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
*******************/
```

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**