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**DOT NET COURSE
BROCHURE**

COURSE CONTENTS (Core Dot Net)

Introduction to .NET

- ❖ Introduction of Language
- ❖ Introduction of Web Application
- ❖ Platform Dependence , Independence & Portability
- ❖ Introduction of .NET Framework
- ❖ Introduction of Compiler & MSIL
- ❖ Introduction of CLR
- ❖ Introduction of CLS, CTS, CLI

OOPs Implementation

- ❖ Encapsulation, Abstraction, Class & object
- ❖ Relation b/w objects and reference variables
- ❖ Method Overloading & Types of Methods
- ❖ Description of Memory blocks: Stacks, Heap & Class Area
- ❖ Constructors and Destructor & Garbage Collection
- ❖ Using Scope & Dispose Method
- ❖ Usage of this keyword
- ❖ Static Data members, Constructors & methods
- ❖ Relation & Implementing Has-A relation
- ❖ Implementing Is-A relation using Inheritance
- ❖ Method Overriding & Hiding
- ❖ Usage of Base keyword
- ❖ Static & Dynamic binding
- ❖ Runtime polymorphism and generalization
- ❖ Abstract classes & methods
- ❖ Interfaces and Role based Inheritance
- ❖ Usage of sealed, partial, out, ref, pram keyword
- ❖ Namespace
- ❖ Assembly & GAC
- ❖ Property & Indexer

- ❖ Windows Application
- ❖ Delegates & Event
- ❖ Event Handling
- ❖ Windows App. Component.
- ❖ Object class and its role

String Handling

- ❖ String class & concept of Immutability
- ❖ Pool of String Constants & its use
- ❖ Common String operations
- ❖ Use of String Builder

Exception Handling

- ❖ Difference b/w exception and error
- ❖ Exception Handling & Robustness
- ❖ Common Exceptions and Errors
- ❖ Try and catch block
- ❖ Exception handlers
- ❖ throw keyword and its usage
- ❖ Role of finally
- ❖ Exception Class Methods & properties
- ❖ Creating User defined Exceptions

Multithreading in .NET

- ❖ Multitasking and Multithreading
- ❖ Process & thread
- ❖ States of Thread
- ❖ Thread based execution model of .NET Applications
- ❖ Implementing User threads
- ❖ Thread synchronization
- ❖ Inter Thread communication
- ❖ Thread Interrupting
- ❖ Daemon Threads and their use

COURSE CONTENTS (Core Dot Net)

Input Output Streams

- ❖ Streams & their advantages over conventional input output
- ❖ Reading & writing data byte by byte, line by line, and in one go.
- ❖ Redirecting Standard input & output streams
- ❖ Serialization & Deserialization
- ❖ Serialization Formatter
- ❖ Xml Formatter
- ❖ Binary Formatter
- ❖ Soap Formatter
- ❖ Json Formatter
- ❖ File class and File System Interaction
- ❖ Zip & Unzip Files

Reflection

- ❖ Understanding object representation of classes
- ❖ Loading classes dynamically
- ❖ Instantiating classes indirectly
- ❖ Obtaining information of classes dynamically
- ❖ Invoking methods indirectly
- ❖ Referencing data members indirectly
- ❖ Overriding access policy and referencing private members

Collection Framework

- ❖ Role and Importance of Collection Framework
- ❖ Index Based Collection Array List, Stack, Queue
- ❖ Use Define Collection
- ❖ Map Based Collection Use of Key & Value pair (Entry)
- ❖ Hash Table, Sorted List
- ❖ Searching elements in List, Hash and Tree based collections
- ❖ Role of equals and hashCode() methods
- ❖ Role of Comparable interfaces
- ❖ Type safety and Generics
- ❖ Generic Collection
- ❖ List ,Stack ,Queue ,Dictionary ,Linked List ,Sorted List

COURSE CONTENTS (Advance Dot Net)

Windows application programming

- ❖ Introduction
- ❖ Controls
- ❖ Menus and Context Menus
- ❖ Dialog
- ❖ Form Inheritance
- ❖ Other Misc. Topics

Database Connectivity Using ADO.NET

- ❖ Overview of Database & Database Server
- ❖ Introduction of SQL Server 2008
- ❖ DML & DDL Query
- ❖ Join , Trigger , Procedure & function
- ❖ ADO.NET API
- ❖ Connected Layer
- ❖ Connection, Command & Data Reader
- ❖ Disconnected Layer
- ❖ Adaptor, Data Set, Table, Row & Column
- ❖ ODBC, OLEDB, Oracle Client
- ❖ Connectivity with Oracle ,Access, Excel & MySql
- ❖ Connection Pooling

- ❖ Data Source
- ❖ SqlDataSource, XmlDataSource, SiteMapDataSource & ObjectDataSource
- ❖ Data Control
- ❖ DataList, DetailsView, FormView, GridView, ListView & Repeater
- ❖ Validation Control
- ❖ CompareValidator, CustomValidator, RangeValidator, RegularExpressionValidator & ValidationSummary
- ❖ Navigation
- ❖ Menu, SiteMapPath & TreeView
- ❖ Login Control & Membership
- ❖ Login, LoginName, LoginStaus, LoginView, PasswordRecovery, ChangePassword, CreateUserWizaed.
- ❖ Ajax Extensions
- ❖ ScriptManager, UpdatePanel, UpdateProgress & Timer
- ❖ Globalization & Ioclation
- ❖ Master Page & Style them
- ❖ Mail
- ❖ SMTP
- ❖ POP3

Web Application Programming Using Asp.NET

- ❖ Web application architecture
- ❖ Static Web Page
- ❖ Application Life Cycle
- ❖ Dynamic Page
- ❖ Page Life Cycle & Event Method
- ❖ Html & Server Control
- ❖ Server Control Event Life Cycle
- ❖ State Management
- ❖ Url Rewriting, Hidden Form Field, View State, Session, Cookies & Application.
- ❖ Global class & Event Method
- ❖ Uploading & Downloading
- ❖ Page Directives

MVC3

- ❖ Introduction to MVC3
- ❖ The Model-View-Controller Pattern
- ❖ Differences Between MVC and Web Forms Applications
- ❖ Building a Simple MVC Application with Visual Studio
- ❖ Working with Controllers and Actions
- ❖ Introduction to Controllers
- ❖ Using a Controller to Manage the Application
- ❖ Controller Actions
- ❖ Returning Action Results
- ❖ Creating MVC Models
- ❖ Data and Business Rules in MVC Applications
- ❖ Creating a Custom Data Model
- ❖ Data Validation and Data Annotations
- ❖ Using MVC Views

COURSE CONTENTS (Advance Dot Net)

- ❖ Views in ASP.NET MVC
- ❖ Creating Views
- ❖ Adding Content to a View
- ❖ HTML Helpers and Action Filters
- ❖ Using HTML Helpers in MVC
- ❖ Creating a Custom Helper
- ❖ Using Action Filters
- ❖ Creating a Custom Filter
- ❖ Routing and URLs
- ❖ Customizing Application URLs
- ❖ Creating Route Constraints
- ❖ Routing and Web Forms
- ❖ Using MVC and AJAX and JQuery
- ❖ Integrating Client-Side Script with MVC
- ❖ Using the MVC AJAX Helpers
- ❖ Working with JSON Data

Networking

- ❖ Introduction of Networking
- ❖ Understanding socket and port
- ❖ Tcp Client & Tcp Listener
- ❖ TCP/IP based networking
- ❖ HTTP based networking
- ❖ HttpRequest
- ❖ HttpResponse

Remoting

- ❖ Application Domain
- ❖ Remotable & NonRemotable Object
- ❖ Marshal-By-Reference
- ❖ ServerActivatedObject(SAO)

- ❖ SingleCall
- ❖ Singleton
- ❖ ClientActivatedObject
- ❖ Channels
- ❖ TcpChannal
- ❖ Service Configuration & Hosting

LINQ

- ❖ Introduction to LINQ
- ❖ LINQ expressions
- ❖ Using via extension methods
- ❖ Filtering
- ❖ Sorting
- ❖ Aggregation
- ❖ Skip and Take operators
- ❖ Joins
- ❖ Extension methods
- ❖ Object initialization syntax
- ❖ Anonymous types
- ❖ Lambda expressions
- ❖ Deferred Execution
- ❖ Benefits and drawbacks
- ❖ IEnumerable vs IQueryable
- ❖ Using across tiers
- ❖ Data Projection
- ❖ Single result value
- ❖ Existing types
- ❖ Anonymous types
- ❖ Grouping

COURSE CONTENTS (Advance Dot Net)

- ❖ LINQ to XML
- ❖ New XML classes
- ❖ Generating XML
- ❖ Querying XML
- ❖ Using data projection
- ❖ Combining with XPath
- ❖ LINQ to SQL
- ❖ Attributes and mapping
- ❖ Creating a DataContext
- ❖ Deferred loading
- ❖ Saving changes
- ❖ Inserts and deletes
- ❖ Transactions