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Week-4

① abstract class program for^printing area of rectangle, triangle, circle.

```java
import java.util.Scanner;

abstract class shape {
    double dim1, dim2;
    Shape ( double a, double b) {
        dim1 = a;
        dim2 = b;
    }
    abstract void printArea();
}

class Rectangle extends Shape {
    Rectangle (double a, double b) {
        super (a, b);
    }
    void printArea () {
        System.out.println ("Area of Rectangle = " + (dim1 * dim2
    }
}

class Triangle extends Shape {
    Triangle (double a, double b) {
        super (a, b);
    }
    void printArea () {
        System.out.println ("area of triangle is" +
                             (dim1 * dim2)/2);
    }
}
```

```java
class circle extends Shape {
    Triangle (double a, double b) {
        super (a, b);
    }
    void printArea() {
        System.out.println("area of circle = " + pi

    Circle (double a, double b) {
        super (a, b);
    }

    final double pi = 3.14159;
    void printArea() {
        System.out.println("area of circle = " + pi * Math.pow(dim, 2));
    }
}

class main {
    public static void main (String args[]) {
        Scanner sc = new Scanner (System.in);
        double a, b;

        System.out.println("enter side of rectangle : ");
        a = sc.nextDouble();
        b = sc.nextDouble();
        Rectangle s = new Rectangle (a, b);

        System.out.println("enter height and base length of triangle : ");
        a = sc.nextDouble();
        b = sc.nextDouble();
        Triangle t = new Triangle (a, b);

        System.out.println("enter radius of circle : ");
        a = sc.nextDouble;
        b = sc.nextDouble;
```

```
Circle C = new Circle (a, 1);

Shape S;
S = 2;
S, print Area ();
S = t;
S. print Area ();
S = C;
S. print Area ();
}
}
```

<u>output</u>

Enter sides of rectangle :
1
2
Enter sides of height and base of Triangle :
5
2
Enter radius of circle :
5
Area of rectangle = 2.0
Area of Triangle = 5.0
Area of circle = 78.53975