CS 2401 – Elementary data structures and algorithms
Fall 2022
Lab 1

Due Date: Wednesday August 31, 2022 – end of day.

Objective: The goal of this assignment is to practice file reading and processing data.

Background: We are given an input text file that contains three midterm scores of 10 students.

Assignment: The file, input.txt, will have ten lines, one line for each student. Each line will have three scores, one for each midterm. Your program should read the data from the file, compute, and display the following information:

- The highest midterm score for each student
- The average score of each midterm

Your program must not contain any array. Your program should use a try-catch block properly to handle file reading.

Test cases:

Test cases are used to test the correctness and robustness of the program. Provide two test cases showing the program can compute the required information correctly (e.g., highest, average). Test cases can include a scenario where the filename is incorrect, the file is missing, or data in the file is in the wrong format.

While writing the test cases, provide a case number, sample input for that case, and expected output from the program. Also, give a brief description of what criteria the test case is checking. Write these cases in a txt file. Your program is expected to pass these test cases.

Sample input file:

```
92 90 99
73 86 97
86 81 89
71 80 100
97 78 77
93 78 90
95 80 78
97 82 80
80 88 78
91 88 97
```

Sample output:

```
Student 0 highest score:99
Student 1 highest score:97
Student 2 highest score:89
Student 3 highest score:100
Student 4 highest score:97
Student 5 highest score:93
Student 6 highest score:95
Student 7 highest score:97
Student 8 highest score:88
Student 9 highest score:97
Average of the first midterm: 87
Average of the second midterm: 83
Average of the third midterm: 88
```

Deliverables: You are expected to submit two files in Blackboard:

    (i)   Lab1_Lastname.java --- the java file of your program.
    (ii)   Lab1_Testcases_Lastname.txt --- the test cases for your program.
    (iii)   Lab1_Inputfile1_Lastname.txt , Lab1_Inputfile2_Lastname.txt, etc. --- all the input files that you used to run your program, each should be in the format as shown in sample input file.

Grading Criteria:

- [10 points] Program compiles and runs.
- [10 points] The program is indented correctly.
- [10 points] The program is documented properly.
- [5 points] The program uses correct variable types.
- [5 points] The program uses meaningful variable names.
- [50 points] The program has a correct logic and generates correct output.
- [10 points] 2 test cases

- Late submission: [**-10**] points for every 24 hours after the deadline.

If you need any clarification, please ask your TA for further details.