

PROGRAMMING CLASSES

UNIT OF MAGENOTO SOFTWARE PVT LTD
AN ISO 9001:2015 CERTIFIED

SYLLABUS OF 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 , Extention 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**