

CHEAT SHEET

This cheat sheet is designed as a way for you to quickly study the key points of this chapter.

Language Integrated Query LINQ

- Any object that implements the `IEnumerable<T>` or `IQueryable<T>` interface can be queried using LINQ.
- The results of a LINQ query are normally returned to a variable of type `var`, which is an implicitly typed variable.

Query expression

- A query expression contains a `from` clause and can contain a `select`, `group by`, `order by`, `where`, or `join` clause.
- Joins are always equivalence based for LINQ queries.
- The execution of a query does not occur until the result is enumerated. You can force execution of the query by using an aggregate function.
- The code in the `where` clause of a query expression is the predicate.
- Multiple `where` clauses use the `and` operator.
- The `orderby` clause is used in query expressions to sort the results on one or more properties.
- You can create a new type on the fly in the `select` clause of a query expression with a limited number of properties from the original object. This is referred to as projection.
- You use the keyword `equals` in a `join` clause.
- To create an outer join, you include an `into` clause in your join, and also call the `DefaultIfEmpty` method to set the properties on the object when no match was found between the two sequences.
- A `join` clause can contain an anonymous type to create a composite key.
- The `group by` clause returns an `IGrouping<TKey, TElement>` collection.

Method-based queries

- Method-based queries and query expressions are interchangeable and produce the same results. The only difference is the syntax.
- Method-based queries use lambda expressions as parameters to the methods.
- You can use the `SelectMany` method to flatten two sequences into one sequence similar to how a join works.
- You can use the `GroupJoin` method to create outer joins when using method-based queries.
- You can concatenate two sequences by using the `Concat` method.
- You can use the `Skip` method to skip a specific number of elements in a sequence.
- You can use the `Take` method to return a limited number of elements from a sequence.
- You can use the `Distinct` method to return the distinct list of elements from a sequence.

LINQ to XML

- You can use the `XElement` class in a LINQ to XML query to return the result of a query in XML.

REVIEW OF KEY TERMS

anonymous type A type created with read-only properties without having to write the code to declare the class.

composite keys Contains multiple properties that you need for the purpose of a join.

deferred execution Execution of a LINQ query is deferred until the result is enumerated or by calling a function on the result.

Goes To operator The `Goes To` operator is the `=>` signs in a lambda expression.

implicitly typed variable A variable that has its type determined by the expression on the right side of the initialization statement. Use the keyword `var` to declare an implicitly typed variable.

inner sequence When using the method-based `Join` function, this refers to the sequence passed into the `Join` method as a parameter.

Language Integrated Query (LINQ) A set of features that extends powerful query capabilities to C#.

method-based query A feature of LINQ that uses extension methods on types that implement the `IEnumerable<T>` or `IQueryable<T>` interface to query the data.

outer join Selects all elements from one sequence when joined to another sequence even if there is not a match on the joined property.

outer sequence When using the method-based `Join` function, this refers to the sequence calling the `Join` method.

ParamArray A parameter to a method that enables you to pass an unknown number of parameter to the method.

predicate The code executed in a `where` clause for a query expression.

projection Selecting a subset of properties from a type that creates a new anonymous type.

query expression A feature of LINQ that enables you to query any type that implements the `IEnumerable<T>` or `IQueryable<T>` interface by using syntax that is easy to comprehend.

EXAM TIPS AND TRICKS

The Review of Key Terms and the Cheat Sheet for this chapter can be printed to help you study. You can find these files in the ZIP file for this chapter at www.wrox.com/remtitle.cgi?isbn=1118612094 on the Download Code tab.