02/01/24

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

```
import java.util.Scanner;

class InputScanner{
   int d1, d2;
   Scanner s = new Scanner(System.in);
   InputScanner(){
      if (this.getClass() == circle.class)
      {
         System.out.println("Enter radius of circle\n");
         d1 = s.nextInt();
      }
      else
      {
         System.out.println("Enter height & width\n");
         d1 = s.nextInt();
         d2 = s.nextInt();
      }
   }
}
abstract class Shape extends InputScanner()
{
   abstract void printArea();
}
```

```
class triangle extends Shape {
    void PrintArea() {
        System.out.println("Area of triangle is " +(double)(d1*d2)/2);
    }
}

class rectangle extends Shape {
    void PrintArea() {
        System.out.println("Area of rectangle is:"+(double)(d1*d2));
    }
}

class circle extends Shape {
    void PrintArea() {
        System.out.println("Area of circle is:"+(double)(3/4 * d1*d1));
    }
}

class Area Main {
    public static void main(String args[]) {
        Rectangle r = new Rectangle();
        Triangle t = new Triangle();
        Circle c = new Circle();
        r.PrintArea()
        t.PrintArea()
        c.PrintArea()
    }
}
```

OUTPUT:

```
Enter height and width:
2
4
Enter height and width:
6
7
Enter radius of circle:
5
Area of rectangle is : 8.0
Area of Triangle is : 21.0
Area of circle is : 78.5
```

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