

OBJECT ORIENTED PROGRAMING LAB**Experiment No.: 15****Name : Swetha Prakash****Roll No : 46****Batch : B****Date : 24-05-22****Aim**

Create an interface having prototypes of functions area() and perimeter(). Create two classes Circle and Rectangle which implements the above interface. Create a menu driven program to find area and perimeter of objects.

Source Code

```
import java.util.Scanner;

interface prop{
    void getdata();
    void area();
    void perimeter();
}

class Circle implements prop{
    double pi = 3.14;
    double r;
    Scanner sc = new Scanner(System.in);
    public void getdata(){
        System.out.println("Enter the radius of the circle :");
        r = sc.nextDouble();
    }
    public void perimeter(){
```

```
        System.out.println("Perimeter of the circle : "+(2*pi*r));
    }
    public void area(){
        System.out.println("Area of the circle : "+(pi*r*r));
    }
}
```

```
class Rectangle implements prop{
    double l,b;
    Scanner sc = new Scanner(System.in);

    public void getdata(){
        System.out.println("Enter the length of the rectangle : ");
        l = sc.nextDouble();
        System.out.println("Enter the breadth of the rectangle : ");
        b = sc.nextDouble();
    }

    public void area(){
        System.out.println("Area of a rectangle : "+(l*b));
    }

    public void perimeter(){
        System.out.println("Perimeter of a rectangle : "+(2*(l+b)));
    }
}
```

```
public class Shapes{
    public static void main(String[] args){
```

```
int ch;

Scanner sc = new Scanner(System.in);

Circle ob = new Circle();

Rectangle obj = new Rectangle();

do{

    System.out.println("\n1.Circle\n2.Rectangle\n3.Exit");

    System.out.println("Enter your choice : ");

    ch = sc.nextInt();

    switch(ch){

        case 1 :ob.getdata();

            ob.area();

            ob.perimeter();

            break;

        case 2 :obj.getdata();

            obj.area();

            obj.perimeter();

            break;

        case 3 :System.out.println("Exiting");

            System.exit(0);

    }

}while(true);

}
```

Output Screenshot

```
D:\Javalab>java Shapes

1.Circle
2.Rectangle
3.Exit
Enter your choice :
1
Enter the radius of the circle :
5
Area of the circle : 78.5
Perimeter of the circle : 31.400000000000002

1.Circle
2.Rectangle
3.Exit
Enter your choice :
2
Enter the length of the rectangle :
4
Enter the breadth of the rectangle :
5
Area of a rectangle : 20.0
Perimeter of a rectangle : 18.0

1.Circle
2.Rectangle
3.Exit
Enter your choice :
3
Exiting
```