

# MICROSOFT .NET 4.6



## CURRICULUM

4 MONTHS

### Introduction of Dot Net Framework

- What is Dot Net?
- Why Dot Net?
- Advantages of Dot Net
- Component of Dot Net
- What is Framework?
- Versions of Framework
- CLR architecture
- CTS architecture
- CLS architecture
- DLR architecture
- What is JIT?
- Types of JIT?
  - Pre-JIT COMPILER
  - Econo-JIT COMPILER
  - Normal-JIT COMPILER

### Getting Started with Visual Studio

- Understanding Project and Solution Explorer
- Creating a Project and Solution
- Understanding Solution Explorer
- Comments in C#
- Debug Project
- Understanding Execution Process

### Assemblies in .Net

- What is Assembly?
- Types of Assembly?
- How to make Private Assembly
- How to make Shared Assembly
- What is DLL HALL Problem?
- What is SN Key?
- What is GAC?
- How to Deploy Assembly in Cache
- What is MSIL?
- What is DLL & EXE?
- How make DLL & EXE.
- Use of Ilasm.exe (IL Assembler) & Use of Ildasm.exe (IL Disassembler).

### Object Oriented Programming System (OOPS)

- What is OOPS?
- What is Class & Object?
- Difference b/w Class, struct, interface and enum
- Types of Variable

- Static Variable
- Const Variable
- Read Only Variable
- Instance & Static Members
- Inheritance & Types of Inheritance
- What is Interface?
- Encapsulation
- Abstraction
- Polymorphism
- Types of Polymorphism
  - Static Polymorphism
  - Dynamic Polymorphism
  - Concept of Method Overloading
  - Concept of Method Overriding
  - Concept of Early Binding
  - Concept of Late Binding
  - Concept of Up Casting
- Operator Overloading?
- What is Constructor?
- Types of Constructor
  - Default Constructor
  - Parameterized Constructor
  - Copy Constructor
  - Private Constructor
  - Static Constructor
  - Concept of This Keyword in Constructor
- Concept of Base Keyword in Constructor
  - Concept of Base Keyword in Constructor
  - Abstract Class & Abstract Method
  - Static Class & Static Method
  - Sealed Class & Sealed Method
  - Partial Class & Partial Method
- Different types of Parameter
  - Input Type
  - Output Type
  - Ref Type
  - Params Type
  - Dynamic Type

## C# LANGUAGE FUNDAMENTALS

### Introductions of C#

- What is C#?
- Namespaces in C#?
- Create namespace in C#
- Data types in C#
- Value type
- Reference type
- Null able type
- Heap
- Stack
- Looping in C#
  - For, While, DOWHILE
  - Foreach
- Conditional statement
  - Switch case
  - If, if-else, Nested if
  - GoTo
  - Break

- Continue
- Conversion Types
  - Implicit {Boxing}
  - Explicit {UnBoxing}

## Array

- What is Array?
- Types of Array
  - Simple Array
  - Multi Array
  - Jagged Array

## File Handling

- Introductions of File Handling
- Working with Files and Directories
- Working with Directories
- Working with Files Using the File and FileInfo Classes
- Working with Directories Using the DirectoryInfo and DirectoryInfo Classes

## Exception Handling

- Introductions of Exception Handling
- Role of Exception Handling
- What is Error, bug and exceptions?
- Try, catch & Finally block
- System Level & Application Level Exception
- Handle Multiple Exception
- Throw Exception

## Software Engineering Models and Concept (Project Based)

- What is Software Development Life Cycle?
- Phases of a SDLC
- Project initiation and planning
- Feasibility study
- System design
- Coding
- Testing
- Implementation
- Maintenance

## Collections

- Introductions of Collections
- Types of collections
- Generic
  - List
  - Dictionary
  - Stack
  - Queue
- Non Generic
  - ArrayList
  - Hashtable
  - Stack
  - Queue

## Delegate

- Introductions of Delegate
- Types of delegate
- SingleCast
- MultiCast
- Generic delegate

## Events

- Introductions of Events
- Understanding Events and Event Handler
- Types of Event
- System Define Event
- User Define Event
- Event Life Cycle
- Binding Events
- Working with Event Handler

## Reflection

- Introductions of Reflection
- Reflection Namespace
- Reflection Classes
- Access Assembly through Reflection
- Member Info
- Method Info
- Property Info
- Constructor Info
- Browsing Members
- Runtime Information

## Threading

- Introductions of Threading
- Threading Namespace
- Understanding Thread LifeCycle
- Default Threading
- Multi Threading
- Priority in threading Member Info

## Introductions of Properties

- set
- get

## Indexer

- Define Indexer
- Advantages of Indexer

## Business Requirement Specification (Project Based)

- Objective of Project
- DFD
- UML Diagram
- Class Diagram
- ER Diagram

## The SQL Server Management

- What is SQL?
- What is Database?
- Create Statement
- Create database
- Create table
- Use Identity
- Select Statement
- Insert statement
- Update statement
- Delete statement
- Drop statement
- Truncate statement
- Difference between delete, drop & truncate
- Alter Query

- Clauses
- Group By
- Order By
- Basic Queries
- Stored Procedure
- Use Input and Output Type parameter in Stored Procedure
- Function
- Types of Functions
- Trigger
- Cursor
- Union & Union All
- Transaction
- Joins
- Indexes
- Views
- Constraints
- Tracing sql query with SqlProfiler

### **System Requirement Database Structure (Project Based)**

- Database Table Structure
- Database Design
- DDL
- DML
- Stored Procedure
- Database Security

### **ADO .NET 10**

- What is ADO.NET?
- Difference between ADO & ADO.NET?
- Architecture of ADO.NET
- Disconnected mode Architecture
  - Using SqlDataAdapter Class
  - Using DataSet Class
  - SqlCommandBuilder Class
- Connected Mode Architecture
  - Using SqlConnection Class
  - Using SqlCommand Class
  - Using SqlDataReader Class
  - Understanding ExecuteNonQuery method
  - Understanding ExecuteScalar method
  - Understanding ExecuteReader method
- Working with DataTable class
- Creating PrimaryKey Column on VirtualTable
- Using Constraints Class
  - ForeignKeyConstraints Class
  - UniqueConstraints Class
- Store table in datatable
- Apply Insert,update,delete operations on VirtualTable
- Show, next,first,last,all by datatable
- Executing Stored Procedure
- Executing Function
- What is Sql Injection
- Applying SqlInjection

### **ASP.NET 4.6 Framework**

- Asp.Net Introduction
  - Evolution of Web Development
  - ASP .NET different versions
  - Understanding protocol and domain
  - Understanding static & dynamic page

- Server-side programming
- Client-side programming
- HTML and HTML Forms
- Creating a simple html page
- Developing ASP.NET Applications
  - Creating Websites
  - Creating a New Web Application
  - Page Life Cycle
  - Understanding Events of Page Life Cycle
  - Websites and Web Projects
  - Adding Web Forms
  - Migrating a Website from a Previous Version
  - Difference b/w inline and code behind concept
  - Asp.Net special directory
  - What is Application Directories
  - Different types of Application Directories
  - Understanding application label and page label variable
  - Need of Global class
  - What is Configuration file?
  - Need of Configuration file
  - Difference b/t app.config & web.con file
  - Nested Configuration
- State Management
  - Need of state management technique
  - Types of state management
  - Understanding Server side and Client side state management
  - ViewState
  - HiddenField
  - Cookies
  - Cache
  - QueryString
  - Session
  - Session Tracking
  - Session Configuration
  - Session mode
  - Cookieless
  - Session Timeout
  - Session Mode
  - Application
  - Transferring Information between Pages
  - Transferring Information between Cross Pages
- Web Controls in ASP.Net
  - Types of web controls
  - Server Controls
  - Standard Controls
  - Data Controls
  - Validation Controls
  - Navigation Controls
  - Login Controls
  - Ajax Extensions
  - Ajax ToolKit
- Html Controls
- User Controls
- Data Controls
  - DataList
  - DetailsView
  - FormsView
  - GridView
  - ListView
  - Repeater

- DataGrid
- EntityDataSource
- Object DataSource
- LinqDataSource
- XmlDataSource
- Working with Templates of Data Controls
- Working with events of Data Controls
- CSS
  - Understanding CSS
  - Types of CSS
  - Inline CSS
  - Internal CSS
  - External CSS
  - Selectors in CSS
- Themes & Skins
- Working with Image gallery
- Working with ImageSlide
- Master Page
- Nested Master Page
- Page Tracing
- Mail & Messaging
- Caching Techniques
  - Understanding Caching
  - Types of Caching
  - Output Caching
  - Data Caching
- Web Security
  - Need of security
  - Types of security
  - Forms Authentication
  - Windows Authentication
  - Confidentiality with SSL
  - Password Format
  - Types of password format
  - MD5
  - SHA1
  - Clear
- Performance tuning
- Ajax
- Understanding Gmail, Facebook and Twitter API's
- Deploying ASP.NET Applications
  - ASP.NET Applications and the Web Server
  - How Web Servers Work
  - Understanding Virtual Directory
  - Web Application URLs
  - Web Farms
- Internet Information Services (IIS)
  - Installing IIS
  - Registering the ASP.NET File Mappings
  - Verifying That ASP.NET Is Correctly Installed
- Managing Websites with IIS Manager
  - Creating a Virtual Directory
  - Configuring a Virtual Directory
- Deploying a Simple Site
  - Web Applications and Components
  - Other Configuration Steps
  - Code Compilation
  - Verifying That ASP.NET Is Correctly Installed
- Deploying a Visual Studio IDE
  - Creating a Virtual Directory for a New Project

- Copying a Website
- Publishing a Website
- Verifying That ASP.NET Is Correctly Installed

### Technical Design & Development (Project Based)

- Working with Project
- Programming Language: C# (Asp.Net)
- Designing Tools
- HTML
- Using CSS
- Using Ajax
- Using JavaScript

## ADVANCE .NET MVC

### Introduction to LINQ

- What is linq?
- Limitation of linq
- Sorting Data
- Filtering Data
- Grouping Data
- Joining Data
- Set Operations
- Datacontext in linq
- Select data by linq
- Perform dml by linq
- Stored procedure by linq?
- Linq with dataset
- Linq query expression
- Linq with generic & non generic collection

### Entity Framework 6.0

- Overview of the Entity Framework
- Difference between Linq to sql and Entity Framework
- Learn how to create an Entity Data Model
- Conceptual schema definition languages (CSDL)
- Store schema definition languages (SSDL)
- Mapping specification language (MSL)
- Techniques for using LINQ to Entities to query data in SQL Server database
- Creating/Managing 1-Many and many-1 relations
- Associations & Foreign Keys
- Procedure Mapping
- Mapping object to Data

### Introduction To WCF

- What is Distributed Application
- Evolution of WCF
- Evolution of Service Oriented Architecture (SOA)
- Four Tenets of SOA
- What is WCF.
- Where does WCF Services fit in?
- WCF comparison with WebServices and
- .Net Remoting.

### Endpoints in WCF

- What is Endpoint in WCF
- End points in Configuration File.
- ABC - Address, Binding & Contract of the service in Configuration File.
- Understanding importance of base address.



- Importance of IMetadataExchange
- Contract / Endpoint.
- IMetadataExchange Contract/Endpoint for Http and tcp.
- Configuring service behavior in configuration file
- WCF Service Configuration Editor
- Creating Endpoints through Code

### **Developing WCF Service Application**

- Hosting WCF Service in IIS/ASP .NET Development Server
- Hosting WCF service in Managed Application(Self Hosting).
- Use of WCF Service Library Project.
- Use of Wcf Service with Entity Framework

### **Understand Contracts in WCF service**

- ServiceContract.
- OperationContract.
- DataContract
- Fault Contract
- Message Contract

### **Understand Instancing behavior in WCF service**

- Single
- PerCall
- PerSession

### **MVC 5 (Model View Controller) Getting Started**

- What is MVC
- Life cycle of MVC
- The MVC Pattern
- The Road to MVC

### **Models**

- Scaffolding
- What Is Scaffolding
- Scaffolding and the Entity Framework
- Executing the Scaffolding Template
- Executing the Scaffolding Code
- Editing
- Building a Resource to Edit
- Responding to the Edit POST Request
- Model Binding
- The DefaultModelBinder
- Explicit Model Binding

### **Views**

- The Purpose of Views
- View Basics
- Understanding View Conventions
- Strongly Typed Views
- How View Bag Falls Short
- Understanding View Bag, View Data, and TempData
- View Models
- Adding a View
- The Razor View Engine
- What Is Razor
- HTML Encoding
- Code Blocks
- Razor Syntax Samples
- Layouts
- View Start

- Specifying a Partial View

## Forms & Html Helpers

- Using Forms
- The Action and the Method
- To GET or to POST?
- HTML Helpers
- Automatic Encoding
- Making Helpers Do Your Bidding
- Inside HTML Helpers
- Adding Inputs
- Helpers, Models, and View Data
- Strongly Typed Helpers
- Helpers and Model Metadata
- Templated Helpers
- Helpers and ModelState
- Other Input Helpers
- Html.Hidden
- Html.Password
- Html.RadioButton
- Html.CheckBox
- Rendering Helpers
- Html.ActionLink and Html.RouteLink
- URL Helpers
- Html.Partial and Html.RenderPartial
- Html.Action and Html.RenderAction

## Data Annotations & Validations

- Annotating Orders for Validation
- Using Validation Annotations
- Controller Actions and Validation Errors
- ValidatableObject
- Display and Edit Annotations
- Display
- Scaffold Column
- Display Format

## Controllers

- Controllers, Actions, and Action Results
- Routing to Controller Actions
- Working with the Application Model

## Routing

- Introduction to Routing
- Comparing Routing to URL Rewriting
- Routing Approaches
- Defining Attribute Routes
- Defining Traditional Routes
- Choosing Attribute Routes or Traditional Routes
- Named Routes
- MVC Areas
- Catch-All Parameter
- Multiple Route Parameters in a Segment
- StopRoutingHandler and IgnoreRoute
- Debugging Routes
- Inside Routing: How Routes Generate URLs

## Bootstrap Introduction

- Responsive app,layouts
- Components
- Developing site with bootstrap

## Interview Preparation :

- Technical Interview Preparation
- Mock interview Preparation
- HR Session

Partners :



Java



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