BLUEMARK ACADEMY

Windows Forms Programming Using C#

Duration: 5 Days · **Training format:** Virtual Classroom / Online

Description

This course provides students with hands on experience using Visual Studio to create desktop applications using Windows Forms and the .NET Framework using C#. The course provides a thorough introduction to the C# programming language, including coverage of the essentials of the C# programming language, built in data types, operators, control structures, classes and methods, collections and exception handling.

Students then learn how to leverage the power of the .NET Framework to build desktop applications. Students learn how to build Windows Forms applications and use with a variety of controls to create sophisticated user interfaces. Students also learn how to use the BackgroundWorker to perform asynchronous operations.

Students also learn how to use ADO.NET to interact with databases and XML files. Students learn how Windows Forms uses data binding to display data in controls such as the DataGridView and Chart. Students also learn how to build and interact with simple WCF SOAP Web Services.

Other topics include: debugging techniques; using a .config file to control application configuration; building menus, toolbars and status bars; reading and writing files; interacting with the file system; and deploying desktop applications.

Comprehensive labs provide the students with extensive experience creating and deploying Windows Forms-based desktop applications.

This course provides thorough coverage of the use of Windows Forms to build desktop applications.

Delegates will learn how to

- Using Visual Studio to create C# applications
- Working with .NET data types
- Creating variables with the proper scope and using operators to build complex expressions
- Designing and using classes
- Using control structures such as if, while and for
- Using procedures to build complex applications
- Throwing and trapping exceptions using try and catch statements
- Using single and multi-dimensional arrays
- Working with .NET collections

- Using LINQ to make queries
- Defining and implementing interfaces
- Working with enumerations
- Creating desktop-based applications
- Using control properties and methods to modify the appearance and behavior of controls
- Writing event handlers to respond to user interactions
- Using list-based controls such as ListBoxes and ComboBoxes on forms
- Using image controls such as ImageList and PictureBox on forms
- Accessing and displaying data using ADO.NET
- Binding data to controls on a Windows Form
- Using modal and modeless dialogs to interact with users
- Using the background worker to perform an asynchronous operation
- Implementing a simple host for a WCF service
- Reading and writing data from files and streams
- Deploying .NET applications

Outline

Introduction to .NET

- Overview of the .NET Framework
- How .NET is Different from Traditional Programming
- Common Language Runtime (CLR)
- Common Language Specification (CLS)
- Common Type System (CTS)
- .NET Assemblies
- Microsoft Intermediate Language (CIL)
- .NET Namespaces
- .NET Framework Class Library

Language Fundamentals

- C# Program Structure
- Defining Namespaces
- Understanding C# Data Types
- Defining Variables and Constants
- Comparing Value Types vs. Reference Types
- Working with Operators and Expressions
- Performing Type Conversions

- Using Console I/O
- Formatting Numbers, Date and Times

Methods and Parameters

- Defining Static and Instance Methods
- Passing Parameters by value and by reference
- Overloading Methods
- Using Variable Length Parameter Lists

Collections

- Defining and Using Arrays
- Understanding System.Array
- .NET Collections vs Generic Collections
- Working with Lists
- Working with Dictionaries
- Using LINQ to Objects

Windows Forms Applications

- Windows Forms Applications
- Setting Form Properties
- Understanding the Life-cycle of a Form
- Using the Windows Forms Designer
- Using the MessageBox Class
- Using a .config File

Handling Events

- Understanding the Event-Driven Programming Model
- Writing Event Handlers
- Sharing Event Handlers

ADO.NET

- Understanding the ADO.NET Object Model
- Connected vs. Disconnected Access
- Using a Connection to Connect to a Data Source
- Using a Command to Execute Queries and Stored Procedures
- Using a DataReader to Work with Cursors
- Using the DataSet with Disconnected Data
- Using DataAdapters with DataSets

Data Binding

- Understanding ADO.NET Data Binding
- Binding to Simple and Complex Controls
- Manually Binding Controls
- Using the BindingSource Control
- Using the BindingNavigator Control
- Using the DataGridView Control
- Using the Chart Control

Working with Menus, Toolbars and Status Bars

- Working with Menus
- Working with Toolbars
- Working with Status Bars

Introduction to WCF Web Services

- Overview of WCF Services
- Understanding SOAP
- Creating a WCF SOAP Web Service
- Creating a Proxy Class
- Calling a WCF SOAP Web Service

Introduction to Visual Studio

- Creating a Project
- Using the Code Editor
- Correcting Syntax Errors
- Setting Project Properties
- Adding References
- Compiling a Program
- Running a Program
- Debugging a Program
- Using the MSDN (Help)

Conditionals and Looping

- if/else
- switch
- while and do/while
- for
- foreach

Exception Handling

- What are Exceptions?
- .NET Exception Hierarchy
- Catching Exceptions
- Throwing Exceptions
- Managing Resources with Finally

Object-Oriented Programming

- Overview of Object-Oriented Programming
- Building Classes
- Defining Properties
- Using Auto-Implemented Properties
- Defining Methods
- Understanding Constructors
- Extending .NET Classes via Inheritance
- Defining and Implementing Interfaces
- Understanding the Role of Interfaces in .NET

Using Controls

- Working with Windows Forms Controls
- Using Text Controls
- Using Button Controls
- Using Selection Controls
- Using List Controls
- Using Container Controls
- Using Image Controls
- Using Up/Down Controls
- Using the ErrorProvider and ToolTipProvider Controls

Performing Asynchronous Activities

- Understanding Threading
- Working with Delegates
- Using the Background Worker
- Updating Controls from Other Threads

Using XML

- Understanding XML and XML Schemas
- Reading XML Data with a DataSet
- Writing XML Data with a DataSet

Working with Forms

- Understanding Modal vs Modeless Forms
- Displaying Modal Forms
- Working with DialogResult
- Retrieving Data from Modal Forms

Prerequisites

There is no prerequisite