



FULL STACK ACADEMY

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Entity Framework



ASP.NET CORE

1. C#
2. SQL Server
3. ADO.NET & Entity Framework
4. ASP.NET CORE
5. ASP.NET CORE MVC
6. ASP.NET CORE WEB API

C#



Computer Fundamentals: 1. What is Computer and How it Works? 2. What is OS? 3. Purpose of OS and Different types of OS 4. Thread in OS 5. What is Process? 6. Process Vs Thread

.NET Fundamentals : 1. What is a compiler? 2. How .NET Core code executes? 3. What is Core CLR 4. Memory Management 5. Garbage Collector 6. How .NET Core code compiles?

.NET Basics: 1. Variables and Datatypes 2. Operators and Loops 3. Control flow statements (Selection, Iteration and Jump) 4. String in C# 5. Static Keyword in C# 6. Static vs Non-Static Members in C# 7. Const & Readonly in C# 8. Boxing and Unboxing 9. Functions in C# 10. Stack and Heap Memory 11. .NET Collections a) Array b) ArrayList c) Stack d) Queue e) Dictionary f) Hashtable g) Generic collections

OOPS: 1. Class and Object in C#? 2. Constructors in C# 3. Type of Constructors 4. Abstraction 5. Encapsulation 6. Polymorphism 7. Inheritance 8. Types of Inheritance 9. Access Modifiers 10. Abstract class in C# 11. Partial Class in C# 12. Static Class in C# 13. Introduction to Interfaces 14. Difference between Interface and Abstract class 15. Indexers 16. Enums

.NET Advanced: 1. Events and Delegates 2. Generics and Lambda Expressions 3. Multi-Threading in C# 4. Asynchronous Programming in C# 5. Parallel Programming in C#

Exception Handling 1. Try, Catch and Finally block. 2. Multiple catch blocks 3. Custom Exceptions 4. Exception Handling abuse in C#

File Handling 1. File and FileStream Classes in C# 2. StreamReader and StreamWriter Classes in C# 3. BinaryReader and BinaryWriter Classes in C# 4. FileInfo class in C# 5. File Handling in C#

Data Annotation Validation 1. Data Annotations in ASP.NET Core MVC 2. Model Validations in ASP.NET Core MVC 3. Data Annotation Attributes in ASP.NET Core MVC 4. Custom Data Annotation in ASP.NET Core MVC 5. Custom Data Annotation

SQL SERVER



Database and Tables Creation: 1. How to Create Database 2. How to Create Tables.

DML Operations on Tables: 1. The Different ways of Inserting Data into tables 2. How to Update the table values 3. How to Delete the records from table 4. How to Drop the table 5. Difference between Truncate and Delete command. 6. How to Get the structure of the table 7. How to take backup of the table.

SQL Constraints: 1. What is SQL Constraints 2. Primary Key 3. Unique Key 4. Not Null 5. Default 6. Check Constraint 7. Foreign Key Constraint 8. How to Create Composite Primary Key

Group By: 1. Group By with Having clause 2. When to Use Group by Having 3. Difference between Having and where clause 4. How to Use Case Statement

Clauses: 1. What are Clauses in SQL? 2. What is the Order of Execution of Clauses?

Joins and Unions: 1. Different types of Joins with examples 2. Explanation about Union and UNION All with examples 3. When to use Union with real-time scenario

Schema: 1. How to Create Schema 2. How to Create a table for a particular schema 3. How to Transfer table from one schema to other

Adding, Modifying and Drop a column on the existing table: 1. How to Alter a column by using SQL query 2. How to Add, Drop a column by using SQL query 3. How to add a Primary Key constraint on an Existing table

Identity Column: 1. How to Impose Identity values in a table 2. How to get the last inserted Identity seed value in a database 3. @@Identity, Scope_Identity(), Ident_Current()

Stored Procedures: 1. How to create stored procedures without parameters 2. How to create stored procedures with parameters 3. How to create stored procedures with default parameters 4. How to create stored procedures with output or Return parameters.

ADO.NET & ENTITY FRAMEWORK



Basics : 1. Database First Approach 2. Code First Approach 3. DbContext & DbSet 4. Data Model 5. Querying using Linq-to-Entities 6. Change Tracking 7. SaveChanges 8. DbContext Pooling 9. One to One Mapping 10. One to Many Mapping 11. Many to Many Mapping 12. Batch INSERT, UPDATE, and DELETE operations. 13. Concurrency 14. Transactions 15. Caching 16. Built-in Conventions 17. Configurations



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ASP.NET CORE

.NET
Core

ASP.NET Core Basics: 1. Overview of Microsoft Web Technologies 2. Introduction to ASP.NET Core 3. NET Core Environment Setup 4. Download and Install .NET Core SDK 5. Download and Install Postman 6. Creating ASP.NET Core Web Application using .NET 8 7. NET Core Project File 8. NET Core Main Method 9. NET Core InProcess Hosting 10. Kestrel Web Server in ASP.NET Core 11. NET Core OutOfProcess Hosting 12. NET Core LaunchSettings.json File 13. NET Core AppSettings.json file 14. NET Core Middleware Components 15. NET Core Request Processing Pipeline 16. Web Root (wwwroot) Folder in ASP.NET Core 17. Static Files Middleware in ASP.NET Core 18. Configuring Default Page in ASP.NET Core 19. Developer Exception Page Middleware in ASP.NET Core 20. NET Core Command Line Interface 21. Project Templates in ASP.NET Core Application

ASP.NET CORE MVC



Fundamentals: 1. What is MVC? 2. How Does MVC Design Pattern Work in ASP.NET Core? 3. What is ASP.NET Core MVC? 4. Features of ASP.NET Core MVC 5. When to Choose ASP.NET MVC and When to Choose ASP.NET Core MVC? 6. ASP.NET Core Dependency Injection 7. Singleton vs Scoped vs Transient Services in ASP.NET Core 8. ViewData in ASP.NET Core MVC 9. ViewBag in ASP.NET Core MVC 10. Strongly Typed View in ASP.NET Core MVC 11. ViewModel in ASP.NET Core MVC 12. TempData in ASP.NET Core MVC

Routing: 1. Routing in ASP.NET Core MVC 2. Custom Routing in ASP.NET Core MVC 3. Attribute Routing in ASP.NET Core MVC 4. Attribute Routing vs Conventional Routing in ASP.NET Core

Views: 1. Layout View in ASP.NET Core MVC 2. Sections in Layout View in ASP.NET Core MVC 3. ViewStart in ASP.NET Core MVC 4. ViewImports in ASP.NET Core MVC 5. Partial Views in ASP.NET Core MVC 6. Different Ways to Render Partial View in ASP.NET Core MVC 7. View Components in ASP.NET Core MVC 8. Razor View Engine and Razor Syntax in ASP.NET Core 9. How to Install Bootstrap in ASP.NET Core MVC 10. How to Use Bootstrap in ASP.NET Core MVC

HTML Helpers: 1. HTML Helpers in ASP.NET Core MVC 2. TextBox HTML Helper in ASP.NET Core MVC 3. Textarea HTML Helper in ASP.NET Core MVC 4. DropDownList HTML Helper in ASP.NET Core MVC 5. RadioButton HTML Helper in ASP.NET Core MVC 6. Check Box HTML Helper in ASP.NET Core MVC 7. ListBox HTML Helper in ASP.NET Core MVC 8. Editor HTML Helper in ASP.NET Core MVC 9. Password HTML Helper in ASP.NET Core MVC 10. Hidden HTML Helper in ASP.NET Core MVC 11. Custom HTML Helper in ASP.NET Core MVC 12. Real-Time Examples of Custom HTML Helpers in ASP.NET Core MVC 13. Creating Form Using HTML Helpers in ASP.NET Core MVC 14. Different Ways to Generate Links in ASP.NET Core MVC

ASP.NET CORE WEB API



Introduction: ASP.NET Core Web API 1. Introduction to ASP.NET Core Web API 2. HTTP (HyperText Transport Protocol) 3. Environment Setup for ASP.NET Core Web API Development 4. Creating ASP.NET Core Web API Project using .NET Core CLI 5. How to Test ASP.NET Core Web API Using Postman 6. Creating ASP.NET Core Web API Project in Visual Studio 7. Default ASP.NET Core Web API Files and Folders 8. Swagger API in ASP.NET Core Web API 9. Controllers in ASP.NET Core Web API 10. Models in ASP.NET Core Web API. **Middleware:** 1. Middleware in ASP.NET Core Web API 2. Run, Use, and Next Method in ASP.NET Core 3. Map Method in ASP.NET Core 4. Custom Middleware in ASP.NET Core. **Routing:** 1. Routing in ASP.NET Core Web API 2. Route Data and Query Strings in Routing 3. Multiple URLs for a Single Resource using Routing. 4. Token Replacement in ASP.NET Core Routing 5. Route Prefix in ASP.NET Core Web API Routing 6. Route Constraints in ASP.NET Core Web API. **Status Codes:** 1. Controller Action Return Types in ASP.NET Core Web API 2. HTTP Status Codes in ASP.NET Core Web API. **Automapper:** 1. How to Use AutoMapper in ASP.NET Core Web API 2. Complex Mapping in ASP.NET Core Web API 3. Mapping Complex Type to Primitive Type using AutoMapper 4. Reverse Mapping in ASP.NET Core Web API 5. Pre-Condition Mapping in ASP.NET Core Web API 6. Post-Condition Mapping in ASP.NET Core Web API 7. Conditional Mapping in ASP.NET Core Web API 8. Condition, PreCondition, and PostCondition 9. Ignore Property Mapping using AutoMapper 10. AutoMapper Null Substitution 11. Fixed and Dynamic Values in Destination Property using AutoMapper. **HTTP Methods in ASP.NET Core Web API:** 1. HTTP GET Method in ASP.NET Core Web API 2. HTTP Post Method in ASP.NET Core Web API 3. HTTP PUT Method in ASP.NET Core Web API 4. HTTP PATCH Method in ASP.NET Core Web API 5. HTTP DELETE Method in ASP.NET Core Web API 6. CRUD Operations in ASP.NET Core Web API using EF Core 7. Repository Design Pattern in ASP.NET Core Web API with Entity Framework Core 8. Generic Repository Pattern in ASP.NET Core Web API with Entity Framework Core 9. Using Both Generic and Non-Generic Repository Patterns in ASP.NET Core Web API 10. Unit of Work in Repository Pattern in ASP.NET Core Web API using EF Core 11. ASP.NET Core Web API with EF Core DB First Approach. **Web API Logging and Caching:** 1. Introduction to Logging 2. The What, Why, and How of Logging 3. Setting up Serilog in Web API 4. Logging to a file using Serilog 5. Adding a new Log table using EFCore migrations 6. Logging to an SQL Table using Serilog 7. Retrieving all logs from the database 8. Caching in ASP.NET Core 9. In-Memory Caching 10. Distributed Caching. **Validations in ASP.NET Core Web API:** 1. Introduction To Validations 2. Data Annotation Validations 3. Fluent Validations 4. Security in ASP.NET Core Web API 5. Authentication and Authorization in ASP.NET Core Web API 6. ASP.NET Core Web API Basic Authentication 7. ASP.NET Core Web API Service with Basic Authentication 8. Role-Based Basic Authentication in ASP.NET Core Web API 9. Token-Based Authentication in ASP.NET Core Web API 10. Client Validation Using Basic Authentication in ASP.NET Core Web API 11. Refresh Token in ASP.NET Core Web API 12. ASP.NET Core Identity in ASP.NET Core Web API 13. Implement JWT Authentication with ASP.NET Core Identity. **Web API Versioning:** 1. Setting up Versioning in .NET Web API 2. Query String-Based Versioning in Web API 3. URL Based Versioning 4. HTTP Header-Based Versioning 5. HTTP Media Type-Based Versioning. **Advanced Concepts:** 1. Global Error Handling 2. Implement Caching 3. Implement Server-Side Sorting 4. Implement Server-Side Filtering 5. Implement Server-Side Paging 6. Microservices using ASP.NET Core Web API 7. Throttling and Rate Limiting in ASP.NET Core Web API 8. Minimal API in ASP.NET Core 9. AutoMapper in ASP.NET Core Web API 10. Unit Testing in ASP.NET Core Web API using MSTest 11. Unit Testing using xUnit. **Authentication/Authorization. ASP.NET Identity. WCF services. Windows Services. Team Foundation Server (TFS). Git Versioning.**