Homework #3

Due: October 27, 2021, Wednesday, 23:59.

FOR loops: Squid game

You are supposed to create a mini–Squid Game in this homework. Each player in the game selects a shape and size and then tries to guess the number of stars. The only way to stay alive is to guess the number of stars in the shape correctly (brutal!).

Write a Python program that does the following:

1. Get two inputs from the user: **number of groups in the game** and **number of players in each group**.

2. For each player of each group, ask the user to select a shape (1= Square, 2= Triangle, 3= Equilateral triangle, 4= Sandglass). If the user enters an invalid number, the program should give a warning message, and the user should be eliminated.

3. If the user's choice is a number representing one of the four valid shapes, the program should ask the user to select a size:

   a. For a *square*, *triangle*, or *equilateral triangle*, the size can be one of 2-3-4-5-6. If the user enters an invalid number, the program should give a warning message, and the user should be eliminated.

   b. For a *sandglass*, the size must be a positive odd number. If it is not so, the program should give a warning message, and the user should be eliminated.

   Possible shape choices are shown below with a sample size=3:

   ```
   *  *  *              *         *  *  *           ***
   *  *  *           *  *            *  *             *
   *  *  *        *  *  *               *           ***
   ```

4. If the size input is valid, then the user is asked to guess the number of stars in the shape. If the user's guess is correct, then user stays alive. Otherwise, the user is eliminated from the game. The program informs the user about the total number of stars no matter whether the user is alive or eliminated.

5. After each group, the program should show the number of players who stayed alive in that group.

Sample outputs are shown on the following pages.

```
How many groups are there? 2

How many players are there in a group? 2

* Group 1 - Player 1 *

Select a shape (1= Square, 2= Triangle, 3= Equilateral triangle, 4= Sandglass): 5

Oops invalid choice! Player 1 is eliminated!

* Group 1 - Player 2 *

Select a shape (1= Square, 2= Triangle, 3= Equilateral triangle, 4= Sandglass): 1

Shape is a square!

Select the size of the shape (2/3/4/5/6): 7

Oops, Player 2 is eliminated!

0 player(s) stayed alive in Group 1 !

* Group 2 - Player 1 *

Select a shape (1= Square, 2= Triangle, 3= Equilateral triangle, 4= Sandglass): 1

Shape is a square!

Select the size of the shape (2/3/4/5/6): 3

How many stars exist in this square? 9

* * *
* * *
* * *

Total number of stars: 9. Player 1 wins the game!

* Group 2 - Player 2 *

Select a shape (1= Square, 2= Triangle, 3= Equilateral triangle, 4= Sandglass): 1

Shape is a square!

Select the size of the shape (2/3/4/5/6): 3

How many stars exist in this square? 6

* * *
* * *
* * *

Total number of stars: 9. Oops, Player 2 is eliminated!

1 player(s) stayed alive in Group 2 !

---- End of the game----
```

Sample output2:

```
How many groups are there? 1

How many players are there in a group? 3

* Group 1 - Player 1 *

Select a shape (1= Square, 2= Triangle, 3= Equilateral triangle, 4= Sandglass): 2

Shape is a triangle!

Select the size of the shape (2/3/4/5/6): 5

How many stars exist in this triangle? 23

        *
      * *
    * * *
  * * * *
* * * * *

Total number of stars: 15. Oops, Player 1 is eliminated!

* Group 1 - Player 2 *

Select a shape (1= Square, 2= Triangle, 3= Equilateral triangle, 4= Sandglass): 4

Shape is a sandglass!

Select the size of the shape (size must be odd!): 7

How many stars exist in this sandglass? 31

   *******
    *****
     ***
      *
     ***
    *****
   *******

Total number of stars: 31. Player 2 wins the game!

* Group 1 - Player 3 *

Select a shape (1= Square, 2= Triangle, 3= Equilateral triangle, 4= Sandglass): 3

Shape is a triangle!

Select the size of the shape (2/3/4/5/6): 4

How many stars exist in this triangle? 26

 * * * *
  * * *
   * *
    *

Total number of stars: 10. Oops, Player 3 is eliminated!

1 player(s) stayed alive in Group 1 !

----End of the game----
```

Make sure you place comments in your program. Place your name, ID, what this program does and the date this program was written as comments at the top.

You should only use the features and commands you have learnt until this homework was given.

Name your Python py-file as **h03***yourlastname***.py** and then upload it to Blackboard Learn at https://ku.blackboard.com. Anyone e-mailing his/her homework will lose points!

While doing all your homework assignments, remember that:
- *You should not work together,*
- *You should not give or take any files,*
- *You should not give or take help other than simple verbal hints.*