CSC401- Assignment 1

Jay Tang

Due Wednesday, April 13, 11:59pm

Reading

Read **Chapter 1**, **2* and 3** in Introduction to Computing using Python: An Application Development Focus, Second Edition by Ljubomir Perković.

*Skip tuples in chapter 2.3.

Logistics

You need to do this assignment on a computer which has Python 3 installed on it. Python 3.10 download page can be found here.

You are encouraged to work with your classmates on the assignments. If you do work with someone on the assignments, please include the name of your collaborators at the top of the file you submit. If you worked alone, please indicate that at the top of your submission. **A submission without collaboration information will not receive credit.**

A submission that includes code which does not run will not get any points for the part unless specifically documented reason of the error.
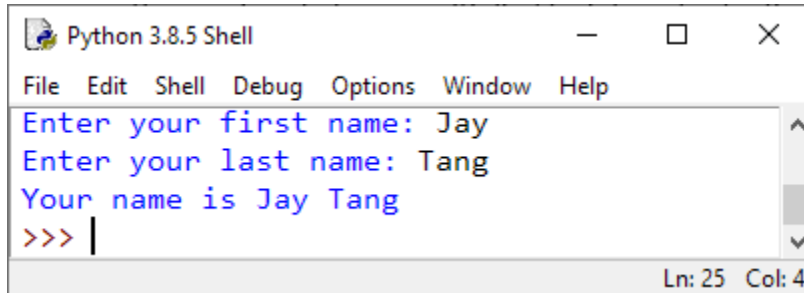
Submission

Submit the assignment using Assignment 1 folder. Submit only a **single python file** using your name as file name (e.g. Jay_Tang_Assign_1.py).

This assignment is due Wednesday, April 13, 11:59pm. Submissions after the deadline will be automatically rejected by the system.

Assignment

1. Interactive input (20pt)

a. (10pt) Write a program that asks for user's first and last name in two separate requests. And then print out user's first name and last name in one line as shown below.
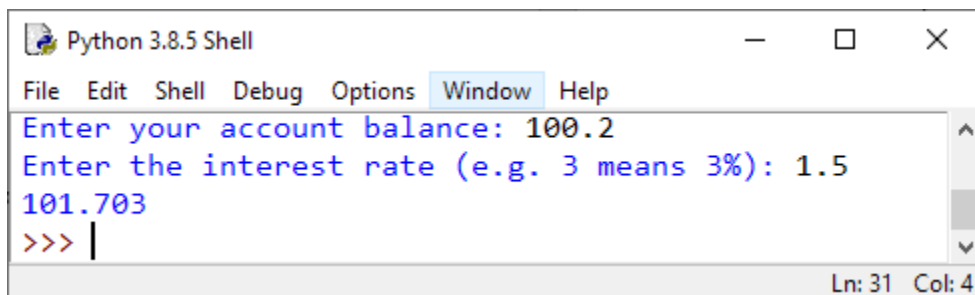
```
Python 3.8.5 Shell                    —    □    ×

File  Edit  Shell  Debug  Options  Window  Help
Enter your first name: Jay
Enter your last name: Tang
Your name is Jay Tang
>>>
                                          Ln: 25  Col: 4
```

b. (10pt) Write a program that asks for a decimal value as account balance and another decimal value as annual interest rate. Calculate the account balance next year assuming there is no deposits or withdrawals and print out the result in the following manner. Do not concern yourself with formatting decimal places for this question. We will cover formatting in chapter 4.

Hint: new balance is the previous balance plus the interest payment. Interest payment is the previous balance multiplied by interest rate. Be careful about the percentage.
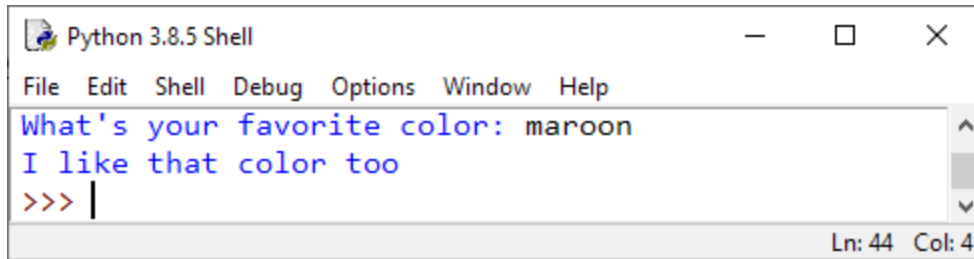
```
Python 3.8.5 Shell                         —    □    ×

File  Edit  Shell  Debug  Options  Window  Help
Enter your account balance: 100.2
Enter the interest rate (e.g. 3 means 3%): 1.5
101.703
>>>
                                             Ln: 31  Col: 4
```

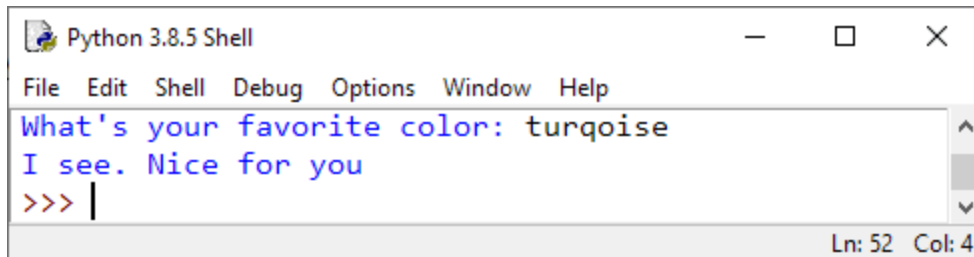## 2. Lists and Decision (20pt)

You keep a list of your favorite colors (pick around 5 or 6). Write a program that allows the user to enter their favorite color. If that color is also one of your favorites, reply by saying so, otherwise say that you don't like the color.

Hint: Do use a list for your colors.

```
Python 3.8.5 Shell                          —    □    ✕
File  Edit  Shell  Debug  Options  Window  Help
What's your favorite color: maroon
I like that color too
>>> |
                                        Ln: 44  Col: 4
```

```
Python 3.8.5 Shell                          —    □    ✕
File  Edit  Shell  Debug  Options  Window  Help
What's your favorite color: turqoise
I see. Nice for you
>>> |
                                        Ln: 52  Col: 4
```

3. Decisions (20pt)

If there is a vote at a meeting, the outcome is based on the number of yes and no votes (abstains are not counted). If more than 1/2 of the votes are yes, then the proposal passes, and otherwise it fails. Write a program that asks the user for the number of yes and no votes (two separate prompts), and then prints the outcome of the vote ('pass', 'fail').

Hint: In a first step compute the total number of votes. Then if, else.

4. Decisions and loops (40pt)

a. (20pt) Write a function called `isNumberPresent()` that accepts a list of numbers and a number to search for. If the number is present in the list, the function should return the `boolean` value (not the `string`!) `True`. Otherwise, the function should return the `boolean` value (not the `string`!) `False`.

b. (20pt) Write a program that lists all the composers on a list, say `['antheil', 'saint-saens', 'price', 'easdale', 'nielsen']`, whose last letter is the same as the first letter. (so saint-saens, easdale and nielsen should get listed, but not the others.)

Hint: How can string comparison be case insensitive?