LAB-04 :-

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Q Develop a java program to create an abstract class named shape that contains two integers and an empty Method named printArea(). Provide three classes named Rectangle, triangle and circle such that each one of the classes extends the class shape. Each one of the classes contain only the Method printArea() that prints the area of the given shape.

→
```
import java.util.Scanner;
class InputScanner {
    Scanner s = new Scanner (System.in);
    double getInput(String prompt) {
        System.out.println(prompt);
        return s.nextDouble(); } }
abstract class shape extends InputScanner {
    double side1, side2;
abstract void area(); }

class Rectangle extends shape {
    Rectangle() {
    side1= getInput("Enter length of rectangle:");
    side2 = getInput("Enter breadth of rectangle:
void area() {
    double area = side1 * side2;
    System.out.println("Area of the rectangle=
            "+area); }}
class triangle extends shape {
    triangle() {
    side1 = getInput("Enter base of the triangle:");
    side2 = getInput("Enter height of the
            triangle:"); }
```

```
void area() {
    double area = side1 * side2 / 2;
    System.out.println("area of the triangle = "+area);
}
class circle extends shape {
    circle() {
        side1 = getInput("Enter the radius of
                the circle:"); }
    void area() {
        double area = Math.PI *side1*side1;
        System.out.println("Area of the ck = "+area);}}
class Main {
    public static void main(String args[]) {
    Rectangle rectangle = new Rectangle();
    triangle Triangle = new triangle();
    circle circle = new circle();
    rectangle.area();
    Triangle.area();
    circle.area();
    System.out.println("Pooja.Gaikwad-1BH22CS(4);
    }
}
```

If negative value to be checked

```
class Input scanner {
    Scanner S = new Scanner(System.in);
    int getInput(String prompt) {
        double input;
        do{
        System.out.println(prompt);
        input = S.nextDouble;
        if (input < 0) {
```

```
system.out.println("Enter positive values only");
}
while (input<0);
    return input;
}
```

output:

```
Enter length of rectangle:
20
Enter breadth of rectangle:
40
Enter base of the triangle:
6
Enter the height of the triangle:
8
Enter the radius of the circle:
4
Area of rectangle = 800.0
Area of  is = 24.0
Area of the circle = 50.26
```

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```
mport java.util.Scanner;
class InputScanner{
Scanner s= new Scanner(System.in);
double getInput(String prompt){
System.out.println(prompt);
return s.nextDouble();}}
abstract class Shape extends InputScanner{
double side1, side2;
abstract void area();}

class Rectangle extends Shape{
Rectangle(){
side1=getInput("Enter length of rectangle:");
side2=getInput("Enter breadth of rectangle:");}
void area(){
double area=side1*side2;
System.out.println("Area of the Rectangle ="+area);}}
class triangle extends Shape{
      triangle(){
      side1=getInput("Enter base of the triangle:");
      side2=getInput("Enter height of the triangle:");}
       void area(){
        double area=side1*side2/2;
System.out.println("Area of the triangle="+area);}}
class circle extends Shape{
circle(){
side1=getInput("Enter the radius of the circle:");}
void area(){
double area=Math.PI*side1*side1;
```

```
System.out.println("Area of the triangle="+area);}}
class circle extends Shape{
circle(){
side1=getInput("Enter the radius of the circle:");}
void area(){
double area=Math.PI*side1*side1;
System.out.println("Area of the circle="+area);}}

class Main{
public static void main(String args[]){
Rectangle rectangle= new Rectangle();
triangle Triangle=new triangle();
circle Circle=new circle();

rectangle.area();
Triangle.area();
Circle.area();
System.out.println("Pooja Gaikwad-1BM22CS194");

}
}
```

```
Enter length of rectangle:
21
Enter breadth of rectangle:
23
Enter base of the triangle:
40
Enter height of the triangle:
30
Enter the radius of the circle:
25
Area of the Rectangle =483.0
Area of the triangle=600.0
Area of the circle=1963.4954084936207
Pooja Gaikwad-1BM22CS194
```