

## LAB 04

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.

4/10/24

Date \_\_\_\_/\_\_\_\_/\_\_\_\_  
Page \_\_\_\_

Q. 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 contain only the method printArea() that prints the area of given shape

```
abstract class shape {  
    int dim1, dim2;  
    shape (int x, int y) {  
        dim1 = x;  
        dim2 = y;  
    }  
    abstract double printArea();  
}  
  
class Rectangle extends shape {  
    Rectangle (int a, int b) {  
        super (a, b);  
    }  
    double printArea () {  
        return dim1 * dim2;  
    }  
}  
  
class Triangle extends Shape {  
    Triangle (int a, int b) {  
        super (a, b);  
    }  
    double printArea () {  
        return 0.5 * dim1 * dim2;  
    }  
}  
  
class circle extends shape {  
    circle (int a, int b) {  
        super (a, 0);  
    }  
}
```

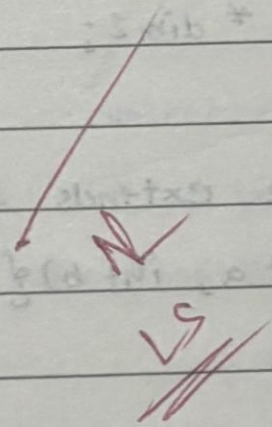
```

}
double printArea () {
return 3.14 * dim1 * dim1 ;
}
}
Class Abstract Demo {
public static void main (String ss []) {
Rectangle r = new Rectangle (100, 240);
Triangle t = new Triangle (10, 20);
Circle c = new Circle (10, 0);
System.out.println ("Area of rectangle : " + r.printArea ());
System.out.println ("Area of triangle : " + t.printArea ());
System.out.println ("Area of circle : " + c.printArea ());
}
}

```

### Output

Area of rectangle : 24000.0  
 Area of triangle : 100.0  
 Area of circle : 314.0



```
abstract class Shape{
int dim1,dim2;
Shape(int x,int y){
dim1=x;
dim2=y;}
abstract double printArea();
}
class Rectangle extends Shape{
Rectangle(int a,int b){
super(a,b);
}
double printArea(){
return dim1*dim2;
}}
class Triangle extends Shape{
Triangle(int a,int b){
super(a,b);
}
double printArea(){
return 0.5*dim1*dim2;
}
}
class Circle extends Shape{
Circle (int a,int b){
super(a,0);
}
double printArea(){
return 3.14*dim1*dim1;
}
}
```

```
class AbstractDemo{  
    public static void main(String ss[]){  
        Rectangle r=new Rectangle(100,240);  
        Triangle t=new Triangle(10,20);  
        Circle c =new Circle(10,0);  
        System.out.println("Area of rectangle:"+r.printArea());  
        System.out.println("Area of triangle:"+t.printArea());  
        System.out.println("Area of circle:"+c.printArea());  
    }  
}
```

```
D:\24BMSCE>javac AbstractDemo.java
```

```
D:\24BMSCE>java AbstractDemo
```

```
Area of rectangle:24000.0
```

```
Area of triangle:100.0
```

```
Area of circle:314.0
```

```
D:\24BMSCE>|
```