

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

```
In [3]: 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)
pi=3.14
x=circle(4)
x.area()
x.perimeter()
```

```
Area of the circle:  50.24
Perimeter of the circle:  25.12
```

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

```
In [7]: class calculator:
        def __init__(self,x,y):
            self.x=x
            self.y=y
        def addition(self):
            print("Sum= ",self.x+self.y)
        def subtraction(self):
            print("Difference= ",self.x-self.y)
        def division(self):
            print("Division= ",self.x/self.y)
        def multiplication(self):
            print("Multiply= ",self.x*self.y)
z=calculator(10,5)
z.addition()
z.subtraction()
z.division()
z.multiplication()
```

```
Sum=  15
Difference=  5
Division=  2.0
Multiply=  50
```

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 [10]: class shapes:
        pi=3.14
        def area(self):
            pass
        def perimeter(self):
            pass
class circle(shapes):
    def __init__(self,radius):
        self.radius=radius
    def area(self):
        return pi*self.radius**2
    def perimeter(self):
        return 2*pi*self.radius
class square(shapes):
    def __init__(self,radius):
        self.radius=radius
    def area(self):
        return self.radius**2
    def perimeter(self):
        return 4*self.radius
class triangle(shapes):
    def __init__(self,s1,s2,s3,base,height):
        self.s1=s1
        self.s2=s2
        self.s3=s3
        self.base=base
        self.height=height
    def area(self):
        return 0.5*self.base*self.height
    def perimeter(self):
        return self.s1+self.s2+self.s3
x=circle(5)
y=square(4)
z=triangle(4,6,8,7,9)
print("Area of circle= ",x.area())
print("Perimeter of circle= ",x.perimeter())
print("Perimeter of circle= ",x.perimeter())
print("Area of square= ",y.area())
print("Perimeter of square= ",y.perimeter())
print("Area of triangle= ",z.area())
print("Perimeter of triangle= ",z.perimeter())

```

```

Area of circle= 78.5
Perimeter of circle= 31.400000000000002
Area of square= 16
Perimeter of square= 16
Area of triangle= 31.5
Perimeter of triangle= 18

```