



## **DOT NET SYLLABUS FOR 6 MONTHS**

### **INTRODUCTION TO .NET**

- Domain of .Net
- D.N.A. Architecture
- One Tier
- Two Tier
- Three Tier
- N-Tier

### **THE COMMON LANGUAGE RUNTIME (C.L.R.)**

- CLR Architecture and Services
- The .Net Intermediate Language (IL)
- Just- In- Time Compilation and CLS
- Disassembling .Net Application to IL
- Strict Type Checking

### **.NET FRAMEWORK CLASS LIBRARY**

- System Namespace
- System .Object Namespace
- System .Collection Namespace
- System .Type
- Exception

### **SYNTAX & DATA TYPES**

#### **LANGUAGE FUNDAMENTAL**

- Data type and Control Constructs
- Value and Reference Types
- Declaring and Initializing Variables
- Unicode Characters and Strings
- C.T.S Type

- Implicitly Typed Local Variables
- Conditional Syntax
- C# Operator
- Looping Syntax
- Structure

## **ARRAY & STRING**

- Arrays in General
- Declaring of different type Arrays
- Initializing Arrays
- Accessing element of different type Array Members
- Arrays of Objects
- Structure type array
- Using foreach with Arrays
- Understanding System. String class and its various operations

## **OOPS CONCEPTS CLASSES**

- Encapsulating Attribute
- Class & Object Creation
- Define Constructor
- Type of Constructor
- Define Methods and their Type
- Overloading Methods and Constructor overloading
- Define Property and their Types
- The Memory Allocation with New Keyword
- Passing Initial Values with Constructor
- Invoking Property and Methods

## **INHERITANCE**

- Implementing Inheritance Hierarchies
- Class Access Modifiers
- Method Overloading, Overriding and Hiding Concepts
- Run time polymorphism
- Abstract and Sealed Class
- Exposing Interface
- Implementation Interface in a Class
- Play with Namespaces

- Interface Polymorphism
- Operator Overloading
- Partial Class

### **EXCEPTION HANDLING**

- Means of Error, Bug and Exceptions
- Role of .Net Exception Handling
- System Level Exception
- Application Level Exception
- Try and Catch Block
- Handling Multiple Exception
- Finally Block
- Throw Exception on Request Custom Exception

### **EVENTS AND DELEGATES**

- Event Driven Programming
- Delegate, Event and its association
- Synchronous and asynchronous operation with delegate
- User Defined events and delegates
- Multicasting with Delegates
- Anonymous methods
- Anonymous Methods with events
- Generic Delegates

### **MULTITHREADING**

- Understand multithreading process
- The System Threading namespace
- The Thread and Thread Start class
- Thread life cycle
- Thread Safety Concept
- Thread synchronization
- Understanding Thread Pool
- Understanding Role of Thread Background Worker Component

### **I/O OPERATIONS WITH FILE SYSTEMS**

- File and Directory Class

- Marshal Classes, File Info and Directory Info
- Path Class
- Drive Info Class
- Stream Object with Files: Stream Reader, Stream Writer
- File Stream and Memory Stream

### ***INTRODUCTION TO ADO.NET***

- How ADO.NET works and how it differs from ADO?
- Evolution of ADO to ADO.NET

### ***ADO.NET AND IT'S ARCHITECTURE***

- Connection Object
- Command Object
- Dataset
- Data Reader Object
- Data Adapter Object
- Concurrency and the Disconnected Data Architecture
- Provider

### ***DATA SET***

- Creating Tables in Dataset
- Data Column
- Data Row
- Data Table
- Updating, Inserting and Modification in Data Table
- Saving Changes into Data Base using Command Builder
- Working With Command and Connection

### ***CONNECTIONS AND COMMAND OBJECT***

- Connection Object
- Command Object
- Execute Non Query
- Execute Scalar

### ***DATA READER***

- Reading Data in Connected Environment

- Moving and Accessing Value of Record
- Execute Reader

### ***DATAGRIDVIEW & DATA BINDING***

- Row State Filter and Sort Property
- Update records via a Datagridview
- Insert records via a Datagridview
- Delete records via a Datagridview

### ***TRANSACTION***

- Introduction of Transaction (ACID)
- Transaction Class
- Method and Property
- Commit and Rollback

### ***ASP.NET***

#### ***INTRODUCTION TO WEB FORM***

- Need of Web Application
- Http Protocol
- Static and Dynamic Page
- Concept Working of IIS and Browser
- Differences between ASP and ASP.NET

#### ***INTRODUCTION TO HTML CONTROLS***

- Creating a Simple HTML Page
- Html Tags
- Hosting a HTML Page
- IIS virtual Directory
- Request Transfer Throws Get and Post Methods

#### ***SERVER PAGES USING ASP.NET***

- Creating sever pages
- Architecture of handling request In Web server
- Http request object
- Http response object

- Understanding post back

## ***UNDERSTANDING PAGE LIFE CYCLE***

- Understanding of Application Life Cycle
- Page Life-cycle Stages
- Life-cycle Events
- Autoeventwireup
- Tracing and debugging asp.net pages

## ***STATE MANAGEMENT***

- Client side State Management
- Introduction of stateless process
- Http Cookies
- Query String Method
- View State
- Hidden Field
- Server Side State Management
- Http Session
- Http Application
- Global.asax
- Web.Config

## ***SERVER CONTROL FORM VALIDATION***

- Working with Range, Regular Expression & Compare
- Required Field Validator Controls
- Use Control to Validate Property
- Custom Validator Control
- Implementation of Client and Server Side Validation
- Working with Validation Summary

## ***WEB FORM CONTROL***

- Textbox
- Check Box
- List Box
- Dropdown List Control
- Add Rotator Control

- File Upload Control
- Multi View Control
- Login Control
- Image control
- Radio button control

### ***DATA BINDING SERVER CONTROLS***

- Use of Data Binding Control
- Type of Data Binding Control (Formatted and Unformatted)

### ***Working with Grid View Control***

- - Data binding with Grid View
  - Working with Column Collection
  - Using Paging
  - Sort
- Working with Data List Control
  - Working with Template
  - Working with Data List Events

### ***MASTER PAGES***

- Introduction and Need of Master Page
- Creating a Master Page
- Default Contents
- Master page with CSS and table layout
- Applying Master Page through Configuration File
  - Dynamic setting a Master Page
  - Nested Master Page
  - Master Page and Relative Path

### ***ASP.NET WEB SECURITY***

- Windows
- Forms
- Passport

## **ASP.NET AJAX**

- Introduction of AJAX
- Role of script manager
- Understanding and working with update panel
- Understanding and Working with Update progress control
- Understanding and Working with Timer control
- Creating AJAX enabled website
- Creating an AJAX enabled web service

## **SKIN & THEME**

- Cascading Style Sheets
- Scoping Themes
- Themes Vs Cascading Style Sheets
- Create a Skin
- Apply a theme to a Web Site

## **CASCADING STYLE SHEET**

- Creating style sheet
- Apply Style Sheet
- Creating Rules
- Creating Elements setting

## **MORE DATA BINDING SERVER CONTROLS**

- Working with Form View Control
  - Working with Template
  - Working with Form View Events
- Working with Details View Control
  - Working with Template
  - Working with Details View Events
  - Understand Event Bubbling

## **.NET REMOTING**

- Introduction of Remoting
- Remoting Architecture & scenario
- Creating .NET Remoting object
- Hosting a Remote Object



- Activation type
- Singleton
- Single call
- Creating channels
- Implementations of a remote base application

## **WEB SERVICES**

- Introduction of web service
- The SOAP architecture
- SOAP and Web Service
- SOAP Essentials
- Web Service attribute
- WSDL Documentations
- Disco & Disco Map file
- Transaction in web service
- Publishing a web service
- Consuming a web service

## **ASP.NET CACHING**

- Introduction ,Need ,Type of caching
- Page output Caching
- Declarative output caching
- Time duration and location setting
- Parameter caching settings
- Page fragment Caching
- Time duration setting
- Parameter caching Setting
- Parameter caching setting
- Caching with HTTPCachePolicy Class
- Post Cache Substitution & Fragment
- Data Caching
- Managing Data into cache

## **COLLECTION CLASSES**

- Array list
- Hash table
- Stack

- Queue
- Sorted List
- Name value Collection
- Dictionary Entry structure
- Interfaces
- ICollection, IList, IEnumerable, IEnumerator, ICloneable, IComparable

## **REFLECTION**

- System. Reflection namespace
- Core reflection classes
- Accessing assembly through reflection
- Method info
- Member info
- Property info
- Browsing and Querying members
- Invoking methods and property and runtime
- Reflection on shared assembly

## **ASSEMBLIES & DEPLOYMENT**

- Role of .NET assembly
- Building and consume a single file assembly
- Building and consume a multi file assembly
- Private assembly
- Shared assembly
- Creating multiple version of a single assembly
- Removing .DLL hell problem

## **GLOBALIZATION & LOCALIZATION**

- Introduction of multilingual application
- Understanding Culture and UICulture
- Setting the UICulture and Culture
- Culture Info Class
- Overriding Initialize culture
- Auto attribute
- Local and Global resources

## **XML**

- Introduction of XML
- XML Documentation structure
- WFF Format of XML
- Parsers DOM and SAX
- XML classes
- Reading and writing XML file

## **LINQ**

### **INTRODUCTION**

- Introduction of LINQ
- Understanding Automatic Properties
- Understanding Initializers
- Understanding Type Inference
- Understanding Anonymous Types
- Understanding Generics
- Understanding Lambda Expressions
- Understanding Extension Methods

### **LINQ to SQL**

- Performing standard Database Commands with LINQ to SQL
- LINQ to Objects Versus LINQ to SQL
- Selecting with LINQ to SQL
- Inserting with LINQ to SQL
- Updating with LINQ to SQL
- Deleting with LINQ to SQL
- Dynamic Queries
- Debugging LINQ to SQL

### **WINDOWS COMMUNICATION FOUNDATION (W.C.F.)**

- The role of W.C.F
- W.C.F project template
- Understanding WCF Addressing
- Understanding WCF Bindings
- Understanding WCF Contracts
- Understanding WCF Endpoint

- Composition of basic W.C.F
- Building a W.C.F service
- Hosting a W.C.F service
- Building a W.C.F client application

## **WINDOWS PRESENTATION FOUNDATION (W.P.F.)**

- What is WPF
- Goals, Benefits & Drawbacks
- First WPF Application
- Types of WPF Application (Windows Based and Browser Based)
- XAML – Extensible Application Markup Language.
- Content Models
- Brief Introduction to Expression Blend
- Label, Button, CheckBox, RadioButton, RepeatButton, ToggleButton, ToolTip, Expander, GroupBox
- Text Controls, TextBox, TextBlock, RichTextBox, PasswordBox
- List Controls Combo Box, ListBox, Menu, StatusBar, TabControl, Toolbar, TreeView, ListView
- General Controls Progress Bar, Image, Slider, ScrollBar, Rectangle, Ellipse, MediaElement
- DataGridView
- Panels , Border,Canvas,Grid,StackPanel,WrapPanel
- WPF Data binding
- WPF Drawing 2D
- WPF Animation

## **SILVER LIGHT**

- Introduction
- What is Silverlight?
- How to Install Silverlight
- What is XAML?
- What tools are available?
- How does Silverlight compare to Flash?
- Silverlight Objects
- How to Declare an Object in XAML
- How to Set a Property in XAML
- Canvas
- Shapes: Rectangle, Ellipse, Line
- Path
- TextBlock
- MediaElement

- InkPresenter
- Object Hierarchy

## **CRYSTAL REPORT**

- Crystal report overview
- Getting start with Crystal Report
- Creating Basic Report
- Working with sub report
- Integration with Windows Application
- Customizing Appearance and Layout of Report Viewer
- Creating XML Report Web service
- Working with .Net Data
- Adding a Database or Table to a Report
- Working with ADO.Net
- Formulas and Logic
- Report Formatting
- Integration with Web Application
- Working With Crystal Report Engine

## **MVC 4.0**

- Model-View-Controller and ASP.NET
- MVC Architecture
- Understanding Routes and URLs
- Routing Compared to URL Rewriting
- The Controller Class and Actions
- Working with Parameters
- Working with Multiple Parameters
- Specifying a View
- Strongly Typed Views
- Using HTML Helper Methods

## **SQL server 2008**

- Create databases and database files
- Create data types and tables
- Use XML-related features in Microsoft SQL Server 2008
- Implement data integrity in Microsoft SQL Server 2008 by using Triggers
- Implement views

- Implement stored procedures
- Cursor, Indexer, functions etc...

Project work is mandatory after the completion of the training program.

