Course Content for .Net

.NET FUNDAMENTALS

- **Why .NET?**
- **The .NET initiative**
- **Introduction to .NET framework**
- **Advantages of .NET framework**
- **System requirements**

MS.NET FUNDAMENTALS

- **Base class libraries**
- **Common language-runtime (CLR)**
- **Microsoft intermediate language (MSIL)**
- **Optimized just-in-time (JIT)**
- **Common type systems (CTS)**
- **Common language specification (CLS)**
- **Compilation and execution of .NET application**
- **Assemblies**
- **Namespace**

INTRODUCTION TO VISUAL STUDIO .NET

- **The Start Page**
- **Solution Explorer**
- **The Object Browser and Class View Window**
- **The Code Editor**
- **The Form Designer and the Toolbox**
- **The Server Explorer window**
- **Macro Explorer**
- **Running a Visual Basic Console Application**

VB.NET

INTRODUCTION TO VB.NET

- **Features of visual basic .NET**
- **File extensions used in visual basic .NET**
- **Visual Basic keywords**
- **Visual Basic statements**
- **Procedures, classes, modules, methods and more…**
- **The Option & Import statements**
- **Adding classes to project**
- **Declaring variables**
- **Data types**
- **Arrays**
- **Handling date and time**

INTRODUCTION TO OOP

- **Principles of oops**
- **Structure Vs classes**
- **Relationship between classes and objects**
- **Access Specifies**
- **How to create namespaces in S class libraries**
- **How to use namespaces**
- **Constructors**
- **Finalize, Dispose & Garbage collectors**
- **My Base, my class & my keywords**

EXCEPTION HANDLING & DEBUGGING

- **Exceptions**
- **.NET exceptions**
- **User defined exceptions**
- **Try-catch-finally**
- **Throw exception**
- **Debugging application**
- **Searching for bugs**

GUI APPLICATION DEVELOPMENT

- **Introduction to system windows, forms**
- **Basic controls and event driven programming**
- **Advanced controls**
- **Rich text box, toolbars**
- **Working with context menus**
- **Built in dialog boxes**

STEARMS

- **File stream**
- **Stream reader**
- **Stream writer**

FILE HANDLING CONCEPTS COLLECTION

- **Generic collections**
- **Bit collections**
- **Specialized collections**
- **Weight collection classes**
- **User defined collection classes**

ADO .NET

INTRODUCTION OF ADO .NET

- Features of ADO .NET
- Differentiation between ADO & ADO .NET
- ADO .NET namespaces
- Properties, Methods & events of the connection object
- Properties, Methods & events of the command object
- Access & Manipulating data from data grid
- Performing data updates

DELEGATES

- Introduction to delegate concept
- Event handling arch with delegate
- Handles, add handler and remove handler

ASSEMBLIES

- Introduction to assemblies
- Benefits
- Contents
- Application-Private assemblies
- Private Vs shared assemblies
- Global assembly cache (GAC)

MULTITHREADING

- Thread class
- Thread synchronization
- Creating and controlling threads
- Sleep, suspend and resume threading

CREATING & USING WEB SERVICES

- Data accessing through crystal reports
- Accessing filtered data through crystal reports
- Accessing related data through crystal reports

ASP .NET

ASP .NET INTRODUCTION

- How is ASP .net different from ASP
- ASP .NET design goals
- ASP .NET in .NET framework
- Development environment for ASP .NET application
- Identifying the features of ASP .NET
- Identifying programming modules in ASP .NET
- Web forms
- Web services

ASP .NET PROGRAMMING SERVER CONTROLS

- Processing of web pages
- Server control hierarchy
- Web controls
- Buttons, list controls, text boxes, hyper links….
- HTML controls
- HTML anchor, button…

STRUCTURE OF AN ASP .NET PAGE ASP .NET PROGRAMMING VALIDATION CONTROLS

- Required field validation
- Regular expression
- Range validation…

IDENTIFING THE DIFFERENT TYPES OF DATA BINDING

- Introduction to data binding
- Single value data binding
- Multi record data binding
- Custom binding

ASP .NET PROGRAMMING WITH ADO .NET

- Introduction of ADO .NET
- Features of ADO .NET
- Differentiation between ADO & ADO .NET
- ADO .NET namespace
- Connected architecture through ADO .NET
- Disconnected architecture through ADO .NET
- Working with transaction in ASP .NET etc…

USING XML & SEARCH TOOLS IN ASP .NET

- Working with XML server controls in ASP .NET
- Binding XML data to web forms controls
- Connecting relational data to an XML document

CONFIGURING, DEBUGGING & DEPLOYING ASP .NET APPLICATION

- Configuration overview
- Structure of configuration file
- Configuration section
- Tracking and debugging an application
- Deploying an application

EXCEPTIONAL HANDLING, MANAGING STATE AND SECURITY ASP .NET WEB APPLICATION

- Introduction state management in ASP.NET

- Sending E-mail from ASP.NET page
- Securing ASP .NET application

SESSION TRACKING

- State maintenance
- Session state
- Cookies
- Session object and events
- CACHING
- Caching and its methods
- Output caching

WEB SERVICES

- Introduction to an ASP .NET web application
- Events of an ASP .NET web application
- Using web services in web application

C# .NET

C# LANGUAGE BASICS

- Data types
- Type conversion
- Boxing & un boxing
- Conditional statements
- Looping
- Methods in C#
- Properties
- Arrays
- Indexes
- Structures, enumerations
- Strings
- Regular expressions
- Collections

POINTERS

- Value types, reference types
- Unsafe
- Structure and pointers

MEMORY MANAGEMENT

- Garbage collector
- Stack and heap
- Architecture of GC
- Generations
- M.M. support classes

OBJECT ORIENTED PROGRAMMING CONCEPTS

EXCEPTION HANDLING

- System defined exceptions
- Custom exceptions
- Try, catch, finally
- Throwing exceptions

OPERATOR OVERLOADING

- Unary operators
- Binary operators

GUI APPLICATION PROGRAMMING

- Introduction to system windows, forms
- Basic controls and events driven programming
- Advanced controls
- Rich text box, toolbars…
- Working with context menus
- Built in dialog boxes
- DATA BASE PROGRAMMING
- Introduction of ADO .NET
- Features of ADO .NET
- Differentiation between ADO & ADO .NET
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- Properties, methods & events of the connection objects
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- Performing data updates

ASSEMBLIES

- Introduction to Assemblies
- Benefits
- Contents
- Application-Private Assemblies
- Private vs Shared Assemblies
- Global Assembly Cache (GAC)

DELEGATES AND EVENT HANDLING

- Introduction to Delegate Concept
- Event handling Arch with Delegate
- Handles, Add Handler and Remove Handler
- Multi Cast Delegates
- Generic Routines
- Function Pointers

MULTITHREADING

- **Thread Class**
- **Thread Synchronization**
- **Creating and controlling Threads**
- **Sleep, Suspend and Resume Threading**

CREATING & USING WEB SERVICES

- **Introduction to Web Services**
- **Creating Web Service**
- **Using Web service in a Windows Application**
- **Working with Window Services**