Course duration

- 2 days

Course Benefits

- Acquire a working knowledge of C# programming
- Learn about important interactions between C# and the .NET Framework
- Learn how to implement simple GUI programs using Windows Forms
- Gain a working knowledge of important newer features in C#

Course Outline

1. Introduction to NET
    1. What is .NET?
    2. .NET Framework and .NET Core
    3. Application Models
    4. Managed Code
    5. Visual Studio 2019
    6. C# Console and GUI Programs
2. C# Overview for the Sophisticated Programmer
    1. First C# Console Application
    2. Namespaces
    3. Data Types
    4. Conversions
    5. Control Structures
    6. Subroutines and Functions
    7. Parameter Passing
    8. Strings
    9. Arrays
    10. Implicitly Typed Variables
    11. Console I/O
    12. Formatting
    13. Exception Handling
3. Object-Oriented Programming in C#
    1. Classes
    2. Access Control
    3. Methods and Properties
    4. Asymmetric Accessor Accessibility
    5. Static Data and Methods
    6. Constant and Readonly Fields
    7. Auto-Implemented Properties

8. Inheritance
9. Overriding Methods
10. Abstract Classes
11. Sealed Classes
12. Access Control and Assemblies
4. C# and the .NET Framework
    1. Components
    2. Interfaces
    3. System.Object
    4. .NET and COM
    5. Collections
    6. IEnumerable and IEnumerator
    7. Copy Semantics in C#
    8. Generic Types
    9. Type-Safe Collections
    10. Object Initializers
    11. Collection Initializers
    12. Anonymous Types
    13. Attributes
5. Delegates and Events
    1. Delegates
    2. Anonymous Methods
    3. Lambda Expressions
    4. Random Number Generation
    5. Events
6. Introduction to Windows Forms
    1. Creating Windows Applications Using Visual Studio 2019
    2. Partial Classes
    3. Buttons, Labels and Textboxes
    4. Handling Events
    5. Listbox Controls
7. Newer Features in C#

Class Materials

Each student will receive a comprehensive set of materials, including course notes and all the class examples.

Class Prerequisites

Experience in the following *is required* for this C# class:

- Strong Application Development Experience

Experience in the following *would be useful* for this C# class:

- Object-Oriented Programming Experience