ExecuTrain
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Microsoft Official Curriculum

ExecuTrain Course Outline

Programming with C#

MOC 2124

5 Days

Introduction

The goal of this course is to provide students with the knowledge and skills they need to develop C# applications for the Microsoft .NET Platform. The course focuses on C# program structure, language syntax, and implementation details.

Audience

This course is intended for experienced developers who already have programming experience in C, C++, Visual Basic, or Java. These developers will be likely to develop enterprise business solutions.

Prerequisites

Before attending this course, students must have:

- • Experience with programming in C, C++, Visual Basic, Java, or another programming language.
- • Familiarity with the Microsoft .NET strategy as described on the Microsoft .NET Web site: http://www.microsoft.com/net/.
- Familiarity with the .NET Framework as described on the MSDN® Magazine Web site:

  http://msdn.microsoft.com/msdnmag/issues/0900/Framework/Framework.asp

  http://msdn.microsoft.com/msdnmag/issues/1000/Framework2/Framework2.asp

Course Outline

Module 1: Overview of the Microsoft .NET Platform

The following topics are covered in this module:

- Introduction to the .NET Platform
- Overview of the .NET Framework
- Benefits of the .NET Framework
- The .NET Framework Components
- Languages in the .NET Framework

Module 2: Overview of C#

The following topics are covered in this module:

- Structure of a C# Program
- Basic Input/Output Operations
- Recommended Practices
- Compiling, Running, and Debugging

Module 3: Using Value-Type Variables

The following topics are covered in this module:

- Common Type System
- Naming Variables
- Using Built-In Data Types
- Creating User-Defined Data Types
- Converting Data Types

Module 4: Statements and Exceptions

The following topics are covered in this module:

- Introduction to Statements
- Using Selection Statements
- Using Iteration Statements
- Using Jump Statements
- Handling Basic Exceptions
- Raising Exceptions

Module 5: Methods and Parameters

The following topics are covered in this module:

- Using Methods
- Using Parameters
- Using Overloaded Methods

Module 6: Arrays

The following topics are covered in this module:

- Overview of Arrays
- Creating Arrays
- Using Arrays

Module 7: Essentials of Object-Oriented Programming

The following topics are covered in this module:

- Classes and Objects
- Using Encapsulation
- C# and Object Orientation
- Defining Object-Oriented Systems

Module 8: Using Reference-Type Variables

The following topics are covered in this module:

- Using Reference-Type Variables
- Using Common Reference Types
- The Object Hierarchy
- Namespaces in the .NET Framework
- Data Conversions

Module 9: Creating and Destroying Objects

The following topics are covered in this module:

- Using Constructors
- Initializing Data
- Objects and Memory
- Resource Managements

Module 10: Inheritance in C#

The following topics are covered in this module:

- Deriving Classes
- Implementing Methods
- Using Sealed Classes
- Using Interfaces
- Using Abstract Classes

Module 11: Aggregation, Namespaces, and Advanced Scope

The following topics are covered in this module:

• Using Internal Classes, Methods, and Data

• Using Aggregation

• Using Namespaces

• Using Modules and Assemblies

Module 12: Operators and Events

The following topics are covered in this module:

- Introduction to Operators
- Operator Overloading
- Creating and Using Delegates
- Defining and Using Events

Module 13: Properties and Indexers

The following topics are covered in this module:

- Using Properties
- Using Indexers

Module 14: Attributes

The following topics are covered in this module:

- Overview of Attributes
- Defining Custom Attributes
- Retrieving Attribute Values