COSC 1436, Dr. Pershwitz

Assignment 7a: 12 points

Write a Program: Competition Score

Your goal is to create a program that will determine the average score for an athlete in a competition. There are 10 judges who each award a score between 0 and 10. The lowest and highest scores are thrown out, and the athlete's score is the average of the eight remaining scores.

You need to create a scorecard file in a text editor or type it into onlineGDB. The scorecard should have the first and the last name of the athlete on the first line and 10 space-separated numbers between 0 and 10 on the second line. The numbers should have at most 1 digit after the decimal point.

Your program should have the following:

- Include 4 comment lines at the top: description of the program, author, section, and date. (1 point)
- An array to hold the scores from all judges. (1 point)
- Have the program read the athlete's name and scores from the file you created and store the scores in the array. Do not forget to check if the file opened successfully. (2 points)
- If a number outside the valid range is encountered print a message disqualifying the athlete because of invalid scores (1 point)
- If an end-of-file is encountered before all 10 scores are read print a message disqualifying the athlete because of insufficient scores (1 point)
- Determine the highest and the lowest scores in the array. (1 point)
- Correctly determine the average score for the athlete using the eight remaining scores. (2 points)
- Display a message to the console that shows the athlete's name, the 10 scores that were entered, the two scores that were dropped, and the final average score with two digits after the decimal point. (2 points)

Notes:

- When you run your program, you should test insufficient, invalid, and valid scores. You should also test your program when the scorecard file is not present. This is a total of 4 runs. Insufficient console output is a 1-point deduction.
- Pay attention to where you create and how you initialize your variables. Unsafe code is a 1-point deduction.
- Remember to create named constants for what's appropriate. Use the standard convention for constant names. Improper/insufficient use of named constants is an up to 1-point deduction.
- Comment your code. Uncommented code is a 1-point deduction.

Example Input File:

```
Mirabella Jones
7.5 8.8 7 8.1 8 9.8 9.3 8.9 9.1 9
```

Example Output:

First run

```
ERROR: the scorecard could not be opened
```

Second run

```
Insufficient scores
Mirabella Jones is disqualified
```

Third run

```
Invalid scores
Mirabella Jones is disqualified
```

Fourth run

```
Mirabella Jones's results:
7.5, 8.8, 7.0, 8.1, 8.0, 9.8, 9.3, 8.9, 9.1, 9.0
The highest score of 9.8 and the lowest score of 7.0 were
dropped
The average score is 8.59
```