

Lab Program 4

```
import java.util.Scanner;
```

```
abstract class Shape {  
    protected int dim1;  
    protected int dim2;  
    public abstract void printArea();  
}  
  
class Rectangle extends Shape {  
    public Rectangle(int length, int width) {  
        this.dim1 = length;  
        this.dim2 = width;  
    }  
    public void printArea() {  
        int area = dim1 * dim2;  
        System.out.println("Area of Rectangle: " + area);  
    }  
}  
  
class Triangle extends Shape {  
    public Triangle(int base, int height) {  
        this.dim1 = base;  
        this.dim2 = height;  
    }  
    public void printArea() {  
        double area = 0.5 * dim1 * dim2;  
        System.out.println("Area of Triangle: " + area);  
    }  
}  
  
class Circle extends Shape {
```

```

public Circle(int radius) {
    this.dim1 = radius;
}

public void printArea() {
    double area = Math.PI * dim1 * dim1;
    System.out.printf("Area of Circle: %.2f\n", area);
}
}

public class ShapeDemo {
    public static void main(String[] args) {
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter length and width of rectangle: ");
        int l = sc.nextInt();
        int w = sc.nextInt();
        Shape rect = new Rectangle(l, w);
        System.out.println("Enter base and height of triangle:");
        int b=sc.nextInt();
        int h=sc.nextInt();
        Shape tri= new Triangle(b,h);
        System.out.println("Enter radius of circle:");
        int r=sc.nextInt();
        Shape circ=new Circle(r);
        rect.printArea();
        tri.printArea();
        circ.printArea();
    }
}

```

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260> javac ShapeDemo.java
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260> java ShapeDemo
Enter length and width of rectangle:
4 5
Enter base and height of triangle:
8 9
Enter radius of circle:
3
Area of Rectangle: 20
Area of Triangle: 36.0
Area of Circle: 28.27
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260>
```