

Introduction to Asp.net core Web API using .NET 7

Use C# and Build an ASP.NET Core Web API with Entity Framework Core, SQL Server, Authentication & Authorization | .NET 7

Duration: 5 Days

Prerequisites:

- Hello world experience in ASPNET Core
- Beginner knowledge about APIs and its usage
- 3-6 months experience working with ASPNET Core and C#

What you'll learn

- Learn, Understand and Create ASPNET Core Web API From Scratch using .NET 7
- Building scalable REST APIs from scratch using ASPNET CORE and C#
- Learn and Apply Entity Framework Core to perform CRUD operations on a SQL Server database
- Use Entity Framework Core in a code first approach
- Understand and Apply the Repository Pattern in ASPNET Core Web API
- Use Domain Driven Design (DDD) approach to create domain first models and project
- Understand RESTful Principles and Apply them in ASPNET Core Web API
- Understand Best practices and Clean Coding Techniques, Know Shortcuts and Tips and Tricks
- Add Validations In ASPNET CORE Web API
- Use popular third-party libraries such as AUTOMAPPER
- Understand and Use Interfaces, Inheritance, Dependency Injection etc
- Understand and Implement Authentication and Role based Authorization to Authenticate and Authorize the ASPNET Core Database
- Create JWT tokens to Authenticate API
- Test ASPNET Core Web API using Swagger and Postman
- Use ASPNET Core Identity in ASPNET Core Web API to Authenticate and add Role based Authorization
- Learn Filtering, Sorting and Pagination in ASPNET Core Web API

Course content

Module 0: Optional

Introduction to building ASP.NET Core Web APIs using .NET

- Introduction to building ASP.NET Core Web APIs using .NET
- Setting up development environment
- Download and Install Visual Studio 2022
- Install .NET SDK and .NET Runtime
- Install SQL Server Management Studio

Module 1

Create New ASP.NET Core Web API & Domain Models

- Introduction
- Create New ASPNET Core Web API
- Understand ASP.NET Core Web API and File Structure
- Understand REST and HTTP Verbs
- Routing In ASP.NET Core Web API
- Running and Calling ASP.NET Core Web API
- Understanding Our Domain (Domain Driven Development) 
- Create Domain Models
- Adding Entity Framework Core Packages
- Creating the DbContext Class
- Adding connectionString to The Database in Appsettings.Json
- Understanding Dependency Injection & Injecting DbContext into Our Application
- Run EF Core Migrations

Module 2: Test ASPNET Core Web API using Swagger and Postman

- Setting up Swagger in ASP.NET Core
- Customizing Swagger UI
- Using Swagger with Postman
- Generating client code from Swagger
- API versioning with Swagger

- Authentication and authorization with Swagger

Module 3: Create New Controller - Regions Controller and CRUD Operations / Action Methods

- Introduction
- Create New Controller (Regions Controller)
- Get All Regions Action Method
- Get Region By Id Action Method
- DTOs and Domain Models
- Change Methods To Use DTOs
- Create Region Action Method
- Update Region Action Method
- Delete Region Action Method

Module 4: Asynchronous Programming, Repository Pattern and Automapper

- Introduction
- Asynchronous Programming and Implement Async Await In our Methods
- Repository Pattern and Benefits
- Implement Repository Pattern in ASP.NET Core Web APIs
- Add Other Methods to Repository
- Automapper Introduction
- Implement Automapper

Module 5: Functionality For Walks - Create, Read, Update, Delete For Walks

- Introduction
- Seeding Data Using Entity Framework Core
- Creating Walks Controller and Create New Walk Action Method
- Get All Walks Action Method
- Navigation Properties in Entity Framework Core
- Get Walk by Id Action Method
- Update Walk Action Method
- Delete Walk Action Method

Module 6: Validations in ASP.NET Core Web API

- Introduction To Model Validations
- Adding Model Validations to Endpoints
- Custom Validate Model Attribute

Module 7: Filtering, Sorting, Pagination in ASP.NET Core Web API

- Introduction
- Seeding Data in SQL Server
- Filtering
- Sorting
- Pagination

Module 8: Securing our ASP.NET Core API - Authentication and Authorization - JWT Tokens

- Introduction
- Authentication Flow
- Setting Up Authentication - Install Nuget Packages
- Testing Authentication Without JWT Token
- Setting Up Identity DbContext
- Seeding Roles
- Run EF Core Migrations to Create Identity Database
- Setting Up Identity
- Create Auth Controller and Register Action Method
- Create Login Action Method
- Create JWT Token in ASP.NET Core Web API
- Inject TokenRepository and Create Token
- Role Based Authorization
- Add Authorization to Swagger

Module 9: Image Upload in ASP.NET Core Web API

- Introduction
- Create Domain Model for Image Upload
- DbContext changes and Migrations for Image Upload
- New Controller and Action Method for Image Upload
- Image Upload Repository Implementaion
- Serving Static Files Through ASPNET Core Web API

Module 10: Advanced Functionality in ASP.NET Core Web APIs

- Introduction To Logging
- Add Logging to Console in ASP.NET Core Web API
- Add Logging to Text File in ASP.NET Core Web APIs

Module 11: Deployment

- Publishing to IIS
- Integration to GitHub.