

Lab program 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 the method printArea() that prints the area of the given shape.

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

```
class InputScanner {
```

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

```
    int getInput(String prompt) {
```

```
        System.out.print(prompt);
```

```
        return s.nextInt();
```

```
}
```

```
class Shape extends InputScanner {
```

```
    double dim1;
```

```
    double dim2;
```

```
    shape(double a, double b) {
```

```
        dim1 = a;
```

```
        dim2 = b;
```

```
}
```

Class Rectangle extends shape {
 Rectangle () {
 super (0,0);
 dim1 = getInput ("Enter length ");
 dim2 = getInput ("Enter breadth ");
 }
 double area () {
 System.out.println ("Inside area for rectangle.");
 return dim1 * dim2;
 }
}

Class Triangle extends shape {
 Triangle () {
 super (0,0);
 dim1 = getInput ("Enter length ");
 dim2 = getInput ("Enter breadth ");
 }
 double area () {
 System.out.println ("Inside area for triangle");
 return dim1 * dim2 / 2;
 }
}

Class circle extends shape {
 circle () {
 super (0,0);
 dim1 = getInput ("Enter radius ");
 dim2 = dim1;
 }
 double area () {

inside area for circle
System.out.println("area");
return Math.PI * dim1 * dim2;

?
? ("Area of rectangle" = 100)
public class Areas { } (100) = 100

public static void main (String [] args) {
Rectangle rectangle = new Rectangle ();
System.out.println ("area of rectangle : " +
rectangle.area());

Triangle triangle = new Triangle ();

System.out.println ("area of triangle : " +
triangle.area());

: Circle circle = new Circle ();

: System.out.println ("area of circle : " +
circle.area());

Output -

Enter length

5

Enter breadth

8.0

Inside area for rectangle: 40.0

Area of rectangle : 40.0

Enter length

7

Enter base

8

Inside area for Triangle : 28.0

Enter the radius

5

Inside area for circle.

Area of circle : 78.5398 cm^2

~~single cultural norm, 2020 norm and 2012~~ : 89%

Amagansett Inn

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Algorithm —

Step 1 : Create abstract class named `shape`

Step 2 : include two members dim 1, dim 2

Step 3 : declare abstract method `paint` Area ().

Step 4 : Create sub-class Rectangle that extends shape.

Step 5 : override ~~Area~~ method to calculate area
of rectangle

~~Step 6 : Repeat step 4 and 5 for Triangle and
Circle.~~

~~Step 7 : In main method create object rectangle, triangle and circle.~~

Step 8 : Stop

4.

