**Take Home Questions**

## Question 1

Write a C# program to solve the following problems:

1. Write a function that receives three integer inputs for the lengths of the sides of a triangle and returns the triangle type (scalene, isosceles, equilateral).
2. Write a function that would return the 5th element from the end in a singly linked list of integers, in one pass, and then provide a set of test cases against that function. Assume the list size cannot be known without traversing the list.

## Question 2

Write a C# program to solve the following problems:

1. Take as input the path to a file containing one integer per line. For each integer in the file, output to the console a comma-delimited list of the integer's prime factors. The list of integers on each line of the output should multiply to produce the input integer. Please include unit tests for the code  ([http://www.nunit.org](http://www.nunit.org/)  preferred)

If you think of any other questions, make an assumption and document it in your code

Customers  
ID NAME ADDRESS PHONE NUMBER EMAIL  
  
Orders  
ID CUSTOMER\_ID ORDER\_AMOUNT ORDER\_ADDRESS

1. Write the SQL Query to pull all customers
2. Write a SQL Query to pull all customers that have orders (no duplicates)
3. Write a SQL Query to pull all customers that do NOT have orders
4. If you had to create an index on these tables, which fields would you most likely index and why?
5. Write a query that lists each customer name, email, and the number of order they have
6. Write query that pulls all customers with between 2 and 5 orders.