

Programming with Visual Basic .NET Course Outline

Developing .NET Business Applications

- Preparing an effective layered application architecture
- Implementing a Visual Basic solution with Visual Studio
- Strong naming assemblies with Visual Studio

Object-Oriented Programming with Visual Basic

Designing classes with encapsulation

- Coding classes with fields and public properties, methods and events
- Instantiating objects with constructors and initializers
- Linking objects with associations
- Crafting classes with Visual Studio class designer
- Creating shared, overloaded and extension methods

Applying inheritance

- Identifying when to use inheritance
- Coding inheritance hierarchies with Inherits
- Overriding base class functionality with Protected, Overridable and Overrides

Employing polymorphism

- Creating abstractions with MustInherit classes
- Attaching the Implements clause to interfaces
- Invoking polymorphic behavior
- Implementing INotifyPropertyChanged and IDataErrorInfo

Engaging the .NET Framework

Common Language Runtime (CLR)

- CLR architecture and services
- Managing memory and garbage collection
- Compiling Visual Basic into Intermediate Language
- Handling errors with Try/Catch/Finally
- Throwing exceptions to enforce correct client behavior

Surveying the .NET Framework Class Library

- Representing sets of data with .NET arrays and generic collections: List (Of T), BindingList (Of T)
- Leveraging data annotation attributes for validation
- Matching complex patterns with Regular Expressions

Programming web user interfaces

- Designing ASP.NET web pages and adding controls
- Working with the ASP.NET page life cycle and events
- Integrating data access into ASP.NET

Constructing .NET desktop applications

- Laying out Windows Forms and controls
- Responding to user interface events
- Implementing master/detail data binding
- Displaying data entry errors with Error Provider

Accessing Data with Entity Framework and LINQ

Connecting to databases with ADO.NET

- Working with Connection, Command and Data Reader
- Calling stored procedures from ADO.NET
- Releasing disposable objects

Mapping objects to databases with ADO.NET Entity Framework

- Demystifying the database, model and code-first approaches
- Automating object-relational mapping with DbContext and DbSet
- Representing associations with foreign key mappings
- Lazy and eager loading-related objects
- Persisting an object graph into the database

Integrating query into Visual Basic with LINQ

- Constructing LINQ statements
- Filtering, sorting, grouping and reshaping data: Where, Order By, Group By and Select
- Building custom objects from LINQ queries with anonymous classes
- Working with expression and lambda function LINQ syntax
- Harnessing LINQ with collections and Entity Framework

Deploying Visual Basic Applications

- Employing .NET configuration and VB My Settings
- Packaging ASP.NET web applications with Visual Studio
- Publishing Windows applications with Click Once

