

8/1/24 Lab Prgm - 04

- Q. Develop a Java prgm to create an abstract class named Shape that contains two integers & 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() the prints the area of given shape

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

```
class InputScanner
```

```
{
```

```
    Scanner s;
```

```
    InputScanner()
```

```
{
```

```
        s = new Scanner(System.in);
```

```
    }
```

```
}
```

```
abstract class Shape extends InputScanner
```

```
{
```

```
    double a;
```

```
    double b;
```

```
    abstract void getInput();
```

```
    abstract void displayArea();
```

```
}
```

```
class Rectangle extends Shape
```

```
{
```

```
    void getInput()
```

```
{
```

```
        System.out.print("Enter length and width
```



```
of the rectangle : ");  
a = s.nextDouble();  
b = s.nextDouble();
```

```
}  
void displayArea()  
{
```

```
System.out.println("Area of Rectangle: " + (a * b));  
}
```

```
9. class Triangle extends Shape  
{
```

```
void getInput()  
{
```

```
System.out.print("Enter base and height of  
the triangle : ");  
a = s.nextDouble();  
b = s.nextDouble();
```

```
}
```

```
void displayArea()  
{
```

```
System.out.println("Area of Triangle: " +  
(0.5 * a * b));  
}
```

```
10. class Circle extends Shape  
{
```

```
void getInput()  
{
```

```
System.out.print("Enter radius of the circle: ");  
a = s.nextDouble();
```

```
}
```

```
void displayArea()  
{
```



```

        System.out.println("Area of circle : " +
            (Math.PI * a * a));
    }
}

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

```

Q1: Enter length and width of rectangle: 9 8

Area of rectangle: 72.0

Enter base and height of the triangle: 4 6

Area of Triangle: 12.0

Enter radius of the circle: 8

Area of circle: 201.06192982974676.

Ans
02/01/24