

MS.NET – 4.0 incl. C#, VB.NET & ASP.NET**MS.NET Framework**

- The .NET Framework - an Overview
- Architecture of .NET Framework
- Types of Applications which can be developed using MS.NET MSIL / Metadata and PE files.
- The Common Language Runtime (CLR)
- Common Type System (CTS)
- Common Language Specification (CLS)
- Types of JIT Compilers
- Security Manager
- MS.NET Memory Management / Garbage Collection
- MS.NET Base Classes Framework
- MS.NET Assemblies and Modules

VB.NET and C# Languages

- ❖ **Developing Console Application**
 - Entry point method - Main.
 - Command Line Parameters
 - Compiling and Building Projects
- ❖ **Language Basics**
 - Variables and Data Types
 - String & StringBuilder.
 - Boxing and Unboxing
 - Operators
 - Statements
 - Arrays and Strings
 - Procedures and Functions
- ❖ **Essentials of Object-Oriented Programming**
 - Object and Class Definition
 - Understanding Identity, State, and Behavior
 - Using encapsulation to combine methods and data in a single class
 - Inheritance and Polymorphism.
- ❖ **Working with Classes and Objects**
 - Adding Variables and Methods
 - Properties and Indexers
 - Constructors and Destructors
 - Type Initialize
 - Extension Methods
 - Anonymous Types
 - Memory Management and Garbage Collection

- Shared / Static Members
- Method Overloading
- **Anonymous Methods**
- **Partial Classes & Methods**
- **Operator Overloading**
- **Inner Classes**
- Attributes and their Usage
- **Inheritance, Interface and Polymorphism**
- Deriving classes
- Calling base class constructor
- Overriding Methods
- Non-Inheritable Classes.
- Abstract Class
- Interface Inheritance
- Namespace and Access Modifiers

Advance Language Features and Base Class API

- ❖ **Working With Collections**
 - List and Dictionary
 - ArrayList and HashTable
 - **Generic Classes & Methods**
 - **List and Dictionary**
 - IEnumerable and IEnumerator
- ❖ **Exception Handling**
 - Handling Exceptions using try and catch
 - Raising Exceptions using throw
 - Pre-defined Exception classes
 - Custom Exception classes
 - **Using Statement**
- ❖ **Inheritance, Interface and Polymorphism**
 - Deriving classes
 - Calling base class constructor
 - Overriding Methods
 - Non-Inheritable Classes.
 - Abstract Class
- ❖ **C# Features / General Features**
 - Unsafe Code
 - fixed Keyword.
 - Operator Overloading.
 - Reflection
 - P-Invoke
- ❖ **Data Streams and Files**

- Byte Streams
- Readers and Writers.
- Binary Streams
- Console and File I/O
- Serialization & Deserialization
- ❖ **Working with Components / Assemblies**
 - Creating a Simple .NET Framework Component
 - Private and Shared Assemblies
 - Signing Assemblies for Strong Names
 - Deploying .NET Assemblies in Global
 - Assembly Cache
- ❖ **Multithreading**
 - Introduction
 - Application Domains
 - Creating and Managing Threads
 - Thread Priority
 - Thread States
 - Thread Synchronization using Monitor and
 - Mutex
- ❖ **Data Access using ADO.NET**
 - Introduction to ADO.NET
 - Managed Providers
 - Working with Connection, Command,
 - DataReader and Transaction objects
 - Working with Prepared Statements and Stored
 - Procedures.
 - **Connection Pooling and Multiple Active Result Sets**
 - Working with DataSet
 - Adding, Deleting and Modifying records in a Dataset
 - Data Tables, Data Columns and DataRows ,
 - Constraints and DataRelations
 - Using DataView
 - **Working with DataGridView.**
- ❖ **WinForms**
 - Introduction
 - Controls
 - Menus and Context Menus
 - MenuStrip, ToolStrip.
 - Graphics and GDI
 - SDI and MDI Applications
 - Dialogbox (Modal and Modeless)
 - Form Inheritance

- Working with Resource Files
- Working with Settings
- Other Misc topics.
- ❖ **XML**
 - Introduction
 - XML-DOM
 - XmlDocument, XElement, XMLAttribute
 - Interoperating with DataSet
 - XmlDocument
 - XML TextReader / XML TextWriter
 - XPath.
- ❖ **Windows Services**
 - Purpose and Advantage
 - Developing and Deploying
 - Debugging Windows Service
 - Sending Custom events
- ❖ **Packaging and Deployment**
 - **Compiled Deployment of ASP.NET application.**
 - Types of Deployment Modules
 - Working with a Setup and Web Setup Project
 - Working with a Merge Module Project
- ❖ **Debugging and Tracing**
 - Debug and Release Compilation
 - Debug and Trace Objects
 - Tracing Switches & Listeners
 - **Debugging JavaScript from VS.NET**
 - **Debugging SQL-Server Stored Procedures.**
 - Developing N-Tier Architecture Application Using SQLHelper
 - DAO
 - Business Object
 - Data Objects and Presentation Tier

ASP.NET

- ❖ **Basic of HTML and JavaScript**
- ❖ **Introduction to ASP**
 - ASP Architecture
 - ASP Objects
 - Request and Response Structure
 - Forms and Querystring
- ❖ **Overview**
 - ASP.NET Architecture
 - Virtual WebServer

- **New Features over ASP and ASP.NET 1.1**
- **Event Handling**
- ❖ **Web Forms**
 - Introduction
 - Advantages
 - Comparison with HTML Form
 - Page Processing States
 - Event Model
 - View State Management
 - **Cross-Page Postback**
- ❖ **Using Web Controls**
 - HTML Server Controls
 - Standard ASP.NET Server Controls
 - **Basic Controls**
 - Validation Controls
 - Web User Controls
- ❖ **Master Pages & UserControl**
 - **URL Rebasing in a Master Page**
 - **Accessing a Master Page from Code**
 - **Nesting Master Pages**
 - **Master and Content Pages**
- ❖ **Applying Themes and Styles to Controls**
 - **Working with CSS**
 - **Using Themes to Customize a Site**
 - **Named Skins within a Theme**
 - **Server-side Styles using Themes**
 - **Contents of a Theme and Skin**
 - **Themes and Profiles**
- ❖ **ASP.NET State Management**
 - Static / Shared Members
 - ViewState Object
 - Cookies
 - Session Management
 - Application State
 - HttpContext
- ❖ **ASP Intrinsic Objects**
 - Request and Response
 - Session Objects
 - Application Objects
 - Server and Context
- ❖ **ASP.NET Web Application**
 - Creating Virtual Directories

- Global.asax & Managing Application Events
- HttpApplication Instance
- HTTP Handlers and creating Custom Handler
- **URL Redirection**
- ❖ **Data Access Controls**
 - Data Binding Server Controls
 - **SqlDataSource, ObjectDataSource**
 - **GridView**
 - **DetailsView and FormView**
 - **Data List and Repeater**
 - ListView
- ❖ **Caching**
 - Overview
 - Page Output Caching
 - **CacheProfile**
 - Page Fragment Caching
 - Data Caching
 - **SQL Cache Invalidation**
 - **Notification-based Invalidation**
 - **Polling-based Invalidation**
 - Expiration Policies and Cache Dependencies
- ❖ **Configuration**
 - Configuration Overview
 - Machine.Config and Web.Config
 - Inheritance of Configuration Settings
 - Configuration File Format
 - URL Rewriting - (Programmatically and using config files)
 - Custom Error Handling.
- ❖ **Trace Functionality**
 - Overview of Tracing
 - Trace Information
 - Page-Level Trace
 - Application-Level Trace
- ❖ **Security**
 - Authentication & Authorization
 - Windows Based Authentication
 - Form Based Authentication
 - Authorizing Users and Roles
 - Impersonation
 - **Using Login Controls**
 - **ASP.NET Membership and Roles**

- **Securing Non-ASP.NET files**
- ❖ **Globalization and Localization**
 - Request and Response Encoding
 - **Local and Global Resources**
 - **Implicit Expressions to Local Resources**
 - **Explicit Expressions to Local Resources**
 - **Programmatic Access to Global Resources**
 - **Localizing Static Content**
 - **Storing Language Preferences**
 - Right to Left Mirroring
 - Culture specific formatting
- ❖ **Personalizing Using Web Parts**
 - **Webpart Controls**
 - **Editing Webparts**
 - **Personalizing**
- ❖ **AJAX.NET**
 - **Architecture**
 - **Working with AJAX Pro**
 - Using AJAX.NET Controls
 - Accordion
 - Calendar
 - CascadingDropDown
 - CollapsiblePanel
 - FilteredTextBox
 - NumericUpDown
 - ModalPopup
 - PopupControl

Distributed Application Development

- ❖ **Introduction**
 - Comparison between 2-tier and 3-tier
 - Limitations of SOCKET communication
 - Stub / Proxy Architecture
 - Comparison between DCOM / CORBA & RMI
 - Protocol for communication.
 - Serialization and Marshalling.
- ❖ **Web Services**
 - Architecture and Advantage.
 - SOAP Significance.
 - Building Services & Hosting Services
 - Using WSDL to Build Proxy for clients
 - Setting up a 3-Tier Application using Web Service.
- ❖ **Remoting**

- Architecture
- Advantages over Web Services
- Channel Types
- Server activated : Singleton / Single Call
- Using Remoting Object in Web Application
- Client activated

MS.Net Suite: MS.NET + SharePoint + Sql Server + Live Project

MS.Net Advanced: LINQ + WCF + WPF + Silverlight + WF

MS.Net JUMBO = All the Above Topics are included.

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