ICE# VC3.1

Design a class named **Triangle** that extends - **SimpleGeometricObject**.
The class contains:

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 **toString()** method is implemented as follows and can be modified as well:

return "**Triangle: side1** = " + side1 + " **side2** = " + side2 + " **side3** = " + side3;

The formula to compute the area of a triangle, is:

$$s = (\text{side1} + \text{side2} + \text{side3})\,/2;$$

$$\text{area} = \sqrt{s\,(s - \text{side1})\,(s - \text{side2})\,(s - \text{side3})}$$

Deliverable:

1. Draw the **UML** diagrams for the classes: **Triangle** and **GeometricObject** and
2. implement the classes.
3. Write a **test program** (**TestTriangle**) 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 sides, area, perimeter, color, and true or false, and date to indicate whether it is filled or not. Use inheritance.

please submit one MS Word with the following contents:

1.UML for Triangle and relationship
2.code for Triangle
3.Code for TestTriangle
4.Screen shot of the program output