

## **C#.NET Training Course Overview**

### **Introduction/Overview of .Net**

- Introduction to .Net
- Platform for the .Net
- Drawbacks of Current Trend
- Net Framework – BCL & CLR | Key design goals
- CLR, CTS, MSIL & other tools.
- Multiple Language Interaction & support | Moving from Project to Assemblies...
- Security in .NET – CAS

### **.Net Framework [Advanced]**

- Advantages/Disadvantages
- Features of .Net
- Assemblies in Detail
- GAC, Strong Names
- Language Interop
- Reflection

### **Visual C#.Net Language**

- Advantages/Disadvantages
- Why C#/ Why Not C#
- Where does C# Fit in
- C, C++ to Visual C#
- Features of C#
- .NET Namespaces

### **.Net Installations/C#.Net**

- .NET Versions – 1.1/2.0/3.0/3.5 Beta
- Visual Studio.NET 2003/2005/Orcas/2008
- Windows Vista – New Look
- Gadgets/SideBars/UAC – relation with .NET
- Hardware/Software Requirements
- FAQ's with detailed answers

### **Programming Using Visual C#.Net**

- The start of the application
- C#.Net Program Design
- Variables and types
- Value types and reference types (CTS)
- Strings and arrays
- The Console class
- String formatting
- Statements and flows
- Programming Structures
- Command-line arguments
- VS.NET to Create C#.NET Apps
- C# 3.0/3.5 features – Implicit types , Extension Methods and more

## **Introduction To Windows Forms – I**

- Windows forms library – WinForms
- Layout Enhancements
- Forms and controls – Hierarchy
- Creating simple GUI by hand
- Event handling
- Basic controls
- Windows forms – buttons, check boxes, radio buttons, panels, group boxes, list boxes, picture boxes...

## **Windows Forms – II**

- Menus
- Built-in dialog boxes and printing
- Extender Controls
- ToolStrips, StatusStrips and progress bars
- A new MDI forms strategy
- Inheritance with forms
- New Controls – Web Browser, Property Grid etc

## **Object Oriented Concepts (Basic)**

- Classes & objects
- Abstract & override methods
- Creating and using your own classes | Data members and member methods | Instantiate an object
- This keyword
- Properties – Read Only Write Only...
- Build process using windows class library | Generate classes for other clients

- How to use classes as part of project

### **Object Oriented Concepts (Advanced)**

- Accessibility levels, specifiers
- Constructors
- Method overloading
- Class (static) variables & methods
- Object destruction
- 'ref' and 'out' parameters
- Constant values
- Enumerations
- Inheritance and Polymorphism
- The root of all classes
- Creating derived classes
- Method overriding and hiding
- Polymorphism and virtual functions
- Casting objects
- Abstract classes
- Sealed classes
- Static classes

### **Object Oriented Concepts (Implementation Oriented)**

- Case Studies
- Class Diagram in VS.Net
- Refactoring & others
- FAQ's

### **Error Handling**

- Unstructured error handling support
- Structured error handling
- Error categories
- Debugging the application
- Debug and Trace classes
- Code Optimization
- Testing and strategies

### **Ado.Net 1.1/2.0/LINQ**

- History and background
- From DAO to ADO.NET
- ADO.NET LINQ
- ADO.NET design goals
- The ADO.NET architecture and its components
- ADO.NET in relation to the other .NET tools
- DataSet in RealTime Scenarios

## **ADO.Net Components**

- Connected and disconnected environment
- ADO.NET object model
- Data sources, providers and connections
- Commands and data readers
- Data sets and data adapters
- Data tables, rows and columns
- Constraints and relations
- Data-centric applications – New ADO.Net Hierarchy

## **Data Sources And .Net Data Providers**

- Connecting to a data source
- SQL Server .NET data provider
- OLE-DB .NET data provider
- Connections and connection strings
- SQL-Server integrated security
- Connection pooling
- ADO.NET exceptions

## **Accessing Data In The Connected Environment**

- Commands
- Creating and executing commands
- Reading data using a data reader
- Batch queries & single result queries
- Parameterised queries (input & output parameters)
- Adding, editing and deleting data
- Stored procedures

## **Accessing Data In Disconnected Environment**

- Why using a disconnected environment?
- DataSet and DataAdapter features
- Filling data sets using data adapters
- Read data using data tables, rows and columns
- Batch queries and data sets
- Visual Studio Data Menu & tools
- DataSet Navigation
- DataSet Functionality
- DataSet Optimistic Concurrency

## **Sorting, Searching And Filtering**

- Searching in data sets
- Find on primary keys
- Searching on any column
- Searching on row state
- Wildcard searches
- Sorting and filtering using data views
- Searching in a data view

## **Live Case Study and Implementation Of ADO.NET in N-Tier**

- Client Server Basics
- N-Tier – Classical and New
- N-Tier importance w.r.t other .Net technologies
- Build User Interface Layer – importance
- Business Layer in N-Tier – advantages & disadvantages
- Data Access Layer – Generic/Specific Advantages
- N-Tier DataBase Application
- SQLHelper, CodeSmith etc tools awareness

## **XML**

- XML Basics – Importance in Today's world
- XML designers/support in VS.NET
- XML Derived Technologies – XSD ,XSL , SOAP ,WSDL

## **XML IN .NET**

- System.Xml Namespace
- Stream Model XML
- XML DOM

- XmlTextReader,TextWriter
- XmlTextReader, TextWriter XmlDocument/ XmlDataDocumentClasses
- Dom Objects – XmlNode/XMLNodeList
- XPATH- Query Language for XML
- DOM – Navigation & Access Case Studies

## **Creating Custom Windows Controls**

- About user – defined controls
- Understanding the control class with Container
- Add Properties/Methods/Events to Control
- Pack & use control in other windows applications
- Create & implement a windows control

## **Windows Services\***

- Understanding services
- Creating windows services
- Setting properties
- Compile, run & install services
- Event log services

## **.Net Remoting**

- About Distributed Applications
- COM/DCOM in Distributed Environment
- Drawbacks of DCOM
- .NET Remoting – New distributed environment
- Advantages & Disadvantages
- Remoting – Web Services comparisons
- MBR, MBV
- Channels
- Formatters
- Programming Model – Object Styles & Lifestyles
- Activation
- Case Study – Implementation using Remoting

## **Crystal Reports\***

- Reporting Need in the application
- Crystal Reports – Reporting Tool
- Different Versions of Crystal Reports
- Developing a Crystal Report

- Different ways to Invoke/Deploy Crystal Reports

## **Application Deployment**

- Packaging Code
- ClickOnce Deployment
- Configuring the .Net framework
- Deploying the application in Web Server
- Deployment – other methods