Introduction to Programming Microsoft .NET Framework Applications with Microsoft Visual Studio® 2005

Course 4994A: Five days; Instructor-Led

Introduction

This five-day instructor-led course enables introductory-level developers who are not familiar with the Microsoft .NET Framework or Microsoft Visual Studio 2005 to gain familiarity with the Visual Studio 2005 development environment. Students will also learn basic skills using either Microsoft Visual Basic or Microsoft Visual C# as a programming language.

Audience

The target audience for this course includes both novice programmers who have a minimum of three months' programming experience and intermediate-level programmers who are otherwise new to .NET Framework development, and want to learn how to use Visual Basic or C#.

Objectives

After completing this course, students will be able to:

- Describe the key features of the .NET Framework and Visual Studio 2005.
- Create a simple Windows Forms application.
- Explain programming fundamentals.
- Create and use data types and variables.
- Control program execution by using conditional statements and loops.
- Explain the fundamentals of object-oriented programming.
- Create simple object-oriented applications.
- Develop the user interface in a Visual Studio 2005 application.
- Validate user input on a Windows form.
- Implement debugging and exception handling in a Visual Studio 2005 application.
- Access data in a Visual Studio 2005 application.
- Create simple Web applications and XML Web services.
- Explain the key features of the .NET Framework version 3.0 technologies.
- Test and deploy Microsoft .NET Framework applications.

Prerequisites

Before attending this course, students must have:

- Exposure to developing applications in either a graphical or a non-graphical environment.
- Ability to understand and apply the basics of structured programming, including concepts such as flow control, variables, parameters, and function calls.

In addition, it is recommended, but not required, that students have completed:

- Course 2667: Introduction to Programming.

Course Outline

Module 1: Getting Started

This module introduces the .NET Framework and the software development life cycle. It also describes the key features of Visual Studio 2005.

Module 2: Creating a Simple Windows Forms Application

This module explains how to create a Windows Forms application, how to add controls to a form, and how to compile and run the application.

Module 3: Programming Fundamentals

This module explains important programming concepts and terminology. It also covers the main elements of a program and explains how to create and work with items such as functions, properties, and methods. Finally, this module provides guidelines on areas such as naming conventions and code documentation.

Module 4: Data Types and Variables

This module introduces data types, variables, and constants and explains how to use them. It also explains how to use collections and data type conversion.

Module 5: Controlling Program Execution

This module describes how to control program execution by writing expressions, conditional statements, and iteration statements.

Module 6: Fundamentals of Object-Oriented Programming

This module introduces students to the concepts of object-oriented programming, defines important terminology, and shows the syntax for defining classes and creating instances.

Module 7: Creating Object-Oriented Applications

This module describes how to design classes by using the Class Designer tool in Visual Studio, and also describes how to use inheritance and interfaces.

Module 8: Building a User Interface

This module explains how to develop an application by using features such as modal and modeless forms, menus, toolbars, status bars, tool tips, and the HelpProvider control.

Module 9: Validating User Input

This module explains how to restrict user input on a form, and how to use field-level and form-level validation.

Module 10: Debugging and Exception Handling

This module introduces students to the types of errors that can occur in an application, and describes how to use a combination of debugging and exception handling to detect and diagnose these errors.

Module 11: Accessing Data

This module introduces students to data access in .NET Framework applications, and shows how to access data both by using the Visual Studio integrated development environment (IDE) and by writing code.

Module 12: Creating Web Applications and XML Web Services

This module introduces students to ASP.NET, and describes how to create simple Web applications and XML Web services.

Module 13: Exploring .NET Framework 3.0 Technologies

This module introduces the new .NET Framework 3.0 technologies and explains how to create a Windows Presentation Foundation application and a Windows Communication Foundation service.

Module 14: Testing and Deploying Microsoft .NET Framework Applications

This module provides an overview of software testing and explains how to use the Object Test Bench (OTB). It also explains how to deploy Microsoft .NET Framework applications by using both Windows Installer and ClickOnce.