

PRAKTIKUM
PEMROGRAMAN BERORIENTASI OBJEK
MODUL 9



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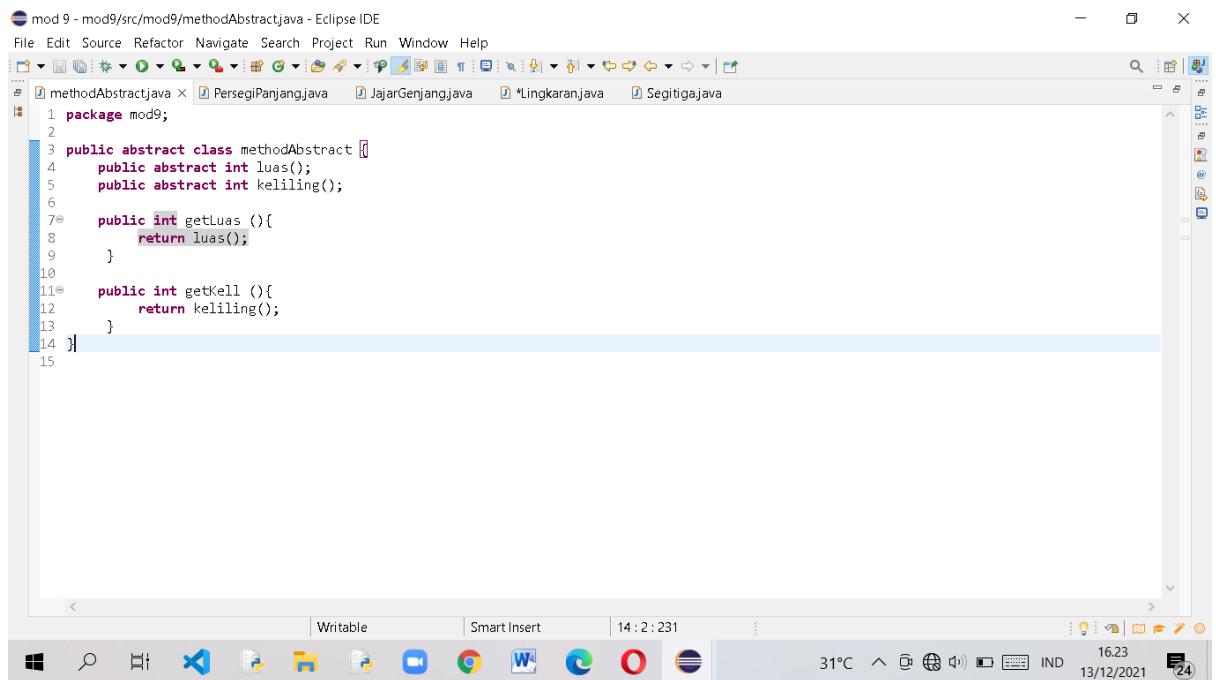
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PROGRAM STUDI
INFORMATIKA
FAKULTAS KOMUNIKASI DAN INFORMATIKA
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TAHUN 2021/2022

➤ Latihan

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

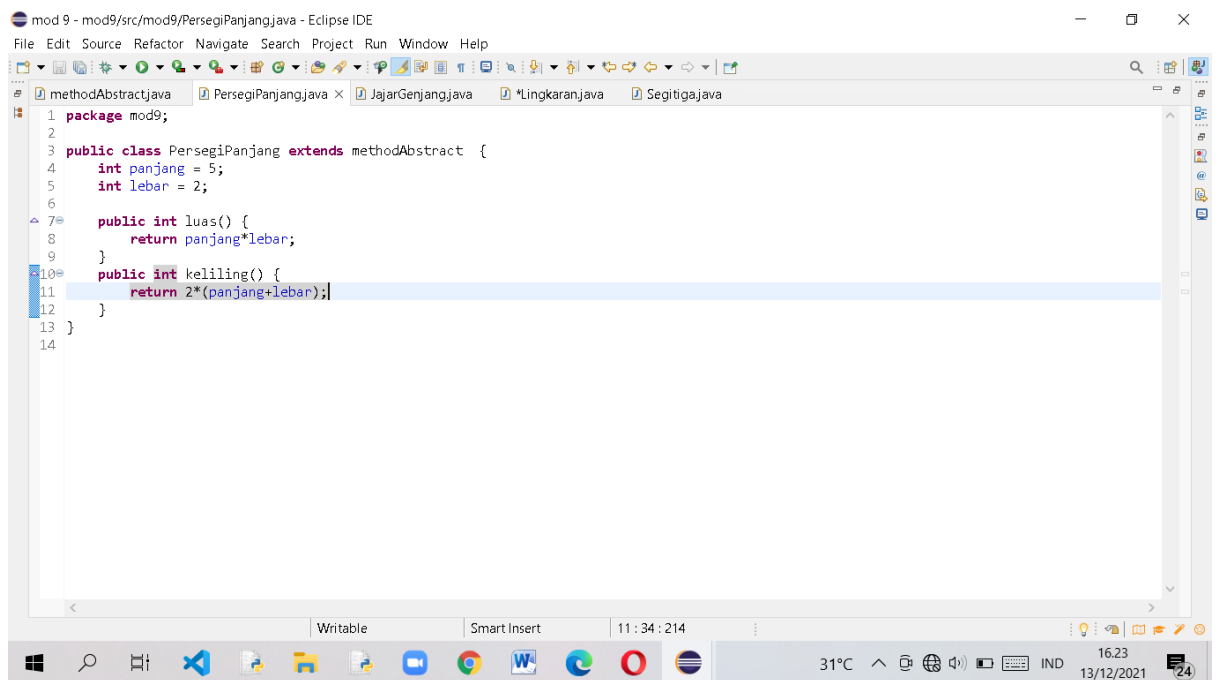
- Class methodAbstract



```
mod 9 - mod9/src/mod9/methodAbstract.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

1 package mod9;
2
3 public abstract class methodAbstract {
4     public abstract int luas();
5     public abstract int keliling();
6
7     public int getLuas () {
8         return luas();
9     }
10
11    public int getKell () {
12        return keliling();
13    }
14 }
15
```

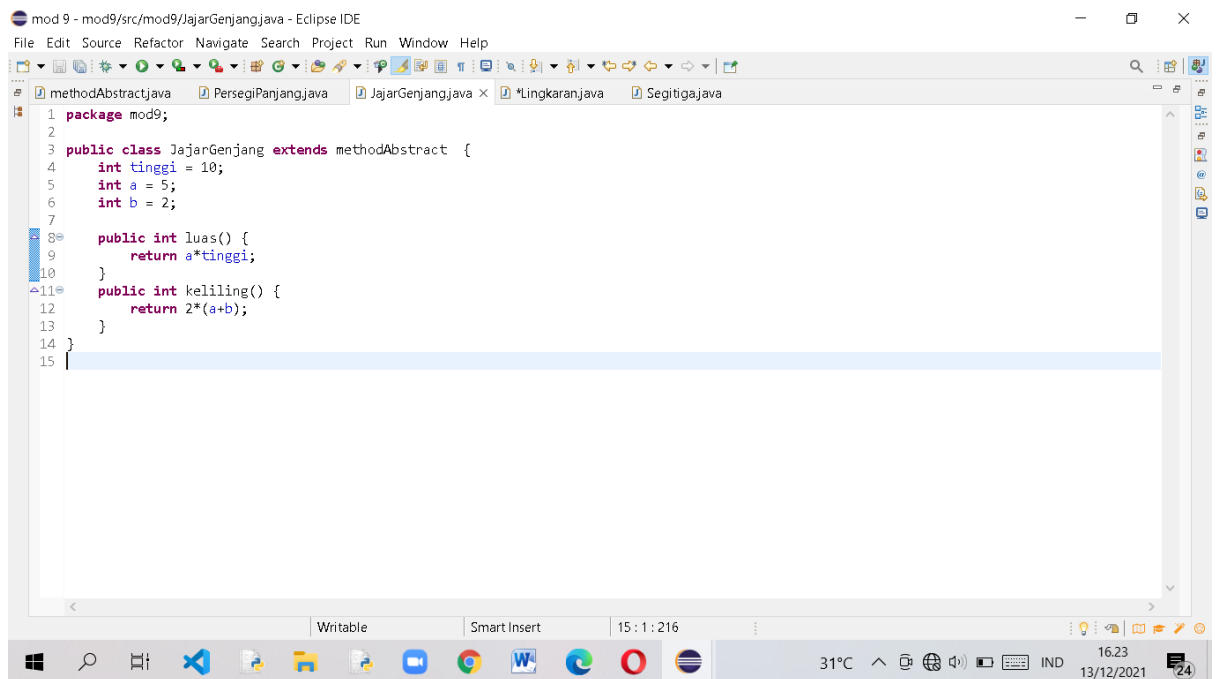
- Class PersegiPanjang



```
mod 9 - mod9/src/mod9/PersegiPanjang.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

1 package mod9;
2
3 public class PersegiPanjang extends methodAbstract {
4     int panjang = 5;
5     int lebar = 2;
6
7     public int luas() {
8         return panjang*lebar;
9     }
10    public int keliling() {
11        return 2*(panjang+lebar);
12    }
13 }
14
```

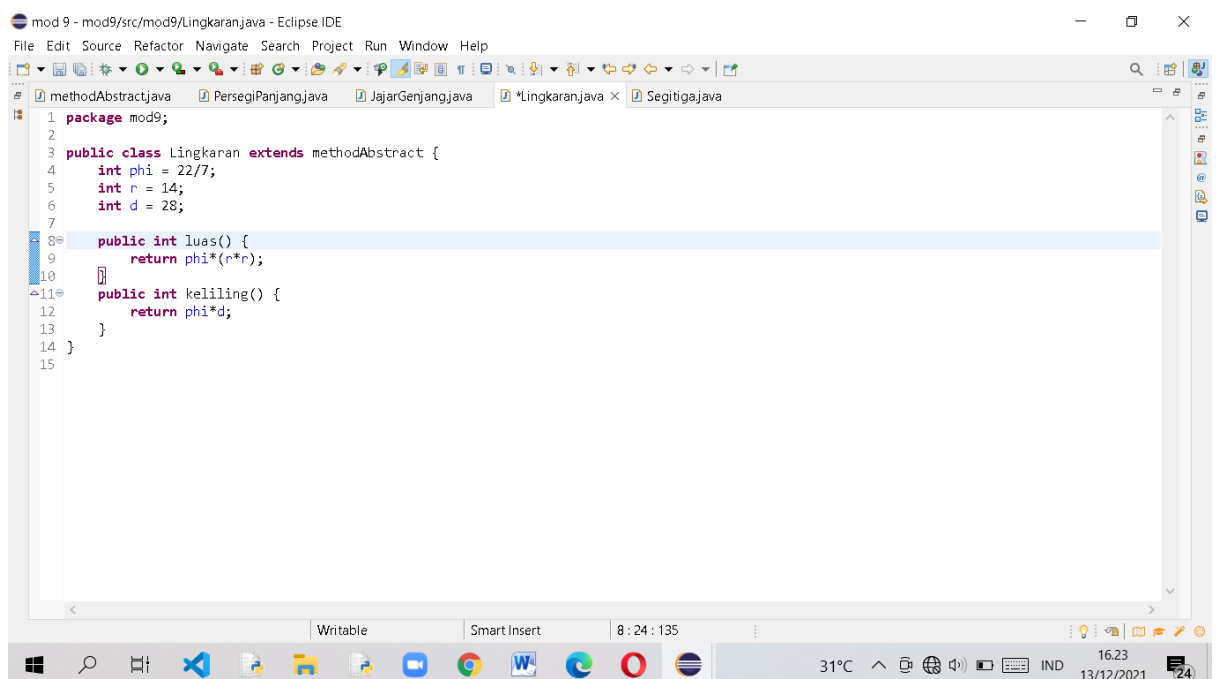
- Class JajarGenjang



The screenshot shows the Eclipse IDE with the file `JajarGenjang.java` open. The code defines a class `JajarGenjang` that extends `methodAbstract`. It includes attributes `tinggi`, `a`, and `b`, and methods `luas()` and `keliling()`.

```
1 package mod9;
2
3 public class JajarGenjang extends methodAbstract {
4     int tinggi = 10;
5     int a = 5;
6     int b = 2;
7
8     public int luas() {
9         return a*tinggi;
10    }
11    public int keliling() {
12        return 2*(a+b);
13    }
14 }
15
```

- Class Lingkaran



The screenshot shows the Eclipse IDE with the file `Lingkaran.java` open. The code defines a class `Lingkaran` that extends `methodAbstract`. It includes attributes `phi`, `r`, and `d`, and methods `luas()` and `keliling()`.

```
1 package mod9;
2
3 public class Lingkaran extends methodAbstract {
4     int phi = 22/7;
5     int r = 14;
6     int d = 28;
7
8     public int luas() {
9         return phi*(r*r);
10    }
11    public int keliling() {
12        return phi*d;
13    }
14 }
15
```

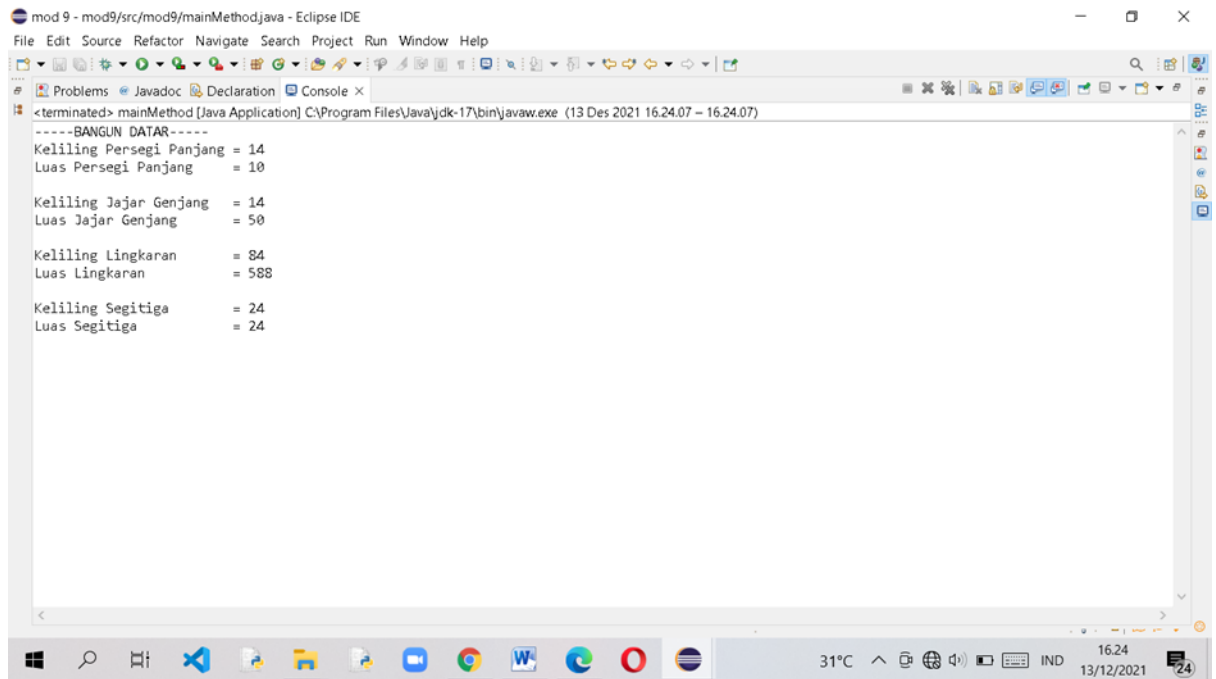
- Class Segitiga

```
1 package mod9;
2
3 public class Segitiga extends methodAbstract {
4     int alas= 4;
5     int tinggi = 12;
6     int sisiMiring = 8;
7
8     public int luas() {
9         return (alas*tinggi)/2;
10    }
11    public int keliling() {
12        return alas+tinggi+sisiMiring;
13    }
14 }
15
16
```

- Class mainMethod

```
1 package mod9;
2
3 public class mainMethod {
4     public static void main(String [] args) {
5         PersegiPanjang psgpjg = new PersegiPanjang();
6         System.out.println("-----BANGUN DATAR-----");
7         System.out.println("Keliling Persegi Panjang = " + psgpjg.getKell() + "\n" +
8             "Luas Persegi Panjang = " + psgpjg.getLuas() + "\n");
9
10        JajarGenjang jjrgjg = new JajarGenjang();
11        System.out.println("Keliling Jajar Genjang = " + jjrgjg.getKell() + "\n" +
12            "Luas Jajar Genjang = " + jjrgjg.getLuas() + "\n");
13
14        Lingkaran lingkaran = new Lingkaran();
15        System.out.println("Keliling Lingkaran = " + lingkaran.getKell() + "\n" +
16            "Luas Lingkaran = " + lingkaran.getLuas() + "\n");
17
18        Segitiga sgtg = new Segitiga();
19        System.out.println("Keliling Segitiga = " + sgtg.getKell() + "\n" +
20            "Luas Segitiga = " + sgtg.getLuas() + "\n");
21    }
22 }
23
```

- Output



```
mod 9 - mod9/src/mod9/mainMethod.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

<terminated> mainMethod [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13 Des 2021 16:24:07)

-----BANGUN DATAR-----
Keliling Persegi Panjang = 14
Luas Persegi Panjang     = 10

Keliling Jajar Genjang   = 14
Luas Jajar Genjang       = 50

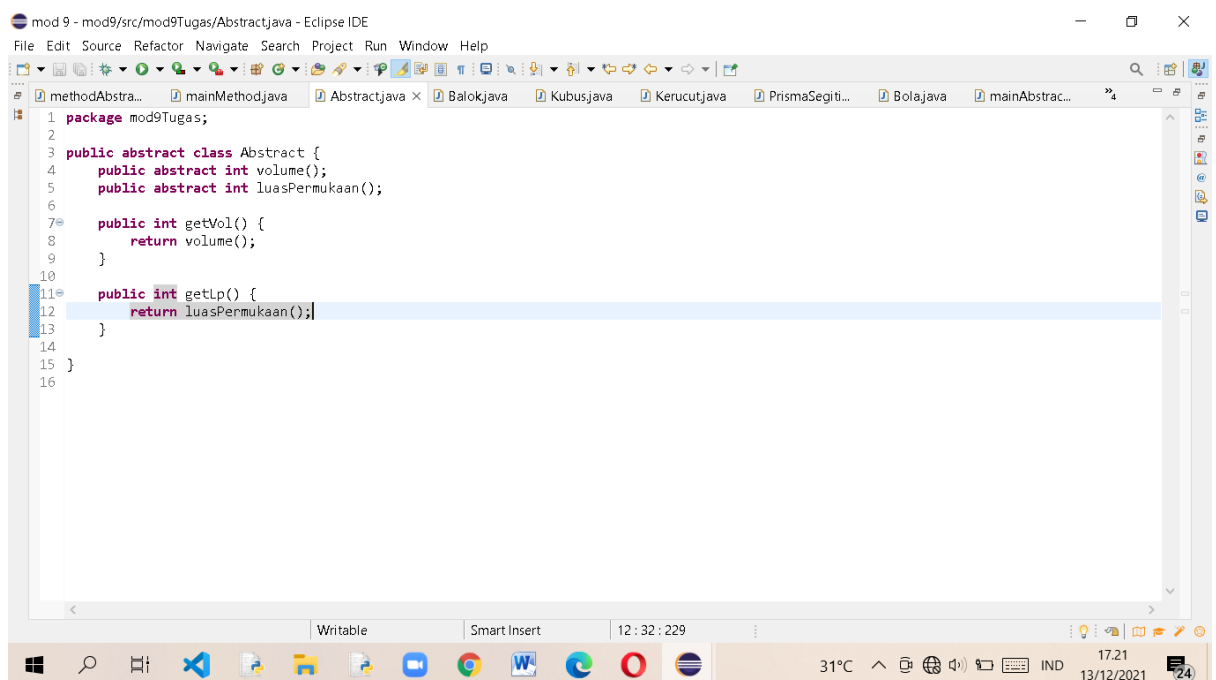
Keliling Lingkaran       = 84
Luas Lingkaran           = 588

Keliling Segitiga        = 24
Luas Segitiga            = 24
```

➤ 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



```
mod 9 - mod9/src/mod9Tugas/Abstract.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

package mod9Tugas;

public abstract class Abstract {
    public abstract int volume();
    public abstract int luasPermukaan();

    public int getVol() {
        return volume();
    }

    public int getLp() {
        return luasPermukaan();
    }
}
```

- Class Balok

```
mod 9 - mod9/src/mod9Tugas/Balok.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

1 package mod9Tugas;
2
3 public class Balok extends Abstract {
4     int p = 20;
5     int l = 5;
6     int t = 10;
7
8     public int volume() {
9         return p*l*t;
10    }
11    public int luasPermukaan() {
12        return (2*p*l) + (2*p*t) + (2*l*t);
13    }
14 }
15
16
```

Writable Smart Insert 12:45:219 31°C 17.21 13/12/2021

- Class Kubus

```
mod 9 - mod9/src/mod9Tugas/Kubus.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help

1 package mod9Tugas;
2
3 public class Kubus extends Abstract {
4     int r = 10;
5
6     public int volume() {
7         return r^3;
8     }
9
10    public int luasPermukaan() {
11        return 6 *(r^2);
12    }
13 }
14
```

Writable Smart Insert 11:19:167 31°C 17.21 13/12/2021

- Class Bola

The screenshot shows the Eclipse IDE with the file 'mod9Tugas/Bolajava'. The code defines a class 'Bola' that extends 'Abstract'. It has two attributes: 'r' (radius) and 'phi' (a constant). Two methods are implemented: 'volume()' and 'luasPermukaan()' (surface area).

```
1 package mod9Tugas;
2
3 public class Bola extends Abstract {
4     int r = 14;
5     int phi = 22/7;
6
7     public int volume() {
8         return 4/3*(phi*r*r*r);
9     }
10
11    public int luasPermukaan() {
12        return 2*phi*r*r;
13    }
14 }
15
```

The status bar at the bottom shows the time as 12:26:203 and the date as 13/12/2021.

- Class PrismaSegitiga

The screenshot shows the Eclipse IDE with the file 'mod9Tugas/PrismaSegitiga.java'. The code defines a class 'PrismaSegitiga' that extends 'Abstract'. It has three attributes: 'luasAlas' (base area), 'kelAlas' (perimeter of base), and 'tinggi' (height). Two methods are implemented: 'volume()' and 'luasPermukaan()' (surface area).

```
1 package mod9Tugas;
2
3 public class PrismaSegitiga extends Abstract {
4     int luasAlas = 20;
5     int kelAlas = 10;
6     int tinggi = 15;
7
8     public int volume() {
9         return luasAlas*tinggi;
10    }
11    public int luasPermukaan() {
12        return (2*luasAlas) + (kelAlas*tinggi);
13    }
14 }
15
```

The status bar at the bottom shows the time as 14:2:265 and the date as 13/12/2021.

- Class Kerucut

```
1 package mod9Tugas;
2
3 public class Kerucut extends Abstract {
4     int phi = 22/7;
5     int r = 14;
6     int s = 10;
7     int t = 6;
8
9     public int volume() {
10         return (phi*r*r*t)/3;
11     }
12
13     public int luasPermukaan() {
14         return phi*r*(r+s);
15     }
16 }
17
```

- Class mainAbstract

```
1 package mod9Tugas;
2
3 public class mainAbstract {
4     public static void main(String [] args) {
5         Balok blk = new Balok();
6         System.out.println("-----BANGUN RUANG-----");
7         System.out.println("Volume Balok = " + blk.getVol() + "\n" +
8             "Luas Permukaan Kubus = " + blk.getLp() + "\n");
9
10        Kubus kbs = new Kubus();
11        System.out.println("Volume Kubus = " + kbs.getVol() + "\n" +
12            "Luas Permukaan Kubus = " + kbs.getLp() + "\n");
13
14        Bola bl = new Bola();
15        System.out.println("Volume Bola = " + bl.getVol() + "\n" +
16            "Luas Permukaan Bola = " + bl.getLp() + "\n");
17
18        Kerucut krcut = new Kerucut();
19        System.out.println("Volume Kerucut = " + krcut.getVol() + "\n" +
20            "Luas Permukaan Kerucut = " + krcut.getLp() + "\n");
21
22        PrismaSegitiga ps = new PrismaSegitiga();
23        System.out.println("Volume Prisma Segitiga = " + ps.getVol() + "\n" +
24            "Luas Permukaan Prisma Segitiga = " + ps.getLp() + "\n");
25    }
26 }
27
```

- Output

