

10975 Introduction to Programming

Overview

In this 5-day course, students will learn the basics of computer programming through the use of Microsoft Visual Studio 2013 and either the Visual C# or Visual Basic programming languages.

Target Audience

This course is intended for anyone who is new to software development and wants, or needs, to gain an understanding of programming fundamentals and object-oriented programming concepts. They will typically be high school students, post-secondary school students, or career changers, with no prior programming experience. They might want to gain an understanding of the core programming fundamentals before moving on to more advanced courses such as 20483B: Programming in C#.

Course Objectives

- Explain core programming fundamentals such as computer storage and processing.
- Explain computer number systems such as binary.
- Create and use variables and constants in programs.
- Explain how to create and use functions in a program.
- Create and use decisions structures in a computer program.
- Create and use repetition (loops) in a computer program.
- Explain pseudocode and its role in programming.
- Explain the basic computer data structures such as arrays, lists, stacks, and queues.
- Implement object-oriented programming concepts.
- Create and use classes in a computer program.
- Implement encapsulation, inheritance, and polymorphism.
- Describe the base class library (BCL) in the .NET Framework.
- Explain the application security concepts.
- Implement simple I/O in a computer program.
- Identify application errors and explain how to debug an application and handle errors.
- Identify the performance considerations for applications.

Course Outline

[Register Online](#)

Schedule

Class Length: 5 Days

G2R = "Guaranteed to Run" | OLL = "Online LIVE"
ILT = "Instructor-Led-Training"

This course is not currently available on the public schedule. Please contact us using the information in the footer below to inquire about future dates or to schedule a private class.

1 - Introduction to Core Programming Concepts

Computer Data Storage and Processing
Application Types
Application Life-Cycle
Code Compilation
Lab : Thinking Like a Computer

2 - Core Programming Language Concepts

Syntax
Data Types
Variables and Constants
Lab : Working with Data Types

3 - Program Flow

Introduction to Structured Programming Concepts
Introduction to Branching
Using Functions
Using Decision Structures
Introducing Repetition
Lab : Creating Functions, Decisions, and Looping

4 - Algorithms and Data Structures

Understand How to Write Pseudo Code
Algorithm Examples
Introduction to Data Structures
Lab : Working with Algorithms and Data Structures

5 - Error Handling and Debugging

Introduction to Program Errors
Introduction to Structured Error Handling
Introduction to Debugging in Visual Studio
Lab : Implementing Debugging and Error Handling

6 - Introduction to Object-Oriented Programming

Introduction to Complex Structures
Introduction to Structs
Introduction to Classes
Introducing Encapsulation
Lab : Implementing Complex Data Structures

7 - More Object-Oriented Programming

Introduction to Inheritance
Introduction to Polymorphism
Introduction to the .NET Framework and the Base Class Library
Lab : Implementing Inheritance
Lab : Implementing Polymorphism

8 - Introduction to Application Security

Authentication and Authorization
Code Permissions on Computers
Introducing Code Signing

9 - Core I/O Programming

Using Console I/O
Using File I/O
Lab : Core I/O Programming

10 - Application Performance and Memory Management

Value Types vs Reference Types
Converting Types
The Garbage Collector
Lab : Using Value Types and Reference Types

Technical

- [Azure](#)
- [Dynamics CRM](#)
- [Exchange](#)
- [SharePoint](#)
- [Skype for Business](#)
- [SQL Server](#)
- [System Center](#)
- [Visual Studio](#)
- [Windows](#)
- [Windows Server](#)

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- [Cloud and Big Data](#)
- [CompTIA](#)
- [IBM](#)
- [Info Security](#)
- [ITIL](#)
- [Red Hat](#)
- [VMware](#)

Applications

- [Office 365](#)
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- [Visio](#)
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Business

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