

C#.Net

SYLLABUS

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 , 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

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- 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

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- 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

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- 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 Todays 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

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- 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

Asp.Net

SYLLABUS

Introduction To Web Applications [Prerequisites]

- Types of Applications – Web, Desktop & Mobile Applications
- Web applications with Web Server
- Web Server role, about IIS, APACHE, and CASSINI
- Web Browsers, Web Support Languages
- Understanding http, TCP/IP, LAN, WAN & O/S role in web development
- Why Scripting & its importance
- Client-Side & Server-Side Scripting

OVERVIEW OF .NET (ASP.NET)

- Intro to .NET
- Drawbacks of Current Trend
- .NET Framework
- Key Design Goals
- CLR, CTS, MSIL, & Other Tools
- Multiple Language Interaction & Support
- Moving from Project to Assemblies...
- Security Services and environment
- Vista & IIS 6.0/7.0 & their requirements
- Installing & Configuring VS.NET/.NET 2.0/3.0/3.5
- AJAX(ATLAS) importance in Web applications
- The need for AJAX & the Solution

ACTIVE SERVER PAGES .NET ROLE

- Shifting from ASP to ASP.Net, Asp.net to web 2.0 (new)
- ASP.Net as Framework, Namespaces
- ASP.Net – New Scenario in development process with IDE – VS.NET
- Web Pages to Web Forms, HTML – ASP.NET, State management- an Important Objective
- Understanding the ASP.NET Execution Scenario
- C#.Net role in ASP.NET Development
- ASP.NET/C#.Net – the Industry approach
- HTML, HTML Controls, ASP.NET Controls
- Client-side & Server-side Controls
- Consuming HTML Client/Server Controls in WebForms
- Consuming ASP.Net Controls in WebForms
- Understanding the Rendering Nature of Controls Developing a Simple Startup Application

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ASP.NET WEB FORMS – THE NEW TECHNOLOGY(BEGINNING)

- Introducing Web Forms, Worker process
- Working with Server Controls
- Applying Styles to Controls, Themes, Skins etc

FORM

- Page Directives and its use
- Separating Code & Design
- New Code behind Techniques
- Implementing ASP.NET Server Controls
- Types of ASP.NET & their need/render
- Intrinsic – Validation – Bound – DataSource
- Navigation – Login – Web Parts & AJAX.-as building blocks Asp.net.

WEB FORMS – INTRODUCTION TO AJAX INPUT VALIDATION

- Validating Form with Validation Controls of Asp.net
- Using RequiredFieldValidator control
- Using CompareValidator Control Using RangeValidator Control
- Using CustomValidator control
- Create Server-side / Client-side functions for – CustomValidator Control
- Group Validations & avoiding Validations.
- Finally – Client Targets & ValidationSummary control

ADO.NET I – DATABASE SERVICES (V1.1/2.0/3.5)

- XML, XML to HTML, XML & Databases
- XML Schema Definition Tool
- Overview of ADO.NET/ XML Support in .NET
- Connect/Insert/Update/Delete,Query data -using ADO.NET
- Retrieve data with datasets
- Data Adapters, Understanding Data tables
- Build Data table programmatically
- Filter and sort Data table, Data Relations
- ADO.NET LINQ

ADO.NET – II

- Parameters with Command Object
- Stored Procedures with ADO.NET using –output parameters
- Develop a Registration form using ADO

PRESENTING DATA USING ASP.NET BOUND CONTROLS (USING VB.NET/C#)

- ASP.Net bound controls

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- DataSource Controls
- Repeater & its uses.
- DataBound and DataAware Controls
- Bind data to Dropdownlist Control
- Datalist control
- DataGrid(1.1/2.0) Control
- GridView & its importance in Development
- GridView(Basic) – simple uses
- GridView (Advanced) –Runtime Fields, Empty DataRows, NTier ...
- FormView & DetailsView
- ListView

AJAX (ATLAS)

- Introduction to Microsoft AJAX.(Code name ATLAS)
- XML Http object
- Programming with XML HTTP Object
- Advantages and Disadvantages of AJAX.
- Features of AJAX.
- MS Implementation of AJAX

ASP.NET ERROR HANDLING & DEBUG.

- Error Handling & .NET Runtime
- Avoid Errors before they occur
- Structured Error Handling
- Catching General Exceptions
- Catching Specific Exceptions
- Throwing Exceptions
- Custom Exceptions
- Page Level Error Handling
- Application Level Error Handling

USER CONTROLS

- Creating User Controls
- Adding member to user controls.
- Registering User Controls
- Properties & Methods
- Dynamically loading user controls
- Master Pages

CONFIGURING ASP.NET APPLICATION

- Web Application configuration-Advantages.
- New Configuration Model, ASP.NET Conf Tool
- Web Application Machine Configuration
- Global Assembly Cache, Strong Names VS2005.
- Working with Assembly Info

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- Web.Config, Machine.Config
- Process Model –System Configuration.

ASP.NET WEB APPLICATIONS

- About Session & Application object
- Comparison between Session & Application
- Using the Global.asax file
- Managing Application State
- Http Handlers
- Application & Session Variables
- Application & Session Events

CACHE SERVICES

- Caching Overview
- Advantages of Caching
- Comparing with Application & Session var's
- Page Output Caching
- Page Data Caching
- Fragment Caching

SECURITY

- Security Overview
- Authentication & Authorization
- Windows-based Authentication
- Passport Authentication.(WebServices)
- Forms-based Authentication
- Memberships
- Authorizing Users and Roles
- User Account Impersonation

DEPLOYMENT

- Deploying ASP.NET Application

ASP.NET XML WEB SERVICES

- Introducing XML Web Services
- Differences Between DCOM / Remoting / 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

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- Using Data in Web Services
- Using Objects and Intrinsic
- HTML Pattern Matching
- WCF

WEBPARTS

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

WINDOWS VISTA-NEW FEATURES

- Gadgets/side bars.
- Office 2007
- VS to VS.net tools for office.

MOBILE APPLICATIONS

- Mobile forms
- Mobile Environment – Today's Need.
- Needed Infrastructure
- WAP, WML overview.
- MS Mobile Explorer.
- Open ware Simulators.
- Line smart phones and Pocket PC Applications.

SMARTPHONE AND POCKET PC

- What is Smartphone / Pocket Pc?
- Application for smartphone / pocket pc
- Deploying / Run application in devices / Live

VSTO – VS.NET

- What is VSTO?
- Programming developing managed addings for outlook.
- Advantages VSTO
- VSTO 2005 SE
- Runtime component.

Additional Needed Services in Web Apps(Optional)

- MSMQ in ASP.Net
- Its need in data transferring
- MSMQ – Its role in heterogeneous networks and systems
- Crystal Reports in ASP.Net
- Designing Reports for Web Browsers