

## PA 2

Assigned: Sep. 18<sup>th</sup>, 2020

Due: Oct. 9<sup>th</sup>, 2020 by midnight.

The programming assignment is to practice the if condition as well as while, do while, and for loops.

Program: GPA calculate

1. Define a function to print out "Welcome to the GPA calculation program!"
2. Define a function that:
  - i. Print out a sentence to guide the user to do the below input
  - ii. Read in data from keyboard for a person's name and the grades for classes.
    1. Computer science, credits 4
    2. English, credits 3
    3. Writing, credits 3
    4. data mining, credits 4
    5. math, credits 2
  - iii. Calculate the average GPA of each person (round the GPA to 1 digit)
    1.  $90 < \text{Grade} \leq 100$ : gpa 4.0
    2.  $85 < \text{Grade} \leq 90$ : gpa 3.5
    3.  $80 < \text{Grade} \leq 85$ : gpa 3.0
    4.  $75 < \text{Grade} \leq 80$ : gpa 2.5
    5.  $70 < \text{Grade} \leq 75$ : gpa 2.0
    6.  $60 < \text{Grade} \leq 70$ : gpa 2.0
    7.  $\text{Grade} \leq 60$ : gpa 1.0

The average gpa = the corresponding GPA for the grade of class1 \* the class credit + the corresponding GPA for the grade of class2 \* the class credit + ...

For example, if a person Katy's grade for the above five classes is:  
100, 100, 80, 90, 100  
the corresponding gpa of each class is:  
4.0, 4.0, 2.5, 3.5, 4.0

The average gpa =  $4.0 * 4 + 4.0 * 3 + 2.5 * 3 + 3.5 * 4 + 4.0 * 2 = 3.6$
  - iv. Return the person's name and the average GPA to the main function
3. In the main function:
  - a. Call the function (defined in step 2) 10 times to read in and calculate the average gpa of 10 people.

- b. Each time, after calling the function, print out the name and average gpa on the terminal. For example:

Katy 3.6

- c. The final printed out results would be 10 rows:

Katy 3.6

Josh 3.6

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