

OBJECT ORIENTED PROGRAMMING LABORATORY WORK

MODULE 2



CREATED BY :

KURNIAWAN BAGASKARA

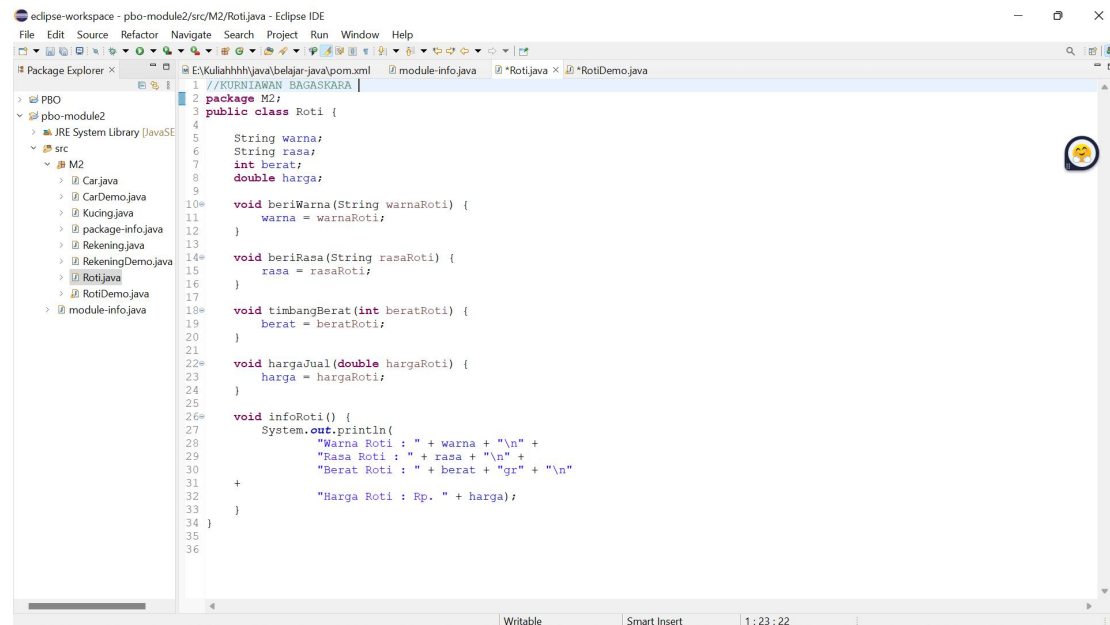
L20021253

INFORMATICS STUDY PROGRAM

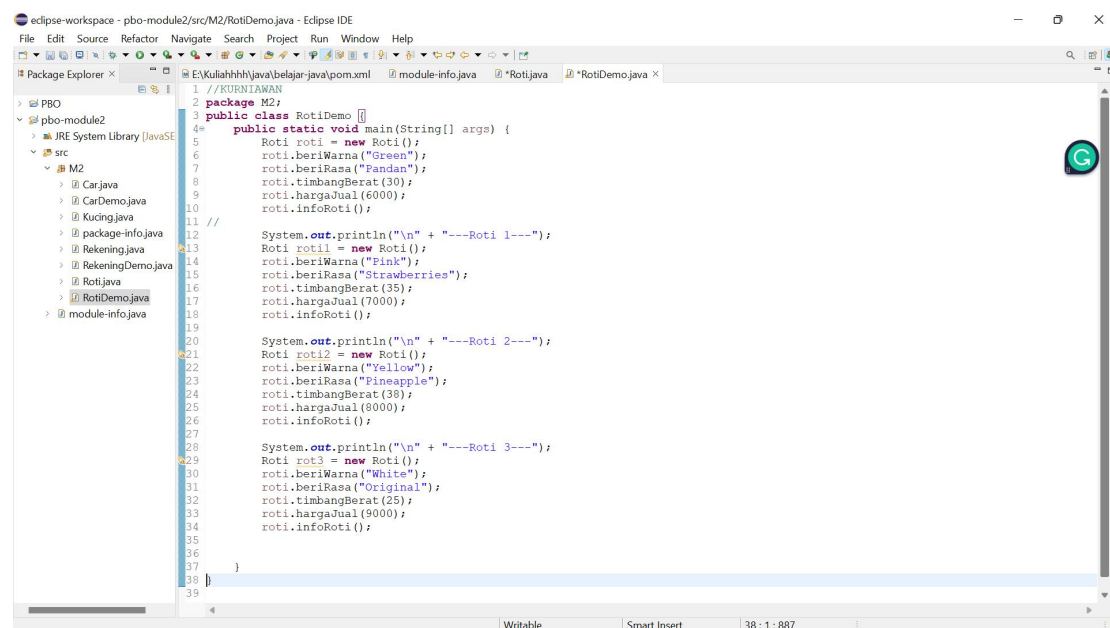
FACULTY OF COMMUNICATION AND INFORMATION SCIENCE

MUHAMMADIYAH SURAKARTA UNIVERSITY

1. Modify the Demo Bread class and create 3 new objects:

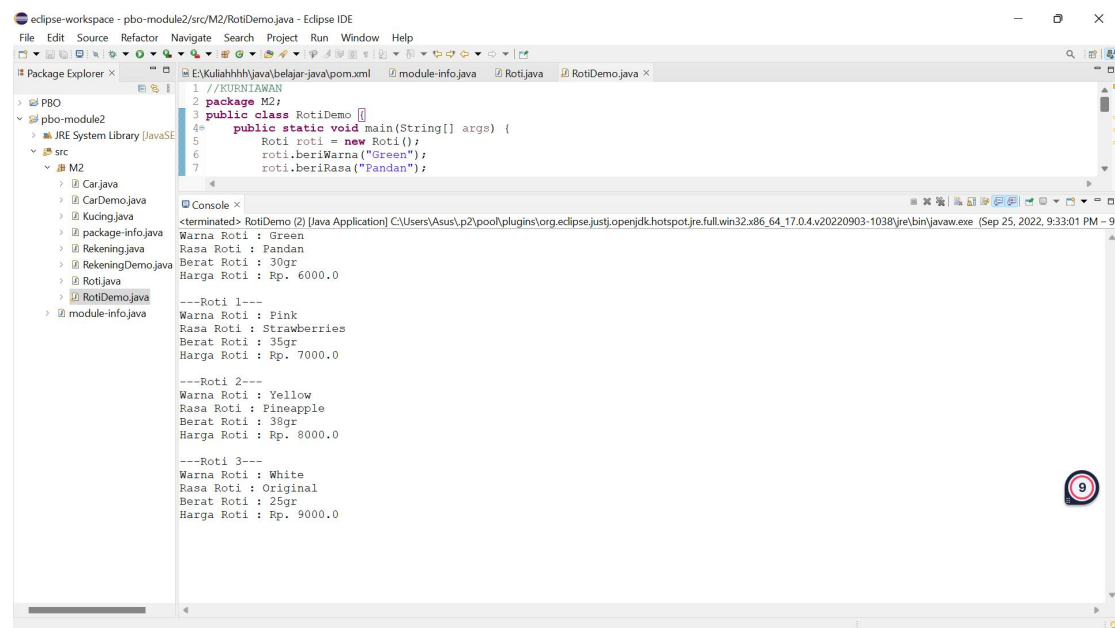


```
1 //KURNIAWAN BAGASKARA
2 package M2;
3 public class Roti {
4
5     String warna;
6     String rasa;
7     int berat;
8     double harga;
9
10    void beriWarna(String warnaRoti) {
11        warna = warnaRoti;
12    }
13
14    void beriRasa(String rasaRoti) {
15        rasa = rasaRoti;
16    }
17
18    void timbangBerat(int beratRoti) {
19        berat = beratRoti;
20    }
21
22    void hargaJual(double hargaRoti) {
23        harga = hargaRoti;
24    }
25
26    void infoRoti() {
27        System.out.println(
28            "Warna Roti : " + warna + "\n" +
29            "Rasa Roti : " + rasa + "\n" +
30            "Berat Roti : " + berat + "gr" + "\n"
31            +
32            "Harga Roti : Rp. " + harga);
33    }
34 }
35
36
```



```
1 //KURNIAWAN
2 package M2;
3 public class RotiDemo {
4     public static void main(String[] args) {
5         Roti roti = new Roti();
6         roti.beriWarna("Green");
7         roti.beriRasa("Pandan");
8         roti.timbangBerat(30);
9         roti.hargaJual(6000);
10        roti.infoRoti();
11
12        System.out.println("\n" + "----Roti 1---");
13        Roti roti1 = new Roti();
14        roti1.beriWarna("Pink");
15        roti1.beriRasa("Strawberries");
16        roti1.timbangBerat(35);
17        roti1.hargaJual(7000);
18        roti1.infoRoti();
19
20        System.out.println("\n" + "----Roti 2---");
21        Roti roti2 = new Roti();
22        roti2.beriWarna("Yellow");
23        roti2.beriRasa("Pineapple");
24        roti2.timbangBerat(38);
25        roti2.hargaJual(8000);
26        roti2.infoRoti();
27
28        System.out.println("\n" + "----Roti 3---");
29        Roti roti3 = new Roti();
30        roti3.beriWarna("White");
31        roti3.beriRasa("Original");
32        roti3.timbangBerat(25);
33        roti3.hargaJual(9000);
34        roti3.infoRoti();
35
36    }
37 }
38
39
```

Output:



```
1 //KURNIAWAN
2 package M2;
3 public class RotiDemo {
4     public static void main(String[] args) {
5         Roti roti = new Roti();
6         roti.beriWarna("Green");
7         roti.beriRasa("Pandan");
8     }
9 }

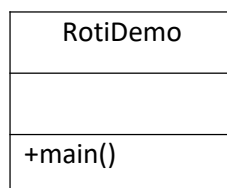
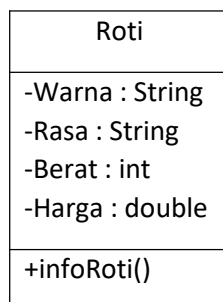
<terminated> RotiDemo (2) [Java Application] C:\Users\Asus\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_17.0.4.v20220903-1038\jre\bin\javaw.exe (Sep 25, 2022, 9:33:01 PM - 9:33:01 PM)
Warna Roti : Green
Rasa Roti : Pandan
Berat Roti : 30gr
Harga Roti : Rp. 6000.0

---Roti 1---
Warna Roti : Pink
Rasa Roti : Strawberries
Berat Roti : 35gr
Harga Roti : Rp. 7000.0

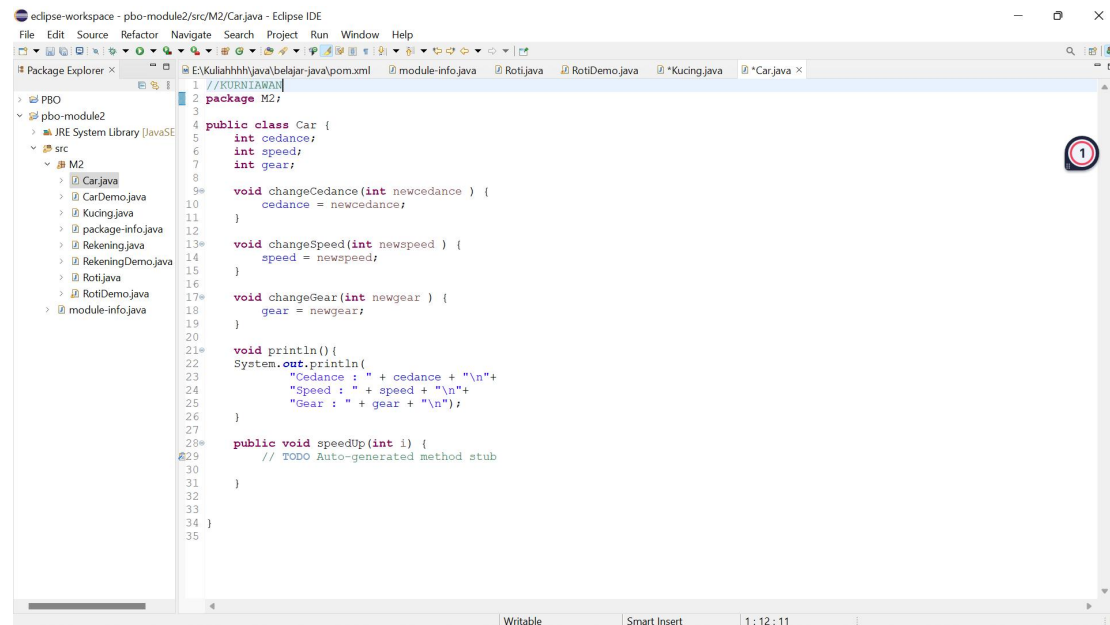
---Roti 2---
Warna Roti : Yellow
Rasa Roti : Pineapple
Berat Roti : 38gr
Harga Roti : Rp. 8000.0

---Roti 3---
Warna Roti : White
Rasa Roti : Original
Berat Roti : 25gr
Harga Roti : Rp. 9000.0
```

2. Class diagram of Bread Demo

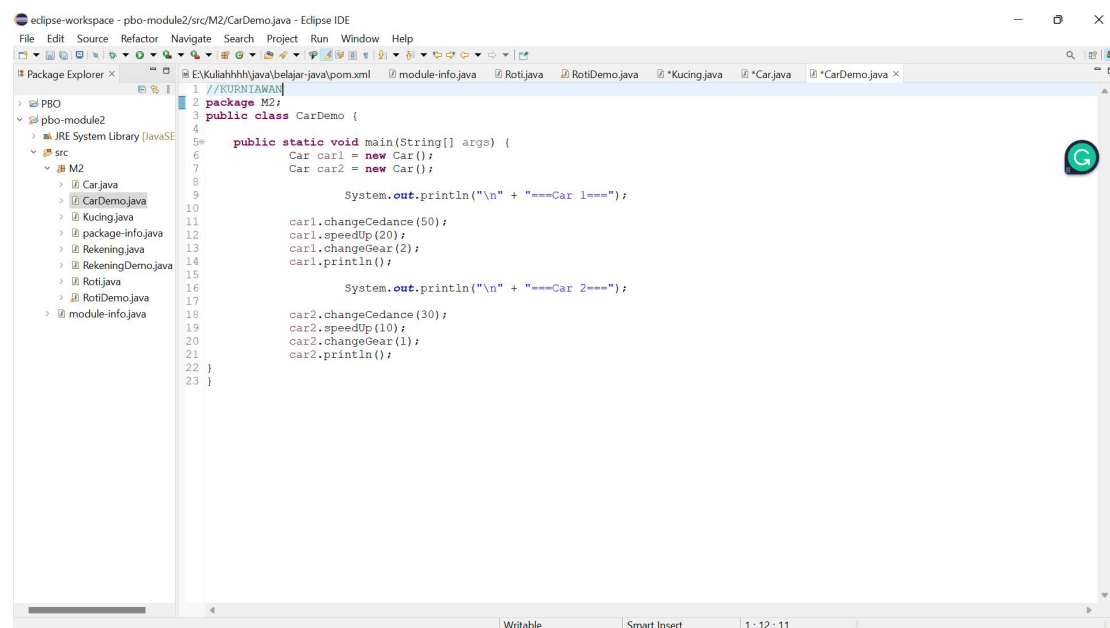


3. Create a new class that can be used as a template from the CarDemo class:



The screenshot shows the Eclipse IDE with the 'Car.java' file open in the editor. The Package Explorer on the left shows the project structure: 'pbo-module2' contains 'src' which contains 'M2'. The 'M2' package contains 'Car.java', 'CarDemo.java', 'Kucing.java', 'package-info.java', 'Rekening.java', 'RekeningDemo.java', 'Roti.java', and 'RotiDemo.java'. The editor displays the following code:

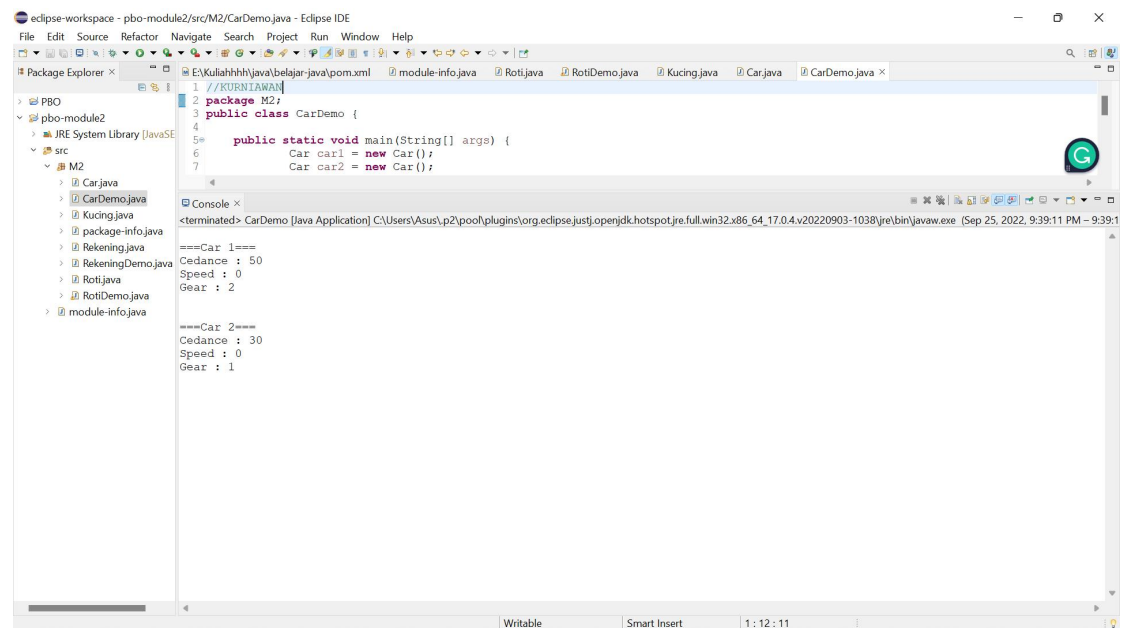
```
1 //KURNIAWAN
2 package M2;
3
4 public class Car {
5     int cedance;
6     int speed;
7     int gear;
8
9     void changeCedance(int newcedance) {
10         cedance = newcedance;
11     }
12
13     void changeSpeed(int newspeed) {
14         speed = newspeed;
15     }
16
17     void changeGear(int newgear) {
18         gear = newgear;
19     }
20
21     void println(){
22         System.out.println(
23             "Cedance : " + cedance + "\n"+
24             "Speed : " + speed + "\n"+
25             "Gear : " + gear + "\n");
26     }
27
28     public void speedUp(int i) {
29         // TODO Auto-generated method stub
30     }
31 }
32
33
34
35
```



The screenshot shows the Eclipse IDE with the 'CarDemo.java' file open in the editor. The Package Explorer on the left shows the project structure: 'pbo-module2' contains 'src' which contains 'M2'. The 'M2' package contains 'Car.java', 'CarDemo.java', 'Kucing.java', 'package-info.java', 'Rekening.java', 'RekeningDemo.java', 'Roti.java', and 'RotiDemo.java'. The editor displays the following code:

```
1 //KURNIAWAN
2 package M2;
3 public class CarDemo {
4
5     public static void main(String[] args) {
6         Car car1 = new Car();
7         Car car2 = new Car();
8
9         System.out.println("\n" + "===Car 1===");
10
11         car1.changeCedance(50);
12         car1.speedUp(20);
13         car1.changeGear(2);
14         car1.println();
15
16         System.out.println("\n" + "===Car 2===");
17
18         car2.changeCedance(30);
19         car2.speedUp(10);
20         car2.changeGear(1);
21         car2.println();
22     }
23 }
```

Output:



The screenshot shows the Eclipse IDE with the `CarDemo.java` file open. The code defines a `Car` class with attributes `Cedance`, `Speed`, and `Gear`, and a `main` method that creates two car objects, `car1` and `car2`, and prints their details. The console output shows the results of the program execution.

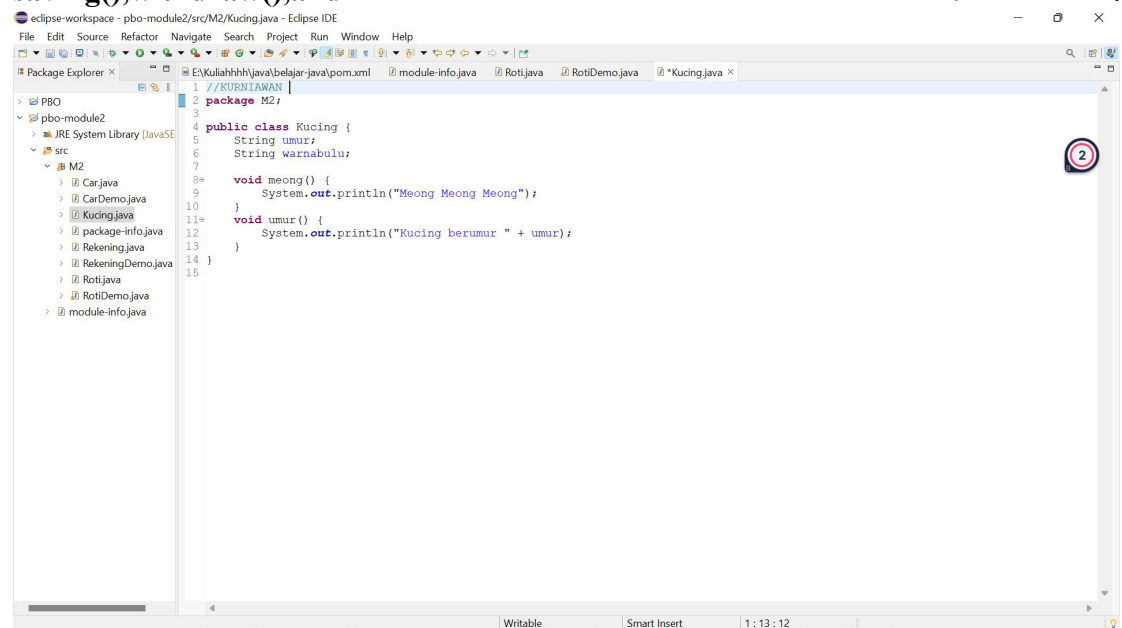
```
1 //KURNIAWAN
2 package M2;
3 public class CarDemo {
4
5     public static void main(String[] args) {
6         Car car1 = new Car();
7         Car car2 = new Car();
8     }
9 }
```

Console Output:

```
<terminated> CarDemo [Java Application] C:\Users\Asus\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_17.0.4.v20220903-1038\jre\bin\javaw.exe (Sep 25, 2022, 9:39:11 PM)
===Car 1===
Cedance : 50
Speed : 0
Gear : 2

===Car 2===
Cedance : 30
Speed : 0
Gear : 1
```

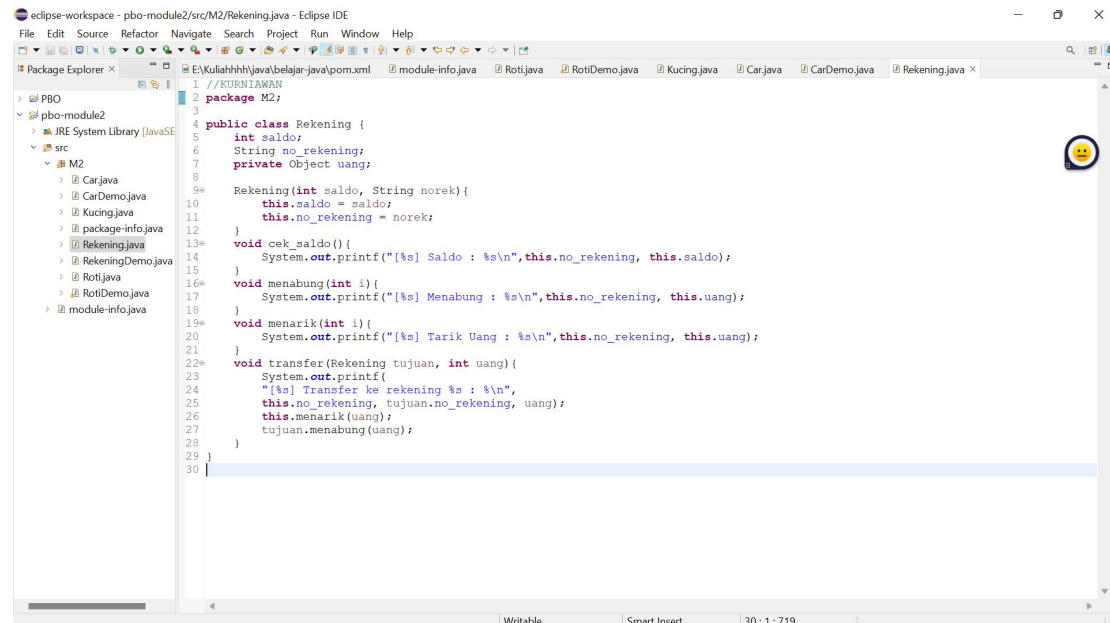
4. Create a class that can represent the properties of the Cat object. This object has fields/variables/properties in the form of age, fur color, and methods 5. Create a class that can represent the Account Object. The variables of this object are balance, no_account, name, and methods in the form of `check_saldo()`, `saving()`, `withdraw()`, and



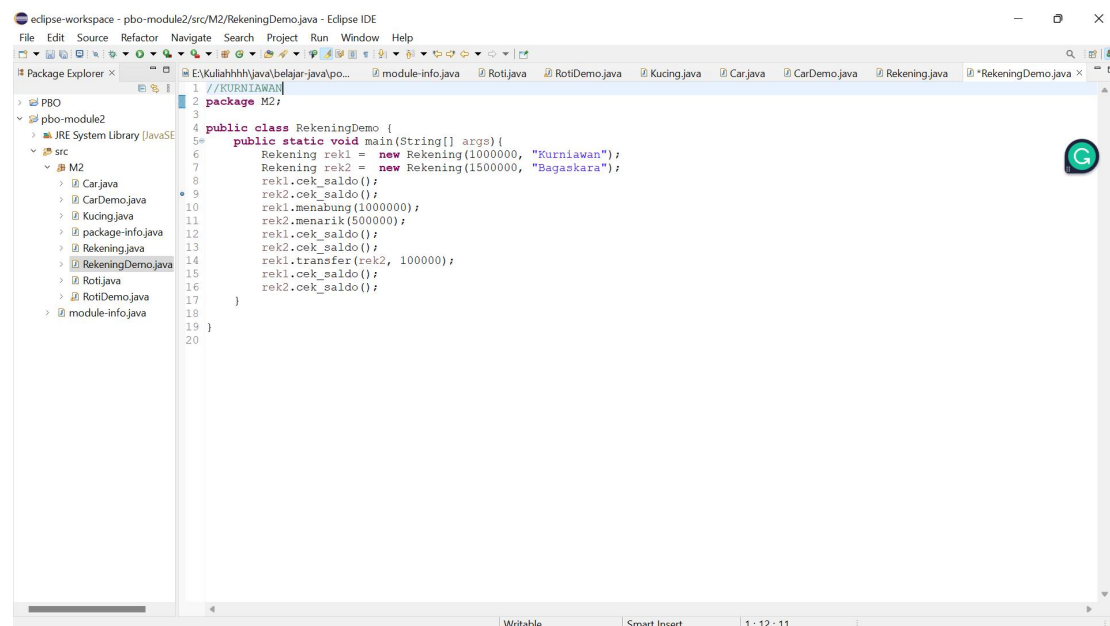
The screenshot shows the Eclipse IDE with the `Kucing.java` file open. The code defines a `Kucing` class with attributes `umur` and `warnabulu`, and methods `meong` and `umur`. The `meong` method prints "Meong Meong Meong", and the `umur` method prints the age of the cat.

```
1 //KURNIAWAN
2 package M2;
3
4 public class Kucing {
5     String umur;
6     String warnabulu;
7
8     void meong() {
9         System.out.println("Meong Meong Meong");
10    }
11    void umur() {
12        System.out.println("Kucing berumur " + umur);
13    }
14 }
15
```

5. Create a class that can represent the Account Object. The variables of this object are balance, no_account, name, and methods in the form of check_saldo(), saving(), withdraw(), and transfer()

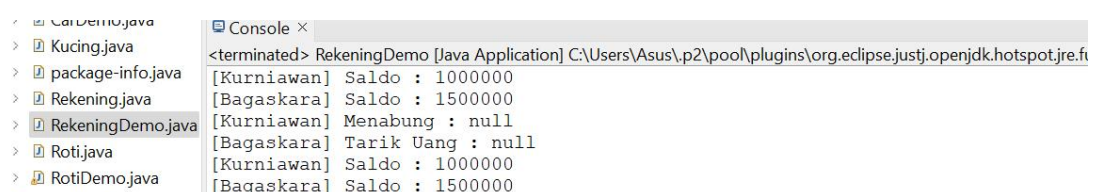


```
1 //KURNIAWAN
2 package M2;
3
4 public class Rekening {
5     int saldo;
6     String no_rekening;
7     private Object uang;
8
9     Rekening(int saldo, String norek){
10         this.saldo = saldo;
11         this.no_rekening = norek;
12     }
13     void cek_saldo(){
14         System.out.printf("[%s] Saldo : %s\n",this.no_rekening, this.saldo);
15     }
16     void menabung(int i){
17         System.out.printf("[%s] Menabung : %s\n",this.no_rekening, this.uang);
18     }
19     void menarik(int i){
20         System.out.printf("[%s] Tarik Uang : %s\n",this.no_rekening, this.uang);
21     }
22     void transfer(Rekening tujuan, int uang){
23         System.out.printf(
24             "[%s] Transfer ke rekening %s : %s\n",
25             this.no_rekening, tujuan.no_rekening, uang);
26         this.menarik(uang);
27         tujuan.menabung(uang);
28     }
29 }
30
```



```
1 //KURNIAWAN
2 package M2;
3
4 public class RekeningDemo {
5     public static void main(String[] args){
6         Rekening rek1 = new Rekening(1000000, "Kurniawan");
7         Rekening rek2 = new Rekening(1500000, "Bagaskara");
8         rek1.cek_saldo();
9         rek2.cek_saldo();
10        rek1.menabung(1000000);
11        rek2.menarik(500000);
12        rek1.cek_saldo();
13        rek2.cek_saldo();
14        rek1.transfer(rek2, 100000);
15        rek1.cek_saldo();
16        rek2.cek_saldo();
17    }
18 }
19
20
```

OUTPUT:



```
<terminated> RekeningDemo [Java Application] C:\Users\Asus\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.f
[Kurniawan] Saldo : 1000000
[Bagaskara] Saldo : 1500000
[Kurniawan] Menabung : null
[Bagaskara] Tarik Uang : null
[Kurniawan] Saldo : 1000000
[Bagaskara] Saldo : 1500000
```

6. List of variables and functions/methods owned by the String Class:

-How to use charAt(int)

This function will return the character in a string in accordance with the index entered.

-How to use codePointAt(int)

This function will return the ASCII code of a char taken from the corresponding String.

-How to use codePointBefore(int)

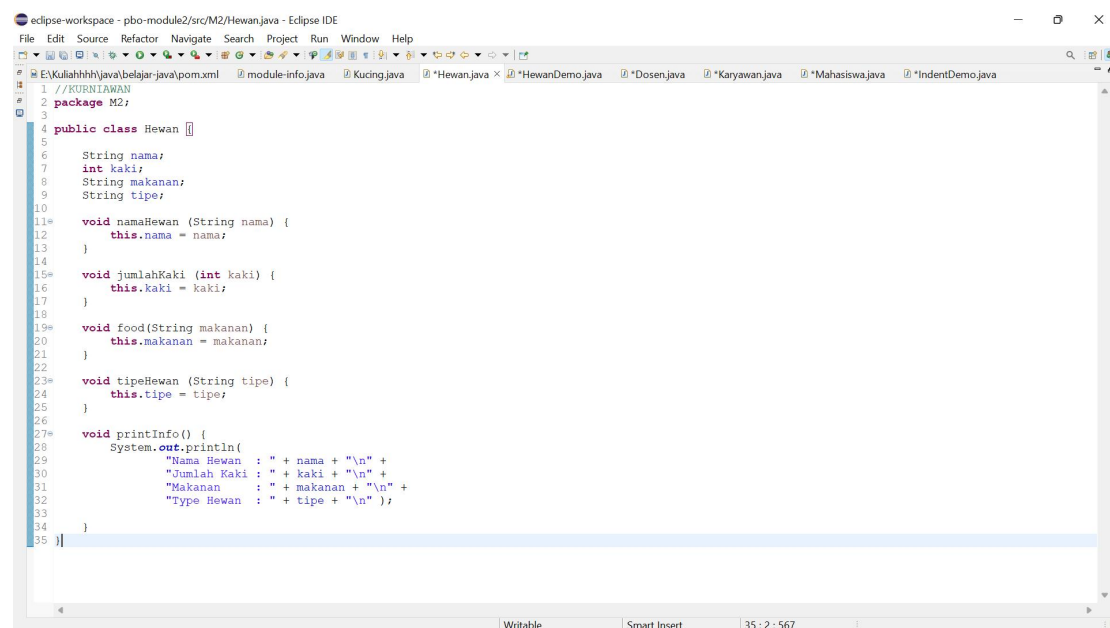
This function will also return the ASCII code of the characters taken from a String.

-How to use codePointCount(int,int)

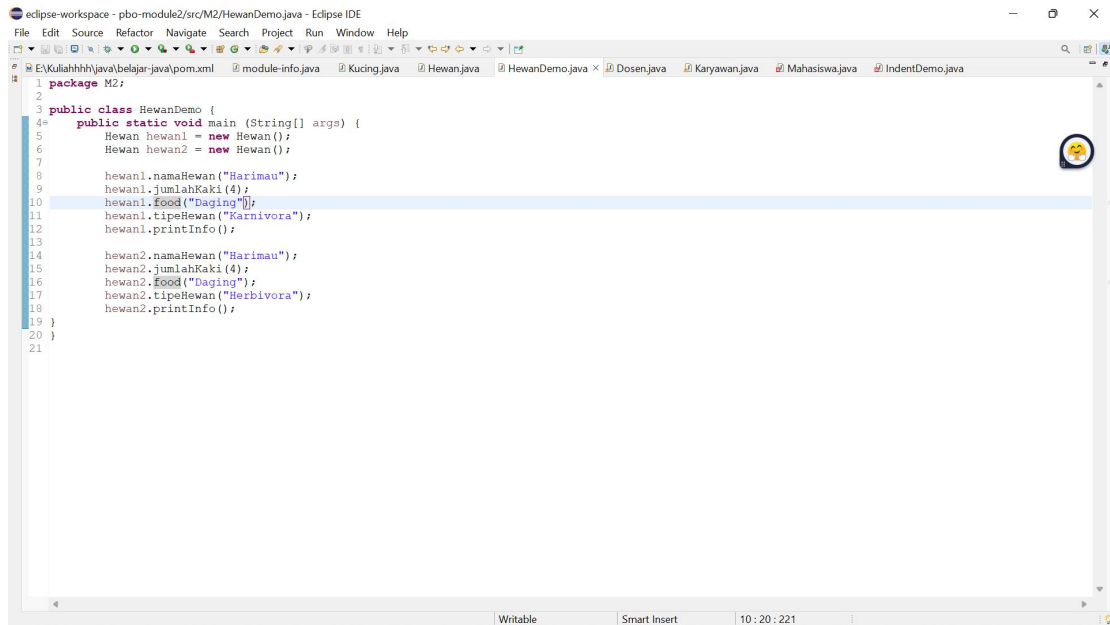
This function will return the length of the string according to the range entered.

TASK 2.5

1. Creating an Animal class and also creating objects from that class so that you can create various kinds of animal objects with their respective characters:

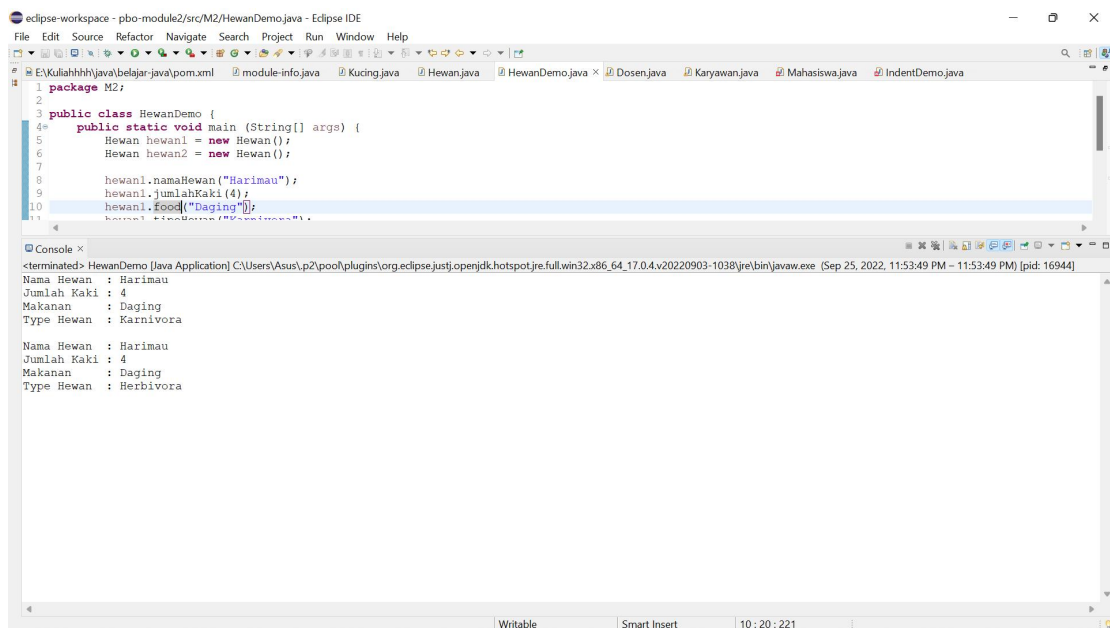


```
eclipse-workspace - pbo-module2/src/M2/Hewan.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
E:\Kuliahhhh\java\belajar-java\pom.xml module-info.java Kucing.java *Hewan.java *HewanDemo.java *Dosen.java *Karyawan.java *Mahasiswa.java *IndentDemo.java
1 //KURNIAWAN
2 package M2;
3
4 public class Hewan {
5
6     String nama;
7     int kaki;
8     String makanan;
9     String tipe;
10
11     void namaHewan (String nama) {
12         this.nama = nama;
13     }
14
15     void jumlahKaki (int kaki) {
16         this.kaki = kaki;
17     }
18
19     void food(String makanan) {
20         this.makanan = makanan;
21     }
22
23     void tipeHewan (String tipe) {
24         this.tipe = tipe;
25     }
26
27     void printInfo() {
28         System.out.println(
29             "Nama Hewan : " + nama + "\n" +
30             "Jumlah Kaki : " + kaki + "\n" +
31             "Makanan : " + makanan + "\n" +
32             "Type Hewan : " + tipe + "\n" );
33     }
34 }
35 }
```



```
1 package M2;
2
3 public class HewanDemo {
4     public static void main (String[] args) {
5         Hewan hewan1 = new Hewan();
6         Hewan hewan2 = new Hewan();
7
8         hewan1.namaHewan ("Harimau");
9         hewan1.jumlahKaki (4);
10        hewan1.food ("Daging");
11        hewan1.tipeHewan ("Karnivora");
12        hewan1.printInfo ();
13
14        hewan2.namaHewan ("Harimau");
15        hewan2.jumlahKaki (4);
16        hewan2.food ("Daging");
17        hewan2.tipeHewan ("Herbivora");
18        hewan2.printInfo ();
19    }
20 }
21
```

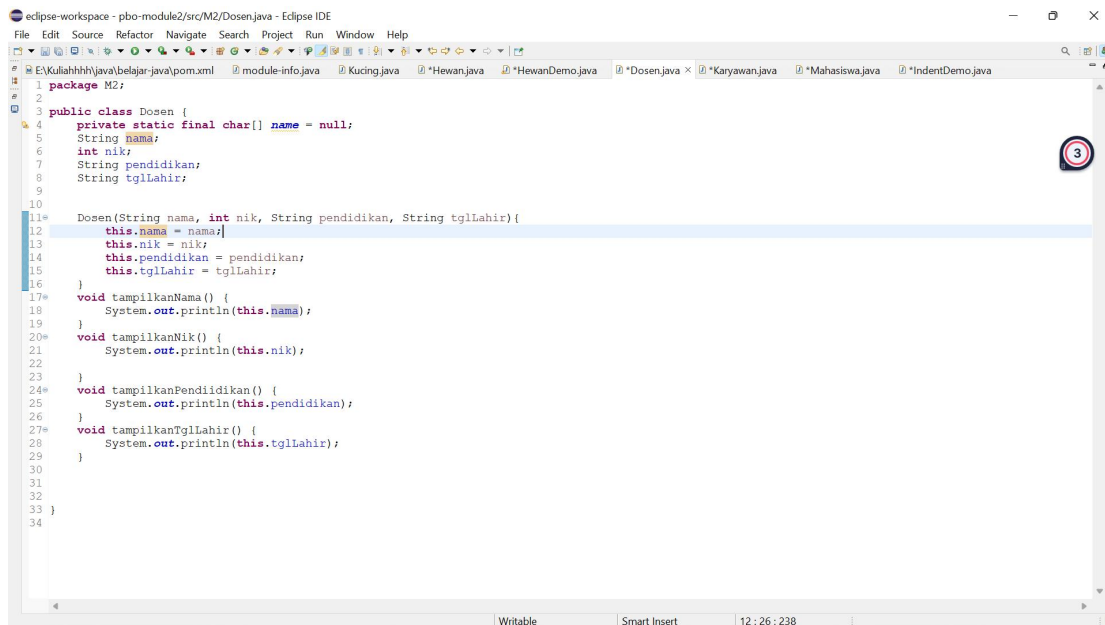
Output :



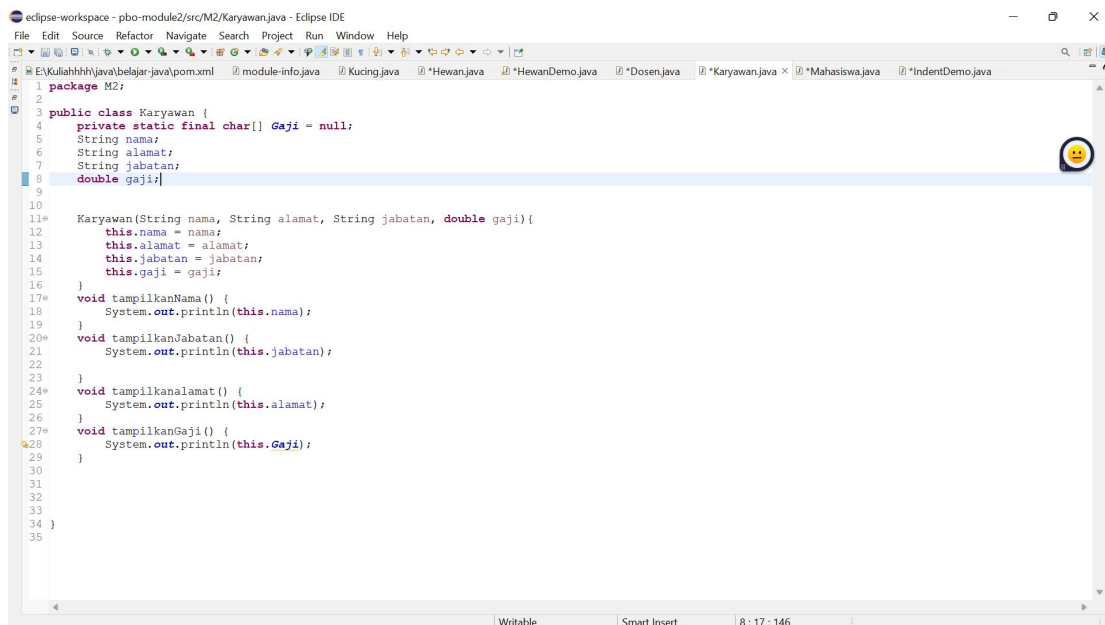
```
<terminated> HewanDemo [Java Application] C:\Users\Asus\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.17.0.4.v20220903-1038\jre\bin\javaw.exe (Sep 25, 2022, 11:53:49 PM ~ 11:53:49 PM) [pid: 16944]
Nama Hewan : Harimau
Jumlah Kaki : 4
Makanan : Daging
Type Hewan : Karnivora

Nama Hewan : Harimau
Jumlah Kaki : 4
Makanan : Daging
Type Hewan : Herbivora
```


2. Create a class based on the class diagram of Lecturers, Employees, and Students according to Figure 2.4 in the module:



```
1 package M2;
2
3 public class Dosen {
4     private static final char[] name = null;
5     String nama;
6     int nik;
7     String pendidikan;
8     String tgllahir;
9
10
11     Dosen(String nama, int nik, String pendidikan, String tgllahir){
12         this.nama = nama;
13         this.nik = nik;
14         this.pendidikan = pendidikan;
15         this.tgllahir = tgllahir;
16     }
17     void tampilkanNama() {
18         System.out.println(this.nama);
19     }
20     void tampilkanNik() {
21         System.out.println(this.nik);
22     }
23
24     void tampilkanPendidikan() {
25         System.out.println(this.pendidikan);
26     }
27     void tampilkanTgllahir() {
28         System.out.println(this.tgllahir);
29     }
30
31
32 }
33
34
```



```
1 package M2;
2
3 public class Karyawan {
4     private static final char[] Gaji = null;
5     String nama;
6     String alamat;
7     String jabatan;
8     double gaji;
9
10
11     Karyawan(String nama, String alamat, String jabatan, double gaji){
12         this.nama = nama;
13         this.alamat = alamat;
14         this.jabatan = jabatan;
15         this.gaji = gaji;
16     }
17     void tampilkanNama() {
18         System.out.println(this.nama);
19     }
20     void tampilkanJabatan() {
21         System.out.println(this.jabatan);
22     }
23
24     void tampilkanalamat() {
25         System.out.println(this.alamat);
26     }
27     void tampilkanGaji() {
28         System.out.println(this.Gaji);
29     }
30
31
32 }
33
34
35
```

eclipse-workspace - pbo-module2/src/M2/Mahasiswa.java - Eclipse IDE

```
File Edit Source Refactor Navigate Search Project Run Window Help
E:\Kuliahhhh\java\belajar\java\pom.xml module-info.java Kucing.java *Hewan.java *HewanDemo.java *Dosen.java *Karyawan.java *Mahasiswa.java *IndentDemo.java
package M2;
public class Mahasiswa {
    String nama;
    String nim;
    String alamat;
    int semester;

    Mahasiswa(String nama, String nim, String alamat, int semester) {
        this.nama = nama;
        this.nim = nim;
        this.alamat = alamat;
        this.semester = semester;
    }

    void tampilkanNama() {
        System.out.println(this.nama);
    }

    void tampilkanNim() {
        System.out.println(this.nim);
    }

    void tampilkanAlamat() {
        System.out.println(this.alamat);
    }

    void tampilkanSemester() {
        System.out.println(this.semester);
    }
}
```

Writable Smart Insert 1:12:11

eclipse-workspace - pbo-module2/src/M2/IndentDemo.java - Eclipse IDE

```
File Edit Source Refactor Navigate Search Project Run Window Help
E:\Kuliahhhh\java\belajar\java\pom.xml module-info.java Kucing.java *Hewan.java *HewanDemo.java *Dosen.java *Karyawan.java *Mahasiswa.java *IndentDemo.java
package M2;
public class IndentDemo {
    public static void main(String[] args) {
        Dosen dosen = new Dosen ("pak fajar ", 3372, "s2 informatika", "8 januari 1968");
        Karyawan karyawan = new Karyawan("pak dandi", "Jl kebon jeruk", "karyawan tetap", 2500000);
        Mahasiswa mahasiswa = new Mahasiswa("Kurniawan bagaskara ", "1200214253", "jalan ir sutami 56", 3);

        System.out.println("==== Info Dosen====");
        dosen.tampilkanNama();
        dosen.tampilkanNim();
        dosen.tampilkanPendidikan();
        dosen.tampilkanTglahir();
        System.out.println("\n");

        System.out.println("==== Info Karyawan====");
        dosen.tampilkanNama();
        dosen.tampilkanAlamat();
        dosen.tampilkanJabatan();
        dosen.tampilkanGaji();
        System.out.println("\n");

        System.out.println("==== Info Mahasiswa====");
        dosen.tampilkanNama();
        dosen.tampilkanNim();
        dosen.tampilkanAlamat();
        dosen.tampilkanSemester();
        System.out.println("\n");
    }
}
```

Writable Smart Insert 3:1:15