CIS 1068

Assignment 2

This assignment will use branching in Java to determine the type of triangle a user enters and then calculate the area of the triangle.

Your program should be able to identify the following shapes:

Triangle	Definition
Equilateral	all three sides are the same length
Right	any two side lengths where the sum of their squares is equal to the square of the other side length • $a^2 + b^2 = c^2$
Obtuse	any two side lengths where the sum of their squares is less than the square of the other side length • $a^2 + b^2 < c^2$
Acute	a triangle is an acute triangle if it is neither a right triangle nor an obtuse triangle • $a^2 + b^2 > c^2$
Isosceles	any two sides are the same length • note that *Isosceles* triangles are also either *Right*, *Obtuse*, or *Acute*

Please note that **If the length of any side is greater than or equal to the sum of the lengths of the other two sides, then there is no triangle.**

Ensure that your program contains the following:

1. Add a comment at the beginning of your program with your name, a description of the program, contact information, and the due date.
2. Use JOptionPane to ask the user to enter the 3 sides of the triangle
3. Use int variables to store the lengths of each side of the triangle
4. Use JOptionPane to print the type of triangle that the user entered based on the description in the table above
5. Calculate and print the area of the triangle using JOptionPane using the following formula:

$$area = \sqrt{s\,(s-a)\,(s-b)\,(s-c)}$$

where a,b, and c are the lengths of the sides, and s = ½ the perimeter

Please submit the **.java** file for your project to Blackboard by the deadline below.

DUE DATE: September 28, at 11:59 PM