

Technical Training Solutions



MICROSOFT VISUAL BASIC .NET 2010 FUNDAMENTALS (USING VISUAL STUDIO 2010) (5 Day Course)

Technical
Course
Outline

Course Summary

During this intensive course, students will be exposed to a wide range of topics that will lead to their proficiency with not only the Visual Basic .NET 2010 programming language, but also the Visual Studio 2010 development environment, and the 4.0 version of the Microsoft .NET Framework.

While many different project/application types will be explored (Windows Forms, ASP .NET Web Application, ASP .NET Web Services, Class Libraries, Console), heavy emphasis is placed on class library development and object-oriented programming principles. Debugging techniques and the underlying workings of the .NET Framework are also covered in detail.

Intended Audience:

This course is intended for those who have **no prior .NET programming experience** and will use Visual Basic .NET with Visual Studio 2010 to develop Windows and web based applications. **Developers who are already familiar with Visual Basic 6.0 and/or VBA, but not VB .NET, should take this course as VB .NET is essentially an entirely new programming paradigm and very different from VB 6.0 and VBA.**

Prerequisites:

- There are no required prerequisites for this course.

Course Contents:

Getting To Know Visual Studio 2010

- The Various Types Of .NET Projects
- Project Configuration Settings ("My Project" Designer)
- Building, Saving, & Running Projects
- Customizing Visual Studio 2010 Settings
 - Option Strict & Other Compile Options
- Getting Help!
 - IntelliSense, Code Expansion, & Code Snippets
 - The MSDN Library & The "Object Browser" Window

Introducing The Microsoft .NET 4.0 Framework

- The CLR (Common Language Runtime)
 - The Common Language Specification & Common Type System
- Assemblies, Namespaces & .NET Class Libraries
 - Adding References
 - Importing Namespaces
 - At The Project Level
 - At The Module Level
- Types
 - Value Types & Reference Types
 - Partial Types
- .NET Memory Management
 - The Managed Stack & The Managed Heap
 - Passing Parameters ByVal & ByRef
 - Garbage Collection
 - Casting vs. Converting vs. Parsing

Windows Forms Applications

- Windows Forms vs. ASP .NET (Web Forms) Applications
- Adding Controls & Setting Control Properties
- Incorporating Event Handling Code

Exception Handling, Debugging & Testing Code

- The **Exception** Class
- **Try...Catch...Finally** Blocks
- Setting Breakpoints & Stepping Through Code
- The Various Debugging Windows

Assemblies

- The End Of DLL Hell?
 - The Assembly Manifest, References, & Versioning
- Private vs. Shared Assemblies
- The Global Assembly Cache (The GAC)
- Strong Naming An Assembly

Visual Basic .NET 2010 Language & Syntax Elements

- Standard & XML Code Commenting
- Variable Declaration & Primitive Data Types
- Decision Making & Looping Code Structures
- Subroutines vs. Functions
- Events & Event Handlers
- "Shorthand" & "Short Circuited" Operators
- The **"Using"** Keyword

Object-Oriented Programming & Building Class Libraries

- Core OO Concepts
 - Classes vs. Instances
 - Abstraction, Encapsulation, Inheritance, Polymorphism
 - Overloading, Overriding, Sharing, Shadowing
- Designing The Class
 - Fields, Properties, Methods, Events, Constructors
 - Determining Member Scope
 - Visual Studio 2010's "Class Diagram" & "Class Designer"
- Advanced Object-Oriented Programming Concepts
 - Abstract & Sealed Classes
 - Creating & Implementing Interfaces
 - Building Enumerable Types (Enums)

Utilizing Class Libraries

- The Console Application Project Type
- References & Importing Namespaces
- Instantiating Classes

Introduction To ASP .NET Web Development

- The HTTP Request/Response (Client/Server) Architecture Model
- ASP .NET Web *Sites* vs. ASP .NET Web *Applications*
- Web Form, HTML, & HTML Server Controls

Introduction To ASP .NET XML Web Services

- What Are XML Web Services?
- Building Web Services
- The **<WebService>** and **<WebMethod>** Compiler Attributes
- Using The Visual Studio Web Service Test Bed
- The Web Service Description Language (WSDL) Document
- Building A Web Service Client
 - Making The Web Reference
 - Using The Web Proxy