5 Days

20483: Programming in C#

Programming in C# training is a five-day course that imparts knowledge of the programming skills that are required for developers to create Windows applications deploying the C# language. During the training period, candidates learn the basics of C# program structure, language syntax, and implementation details, and also learn to build an application that incorporates several features of the .NET Framework 4.5.

The course introduces participants to various techniques and technologies employed by modern desktop and enterprise applications, including:

- Accessing a database
- Building new data types.
- Handling events.
- Using remote data.
- Programming the user interface.
- Performing operations asynchronously.
- Create custom attributes.
- Integrating with unmanaged code.
- Encrypting and decrypting data.

This course uses Visual Studio 2012, running on Windows 8.

Course Details

Course Outline

Module 1: Review of C# Syntax

- Writing Applications using C#
- Data types, Operators, and Expressions
- C# Programming Language Constructs

Module 2: Create Methods, Handling Exceptions, and Monitoring Applications

- Create and Invoking Methods
- Create Overloaded Methods and Using Optional and Output Parameters
- Handle Exceptions
- Monitor Applications

Module 3: Developing the Code for a Graphical Application

- Implement Structs and Enums
- Organise Data into Collections
- Handle Events

Module 4: Create Classes and Implement Type-safe Collections

- Create Classes
- Define and Implement Interfaces
- Implement Type-safe Collections

Module 5: Create a Class Hierarchy by Using Inheritance

- Create Class Hierarchies
- Extend .NET Framework Classes
- Create Generic Types

Module 6: Read and Write Local Data

- Read and Write Files
- Serialise and De-Serializing Data
- Perform I/O Using Streams

Module 7: Access a Database

- Create and Use Entity Data Models
- Query Data by Using LINQ
- Update Data by Using LINQ

Module 8: Access Remote Data

- Access Data Across the Web
- Access Data in the Cloud

Module 9: Design the User Interface for a Graphical Application

- Use XAML to Design a User Interface
- Bind Controls to Data
- Style a User Interface

Module 10: Improve Application Performance and Responsiveness

- Implement Multitasking by using Tasks and Lambda Expressions
- Perform Operations Asynchronously
- Synchronise Concurrent Access to Data

Module 11: Integrate with Unmanaged Code

- Create and Use Dynamic Objects
- Manage the Lifetime of Objects and Control Unmanaged Resources

Module 12: Create Reusable Types and Assemblies

- Examine Object Metadata
- Create and Use Custom Attributes
- Generate Managed Code
- Version, Sign and Deploy Assemblies

Module 13: Encrypting and Decrypting Data

- Implement Symmetric Encryption
- Implement Asymmetric Encryption

Who Should Attend

- ???This course is beneficial for experienced developers who already possess programming experience in C, C++, JavaScript, Objective-C, Microsoft Visual Basic, or Java and have a decent understanding of the concepts of object-oriented programming.
- This course does not target individuals who are new to programming, rather, it is targeted to professional developers who have at least one month of experience programming in an object-oriented environment.

Pre Requisite

Experienced Developers attending this course should already have acquired some decent experience using C# to complete basic programming tasks. More specifically, candidates should have hands-on experience using C# that demonstrates their understanding of the following:

- Name, declare, initialize and assign values to variables within an application.
- Create the code syntax for simple programming statements using C# language keywords.
- Use arithmetic operators to perform arithmetic calculations involving one or more variables;
- Use logical operators to combine expressions that contain relational operators.
- Use relational operators to test the relationship between two variables or expressions;
- Create a simple branching structure using an IF statement.
- Create a simple looping structure using a for statement to iterate through a data array.
- Use the Visual Studio IDE to locate simple logic errors.
- Design and build a simple user interface using standard controls from the Visual Studio toolbox.
- Create a Function that accepts arguments (parameters and returns a value of a specified type.
- Sort data in a loop.
- Recognize the classes and methods used in a program.
- Connect to a SQL Server database and the basics of how to retrieve and store data.

Exams

Microsoft Certified Professional (MCP) [70-483]

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