CSE 110 - Lab 5

This lab is for practicing the nested for loops and switch statement.

Use the following Coding Guidelines:

• When declaring a variable, you usually want to initialize it.

• Use white space to make your program more readable.

• Use comments after the ending brace of classes, methods, and blocks to identify to which block it belongs.

Assignments Documentation:

At the beginning of each programming assignment you must have a comment block with the following information:

```
/
*-------------------------------------------------------------------
-----
// AUTHOR:         (Put your name here)
// FILENAME:       Lab6.java
// SPECIFICATION:   This program is for practicing nested loops.
//                  It prints out a certain size of pyramid and
triangle of stars
// INSTRUCTIONS:    Read the following code skeleton and add your own
code
//              according to the comments.  Ask your TA or your class-
//              mates for help and/or clarification.  When you see
//              //--> that is where you need to add code.
// LAB LETTER:    (Put your lab letter)
//-------------------------------------------------------------------
----*/
```

Getting Started

Create a class called **Lab6**. Use the same setup for setting up your class and main method as you did for the previous assignments. Be sure to name your file **Lab6.java**.

Hints

Please replace //--> with the correct program to finish the task according to the corresponding comment.

Please replace ??? with the correct program to enable the program to run as required.

```
/
*-------------------------------------------------------------------
-----
// AUTHOR:         (Put your name here)
// FILENAME:       Lab6.java
// SPECIFICATION:   This program is for practicing nested loops.
//                  It  prints out a certain size of pyramid and
triangle of stars
// INSTRUCTIONS:    Read the following code skeleton and add your own
code
//              according to the comments.  Ask your TA or your class-
//              mates for help and/or clarification.  When you see
//              //--> that is where you need to add code.
// LAB LETTER: (Put your lab letter)
//-------------------------------------------------------------------
----*/
```

```
//import Scanner class
import java.util.Scanner;

//declare the class Lab6
public class Lab5
{

    //declare the main method
    public static void main(String[] args)
    {

 // Declare Constant integers PYRAMID = 1, TRIANGLE = 2, QUIT = 3
      final int PYRAMID = 1;
      final int TRIANGLE = 2;
      final int QUIT = 3;



  // Define scan object of the type Scanner class
  //-->


  // Create an integer variable named choice.
  //—>
  //define an int variable <size>
  //-->



  // Create a do-while loop that exits only when the user chooses quit
(choice = QUIT)
  // Have the do-statement here
  ??
  {
  // Print the following options:
  // "This proGram does the following:"
  //-->

  // "1. Print a PYRAMID:”
  //—>
  // “2. Print a TRIANGLE:”
  //-->
  // "3. Quit"
  //-->
  // Read the value the user enters and store it in an integer variable
<choice>
  //-->

  // Create a switch statement with <choice> as input for the 2 cases
   switch(???)
   {
   case PYRAMID:

    // Print "Please input the Pyramid height:
```

```
    //-->

    //scan the next integer and assign it to <size>
    //-->

    // outer loop to handle number of rows
    // First for loop
    // 1st ??? --> define an int variable <i> and initialize it to 0
    // 2nd ??? --> check if <i> is less than  <size>
    // 3rd ??? --> increment variable <i> by 1
    for (???;???;???)
    {
      //  inner loop to handle number of columns
      // Second for loop
      // Let the inner loop run from j=0 up to and including i
      for (???;???;???)
      {
            // The inner loop prints the stars
            //-->
      }
      // Start a new line
      //-->
    }

       //terminate this case using break
    //—>

   case TRIANGLE:

      // Print "Please input the Triangle height:
    //-->

    //scan the next integer and assign it to <size>
    //-->

    //Calculate the number of spaces required and initialize k with
that.
    //-->

    // outer loop to handle number of rows
    // First for loop
    // 1st ??? --> define an int variable <i> and initialize it to 0
    // 2nd ??? --> check if <i> is less than to <size>
    // 3rd ??? --> increment variable <i> by 1
    for (???;???;???)
    {
      // This inner for loop handles the number of spaces
      // Let the inner loop run from j=0 up to k (excluding k)
      for (???;???;???)
      {
            // The inner loop prints the spaces
            //-->
      }
      //Decrementing spaces after each loop
```

```
      //This inner for loop is for printing stars
      // Let the inner loop run from j=0 up to and including i
      for (???;???;???)
      {
            // The inner loop prints the stars
            //-->
      }

      //
      // Start a new line
      //-->


   case QUIT:
    // Print "Qutting the program as you requested..."
    //-->

    //terminate this case
    //-->

   default:
    // Print "Please choose again"
    //-->

   }
  }while(???);
    //Close the scanner object.
 }
}
```

Sample output:

```
Please select an option:
1. PYRAMID
2. TRIANGLE
3. QUIT
1
Please enter the size:
5
*
* *
* * *
* * * *
* * * * *
Please select an option:
1. PYRAMID
2. TRIANGLE
3. QUIT
2
Please enter the size:
6
          *
         * *
        * * *
       * * * *
      * * * * *
     * * * * * *
Please select an option:
1. PYRAMID
2. TRIANGLE
3. QUIT
3
Qutting the program as you requested...
```