

CPS 280S Home Work 2

Assigned: Tuesday, February 09, 2016

Due: Friday, February 19, 2016

1 Description

You will need to submit your program file to Blackboard [Homework 2](#)

2 What to Do

1. Create a new Python project
2. Create a Python file called hw2_globalid^{1 2 3}
3. Create a Python file called test_hw2^{2 3}
4. Run each of the files with empty contents to create the correct run configurations
5. Copy the contents from the test_hw2.py file from the [Assignments](#) area on Blackboard
6. Download the Grades file from the [Assignments](#) area on Blackboard and move it to your project folder

The program should meet the following requirements:

(a) Define a Class named Student² that should

- Have the following instance variables
 - str_fname
 - str_lname
 - str_grade
- Have an initialization method that
 - Can take first name, last name, a maximum score, and a total of earned points⁴
 - Calls setters to set the values of each instance variable
- Have a string conversion function that returns a string formatted as FirstName LastName:LetterGrade
- Have setters and getters for each instance variable
- The setters for str_fname and str_lname should
 - Take one argument
 - Ensure that the instance variable is set to a string
- The setter for str_grade should
 - Take a list as the only argument⁵
 - Treat the first item in the list as a maximum score⁶

¹You should replace globalid with your global id in lowercase letters.

²Capitalization is important.

³The .py extension will be added automatically.

⁴The default values should be: fname=Jon, lname=Doe, max=415.0, and points=0

⁵If not given a list it should set the grade to E.

⁶If the score can not be expressed as a float max should be set to 415.

- Sum the remaning items⁷
 - Calculate the percentage grade
 - Set the value of str_grade⁸
- (b) When run alone it should call a function named main², which should
- Open the file Grades for reading.²
 - Read the contents of the file.⁹
 - Use the data from each line to
 - Create a new Student object
 - Set the str_fname instance variable
 - Set the str_lname instance variable
 - Set the str_grade instance variable based on a maximum of 415 points
 - For each student write a single line to a file named "Graded".^{2 10 11 12 13}
7. Run test_hw2 to make sure your program passes all of the tests
8. Submit your hw2_globalid.py file on Blackboard¹⁴

⁷Ignore non-numeric data when calculating the sum

⁸The letter grade must be based on the grading scale given in the syllabus for this course.

⁹The format of each line in the file will be

LastName,FirstName,Grade1,Grade2,Grade3,Grade4,Grade5,Grade6,Grade7,Grade8,Grade9,Grade10,Grade11

¹⁰The output to the file should be sorted by a concatenation of Last Name and First Name.

¹¹The sort should be case insensitive.

¹²The line should be in the form of "FirstName LastName:LetterGrade"

¹³Some first names may contain multiple words separated by a space

¹⁴Do not submit any other files.