

Course Name : C# MASTERY: BASIC TO INTERMEDIATE SKILLS
Duration : 3 Days (Physical Classroom / Virtual Live Instructor)
Skill Level : Beginner

COURSE DESCRIPTION:

Embark on a comprehensive journey into the realm of C# through our immersive training course designed for individuals at all skill levels. Led by a certified instructor, the course is tailored to accommodate both beginners and those with prior programming experience. Delve into the fundamental principles and progress seamlessly to intermediate levels, as the instructor navigates you through C# essentials, syntax intricacies, data types, and program flow control. The emphasis is on cultivating an in-depth understanding of the language itself, minimizing reliance on external tools.

As the course unfolds, participants will master Object-Oriented Programming (OOP) and explore the advanced features introduced in C# versions 6 and beyond. This hands-on approach ensures that learners gain practical experience, enabling them to confidently write, debug, and comprehend C# code by the program's conclusion. Tailored for a diverse audience, whether starting from scratch or seeking to enhance existing coding skills, the course proves especially advantageous for web developers utilizing frameworks such as Angular, React, Vue, or Node. Elevate your programming proficiency by acquiring a robust foundation in C#, empowering you to excel in the dynamic landscape of modern web development.

WHAT WILL YOU LEARN?

In this course, you'll learn the basics of C# programming from scratch. We'll start with the essential principles of programming, setting the stage for your journey with C#. You'll also explore server-side development in C#, especially using technologies like ASP.NET. By the end of the course, you'll be ready to create dynamic and interactive applications with C#. Whether you're just starting or want to improve your programming skills, this course gives you the knowledge and hands-on experience to confidently navigate the world of C# development.

PREREQUISITE:

Beginners. No programming experience is required.

METHODOLOGY:

This program will be conducted with interactive lectures, PowerPoint presentations, discussions, and practical exercises. This course can be conducted as instructor-led (ILT) or virtual instructor-led training (VILT).

JOB SCOPE:

Upon completion of this course, candidates may pursue the following career paths:

- .NET Developer
- Web Developer
- Backend Developer
- Full-Stack Developer
- Software Engineer
- Game Developer (using Unity)

MODULE 1: INTRODUCTION TO C# AND .NET FRAMEWORK

- Welcome
- C# Overview and Use Cases
- C# Compilation and Place in the Programming World
- Common Language Infrastructure and .NET Framework
- Installing and Using Visual Studio

MODULE 2: C# SYNTAX AND DATA TYPES

- Writing and Running a Simple C# Program
- Variables, Constants, Operators, Expressions, Statements
- Working with Data Types
- Type Conversion, Formatting, and Parsing

MODULE 3: CONTROL FLOW AND METHODS

- Selection Statements and Loops
- Break, Continue, Goto Statements
- Logical and Conditional Operators
- Defining and Calling Methods
- Parameters, Return Values, Overloading, Optional Parameters

MODULE 4: OBJECT ORIENTED PROGRAMMING

- OOP Fundamentals and Advantages
- Classes and Objects
- Fields, Properties, Constructors, Destructors
- Access Modifiers, Static Members, Inheritance, Polymorphism
- Abstract Classes, Interfaces, Object Class

MODULE 5: ARRAYS AND COLLECTIONS

- Arrays and Multidimensional Arrays
- Indexers and Foreach Loops
- Generic Collections and Methods
- Stacks, Queues, Lists, Dictionaries, Sets, LINQ

MODULE 6: EXCEPTION HANDLING AND DEBUGGING

- Exceptions and Handling
- Exception Class and Custom Exceptions
- Debugger, Breakpoints, Debug, Trace Classes

MODULE 7: DELEGATES AND EVENTS

- Delegates
- Anonymous Methods and Lambda Expressions
- Multicast Delegates and Invocation Lists
- Events in C#

MODULE 8: GENERICS AND REFLECTION

- Generics
- Generic Constraints and Variance
- Generic Delegates and Events
- Reflection in C#

MODULE 9: FILE I/O AND SERIALIZATION

- Working with Files and Directories
- Text and Binary File Operations
- Serialization Concepts

MODULE 10: THREADING AND ASYNCHRONOUS PROGRAMMING

- Basics of Threads
- Synchronization and Locking Mechanisms
- Asynchronous Programming

CONCLUSION

- QA
- Useful References and Books
- Feedback