Tugas Praktikum 9

(Sebagai pemenuhan salah satu tugas mata kuliah PBO Praktikum
Program Studi D3 Teknik Informatika)

Disusun oleh :
Muhammad Ali Kusnadin   (201511016)

D3 – 2A
PROGRAM STUDI D3 TEKNIK INFORMATIKA
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1. Kasus 1 – Painting Shapes
   a. Write an abstract class Shape with the following properties!

```java
package com.praktek;

public abstract class Shapes {
    protected String shapeName;
    protected double _area;

    public Shapes(String shapeName) {
        this.shapeName = shapeName;
    }

    public double area() {
        return _area;
    }
    public String toString() {
        return shapeName;
    }

}
```

   b. Make class Cylinder and class Rectangle

```java
package com.praktek;

public class Cylinder extends Shapes{
    private double radius;
    private double height;
    public Cylinder(double radius, double height)
    {
        super("Cylinder");
        this.radius = radius;
        this.height = height;
    }

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

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

```java
Rectangle.java ×
 1  package com.praktek;
 2
 3  public class Rectangle extends Shapes
 4  {
 5      private double length;
 6      private double width;
 7      public Rectangle(double length, double width)
 8      {
 9          super("Rectangle");
10          this.length = length;
11          this.width = width;
12      }
13
14      public double area()
15      {
16          return length*width;
17      }
18
19      public String toString()
20      {
21          return super.toString() + " of length " + this.length + " and width " + this.width;
22      }
23  }
24
```

c. Correct statement amount in Paint.java

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

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

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

d. Complete program PaintThings.java

```java
23
24      // Instantiate the three shapes to paint
25      deck = new Rectangle(20,35);
26      bigBall = new Sphere(15);
27      tank = new Cylinder(10,30);
28
29      // Compute the amount of paint needed for each shape
30      deckAmt = paint.amount(deck);
31      ballAmt = paint.amount(bigBall);
32      tankAmt = paint.amount(tank);
```

e. Output

```
Computing amount for Rectangle of length 20.0 and width 35.0
Computing amount for Sphere of radius 15.0
Computing amount for Cylinder of radius 10.0 and height 30.0

Number of gallons of paint needed...
Deck 2
Big Ball 8.1
Tank 26.9
```

2. Kasus 2 – The Avenged
   a. Output

```
===============================
It's Gennichiro, the ManRay! It has the power level of 0
.....HEED ME.....
TIME TO SHOW YOU MY POWERS
SUPERIOR SIGHT, BEHOLD LASER EYE!
WEAKNESS DISGUST ME, BEHOLD SUPER STRENGTH!
===============================
===============================
It's Shirai, the FlyingDutchMan! It has the power level of 255
.....HEED ME.....
TIME TO SHOW YOU MY 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.....
TIME TO SHOW YOU MY POWERS
SUPERIOR SIGHT, BEHOLD LASER EYE!
WEAKNESS DISGUST ME, BEHOLD SUPER STRENGTH!
===============================
===============================
It's Arnastria, the FlyingDutchMan! It has the power level of 666
.....HEED ME.....
TIME TO SHOW YOU MY POWERS
EAT DIRT MORTAL, BEHOLD THE POWER OF FLIGHT!
WEAKNESS DISGUST ME, BEHOLD SUPER STRENGTH!
===============================

===============================
It's Tatenari, the FlyingDutchMan! It has the power level of 36556
.....HEED ME.....
TIME TO SHOW YOU MY POWERS
EAT DIRT MORTAL, BEHOLD THE POWER OF FLIGHT!
SUPERIOR SIGHT, BEHOLD LASER EYE!
===============================
```