Page No.
Date 2/01/24

Lab 4 programs:-

1. Java program to create an abstract class named Shape containing two integers and an empty method named printArea().

```
import java.util.Scanner;

class InputScanner {
int d1, d2;
Scanner sc = new Scanner(System.in);
InputScanner() {
if (this.getClass() == Circle.class) {
  System.out.println("Enter d1:");
  d1 = sc.nextInt();
}
else {
   System.out.println("Enter d1 and d2:");
   d1 = sc.nextInt();
   d2 = sc.nextInt();
}
}
}
abstract class Shape extends InputScanner{}
abstract void printArea();
}
class Triangle extends Shape {
void PrintArea(){
 System.out.println("Area of triangle is :" + (double)(d1*d2)/2);
}
}

class Rectangle extends Shape {
```

```
    void printArea(){
    System.out.println("Area of rectangle is : " +
                        (double)(d1 * d2));
    }
}

class Circle extends Shape {
void printArea(){
 System.out.println("Area of circle :" + (double)(3.14*d1*d1));
}
}
class AreaMain {
public static void main(String args[]) {
Rectangle r = new Rectangle();
Triangle tr = new Triangle();
 Circle c = new Circle();
 r.printArea();
 tr.printArea();
  c.printArea();
}
}
```

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OUTPUT:-

```
Enter d1 and d2:
5
4
Enter d1 and d2:
5
3
```

```
Enter d1:
6
Area of rectangle is : 20.0
Area of triangle is : 7.5
Area of circle : 113.03999...
```

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