Lab program - 4

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① Develop a java program to create an abstract class named shape that contains two integers and an empty method named printArea(), provide 3 classes named □, △, ○ such that each of of them extend the class Shape. Each of the class contain only one method named printArea that prints area of the given shape

```
abstract class shape{
  int a, b;
  abstract double printarea();
}

class rectangle extends shape{
  rectangle (int x, int y){
    this.a = x;
    this.b = y;
  }
  double printarea (){
      return a*b;
  }
}

class triangle extends shape {
  triangle (int x, int y){
      this.a = x;
      this.b = y;
  }
  double printarea (){
      return 0.5 * a * b;
  }
}
```

```
class circle extends Shape {
final double pi = 3.14159;
circle(int r) {
    this.a = r;
} :
double printarea () {
    return pi * a * a;
}
}

class AbstractDemo {
public static void main (String args[]) {
    rectangle o1 = new rectangle (7,25);
    triangle o2 = new triangle (15,20);
    circle o3 = new circle (5);
    Shape sh;
    sh = o1;
    double a1 = sh.printarea();
System.out.println ("Area of rectangle:" + a1);
    sh = o2;
    double a2 = sh.printarea();
System.out.println ("Area of triangle:" + a2);
    sh = o3;
    double a3 = sh.printarea();
    System.out.println ("Area of circle:" + a3);
}
}
```

o/p

```
Area of rectangle : 175.0
Area of triangle : 150.0
Area of circle : 78.53975
```