

## C# Development for .NET 4.0

(5 days hands-on)

If you have used any curly-bracket language (C, C++, Java) and want to program in .NET, then C# is the language for you. C# has undergone several enhancements over the years, and C# 2010 offers some great productivity features. This course provides comprehensive and exhaustive coverage of the language, including LINQ, extension methods, lambdas, and dynamic variables.

### Contents:

- **Introduction to C# and .NET:** .NET Framework building blocks; Hello world in C#; Using Visual Studio 2010; Namespaces and assemblies
- **Core C# Programming Constructs:** Variables, operators, and statements; Reference types vs. value types; Conversions; Nullable types; Using the Console and String classes; Flow-of-control; Using implicit types
- **More C# Programming Constructs:** Defining methods; Method overloading; Arrays; Defining and using structures
- **Defining and Using Classes:** Defining classes; Defining instance variables and instance methods; Defining constructors and finalizers; Defining properties; Creating and disposing objects; Defining constants and read-only fields; Static members; Partial classes; Partial methods
- **Inheritance and Polymorphism:** Defining base classes and derived classes; Overriding methods; Abstract classes; Interfaces
- **Exception Handling:** Defining Try/Catch/Finally blocks; Throwing exceptions; Defining new exception classes; Defining Using blocks
- **Creating Collections of Objects:** Overview of generics; Using List collections; Using Dictionary collections
- **Delegates, Events, and Lambdas:** Overview; Defining simple delegates; Defining and handling events; Using lambda expressions
- **Additional Language Features:** Operator overloading; Extension methods; Object initializers; Anonymous types
- **Introduction to LINQ:** The role of LINQ; Simple LINQ query expressions; Using LINQ with collections; LINQ query operators
- **File Handling:** Using the DriveInfo, DirectoryInfo, and FileInfo classes; Using the Directory and File classes; Using stream readers and writers
- **Introduction to Data Access:** .NET data providers; Connecting to a database; Executing a query; Result sets; DataSets
- **ADO.NET Entity Framework:** Introduction to EF; Creating an EF data model; EF queries
- **Introduction to WPF:** Overview of Windows Presentation Foundation; Getting started with XAML; Implementing event handlers
- **Introduction to WCF:** Overview of Windows Communication Foundation; Creating a service; Hosting a service; Creating a client
- **Multithreading:** Invoking methods asynchronously via delegates; Creating threads programmatically; Synchronization; Parallel programming; PLINQ
- **Dynamic Programming:** The dynamic keyword; The Dynamic Language Runtime

### Who Should Attend:

Developers who want to develop solutions for the .NET 4.0 platform using C#.

### Prerequisites:

Experience using any contemporary OO language.