

Practical 01

Python Overview

1. A student's overall Grade Point Average (GPA) for a semester is calculated by dividing the total grade points earned by the total amount of module credits. The GPA may range from 0.0 to 4.0. An example of the GPA earned by a student for 5 modules taken in a semester, and the corresponding module credit is given in the table below. The overall GPA for that semester is calculated by using the following formula:

$$GPA = (3.5*4 + 3.5*4 + 3*4 + 2*8 + 4*2) / (4+4+4+8+2) = 2.91$$

Module Code	Module Credit	Grade Point Average	Grade Point
Module 1	4	3.5	$3.5 * 4$
Module 2	4	3.5	$3.5 * 4$
Module 3	4	3	$3 * 4$
Module 4	8	2	$2 * 8$
Module 5	2	4	$4 * 2$

Using a `for` loop, write a Python program to prompt the user for the module credit and module GPA for the 5 modules. Compute and print out the overall GPA.

Sample output:

```
Enter the credit for Module 1: 4
Enter your GPA for Module 1: 3.5
Enter the credit for Module 2: 4
Enter your GPA for Module 2: 3.5
Enter the credit for Module 3: 4
Enter your GPA for Module 3: 3
Enter the credit for Module 4: 8
Enter your GPA for Module 4: 2
Enter the credit for Module 5: 2
Enter your GPA for Module 5: 4

Your overall GPA for 5 modules is 2.91

Process finished with exit code 0
```

2. Write a Python program to simulate the 'Wheel of Fortune' word game. To help you solve this problem, you may start your program with the following code snippet:

```
import re

sentence = "wheel of fortune"
p = re.compile('\w')
hidden_sentence = p.sub('-', sentence)

print('Guess the phrase :', hidden_sentence)
# while loop to keep asking for the letter and print out the phrase
```

The following links describing the use of regular expressions in Python might be useful:

- https://www.w3schools.com/python/python_regex.asp
- <https://stackoverflow.com/questions/26374484/replace-a-certain-index-of-a-string-in-python-3-0>

Sample output:

```
Guess the phrase : -----
Give me a letter : w
Guess the phrase : w-----
Give me a letter : h
Guess the phrase : wh---
Give me a letter : e
Guess the phrase : whee-
Give me a letter : l
Guess the phrase : wheel
Give me a letter : o
Guess the phrase : wheel o-
Give me a letter : f
Guess the phrase : wheel of fo-
Give me a letter : r
Guess the phrase : wheel of for-
Give me a letter : t
Guess the phrase : wheel of fort-
Give me a letter : u
Guess the phrase : wheel of fortu-
Give me a letter : n
Guess the phrase : wheel of fortune

Yeah, you got it right!

Process finished with exit code 0
```

3. Write a Python program that ask the user to enter a total of 10 numbers.
- The program should store the numbers in a Python list and display the following information:
 - The smallest number in the list
 - The largest number in the list
 - The sum of all the numbers in the list
 - The average of all the numbers in the list
 - Modify the program so that it will first ask the user for the number of numbers to be stored in the list.
 - Modify the program so that it will continue asking the user for input until 10 valid numbers have been captured.

-- End of Practical --