
Introduction to .NET framework

The .NET Framework - an Overview

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

C # Language

Syntax Why Datatypes

- Global, Stack and Heap Memory
- Common Type System
- Reference Type and Value Type
- Datatypes & Variables Declaration Implicit and Explicit Casting
- Checked and Unchecked Blocks – Overflow Check
- Casting between other datatypes
- Boxing and Unboxing

- Enum and Constant
- Operators
- Control Statements
- Working with Arrays
- Working with Methods
- Pass by value and by reference and out parameters

OOPs-Inheritance

Introduction to Inheritance

- Constructor & Inheritance Type Casting of Reference Types
- Static and Dynamic Binding
- Abstract Class
- OOPs-Interface & Polymorphism What is 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

Exception Handling

Defining Exception

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

IO Streams What is a streams?

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

Developing GUI Application Using WINFORMS Basic Controls

- Panel & Layouts Drawing and GDI Devices
- MenuStrip, ToolStrip and ContextMenuStrip
- Model and Modeless Dialog boxes
- Mutiple 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

Introduction to Windows Service

- Windows Service Project Template
- Developing Windows Services
- Delegates & Events Introduction to Delegates
- Events Declaration, Raising and Handling
- User Control and Custom Control Multithreading Threading Overview
- Thread States
- Programming Threads
- Methods of Thread Class
- Thread Pool
- Thread Synchronization
- Parallel Programming using Task Parallel Library
- Asynchronous Programming using async and wait

Debugging and Diagnostics What is Debugging?

- Build Configuration(Debug and Release)
- List of Debugging Windows
- Break Point Hit Count and Condition
- Debugging Exception
- What is Diagnostics?
- Debug and Trace Classes