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**Batch: MCA B**

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**OBJECT ORIENTED PROGRAMMING LAB**

**Experiment No.: 15**

**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.\*;

import java.lang.\*;

interface Shape {

float pi = 3.14F;

float area();

float perimeter();

}

class Circle implements Shape {

Scanner sc = new Scanner(System.in);

int r;

public float area() {

System.out.print("Enter the radius : ");

r = Integer.parseInt(sc.nextLine());

return (pi \* r \* r);

}

public float perimeter() {

System.out.print("Enter the radius : ");

r = Integer.parseInt(sc.nextLine());

return (2 \* pi \* r);

}

}

class Rectangle implements Shape {

Scanner sc = new Scanner(System.in);

int l, b;

public float area() {

System.out.print("Enter the Length : ");

l = Integer.parseInt(sc.nextLine());

System.out.print("Enter the breadth : ");

b = Integer.parseInt(sc.nextLine());

return (l \* b);

}

public float perimeter() {

System.out.print("Enter the Length : ");

l = Integer.parseInt(sc.nextLine());

System.out.print("Enter the breadth : ");

b = Integer.parseInt(sc.nextLine());

return (2 \* (l + b));

}

}

class ShapeInterface {

public static void main(String args[]) {

Scanner sc = new Scanner(System.in);

Circle c = new Circle();

Rectangle r = new Rectangle();

int ch;

while (true) {

System.out.println("1:Area of Circle");

System.out.println("2:Perimeter of Circle");

System.out.println("3:Area of Rectangle");

System.out.println("4:Perimter of Rectangle");

System.out.println("5:EXIT");

System.out.print("Enter choice : ");

ch = Integer.parseInt(sc.nextLine());

switch (ch) {

case 1:

float ar = c.area();

System.out.println("Area :" + ar);

System.out.println("\*\*-----------\*\*----------\*\*");

break;

case 2:

float pr = c.perimeter();

System.out.println("Perimeter of Circle = "+pr);

System.out.println("\*\*-----------\*\*----------\*\*");

break;

case 3:

float a = r.area();

System.out.println("Area :" + a);

System.out.println("\*\*-----------\*\*----------\*\*");

break;

case 4:

float pr1 = r.perimeter();

System.out.println("Perimeter of Rectangle = "+pr1);

System.out.println("\*\*-----------\*\*----------\*\*");

break;

case 5:

System.out.println("Exiting the Program!!!!!");

System.exit(0);

default:

System.out.println("invalid!");

}

}

}

}

**Output Screenshot**

