

C#. Net

Introduction to .NET

- ✓ Overview of the .NET Platform
- ✓ How .NET is Different from Traditional Programming
- ✓ .NET Framework Classes
- ✓ Common Language Runtime (CLR)
- ✓ Overview of .NET Assemblies

Introduction to Visual Studio.NET

- ✓ Setting Profiles
- ✓ Creating a Project
- ✓ Using the Solution Explorer
- ✓ Setting Project Properties
- ✓ Adding References
- ✓ Using the Code Editor
- ✓ Compiling a Program
- ✓ Running a Program

.NET Programming in C#

- ✓ Data Types
- ✓ Value Types vs. Reference Types
- ✓ Control/Conditional Statements
 - ✓ If Else
 - ✓ While
 - ✓ Do While
 - ✓ For
 - ✓ Break Continue
 - ✓ Switch Case

Data Structures

- ✓ Defining and Using Arrays
- ✓ Using System.Array
- ✓ Defining and Using Structures
- ✓ Defining and Using Enumerations

Exception Handling

- ✓ What are Exceptions
- ✓ .NET Exception Hierarchy
- ✓ Catching Exceptions
- ✓ Throwing Exceptions
- ✓ Managing Resources with Finally
- ✓ Defining Custom Exception Types

Object-Oriented Programming

- ✓ Defining and Using Classes
- ✓ Class Members

- ✓ Access Modifiers
- ✓ Working with Property Procedures
- ✓ Working with Constructors and Finalizers
- ✓ Working with Indexers

Advanced Object-Oriented Programming

- ✓ Defining and Implementing Interfaces
- ✓ Defining and Implementing Inheritance
- ✓ Cross-Language Inheritance
- ✓ Visual Inheritance
- ✓ Forcing Inheritance with Abstract Classes
- ✓ Preventing Inheritance with Sealed Classes
- ✓ Defining and Implementing Delegates
- ✓ Understanding Partial Classes
- ✓ Working with Generics
- ✓ Working with Iterators
- ✓ Working with Nullable Types.
- ✓ Working with Anonymous methods.

Delegates and Events

- ✓ Difference between delegate and function pointer
- ✓ Types of delegates
- ✓ Defining events
- ✓ EventHandlers

Windows Forms Programming in C#.NET

- ✓ What are Windows Forms
- ✓ Overview of Controls
- ✓ Using the Windows Forms Designer
- ✓ The Life-cycle of a Form
- ✓ The .NET Control Hierarchy
- ✓ Label and Textbox Controls
- ✓ Button and other Controls

Using Controls

- ✓ Enabling/Disabling Controls
- ✓ Showing/Hiding Controls
- ✓ Setting Focus to a Control
- ✓ Making Choices Using the CheckBox and RadioButton Controls

- ✓ Managing Lists Using the ListBox, ComboBox,
- ✓ Providing Assistance with the ToolTip Control
- ✓ Using the ErrorProvider Control
- ✓ Building Menus and MDI forms
- ✓ Additional controls : Timer, DateTimePicker, ListView, TreeView, ToolBar etc.,

Working with Dialogs

- ✓ Using the MessageBox Class
- ✓ Using the Standard Dialogs
- ✓ Creating and Using Windows Dialogs
- ✓ Modal versus Modeless Dialogs
- ✓ Working with Modal Dialogs
- ✓ Using DialogResult
- ✓ Working with Modeless Dialogs

ADO.NET

- ✓ The ADO.NET Object Model
- ✓ Connected vs. Disconnected Access
- ✓ Using Connection Classes to Connect to a Data Source
- ✓ Using Command Classes to Execute Queries and Stored Procedures
- ✓ Insert, Update and Delete with ADO.NET
- ✓ Using DataReader Classes
- ✓ Stored Procedures with ADO.NET using –output parameters
- ✓
- ✓ Using the DataSet Class with Disconnected Data
- ✓ Using DataAdapter Classes with DataSets

Data Binding

- ✓ Introduction to Data Binding
- ✓ Binding Controls using .NET 2.0

Working with Assemblies

- ✓ The Role of .NET Assemblies
- ✓ Private and Shared Assemblies
- ✓ Understanding Private Assemblies
- ✓ Building and Using Single-File Assemblies

- ✓ Building and Using Multi-File Assemblies
- ✓ Understanding Shared Assemblies
- ✓ Strong Names
- ✓ Global Assembly Cache (GAC)
- ✓ Building, Configuring and Consuming Shared Assemblies

NET Interoperability Services

- ✓ Interactions between Managed and Unmanaged Code
- ✓ Using COM Servers from .NET
- ✓ Calling .NET Components from COM

Reading and Writing Files

- ✓ System.IO Namespace
- ✓ Examining Files and Directories
- ✓ Opening Files
- ✓ Reading Files
- ✓ Writing Files
- ✓ Serialization

Multithreading in .NET

- ✓ Threading Concepts
- ✓ Creating Threads in C#
- ✓ Managing Threads
- ✓ Problems with Threads
- ✓ Thread Synchronization

Remoting

- ✓ Remoting Basics
- ✓ Understanding Application Domains
- ✓ Creating Remotable Objects
- ✓ Well-known vs. Activated Objects
- ✓ Creating Channels for Calling Remote Methods
- ✓ Creating Remote Objects
- ✓ Interacting with Remote Objects

XML

- ✓ Why xml
- ✓ Some xml based languages
- ✓ Creating xml document
- ✓ DTD,XSD,XPATH,XQUERY,DOM
- ✓ System.xml namespace
- ✓ XmlTextReader,XmlTextWriter, XmlDocument, XmlDataDocument

Language Integrated Query (LINQ)

- ✓ Understanding the Role of LINQ
- ✓ First Look at LINQ Query Expressions
- ✓ Internal Representation of LINQ Query Operators
- ✓ LINQ to Objects
- ✓ LINQ to Ado.net
- ✓ LINQ to XML

Security

- ✓ Security Basics
- ✓ Evidence and Code Identity
- ✓ Role-based Security
- ✓ Code Access Security
- ✓ Cryptography

Deploying Applications

- ✓ Creating set project
- ✓ Using Visual Studio Deployment Projects
- ✓ Deploying Windows Application

.Net4.0 Features

- ✓ Anonymous constructors
- ✓ Automatic properties
- ✓ Anonymous types
- ✓ The 'var' keyword
- ✓ Lambda expressions
- ✓ Extension methods
- ✓ Partial Methods
- ✓ Parallel Programming.

ASP.Net

Introduction (PreRequisites)

- ✓ Types of Applications – Web, Desktop & Mobile
- ✓ Introduction to Web applications
- ✓ Web Server role, about IIS
- ✓ Web Browsers, Web Support Languages
- ✓ Why Scripting & its importance
- ✓ Client-side & Server-side scripting

Introduction to ASP.NET

- ✓ What is ASP.Net
- ✓ Differences between ASP and ASP.Net

- ✓ Need of Asp.net MVC
- ✓ ASP.Net – New Scenario in development process with IDE – VS.Net
- ✓ Page Directives and its use
- ✓ Separating Code & Design
- ✓ Understanding the ASP.Net Execution Scenario
- ✓ C#.Net role in ASP.Net development

ASP.NET Web Forms (Beginning)

- ✓ Introducing Web Forms, Worker Process
- ✓ HTML, HTML Controls
- ✓ Client-side & Server-side controls
- ✓ Consuming HTML Client/Server controls in webForms
- ✓ Working with Server Controls
- ✓ Consuming ASP.Net controls in WebForms
- ✓ Understanding the Rendering Nature of Controls
- ✓ Asp.net PageLifeCycle

Web Forms – validation controls

- ✓ Validating Form with Validation Controls of ASP.Net
- ✓ RequiredFieldValidator control
- ✓ CompareValidator control
- ✓ RangeValidator control
- ✓ CustomValidator control
- ✓ Create Server-side/Client-side functions for CustomValidator control
- ✓ Group Validations & avoiding Validations
- ✓ ValidationSummary control

User Controls

- ✓ Creating User Controls
- ✓ Adding member to user controls
- ✓ Registering User Controls
- ✓ Properties & Methods
- ✓ Dynamically loading user controls

Master Pages

- ✓ The Basics of Master Page
- ✓ Coding a Master Page

- ✓ Coding a Content Page
- ✓ Event Ordering

ADO.NET

- ✓ Overview of ADO.NET
- ✓ Connect/Insert/Update/Delete, Query data – using ADO.NET
- ✓ Retrieve data with datasets
- ✓ Data Adapters, Understanding Data tables

DataBinding using ASP.NET bound controls (C#)

- ✓ ASP.NET bound controls
- ✓ Types of databinding
- ✓ DataSource Controls
- ✓ Repeater & its uses.
- ✓ DataBound Controls
- ✓ Bind data to Dropdownlist control
- ✓ Datalist control
- ✓ GridView & its importance in Development
- ✓ GridView (Basic) – simple uses
- ✓ GridView (Advanced) – Runtime Fields, Empty DataRows
- ✓ N-Tier architecture
- ✓ FormView & DetailsView
- ✓ DataPager, ListView

ENTITY FRAMEWORK

- ✓ Need of Entity Framework
- ✓ Different entity frameworks available
- ✓ ADO.Net Entity Framework
- ✓ NHibernate

State Management

- ✓ Different state management techniques
- ✓ View state and its features
- ✓ Using Query String
- ✓ Advantages and disadvantages of QueryString
- ✓ Working with cookies
- ✓ Advantages and disadvantages of cookies
- ✓ Session and its features

- ✓ Comparison between Session & application
- ✓ Using the Global.asax file
- ✓ Managing Application State
- ✓ Application & Session Variables
- ✓ Application & Session Events

Caching Overview

- ✓ Advantages of Caching
- ✓ Comparing with Application & Session variables
- ✓ Page Output Caching
- ✓ Page Data Caching
- ✓ Fragment Caching
- ✓ Crosspage postback and its advantages

Security

- ✓ Security Overview
- ✓ Authentication & Authorization
- ✓ Windows-based Authentication
- ✓ Forms-based Authentication
- ✓ Memberships
- ✓ Authoring Users and Roles
- ✓ User Account Impersonation

Configuring ASP.Net Application

- ✓ Web Application configuration Advantages
- ✓ New Configuration Model, ASP.Net Config Tool
- ✓ Web Application Machine Configuration
- ✓ Working with Assembly info
- ✓ Web.Config, Machine.Config
- ✓ Process Model – System Configuration

Deployment

- ✓ Deploying ASP.NET Application

AJAX & JQUERY

- ✓ Introduction to Microsoft AJAX
- ✓ XMLHttpRequest object
- ✓ Programming with XMLHttpRequest Object
- ✓ Advantages and Disadvantages of AJAX
- ✓ Future of AJAX

- ✓ MS Implementation of AJAX
- ✓ Advantages and Disadvantages of ASP.Net AJAX
- ✓ Need of JQuery
- ✓ Ajax with the help of JQuery

ASP.NET XML Web Services

- ✓ Introducing XML Web Services
- ✓ ASP.NET Webservices.
- ✓ Writing a Simple Web Service
- ✓ XML web services stack, SOAP, WSDL, UDDI, Sync an Async Calls
- ✓ Web Service Type Marshalling
- ✓ Using Data in Web Services

WebParts

- ✓ New concept in Web Apps
- ✓ Advantages and Disadvantages
- ✓ Predefined/ user defined controls with webparts

ASP.NET MVC

- ✓ Introduction to asp.net MVC
- ✓ Difference between asp.net and asp.net MVC
- ✓ Model
- ✓ Views
- ✓ Controller
- ✓ Examples

VB.Net

Language Fundamentals

- ✓ VB.NET Project Types
- ✓ Program Structure
- ✓ Defining Namespaces
- ✓ VB.NET Data Types
- ✓ Declaration and use of Variables and Constants
- ✓ Operators and Expressions
- ✓ Console I/O
- ✓ Type Conversions and Type Checking

Control.of.Flow Language Conditional Statements

- ✓ If... Else

- ✓ If... Elseif... Else
- ✓ Do...Loop
- ✓ While
- ✓ For...Next
- ✓ For Each...Next
- ✓ Select Case

Object-Oriented Programming Concepts

- ✓ Purpose of Object-Oriented Programming
- ✓ Building Classes
- ✓ Creating Objects
- ✓ Using Inheritance with .NET Classes
- ✓ Understanding the Role of Interfaces in .NET
- ✓ Understanding the Role of delegates in .NET

Procedures and Parameters

- ✓ Subroutines vs. Functions
- ✓ Parameters
- ✓ Passing by Value
- ✓ Passing by Reference
- ✓ Value Types versus Reference Types
- ✓ The Stack
- ✓ The Heap
- ✓ Procedure Overloading
- ✓ Variable Length Parameter Lists
- ✓ Type Checking
- ✓ Static Members

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- ✓ Providing Assistance with the ToolTip Control
- ✓ Using the Up/Down Controls
- ✓ Building Menus, Toolbars and Statusbars

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MDI Applications

- ✓ Introduction to MDI Applications
- ✓ Building the Parent Form
- ✓ Building the Child Form
- ✓ Spawning Child Forms

Working with Files

- ✓ System.IO Namespace
- ✓ Examining Files and Directories
- ✓ Opening Files
- ✓ Reading Files
- ✓ Writing Files

WCF

WCF Overview

- ✓ SOAP
- ✓ WSDL
- ✓ REST
- ✓ JSON

Simple Service and Client

- ✓ Service Contract
- ✓ Service Implementation
- ✓ WCF Service Host and WCF Test Client
- ✓ Custom Service Host
- ✓ WCF Client
- ✓ Diagnostics

Contracts

- ✓ Data Contract
- ✓ Versioning
- ✓ Service Contract
- ✓ Message Contract

Service Implementation

- ✓ Creating a Client Programmatically
- ✓ Error Handling

Binding Hosting

- ✓ Custom Hosting
- ✓ WAS Hosting

Clients

- ✓ Consuming WCF service from client

WPF

Introduction WPF

- ✓ Understanding Windows Graphics
- ✓ WPF: A Higher-Level API
- ✓ The Architecture of WPF

XAML

- ✓ Understanding XAML
- ✓ XAML Basics
- ✓ Properties and Events in XAML
- ✓ Using types from Other Namespaces
- ✓ Loading and Compiling XAML

The Application

- ✓ Creating a WPF Application
 - ✓ Building the WPF Application
- ✓ Adding Controls to the Form
 - ✓ Using WPF Controls
 - ✓ Changing Properties dynamically
- ✓ Handling Events in a WPF Form
 - ✓ Processing Events in Windows Forms

Gathering User Input

- ✓ Menu Guidelines and Style
- ✓ Menus and Menu Events
 - ✓ Creating a Menu
 - ✓ Handling Menu Events

- ✓ Shortcut Menus
 - ✓ Creating Shortcut Menus
- ✓ Windows Common Dialog Boxes
 - ✓ Using the SaveFileDialog Class
- ✓ Improving Responsiveness in a WPF Application

Performing Validation

- ✓ Validating Data
 - ✓ Strategies for Validating User Input
- ✓ An Example – Order Tickets for Events
 - ✓ Performing Validation by Using Data Binding
 - ✓ Changing the Point at which Validation Occurs

Silverlight

Comparing WPF and Silverlight

Creating a Silverlight Project

Navigation

Networking

- ✓ Creating an ADO.NET Entity Data Model
- ✓ Creating a WCF Service for Silverlight Clients
- ✓ Calling WCF Services
- ✓ Using WCF Data Services
- ✓ Using System.Net to Access the Service

Browser Integration

- ✓ Calling out to JavaScript
- ✓ JavaScript Calling Silverlight

Silverlight Out-of-Browser Applications