

Tugas Praktikum 7

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



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**D3 – 2A
PROGRAM STUDI D3 TEKNIK INFORMATIKA
POLITEKNIK NEGERI BANDUNG
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A. Task 1.1

a. Modify class Circle

i. Variable color :String

```
1 public class Circle {  
2     // private instance variable, not accessible from outside this class  
3     private double radius;  
4     private String color;  
5 }
```

ii. Constructor Circle(radius:double,color:string)

```
1 /**Constructs a Circle instance with the given radius and color**/  
2 public Circle(double r,String color) { // 2nd constructor  
3     this.radius = r;  
4     this.color = color;  
5 }
```

iii. Getter and setter for color

```
1 public String getColor() {  
2     return color;  
3 }  
  
4 public void setColor(String color) {  
5     this.color = color;  
6 }
```

B. Task 1.2

```
1 //A public method for computing the volume of cylinder  
2 //use superclass method getArea() to get the base area  
3 public double getVolume() {  
4     return super.getArea()*height;  
5 }  
6 //override  
7 public double getArea() {  
8     return super.getArea()* 2 + 2 * Math.PI * super.getRadius()*height;  
9 }  
10 }
```

Jadi saya membuat method overriding getArea pada kelas Cylinder yang rumusnya ($2\pi * \text{radius} * \text{height} + 2 * \text{base-area}$), kita dapat menggunakan getArea pada kelas Circle karena base-area = getArea pada kelas Cylinder lalu kita gunakan super untuk memanggil method pada kelas parent-nya. Lalu karena saya membua method overriding pada getArea maka mempengaruhi pemanggilan getArea pada method getVolume, karena jika tidak

menggunakan `super` di depannya maka akan memanggil `getArea` pada kelas `Cylinder` bukan `getArea` dari kelas `Circle`.

C. Task 1.3

```
28         + " volume=" + c3.getVolume();
29     System.out.println();
30     System.out.println(c1);
31     System.out.println(c2);
32     System.out.println(c3);
33 }
34 }
```

Problems Javadoc Declaration Console

<terminated> TestCylinder [Java Application] C:\Program Files\Java\jdk-16.0.2\bin\javaw.exe (Oct 26, 2021, 2:37:19 PM - 2:37:21 PM)

Cylinder: radius=1.0 height=1.0 base area=12.566370614359172 volume=3.141592653589793
Cylinder: radius=1.0 height=10.0 base area=69.11503837897544 volume=31.41592653589793
Cylinder: radius=2.0 height=10.0 base area=150.79644737231007 volume=125.66370614359172

Cylinder: subclass of Circle[radius 1.0, color= red] height=1.0
Cylinder: subclass of Circle[radius 1.0, color= red] height=10.0
Cylinder: subclass of Circle[radius 2.0, color= red] height=10.0

D. Task 2

```
1 package com.practice;
2
3 public class Main {
4     public static void main(String[] args) {
5         Shape shape = new Shape();
6         Circle circle = new Circle();
7         Rectangle rectangle = new Rectangle();
8         Square square = new Square();
9
10        //printan
11        System.out.println(shape);
12        System.out.println("_____");
13        System.out.println(circle);
14        System.out.println("_____");
15        System.out.println(rectangle);
16        System.out.println("_____");
17        System.out.println(square);
18        System.out.println("_____");
19    }
20 }
21
```

Problems @ Javadoc Declaration Console

<terminated> Main [Java Application] C:\Program Files\Java\jdk-16.0.2\bin\javaw.exe (Oct 26, 2021, 3:30:08 PM – 3:30

Shape[color= red, filled=true]

Circle[Shape[color= red, filled=true], radius= 1.0]

Square[Rectangle[Shape[color= red, filled=true],width= 1.0, length= 1.0]

Square[Square[Rectangle[Shape[color= red, filled=true],width= 1.0, length= 1.0]]

Jadi ini hasil dari tugas task 2, untuk source code lebih lengkap terdapat di github