

Lab-5

Abstract class

↳ Abstract class shape

double dim1;

double dim2;

Shape (double a, double b)

{

dim1 = a;

dim2 = b;

}

abstract double area()

↳

class Rectangle extends Shape

{

Rectangle (double a, double b) {

{

super (a, b);

}

double area ()

{

System.out.println ("inside area of rectangle");

return dim1 * dim2;

}

↳

class Triangle extends Shape

{

Triangle (* double a, double b)

{

super (a, b);

}

double area()

{

System.out.println("inside area of triangle");
return (dim1 * dim2) / 12;

}

}

class circle extends shape

{

circle (double a, double b) {

super(a, b);

}

double area()

{

System.out.println("inside area of circle");
return (dim1 * dim2 * 3.14);

}

}

public class Abstractclass

{

public static void main (String args[])

{

rectangle r = new rectangle (9, 5);

triangle t = new triangle (10, 6);

circle c = new circle (4, 4);

shape shary;

System.shary = r;

System.out.println("area of rectangle" +
shary.area());


```

    sharef = t;
    System.out.println("area of triangle" + sharef.area());
    sharef = c;
    System.out.println("area of circle" + sharef.area());
}
}

```

Output :-

```

inside area of rectangle
area of rectangle 45.0
inside area of triangle
area of triangle 36.0
inside area of circle
area of circle 50.24.

```

```

25 class triangle extends shape
26 {
27     triangle(double a,double b)
28     {
29         super(a,b);
30     }
31     double area()
32     {
33         System.out.println("inside area of triangle");
34         return (dim1*dim2)/(2);
35     }
36 }
37
38 class circle extends shape
39 {
40     circle(double a,double b)
41     {
42         super(a,b);
43     }
44     double area()
45     {
46         System.out.println("inside area of circle");
47         return 3.14*dim1*dim2;
48     }
49 }
50 public class abstractareas
51 {
52     public static void main(String args[])
53     {
54         rectangle r=new rectangle(9,5);
55         triangle t=new triangle(10,6);
56         circle c=new circle(4,4);
57         shape sharef;
58         sharef=r;
59         System.out.println("area of rectangle" +sharef.area());
60         sharef=t;
61         System.out.println("area of triangle"+sharef.area());
62         sharef=c;
63         System.out.println("area of circle"+sharef.area());
64     }

```

```

$javac abstractareas.java
$java -Xmx128M -Xms16M abstractareas
inside area of rectangle
area of rectangle45.0
inside area of triangle
area of triangle30.0
inside area of circle
area of circle50.24

```