**LAB 7**

**Inheritance – 10 points**

**Instructions:**

1. After downloading the lab assignment from Blackboard, please write the appropriate Java programs in BlueJ IDE.
2. If stuck anywhere, the instructor and the lab assistant are always there to help.
3. Lab assignments need to be uploaded onto Blackboard by the due date listed on Blackboard.
4. You would need to submit a .docx file. Copy-paste the written code and a sample run of the program.
5. Online resources can ‘definitely’ be consulted. However, please refrain from using content from the internet as-is. The mark of a good programmer is to write clean and genuine code – anytime, anywhere, and always.
6. Design a class named **Triangle** that extends ­**SimpleGeometricObject**. The code is at: <https://liveexample.pearsoncmg.com/html/SimpleGeometricObject.html>

The **Triangle** class should contain:

* Three **double** data fields named **side1**, **side2**, and **side3** with default values **1.0** to denote three sides of a triangle.
* A no-arg constructor that creates a default triangle.
* A constructor that creates a triangle with the specified **side1**, **side2**, and **side3**.
* The accessor methods for all three data fields.
* A method named **getArea()** that returns the area of this triangle.
* A method named **getPerimeter()** that returns the perimeter of this triangle.
* A method named **toString()** that returns a string description for the triangle.

The formula to compute the area of a triangle is:

area=√s(s−side1)(s−side2)(s−side3)

Where

s=(side1+side2+side3)/2;

Override the **toString()** method to display:

**return** **"Triangle: side1 = "** + side1 + **" side2 = "** + side2 +

**" side3 = "** + side3;

Write a test program that prompts the user to enter three sides of the triangle, a color, and a Boolean value to indicate whether the triangle is filled. The program should create a Triangle object with these sides and set the color and filled properties using the input. The program should display the area, perimeter, color, and true or false to indicate whether it is filled or not. (10 points)