olsen
software ltd

📞 +44 7989 401397

✉ info@olsensoft.com

C#12 Development   (5 days)

Course overview

C#12 is the latest evolution of Microsoft's primary programming language. This course covers the new language features introduced in C#12, plus the key features from earlier versions of the language. The course is based on .NET 8 (previously known as .NET Core) and shows how to create contemporary solutions using REST, Entity Framework, asynchronous techniques, and so on.

What you'll learn

- Essential C# syntax
- Implementing object-oriented designs in C#
- Using common .NET APIs
- Using LINQ and EF
- Introduction to asynchronous programming
- Creating REST services using Web API

Prerequisites

- At least 6 months programming experience
- Familiarity with OO concepts would be an advantage

Course details

- Introduction to .NET: Overview of .NET; Creating a .NET App at the Command Line; Creating a .NET App by using Visual Studio; Understanding Top-Level Statements
- Core C# Language Features: Language Essentials; Operators; Conditional Statements; Loops
- Control Flow Techniques: Conditional Logic Techniques; Loop Techniques
- Defining Types: .NET Language Essentials; Classes and Objects; Arrays; Value Types
- Defining Nullable Types: Nullable Reference Types; Nullable Value Types; Null Coalescing Operators
- Defining Members: A Closer Look at Parameters; Additional Function Techniques; Construction and Finalization; Properties; Required members
- Going Further with Types and Members: Static Members; Operators; Partial Types; Partial Methods
- Inheritance: Introduction to Inheritance; Additional Inheritance Techniques
- Interfaces: Introduction to Interfaces; Object Disposal; Additional Interface Techniques

- **Delegates, Lambdas, and Events:** Delegates; Lambdas; Standard Delegate Types; Events

- **Using .NET APIs:** Exception Handling; Collections; Regular Expressions

- **Additional C# Language Features:** Initialization; Primary Constructors; Anonymous Types; Extension Methods

- **LINQ:** Introduction to LINQ; Using LINQ with Arrays; Using LINQ with Collections; LINQ Techniques

- **ADO.NET Entity Framework:** Introduction to the Entity Framework; Understanding the Sample Database; Defining an EF Data Model; Using EF to Access Data

- **Tuples and Records:** Tuples; Improved Pattern Matching; Record Types

- **Parallelization and Asynchronous Methods:** Parallelization; Async Methods

- **Creating REST Services:** Overview of REST Services; Creating REST Services in .NET; Implementing Industrial-Strength Actions