

# **Tugas Pemrograman Berorientasi Objek**



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## Abstract

Is the two object have the same area? false

The area is 78.53981633974483

The perimeter is 31.41592653589793

The color is white

Created on Tue May 17 14:27:53 WIB 2022

The area is 15.0

The perimeter is 16.0

The color is white

Created on Tue May 17 14:27:53 WIB 2022

## GeometriObject.java

```
package Abstract;

public abstract class GeometriObject {
    private String color = "white";
    private boolean filled;
    private java.util.Date dateCreated;

    protected GeometriObject() {
        dateCreated = new java.util.Date();
    }

    protected GeometriObject(String color, boolean filled) {
        dateCreated = new java.util.Date();
        setColor(color);
        setFilled(filled);
    }

    public String getColor() {
        return this.color;
    }

    public void setColor(String color) {
        this.color = color;
    }

    public boolean isFilled() {
        return this.filled;
    }

    public void setFilled(boolean filled) {
        this.filled = filled;
    }

    public java.util.Date getDateCreated() {
```

```

        return this.dateCreated;
    }

    @Override
    public String toString() {
        return "Created on " + dateCreated + "\nColor : " + color + " and
filled : " + filled;
    }

    public abstract double getArea();

    public abstract double getPerimeter();
}

```

Circle.java

```

package Abstract;

public class Circle extends GeometriObject {
    private double radius;

    public Circle() {

    }

    public Circle(double radius) {
        setRadius(radius);
    }

    public Circle(double radius, String color, boolean filled) {
        setRadius(radius);
        setColor(color);
        setFilled(filled);
    }

    public double getRadius() {
        return this.radius;
    }

    public void setRadius(double radius) {
        this.radius = radius;
    }

    public double getDiameter() {
        return radius + radius;
    }
}

```

```

@Override
public double getArea() {
    // TODO Auto-generated method stub
    return radius * radius * Math.PI;
}

@Override
public double getPerimeter() {
    // TODO Auto-generated method stub
    return 2 * radius * Math.PI;
}
}

```

Rectangle.java

```

package Abstract;

public class Rectangle extends GeometriObject {
    private double width;
    private double height;

    public Rectangle() {

    }

    public Rectangle(double width, double height) {
        setWidth(width);
        setHeight(height);
    }

    public Rectangle(double width, double height, String color, boolean
filled) {
        setWidth(width);
        setHeight(height);
        setColor(color);
        setFilled(filled);
    }

    public double getWidth() {
        return this.width;
    }

    public void setWidth(double width) {
        this.width = width;
    }
}

```

```

    }

    public double getHeight() {
        return this.height;
    }

    public void setHeight(double height) {
        this.height = height;
    }

    @Override
    public double getArea() {
        // TODO Auto-generated method stub
        return width * height;
    }

    @Override
    public double getPerimeter() {
        // TODO Auto-generated method stub
        return 2 * (width + height);
    }
}

```

Demo.java

```

package Abstract;

public class Demo {
    private static boolean equalArea(GeometriObject geoObj1, GeometriObject
geoObj2) {
        return geoObj1.getArea() == geoObj2.getArea();
    }

    private static void displayGeometriObject(GeometriObject geoObj) {
        System.out.println("\nThe area is " + geoObj.getArea());
        System.out.println("The perimeter is " + geoObj.getPerimeter());
        System.out.println("The color is " + geoObj.getColor());
        System.out.println("Created on " + geoObj.getDateCreated());
    }

    public static void main(String[] args) {
        GeometriObject geoObj1 = new Circle(5);
        GeometriObject geoObj2 = new Rectangle(5, 3);
    }
}

```

```
        System.out.println("\nIs the two object have the same area? " +
equalArea(geoObj1, geoObj2));

        // Display circle
displayGeometriObject(geoObj1);

        // Display rectangle
displayGeometriObject(geoObj2);

        System.out.println("");

    }

}
```

## Interface

```
Is the two object have the same area? false

The area is 78.53981633974483
The perimeter is 31.41592653589793

The area is 15.0
The perimeter is 16.0
```

## GeometriObject.java

```
package Interface;

public abstract class GeometriObject {
    private String color = "white";
    private boolean filled;
    private java.util.Date dateCreated;

    protected GeometriObject() {
        dateCreated = new java.util.Date();
    }

    protected GeometriObject(String color, boolean filled) {
        dateCreated = new java.util.Date();
        setColor(color);
        setFilled(filled);
    }

    public String getColor() {
        return this.color;
    }

    public void setColor(String color) {
        this.color = color;
    }

    public boolean isFilled() {
        return this.filled;
    }

    public void setFilled(boolean filled) {
        this.filled = filled;
    }

    public java.util.Date getDateCreated() {
```

```
        return this.dateCreated;
    }

    @Override
    public String toString() {
        return "Created on " + dateCreated + "\nColor : " + color + " and
filled : " + filled;
    }

    public abstract double getArea();

    public abstract double getPerimeter();
}
```

Benefit.java

```
package Interface;

public interface Benefit {
    public abstract void application();
}
```



## Circle.java

```
package Interface;

public class Circle extends GeometriObject implements Benefit {
    private double radius;

    public Circle() {

    }

    public Circle(double radius) {
        setRadius(radius);
    }

    public Circle(double radius, String color, boolean filled) {
        setRadius(radius);
        setColor(color);
        setFilled(filled);
    }

    public double getRadius() {
        return this.radius;
    }

    public void setRadius(double radius) {
        this.radius = radius;
    }

    public double getDiameter() {
        return radius + radius;
    }

    @Override
    public double getArea() {
        // TODO Auto-generated method stub
        return radius * radius * Math.PI;
    }

    @Override
    public double getPerimeter() {
        // TODO Auto-generated method stub
        return 2 * radius * Math.PI;
    }

    @Override
    public void application() {
        // TODO Auto-generated method stub
        System.out.println("Circle are on wheels, rings, clocks, etc");
    }
}
```

```
}  
  
}
```

### Square.java

```
package Interface;  
  
public class Square implements Benefit {  
  
    @Override  
    public void application() {  
        // TODO Auto-generated method stub  
        System.out.println("Square are on dice, cube, aquarium, etc");  
    }  
  
}
```

### Demo.java

```
package Interface;  
  
public class Demo {  
    public static void main(String[] args) {  
        Circle c = new Circle();  
        c.setRadius(5);  
        System.out.println("\nThe circle's area is " + c.getArea());  
        System.out.println("The circle's permieter is " + c.getPerimeter());  
        c.application();  
        System.out.println("");  
  
        Square s = new Square();  
        s.application();  
  
        System.out.println("");  
    }  
}
```