



LAB

JAN 2022

TEB1113

Algorithm & Data Structure

Lab 2

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Program 1

```
public class Shape{  
    public static void main(String[] args){  
        // Creating Objects  
        Rectangle rect = new Rectangle();  
        Square sqr = new Square();  
        Circle circ = new Circle();  
  
        // Set parameters  
        rect.setLength(5);  
        rect.setWidth(6);  
  
        sqr.setLength(8);  
  
        circ.setRadius(3);  
  
        // Calculating Area  
        System.out.println("Area of Rectangle: " + rect.calcArea());  
        System.out.println("Area of Square: " + sqr.calcArea());  
        System.out.println("Area of Circle: " + circ.calcArea());  
    }  
}
```

```
class Rectangle{  
    // Attributes  
    private float length;  
    private float width;  
  
    // Methods  
  
    public void setLength(float newLength){
```

```
        this.length = newLength;
    }
    public float getLength(){
        return length;
    }
    public void setWidth(float newWidth){
        this.width = newWidth;
    }
    public float getWidth(){
        return width;
    }
    public float calcArea(){
        return (width*length);
    }
}
```

```
class Square{
    // Attributes
    private float length;

    // Methods
    public void setLength(float newLength){
        this.length = newLength;
    }
    public float getLength(){
        return length;
    }
    public float calcArea(){
        return (length*length);
    }
}
```

```
class Circle{  
    // Attributes  
    private float radius;  
  
    // Methods  
    public void setRadius(float newRadius){  
        this.radius = newRadius;  
    }  
    public float getRadius(){  
        return radius;  
    }  
    public float calcArea(){  
        return ((22/7)*radius*radius);  
    }  
}
```

```
Area of Rectangle: 30.0  
Area of Square: 64.0  
Area of Circle: 27.0  
Press any key to continue...
```

Program 2

1. Shape.java

```
import AllShape.*;

public class Shape{

    public static void main(String[] args){
        // Creating Objects
        Rectangle rect = new Rectangle();
        Square sqr = new Square();
        Circle circ = new Circle();

        // Set parameters
        rect.setLength(5);
        rect.setWidth(6);

        sqr.setLength(8);

        circ.setRadius(3);

        // Calculating Area
        System.out.println("Area of Rectangle: " +
rect.calcArea());

        System.out.println("Area of Square: " + sqr.calcArea());
        System.out.println("Area of Circle: " + circ.calcArea());
    }
}
```

2. AllShape.java

```
package AllShape;

class Rectangle{

    // Attributes

    private float length;

    private float width;


    // Methods


    public void setLength(float newLength){

        this.length = newLength;

    }

    public float getLength(){

        return length;

    }

    public void setWidth(float newWidth){

        this.width = newWidth;

    }

    public float getWidth(){

        return width;

    }

    public float calcArea(){

        return (width*length);

    }

}

class Square{

    // Attributes

    private float length;


    // Methods
```

```

        public void setLength(float newLength){
            this.length = newLength;
        }
        public float getLength(){
            return length;
        }
        public float calcArea(){
            return (length*length);
        }
    }
    class Circle{

        // Attributes
        private float radius;

        // Methods
        public void setRadius(float newRadius){
            this.radius = newRadius;
        }
        public float getRadius(){
            return radius;
        }
        public float calcArea(){
            return ((22/7)*radius*radius);
        }
    }

```

```

Area of Rectangle: 30.0
Area of Square: 64.0
Area of Circle: 27.0
Press any key to continue...

```