

# ActiveNET

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## .net Course Content

### C# .net

#### **.NET Enterprise Architecture**

- Ø NET Framework
- Ø Base Class Libraries (BCL)
- Ø Common Language Run Time (CLR)
- Ø Microsoft Intermediate Language (MSIL)
- Ø Common Language Specification (CLS)
- Ø .NET Products
- Ø .NET Services

#### **.NET Languages**

- Ø VB.NET
- Ø VC#.NET
- Ø VC++.NET
- Ø Languages Comparison

#### **C# Languages Basics**

- Ø Data Types
- Ø Type Conversion
- Ø Boxing & Unboxing
- Ø Conditional Statements
- Ø Looping
- Ø Methods in C#
- Ø Properties
- Ø Arrays
- Ø Indexes
- Ø Structures, Enumerations
- Ø Strings
- Ø Regular Expressions
- Ø Collections

#### **Operator Overloading**

- Ø Unary Operator
- Ø Binary Operator

#### **Object Oriented Language**

- Ø OOPS Concepts
- Ø Encapsulation
- Ø Inheritance
- Ø Polymorphism
- Ø Class and Object
- Ø Constructors
- Ø Destructors
- Ø Method Overloading
- Ø Method Overriding
- Ø Early binding, Late binding
- Ø Abstract Classes
- Ø Abstract Methods
- Ø Interfaces
- Ø Multiple Inheritances

#### **Memory Management**

- Ø Garbage Collector Stack and Heap
- Ø System. Object Class
- Ø Architecture of Gc
- Ø Generations

#### **Exceptional Handling**

- Ø System Defined Exceptions
- Ø Custom Exceptions
- Ø Try, Catch, Finally
- Ø Throwing Exceptions

#### **GUI Applications Development**

- Ø Windows forms and controls
- Ø Creating Menus
- Ø Toolbars, Image list
- Ø Tree View, List view

# C# .net

## Data Base Programming

- Ø ADO.NET Introduction
- Ø Data Providers in .NET
- Ø Connection, Command
- Ø Data reader
- Ø Data Adapter
- Ø Data Set
- Ø Command Builder
- Ø Data Relations
- Ø ADO.NET and XML

## Assemblies

- Ø Private Assemblies
- Ø Shared Assemblies
- Ø Global Assembly Cache (GAC)

## Architecture of CLR

- Ø Components in CLR
- Ø Type Safety

## COM Interparability

- Ø Architecture of COM
- Ø Using COM Component form.NET
- Ø Using .NET Component form VB/VC++

## Delegates and Event Handling

- Ø Function Pointers
- Ø Multi cast delegates
- Ø Generic Routines
- Ø Event Handling

## Pointers

- Ø Value types, Reference types
- Ø Unsafe
- Ø Structures and pointers

## Remoting

- Ø Distributed Architecture
- Ø DCOM, RMI, CORBA
- Ø Channels (TCP, HTTP)
- Ø Marshal by Value
- Ø Marshal by reference
- Ø Server Activated
- Ø Client Activated
- Ø Remoting Architecture

## File Handling

- Ø System. IO namespace
- Ø File stream
- Ø Stream Reader
- Ø Stream Writer
- Ø File info
- Ø Directory info

## Windows Services

- Ø Service base class
- Ø Service Process Installer
- Ø Service Installer
- Ø Creating a windows Service
- Ø Installutil.exe

## Multi Threading

- Ø System, threading
- Ø Thread Synchronization
- Ø Critical Sections
- Ø Thread life cycle

## Introduction to Web applications and Security

- Ø ASP.NET using C#
- Ø System. Web & A simple web application
- Ø Code access security
- Ø Role based security

# ASP .net

## Introduction to Web Technologies

- Ø HTML
- Ø Client side scripting languages
- Ø IIS Architecture
- Ø Server side programming with ASP
- Ø ASP objects introduction

## ASP.NET Introduction

- Ø What is ASP.NET
- Ø ASP vs. ASP.NET
- Ø Page and import directive
- Ø In page technique and code behind technique

## Server Side Controls

- Ø Client control vs. Server side controls
- Ø Type of server controlsHTML server controls, Web server controls
- Ø HTML server controls programming using in page technique
- Ø View state architecture
- Ø ASP.NET page execution architectureASP. NET worker process, page life cycle events
- Ø VS.NET vs. Web matrix
- Ø Types of web server controlsWorking with basic controls, Label,Text box, Buttons etc.,
- Ø Working with rich controls Calendar, Adrotator.
- Ø Validation controls.

# ASP .net

## State Management

- Ø Page submission
- Ø Cookies
- Ø Session State
- Ø Session Tracking Arch
- Ø Application object
- Ø Session and App events
- Ø Global ASAX

## XML Programming

- Ø Introduction to XML
- Ø Creation of XML document
- Ø XML parsers
- Ø DOM vs. SAX parser
- Ø Developing Client App for XML
- Ø HTML PageVB
- 6.0 App
- Ø DTD
- Ø XML Scheme
- Ø Database support for web

## ADO.NET

- Ø Introduction to manage data providers
- Ø Data Reader programming
- Ø Drawbacks of Record set
- Ø Dataset and Data Adapter
- Ø Datagrid with sorting
- Ø Datagrid with paging
- Ø Customizing Datagrid
- Ø Typed Dataset
- Ø Inline editing with Data grid
- Ø Dataset serialization and deserialization
- Ø Write XML and read XML methods
- Ø Data view
- Ø Repeater Control
- Ø Data list control

## Caching

- Ø Importance of caching
- Ø ASP 3.0 Support for caching
- Ø Type of caching in ASP.NET
- Ø Output caching Web user control vs custom control
- Ø Fragment caching
- Ø Data caching vs. Application object

## ASP.NET Configuration

- Ø Machine configuration vs. Web configuration
- Ø Application variables
- Ø Compilation setting
- Ø Custom error setting
- Ø Session state setting
- Ø Enhancement in ASP.NET
- Ø Inprocess vs. Outprocess session state
- Ø State server and SQL server
- Ø Cookie less session

## ASP.NET Tracing

- Ø Page level
- Ø Application level

## Security in ASP.NET

- Ø Authentication & Authorization
- Ø Windows based authorization
- Ø Form Based authorization
- Ø Passport

## XML Web Services

- Ø ASP 3.0 with MTS
- Ø Dcom vs. XML Web services
- Ø Role of WSDL
- Ø NET support for Web Service
- Ø Client Apps for Web Service
- Ø WSDL utility
- Ø Session state with Web Service
- Ø Caching with Web Service
- Ø Proxy with Asynchronous Methods
- Ø Web service wire Formats
- Ø HTTP Post
- Ø HTTP Get
- Ø SOAP Architecture
- Ø SOAP Envelops
- Ø Discovering web Service
- Ø Disco vs. VSDisco
- Ø UDDI Registry
- Ø Securing web Service
- Ø IP Address & Domain Restriction
- Ø SSL (Secured Socket Layer) – SOAP Header

## Localization and Globalization

### Introduction to Mobile Programming

- Ø Mobile ASP.NET Arch
- Ø MMIT (Micro Soft Mobile Internet Toolkit)
- Ø Creating Mobile ASP.NET Page
- Ø Mobile Emulator

# VB .net

## Micro Soft .NET Overview

- Ø Why .Net
- Ø Introduction to .Net framework
- Ø Basic functionality of CLR
- Ø MSIL
- Ø CTS & CLS
- Ø .Net languages
- Ø System Requirements

## Introduction to VB.NET

- Ø Features of VB.NET
- Ø Writing programmes in VB.NET
- Ø Compiling and Executing from Command prompt
- Ø Intro to Assemblies and Namespace
- Ø Base class libraries
- Ø Data types
- Ø Option statements
- Ø Boxing and Unboxing
- Ø Array
- Ø Sub programmes

## Introduction to Visual Studio.NET

- Ø VS 6.0 VS VS.NET
- Ø File structure created for VS.NET APP
- Ø Types of projects
- Ø Creating Demo Console App

## Object Oriented Programming

- Ø Principles of OOP
- Ø Structure VS Class
- Ø Access Specifiers
- Ø Properties
- Ø Method Overloading
- Ø Constructors
- Ø Shared Modifier
- Ø Inheritance
- Ø Overloading and Overriding
- Ø My base Keyboard
- Ø Shadowing
- Ø Abstract class
- Ø Sealed class
- Ø Interface
- Ø Polymorphism
- Ø Early Binding and Late Binding
- Ø Destructor & Garbage Collector

## GUI application development

- Ø Introduction to system WINDOWS, Form, DLL
- Ø Basic controls rich and Event driven programming
- Ø Advanced controls Rich text box, Dialog
- Ø Boxes, Toolbar...
- Ø Working with context menu
- Ø Main menu and MDI form
- Ø Visual Inheritance

## Assemblies

- Ø Introduction to COM Architecture
- Ø Disadvantages of COM
- Ø Introduction to Assembly
- Ø Private Assembly vs. Shared Assembly
- Ø Creating private Assembly
- Ø Probing and Preparing Configuration file
- Ø Strong name utility
- Ø Creating shared Assembly
- Ø CLR Architecture
- Ø Native Generator utility
- Ø Assembly Versioning
- Ø Compatibility of Assembly
- Ø Configuring file for sharing Assembly

## Data access with ADO.NET

- Ø Introduction to Data Access Libraries DAO
- Ø RDO and ADO
- Ø Draw Back of ADO
- Ø ADO.NET managed Data providers
- Ø Introduction to system.Data.OleDb
- Ø Data Reader
- Ø Introduction to system.Data.SqlClient
- Ø Preparing Statement
- Ø Transaction handling
- Ø Introduction to system.Data.Oracleclient
- Ø Dataset and Data adapter
- Ø Data Binding
- Ø Data grid Programming
- Ø Data View
- Ø Data Relation

## Delegates

- Ø Introduction to Delegate concept
- Ø Event Handling Arch with Delegate
- Ø Handles, Add Handler and Remove Handler

## Multi Threading

- Ø Thread Class
- Ø Sleep, Suspend and Resuming Thread
- Ø Asynchronous Connection
- Ø Synchronization of Threads

## Distributed APP development

- Ø Introduction to monolithic, 2 Tier and 3 Tier Arch
- Ø Introduction to DCOM
- Ø Disadvantages Of DCOM
- Ø Introduction to remoting
- Ø TCP and HTTP Channels
- Ø Serialization and Deserialisation with Binary Formatter and SOAP Formatter
- Ø Activation Modes Server Activated and client Activated
- Ø Server Activated (Single call and single ton)
- Ø Remoting Architecture
- Ø System. Runtime. Remoting. DLL
- Ø Apps for server Activated and client Activated

# VB .net

## **Windows control library**

- Ø Creating custom control extending existing control
- Ø Creating custom control grouping existing controls

## **Interoperability with COM**

- Ø Creating custom control extending
- Ø Creating ActiveX DLL using VB 6.0
- Ø Managed code and Unmanaged code
- Ø Using ActiveX DLL in VB.NET APP
- Ø TLBIMP Utility
- Ø RCW
- Ø Using .NET Assembly in VB 6.0 App
- Ø CCW
- Ø TLBExp and Regasm Utilities

## **Crystal reports**

### **File Streams**

## **Windows Service**

- Ø Introduction to service App
- Ø System. Service process
- Ø Service Base Class
- Ø Service Installer and Service
- Ø Process installer
- Ø Register Data Base of Services
- Ø Install util utility
- Ø SCM & SCP

## **Localization and Globalization**

- Ø Resource file creation
- Ø Satellite Assembly Creation
- Ø System. Reflection Assembly and Resource Manager