



## **Course Title: EF Core 8: Entity Framework Core for .NET Developers**

### Course Overview:

This course covers the fundamentals of Entity Framework Core 8, a popular Object-Relational Mapping (ORM) framework for .NET developers. Students will learn how to use EF Core 8 to interact with databases, perform CRUD (Create, Read, Update, Delete) operations, and leverage advanced features such as query filtering, caching, and concurrency control.

Duration: 40 hours

### Prerequisites:

\*.NET development experience (C# or F#)

Basic understanding of database concepts and SQL

### Target Audience:

\*.NET developers who want to learn EF Core 8

- Database developers who want to learn about EF Core 8

- Architects and technical leads who want to understand EF Core 8 capabilities and limitations

### Course Outline:

#### Module 1: Introduction to EF Core 8

- Overview of Entity Framework Core 8

- History and evolution of EF Core

- Key features and benefits of EF Core 8

- Setting up a new EF Core 8 project

#### Module 2: Entity Modeling

- Defining entities and their relationships

- Configuring entity properties and validation

- Using inheritance and polymorphism in entity models



- Entity model conventions and customization

### Module 3: Database Connections and Migrations

- Configuring database connections and providers
- Understanding database migrations and schema management
- Creating and applying migrations
- Managing database schema changes

### Module 4: CRUD Operations

- Performing CRUD operations using EF Core 8
- Using DbContext and DbSet classes
- Understanding change tracking and state management
- Handling concurrency conflicts and optimistic concurrency

### Module 5: Querying and Filtering

- Using LINQ to query data with EF Core 8
- Filtering data using Where and Include methods
- Using query parameters and caching
- Advanced querying techniques (e.g., grouping, aggregating)

### Module 6: Best Practices and Troubleshooting

- Following best practices for EF Core 8 development
- Troubleshooting common EF Core 8 issues
- Using EF Core 8 tools and diagnostics
- Debugging and logging EF Core 8 applications