



Training | Consulting | Development | Outsourcing



Dot Net Developer

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Dot Net Basic & Advanced Developer

Course Overview:

This course will cover the practical aspects of multi-tier application development using the .NET framework. The goal of this course is to introduce the students to the basics of distributed application development. We will introduce the students to Web Service development and .NET remoting. Technologies covered include the Common Language Runtime (CLR), .NET framework classes, C#, ASP.NET, and ADO.NET. We will also cover service oriented architecture, design, performance, security, content managements systems and deployment issues encountered in building multi-tier distributed applications

Course Outline:

1 .NET: What You Need To Know

- Installation
- .NET Executables and the CLR
- Using Visual Studio

2 First C# Programs

- Hello, World
- Namespaces
- Variables and Expressions
- Using C# as a Calculator
- Input/Output in C#
- .NET Framework Class Library

3 Data Types in C#

- Data Types
- Integer Types
- Floating Point Types
- Decimal Type

- Characters and Strings
- Boolean Type
- Conversions
- Nullable Types

4 Operators and Expressions

- Operator Cardinality
- Arithmetic Operators
- Relational Operators
- Logical Operators
- Bitwise Operators
- Assignment Operators
- Expressions
- Checked and Unchecked

5 Control Structures

- If Tests
- Loops
- Arrays
- Foreach
- More about Control Flow
- Switch

6 Object-Oriented Programming

- Objects
- Classes
- Inheritance
- Polymorphism
- Object-Oriented Languages
- Components

7 Classes

- Classes as Structured Data
- Methods
- Constructors and Initialization

- Static Fields and Methods
- Constant and Read only

8 More about Types

- Overview of Types in C#
- Value Types
- Boxing and Unboxing
- Reference Types

9 Methods, Properties and Operators

- Methods
- Parameter Passing
- Method Overloading
- Variable-Length Parameter Lists
- Properties
- Operator Overloading

10 Characters and Strings

- Characters
- Strings
- String Input
- String Methods
- StringBuilder Class
- Programming with Strings

11 Arrays and Indexers

- Arrays
- System.Array
- Random Number Generation
- Jagged Arrays
- Rectangular Arrays
- Arrays as Collections

12 Inheritance

- Single Inheritance

- Access Control
- Method Hiding
- Initialization

13 Virtual Methods and Polymorphism

- Virtual Methods and Dynamic Binding
- Method Overriding
- Fragile Base Class Problem
- Polymorphism
- Abstract Classes
- Sealed Classes
- Heterogeneous Collections

14 Formatting and Conversion

- ToString
- Format Strings
- String Formatting Methods
- Type Conversions

15 Exceptions

- Exception Fundamentals
- Structured Exception Handling
- User-Defined Exception Classes
- Inner Exceptions

16 Interfaces

- Interface Fundamentals
- Programming with Interfaces
- Using Interfaces at Runtime
- Resolving Ambiguities

17 .NET Interfaces and Collections

- Collections
- IEnumerable and IEnumerator

- Copy Semantics and ICloneable
- Comparing Objects
- Generic Types
- Type-Safe Collections

18 Delegates and Events

- Delegates
- Anonymous Methods
- Events

19 Introduction to Windows Forms

- Creating Windows Applications Using Visual Studio
- Partial Classes
- Buttons, Labels and Textboxes
- Handling Events
- Listbox Controls

20 Additional C# Features

- Auto-Implemented Properties
- Implicitly Typed Variables
- Object Initializers
- Collection Initializers
- Anonymous Types
- Partial Methods
- Extension Methods
- Lambda Expressions
- Language-Integrated Query (LINQ)

Windows Forms

1 Introduction to Windows Forms

- What Are Windows Forms?
- Windows Forms Class Hierarchy
- Building a Form
- The Application Class

- Trapping Events
- Buttons
- Labels and Textbox Controls

2 Visual Studio and the Forms Designer

- Using the Forms Designer
- Code Generated by Forms Designer
- Adding Event Handlers
- Creating Attractive Forms
- Creating Easy To Use Forms

3 Using Controls

- Checkbox, Radio Button, and Group Box
- Numeric Up/Down
- Trackbar
- Progress
- MonthCalendar
- DateTimePicker

4 List Controls

- List box and Combo box
- Domain UpDown
- List View
- Storing Objects in List Controls
- Working with Dialogs
- Modal vs. Modeless Dialogs
- Message Boxes
- Common Dialogs
- Creating a Modal Dialog
- Configuring the Dialog Result
- Access Data from the Dialog
- Validating Data
- Error Provider Control
- Modal Dialogs
- Creating a Modeless Dialog

6 Menus, Tool bars and Status Bars

- Main Menus
- Context Menus
- Building a Status Bar
- Building a Toolbar
- Using the Timer Control

7 Using Advanced Controls

- Panel
- Tree View
- Splitter
- Tab Control
- Resources
- Image Resources
- Resource Files
- String Resources
- Working with Resources in Visual Studio
- Resource Managers
- Cultures and Internationalization
- Building Localizable Forms

9 Data Access and Data Binding

- ADO.NET Overview
- .NET Data Providers
- Using DataReaders
- Data Sets
- Data Tables
- Data Views
- Data Binding
- Interacting with XML Data

10 .NET Windows Forms

- Tool Strip Control
- Split Container Control
- Web Browser Control
- Data Grid View Control

- Other .NET Controls
- New Data Binding
- Application Settings
- Background Worker Component
- Click Once Deployment

ASP.NET

1 Introduction to ASP.NET

- From ASP to ASP.NET
- Web Forms
- Web Services
- ASP.NET Features

2 Web Forms Architecture

- Page Class
- Web Forms Life Cycle
- Web Forms Event Model
- Code-Behind

3 ASP.NET and HTTP

- Request/Response Programming
- HTTP Request Class
- HTTP Collections
- HTTP Response Class
- Redirection
- HTTP Utility Class

4 Web Applications Using Visual Studio

- Using Visual Web Developer
- Visual Studio Forms Designer
- Using Components
- Shadow Copying
- Using the Global.asax File

- Data Binding

5 State Management and Web Applications

- Session State
- Application State
- Multi Threading Issues
- Cookies

6 Server Controls

- HTML Server Controls
- Web Forms Server Controls
- Rich Controls
- Validation Controls
- User Controls

7 Caching in ASP.NET

- What Is Caching
- Page-Level Caching
- Page Fragment Caching
- Optimizing Your ASP.NET Application
- Application Caching

8 ASP.NET Configuration and Security Fundamentals

- Configuration Overview
- Authentication and Authorization
- Forms Authentication
- Windows Authentication
- Security and ASP.NET

9 Debugging, Diagnostics and Error Handling

- Debugging
- Application Tracing
- Page Tracing
- Error Handling

10 More Server Controls

- Most recent ASP.NET Controls
- Menus
- Master Pages

11 Data Access in ASP.NET

- Data Source Controls
- Connection String Storage
- Grid View
- Details View
- Form View
- Object Data Sources
- List View
- Data Pager
- Linq Data Source

12 Personalization and Security

- Configuration Overview
- Themes
- Skins
- Security in ASP.NET
- Membership and Roles
- Login Controls
- User Profiles

13 Introduction to ASP.NET AJAX

- Rich Client Applications
- AJAX
- Script Manager
- Update Panel 5

15 HTTP Pipeline

- Pipeline Architecture
- Context
- Applications
- Handlers
- Modules

Webservices

1 What Are Web Services?

- Introduction to Distributed Computing
- Network Latency
- Object State and Scalability
- Interoperability
- SOAP
- WSDL
- UDDI
- Web Service Business Models
- Service Oriented Architecture (SOA)
- ASP.NET Web Services
- Web Service Enhancements (WSE)
- Windows Communications Framework (WCF)

2 Web Services Fundamentals

- Creating a Web Service Using ASP.NET
- Deploying a Web Service Using IIS
- Testing a Web Service
- HTTP
- XML
- SOAP
- Web Service Clients
- WSDL

3 Developing ASP.NET Web Services

- Using Visual Studio to Develop Web Services
- Visual Web Developer
- Using ASP.NET Development Server

- An Overview of the Web Services Namespaces
- Deriving from the WebService Class
- @WebService Attribute
- WebService Class
- Adding a WebMethod to Web Services
- Debugging Web Services

4 Web Service Clients

- Web Service Proxies
- Web Services Description Language Tool (WSDL.exe)
- Understanding the Proxy Code
- Creating a Proxy with Visual Studio
- Returning Complex User-Defined Data Types
- Writing a Client for the Google Search API

ADO.NET

1 Introduction to ADO.NET

- Microsoft Data Access Technologies
- From ADO to ADO.NET
- ADO.NET Architecture
- Namespaces and Classes
- Interfaces
- DataSets and Disconnected Access
- First ADO.NET Programs
- Acme Computer Case Study

2 ADO.NET Connections

- .NET Data Providers
- IDbConnection
- Connection Classes
- Connection Strings
- Connection Pooling
- Connection Events
- Error Handling

- Database Programs with ASP.NET

3 ADO.NET Commands

- IDbCommand
- Command Objects
- Creating Commands
- Executing Commands
- Parameterized Queries
- Command Types
- Using Stored Procedures
- Batch Queries

4 DataReaders and Connected Access

- DataReaders
- IDataRecord
- Type-Safe Accessors
- Null Columns
- ExecuteReader Options
- Multiple Result Sets
- Obtaining Schema Information

5 Data Sets and Disconnected Access

- Data Set
- Data Adapter
- Command Objects
- Data Table
- Data Column
- Data Row
- Row States and Versions
- Accept or Reject Changes
- Data Table Events
- Updating a Database from a Data Set
- Command Builders

6 More About Data Sets

- Filtering Data Tables
- Multiple Table DataSets
- Schema
- Constraints
- Relations
- Navigating a DataSet
- DataMapping
- Creating a DataSet Programmatically

7 XML and ADO.NET(Not covered in the Windows and Web offerings)

- Strong Coupling Between ADO.NET and XML
- Rendering XML from a DataSet
- Controlling XML Output
- Reading XML into a DataSet
- XML Schema and DataSets
- Typed DataSets
- Table Adapters
- Synchronizing DataSets and XML
- XML Serialization

10 New Features in ADO.NET

- Σ Using Server Explorer in Visual Studio
- Σ Asynchronous Database Operations
- Σ Multiple Active Result Sets
- Σ Bulk Copy in ADO.NET

WCF

1 Introduction to WCF

- What is WCF?
- Address, Binding and Contract
- WCF Services and Clients
- IIS Hosting
- WCF Architecture

2 Addresses and Bindings

- Addresses
- Bindings
- Message Exchange Patterns
- Configuring Bindings
- Interoperating with ASMX Web Services
- Hosting in a Console Application
- Channel Factories
- Multiple Endpoints

3 Service Contracts

- Defining Service Contracts
- Defining Operation Contracts
- Services With Multiple Contracts
- Contract Inheritance
- Operation Overloading

4 Instance Management

- Using Per-Call Services
- Using Per-Session Services
- Using Singleton Services
- Configuring Behaviors

5 Data Contracts

- Implementing Data Contracts
- Mapping Data Contracts to XSD Schema
- Serialization
- Arrays and Generic Collections
- Enums
- Versioning Data Contracts

6 More about Service Contracts

- Versioning Service Contracts
- Implementing Message Exchange Patterns

- Oneway Contracts
- Duplex Contracts
- Asynchronous Proxies

7 Handling Errors

- Faults and Exceptions
- Generating and Handling Faults
- Fault Contracts
- Faults and Sessions

WPF

1 Introduction to WPF

- Why WPF?
- What Is WPF?
- NET Framework 4.5 (WinFX)
- WPF Overview
- Application and Window
- A Simple WPF Application
- Using Visual Studio
- Brushes
- Panels

2 XAML

- Role of XAML
- Elements and Attributes
- Namespaces
- Property Elements
- Type Converters
- Content Property
- Collections
- XAML and Procedural Code

3 WPF Controls

- Button
- Label
- TextBox
- ToolTip
- RadioButton
- CheckBox
- ListBox
- ComboBox

4 Layout

- Sizing
- Positioning
- Transforms
- Canvas
- Drawing Shapes
- StackPanel
- WrapPanel
- DockPanel
- Grid
- Scrolling
- Scaling

5 Dialogs

- Message Boxes
- Win32 Common Dialogs
- Custom Modal Dialogs
- Custom Modeless Dialogs

6 Menus and Commands

- Menus
- Context Menus
- Icons on Menu Items
- Commands
- Keyboard Shortcuts
- Disabling Menu Items
- Checking Menu Items

7 Tool bars and Status Bars

- Toolbars
- Toolbars and Commands
- Status Bars

8 Data Binding

- Binding Sources
- Sharing Sources with DataContext
- Data Templates
- Value Converters
- Collection Views
- Data Providers
- Validation Rules

MVC

1 Introduction

- ASP and ASP.NET WebForms
- Web Standards and REST
- JavaScript and AJAX
- The MVC Design Pattern
- Unit Testing
- Managing Dependencies

2 ASP.NET MVC Architecture

- ASP.NET Platform
- Controllers, Models, and Views
- URL Routing
- Controller Actions
- Razor View Engine
- Extensibility

3 Defining the Model

- Persistence Ignorance
- Repository Pattern
- Object Relational Mapping (ORM)
- ADO.NET
- Entity Framework (EF)
- nHibernate
- Using an IoC Container

4 Routes and URLs

- Introduction to Routing
- Defining Routes
- Route Evaluation
- The Controller Factory
- Constraints
- Exempting URLs
- Constructing Outgoing URLs
- Unit Testing Route

5 Controllers and Actions

- IController, Controller Base, and Controller
- Defining Actions
- Action Selectors
- Action Filters
- HTTP Verbs
- Http Context and Route Data
- Maintaining Testability
- Returning Data with Action Result
- Parameters and the Model Binder
- Asynchronous Action Methods

6 Views

- View Engines
- Templates and Scaffolding
- Razor Syntax

- ViewData and ViewBag
- Strongly-Typed Views
- Layout Pages
- Custom Sections
- Partial Views
- Child Actions
- Using a View Model Object

7 HTML Helpers

- Basic Helpers
- Strongly-Typed Helpers
- Creating Custom Helpers
- Declarative Helpers

8 Data Validation

- Data Annotations
- Validation HTML Helpers
- ModelState
- IValidatableObject
- Client Side Validation

9 Authentication and Authorization

- Using Windows Authentication
- Building a Custom Account Controller
- Configuring Forms Authentication
- Using the Authorize Attribute

10 AJAX

- Controller Actions for Ajax
- Ajax Helpers
- Unobtrusive Ajax
- Ajax with jQuery

11 Customizing and Extending ASP.NET MVC

- Customizing and Extending ASP.NET MVC

- ASP.NET MVC Pipeline
- Advanced Routing
- Custom Global Filters
- Customizing MVC Code Templates
- Creating a Custom Controller Factory

12 Deployment

- Server Requirements
- Configuration Options

Prerequisites:

- Bit Knowledge about fundamentals of the programming will be enough from your side and we will take the responsibility that you will be an expert in the related area by the end of the course

Who Can Attend:

- This course can be taken by anyone who wants to become an ASP.NET Web Developer or wants to learn MS.NET Framework
- Any one programming language like C, C++, Java, HTML and JavaScript and any one database like Oracle, SQL Server, MySQL.

Number of Hours: 50hrs

Certification: MCPD (70-518)

Key Features:

- One to One Training
- Online Training
- Fastrack & Normal Track
- Resume Modification
- Mock Interviews
- Video Tutorials
- Materials
- Real Time Projects
- Virtual Live Experience
- Preparing for Certification