Lab Program 4 :

Q. Java program to create an abstract class named shape that contains two integers and an empty method named printArea()...

Ans:

```java
import java.util.Scanner;

abstract class Shape {
    protected int d1;
    protected int d2;
    public abstract void printArea();
    public void setDimensions(int d1, int d

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 s1, s2;
    abstract void area();
}

class Rectangle extends Shape {
    Rectangle() {
        s1 = getInput("Enter the length of the rectangle: ");
        s2 = getInput("Enter the breadth of the rectangle: ");
    }
```

```java
    void area () {
        double area = s1 * s2;
        System.out.println("Area of the rectangle = " + area);
    }
}


class Triangle extends Shape {
    Triangle () {
        s1 = getInput("Enter the base of the triangle : ");
        s2 = getInput("Enter the height of the triangle : ");
    }

    void area () {
        double area = s1 * s2/2;
        System.out.println("Area of the triangle = " + area);
    }
}


class Circle extends Shape {
    Circle () {
        s1 = getInput("Enter the radius of the circle : ");
    }

    void area () {
        double area = Math.PI * s1 * s1;
        System.out.println("Area of the circle = " + area);
    }
}


class Main1 {
    public static void main (String args[]) {
        Rectangle r = new Rectangle();
        Triangle t = new Triangle();
        Circle c = new Circle();
        r.area();
```

```
        t. area ();
        c. area ();
    }
}
```

Output :

Enter the length of the rectangle :
4
Enter the breadth of the rectangle :
3
Enter the base of the triangle :
6
Enter the height of the triangle :
3
Enter the radius of the circle :
4

Area of the Rectangle = 12.0
Area of the Triangle = 9.0
Area of the circle = 50.26548245