

Lab program 4

- 4) 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.

```
import java.util.*;  
abstract class Shape {  
    int d1, d2;  
    Scanner input = new Scanner(System.in);  
    abstract void printArea();  
}
```

```
class Rectangle extends Shape {  
    void printArea() {  
        System.out.print("Enter length and breadth  
of rectangle: ");  
        d1 = input.nextInt();  
        d2 = input.nextInt();  
        System.out.println("The area of Rectangle  
is : " + d1 * d2 + "\n");  
    }  
}
```

```
class Triangle extends Shape {  
    void printArea() {  
        void printArea() {
```



```

System.out.print("Enter Base and height of
triangle : ");
d1 = input.nextInt();
d2 = input.nextInt();
System.out.println("The area of Triangle is"
+ (d1 * d2) / 2 + "\n");
}
}

```

```

class Circle extends Shape {
void printArea() {
System.out.print("Enter Radius : ");
d1 = input.nextInt();
System.out.println("The area of circle is : "
+ 3.14 * d1 * d1 + "\n");
}
}

```

```

public class shapemain {
public static void main (String[] args) {
Rectangle rec = new Rectangle();
rec.printArea();
Triangle tri = new Triangle();
tri.printArea();
Circle cir = new Circle();
cir.printArea();
}
}

```

Output:

Enter length and breadth of rectangle: 10 20  
The area of Rectangle is: 200

Enter Base and Height of triangle: 5 10  
The area of Triangle is: 25

Enter Radius: 3

The area of Circle is: 28.26.