

EXP.NO:05	AREA CALCULATOR
DATE:09.08.19	

AIM:

To write a Java program to create a “Area Calculator” by creating abstract class named Shape with two integers for finding area of triangle, circle, rectangle.

REQUIREMENT:-

- Abstract class named Shape.
- With two integers and an empty method named printarea().
- Three classes named rectangle, triangle and circle. Where Shape is the super class and all other classes are sub classes
- Each class containing printarea() method that is used to print the area of the given shape.

ALGORITHM:-

STEP 1: start

STEP 2: create the package shapearea, super class shape and sub classes Triangle, Circle, Rectangle and Calculation

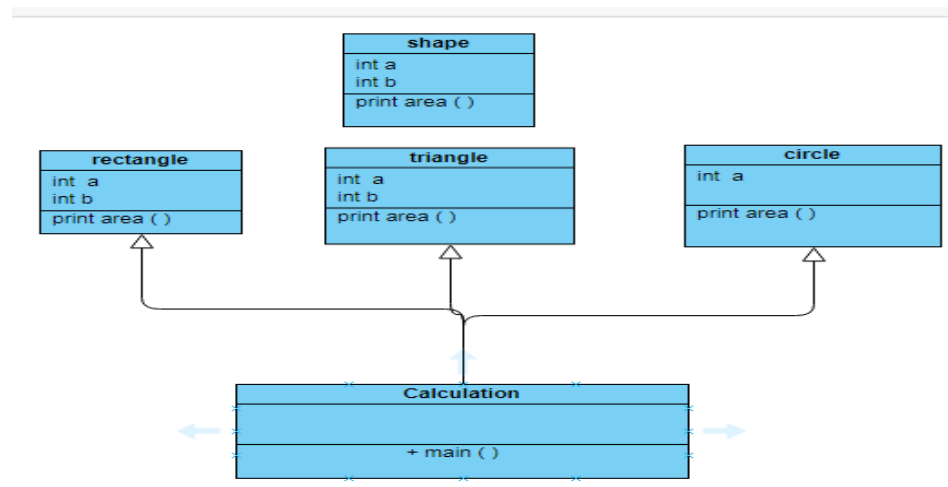
STEP 3: In the class Shape declare the attributes a, b which will be used in the sub classes for calculating area

STEP 4: each class is provided with a printarea() method where in the calculation class the respective values for calculating the area will be given

STEP 5: By execution of the program the area of the triangle, circle and rectangle is found out

STEP 6: stop

CLASS DIAGRAM:



PROGRAM:

```
/*
 * developed by M.upendra
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 *
 */
package shapearea;
abstract class shape {
    protected int a;
    protected int b;
    abstract public void printarea();
}
package shapearea;
public class circle extends shape {
    public circle(int l)
    {
        super.a=l;
    }
    public void printarea() {
        double area;
        area=3.14*super.a*super.a;
        System.out.println("the area of the circle is:"+area);
    }
}
package shapearea;
public class rectangle extends shape {
    public rectangle(int l, int h)
    {
        super.a=l;
        super.b=h;
    }
    public void printarea() {
        double area;
        area=super.a*super.b;
        System.out.println("the area of the rectange is:"+area);
    }
}
```

```
package shapearea;
public class triangle extends shape {
    public triangle(int l, int h)
    {
        super.a=l;
        super.b=h;
    }
    public void printarea() {
        double tri;
        tri=0.5*super.a*super.b;
        System.out.println("the area of the triangle is:"+tri);
    }
}
package shapearea;
public class calculation {
    public static void main(String[] args) {
        shape sha;
        sha=new rectangle(50,60);
        sha.printarea();
        sha=new circle(20);
        sha.printarea();
        sha=new triangle(40,60);
        sha.printarea();
    }
}
```

OUTPUT:

the area of the rectangle is:3000.0

the area of the circle is:1256.0

the area of the triangle is:1200.0

RESULT: Hence, a Java program is created where a “Area Calculator” by creating abstract class named Shape with two integers for finding area of triangle, circle, rectangle is done and the respective area is found out