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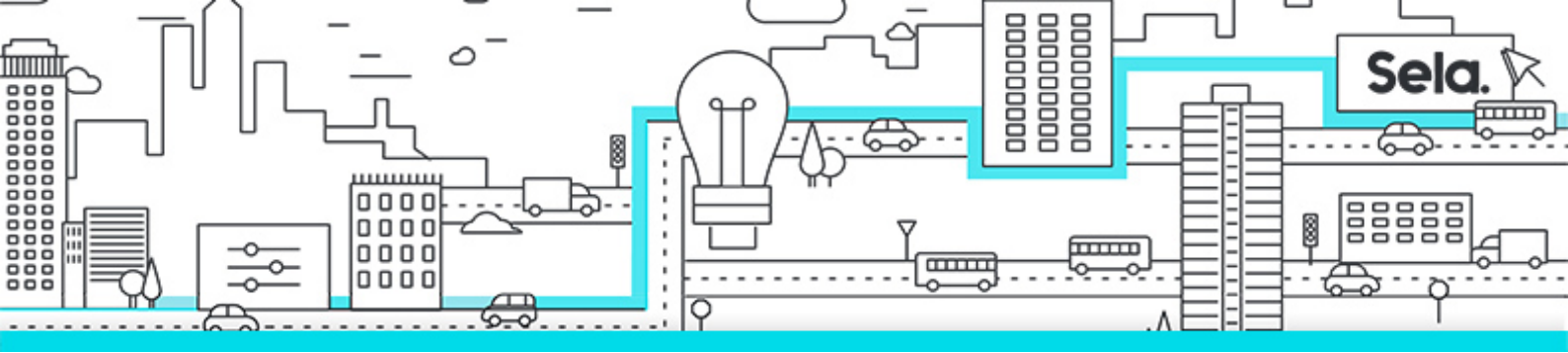
50066

LINQ via C#

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LINQ via C#

50066 - Version: 2.1

3 days course

Description:

This three-day instructor-led course provides students with the knowledge and skills to develop applications with the C# 3.0 language and the LINQ (Language Integrated Query) framework.

LINQ is Microsoft's framework for bridging the gap between various data sources and the .NET object-oriented languages. LINQ abstracts away the data source, providing an intuitive, declarative and uniform query interface to object collections, SQL-based relational databases and XML documents. Its extensibility features facilitate integrating additional data sources through the use of custom query providers. LINQ C# integration relies heavily on a set of new features of the C# 3.0 language.

The course is packed with practical code samples, demos and exercises to facilitate understanding the motivation of LINQ, the design patterns for its application, and its potential pitfalls.

Intended Audience:

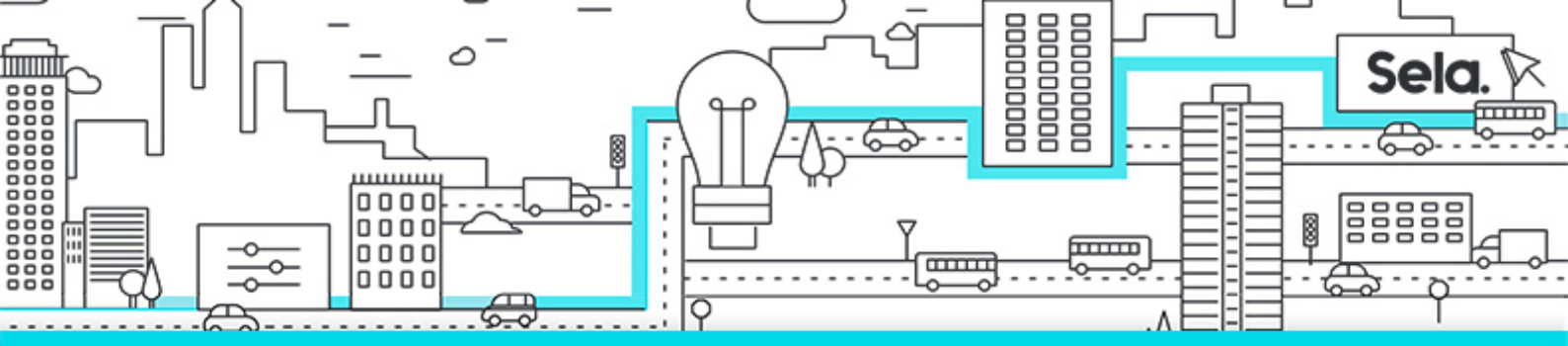
This course is intended for C# developers with practical experience in the .NET framework.

Prerequisites:

- Working knowledge of C# 2.0: Generics, anonymous methods, iterators
- Working knowledge of the .NET framework: Collections, ADO.NET basics, XML

Objectives:

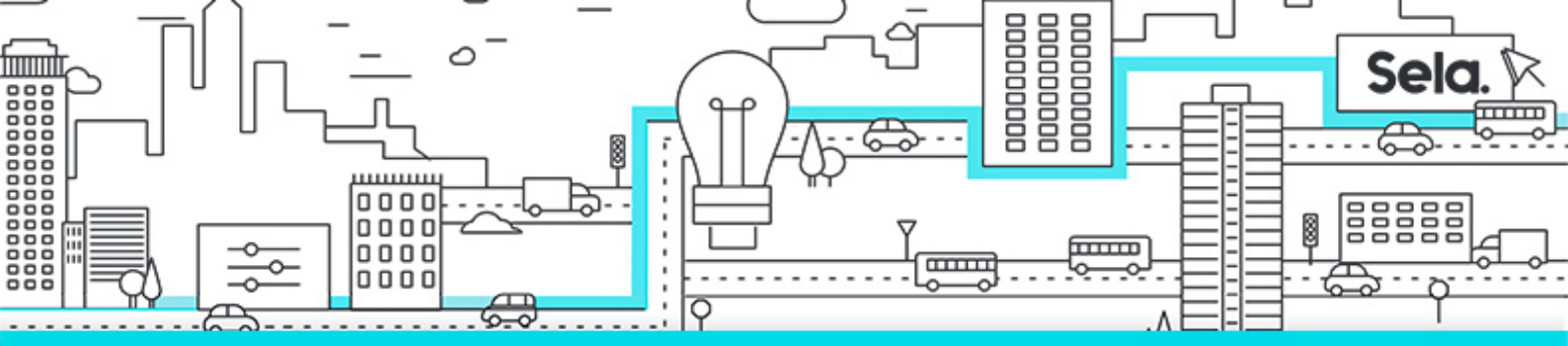
- Apply the new C# 3.0 language features in appropriate and practical scenarios



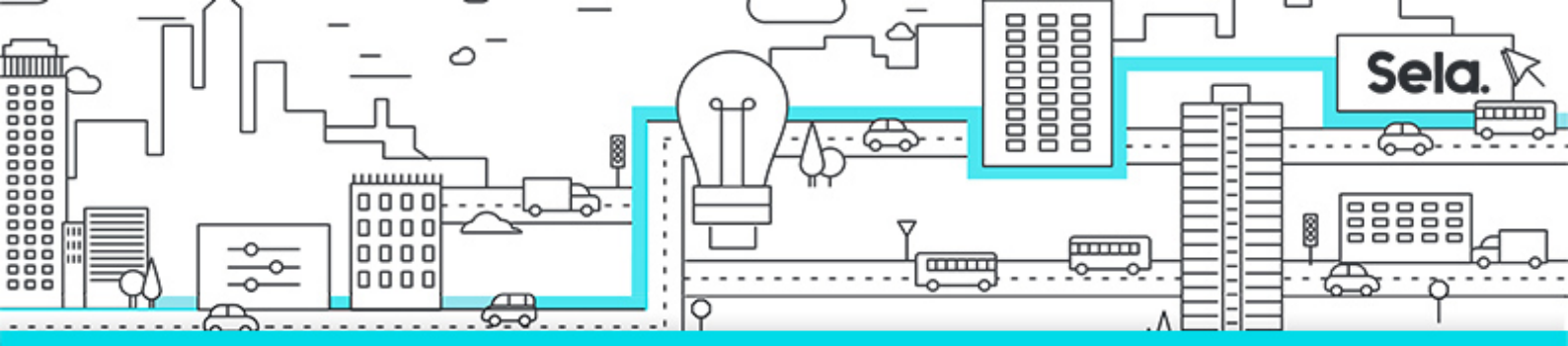
- Apply the LINQ framework for accessing various types of data sources
- Gain a general understanding of the LINQ extensibility model for writing query providers and customizing existing data sources
- Gain a general understanding of future frameworks in the LINQ area, including ADO.NET Data Services, ADO.NET Entity Framework, Parallel LINQ and other

Topics:

- **Module 1: C# Language Features**
 - Developer Productivity
 - Extensibility Concepts
 - Functional Programming Features
 - LINQ Support Features
 - Lab 1: Extension Methods and IEnumerable
 - Lab 2: Extension Methods and Anonymous Types
- **Module 2: LINQ Query Operators**
 - Motivation for Query Operators
 - Developing Query Operators
 - Categorizing query operators
 - Language integration of query operators
 - Lab 3: Implementing Query Operators
- **Module 3: Applied LINQ to Objects**
 - Using Query Operators with Objects.
 - Customizing query operators



- The query pattern
 - Examples of LINQ to Objects
 - Lab 4: Implementing the Query Pattern
 - Lab 5: Using LINQ Queries
- **Module 4: LINQ to XML**
 - Introducing the XElement API
 - Constructing XML fragments with XElement
 - Querying XElement DOMs
 - Axis methods
 - Lab 6: LINQ to XML
- **Module 5: LINQ to SQL**
 - LINQ to DataSet
 - LINQ to SQL as an Object-Relational Mapper
 - The Data Context
 - Visual Studio LINQ to SQL Designer vs. SQLMetal.
 - Lab 7: Integrating XML Mapping
 - Lab 8: Testing Concurrency Control and Object Tracking
 - Lab 9: Inheritance Mapping
- **Module 6: Beyond LINQ**
 - Overview of Parallel LINQ.
 - Overview of ADO.NET Entity Framework.
 - Overview of ADO.NET Data Services.
 - Overview of Custom Query Providers.
 - Performance Considerations of LINQ to Objects.



- Performance Considerations of LINQ to XML.
- Performance Considerations of LINQ to SQL.