

## **. NET Programming with VB and C#**

### **Course Summary**

#### **Description**

This hands on course focuses primarily on creating Windows and Web (ASP.NET) applications, using the .NET Framework. Also introduces the creation of Class Libraries, Web Services, and Console applications. It covers the writing of code in Visual Basic and C#, including conditional statements, looping, exception handling, declaring variables, manipulating numbers, dates and strings, and much more. VB and C# examples are given side by side, so that the student can focus exclusively on one language or the other, or compare the two languages. This course introduces ADO.NET. (The database components of .NET)

#### **Objectives**

At the end of this course, students will be able to:

- Use Visual Studio to create and manage Windows, Web (ASP.NET), and Console projects
- Use a wide variety of controls to build good graphical user interfaces
- Use all features of Visual Basic .NET and/or C#, including conditional statements, loops, variables of all types, and exception handling
- Create classes as part of a class library, web service or WCF Service, and use those classes from any client application
- Create database applications to query and update databases, using ADO.NET objects such as DataSets, DataReaders, Commands and Parameters
- Create a LINQ-to-SQL entity and write basic LINQ queries
- Understand the purpose of the Entity Framework
- Read and write files, send email, distribute reports
- Understand the organization of the .NET Framework, and use its documentation

#### **Topics**

- Overview
- Foundations of a project
- Language basics
- Variables and constants
- Handling numbers, dates and strings
- Providing choices
- Functions
- Windows forms and navigation
- Web forms (ASP.NET pages)
- Database programming
- Additional topics
- Deployment

#### **Audience**

This course is designed for Application developers.

#### **Prerequisites**

Students should have experience in any programming language, including Visual Basic, C, Java, COBOL, etc.

#### **Duration**

Five days

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## **.NET Programming with VB and C#**

### **Course Outline**

#### **I. Overview**

- A. Object Orientation
- B. Creating simple Windows
- C. Web and console applications

#### **II. Foundations of a project**

- A. Basic controls for Windows and web interfaces
- B. Using a class to query and display data

#### **III. Language basics**

- A. Conditional VB and C# statements such as if and case logic
- B. Exception handling
- C. Using all types of loops

#### **IV. Variables and constants**

- A. Scope and lifetime of variables
- B. Value and reference data types
- C. Casting
- D. Special ASP.NET considerations
- E. Collections such as arrays and Lists
- F. Implicit typing
- G. Nullable value-type variables

#### **V. Handling numbers dates and strings**

- A. Arithmetic operations
- B. Rounding
- C. Formatting numbers
- D. Date calculations and formatting
- E. Regular Expressions and other useful string operations

#### **VI. Providing choices**

- A. Filling and using list boxes
- B. Radio buttons
- C. Check boxes and menus
- D. Using AssemblyInfo files to control versioning and other attributes

#### **VII. Functions**

- A. Function design and syntax
- B. Passing arguments
- C. Optional arguments
- D. Overloading

- E. Creating class libraries

- F. Web services and WCF services

#### **VIII. Windows forms and navigation**

- A. Navigation from one form to another
- B. Passing arguments to constructor methods
- C. Owned
- D. Modal and other types of forms
- E. Inheriting from another form
- F. Basics of WPF and XAML

#### **IX. Web forms (ASP.NET pages)**

- A. Navigation
- B. Passing arguments with a QueryString

#### **X. Database programming**

- A. ADO.NET objects such as Connections
- B. Commands
- C. DataReaders and Parameters for querying and updating
- D. LINQ to SQL overview
- E. Data binding to various controls such as grids

#### **XI. Additional topics**

- A. Calendars
- B. Graphics
- C. Using configuration files
- D. Using Settings
- E. Reporting and printing
- F. Reading and writing text files
- G. Sending email

#### **XII. Deployment**

- A. The compile process
- B. Intermediate Language
- C. Assemblies
- D. Dealing with multiple versions of .NET
- E. Side-by-side deployment of components

#### **XIII. SQL Server Database Projects**

- I. Methods of deploying Windows applications, Web projects and web sites

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