Introduction to Java Programming

Sheet # 11: Inheritance and Polymorphism

Textbook: Introduction to Java Programming and Data Structures, Comprehensive Version (11th Edition)

This sheet covers chapter 11 "Inheritance and Polymorphism"

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➢ Check Point Questions:

Review the questions at the following URL:
https://liveexample.pearsoncmg.com/checkpoint12/Chapter11.html

➢ Solve the following Programming Exercises from the textbook (pages 469-473)

11.2	11.3	11.5	11.6	11.11	11.13
11.14	11.15	11.19			

➢ Mini Project: The Triangle Class

Design a class named Triangle that extends GeometricObject. The class contains:

- Three double data fields named side1, side2, and side3 with default values 1.0 to denote three sides of the 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.

For the formula to compute the area of a triangle, see Exercise 5.19. The toString() method is implemented as follows:

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

Draw the UML diagram that involves the classes Triangle and GeometricObject. Implement the class. Write a test program that creates a Triangle object with sides 1, 1.5, 1, color yellow and filled true, and displays the area, perimeter, color, and whether filled or not.

With our best wishes;