

## PYTHON LAB PROGRAM 7

### 7) AIM: Demonstration of concepts of classes, methods, objects and inheritance

By using the concept of inheritance write a python program to find the area of triangle, circle and rectangle.

Code:

```
import math

class Shape:
    def __init__(self):
        self.area = 0
        self.name = ""

    def showArea(self):
        print("The area of the", self.name, "is", self.area, "units")

class Circle(Shape):
    def __init__(self, radius):
        super().__init__()
        self.name = "Circle"
        self.radius = radius

    def calcArea(self):
        self.area = math.pi * self.radius * self.radius

class Rectangle(Shape):
    def __init__(self, length, breadth):
        super().__init__()
        self.name = "Rectangle"
        self.length = length
        self.breadth = breadth

    def calcArea(self):
        self.area = self.length * self.breadth

class Triangle(Shape):
    def __init__(self, base, height):
        super().__init__()
        self.name = "Triangle"
        self.base = base
        self.height = height

    def calcArea(self):
        self.area = self.base * self.height / 2

c1 = Circle(5)
c1.calcArea()
c1.showArea()

r1 = Rectangle(5, 4)
r1.calcArea()
r1.showArea()
```

```
t1 = Triangle(3, 4)  
t1.calcArea()  
t1.showArea()
```

### **OUTPUT:**

```
The area of the Circle is 78.53981633974483 units  
The area of the Rectangle is 20 units  
The area of the Triangle is 6.0 units
```

- b) Write a python program by creating a class called Employee to store the details of Name, Employee\_ID, Department and Salary, and implement a method to update salary of employees belonging to a given department.

```
class Employee:
    def __init__(self):
        self.name = ""
        self.empId = ""
        self.dept = ""
        self.salary = 0

    def getEmpDetails(self):
        self.name = input("Enter Employee name: ")
        self.empId = input("Enter Employee ID: ")
        self.dept = input("Enter Employee Dept: ")
        self.salary = int(input("Enter Employee Salary: "))

    def showEmpDetails(self):
        print("Employee Details")
        print("Name:", self.name)
        print("ID:", self.empId)
        print("Dept:", self.dept)
        print("Salary:", self.salary)

    def updtSalary(self):
        self.salary = int(input("Enter new Salary: "))
        print("Updated Salary:", self.salary)

e1 = Employee()
e1.getEmpDetails()
e1.showEmpDetails()
e1.updtSalary()
```

#### OUTPUT:

```
Enter Employee name: Aaryan
Enter Employee ID: 123
Enter Employee Dept: cse
Enter Employee Salary: 50000
Employee Details
Name: Aaryan
ID: 123
Dept: cse
Salary: 50000
Enter new Salary: 60600
Updated Salary: 60600
```