



Course Brochure

C#.NET

Overview

•With the introduction of the .NET framework, Microsoft has provided a very powerful platform for developing distributed applications. To utilize and excel in this new development environment, a programmer must be equipped with the knowledge and skills necessary for success. This is what this course provides: a thorough introduction to three most important tools in the .NET framework and how they are used together to build different types of .NET applications.

Pre-requisites

•No prior .NET experience is required. Some working knowledge of computer programming is essential for this course.

Applications

COURSE CONTENTS

.NET ENTERPRISE ARCHITECTURE 4.0

- ❖ Introduction to the .NET platform
- ❖ Common Language Run Time (CLR)
- ❖ The Common Type Specification (CTS)
- ❖ The Common Language Specifications (CLS)
- ❖ Microsoft Intermediate Language (MSIL)

C#.NET Language Basics

- ❖ Data Types
- ❖ Type Conversion
- ❖ Boxing & Unboxing
- ❖ Conditional Statements
- ❖ Looping
- ❖ Methods in C#
- ❖ Properties
- ❖ Arrays
- ❖ Indexers
- ❖ Structures, Enumerations
- ❖ Strings
- ❖ Collections

Objects Oriented Programming

- ❖ Oops Concepts
- ❖ Encapsulation
- ❖ Inheritance
- ❖ Polymorphism
- ❖ Class and Object
- ❖ Constructors
- ❖ Dynamic types
- ❖ Optional parameters
- ❖ Names & optional arguments
- ❖ Covariant generic type parameters
- ❖ Destructors
- ❖ Method overloading
- ❖ Method overriding
- ❖ Early binding, Late Binding
- ❖ Abstract Classes
- ❖ Abstract Methods
- ❖ Interfaces
- ❖ Multiple Inheritance
- ❖ Generic classes
- ❖ Static classes
- ❖ Static constructors
- ❖ Object initializer

- ❖ Collection Initializer
- ❖ Extension Methods
- ❖ Partial Classes & Methods

Memory Management

- ❖ Garbage Collector
- ❖ Stack and Heap
- ❖ System. GC Class
- ❖ System. Object Class
- ❖ Architecture of Gc
- ❖ Generations

Exception Handling

- ❖ System Defined Exceptions
- ❖ Custom Exceptions
- ❖ Try, Catch, Finally
- ❖ Throwing exceptions

Operator Overloading

- ❖ Unary Operators
- ❖ Binary Operators

GUI Application Development

- ❖ Windows forms and Controls
- ❖ Creating Menus
- ❖ Toolbars, Image List
- ❖ Tree view, List view
- ❖ Notify Icon
- ❖ Error Provider

Data Base Programming (ADO.NET)

- ❖ ADO .NET Introduction
- ❖ Data Providers in .Net
- ❖ Introduction to Managed and Unmanaged Providers
- ❖ Data Readers
- ❖ Dataset and Data Adapters
- ❖ Datagrid View with DML operations sorting and paging etc.

COURSE CONTENTS

- ❖ SQL Datasource, XML Datasource, Object Datasource etc
- ❖ Creating Relations and Transactions,
- ❖ Linq programming

ASSEMBLIES

- ❖ Private Assemblies
- ❖ Shared Assemblies
- ❖ Single file Assemblies
- ❖ Multifile Assemblies
- ❖ Global Assembly Cache (GAG)

Delegates

- ❖ Function Pointers
- ❖ Multi cast delegates

User Controls and Event Handling

- ❖ User Defined Control
- ❖ Inherited Control
- ❖ Inherited forms
- ❖ Event handling

Pointers

- ❖ Value types, Reference types
- ❖ Unsafe Structures and Pointers

Distributed Technologies & .NET Remoting

- ❖ Distributed architecture
- ❖ DCOM, RMI, CORBA
- ❖ Channels (TCP HTTP)
- ❖ Marshal by Value
- ❖ Marshal by Reference
- ❖ Server Activated
- ❖ Client Activated
- ❖ Remoting Architecture

File Handling

- ❖ System .IO namespace
- ❖ File stream
- ❖ Stream Reader
- ❖ Stream writer
- ❖ Fileinfo
- ❖ Directory info

Windows Services

- ❖ Service base class
- ❖ Service Process installer
- ❖ Service Installer
- ❖ Creating a Windows Service
- ❖ Installutil .exe

WPF Programming

- ❖ Shapes
- ❖ Transformation
- ❖ Animation

Multi threading

- ❖ System, threading
- ❖ Thread synchronization
- ❖ Critical sections
- ❖ Thread life cycle

Security in .NET

- ❖ Cryptography
- ❖ Role based security