Course ID
TK2124

Course Title
Programming with C#

Course Duration
5 days

Related Courses

- Introduction to C# programming with Microsoft .NET (TK2609, 5 days)

Aimed At

Those with prior programming experience in C, C++, Visual Basic, or Java who wish to learn how to develop C# applications for the Microsoft .NET Platform.

Group Size

5-15

Prerequisites

You should be an experienced programmer with knowledge of C, C++, Visual Basic, Java, or another programming language. You should also be familiar with the Microsoft .NET strategy and the .NET Framework.

Course In a Nutshell

Are you a programmer looking to get into enterprise business solutions development? This course can help you accomplish that.

C#, designed as a vehicle for enterprise applications, is an object-oriented and type-safe language that combines the high productivity of Microsoft Visual Basic with the power of C++. In this comprehensive five-day course, you will learn the C# program structure, language syntax, and implementation details. Covered are flow control and exception handling, value and reference type variables, methods (subroutines and functions) and parameters, types, arrays, operators and events, properties and indexers, attributes, and object oriented programming techniques.

Customize It!

We can tailor this course to your specific background and project requirements at little-to-no additional cost.

Learn How To

- List the major elements of the .NET Framework and explain how C# fits into the .NET platform
- Analyze the basic structure of a C# application and be able to document, debug, compile and run a simple application
- Create, name and assign values to variables
- Use common statements to implement flow control, looping and exception handling
- Create methods (functions and subroutines) that can return values and take parameters
- Create, initialize, and use arrays
- Explain the basic concepts and terminology of object-oriented programming
- Use common objects and reference types
- Create, initialize and destroy objects in a C# application

- Build new C# classes from existing classes
- Create self-contained classes and frameworks in a C# application
- Define operators, use delegates and add event specifications
- Implement properties and indexers
- Use predefined and custom attributes

Course Outline

- Overview of the Microsoft .NET Platform
  - Introduction to the .NET platform
  - Overview of the .NET Framework
  - Benefits of the .NET Framework
  - Components of the .NET Framework
  - Language support in the .NET platform
- Overview of C#
  - Structure of a C# program
  - Basic Input/Output (I/O) operations
  - Handling exceptions in a C# program
  - Recommended practices
  - Compiling, running and debugging a C# program
- Using Value-Type Variables
  - Common type system
  - Naming variables
  - Using built-in data types
  - Creating user-defined data types
  - Converting data types
- Statements and Exceptions
  - Introduction to statements
  - Using selection statements
  - Using iteration statements
  - Using jump statements
  - Handling and raising basic exceptions
- Methods and Parameters
  - Creating static methods
  - Using parameters
  - Using overloaded methods
- Arrays
  - Overview of arrays
  - Creating and initializing arrays of varying ranks
  - Using arrays
- Essentials of Object-Oriented Programming
  - Introduction to classes and objects
  - Using encapsulation
  - C# and object orientation

- Defining object-oriented systems

- Using Reference-Type Variables
  - Using reference-type variables
  - Using common reference types
  - The object hierarchy
  - Namespaces in the .NET Framework
  - Data conversions

- Creating and Destroying Objects
  - Using constructors
  - Initializing objects
  - Objects and memory
  - Resource management

- Inheritance in C#
  - Deriving classes
  - Implementing methods
  - Using sealed classes
  - Implementing interfaces
  - Using abstract classes

- Aggregations, Namespaces and Advanced Scope
  - Using internal classes, methods and data
  - Using aggregation to implement powerful patterns
  - Using namespaces to organize classes
  - Creating simple modules and assemblies

- Operators and Events
  - Introduction to operators
  - Operator overloading
  - Creating and using delegates
  - Defining and using events

- Properties and Indexers
  - Using properties
  - Using indexers

- Attributes
  - Overview of attributes
  - Defining custom attributes
  - Retrieving attribute values

How You Will Learn

- An experienced C# developer and instructor will teach this class in workshop format.
- Hands-on exercises will ensure that you have understood every topic before the class ends.
- The course incorporates real-life examples, applications, and case studies to enrich the class and drive home the essential points.

- We will teach you the dos and don’ts, tricks of the trade, and the hidden pitfalls of C# programming.
- The course includes a comprehensive participant handbook.

Revised *April 7, 2007*