Homework 7

100 Points

1D Arrays and Functions

Assignments & Grading:

1. 30Points – Program 7A: find and fix errors
2. 70Points – Program 7B: Project Exam Statistics

UPLOAD the source file (screen output included), input & output files (if any)

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 (such as **`scores.txt`**). Assume the file contains the scores of the final exams; each score is preceded by a 5 characters student id. Create the input file: copy and paste the following data into a new text file named **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 read the contents of the file into two arrays, determine what needs to be determined, and displays the following results:

- The total number of students in the array
- The class average
- The lowest score in the array followed by the ids of the students with that score
- The highest score in the array followed by the ids of the students with that score

Finally, the program should write to another file the scores below the average, and the corresponding ids. The program prompts the user to enter the name of an output file

Design: Your program should include several functions in addition to **`main()`**

// NOTE: You must write documentation for each function!

Pseudocode: // see next page

Pseudo-code:

1. Display welcome & info about the program
2. Create 2 arrays in main (assume the maximum class size is 45)
3. Read data from file into two arrays and also count the number of students in the input file.
4. Calculate the class average
5. Find the lowest score
6. Find the highest score
7. Display the average and the number of students
8. Display the lowest score followed by the ids of the students with that score
9. Display the highest score followed by the ids of the students with that score
10. Write to another file the scores below the average, and the corresponding ids. The program prompts the user to enter the name of an output file
11. Display an “end of the program” message.