

02/01/2024

## LAB - 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 & Circle such that each one of the classes extend the class 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 getPrintArea();
```

```
}
```

```
class Rectangle extends Shape{
```

```
    void getInput() {
```

```
        System.out.println ("Enter the dimensions  
for Rectangle");
```

```
        a = s.nextDouble();
```

```
        b = s.nextDouble();
```

```
    }
```



```
void printArea() {
```

System.out.println("Area of Rectangle  
= " + (a\*b)).

3

3.

class Triangle extends Shape {

```
void getInput() {
```

System.out.println ("Enter dimensions of Triangle");

$a = x.\text{nextDouble}();$

$b = a.\text{next Double}()$

3

```
void printArea() {
```

```
System.out.println("Area of triangle = " + (0.5 * a * b));
```

3

30

```
class Circle extends Shape {
```

```
void get Input() {
```

System.out.println("Enter the dimensions  
of circle");

~~A = \*next Double();~~

3

```
void printArea()
```

3

```
System.out.println("Area of Circle = "+  
    (3.14*a*a));
```

2

$$\}$$



```
class Main {
```

```
    public static void main (String [] args) {
```

```
        Rectangle r = new Rectangle();
```

```
        Triangle t = new Triangle();
```

```
        Circle c = new Circle();
```

```
        r = getInput();
```

```
        t = getInput();
```

```
        c = getInput();
```

```
        r = getPrintArea();
```

```
        t = printArea();
```

```
        c = printArea();
```

```
    }
```

```
}
```

Output:

Enter the dimensions of rectangle  
2 3

Enter the dimensions of triangle  
2 4

Enter the dimensions of circle  
2

Area of Rectangle = 6.0

Area of Triangle = 4.0

Area of Circle = 12.56

2/1/2024

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