

C# .NET

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-1

- Windows forms library-win forms
- 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
- Inheritance with forms
- New Controls – Web Browser, Property Grid etc

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.Net1.1/2.0/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 Real-time Scenarios'

Ado.Net Concepts

- Connected and disconnected environment
- ADO.NET object model
- Data sources, providers and connections
- Commands and data readers
- Data sets and data adaptors
- 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 Connected Environment

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

Accessing Data in Disconnected Environment

- Why using a Disconnected Environment?
- DataSet and Data Adapter 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

Storing Searching And Filtering

- Searching in datasets
- 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

