**CST-201**

**Project 0: Array Warm-Up**

The purpose of this assignment is to practice manipulating arrays. This assignment assesses your ability to:

* Implement sequential and binary search algorithms for array structures.
* Implement iterative sorting algorithms for array data.

For this assignment, you will write a program that reads a text file and stores each word in an array. You will write one of the iterative sorting algorithms to sort your data. Once the data is sorted, you will write a binary sort algorithm that, when given a string, returns either the index of the string or a -1 to indicate the string was not found in the array. Your program should allow the user to continually enter strings. An entry of 0 indicates the user is finished searching for strings.

Start your program by reading strings from a file and populating a string array. Declare the array with a capacity for 10,000 strings. An input file is included with this assignment: ‘text.txt’.

Next, write a method that implements either bubble sort, insertion sort, or selection sort. Write this implementation yourself without help from the Internet. Display the array before and after sorting it to ensure that the sort algorithm works properly. Remember, upper-case and lower-case letters affect the alphabetical ordering. Do not convert to all upper or all lower case – just sort the words as they are presented.

Finally, write a method that implements binary search on your sorted array. Allow the user to repeatedly enter words to search for. Display either the index of the word or a message that the word is not in the list.

Before submitting your work, create a LOOM video in which you run your program and explain EXACTLY how your sort and search methods work. Focus on explaining WHY you coded your work the way you did. Refrain from reading your code; I can read code – what I want to know is whether or not you fully understand the work you have submitted. Your video should not exceed 4 minutes.

Submit the following:

1. Your program. Submit ONLY the files that you coded. If you have more than 1 file, zip them up before submitting. If you have only 1 file, add .txt to the extension and submit.
2. A text file called video.txt that contains a link to your LOOM video

See below for an example:

