

# Wizards Training

Dot Net Course Curriculum

Duration:

## Getting started

- ✦ Learn the advantages and architecture of the .NET Framework
- ✦ Setup a development profile in Visual Studio .NET
- ✦ View the code that Visual Studio generates and understand what it does

## Data Types and Variables

- ✦ Understand how to create variables and assign values
- ✦ Explore operators and see how they can be used to change values and compare expressions

## Using the .NET Framework

- Using .NET Framework classes
- Explore basic file IO operations

## Branching and Flow Control

- ✓ Making choices using conditional statements
- ✓ Manage flow control using branching statements
- ✓ Break out of loops when necessary

## Classes and Objects

- ❖ Investigate .NET Framework classes to see how you can consume classes in your code
- ❖ Learn about properties, methods, and fields
- ❖ Create instances of classes using class constructors
- ❖ Investigate class details, including reference vs. value types, and more

## Properties and Methods

- Explore how to use properties in your classes
- Learn to control how property values are set and retrieved
- Understand how to pass arguments to methods
- Learn how to return both simple and complex data types from methods

## Object-Oriented Techniques

- ✦ Understand how derived classes inherit from base classes
- ✦ Explore how to add and modify members in derived classes
- ✦ Understand how to create and use interfaces

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# Wizards Training

## Dot Net Course Curriculum

### Duration:

- ✦ Explore techniques for organizing your classes

## Working with Arrays

- Create and initialize arrays
- Work with array methods and properties
- Investigate arrays in the .NET Framework
- Learn techniques for sorting arrays

## Delegates and Events

- ✓ Learn different ways to work with delegates
- ✓ Introduce anonymous delegates
- ✓ Learn how delegates and events are related
- ✓ Investigate events and event handlers

## Generics

- ❖ Understand the advantages and benefits of generics
- ❖ Explore the use of generics to sort and search in arrays
- ❖ See how to use generic interfaces and constraints
- ❖ Explore the generic List class

## Handling Exceptions

- ✦ Learn to use try/catch blocks to handle runtime errors
- ✦ Throw exceptions back to procedure callers
- ✦ Use the finally block to run code unconditionally
- ✦ Create and handle user-defined exceptions

## Collection Classes

- Investigate the collection interfaces in the System.Collections.Generic namespace
- Create dynamically sized arrays using the List class
- Investigate the generic SortedDictionary, SortedList, Stack, and Queue classes

## LINQ

- Motivate the need for LINQ
  - Learn about the various LINQ providers
  - Investigate simple LINQ to Objects, LINQ to SQL, and LINQ to XML samples
- Introduction to Windows Forms

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## Dot Net Course Curriculum

### Duration:

- ✦ Adding Controls to a Form
- ✦ A Peek behind the Scenes
- ✦ Adding Event Handling Code
- ✦ Adding a Menu to the Form
- ✦ Adding Non-Graphical Components
- ✦ Taking Advantage of the Form Event Model

## How Visual C# Handles Events

- Exploring Form and Control Events

## Common Windows Forms Controls

- ✦ Label, TextBox, and Button
- ✦ CheckBox and RadioButton
- ✦ ComboBox, ListBox, and CheckedListBox
- ✦ LinkLabel, NumericUpDown, PictureBox and ProgressBar

## Working with Strings and Dates

- Basic .NET Data Types
- Working with Text: The String Class
- Working with Dates and Times

## Basics of Database Design

- Relational Database Design Principles
- Implementing the Design
- Normalization
- Denormalization
- Creating a Database
- Data Definition Language Statements
- Data Manipulation Language Statements
- Data Control Language Statements
- Create Tables, Views
- Data Selection Queries
- Creating Stored Procedures, User-Defined Functions, Triggers

## Accessing Data

- ✓ Overview of ADO.NET
- ✓ Connecting to Data
- ✓ Executing Commands
- ✓ Working with Data
- ✓ Choosing an ADO.NET Provider

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Duration:

## Data Binding Techniques

- ❖ Data Binding Basics
- ❖ Creating a Data Source
- ❖ Creating Data-Bound Forms
- ❖ Data Binding Components and Controls
- ❖ Displaying Data from Related Tables
- ❖ Displaying Data from Lookup Tables
- ❖ Adding Search Capabilities to a Form
- ❖ Filtering by Values from a Lookup Table
- ❖ Working with Local Data
- ❖ Data Validation
- ❖ Working with Local Data

## Using the Data Controls

- Data Controls
- The BindingNavigator Control
- The BindingSource Control
- The DataGridView Control
- The ReportViewer Control

## Handling Input/Output Tasks

- ✚ Introducing the System.IO Namespace
- ✚ Selecting Files
- ✚ Browsing for Folders
- ✚ Handling Path Information
- ✚ Working with Directories and Files
- ✚ Using Stream-Based Objects to Read and Write File Contents

## Debugging Your Applications

- Debugging Applications
- Setting Breakpoints and Stepping through Code
- Evaluating Variables and Objects
- Edit and Continue
- Debugging Code in Assemblies
- Tracing and Instrumenting Applications

## Container Controls

- ⊕ Introducing Container Controls
- ⊕ Grouping Controls with the GroupBox Control
- ⊕ Introducing the Panel Control
- ⊕ Displaying Multiple Panels with the SplitContainer Control

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## Dot Net Course Curriculum

### Duration:

- ✦ Laying Out Panels with the TabControl Control
- ✦ Simple Layout Using the FlowLayoutPanel Control
- ✦ Advanced Layout Using the TableLayoutPanel Control

## Menus and Toolbars

- Introducing the ToolStrips
- Working with the ToolStrips

## Creating MDI Applications

- MDI Applications
- MDI Parent and Child Forms
- Managing Open Windows
- Managing Menus
- Working with Open Forms

## Complex Windows Forms Controls

- ✓ Introducing Complex Controls
- ✓ NotifyIcon Control
- ✓ WebBrowser Control
- ✓ MaskedTextBox Control
- ✓ RichTextBox Control
- ✓ TreeView and ListView Controls
- ✓ MonthCalendar and DateTimePicker Controls

## Creating Custom Controls

- ❖ Control Creation in Windows Forms
- ❖ Inheriting from an Existing Control
- ❖ Drawing Your Own Custom Controls
- ❖ Creating Composite Controls

## Interoperability

- COM and .NET

## Creating Windows Services

- Windows Service
- FileSystemWatcher Class
- Debug Windows Service Applications

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Dot Net Course Curriculum

Duration:

## Reading and Writing XML Using the XML DOM

- Reading and Writing XML, Programmatically
- Important Classes in the System.XML Namespace
- Read and Write XML Nodes and Attributes

## Expert XML

- ✦ Contents of an XML Document
- ✦ Write an XML Document
- ✦ Query using XPath Expressions

## Data Improvements

- Enforce Referential Integrity in Applications
- Maintain Data
- Separate DataSet from TableAdapter Code
- LINQ to SQL

## Securing Windows Applications

- ✦ .NET Framework Security
- ✦ Code Access Security
- ✦ Role-Based Security

## Attributes and Reflection

- Built-In Attributes
- Custom Attributes
- Use Reflection to take Advantage of Attributes
- Reflection's Capabilities

## Project Settings in Visual Studio

- ✓ The Project Designer
- ✓ Application Properties
- ✓ Compilation Properties
- ✓ Debugging Properties
- ✓ Project References
- ✓ Project Resources
- ✓ Project Settings

## Handling Versioning Issues

- CLR Locates Assemblies

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# Wizards Training

## Dot Net Course Curriculum

### Duration:

- ✓ CLR Enforces Versioning
- ✓ Strong Name an Assembly
- ✓ Private and Shared Assemblies
- ✓ Techniques of Sharing Assemblies

## Building Setup Applications

- ❖ Installation Package
- ❖ Customize a Setup Project
- ❖ Control Installation of an Application
- ❖ Specify Conditions of an Install
- ❖ Custom Actions for after an Installation

## Deployment

- Publishing an Application
- Setting Publish Options
- Updating a Deployed Application
- What Happens When You Publish an Application?
- What Happens When You Publish an Update to an Application?
- ClickOnce and Security
- Using the Deployment API to Manage Updates

## ASP.NET

### Introduction

- ✚ A Review of Classic ASP
- ✚ ASP.NET Web Applications
- ✚ Rendering HTML with Server Controls
- ✚ Data Binding in ASP.NET
- ✚ Web Development Using Visual Studio

### Working with Controls

- Introduction to Web Controls
- Simple Input Controls
- HyperLink and Button Controls
- List Controls
- Controlling Focus

### Using Rich Server Controls

- Introduction to Rich Controls
- The Calendar Control

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## Dot Net Course Curriculum

### Duration:

- The AdRotator Control
- The XML Control

## Validating User Input

- ⊕ Overview of ASP.NET Validation Controls
- ⊕ Using the Simple Validators
- ⊕ Using the Complex Validators
- ⊕ Summarizing Results with the ValidationSummary Control
- ⊕ Separating Validation into Validation Groups

## Configuration

- Configuration Overview
- Using the Web Site Administration Tool
- Programming Configuration Files
- Encrypting Configuration Sections

## Data Binding

- ✓ Introducing Data Source Controls
- ✓ Reading and Write Data Using the SqlDataSource Control
- ✓ Displaying and Editing Middle-Tier Data using the ObjectDataSource Control
- ✓ Displaying XML Data Using the XmlDataSource Control

## Displaying Data with the GridView Control

- Introducing the GridView Control
- Filter Data in the GridView Control
- Allow Users to Select from a DropDownList in the Grid
- Add a Hyperlink to the Grid
- Deleting a Row and Handling Errors

## LINQ

- ❖ Language Integrated Query
- ❖ LINQ Syntax
- ❖ LINQ to SQL
- ❖ LINQ to DataSets
- ❖ LINQ to XML

## Creating New Controls

- User-defined Controls
- User Controls

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Dot Net Course Curriculum

Duration:

- Custom Controls

## Themes and Master Pages

- ✦ Creating a Consistent Web Site
- ✦ ASP.NET 2.0 Themes
- ✦ Master Pages

## Site Navigation

- ASP.NET Web Site Navigation
- Creating an XML Site Map File
- Site Navigation Controls
- Using the Site Navigation API
- URL Mapping
- Security Trimming

## Managing State

- Preserving State in Web Applications
- Page-Level State
- Using Cookies to Preserve State
- ASP.NET Session State
- Storing Objects in Session State
- Configuring Session State
- Setting Up an Out-of-Process State Server
- Storing Session State in SQL Server
- Using Cookieless Session IDs
- Application State

## Improving Performance with Output Caching

- ✦ Output Caching
- ✦ Declarative Output Caching
- ✦ Cache Page Fragments with User Controls
- ✦ Dynamic Content in Cached Pages
- ✦ Set Caching Configuration Options

## Advanced Caching Techniques

- Caching Features in ASP.NET
- Configure Output Caching
- Expiration Policies
- Database Changes
- SQL Notifications for Cache Expiration

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Duration:

## Security

- ✓ Definition of Web security
- ✓ Understand Web programming best practices
- ✓ Learn ASP.NET forms-based authentication
- ✓ Discover ASP.NET authorization
- ✓ Encrypting sections of Web.config
- ✓ Know ASP.NET security configuration
- ✓ Learn IIS security
- ✓ Work with ASP.NET security controls

## Managing Users with ASP.NET's Membership Features

- ❖ Introduction to Membership and Roles
- ❖ Using Membership Controls
- ❖ Writing Code to Interact with Membership and Roles

## ASP.NET Profile Features

- Introduction to ASP.NET's Profile Features
- Create Profile Schema in Web.config
- Work With ASP.NET's Profile Object Programmatically
- Manage Anonymous Users and Their Profiles
- Build and Use a Custom Profile Provider

## Empowering User With Web Parts

- ✚ Personalization Features
- ✚ Web Part Server Controls
- ✚ Code to Control Web Parts
- ✚ Create Web Parts Controls

## Creating and Consuming Web Services

- XML Web Service in Visual Studio
- Test and Run Your Web Service
- Web Service From a .NET Client
- Explore the Windows Communication Foundation (WCF)

## Server Debugging

- Server-Side Code Debugging in ASP.NET
- Using the Visual Debugger
- Debugging Exceptions and Handling Errors
- Debugging Stored Procedures

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Duration:

## Client-Side and Advanced Debugging

- ⊕ Client-side Code Debugging in ASP.NET
- ⊕ Debugging Client-Side JavaScript
- ⊕ Custom Data Visualizers
- ⊕ Debugging .NET Framework Source Code

## ASP.NET Tracing

- Page-level Tracing
- Programmatic Tracing
- Web.config
- System.Diagnostics.Trace
- Trace Viewer
- TraceListeners and TraceSwitches
- WebPageTraceListener
- Monitor Application Health

## Deployment

- ✓ Copy, XCopy and RoboCopy a Web Site
- ✓ Pre-compiling a Web site using aspnet\_compiler.exe
- ✓ Copying a Web site in Visual Studio
- ✓ Publishing a Web site in Visual Studio
- ✓ Building an ASP.NET Web deployment (\*.msi) project

## ASP.NET AJAX

- ❖ Know the role of AJAX
- ❖ AJAX in today's Web world
- ❖ Understand the role of the XMLHttpRequest object
- ❖ Learn the ASP.NET AJAX controls
- ❖ Explore the ASP.NET AJAX client libraries
- ❖ Use the UpdatePanel and the UpdateProgress controls
- ❖ Build a Web site using the ASP.NET AJAX Control Toolkit

## ASP.NET MVC

- Understand the basic architecture of ASP.NET MVC
- Comparing ASP.NET Forms to ASP.NET MVC
- C#/VB advanced language features (Linq, Lambdas, etc)
- Using routes
- Defining a controller
- Using Models, Entity Framework and Custom
- Exploring views

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## Introduction JQuery with ASP.NET

- ✦ jQuery within Visual Studio and ASP.NET
- ✦ The "\$" Object and basic jQuery syntax
- ✦ Ajax utilities
- ✦ DOM and event enhancements
- ✦ Page rendering
- ✦ UI Library overview (Date Picker, Auto-Complete, etc)

## Silverlight

- Understand the role of Silverlight
- Contrast the Silverlight 1.0 and newer feature sets
- Survey the Silverlight architecture
- Overview key Silverlight development tools
- Learn the core Silverlight assemblies and namespaces
- Learn the role of the Application and UserControl classes

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