Due: Thursday, April 13, 2017, 11:59:59 Midnight

**Introduction**

This lab is designed to give you practice working with a sorting and search algorithm.

**Lab Objectives**

In addition to practicing concepts used in previous assignments and labs, upon completion of this lab,

you should be able to:

* Sort an array of values using selection sort
* Search for an element in a sorted array using linear search

**Prior to Lab**

You are required to watch the following videos before attending lab:

<https://www.youtube.com/watch?v=lx9G71uLXIg>

https://www.youtube.com/watch?v=vZWfKBdSgXI

**Instructions**

Download the necessary starting files from canvas. You will notice that driver.cpp contains

pseudo-code to help guide you through this lab.

Task 1:

* Read data from the input.txt file specified in argv[1] using command line arguments. Read the data from the file and store it into a container of your choice (array, vector). Read from the file

and populate the container. Print the contents of the container once, sort the data using

selection sort, and lastly, printing the data again after sorting. You MUST implement and use the

print\_data and selection\_sort functions for these tasks.

Task 2:

* Prompt the user to enter a number with the string " Enter search item: " . Then, search the

data for that number using a linear search. If the number was found in the container, print out

the message “<number> found at index <index> ”. If the number was not found, print out the message “<number> not found in the ”. You MUST implement and use the linear\_search function to search for the specified number.

**FORMATTING**

1. Your program should be well documented
2. Each file should include a header (example below)
3. Your program should consist of proper and consistent indention Ex. You should choose a specific number of spaces to indent – 3, 4, or 5 – and be consistent
4. No lines of code should be more than 80 characters
5. Variable names should be meaningful

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

your name

username

Lab 11

Lab Section:

Name of TA

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**Submission Instructions**

Use handin (http://handin.cs.clemson.edu) to submit a tarred file called Lab11.tar.gz containing **driver.cpp, functions.cpp, and functions.h**