

**PRAKTIKUM**  
**PEMROGRAMAN BERORIENTASI OBJEK**



**Disusun Oleh :**  
**Fariz Taufiqul Hafidz**  
**L200210192**

**PROGRAM STUDI TEKNIK INFORMATIKA**  
**FAKULTAS KOMUNIKASI DAN INFORMATIKA**  
**UNIVERSITAS MUHAMMADIYAH SURAKARTA**  
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### 9.3. LATIHAN

Dengan menggunakan class `MethodAbstrak` pada Program 5 di atas, buatlah class `PersegiPanjang`, `JajarGenjang`, `Lingkaran`, dan `Segitiga`! Selanjutnya implementasikan `methodluas()` dan `keliling()` yang sesuai dengan perhitungan masing-masing class.

#### Class MethodAbstrak

```
src > MethodAbstrak > methodAbstrak.java > methodAbstrak
1  package MethodAbstrak;
2
3  public abstract class methodAbstrak {
4
5      public abstract int luas ();
6      public abstract int keliling ();
7
8      public int getLuas () {
9          return luas();
10     }
11
12     public int getKell () {
13         return keliling();
14     }
15 }
```

#### Class PersegiPanjang

```
src > MethodAbstrak > PersegiPanjang.java > PersegiPanjang
1  package MethodAbstrak;
2
3  public class PersegiPanjang extends methodAbstrak {
4
5      int a = 2;
6      int b = 4;
7
8      public int luas() {
9          return a*b;
10     }
11
12     public int keliling() {
13         return 2*(a+b);
14     }
15 }
```

## Class JajarGenjang

```
src > MethodAbstract > JajarGenjang.java > JajarGenjang > b
1  package MethodAbstract;
2
3  public class JajarGenjang extends methodAbstract {
4
5      int a = 2;
6      int b = 4;
7      int t = 6;
8
9      public int luas() {
10         return a*t;
11     }
12
13     public int keliling() {
14         return 2*(a+b);
15     }
16 }
```

## Class Lingkaran

```
src > MethodAbstract > Lingkaran.java > Lingkaran
1  package MethodAbstract;
2
3  public class Lingkaran extends methodAbstract {
4
5      int r = 7;
6
7      public int luas() {
8         return 22/7*r;
9     }
10
11     public int keliling() {
12         return 2*22/7*r;
13     }
14 }
```

## Class Segitiga

```
src > MethodAbstract > Segitiga.java > Segitiga
1  package MethodAbstract;
2
3  public class Segitiga extends methodAbstract {
4
5      int a = 2;
6      int b = 4;
7      int c = 6;
8      int t = 8;
9
10     public int luas() {
11         return (a*t)/2;
12     }
13
14     public int keliling() {
15         return a+b+c;
16     }
17 }
```

## Class MethodMain

```
src > MethodAbstract > MethodMain.java > MethodMain
1  package MethodAbstract;
2
3  public class MethodMain {
4      public static void main(String[] args) {
5
6          Persegi psg = new Persegi();
7          System.out.println("Keliling Persegi = " + psg.getKell());
8          System.out.println("Luas Persegi = " + psg.getLuas());
9
10         PersegiPanjang pp = new PersegiPanjang();
11         System.out.println("Keliling Persegi Panjang = " + pp.getKell());
12         System.out.println("Luas Persegi Panjang = " + pp.getLuas());
13
14         JajarGenjang jg = new JajarGenjang();
15         System.out.println("Keliling Jajargenjang = " + jg.getKell());
16         System.out.println("Luas Jajargenjang = " + jg.getLuas());
17
18         Lingkaran lg = new Lingkaran();
19         System.out.println("Keliling Lingkaran = " + lg.getKell());
20         System.out.println("Luas Lingkaran = " + lg.getLuas());
21
22         Segitiga sg = new Segitiga();
23         System.out.println("Keliling Segitiga = " + sg.getKell());
24         System.out.println("Luas Segitiga = " + sg.getLuas());
25     }
26 }
```

### Output

```
PS C:\Users\Asus\.vscode\Praktikum_PBO_9>
s\Java\jdk-17.0.4.1\bin\java.exe' '-XX:+Sho
tikum_PBO_9\bin' 'MethodAbstract.MethodMain
Keliling Persegi = 20
Luas Persegi = 25
Keliling Persegi Panjang = 12
Luas Persegi Panjang = 8
Keliling Jajargenjang = 12
Luas Jajargenjang = 12
Keliling Lingkaran = 42
Luas Lingkaran = 21
Keliling Segitiga = 12
Luas Segitiga = 8
PS C:\Users\Asus\.vscode\Praktikum_PBO_9>
```

## 9.4. TUGAS

Buatlah class abstract untuk bangun ruang, dengan ketentuan memiliki method abstract untuk menghitung volume, dan luasSelimut/luasPermukaan. Selanjutnya buatlah class Balok, Kubus, Bola, Kerucut, dan PrismaSegitiga untuk mengimplementasikan method abstract tersebut!

### Class Abstract

```
1  package Tugas;
2
3  public abstract class RuangAbstrak {
4
5      public abstract int volume();
6      public abstract int luasPermukaan();
7
8      public int getVol() {
9          return volume();
10     }
11
12     public int getLp() {
13         return luasPermukaan();
14     }
15 }
```

## Class Balok

```
src > Tugas > Balok.java > Balok
1  package Tugas;
2
3  public class Balok extends RuangAbstrak {
4
5      int p = 2;
6      int l = 4;
7      int t = 6;
8
9      public int volume() {
10         return p*l*t;
11     }
12
13     public int luasPermukaan() {
14         return 2*((p*l)+(p*t)+(l*t));
15     }
16 }
```

## Class Kubus

```
src > Tugas > Kubus.java > Kubus
1  package Tugas;
2
3  public class Kubus extends RuangAbstrak {
4
5      int r = 2;
6
7      public int volume() {
8         return r*r*r;
9     }
10
11     public int luasPermukaan() {
12         return 6*r*r;
13     }
14 }
```

## Class Bola

```
src > Tugas > Bola.java > Bola
1  package Tugas;
2
3  public class Bola extends RuangAbstrak {
4
5      int r = 7;
6
7      public int volume() {
8          return (4/3)*(22/7)*r*r*r;
9      }
10
11     public int luasPermukaan() {
12         return 4*(22/7)*r*r;
13     }
14 }
```

## Class Kerucut

```
src > Tugas > Kerucut.java > Kerucut
1  package Tugas;
2
3  public class Kerucut extends RuangAbstrak {
4
5      int r = 7;
6      int s = 10;
7      int t = 12;
8
9      public int volume() {
10         return ((22/7)*r*r*t)/3;
11     }
12
13     public int luasPermukaan() {
14         return (22/7)*r*(r+s);
15     }
16 }
```

## Class PrismaSegitiga

```
src > Tugas > PrismaSegitiga.java > PrismaSegitiga
1  package Tugas;
2
3  public class PrismaSegitiga extends RuangAbstrak {
4
5      int ab = 4; // Panjang rusuk alas prisma segitiga
6      int bc = 3; // Panjang rusuk alas prisma segitiga
7      int ac = 5; // Panjang rusuk alas prisma segitiga
8      int t = 8; // Tinggi prisma segitiga
9
10     public int volume() {
11         return (bc*ab*t)/2;
12     }
13
14     public int luasPermukaan() {
15         return 2*((bc*ab)/2) + ((ab+bc+ac)*8) ;
16     }
17 }
```

## Class Demo

```
src > Tugas > Demo.java > Demo
1  package Tugas;
2
3  public class Demo {
4      Run | Debug
5      public static void main (String[] args) {
6
7          Balok bk = new Balok();
8          System.out.println("Volume Balok = " + bk.getVol());
9          System.out.println("Luas Permukaan Balok = " + bk.getLp());
10
11         Kubus ks = new Kubus();
12         System.out.println("Volume Kubus = " + ks.getVol());
13         System.out.println("Luas Permukaan Kubus = " + ks.getLp());
14
15         Bola ba = new Bola();
16         System.out.println("Volume Bola = " + ba.getVol());
17         System.out.println("Luas Permukaan Bola = " + ba.getLp());
18
19         Kerucut kt = new Kerucut();
20         System.out.println("Volume Kerucut = " + kt.getVol());
21         System.out.println("Luas Permukaan Kerucut = " + kt.getLp());
22
23         PrismaSegitiga ps = new PrismaSegitiga();
24         System.out.println("Volume PrismaSegitiga = " + ps.getVol());
25         System.out.println("Luas Permukaan PrismaSegitiga = " + ps.getLp());
26     }
```



## Output

```
PS C:\Users\Asus\.vscode\Praktikum_PBO_9>
  'C:\Program Files\Java\jdk-17.0.4.1\bin\ja
  '-cp' 'C:\Users\Asus\.vscode\Praktikum_PBO
Volume Balok = 48
Luas Permukaan Balok = 88
Volume Kubus = 8
Luas Permukaan Kubus = 24
Volume Bola = 1029
Luas Permukaan Bola = 588
Volume Kerucut = 588
Luas Permukaan Kerucut = 357
Volume PrismaSegitiga = 48
Luas Permukaan PrismaSegitiga = 108
PS C:\Users\Asus\.vscode\Praktikum_PBO_9>
```