

C# .Net Technology Training

Duration: 72 Hrs.

DOT.NET Framework Introduction

- The .NET Framework - an Overview
- Framework Components
- Framework Versions
- Types of Applications which can be developed using DOT.NET
- DOT.NET Base Class Library
- DOT.NET Namespaces
- MSIL, Metadata and PE files
- The Common Language Runtime (CLR)
- Managed Code
- Memory Management and Garbage Collection
- Common Type System (CTS)
- Common Language Specification (CLS)
- Types of JIT Compilers
- Security Manager

DOT.NET and Entry Point Method –Main

- Introduction to Project and Solution in Studio
- Entry point method - Main
- Compiling and Building Projects
- Using Command Line Arguments
- Importance of Exit code of an application
- Different valid forms of Main
- Compiling a C# program using command line utility CSC.EXE

C # Language Syntax

- Basics of Data type
- Global, Stack and Heap Memory
- Common Type System
- Reference Type and Value Type
- Data types & Variables Declaration
- Implicit and Explicit Casting
- Checked and Unchecked Blocks
- Casting between other data types
- Boxing and Unboxing
- Enum and Constant

- Operators
- Control Statements
- Working with Arrays
- Working with Methods
- Pass by value and by reference and out parameters
- this and base keyword
- Indexer
- Properties-Read only & Write Only Properties
- Static keyword, static constructor
- Nullable Type
- Object Initializer
- C# Structure
- Access Specifiers
- String Handling

OOPs-Concepts

Encapsulation

- Understanding Encapsulation Concept through an example

Inheritance

- Introduction to Inheritance
- Constructor & Inheritance
- Type Casting of Reference Types
- Static and Dynamic Binding
- Abstract Class

OOPs-Interface & Polymorphism

- Introduction to Polymorphism
- Overview of Interface
- Interface with examples
- Types of Inheritance Collections and Generics
- Introducing Collections
- Benefits of Collection Classes
- Understanding and using commonly used

Collections & Generics

- Advantages of Generics
- How Generics Work at Runtime

- Constraint on Type Parameters
- Generic Methods
- Generic Collections
- Selecting a Collection Class

Assemblies and GAC

- What is a DLL and how is it different from EXE
- Types of DLL
- What is an Assembly Assemblies
- How to build a Class Library?
- How to use a Class Library in another Application?
- What is Namespace?
- Internal Access Specifier
- Types of Assemblies
- Global Assembly Cache

Exception Handling

- Defining Exception
- Understandings try and catch keywords
- Using “finally” block
- “using” statement
- Throwing exceptions
- Creating User defined
- Custom Exception class

IO Streams

- Definition of stream
- Types of Stream
- Standard I/O Streams – Console
- Handling text in files
- Dealing with Binary files
- Serialization & Deserialization

Unsafe Code Reflection and Attributes

- Definition of Reflection
- Using Reflection to read type information
- Attributes
- Pre-defined Attributes
- Custom Attributes

- Using Reflection to read custom attributes

More on Classes

- Operator Overloading
- Partial Classes and Methods
- Anonymous Types
- Extension Methods
- Caller Method Information
- Configuration File

Developing GUI Application Using WINFORMS

- Basic Controls
- Panel & Layouts
- Drawing and GDI Devices
- MenuStrip, ToolStrip and ContextMenuStrip
- Model and Modeless Dialog boxes
- Multiple Document Interface (MDI)
- Form Inheritance
- Building Login Form
- Working with Resource Files and Setting
- Notify Icon Controls
- Using Components like Timer, FileSystemWatcher, Process, BackgroundWorker
- Drag and Drop
- Working with Advanced Controls like TreeView and ListView

Delegates & Events

- Introduction to Delegates
- Events Declaration, Raising and Handling
- Anonymous Methods

Multithreading

- Threading Overview
- Scheduling
- Thread States
- Programming Threads
- Methods of Thread Class
- Thread Pool
- Thread Synchronization
- Monitor

- Mutex
- Semaphore
- Events
- Asynchronous Programming using async and await keywords

Database Programming Using ADO.NET

- Introduction to ADO.NET
- Understanding the Role of Managed Provider and ADO.NET Objects
- Connecting to Database and Connection Pooling
- Performing Insert, Update and Delete Operations
- Fetching Data from database - Executing Select Statements
- How to implement Login facility with database
- Use of Multiple Active Result Sets
- Parameterized Prepared Statements
- Inserting Image into Database table
- Executing Stored Procedure
- Writing Common Code for Execution of Stored Procedures

Managing Data using DataSet

- Introduction DataSet and its Object Model
- Filling DataSet using DataAdapter
- Binding DataSet to DataGridView
- Updating changes to database using DataAdapter
- Managing DataTable Programmatically
- DataAdapter events
- Working with DataViews
- Constraints in DataTable
- Using DataRelations object
- Creating DataSet and DataTable dynamically
- Working with Typed DataSet

Debugging and Diagnostics

- Definition of Debugging
- List of Debugging Windows
- Break Point Hit Count and Condition
- Debugging Exception

Windows Form

- Creating Word Processor

- Creating Namespace (Class Library)
- Windows Form Control:
 - DateTimePicker
 - Progressbar
 - Masked TextBox
 - ImageList
 - Data Gridview
 - ListBox
 - Error Provider
 - StatusStrip
 - Tab Control
 - Web Browser
 - PrintForm

Project Work

