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# Deccansoft Software Services

(A Microsoft Learning Partner)

## Module 1:- Introduction to .Net Framework

In this module we explained clearly about the .Net Framework that

- ❖ What is a .Net Framework and components in the .Net Framework
- ❖ Different .Net Framework versions and their Dependency
- ❖ The core of the .Net Framework and the Types of .Net Applications that we can develop
- ❖ What are Base class Libraries and what is a Namespace
- ❖ How the Compilation process and Execution Process is done
- ❖ What is Portable Executable and its extensions
- ❖ What is MSIL and why MSIL instructions are Platform Independent Instructions
- ❖ What is Metadata and which type of Information does the Metadata Stores
- ❖ What is CLR and What are the Components in CLR

## Module 2:- VS.Net and Entry point Method

In this module we concentrated on how to install a visual studio and the types of Editions in visual studio

Using a sample Application we understand

- ❖ Importance of Command Line arguments and how to pass values for arguments through Command prompt
- ❖ and through command Line arguments in the visual studio
- ❖ Different Entry point methods and Significance of the Return value in main
- ❖ How to resolve ambiguity of Main method
- ❖ How to develop an application without using Visual studio .Net

## Module 3:- C# Language Syntax

In this Module we concentrated on Introduction to C#, its Evolution and its versions History along with that

We understand

- ❖ Why we need a programming Language
- ❖ What are the Data Types we have in C# and how to declare a Variable
- ❖ How Data Types are Categorized into Value Type and Reference Type
- ❖ What is Implicit Casting and Explicit casting and how to handle Overflow checks
- ❖ .Difference between string and string Builder
- ❖ what is Boxing
- ❖ what is Unboxing
- ❖ what is Type Inference
- ❖ what are constants and Enums
- ❖ what are the Operators we have in C#
- ❖ How the if, while, do while, switch condition will works
- ❖ What is the difference between for and foreach and where to use for loop and where to use foreach loop

- ❖ What is single dimension Array, multi dimension Array
- ❖ What is method overloading
- ❖ what are optional parameters and what will happen when we not provide any value for the parameter
- ❖ what are Named Arguments
- ❖ what is params Parameter
- ❖ How to Pass argument by value, ref and out
- ❖ How to improve our Programming skills and logical skills to become a extraordinary programmer

#### **Module 4:- OOPS – Concepts**

In this module we concentrate on

- ❖ Introduction to OOPS and its principles
- ❖ what is a class
- ❖ what is an object
- ❖ what is a component
- ❖ what is Encapsulation and Data Abstraction
- ❖ what is an inheritance and advantages of inheritance
- ❖ what is a polymorphism

#### **Module 5:- OOPs - Programming Encapsulation**

In this Module we understand that

- ❖ How to create a WindowsForms application
- ❖ How to create a class and how to declare field members in it
- ❖ How to Design GUI using Controls in the ToolBox
- ❖ How button click event works
- ❖ How Garbage collector will destroy the objects and what are the generations in Garbage Collector
- ❖ what is an instance Method and what is the use of this keyword inside a method
- ❖ what are properties and what does a get and set block do
- ❖ What is the difference between constructor and Destructor
- ❖ Where the static members allocate memory
- ❖ when the memory is allocated for static members
- ❖ How to access a static member
- ❖ what is the role of Static constructor and how it executes
- ❖ when to declare a class as static

#### **Module 6:- OOPs – Inheritance**

In this module we concentrate on

- ❖ what is Protected keyword and how to bypass it through child class
- ❖ How to casting the reference types
- ❖ what does a "is" operator do
- ❖ what does "as" operator do
- ❖ what does "?>" operator do
- ❖ What is static Binding and Dynamic Binding
- ❖ How to override a method
- ❖ what is an abstract class , abstract method

- ❖ when to declare a class as abstract
- ❖ what is the difference between abstract class and concrete class
- ❖ when to declare a method using new keyword
- ❖ what is a system.object class
- ❖ What are the methods in the object class

#### **Module 7:- OOPS - Interface and Polymorphism**

In this module we concentrate on

- ❖ what is an interface
- ❖ How does multiple inheritance is working with interfaces
- ❖ How to solve if two interfaces having same method name
- ❖ What is publicly implemented and Explicitly implemented
- ❖ why does the .net doesn't support multiple inheritance using classes
- ❖ How to implement an interface by inheriting it

#### **Module 8:- Collections and Generics**

In this module we concentrate on the Introduction to Collections and

- ❖ What are the Types of collections and what is IEnumerable, ICollection, IList, IDictionary
- ❖ What is ArrayList, HashTable, SortedList, Queue, Stack
- ❖ How to iterate using IEnumerable
- ❖ How sort using IComparer and IComparable
- ❖ What are the advantages of Generics and how they work at Runtime
- ❖ what are Generic methods and Generic collection classes
- ❖ What is List and Dictionary

#### **Module 9:- Assemblies and GAC**

In this module we concentrate on the Assemblies

- ❖ What is difference between DLL and EXE
- ❖ 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

#### **Module 10:- Exception Handling**

In this module we concentrate on how to handle when an Exception raised using sample application we understand that

- ❖ What is an Exception and types of Exceptions
- ❖ How to handle Exception using try and catch blocks
- ❖ How to throw an Exception using throw ex and throw
- ❖ What is finally Block
- ❖ How to define custom Exception class

#### **Module 12:- IO Streams**

In this module we concentrate on IO Streams and we understand

- ❖ What is a Stream and Types of Streams
- ❖ what are standard IO streams
- ❖ How Files can be Handled using FileMode, FileAccess, FileShare
- ❖ What is Binary Reader and Binary Writer
- ❖ How to work with File System
- ❖ What is Serialization and Deserialization

**Module 13:- Unsafe Code**

In this module we concentrate on what is unsafe code and how pointers will work in C#

**Module 14:- Reflection and Attributes**

In this module we concentrate on Reflections and Attributes and we understand

- ❖ What is Reflection
- ❖ How to read type information Using Reflection
- ❖ How to work with Attributes
- ❖ what are Pre-defined Attributes
- ❖ what are Custom Attributes
- ❖ How to read custom attributes Using Reflection

**Module 15:- Extended C# Language Features**

In this module we concentrate on Extended C#Language Features

- ❖ What is Operator Overloading
- ❖ What is the partial class, partial methods
- ❖ What are Extension Methods
- ❖ what are Anonymous Types
- ❖ what are Tuples
- ❖ what is caller Information
- ❖ what is configuration File

**Module 16:- New Features of C# 6**

In this module we concentrate on New Features of CSharp 6.0 and we understand

- ❖ what is String Interpolation
- ❖ what is Null Conditional Operator
- ❖ what is Auto Property Initializer
- ❖ what is Dictionary / Index Initializer
- ❖ what is Expression-bodied function members
- ❖ what is Static Using
- ❖ what is name of Expression
- ❖ what are Exception Filters
- ❖ what is Declaration Expressions
- ❖ How does await keyword works in catch and finally block