Programming with Visual Basic

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Duration : 2 days

Course Content

This course is an introduction to the Visual Basic (VB.NET) programming language. It will cover the basic building blocks of the Visual Basic programming language, such as how .NET is different from traditional programming, defining variables, control structures (If..Else, loops etc) and operators, before moving on to key concepts such as classes, objects, properties and methods. It will then move on to more advanced subjects such as Shared and Abstract behaviour, enumerations and error handling. It will provide delegates with a skill base from which they can go on to develop .NET applications on either the Windows Forms or
 platforms.

Please note that this is the .NET version of Visual Basic (version 7 and above). It is not suitable if you want to learn VB6 or below, or Visual Basic for Applications (VBA). Please contact us if you are unsure if this is the right course for your VB requirements.

Prerequisites

There are no prerequisites for this course.

Course Content

Introduction to .NET
What is .NET?
Common Language Runtime (CLR)
Common Type System (CTS)

Introduction to Visual Basic
What is Visual Basic.NET?
Getting started with Visual Basic
Visual Studio IDE

Getting started
Creating a project
The Main procedure
Visual Basic basics
Displaying to the console screen
Adding comments
Compiling and running the program from the command line
Compiling and running the program using Visual Studio

Variables
Variables in Visual Basic
Declaring variables
Variable name rules
Visual Basic keywords
Assigning a value to a variable
Strings
Character data types
Numeric data types
Signed and Unsigned
Byte
Signed Byte
Short Integers
Unsigned Short Integers
Signed Integers
Unsigned Integers

Long Integers
Unsigned Long Integers
Real Numbers: Single
Double-Precision Numbers
Decimal
The Boolean Data Type
The Date Data Type
Assigning a Date value
Default variable values
Constants
Visual Basic / .NET Data Types
VB / .NET Data Type equivalents

Properties and methods
About data type properties and methods
String properties: Length
String methods: PadLeft and PadRight
String method: Substring
More String methods
Date properties
Shared Date properties
Date methods
Converting Date to a String
Date format masks
Converting numeric data to string

Data type conversion
Implicit and explicit conversion
Using Parse to convert data types
Using TryParse to convert data types
System.Convert

Operators

Visual Basic operators
The + operator
The & operator
The -, * and / operators
The += addition assignment operator
The -=, *= and /= operators
Logical operators: =
Logical operators: <>
Logical operators: < and >
Logical operators: <= and >=
Logical 'and' Conjunction: And
Conditional 'and' Conjunction: AndAlso
The Binary 'or' operator: Or
The Conditional 'or' operator: OrElse
The exclusive 'or' operator: Xor

Conditional logic

Conditional control: If / Then
Conditional control: If / Then cont.
Using If on a single line
Conditional control: Else
If .. ElseIf
If .. ElseIf .. Else
The Ternary If Operator
Case Switches
GoTo

Loops

The While loop
While cont.
Do…While
Do...Until
The For..Next loop
Exiting out of a loop
Continuing a loop

Procedures

Procedures of a class
Types of procedure
Sub procedures
Declaring a sub procedure
Procedure parameters
Specifying procedure parameters
Optional parameters
Overloading a sub procedure
Functions
What are functions?
Calling functions
Declaring a function
Returning a value from a function
Overloading a function

Introduction to Classes

Object oriented programming
Classes
Objects
Member variables
Creating a class
Creating a class in its own file
Creating an object
Assigning a value to an object
Accessing class members
Objects as parameters and return types

Access modifiers
The Public access modifier
The Private access modifier

Properties

Encapsulation
Properties
Coding a Property
Implementing a Property
Accessing a property
Read only Properties
Write only Properties

Constructors

What are constructors?
Constructors with arguments
Calling a constructor
The default constructor
Constructor chaining
Shared constructors
Shared constructor execution
Declaring a shared constructor
Shared constructor rules

Inheritance

Introduction to Inheritance
Examples of inheritance use
Deriving one class from another
Adding to a Derived Class
Overriding Members of the Base Class
Multi-Level Hierarchies
Constructors and Inheritance

Shared members and classes

Shared Members of a Class
Examples of shared behaviour
Declaring Shared Members
Referencing Shared Members

Arrays

Array Types
Declaring an Array Variable
Accessing the elements in an array
Declaring and populating an array variable
Changing the size of an array
Retrieving the length of an array
Using For Each to loop through an array

Error handling

Introduction to Exception Handling
Try .. Catch
Finally
The Exception Class
Catching the Exception instance
The Exception Message
Throwing an Exception
Passing a message to the Exception class

Namespaces and Modules

What is a namespace?
Accessing Members of a Namespace
Namespace Nesting
Importing a Namespace
Root namespaces
Modules