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CIT 260 – 04

W10 Exercise: Assignment 10 (program 10.1)

Task: Design a class named Triangle that extends the GeometricObject class given in Listing 11.1 in the textbook.

1. Your Triangle class should contain the following:
2. Three data fields side1**,** side2**,** and side3 that represent sides of a triangle.
3. Getter and setter methods for side1**,** side2**,** and side3**.**
4. A no-arg constructor that creates a default triangle with each side equal to 1.
5. A parameterized constructor that creates a triangle with specified values for side1, side2, and side3, a color, and a filled attribute.
6. A member method named getArea( ) that calculates and returns the area of the triangle. The formula to compute the area of a Triangle, given three sides is called Heron's formula. Heron's formula is described in problem 2.19 in the textbook.
7. A member method named toString( ) that generates a String representation of the triangle object. This toString() method must call GeometricObject's toString() method to correctly display the String representation of the Triangle object.
8. Create a UML diagram that documents your class design. Show both the GeometricObject class and the Triangle class in your diagram. Include your diagram when you submit your assignment. The preferred format is a .PDF file.

UML diagram: