

# Microsoft® LINQ Using Visual C#® 2008



**Instructors:** **Ken Getz** is a nationally renowned speaker and best-selling author who specializes in programming with Visual C# and Visual Basic. He is the author and presenter of some of AppDev's most popular courses, and has been showing developers how to build powerful, robust applications for over 10 years.

**Robert Green** is a frequent speaker at technology conferences and has authored many articles on Visual Basic and Visual C#. A former program manager and product manager for Microsoft Corporation, Robert now specializes in authoring and presenting using the latest Visual Studio technologies.

**Target Audience/Prerequisites:** This course assumes that students have familiarity with .NET in general, and with specifically with programming ADO.NET. The course makes no attempt to explain basic Visual Studio 2010 or .NET Framework concepts, and assumes that the student is at least familiar with all the concepts covered in the Introduction to Programming and Developing Applications with Visual Studio 2010 courses.

**Total Learning Time:** 10-30 hours

Media run time is 10+ hours, total learning time could be up to 30 hours if the courseware, labs and exams are utilized. This course can also be used as quick reference material, with the ability to access just the information you need in a matter of minutes.

**Course Description:** In this course, you'll learn to use the Language Integrated Query (LINQ) to easily create complex data-independent queries. In addition, you'll learn about the language features for Visual C# in Visual Studio 2010 in order to make LINQ possible. You'll start by working through a quick overview of LINQ, and how it applies to working with collections of objects, retrieving data stored in SQL Server, and creating XML content. Subsequent topics introduce new LINQ-oriented language features, LINQ to Objects, LINQ to DataSets, LINQ to SQL, LINQ to XML, and LINQ to Entities. By the time you've completed the course, you'll have a good understanding of not only how to construct LINQ queries to work with data, but also how to use the features added to Visual Basic that support LINQ.

## Course Outline:

### Introduction to LINQ

- Motivate the Need for LINQ
- Learn about the Various LINQ Providers
- Investigate Simple LINQ to Objects, LINQ to SQL, and LINQ to XML Samples

### Language Enhancements for LINQ

- Investigate the New Language Features Required by LINQ
- Learn about Implicit Type Declaration
- Use Object Initialization
- Work with Lambda Expressions
- Create and Use Extension Methods
- Select Multiple Columns Using Anonymous Types

### LINQ to Objects

- Learn Various Techniques for Using LINQ to Query Collections of In-Memory Objects
- Use LINQ with Arrays, Generic Lists, Generic Dictionaries, Strings, and Other Non-Generic Collections
- Work with Examples Using Many of the System.Linq.Enumerable Extension Methods, and Compare these Methods to LINQ Keywords

### LINQ to SQL

- Learn How to Map a Data Model to an Object Model
- Learn Various Techniques for Using LINQ to SQL to Query Data in a SQL Server Database
- Explore How to Modify Data and Save Changes
- See How to Use Stored Procedures to Modify Data

### More LINQ to SQL

- Explore Advanced Features of LINQ to SQL
- Explore Using LINQ to SQL in a Windows Application
- Explore Using LINQ to SQL in a Web Application

### LINQ to DataSets

- Learn various techniques for using LINQ to DataSet to query data in a DataSet
- See how to use DataViews with the results of a LINQ to DataSet query
- Explore how to bind the results of a LINQ to DataSet query to Windows Forms controls

### LINQ to XML

- Create XML Content Using Classes in the System.Xml.Linq Namespace
- Search Content Using XPath Expressions with the LINQ-Based API.
- Validate XML Content Using the LINQ-Based API
- Query XML Content Using LINQ to XML
- Transform XML Content Using LINQ to XML

### LINQ to Entities

- Understand the relationship between LINQ to Entities and the Entity Framework
- Learn how to map a data model to an Entity Data Model
- Learn various techniques for using LINQ to Entities to query data in a database
- Explore how to modify data and save changes
- See how to use stored procedures to modify data

Number of Modules	Media Run Time	Total Learning Time	Online Courseware*	Hands-on Labs	Sample Code	Pre/Post Exams	Supports Microsoft Exam Number
8 Modules	10+ hours	10-30 hours	850+ Pages	Yes	Yes	Yes	N/A

\* Professionally printed, bound courseware (student manuals) are available. Ask for details.