a1-triagle

November 14, 2024

[2]:
```
class Polygon:
    def __init__(self, no_of_sides):
        self.n = no_of_sides
        #self.sides = [0 for i in range(no_of_sides)]
        self.sides = []

    def inputSides(self):
        #self.sides = [float(input("Enter the length of side"+str(i+1)+" : " ))
 ↪for i in range(self.n)]
        for i in range(self.n):
            side = float(input("Enter the length of a side : " ))
            self.sides.append(side)

    def dispSides(self):
        for i in range(self.n):
            print("length of Side",i+1,"is",self.sides[i])

    def findArea(self):
        pass

    def calculateperimeter(self):
        s = sum(self.sides)/2
        return s



class Triangle(Polygon):
    def __init__(self):
        super().__init__(3)

    def findArea(self):
        #calculate semi perimeter
        s = self.calculateperimeter()
        # area = square root of s*(s-a)*(s-b)*(s-c)*.....   where a,
 ↪b,c,d,... are sides

        a,b,c = self.sides
```

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        if a>(b+c) or b>(a+c) or c>(a+b):
            print("Invalid Sides")
        else:
            area = (s*(s-a)*(s-b)*(s-c))**0.5
            print('The area of triangle is %0.2f' %area)


t = Triangle()
t.inputSides()
t.dispSides()
t.findArea()
```

```
Enter the length of a side :  10
Enter the length of a side :  2
Enter the length of a side :  9

length of Side 1 is 10.0
length of Side 2 is 2.0
length of Side 3 is 9.0
The area of triangle is 8.18
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