Java Bonus Lab

For loops and Random Numbers

IMPORTANT! Save all your work to a safe location such as oneDrive.

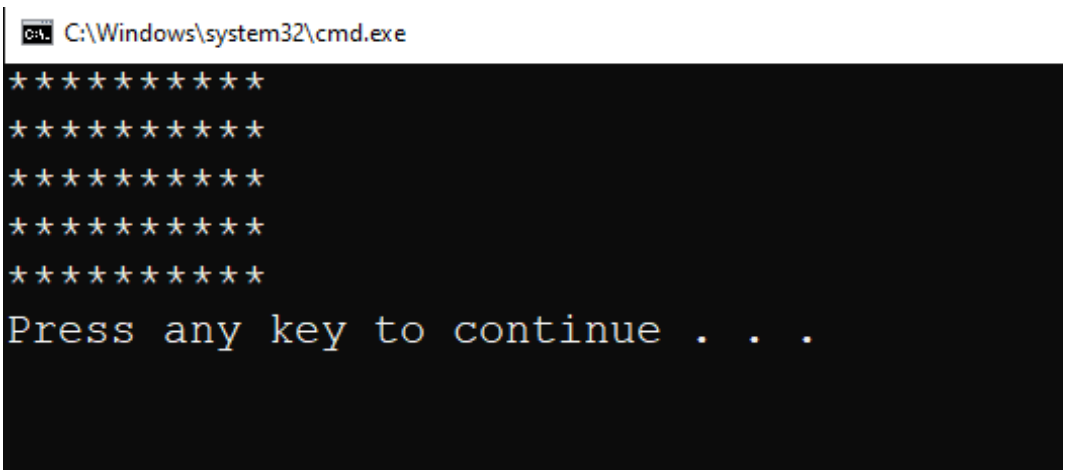
Create a folder for SDPD into which you will save all your work for this module, arranged how you wish. Ideally you should create a folder each week for your lab exercises. Note that you should create **a separate file** for each exercise.

Exercise 1

Goal: Create a program in Java using a nested for loop

Create a Create a program called JavaForBonus1 that will produce the output shown below. This will be achieved using a nested if statement:

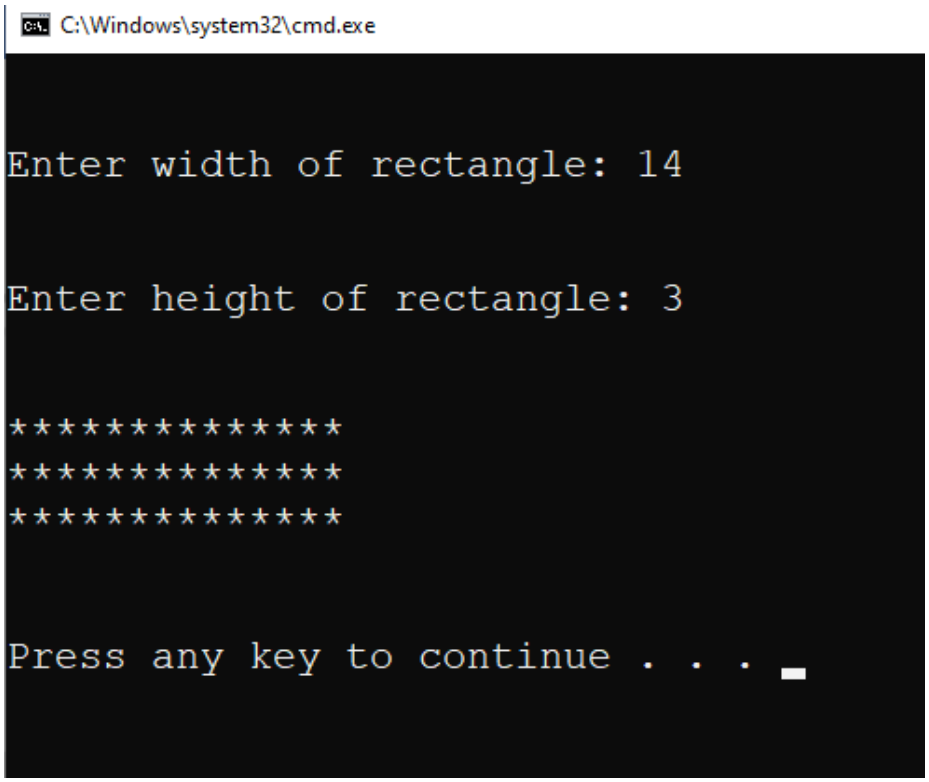
```
//Outer loop will run 5 times
for (int i = 1; i <= 5; i++)
{

    // Inner for loop will run 10 times,
    // outputting ********** each time it runs
    for(int x = 1; x <= 10; x++)
    {
        System.out.print("*");
    }


    //This will output a new-line character
    System.out.print("\n");


}
```



Exercise 2

Goal: Create a program in Java using a nested for loop that will draw a rectangle based on values provided by the user

Create a Create a program called JavaForBonus2 that will prompt the user to input a width and height of a rectangle. The program will then output the rectangle shape based on these two values, using the "*" character. Your output should be similar to as shown below:

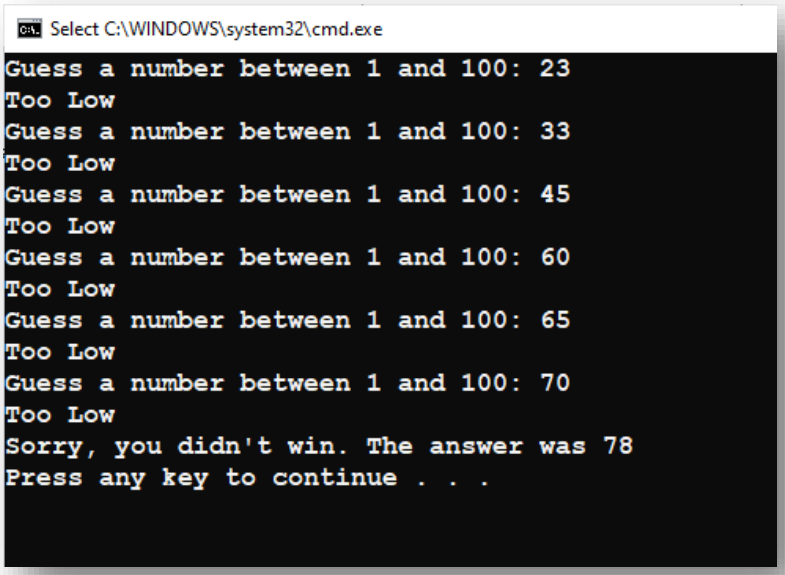


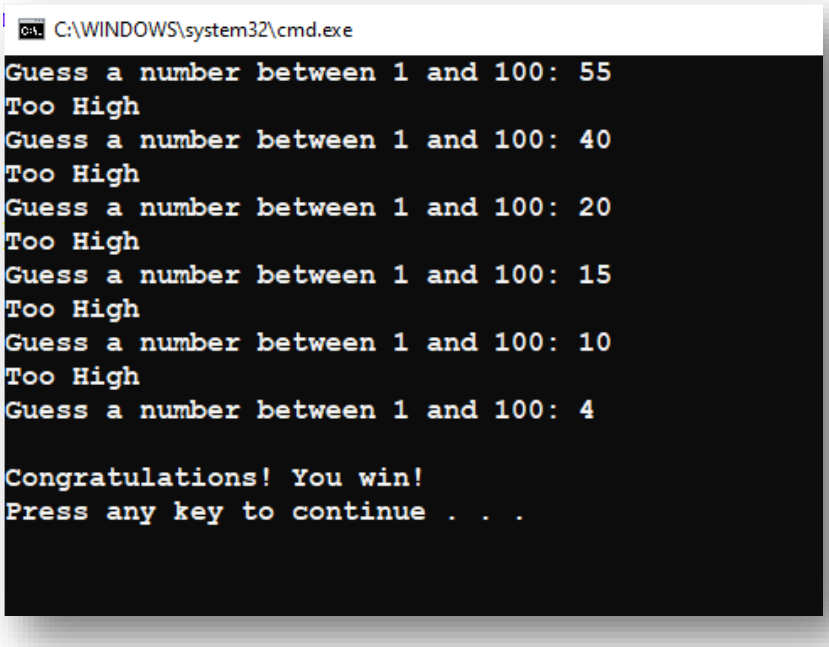
Exercise 3

Goal: Create a program called GuessingGame in Java

Create a guessing game where your Java program randomly selects a number between 1 and 100 (This is hidden from the user). The user gets six attempts to guess the number. After each attempt, they get feedback on whether the number was too high (higher than the number randomly selected), or too low.

If the user guesses the number in six attempts or less, they get a message saying “Congratulations”, they won the game. Otherwise, once they've had six attempts, they get a message saying “sorry, you didn't win” and it tells them what the number was.



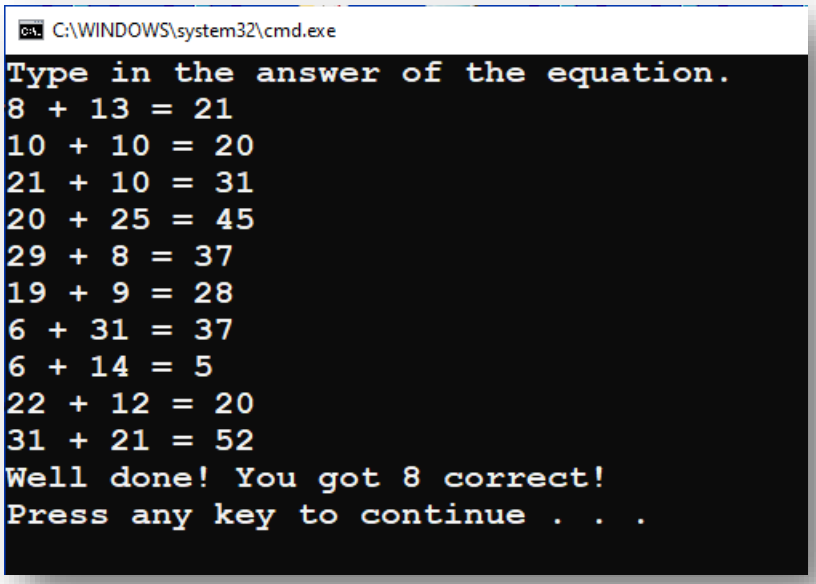


Exercise 4

Goal: Create an addition game in java

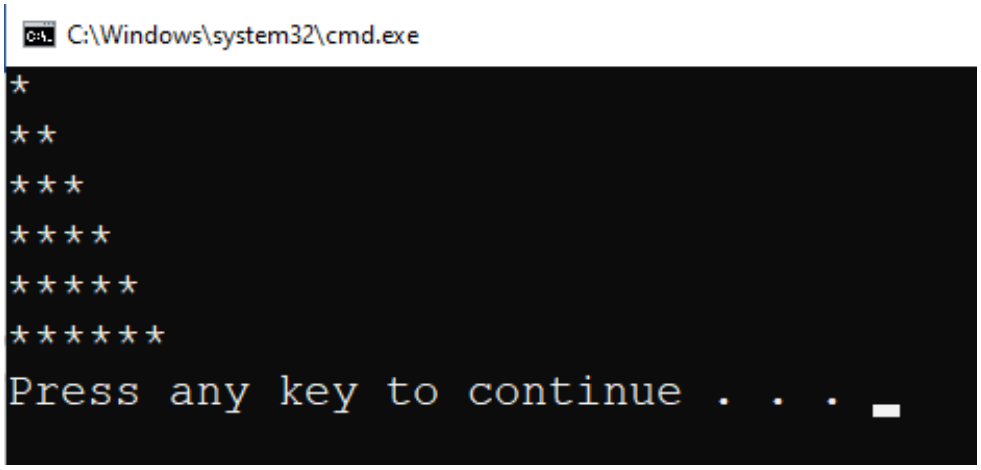
Create a game the generates 2 random numbers (between 5 and 30) and then asks the user to give the answer of the addition of the 2 numbers.

The user should have 10 turns, and at the end they get their result – ie, you got 6 correct!



Goal: Create a program in Java using a *nested for loop* the will draw a shape with the * character

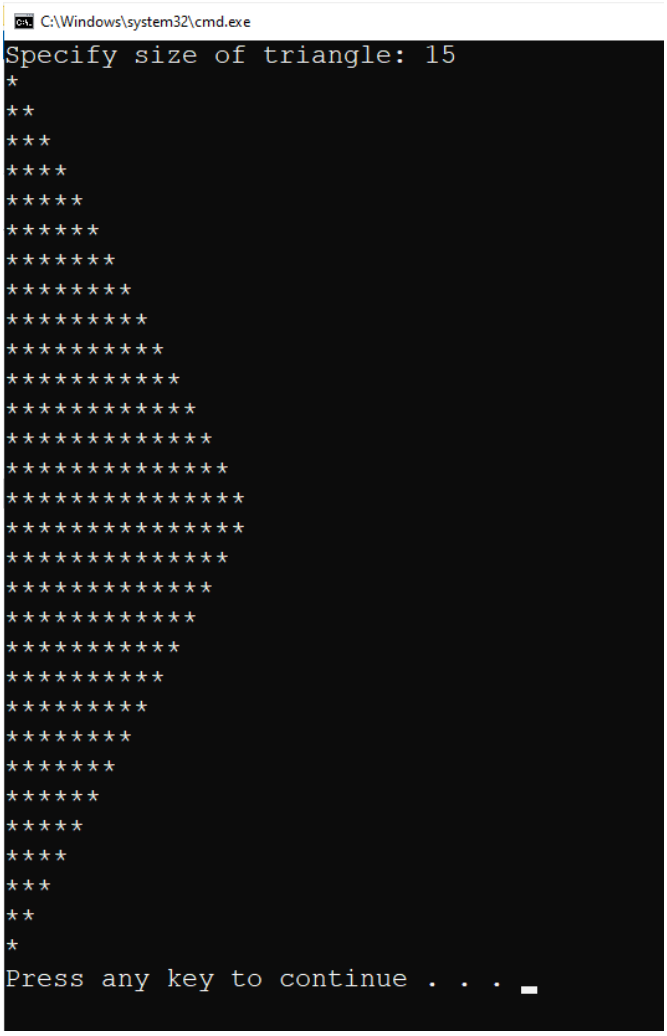
Create a Create a program called JavaForBonus5 Will draw the shape as shown below. The shape starts with a single star on one line and progresses to six stars on the final line of the output. this can be achieved usinga nested for loop (similar to the examples in exercise 7 and 8)



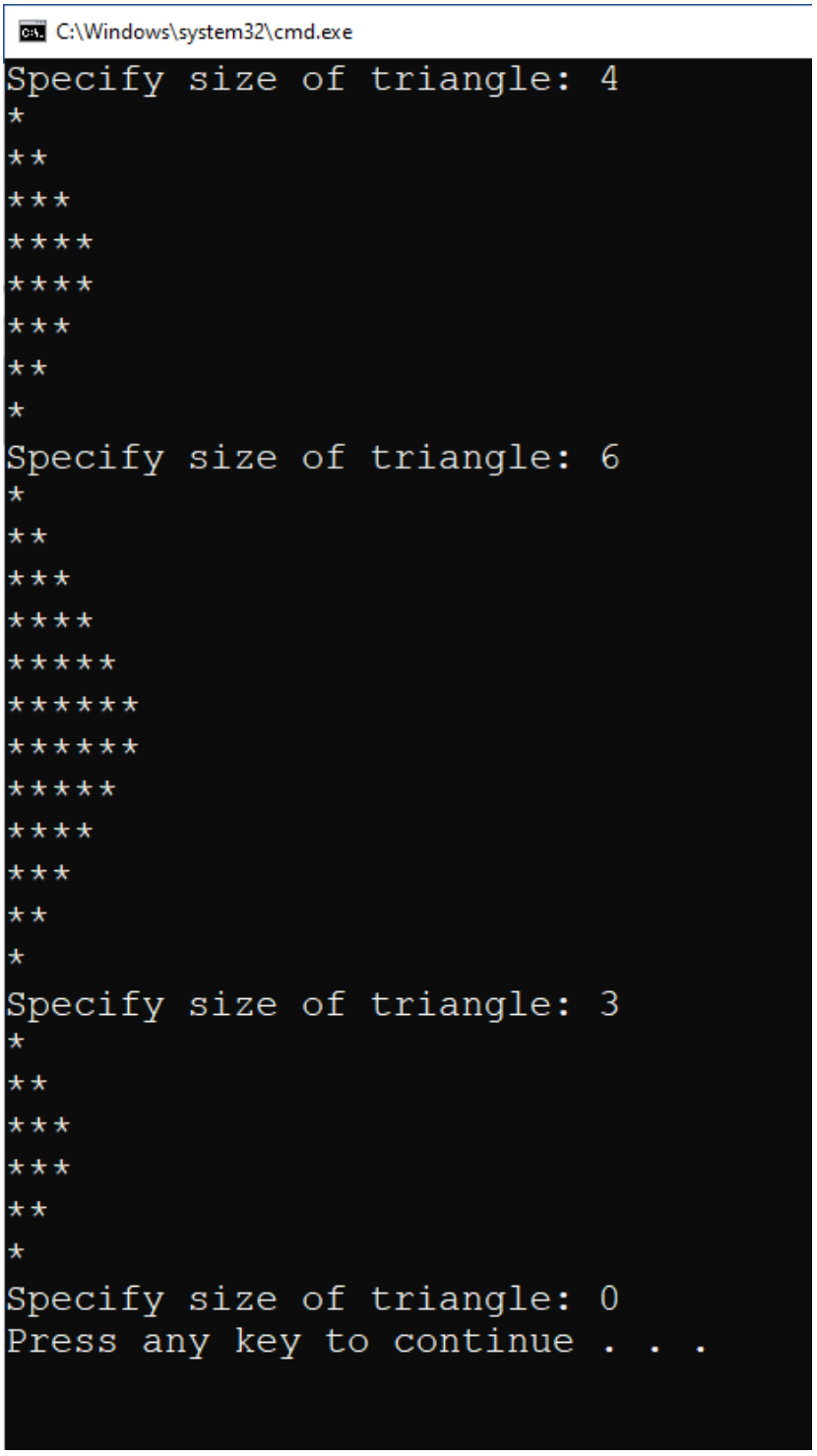
Exercise 6

Goal: Create a program in Java, using nested for loops

Create a new a Java program that produces the result shown below. The user should be able to specify the size of the triangle:



Amend your code so that the program continually runs until the user enters the size of 0:



Exercise 7

Create a java program of the Las Vegas casino dice game, craps - utilizing a pair of dice.

Here are some basics to get you started at a Vegas craps table or craps slot machines.

All wagers must be placed before the dice are thrown. The types of wagers that can be made are:

Pass Line

A double your money bet - made on the first roll of the dice. You win if a 7 or 11 roll, or lose if 2, 3, or 12 roll (known as “craps”).

Any other number that rolls and there is no winner.

You program should start with the player having $100 in their wallet. The game ends after 10 turns (use a for loop for this), or when the player runs out of money.