



**Commerce & Business Administration  
Computing Studies and Information Systems  
CSIS 1175 Winter 2017**

**Introduction to Programming**

**LINQ LAB**

**Due End of Thursday Class.**

**Covers concepts taught up to Chapter 9 (No credit)**

In this lab exercise, you are asked to write a C# program that will use LINQ to retrieve customer objects stored in a list. It involves concepts you learned since the beginning of this course such as Lists, Objects, Loops, Variables (casting), etc. So it is impossible for me to say something like "the final exam only covers material we learned after the mid-term" since the first six chapters are the foundation for the chapters that follow. The final exam thus covers every chapter in the textbook up to Chapter 10 PLUS LINQ material on the web and used in this lab exercise.

The link to the LINQ web site is here. <https://msdn.microsoft.com/en-us/library/bb397927.aspx>  
Specifically, you will use LINQ to code

- i. Filters (e.g. for specific cities)
- ii. Filters with AND
- iii. Filters with OR
- iv. Groups.
- v. Sorting Order.

Given a text file as INPUT (*CustomerAccounts.txt*), your application will fetch specific objects from the data source according to the users' requirements and display their details in a list box (or list view).

**User Interface**

Below is a suggested interface for your application. You are allowed (in fact encouraged) to enhance this interface in any way ***IF*** it will...

- a. Make the work of the user more efficient
- b. Reduce the possibility of mistakes in inputting data
- c. Make understanding the report (output) easier, quicker, and more meaningful to the user (hint: adding colors randomly and a nice graphic does not help the user).

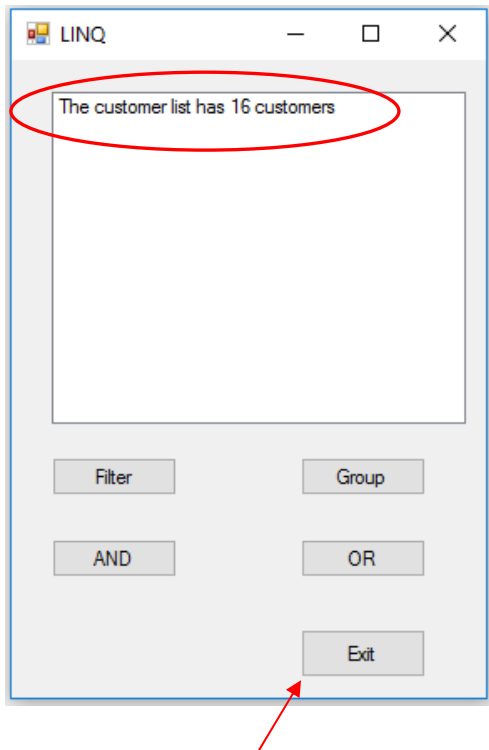
As you can see below, the user is given FOUR options. To filter, group, filter with AND, and filter with OR.

Option 1. Filter. In this option, you will need to retrieve (from the datasource) customers who live in Seattle. The results displayed must be sorted by customer last name and you must display customer last name, first name, customer number, and customer city in this specific order.

Option 2. Group. In this option, you will need to retrieve (from the datasource) customer cities where two or customers reside. In other words, cities where there are two or more customers. The results displayed must be sorted by customer city and you must display customer city, customer last name, first name, and customer number in this specific order.

Option 3. Filter with AND. In this option, you will need to retrieve (from the datasource) customers who live in Seattle AND have balances over \$100.00. The results displayed must be sorted by customer balance in DESCENDING order (largest amount on top) and you must display customer balance, customer first name, last name, and customer city in this specific order.

Option 4. Filter with OR. In this option, you will need to retrieve (from the datasource) customers who live in Seattle OR customers who live in Renton. The results displayed must be sorted by customer last name and you must display customer last name, first name, and customer city in this specific order.



Upon loading the form must also indicate the number of customers in the datasource and have an Exit button to close the application.

### The Business End

Terminology.

There is no special terminology used in this exercise. If in doubt, ask the instructor to clarify.

Please see the screen shot of Option 2 for an example of the calculation.

S/No.	Object Name	Purpose
1.	btnFilter	To execute option 1.
2.	btnGroup	To execute option 2.
3.	btnAND	To execute option 3.
4.	btnOR	To execute option 4
5.	btnExit	To close and stop running the application.
6.	ListBox1	For displaying the output of the LINQ queries for the user.

**End of document**