CS 150 Lab 6
Files & Loops

The main objective of today's lab is to process data from a file. We will start be reading in data for one individual, and then reading in data for multiple people.

- Be sure your output looks exactly like the specified output.
- Be sure to submit the completed project to CS150-02 Lab by Friday at 5pm.
- Be sure to follow the coding standards and add comments to your code!

Show the instructor or TA your solution after part is implemented below.

Lab 6.1

Part A:

Write a complete C++ program in a project called **06_1_Grader** that will process an exam grade for a single individual. The line of data will include a student's PUNetID and their exam score. Each exam will be out of 100 points. You must create the data file and name it **grades.txt** and place it in the Resource Files folder.

A simple data file might look like the following:

```
smit4321 86
```

You are to process this single line of data and output the following results:

```
*************************************
*       Pacific Grading Program     *
*************************************

    PUNetID     Score
   --------    --------
   smit4321     86.00
```

<u>Show the instructor or TA your solution</u>

Part B:

You are to add the ability to process a large data file that contains an unknown number of students and grades. The last line contains the sentinel xxxx9999.

A simple data file might look like the following:

```
smit4321 86
will1234 91.21
hall9876 77.6
xxxx9999
```

You are to process this entire file and output the following results:

```
***************************************
*         Pacific Grading Program     *
***************************************

    PUNetID       Score
    --------    --------
    smit4321      86.00
    will1234      91.21
    hall9876      77.60
```

Show the instructor or TA your solution

Part C:

Add grades such that [90,100] is an A, [80,90) is a B, and so on.

```
***************************************
*         Pacific Grading Program     *
***************************************

    PUNetID       Score       Grade
    --------    --------    --------
    smit4321      86.00          B
    will1234      91.21          A
    hall9876      77.60          C
```

Show the instructor or TA your solution

Part D:

Calculate the average class score on the assignment and output the average below the table.

```
***************************************
*         Pacific Grading Program     *
***************************************

    PUNetID       Score       Grade
    --------    --------    --------
    smit4321      86.00          B
    will1234      91.21          A
    hall9876      77.60          C

The class average is: 84.94
```

Show the instructor or TA your solution

Part E:

Test your program with the data files on the CS150-02 Public folder on Turing. There are two files: 06test1.txt and 06test2.txt. You need to copy each of these files from Turing to the same location as grades.txt and then right-click on the Resource Files and add Existing Item.

Show the instructor or TA the output after running your program using those files

Optional Challenge: As summary statistics, print the PUNetID of the person in the class with the highest class average and their corresponding class average.

1) Your program is to compile without any errors or warnings.

2) Do not use any magic constants in your program. Define your constants before defining the rest of your program's variables.

Once your project is complete, place your solution PUNetIDLabs into the CS150-02 Drop folder on Turing. Your solution is to have ALL previous projects completely working and correct.