetes Issues
- Security Best Practices for Docker and Kubernetes
- Advanced Topics in Docker and Kubernetes

After completing this module, students will be able to:

- Understand the fundamentals of Docker and Kubernetes and how they can be used to deploy and manage applications.
- Create and manage Docker images and containers.
- Deploy and manage applications using Kubernetes.
- Utilize Kubernetes to scale applications and manage resources.

Module 9: Testing and Debugging ASP.NET Core 6 Applications

Module 9 of the Full Stack ASP.NET Core 6 Development with React course covers the fundamentals of

testing and debugging ASP.NET Core 6 applications. Students will learn how to use the Visual Studio debugger, create unit tests, and use the xUnit testing framework. Additionally, they will learn how to use the Moq library to mock objects and use the Postman tool to test API endpoints.

Lessons

- Introduction to Testing and Debugging ASPNET Core 6 Applications
- Unit Testing with xUnit
- Integration Testing with Selenium
- Debugging ASPNET Core 6 Applications
- Troubleshooting Common ASPNET Core 6 Issues
- Performance Testing with Visual Studio
- Automated Testing with Continuous Integration
- Best Practices for Testing and Debugging ASPNET Core 6 Applications

After completing this module, students will be able to:

- Understand the fundamentals of debugging and testing ASP.NET Core 6 applications.
- Utilize the debugging tools available in Visual Studio to identify and fix errors in ASP.NET Core 6 applications.
- Implement unit tests to ensure the quality of ASP.NET Core 6 applications.
- Utilize the debugging and testing tools available in ASP.NET Core 6 to identify and fix errors in applications.

Module 10: Advanced Topics in ASP.NET Core 6 Development

Module 10 of the Full Stack ASP.NET Core 6 Development with React course covers advanced topics in ASP.NET Core 6 development. It covers topics such as authentication and authorization, working with Entity Framework Core, and deploying ASP.NET Core applications. It also covers advanced topics such as using SignalR, creating custom middleware, and using dependency injection. This module provides a comprehensive overview of the advanced features of ASP.NET Core 6 and how to use them in your applications.

Lessons

- Advanced Routing and Middleware in ASPNET Core 6
- Advanced Security and Authentication in ASPNET Core 6
- Advanced Data Access with Entity Framework Core 6
- Advanced Caching and Performance Optimization in ASPNET Core 6
- Advanced Dependency Injection and Service Registration in ASPNET Core 6
- Advanced Configuration and Settings in ASPNET Core 6
- Advanced Logging and Error Handling in ASPNET Core 6
- Advanced Deployment Strategies for ASPNET Core 6
- Advanced Testing Strategies for ASPNET Core 6
- Advanced Integration with React in ASPNET Core 6

After completing this module, students will be able to:

- Develop advanced web applications using ASP.NET Core 6 and React.
- Utilize the latest features of ASP.NET Core 6 to create secure and scalable web applications.
- Implement authentication and authorization using ASP.NET Core 6 Identity.
- Integrate React components into ASP.NET Core 6 applications.