Homework 0 – Practice & Review

100 Points

One Dimensional Arrays

Assignments & Grading
A. 20Points – Search: class exercise // **22B_H_0A.cpp**
B. 20Points – Sort: Find and fix errors // **22B_H_0B.cpp**
C. 60Points – Exam Statistics // **22B_H_0C.cpp**.

Run each program as required and save the output at the end of the source file as a comment. Compress the source file, input, and output files (if any) and upload the compressed file: 22A_LastName_FirstName_H0.zip

Project Exam Statistics

Here is what your program will do: first it welcomes the user and displays the purpose of the program. It then prompts the user to enter the name of an input file. Assume the file contains the scores of the final exams; each score is preceded by a 5 characters student id. Test your program with the following data:

scores.txt

```
DH232  89
DR123 100
AJ222  98
SW111  45
12AB1  82
516BC  99
2ABCD 100
333XY  92
TY4XZ  45
AC234  78
9QWE9  45
JP200  89
AK323 100
```

The program should do the following:

- Read the contents of the file into two parallel arrays.
- Sort the arrays in ascending order by student ID.
- Write the sorted arrays to another output file named **scoresOut1.txt**
- Sort the arrays in descending order by score.
- Write the sorted arrays to an output file named **scoresOut2.txt**
- Display the highest score in the array and the ids of the students with that score.
- Display the lowest score in the array and the ids of the students with that score.
- Display the total number of students in the array
- Display the class average.

Design: Define and call functions: each function should be in charge of a single task, such as print a welcome message, read data from file into two parallel arrays, sort by score, sort by id, write to file, etc.

Extra Credit 1: This assignment does not have to be submitted. However, if you do submit it on time and if it is perfect, you may earn your first Extra Credit Point!

Hierarchy Chart (also known as Structure Chart) for Project Exam Statistics