LAPORAN PRAKTIKUM PEMROGRAMAN BERORIENTASI OBYEK

MODUL 9

ABSTRACT CLASS

Disusun Oleh :

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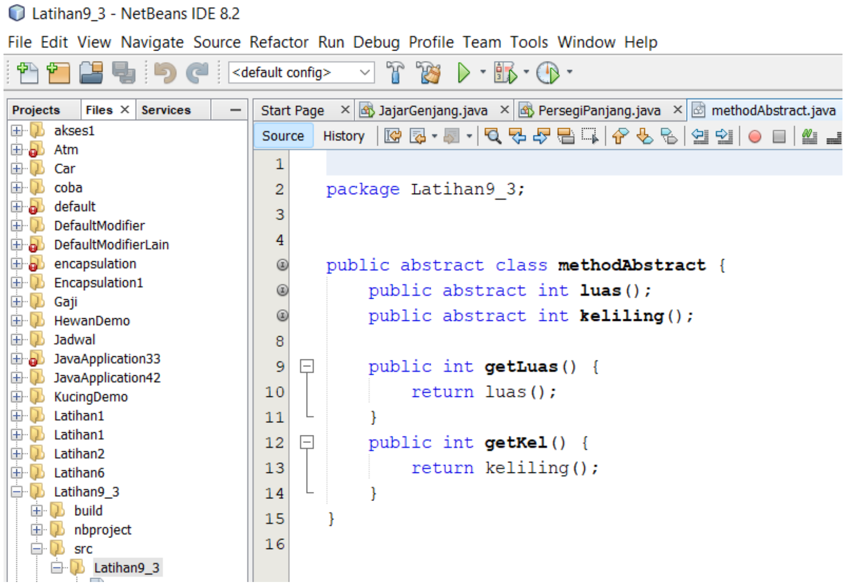
9.3 LATIHAN

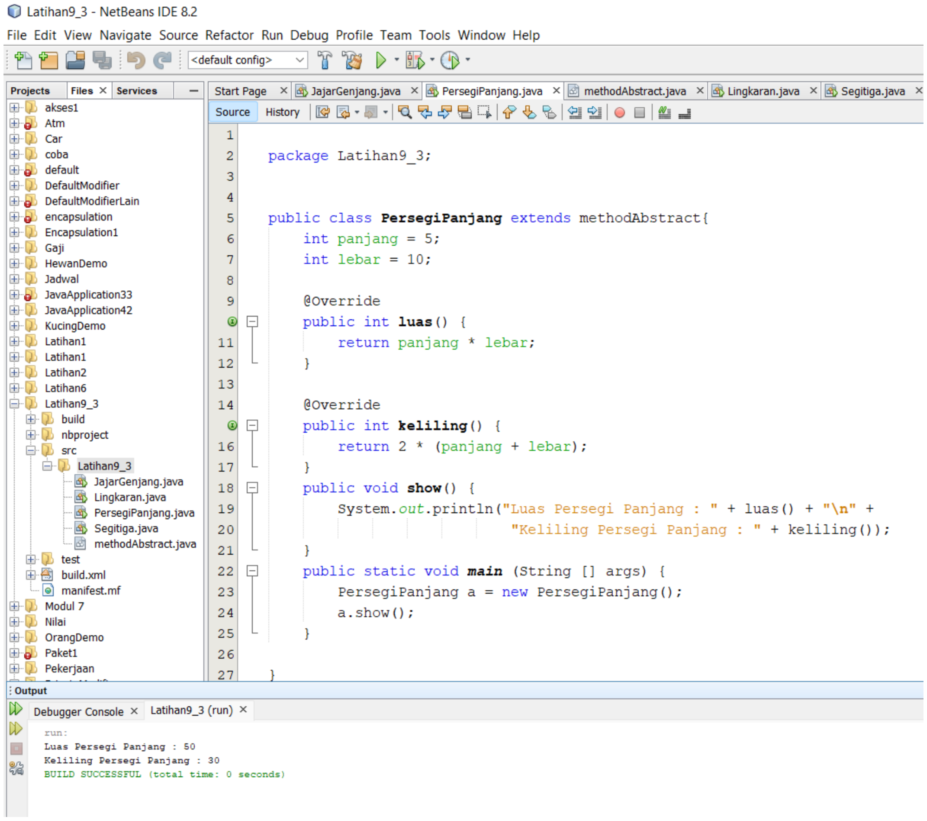
Dengan menggunakan class MethodAbstract pada program 5 diatas, buatlah class PersegiPanjang, JajarGenjang, Lingkaran, dan Segitiga! Selanjutnya implementasikan method luas() dan keliling() yang sesuai dengan perhitungan masing – masing.

- **MethodAbstract**



```java

package Latihan9_3;


public abstract class methodAbstract {
    public abstract int luas();
    public abstract int keliling();

    public int getLuas() {
        return luas();
    }
    public int getKel() {
        return keliling();
    }
}

```

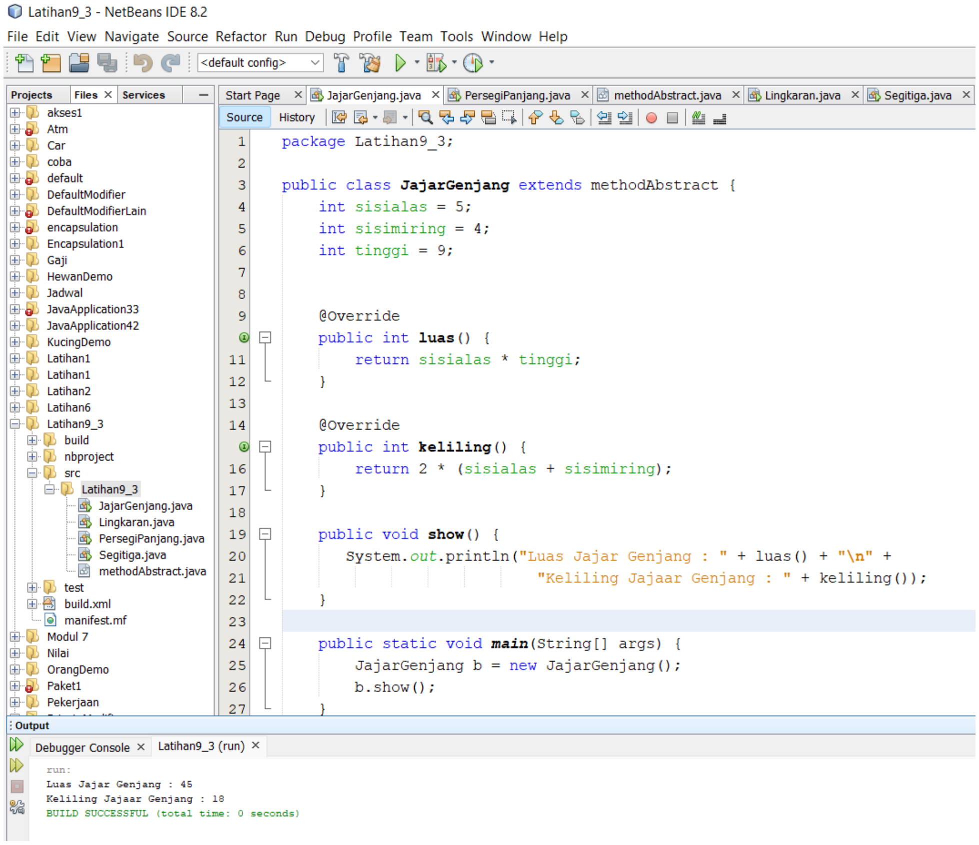
- **Persegi Panjang**



```java

package Latihan9_3;


public class PersegiPanjang extends methodAbstract{
    int panjang = 5;
    int lebar = 10;

    @Override
    public int luas() {
        return panjang * lebar;
    }

    @Override
    public int keliling() {
        return 2 * (panjang + lebar);
    }
    public void show() {
        System.out.println("Luas Persegi Panjang : " + luas() + "\n" +
                           "Keliling Persegi Panjang : " + keliling());
    }
    public static void main (String [] args) {
        PersegiPanjang a = new PersegiPanjang();
        a.show();
    }

}
```

```
run:
Luas Persegi Panjang : 50
Keliling Persegi Panjang : 30
BUILD SUCCESSFUL (total time: 0 seconds)
```

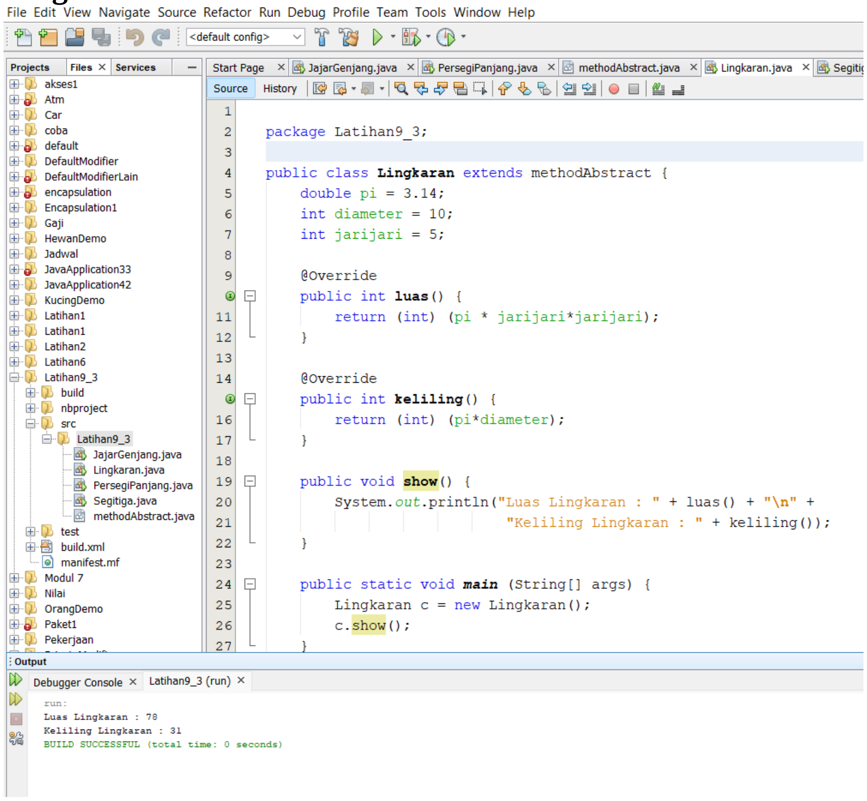
- ## Jajar Genjang



```java
package Latihan9_3;

public class JajarGenjang extends methodAbstract {
    int sisialas = 5;
    int sisimiring = 4;
    int tinggi = 9;


    @Override
    public int luas() {
        return sisialas * tinggi;
    }

    @Override
    public int keliling() {
        return 2 * (sisialas + sisimiring);
    }

    public void show() {
       System.out.println("Luas Jajar Genjang : " + luas() + "\n" +
                          "Keliling Jajaar Genjang : " + keliling());
    }

    public static void main(String[] args) {
        JajarGenjang b = new JajarGenjang();
        b.show();
    }
```

```
run:
Luas Jajar Genjang : 45
Keliling Jajaar Genjang : 18
BUILD SUCCESSFUL (total time: 0 seconds)
```

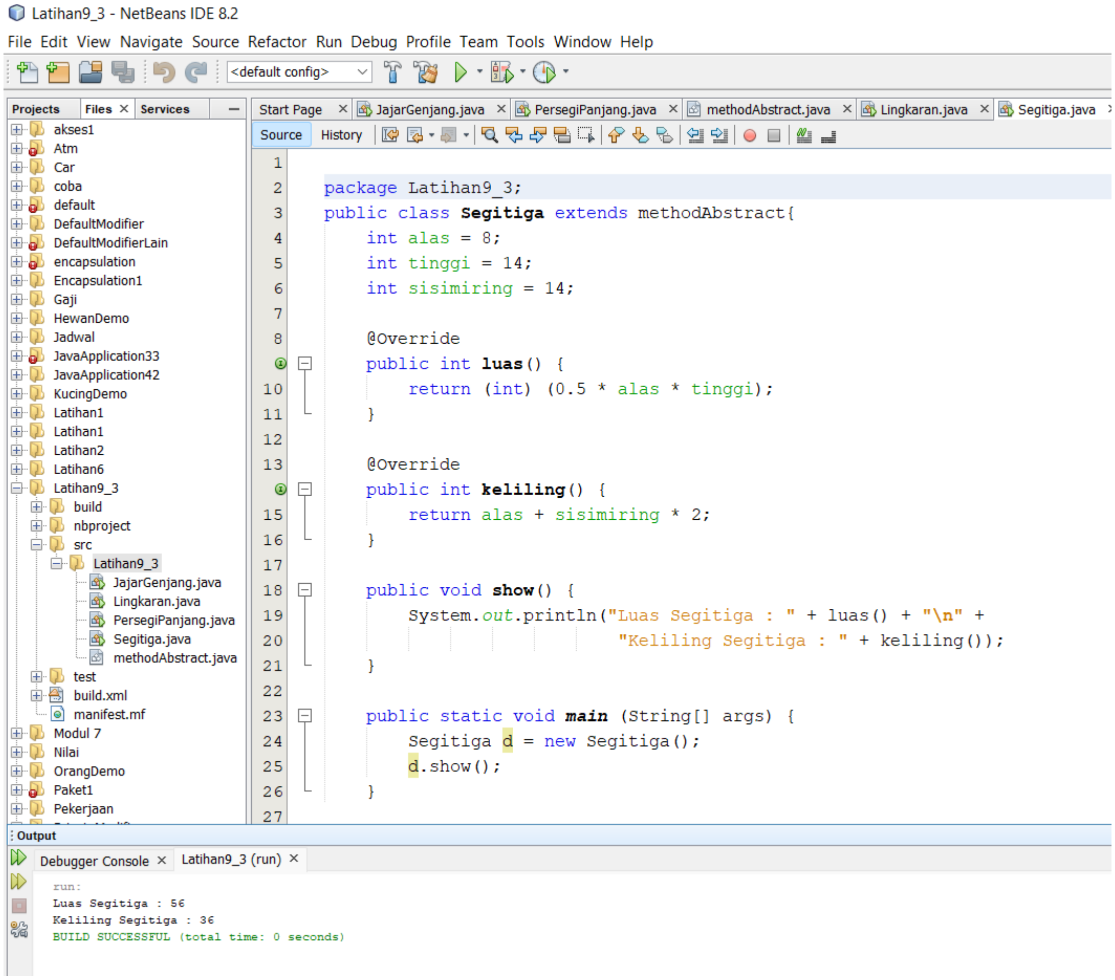
- ## Lingkaran



```java

package Latihan9_3;

public class Lingkaran extends methodAbstract {
    double pi = 3.14;
    int diameter = 10;
    int jarijari = 5;

    @Override
    public int luas() {
        return (int) (pi * jarijari*jarijari);
    }

    @Override
    public int keliling() {
        return (int) (pi*diameter);
    }

    public void show() {
        System.out.println("Luas Lingkaran : " + luas() + "\n" +
                           "Keliling Lingkaran : " + keliling());
    }

    public static void main (String[] args) {
        Lingkaran c = new Lingkaran();
        c.show();
    }
```

```
run:
Luas Lingkaran : 78
Keliling Lingkaran : 31
BUILD SUCCESSFUL (total time: 0 seconds)
```

- **Segitiga**



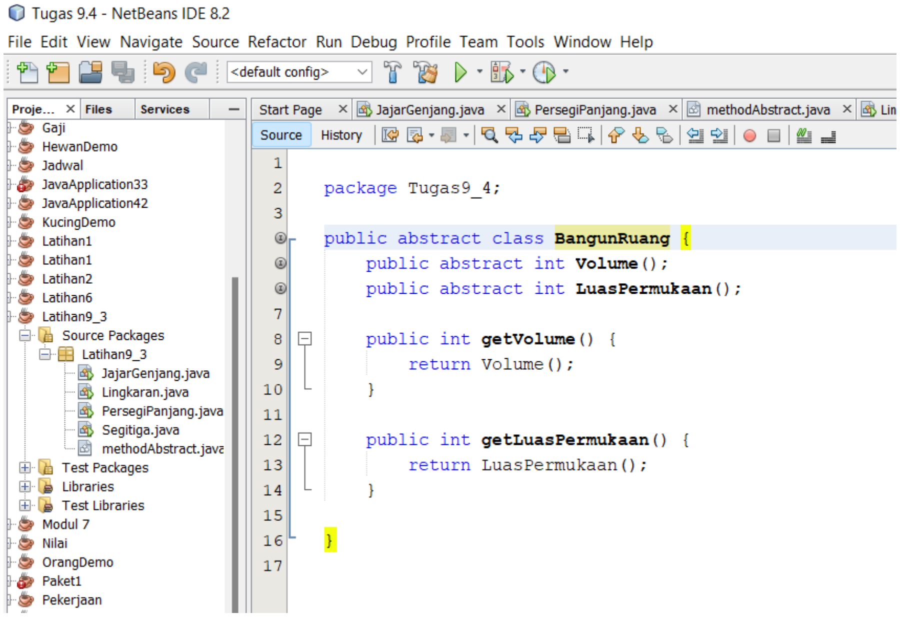
```java

package Latihan9_3;
public class Segitiga extends methodAbstract{
    int alas = 8;
    int tinggi = 14;
    int sisimiring = 14;

    @Override
    public int luas() {
        return (int) (0.5 * alas * tinggi);
    }

    @Override
    public int keliling() {
        return alas + sisimiring * 2;
    }

    public void show() {
        System.out.println("Luas Segitiga : " + luas() + "\n" +
                           "Keliling Segitiga : " + keliling());
    }

    public static void main (String[] args) {
        Segitiga d = new Segitiga();
        d.show();
    }

```

```
run:
Luas Segitiga : 56
Keliling Segitiga : 36
BUILD SUCCESSFUL (total time: 0 seconds)
```

9.4 TUGAS

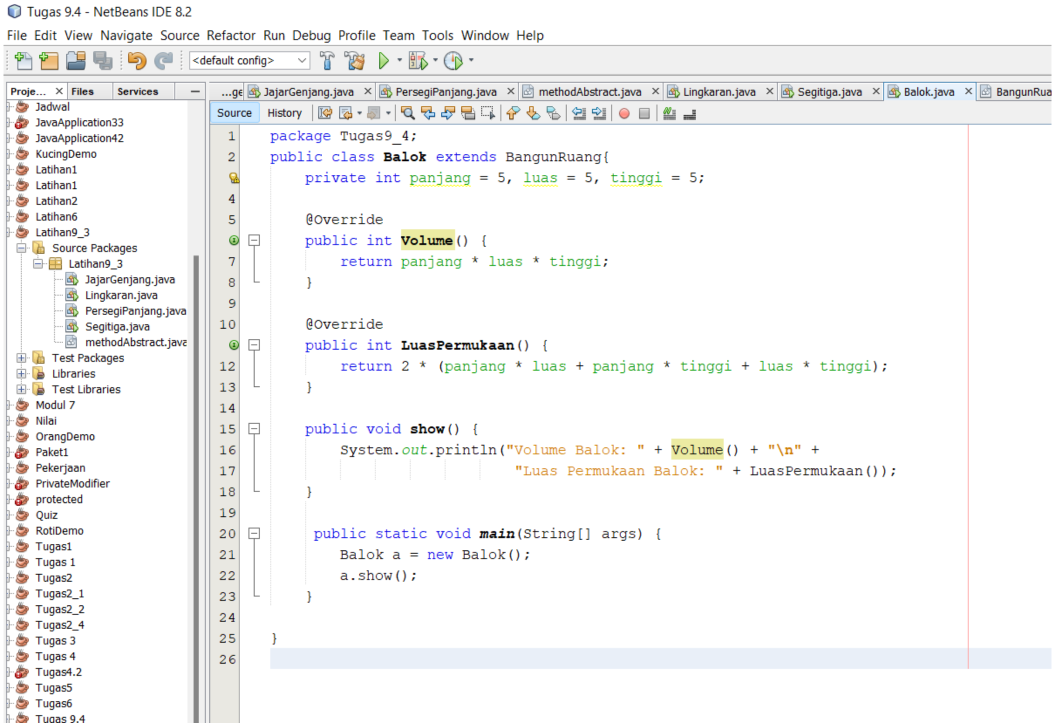
Buatlah class abstract untuk bangun ruang, dengan ketentuan memiliki method abstract untuk menghitung volume dan luas selimut/luas permukaan. Selanjutnya buatlah class Balok, Kubus, Bola, Kerucut, dan PrismaSegitiga untuk mengimplementasikan method abstract tersebut!

- Bangun Ruang



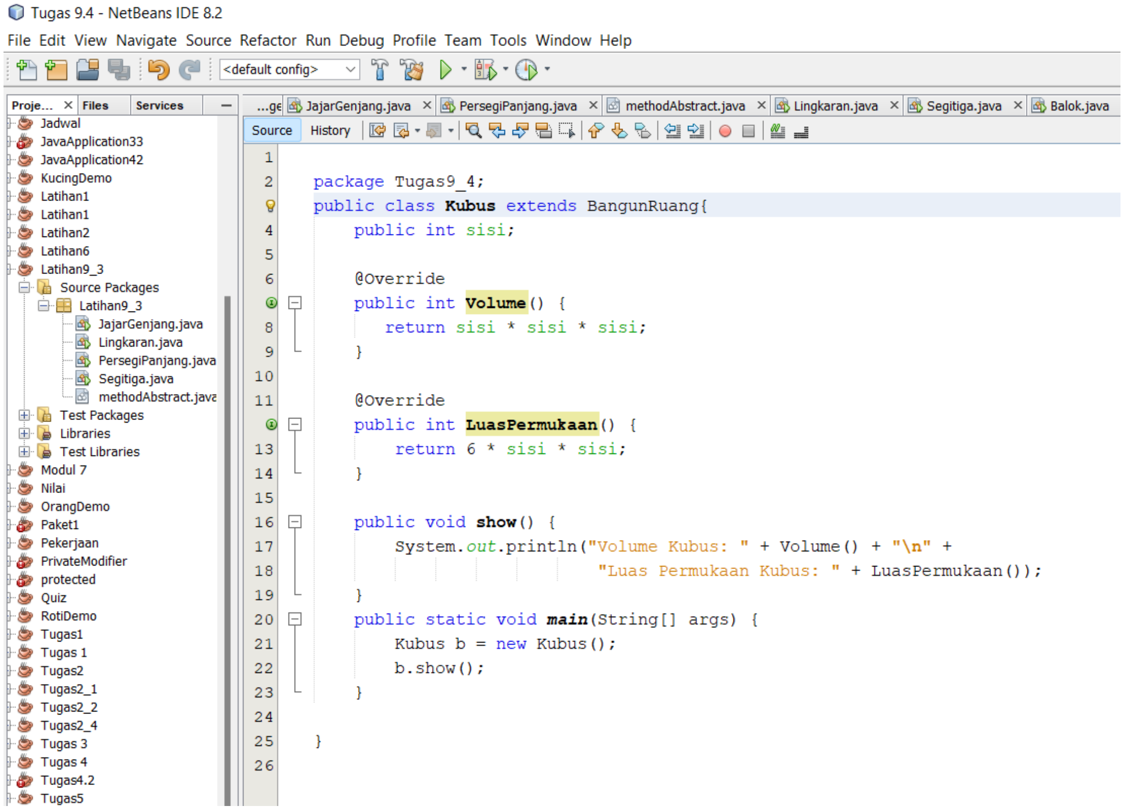
```

package Tugas9_4;

public abstract class BangunRuang {
    public abstract int Volume();
    public abstract int LuasPermukaan();

    public int getVolume() {
        return Volume();
    }

    public int getLuasPermukaan() {
        return LuasPermukaan();
    }

}

```

- Balok



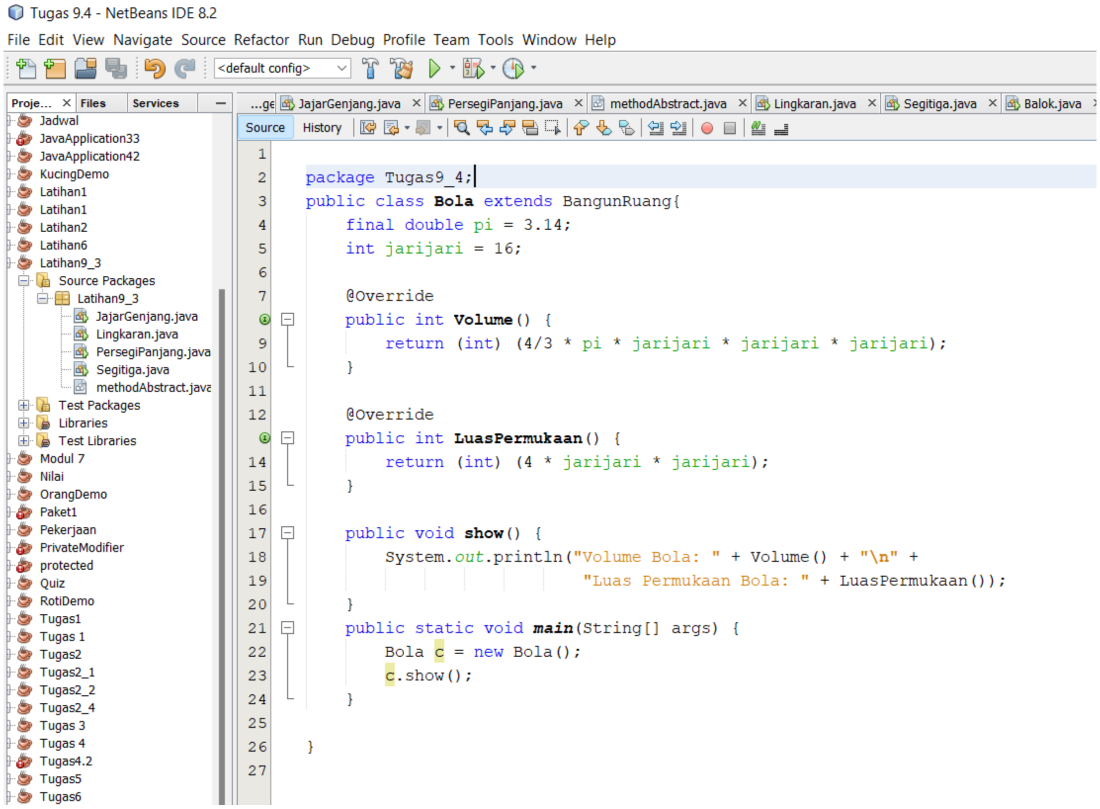
```
package Tugas9_4;
public class Balok extends BangunRuang{
    private int panjang = 5, luas = 5, tinggi = 5;

    @Override
    public int Volume() {
        return panjang * luas * tinggi;
    }

    @Override
    public int LuasPermukaan() {
        return 2 * (panjang * luas + panjang * tinggi + luas * tinggi);
    }

    public void show() {
        System.out.println("Volume Balok: " + Volume() + "\n" +
                          "Luas Permukaan Balok: " + LuasPermukaan());
    }

     public static void main(String[] args) {
        Balok a = new Balok();
        a.show();
    }

}

```

- Kubus



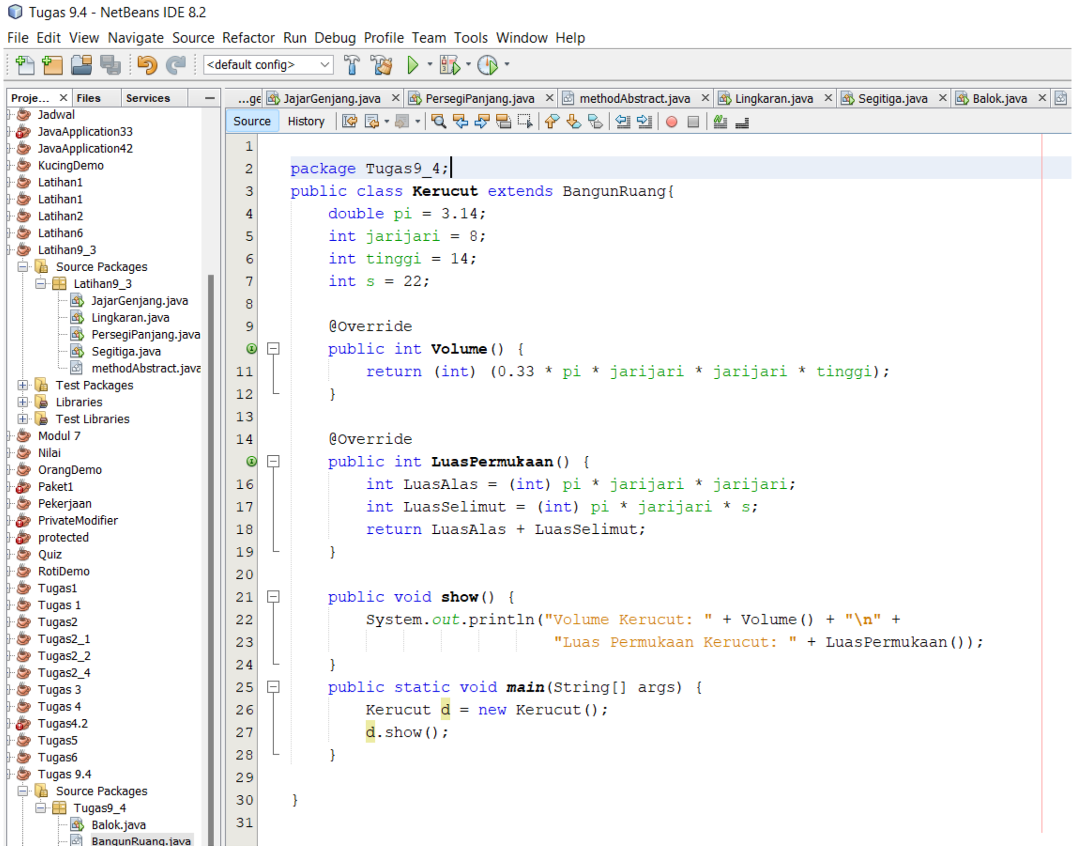
```java

package Tugas9_4;
public class Kubus extends BangunRuang{
    public int sisi;

    @Override
    public int Volume() {
        return sisi * sisi * sisi;
    }

    @Override
    public int LuasPermukaan() {
        return 6 * sisi * sisi;
    }

    public void show() {
        System.out.println("Volume Kubus: " + Volume() + "\n" +
                "Luas Permukaan Kubus: " + LuasPermukaan());
    }
    public static void main(String[] args) {
        Kubus b = new Kubus();
        b.show();
    }

}

```

- Bola



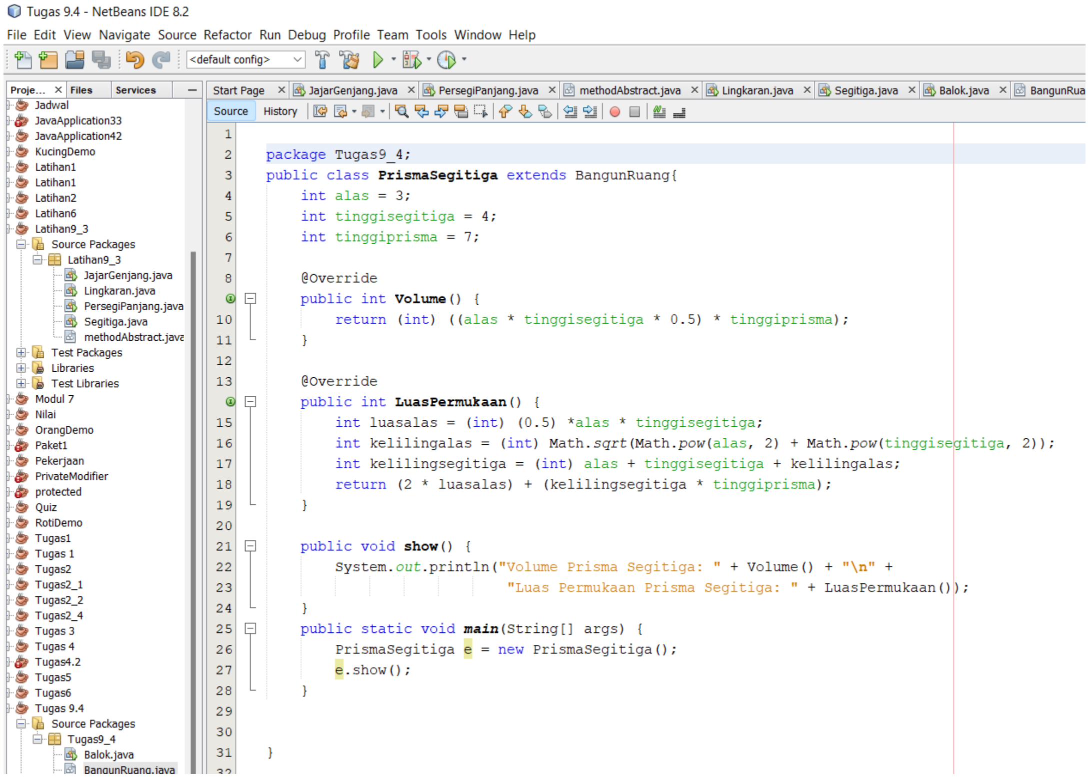
```java

package Tugas9_4;
public class Bola extends BangunRuang{
    final double pi = 3.14;
    int jarijari = 16;

    @Override
    public int Volume() {
        return (int) (4/3 * pi * jarijari * jarijari * jarijari);
    }

    @Override
    public int LuasPermukaan() {
        return (int) (4 * jarijari * jarijari);
    }

    public void show() {
        System.out.println("Volume Bola: " + Volume() + "\n" +
                "Luas Permukaan Bola: " + LuasPermukaan());
    }
    public static void main(String[] args) {
        Bola c = new Bola();
        c.show();
    }

}

```

- Kerucut



```java

package Tugas9_4;
public class Kerucut extends BangunRuang{
    double pi = 3.14;
    int jarijari = 8;
    int tinggi = 14;
    int s = 22;

    @Override
    public int Volume() {
        return (int) (0.33 * pi * jarijari * jarijari * tinggi);
    }

    @Override
    public int LuasPermukaan() {
        int LuasAlas = (int) pi * jarijari * jarijari;
        int LuasSelimut = (int) pi * jarijari * s;
        return LuasAlas + LuasSelimut;
    }

    public void show() {
        System.out.println("Volume Kerucut: " + Volume() + "\n" +
                           "Luas Permukaan Kerucut: " + LuasPermukaan());
    }
    public static void main(String[] args) {
        Kerucut d = new Kerucut();
        d.show();
    }

}

```

- Prisma Segita



```java

package Tugas9_4;
public class PrismaSegitiga extends BangunRuang{
    int alas = 3;
    int tinggisegitiga = 4;
    int tinggiprisma = 7;

    @Override
    public int Volume() {
        return (int) ((alas * tinggisegitiga * 0.5) * tinggiprisma);
    }

    @Override
    public int LuasPermukaan() {
        int luasalas = (int) (0.5) *alas * tinggisegitiga;
        int kelilingalas = (int) Math.sqrt(Math.pow(alas, 2) + Math.pow(tinggisegitiga, 2));
        int kelilingsegitiga = (int) alas + tinggisegitiga + kelilingalas;
        return (2 * luasalas) + (kelilingsegitiga * tinggiprisma);
    }

    public void show() {
        System.out.println("Volume Prisma Segitiga: " + Volume() + "\n" +
                           "Luas Permukaan Prisma Segitiga: " + LuasPermukaan());
    }
    public static void main(String[] args) {
        PrismaSegitiga e = new PrismaSegitiga();
        e.show();
    }


}
```