TASK-5

1) Write a Python program to create a class representing a Circle. Include methods to calculate its area and perimeter.

In [ ]:
```
# 1)Write a Python program to create a class representing a Circle. Include methods to calculate its area and perimeter.
```

In [8]:
```
from math import pi
class Circle:
    def __init__(self,radius):
        self.radius=radius
    def area(self):
        print("Area of the circle:",pi*self.radius**2)
    def perimeter(self):
        print("Perimeter of the circle:",2*pi*self.radius)
radius=int(input("Enter the radius:"))
i=Circle(radius)
i.area()
i.perimeter()
```

```
Enter the radius:5
Area of the circle: 78.53981633974483
Perimeter of the circle: 31.41592653589793
```

2) Write a Python program to create a calculator class. Include methods for basic arithmetic operations.

In [ ]:
```
# 2) Write a Python program to create a calculator class. Include methods for basic arithmetic operations.
```

In [10]:
```
class Calculator:
    def __init__(self,a,b):
        self.a=a
        self.b=b
    def add(self):
        print("Addition:",a+b)
    def subtraction(self):
        print("Subtraction:",a-b)
    def multiplication(self):
        print("Multiplication:",a*b)
    def division(self):
        print("Division:",a/b)
    def modulus(self):
        print("Modulus:",a%b)
a=int(input("Enter the first number:"))
b=int(input("Enter the second number:"))
i=Calculator(a,b)
i.add()
i.subtraction()
i.multiplication()
i.division()
i.modulus()
```

```
Enter the first number:10
Enter the second number:2
Addition: 12
Subtraction: 8
Multiplication: 20
Division: 5.0
Modulus: 0
```

3) Write a Python program to create a class that represents a shape. Include methods to calculate its area and perimeter. Implement subclasses for different shapes like circle, triangle, and square.

In [ ]:
```
# 3) Write a Python program to create a class that represents a shape. Include methods to calculate its area and perimeter. Imple
```

In [16]:
```
from math import pi
class Shape:
    def area(self):
        pass
    def perimeter(self):
        pass
class Circle(Shape):
    def __init__(self,r):
        self.r=r
    def area(self):
        print("Area of the circle:",pi*self.r**2)
    def perimeter(self):
        print("Perimeter of the circle:",2*pi*self.r)
class Triangle(Shape):
    def __init__(self,b,h,s1,s2,s3):
        self.b=b
        self.h=h
        self.s1=s1
        self.s2=s2
        self.s3=s3
    def area(self):
        print("Area of the triangle:",0.5*self.b*self.h)
    def  perimeter(self):
        print("Perimeter of the triangle:",self.s1+self.s2+self.s3)
class Square(Shape):
    def __init__(self,a):
        self.a=a
    def area(self):
        print("Area of the square:",self.a**2)
    def perimeter(self):
        print("Perimeter of the square:",4*self.a)
print("-----CIRCLE-----")
r=int(input("Enter the radius:"))
x=Circle(r)
x.area()
x.perimeter()
print("-----TRIANGLE-----")
h=int(input("Enter the height:"))
b=int(input("Enter the base:"))
s1=int(input("Enter the side1:"))
s2=int(input("Enter the side2:"))
s3=int(input("Enter the side3:"))
y=Triangle(b,h,s1,s2,s3)
y.area()
y.perimeter()
print("-----SQUARE-----")
a=int(input("Enter the side of square:"))
z=Square(a)
z.area()
z.perimeter()
```

```
-----CIRCLE-----
Enter the radius:3
Area of the circle: 28.274333882308138
Perimeter of the circle: 18.84955592153876
-----TRIANGLE-----
Enter the height:3
Enter the base:4
Enter the side1:3
Enter the side2:6
Enter the side3:2
Area of the triangle: 6.0
Perimeter of the triangle: 11
-----SQUARE-----
Enter the side of square:4
Area of the square: 16
Perimeter of the square: 16
```