Hands-On

Programming in Visual Basic

with Microsoft Visual Studio

Course Description

Our Hands-On course will cover Visual Basic language syntax, program structure, and implementation by using Microsoft Visual Studio 2010 and the Microsoft .NET Framework 4.0. In this course, you'll gain a solid foundation in Visual Basic programming.

This course will also focuses on new enhancements in the Visual Basic 2010 language using Visual Studio 2010. Our course will reinforce the course materials with effective, real-world Hands-On labs, this will enable you to be more effective with the day-today use and practical applications in your working environment.

Students Will Learn

- **Visual Basic and the .NET Framework**
- **Using Visual Basic Programming Constructs**
- **Declaring and Calling Methods**
- **Handling Exceptions**
- **Reading and Writing Files**
- **Creating New Types**
- **Encapsulating Data and Methods**
- **Inheriting from Classes and Implementing Interfaces**
- **Managing the Lifetime of Objects and Controlling Resources**
- **Creating and Using Properties and Indexers**
- **Overloading Operators**
- **Decoupling Methods and Handling Events**
- **Using Collections**
- **Building Generic Types Custom Collection Classes**
- **Using LINQ to Query Data**
- **Integrating Visual Basic Code with Dynamic Languages and COM Components**
- **And more...**

Target Audience

Developers who might create enterprise business solutions
Developers who have programming experience in Visual Basic, C, C++, C, or Java and understand the concepts of object-oriented programming

Prerequisites

Visual Basic knowledge
Some experience working with an object-oriented languages
Experience with the Microsoft .NET Framework
Knowledge of the Visual Studio integrated development environment

Course Outline

1. Visual Basic and the .NET Framework

- Introduction to the .NET Framework 4
- Creating Projects within Visual Studio 2010
- Writing a Visual Basic Application
- Building a Graphical Application
- Documenting an Application
- Debugging Applications by Using Visual Studio 2010

2. Using Visual Basic Programming Constructs
- Declaring Variables and Assigning Values
- Using Expressions and Operators
- Creating and Using Arrays
- Using Decision Statements
- Using Iteration Statements

3. Declaring and Calling Methods
- Defining and Invoking Methods
- Specifying Optional Parameters and ByRef Parameters

4. Handling Exceptions
- Making a Method Fail-Safe
- Detecting an Exceptional Condition

5. Reading and Writing Files
- Accessing the File System
- Reading and Writing Files by Using Streams

6. Creating New Types
- Creating and Using Modules and Enumerations
- Creating and Using Classes
- Creating and Using Structures
- Comparing References to Values

7. Encapsulating Data and Methods
- Controlling Visibility of Type Members
- Sharing Methods and Data

8. Inheriting from Classes and Implementing Interfaces
- Using Inheritance to Define New Reference Types
- Defining and Implementing Interfaces
- Defining Abstract Classes

9. Managing the Lifetime of Objects and Controlling Resources
    - Garbage Collection
    - Managing Resources

10. Encapsulating Data and Defining Overloaded Operators
    - Creating and Using Properties
    - Creating and Using Indexers
    - Overloading Operators

11. Decoupling Methods and Handling Events
    - Declaring and Using Delegates
    - Using Lambda Expressions
    - Handling Events

12. Using Collections and Building Generic Types
    - Using Collections
    - Creating and Using Generic Types
    - Defining Generic Interfaces and Understanding Variance
    - Using Generic Methods and Delegates

13. Building and Enumerating Custom Collection Classes
    - Implementing a Custom Collection Class
    - Adding an Enumerator to a Custom Collection Class

14. Using LINQ to Query Data
    - Using the LINQ Extension Methods and Query Operators
    - Building Dynamic LINQ Queries and Expressions

15. Integrating Visual Basic Code with Dynamic Languages and COM Components
    - Integrating Visual Basic Code with Ruby and Python
    - Accessing COM Components from Visual Basic

Delivery Method

Instructor-Led with numerous Hands-On labs and exercises.

Equipment Requirements

(This apply's to our hands-on courses only)

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

Course Length

5 Days