OBJECT ORIENTED PROGRAMMING LAB

Experiment No.: 15

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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.

Procedure

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

```
}

public class AreaPerimeter
{
   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("Exited...");
                    System.exit(0);
         }
      }while(true);
```

```
    }
}
```

Output

```
C:\Users\Student\Documents\java>javac AreaPerimeter.java

C:\Users\Student\Documents\java>java AreaPerimeter

1.Circle
2.Rectangle
3.exit
Enter your choice:
1
Enter the radius of the circle:
4
Perimeter of the circle: 50.24
Perimeter of the circle: 25.12

1.Circle
2.Rectangle
3.exit
Enter your choice:
2
Enter the length of the rectangle:
2
Enter the breadth of the rectangle:
3
Perimeter of a rectangle: 6.0
Perimeter of a rectangle: 10.0

1.Circle
2.Rectangle
3.exit
Enter your choice:
3
Exited...
```