CSC 110: Fundamentals of Programming I
Assignment #3: Scanners, for-loops and methods

Due date

Sunday, January 31st, 2015 at 11:55 pm via submission to connex.

How to hand in your work

Submit the requested file (`Loopy.java`) through the Assignment #3 link on the CSC 110 connex site.

Learning outcomes

When you have completed this assignment, you should understand:

- How to *evaluate expressions*.
- How to use a *`for-loop`* to repeat operations.
- How to write and call a *static methods* that take *parameters*.
- How to *design, compile, run and check* a Java program on your own.
- How to *input data from the console*.
- How to *indent and document* a Java program.

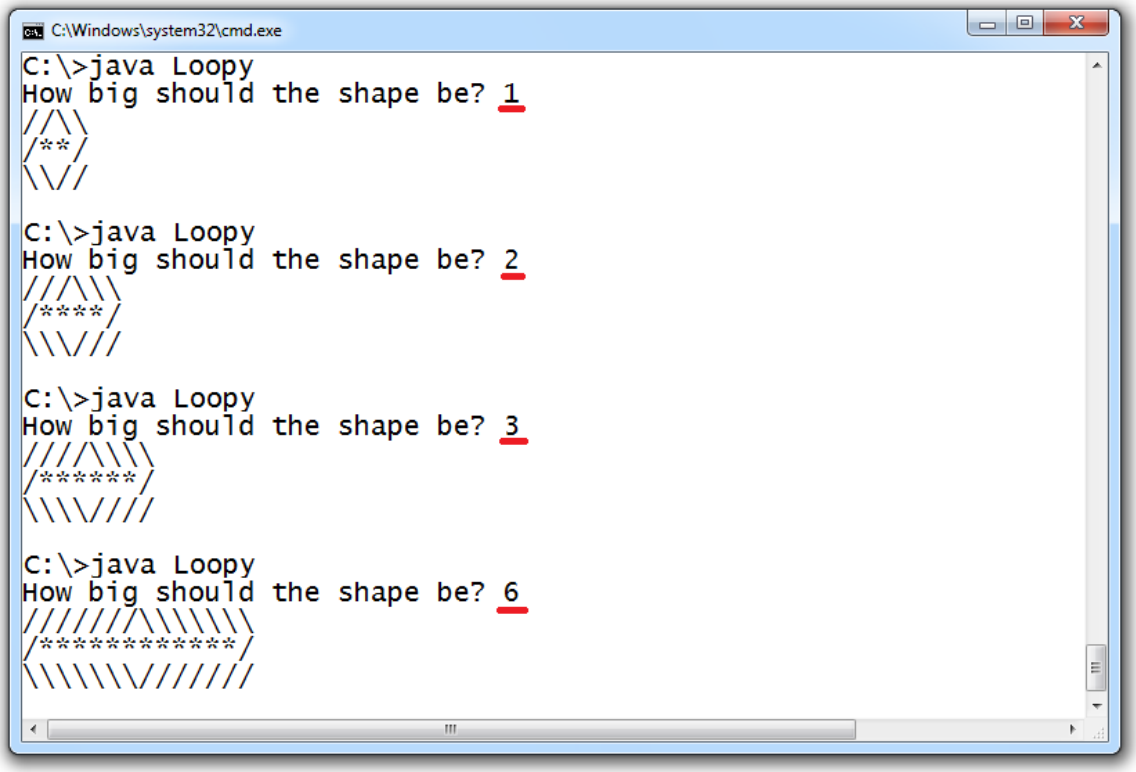
Part 1 – drawShape method

Create a Java program named *Loopy.java*.

The program will request that the user input a number from the command line. Create a Scanner in your program and use the *.nextInt()* method found in the Scanner class to read in the value and assign it to a variable in your program

This number represents the size of the shape to draw. Pass the value as a parameter to a method called ***drawShape***. The drawShape method accepts one parameter, an integer, and draws a shape, where the size of the shape is based on the parameter.

Below are four examples of the output from running Loopy where the number the user enters is underlined in red:



Note: The size of the design depends on the size on the number entered.

Your job is to determine how the numbered entered by the user determines each of the characters printed in the shape created.

This will take some time, and a lot of trial and error might be necessary.

You will need at least one for-loop in your drawShape method (and maybe lots of for-loops!). The number of times the for-loops repeat are based on the number the user enters (which is passed into the method as a parameter).

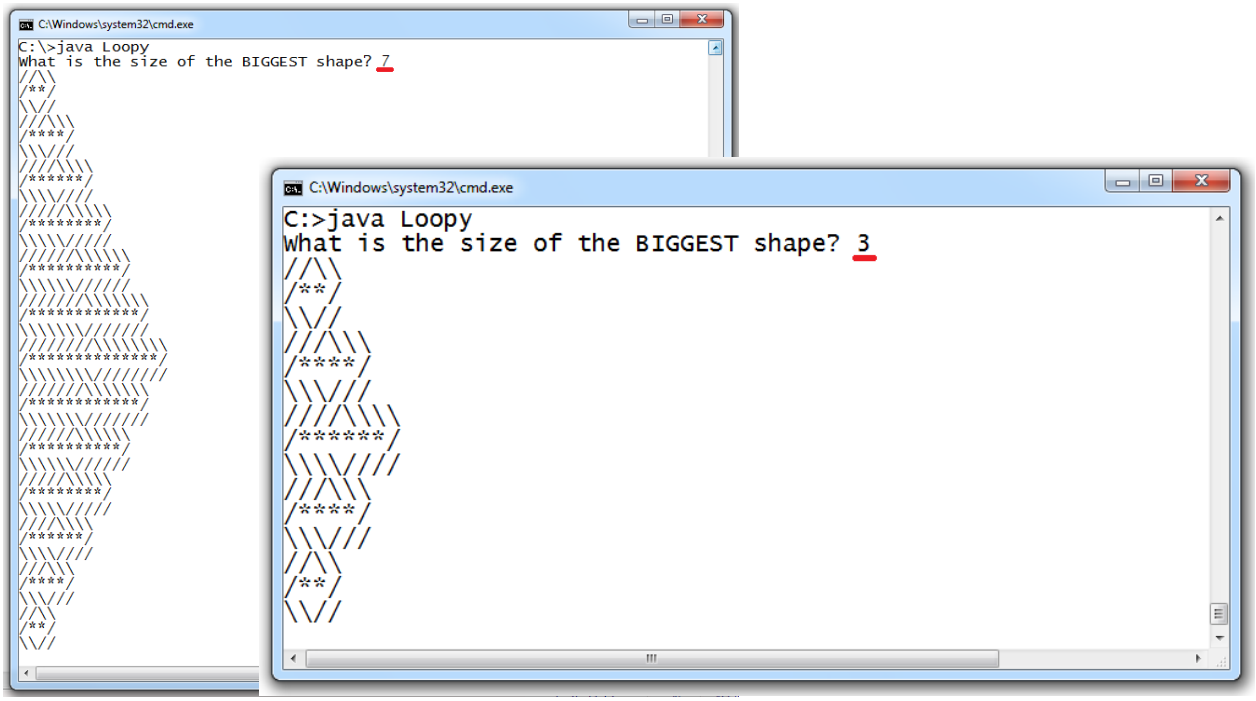
Part 1 – drawImage method

After you have completed testing your drawShape method, you may comment out all your code used to test that method in main.

For the drawImage method, your program will again request that the user input a number from the command line. This number represents the size of the shape.

The number entered will be passed in as a parameter to a method called ***drawImage***. The drawImage method accepts one parameter, an integer, and will call the drawShape method a number of times to create different shapes from size 1 up to the number entered.

Below are two examples of the output from running Loopy where the number the user enters is underlined in red:



Note: The size of the design depends on the size on the number entered.

Your job is to determine how the numbered entered by the user determines how many shapes are printed, and how big each shape is.

You will need at least one for-loop in your drawImage method, and your drawImage method ***must call*** the drawShape method!

File to submit: Loopy.java

Marking

Your mark will be based on the following criteria:

- Your code *must compile and run*. It must prompt the user, read text input, and produce the expected output as described and shown above.

- Your code must conform to the requirements mentioned above (i.e., must have *drawShape()* and *drawImage()* methods, and the *drawImage()* method must call the *drawShape()* method..).

- Your code must follow the guidelines outlined in Style_Guidelines.pdf, found through the Lectures & Stuff link in the Lab Resources folder on connex.