COSC2429 – Introduction to Programming

Assessment 4 – Test 3 – 2022C

Individual – Timed Programming Test 1

Period: 05 + 60 + 05 minutes, Week 11

Late work: Deduction of 10% per minute

Submission Instructions

1) Only submit the python files, name your files as question1.py, question2.py, ...
    - No capital letter in the file names
    - Make sure it works properly (PyCharm, Python 3.8x)
    - If you use any other python version/IDE, you must note that in the comment at the beginning of your code
2) Place all your files in **ONE folder**:
    - named the folder as **<Your sID_Name>,** where 'sID' is your student ID, and 'name' is your full name. This is a correct way to name your folder: s1234567_NguyenMinhNhat
3) Zip the folder <Your sID_Name>, and submit **only this zip file** to Canvas
4) Point deduction will be given if you:
    - Have incorrect file names, function names, variable names.
    - Forget file header in the correct format.
    - Forget function docstrings in the correct format.
    - Have no or little code comments.
    - Write too long and repetitive code where iteration can help shorten it.
    - Place all your code in the main program without using functions.

Question 1

Write a program which takes a string with words and numbers as an input from a user. Then the program prints only the words in the input ***(without printing the digits)*** in reverse order as a string.

Example 1: *Input:* Enter a string with words and numbers: 3 men ate 9 apples in 3 days

Output: days in apples ate men

Example 2: *Input:* Enter a string with words and numbers: Today is 14th Jan 2023

Output: Jan is Today

Question 2

In computers, when something is deleted, actually it is not completely deleted from database. It is labelled as “deleted”, and it’s information will not appear to user. Given a dictionary with some items has value of “DELETED” (in file *test3_q2_2022C_dic.py*). Implement a program to actually remove all items having value of 'DELETED' from this dictionary. Then write the result to the file “output.txt” with the exact format as follows:

```
# main program
student = {
    'ID': 's3962053',
    'Name': 'Huynh Tin',
    'University': 'RMIT',
    'Major': 'Information Technology',
    'Year': 2022,
    'Python': 'DI',
    'OOP': 'HD',
    'Network': 'DELETED',
    'C++': 'DI',
    'Web': 'DELETED',
    'Java': 'CR'
   }
```

output.txt

```
ID: s3962053
Name: Huynh Tin
University: RMIT
Major: Information Technology
Year: 2022
Python: DI
OOP: HD
C++: DI
Java: CR
```

Question 3

You are given the data file **stock_data.txt** (which should be placed in the same folder with your solution Python file). Each data line contains stock code, number of shares and share value, separated by the comma "," for example,

NVL,100,18.000

The investment amount for each data line is the product of the number of shares (an **integer**) and the share value (a **float** number). For example, the investment amount for the line above is

100 x 18.000 = 1800.000

a. Write a function with parameter **data_file_name** (a string) that computes and total investment amount in the data file.

b. In the main program, ask the user to input the name of a data file **in_data_file_name**. Call the function you wrote in part a) with the parameter value **in_data_file_name** and display the output message which should look like in the following example.

Example: *Input:* **stock_data.txt**

Output: The total investment amount is: 129740.0

Explanation. The **total** investment amount is the sum of the investment amounts for all the lines in the data file *(for example, 10 lines in the file **stock_data.txt**).*

Question 4

Assume that one point in three dimensional space is represented by three integer numbers x, y and z. You are required to design and implement an OOP program that allows:

a. initialize an object/instance of class *MyPoint* with three parameters x, y, and z.

b. show the coordinates of a point on the screen in the format (x,y,z) with *print function*

c. *add two points* and return a new point as the sum of each coordinate correspondingly

Test your program with the input as follows, and make sure the output must be the same format as provided:

The main program:

```
# this is the main program
p1 = MyPoint(1, 2, 3)
p2 = MyPoint(2, 3, 4)
print(p1)
print(p2)
p3 = p1 + p2
print(p3)
```

The output:

```
(1,2,3)
(2,3,4)
(3,5,7)

Process finished with exit code 0
```

ENJOY THE TEST & GOOD LUCK TO YOU

---------- End of the Test ----------