.NET Programming with VB and C#

Description

A heavily-hands-on course for programmers with little or no previous .NET exposure:

- 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
- 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
- introduces ADO.NET (the database components of .NET)
- this course is a prerequisite to *ASP.NET Workshop*, *ADO.NET Workshop*, and *Building .NET Components and Web Services*
- this course is based on the .NET Framework 2.0 or 3.5 and Visual Studio 2005 or 2008

Length

5 days

Outline

- ***Overview***; Purpose and relationship of the .NET Framework and Visual Studio; overview of the many editions of Visual Studio, including the Team editions; the Visual Studio IDE; creating simple Windows, Web and Console applications; co-existence and interoperability with prior versions
- ***The Foundations of a project***; starting a solution and project; forms and other files; differences between Windows and Web projects; including existing code modules in a project; using the toolboxes to put controls on forms; properties of controls; some basic VB or C# coding; building and debugging the application; using Help; generating XML documentation
- ***Language basics***; syntax rules; conditional statements; exception handling with try/catch; looping
- ***Data types, variables and constants***; variable scope, lifetime, types; constants; arrays and lists; enumerations; value vs. reference types; implicitly typed and nullable variables in .NET 3.5
- ***Handling numbers, dates & strings***; numeric operations such as rounding and formatting; date operations such as formatting and date arithmetic; string operations such as replacing, and using Regular Expressions
- ***Providing choices with controls***; filling and using list boxes of all types, including multiple-selection list boxes; radio buttons and check boxes; menus

- ***VB and C# Functions***; the structure of a function; passing arguments to functions, by reference or by value; using optional arguments or overloading methods; creating and using a separate Class Library project; overview of classes, inheritance, and other OO features
- ***Introduction to LINQ (Language Integrated Query, only in .NET 3.5)***; examples of queries on arrays and lists
- ***Controls for input and output***; choosing controls that use the fewest resources; calendars; displaying graphics; using a configuration file; dynamic control creation; reading and writing text files
- ***Windows forms and navigation***; how Windows applications start and end; adding forms to a project, such as splash screen, menu, other forms; opening another form, passing arguments; owned, modal and MDI forms; useful form properties and methods; inheriting from another form
- ***Web forms and navigation***; how IIS determines the default web page for a site; controls for linking from page to page; server-side instructions for transferring to another page; passing arguments via the query string
- ***ADO.NET overview***; overview of .NET database classes; overview of creating and using DataSets; using ADO.NET connections, commands and data readers to read data; updating with a command and parameters; using wizards to create DataSources, binding controls such as grids to quickly create database applications
- ***Deploying applications***; the Build process; how and what to deploy; side-by-side deployment of components on Windows desktops and Web servers

Hardware, software

One workstation per student and the instructor, with Windows 2000 or higher, and Visual Studio.NET 2005 or 2008 Professional or higher; IIS is *not* required

Exercises

Students spend the majority of class time developing windows and/or web applications, depending on their future direction; the course is accompanied by a library of 50+ detailed sample applications, including solutions to all exercises