**BIT 142**

**Total: 50 Points**

**25 for style**

**25 for working code**

Intermediate Programming

*Major Assignment 4*

**The Task:**

Given a list of numbers by the user, code the algorithm for the following…in order to find the element the user is searching for

* Binary Search
* Linear Search
* Bubble Sort
* A searching algorithm of your choice
* A sorting algorithm of your choice

If the element is present, print the index it is at.

If the element is not present, print “the element is not in this list.”

**What You Need to Do:**

Example outputs are below:

Hello! Welcome to my Searching and Sorting Algorithm!

What search/sort method would you like to do? **Linear Search**

How many numbers do you have? **2**

Please enter a number: **2**

Please enter a number: **67**

What number are you looking for? **10**

The element you are looking for is not in this list.

Hello! Welcome to my Searching and Sorting Algorithm!

What search/sort method would you like to do? **Binary Search**

How many numbers do you have? **5**

Please enter a number: **2**

Please enter a number: **3**

Please enter a number: **4**

Please enter a number: **10**

Please enter a number: **40**

What number are you looking for? **10**   
  
The element you are looking for is at index 3.

Your program should be able to take any number output *as long as it is sorted*. Please ignore any unusual cases; you may assume the input will be valid.

**HINTS:**

* Comment on your code (not how, but WHAT)
* Use the concepts we learned in class
  + Refer to the PPT slides

Feel free to come to me with any questions!