

Laporan Tugas Praktikum PBO

Pertemuan 9



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Kelas 2 – B

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Program Studi D3 Teknik Informatika

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2021

Tugas 1

Painting Shapes

1. Hasil program

Program

a. Shape.java

- Membuat abstract class Shape yang merupakan superclass
- membuat instance variable yaitu shapeName
- Membuat method constructor Shape
- Membuat method abstract area
- Membuat method toString yang nantinya akan dipanggil di class turunannya

```
package soal1;

//menulis abstract class Shape (sebagai superclass)
abstract class Shape {
    //membuat object/variable shapeName
    private String shapeName;

    //membuat constructor pada class Shape
    //constructor adalah suatu method yang berfungsi untuk memberikan
    //nilai pada suatu objek yang dibuat
    public Shape(String Name)
    {
        shapeName = Name;
    }

    //membuat abstract method area
    abstract public double area();

    //membuat method toString yang akan mengembalikan nama dari shape
    //method ini nantinya akan dipanggil lagi di subclass (overriding)
    public String toString()
    {
        return shapeName;
    }
}
```

b. Membuat class lainnya

- Sphere.java

```
package soal1;

public class Sphere extends Shape
{
    private double radius;

    public Sphere(double r)
    {
        super("Sphere");
        radius = r;
    }

    public double area()
    {
        return 4*Math.PI*radius*radius;
    }

    public String toString()
    {
        return super.toString() + " of radius " + radius;
    }
}
```

- Rectangle.java

- membuat class Rectangle.java yang merupakan turunan dari Shape (descendant of Shape) dan memiliki struktur yang mirip dengan class Sphere

- membuat dua instance variable yaitu length dan width
- membuat method constructor Rectangle
- membuat method area yang mengembalikan nilai length time width
- membuat method toString yang merupakan overriding dari Shape

```
package soal1;
{
public class Rectangle extends Shape
{
    private double length;
    private double width;

    public Rectangle(double l, double w)
    {
        super("Rectangle");
        this.length = l;
        this.width = w;
    }

    public double area()
    {
        return length*width;
    }

    public String toString()
    {
        return super.toString() + " of length " + length + " of width " + width;
    }
}
}
```

- Cylinder.java

- membuat class Cylinder.java yang merupakan turunan dari Shape (descendant of Shape) dan memiliki struktur yang mirip dengan class Sphere
- membuat dua instance variable yaitu radius dan height
- membuat method constructor Cylinder
- membuat method area yang mengembalikan nilai $\text{Math.PI} \times \text{radius} \times \text{radius} \times \text{height}$
- membuat method toString yang merupakan overriding dari Shape

```
package soal1;
{
public class Cylinder extends Shape
{
    private double radius;
    private double height;

    public Cylinder(double r, double h)
    {
        super("Cylinder");
        this.radius = r;
        this.height = h;
    }

    public double area()
    {
        return Math.PI*radius*radius*height;
    }

    public String toString()
    {
        return super.toString() + " of radius " + radius + " of height " + height;
    }
}
}
```

c. Paint.java

- Memperbaiki method amount

```

package soal1;
{
public class Paint
{
    private double coverage;

    public Paint(double c)
    {
        coverage = c;
    }

    public double amount (Shape s)
    {
        System.out.println("Computing amount for " + s);
        return s.area()/coverage;
        //return 0;
    }
}
}

```

d. PaintThings.java

- Menambahkan instance and value three shape

```

package soal1;

import java.text.DecimalFormat;

public class PaintThings
{
    public static void main (String[] args)
    {
        final double COVERAGE = 350;
        Paint paint = new Paint(COVERAGE);

        Rectangle deck;
        Sphere bigBall;
        Cylinder tank;

        deck = new Rectangle(20,35);
        bigBall = new Sphere(15);
        tank = new Cylinder(10,30);

        double deckAmt, ballAmt, tankAmt;

        deckAmt = paint.amount(deck);
        ballAmt = paint.amount(bigBall);
        tankAmt = paint.amount(tank);

        DecimalFormat fmt = new DecimalFormat("0.#");
        System.out.println("\nNumber of gallons of paint needed. . .");
        System.out.println("Deck " + fmt.format(deckAmt));
        System.out.println("Big Ball " + fmt.format(ballAmt));
        System.out.println("Tank " + fmt.format(tankAmt));
    }
}

```

Output

```
Console
<terminated> PaintThings (1) [Java Application] C:\Program Files\Java\jdk-11.0.12\bin\javaw.exe (19 Nov
Computing amount for Rectangle of length 20.0 of width 35.0
Computing amount for Sphere of radius 15.0
Computing amount for Cylinder of radius 10.0 of height 30.0

Number of gallons of paint needed. . .
Deck 2
Big Ball 8,1
Tank 26,9
```

2. Permasalahan : -
3. Solusi : -
4. Teman yang membantu : -

Tugas 2

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1. Hasil program

Output

```
|=====
It's Gennichirothe ManRay! It has the power level of 0
. . . . .HEED ME. . . . .
FOR MY NAAAAAAME IS Gennichiro
TIME TO SHOW YOU MU POWERS
SUPERIOR SIGHT, BEHOLD LASER EYE!
DISGUST ME, BEHOLD SUPER STRENGTH!
=====
It's Shirai the FlyingDutchMan! It has the power level of 255
. . . . .HEED ME. . . . .
FOR MY NAAAAAAME IS Shirai
TIME TO SHOW YOU MU POWERS
EAT DIRT MORTAL, BEHOLD THE POWER OF FLIGHT!
SUPERIOR SIGHT, BEHOLD LASER EYE!
=====
It's Gyoubu Masataka Oniwa the ManRay! It has the power level of 553
. . . . .HEED ME. . . . .
FOR MY NAAAAAAME IS Gyoubu Masataka Oniwa
TIME TO SHOW YOU MU POWERS
SUPERIOR SIGHT, BEHOLD LASER EYE!
DISGUST ME, BEHOLD SUPER STRENGTH!
=====
It's Tatenari the FlyingDutchMan! It has the power level of 36556
. . . . .HEED ME. . . . .
FOR MY NAAAAAAME IS Tatenari
TIME TO SHOW YOU MU POWERS
EAT DIRT MORTAL, BEHOLD THE POWER OF FLIGHT!
SUPERIOR SIGHT, BEHOLD LASER EYE!
=====
It's Arnastria the DirtyBubble! It has the power level of 666
. . . . .HEED ME. . . . .
FOR MY NAAAAAAME IS Arnastria
TIME TO SHOW YOU MU POWERS
```

2. Permasalahan : -
3. Solusi : -
4. Teman yang membantu : -