

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 and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only one method printArea() that prints the area of the given shape.

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

```
abstract class Shape
```

```
{
```

```
    int length, breadth;
```

```
    void printArea()
```

```
    { }
```

```
}
```

```
    double areaR;
```

```
    void printArea() {
```

```
        areaR = (length * breadth);
```

```
        System.out.println("The area of rectangle is  
        "+areaR+" cm^2");
```

```
    }
```

```
}
```

```
class Triangle extends Shape
```

```
{
```

```
    double areaT;
```

```
    void printArea() {
```



```
areaT = (0.5) * (length * breadth);  
System.out.println("The area of triangle is  
" + areaT + "cm^2");
```

}

}

```
class Circle extends Shape  
{
```

```
    double areaC;
```

```
    void printArea()
```

```
    {  
        areaC = (3.14) * (length * length);
```

```
        System.out.println("The area of circle is  
" + areaC + "cm^2");
```

}

}

```
class main
```

```
{
```

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

```
    {  
        Scanner A = new Scanner (System.in);
```

```
        Rectangle R1 = new Rectangle();
```

```
        Triangle T1 = new Triangle();
```

```
        Circle C1 = new Circle();
```

```
        System.out.println("---- Area of generator  
of Rectangle, Triangle and circle ----");
```


System.out.println("Enter the length and breadth
of rectangle in cm: \n");

R1.length = A.nextInt();

R1.breadth = A.nextInt();

System.out.println("Enter the ^{height} length and
base of triangle in cm: \n");

T1.length = A.nextInt();

T1.breadth = A.nextInt();

System.out.println("Enter the radius of
circle in cm: \n");

C1.length = A.nextInt();

R1.printArea();

T1.printArea();

C1.printArea();

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