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Week-4

Abstract class program for printing area of rectangle, triangle and circle.

```
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 is" +(dim1*dim2));
    }
}

class Triangle extends Shape {
    Triangle(double a, double b)
    {
        super(a,b);
    }
    void printArea() {
        System.out.println("Area of Triangle is" +(1/2*dim1*dim2));
    }
}
```

```
class Circle extends Shape() {
    Circle(double a, double b) {
        super(a, b);
    }
    final double pi = 3.14159;

    void printArea() {
        System.out.println("Area of circle is" + pi * Math.pow(dim1, 2));
    }
}

class Main {
    public static void main(String args[]) {

        Scanner s = new Scanner(System.in);
        double a, b;

        System.out.println("Enter sides of rectangle:");
        a = s.nextDouble();
        b = s.nextDouble();

        Rectangle r = new Rectangle(a, b);

        System.out.println("Enter height and base length of triangle:");
        a = s.nextDouble();
        b = s.nextDouble();

        Triangle t = new Triangle(a, b);
```

class Circle extends Shape() {
~~Circle(double a)~~ Circle(double a, double b) {
~~super(x);~~ super(a, b);
~~}~~ }
~~void printArea() {~~
~~System.out.println("Area~~
final double pi = 3.14159;

void printArea() {
System.out.println("Area of circle is" + pi * Math.pow(dim1, 2));
}
}

class Main {
public ~~static~~ void main(String args[]) {

Scanner s = new Scanner(System.in);
double a, b;

System.out.println("Enter sides of rectangle:");
a = ~~s.a~~ s.nextDouble();
b = s.nextDouble();

Rectangle r = new Rectangle(a, b);

System.out.println("Enter height and base length of triangle:");
a = s.nextDouble();
b = s.nextDouble();

Triangle t = new Triangle(a, b);

```
System.out.println("Enter radius of circle: ");
a = s.nextDouble();
Circle c = new Circle(a,1);

Shape S;
S=r;
S.printArea();
S=t;
S.printArea();
S=c;
S.printArea();
}
}
```

Output:

```
Enter sides of rectangle:
1
2
Enter height and base length of Triangle:
5
2
Enter radius of Circle:
5
Area of Rectangle is 2.0
Area of Triangle is 5.0
Area of circle is 78.53975
```

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