LAB 03

SUBMISSION INSTRUCTIONS

Submit 3 python files using the naming convention below (replace JaneDoe with your first and last name respectively):

- jane_doe.py - For question 1 part a.
- JaneDoe3_1.py - For question 1 part b.
- JaneDoe3_2.py - For question 2.

QUESTIONS

1. You should submit 2 files for this question.
    a. Create a module that will only contain functions to compute the area of a circle, rectangle, square, and triangle.
    b. Download JaneDoe3_1.py. Look over the code and compare it to the sample output to get an idea of what the code is meant to do. Fill out the missing parts with the help of the code comments.
    c. Test your program by comparing it with the sample output. Pay attention to the prompts and numeric output for things your code needs to account for.

    Please note:

    - Numeric input must be treated as floats and displayed to 2 decimal places.
    - Strip your string input and make sure you are accounting for upper and lower case input.
    - Module names are traditionally lower case so use the format provided when giving your module a name.

    ### SAMPLE OUTPUT

```
----------------------
SELECT SHAPE
----------------------
1 - Circle
2 - Rectangle
3 - Square
4 - Triangle
Shape number: 0
Shape number (1-4): 5
Shape number (1-4): 1
Circle radius: 10
Circle area = 314.16
Continue (y/n): x
Enter y or n: y
```

```
----------------------
SELECT SHAPE
----------------------
1 - Circle
2 - Rectangle
3 - Square
4 - Triangle
Shape number: 2
Rectangle length: 5
Rectangle width: 10
Rectangle area = 50.00
Continue (y/n): Y
----------------------
SELECT SHAPE
----------------------
1 - Circle
2 - Rectangle
3 - Square
4 - Triangle
Shape number: 3
Square length: 10
Square area = 100.00
Continue (y/n):          y
----------------------
SELECT SHAPE
----------------------
1 - Circle
2 - Rectangle
3 - Square
4 - Triangle
Shape number: 4
Triangle base: 2
Triangle height: 4
Triangle area = 4.00
Continue (y/n): n
PROGRAM DONE
```

2. Write a program to play the popular rock-paper-scissor game with a computer.

    a. Watch this video for the detailed game explanation, but in general, rock beats scissor, paper beats rock, and scissor beats paper.

    b. Use the random module to come up with random computer choices for each round.

c. Your input should be compared with that of the computer to determine who the winner of a round is. Best of 3 wins the game.

d. Below is sample output you can use to test your program. To get the same results, set your program’s random seed to 1 and use the input values provided (I used random.choice to select from [‘rock’, ‘paper’, ‘scissor’] for the computer guess).

Please note:

- Strip your string input and make sure you are accounting for upper and lower case input.
- Write your program as a script (i.e. include the if __name__ == ‘__main__’: block).

SAMPLE OUTPUT 1

```
---------------------------
Rock - Paper - Scissor
---------------------------
Enter response: pa
Enter valid response: pap
Enter valid response: paper
Computer is rock. You are paper. You win.

Enter response: scissor
Computer is scissor. You are scissor. You tie.
Enter response: scissor
Computer is rock. You are scissor. You lose.
GAME OVER - IT'S A TIE
```

SAMPLE OUTPUT 2

```
---------------------------
Rock - Paper - Scissor
---------------------------
Enter response: paper
Computer is rock. You are paper. You win.
Enter response: scissor
Computer is scissor. You are scissor. You tie.
Enter response: paper
Computer is rock. You are paper. You win.
GAME OVER - YOU WIN
```

SAMPLE OUTPUT 3

```
----------------------------
Rock - Paper - Scissor
----------------------------
Enter response: scissor
Computer is rock. You are scissor. You lose.
Enter response: paper
Computer is scissor. You are paper. You lose.
GAME OVER - COMPUTER WINS
```

SAMPLE OUTPUT 4

```
----------------------------
Rock - Paper - Scissor
----------------------------
Enter response: rock
Computer is rock. You are rock. You tie.
Enter response: scissor
Computer is scissor. You are scissor. You tie.
Enter response: paper
Computer is rock. You are paper. You win.
GAME OVER - YOU WIN
```