

Technical Training Solutions



ADVANCED VISUAL BASIC .NET 2008 (USING VISUAL STUDIO 2008) (4 Day Course)

Technical
Course
Outline

COURSE SUMMARY

During this intensive advanced course, students will go beyond the introductory aspects of VB .NET 2008 and explore its more advanced topics and concepts. In addition, advanced features of the Visual Studio 2008 development environment and the 3.5 version of the Microsoft .NET Framework will be covered.

Windows Forms (WinForms), Web Forms (ASP .NET), Class Library, Windows Services, and Console project types will be used to explore the course topics in order to give students the widest possible exposure to the topics covered.

INTENDED AUDIENCE:

This course is intended for those **VB .NET developers, who have mastered the basics of VB .NET 2008, Visual Studio 2008, and the 3.5 version of the .NET Framework** and wish to leverage their knowledge to create even more powerful and robust applications using the more sophisticated features of VB .NET, Visual Studio and the .NET Framework.

PREREQUISITES:

To ensure the best learning experience for all participants, the following pre-requisites **must be met** in order to participate in this course:

- Successful completion of, or complete familiarity with the topics in: "**Object Oriented Analysis and Design**"
- Successful completion of, or complete familiarity with the topics in: "**Microsoft VB .NET with Visual Studio .NET 2008 Fundamentals**"
- Successful completion of, or complete familiarity with the topics in: "**Introduction To XML**"
- Successful completion of, or complete familiarity with the topics in: "**ASP.NET 3.5 & ADO .NET 3.5 Fundamentals (using VB .NET)**"
- At least 6 months programming applications using Visual Basic .NET 2008 and Visual Studio 2008.

COURSE CONTENTS:

.NET Framework 3.5 "Under The Hood"

- Memory Management (revisited)
 - Casting vs. Converting vs. Parsing
 - Boxing & Unboxing
- Garbage Collection In Depth
 - Object Generations
 - Dispose/Finalize Patterns
- Collections & Generics
 - The Collection Types In System.Collections
 - The Generic Types In System.Collections.Generic
 - Nullable Types
- Partial Types
- Reflection
 - Understanding Reflection
 - Compiler Attributes
 - .NET Pre-Defined Attributes
 - Customer Attributes
 - Reflecting Classes

Assembly Management

- Creating A Shared Assembly In The GAC
 - Strong Naming An Assembly
 - Assigning Strong Names Using VS 2005
 - Delay Signing
 - Installing/Uninstalling An Assembly Into The GAC
 - Multiple GAC Versions Of An Assembly
- .NET Security & Configuration
 - Encryption
 - .NET Security Policies

Win32 Interoperability (COM InterOp)

- Runtime Callable Wrappers (RCW's)
 - Microsoft Office Primary InterOp Assemblies (Office PIA's)
- COM Callable Wrappers (CCW's)

Visual Basic .NET Language & Syntax Elements

- Declaring & Raising Events (revisited)
- Callback Interfaces, Delegates, & Events
 - Multicasting
 - Hooking Into Events With "WithEvents" & "Handles"
- Language Integrated Query (LINQ)
- Lambda Expressions

Advanced Object-Oriented Programming

- Interfaces
 - Designing & Implementing Custom Interfaces
 - Implementing .NET Framework Interfaces
 - IDisposable
 - ISerializable & IFormatter
 - Polymorphism
 - Polymorphism Via Interfaces
- Operator Overloading
- Overriding System.Object Methods

Building Windows Services (overview)

- When To Use Windows Service Projects
- The System.ServiceProcess.ServiceBase Class
- Sub OnStart
- Sub OnStop
- Adding An Installer Type
- The ServiceController Class

Asynchronous Calls & Multithreading

- Processes
- AppDomains
- Contexts
- Threads
 - The CLR ThreadPool
 - Concurrency & Thread Synchronization
- Invoking Methods Asynchronously