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# PROBLEM 12.1

GeometricObject:

-  color: string
-  filled: boolean
init(self, color="white", filled=False)
getColor(self): string
setColor(self, color: string)
isFilled(self): boolean
setFilled(self, filled: boolean)
str(self) -> string

Triangle:

-  side1: float
-  side2: float
-  side3: float
init(self, side1=1.0, side2=1.0, side3=1.0, color="white", filled=False)
getSide1(self): float
getSide2(self): float
getSide3(self): float
setSide1(self, side1: float)
setSide2(self, side2: float)
setSide3(self, side3: float)
getArea(self): float
getPerimeter(self): float
str(self) -> string

class GeometricObject:
    def __init__(self, color="white", filled=False):
            self.__color = color
            self.__filled = filled
    def getColor(self):
        return color
    def setColor(self, color):
        self.__color = color
    def isFilled(self):
        return bool(filled)
    def setFilled(self, filled):
        self.__filled = filled
    def __str__(self):
        return "color: " + color + " filled: " + str(self.__filled)

class Triangle(GeometricObject):
    def __init__(self, side1=1.0, side2=1.0, side3=1.0, color="white",
filled=False):
        super().__init__(color, filled)
        self.__side1 = side1
        self.__side2 = side2
        self.__side3 = side3
    def getSide1(self):
        return side1
    def getSide2(self):
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        return side2
    def getSide3(self):
        return side3
    def setSide1(self, side1):
        self.__side1 = side1
    def setSide2(self, side2):
        self.__side2 = side2
    def setSide3(self, side3):
        self.__side3 = side3
    def getArea(self):
        s = (side1 + side2 + side3) / 2
        return (s * (s - side1) * (s - side2) * (s - side3)) ** 0.5
    def getPerimeter(self):
        return side1 + side2 + side3
    def __str__(self):
        return "Triangle: side1 = " + str(side1) + " side2 = " +
str(side2) + " side3 = " + str(side3)

sides = input("Enter the three sides of the triangle: ").split()
side1 = float(sides[0])
side2 = float(sides[1])
side3 = float(sides[2])
color = input("Enter the color of the triangle: ")
filled = eval(input("Enter 1 for filled, 0 for not filled: "))

triangle = Triangle(side1, side2, side3, color, filled)

print("Area:", triangle.getArea())
print("Perimeter:", triangle.getPerimeter())
print("Color:", triangle.getColor())
print("Filled:", triangle.isFilled())

= RESTART: C:/Users/Caden
Roberts/AppData/Local/Programs/Python/Python311/Chapter 1.py ==========
Enter the three sides of the triangle: 3 4 5
Enter the color of the triangle: green
Enter 1 for filled, 0 for not filled: 0
Area: 6.0
Perimeter: 12.0
Color: green
Filled: False
```