

**PRAKTIKUM**  
**PEMROGRAMAN BERORIENTASI OBJEK**  
**MODUL 8**



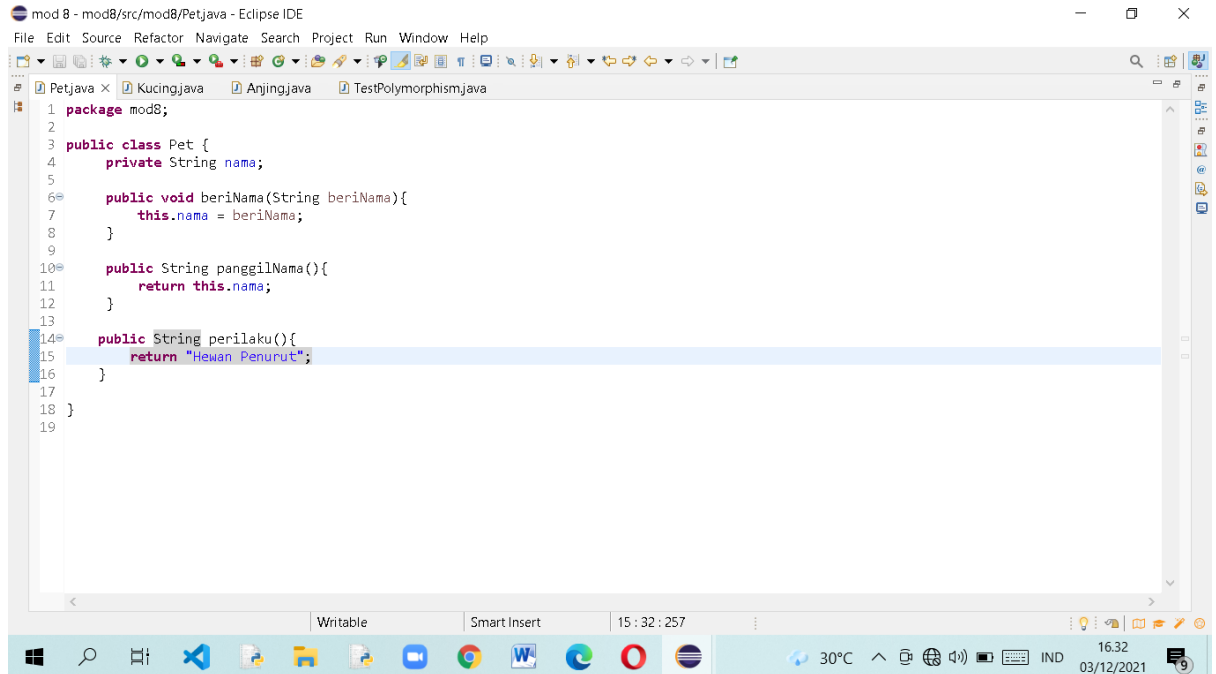
**Nama : NICKY JULYATRIKA SARI**

**NIM : L200200101**

**PROGRAM STUDI**  
**INFORMATIKA**  
**FAKULTAS KOMUNIKASI DAN INFORMATIKA**  
**UNIVERSITAS MUHAMMADIYAH SURAKARTA**  
**TAHUN 2021/2022**

- **Latihan**

Silahkan tulis dan jalankan Program 8 berikut ini(Class Pet)! Kemudian kerjakan soal setelahnya!



```
mod 8 - mod8/src/mod8/Pet.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Pet.java x Kucing.java Anjing.java TestPolymorphism.java
1 package mod8;
2
3 public class Pet {
4     private String nama;
5
6     public void beriNama(String beriNama){
7         this.nama = beriNama;
8     }
9
10    public String panggilNama(){
11        return this.nama;
12    }
13
14    public String perilaku(){
15        return "Hewan Penurut";
16    }
17 }
18
19
```

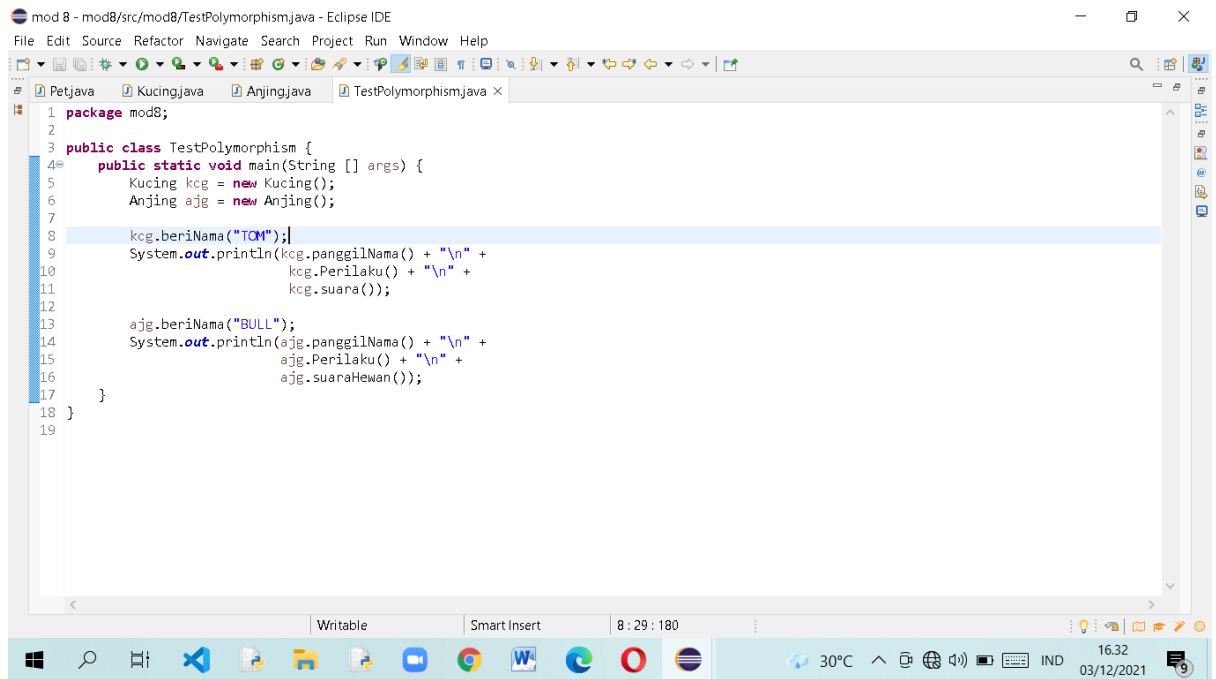
1. Buatlah class Kucing dan Anjing dimana kedua class tersebut melakukan overriding terhadap method perilaku()!
2. Tambahkan satu method pada masing-masing class yang secara khusus hanya berlaku pada masing-masing class tersebut.
  - a. Class Anjing

```
1 package mod8;
2
3 public class Anjing extends Pet{
4     String suaraHewan;
5
6     public String Perilaku() {
7         return "Menyukai Daging dan Tulang";
8     }
9     public String suaraHewan() {
10        return "Guk..Guk..Guk..";
11    }
12 }
13
```

## b. Class Kucing

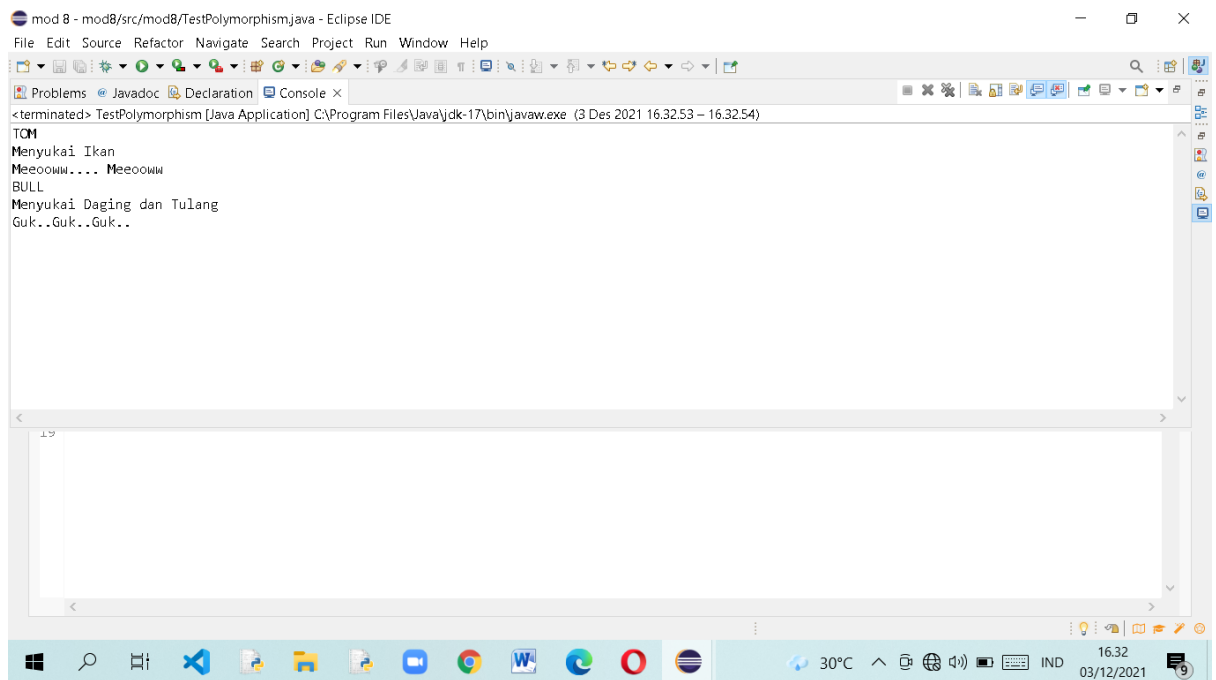
```
1 package mod8;
2
3 public class Kucing extends Pet{
4     String suara;
5     public String Perilaku() {
6         return "Menyukai Ikan";
7     }
8
9     public String suara() {
10        return "Meeooww.... Meeooww";
11    }
12 }
13
```

3. Buat class TestPolymorphism sehingga keluaran program seperti berikut ini!



```
1 package mod8;
2
3 public class TestPolymorphism {
4     public static void main(String [] args) {
5         Kucing kcg = new Kucing();
6         Anjing ajg = new Anjing();
7
8         kcg.beriNama("TOM");
9         System.out.println(kcg.panggilNama() + "\n" +
10             kcg.Perilaku() + "\n" +
11             kcg.suara());
12
13         ajg.beriNama("BULL");
14         System.out.println(ajg.panggilNama() + "\n" +
15             ajg.Perilaku() + "\n" +
16             ajg.suaraHewan());
17     }
18 }
19
```

## 4. Output

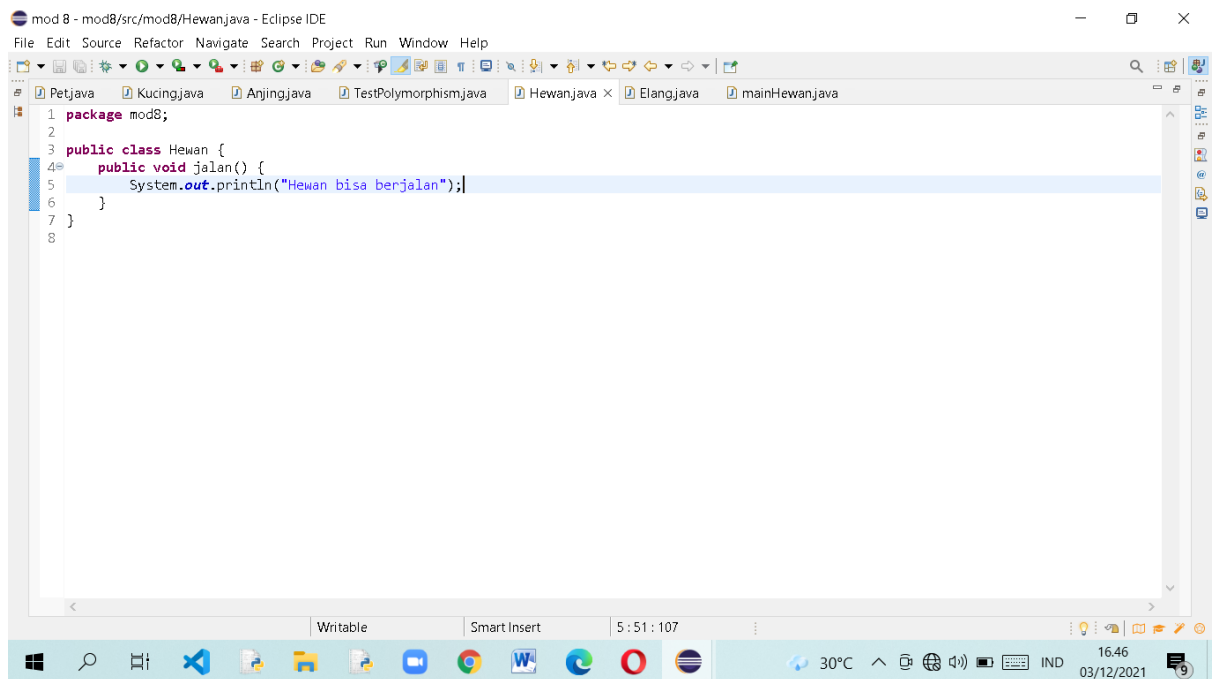


```
<terminated> TestPolymorphism [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (3 Des 2021 16.32.53 - 16.32.54)
TOM
Menyukai Ikan
Meooooom.... Meooooom
BULL
Menyukai Daging dan Tulang
Guk..Guk..Guk..
```

## • TUGAS

1. Lihat kembali Program 4 mengenai overriding, buatlah class Elang yang memiliki method jalan() namun implementasinya berbeda dari kedua class lainnya!

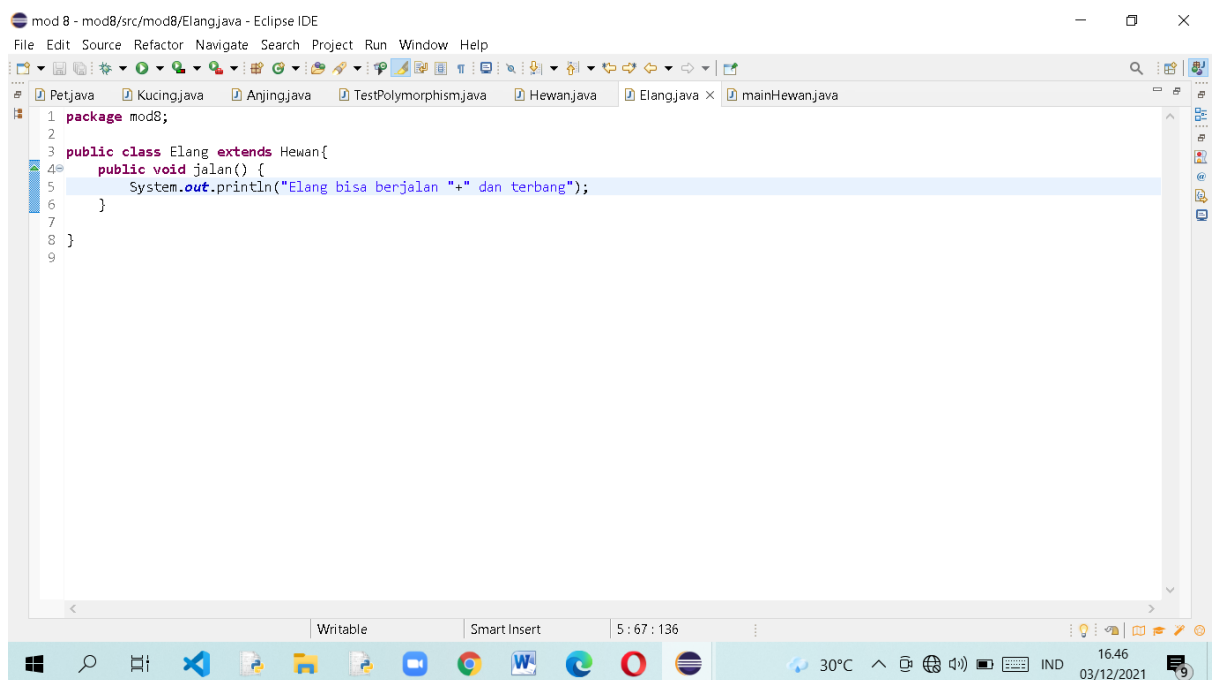
## a. Class Hewan



The screenshot shows the Eclipse IDE with the file `mod8 - mod8/src/mod8/Hewan.java` open. The code defines a `public class Hewan` with a `public void jalan()` method that prints `"Hewan bisa berjalan";`. The IDE interface includes a menu bar, a toolbar, a package explorer on the left, and a status bar at the bottom showing the time as 5:51:107 and the date as 03/12/2021.

```
1 package mod8;
2
3 public class Hewan {
4     public void jalan() {
5         System.out.println("Hewan bisa berjalan");
6     }
7 }
8
```

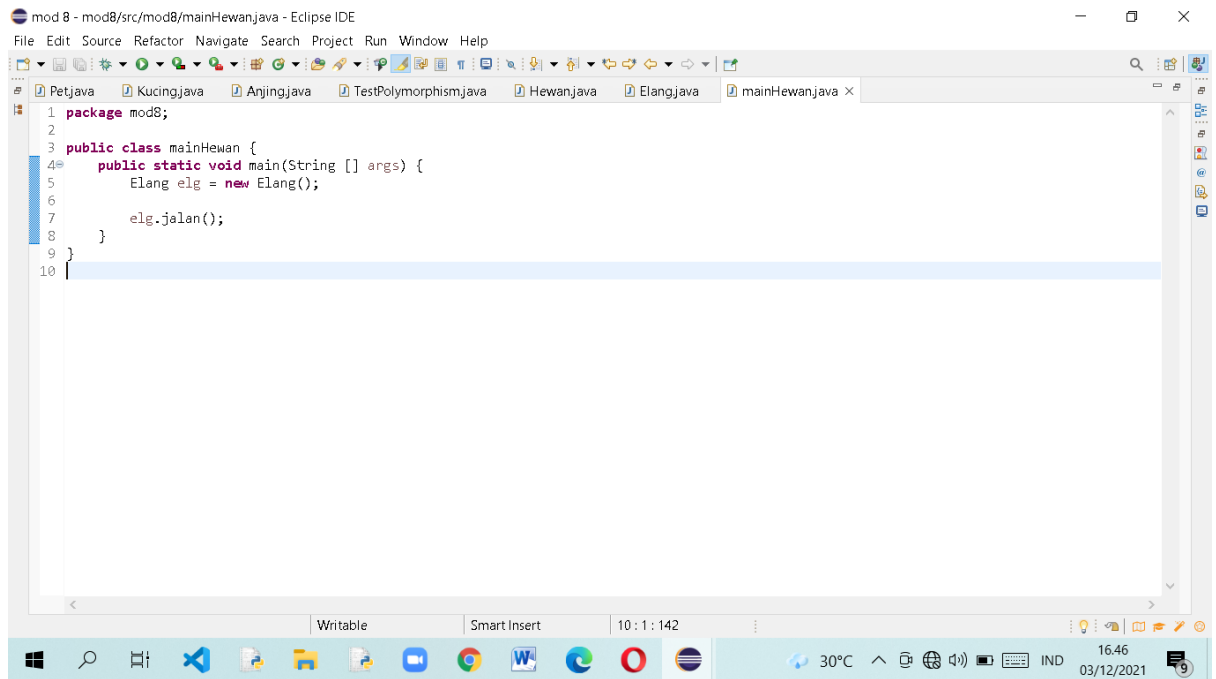
## b. Class Elang



The screenshot shows the Eclipse IDE with the file `mod8 - mod8/src/mod8/Elang.java` open. The code defines a `public class Elang` that extends `Hewan`. It overrides the `public void jalan()` method to print `"Elang bisa berjalan "+" dan terbang";`. The IDE interface is similar to the previous screenshot, with the status bar showing the time as 5:67:136 and the date as 03/12/2021.

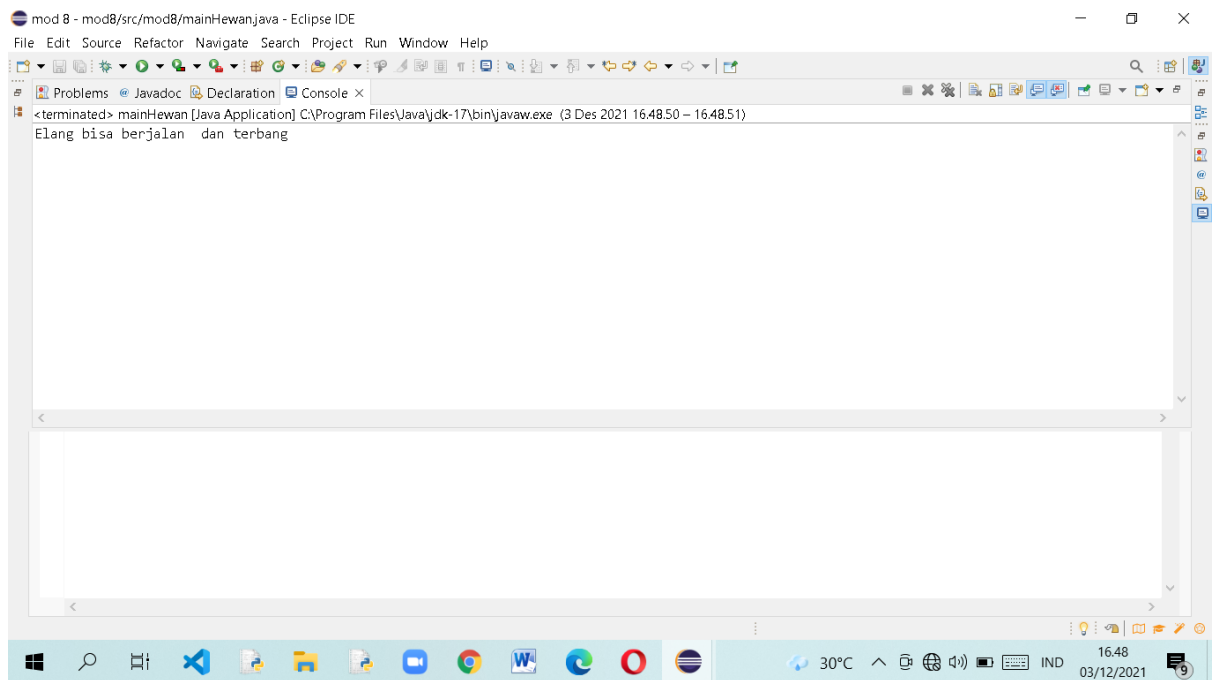
```
1 package mod8;
2
3 public class Elang extends Hewan{
4     public void jalan() {
5         System.out.println("Elang bisa berjalan "+" dan terbang");
6     }
7 }
8
9
```

## c. Class mainHewan



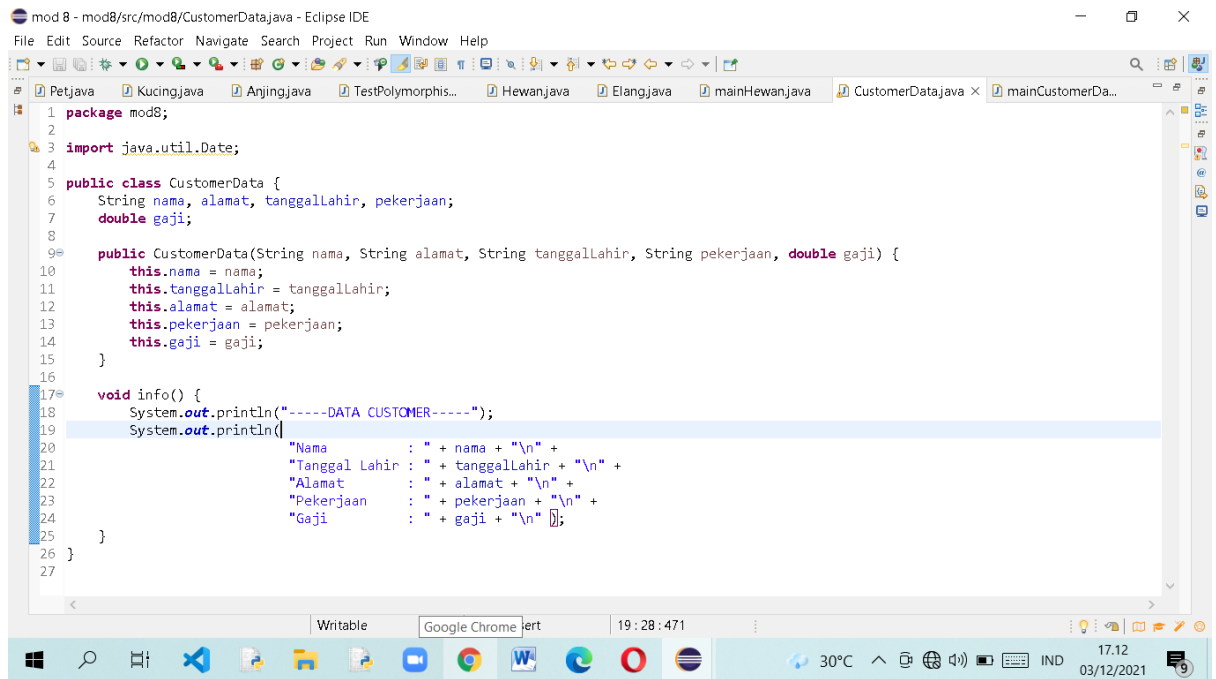
```
1 package mod8;
2
3 public class mainHewan {
4     public static void main(String [] args) {
5         Elang elg = new Elang();
6
7         elg.jalan();
8     }
9 }
10
```

#### d. Output



```
<terminated> mainHewan [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (3 Des 2021 16:48:50 - 16:48:51)
Elang bisa berjalan dan terbang
```

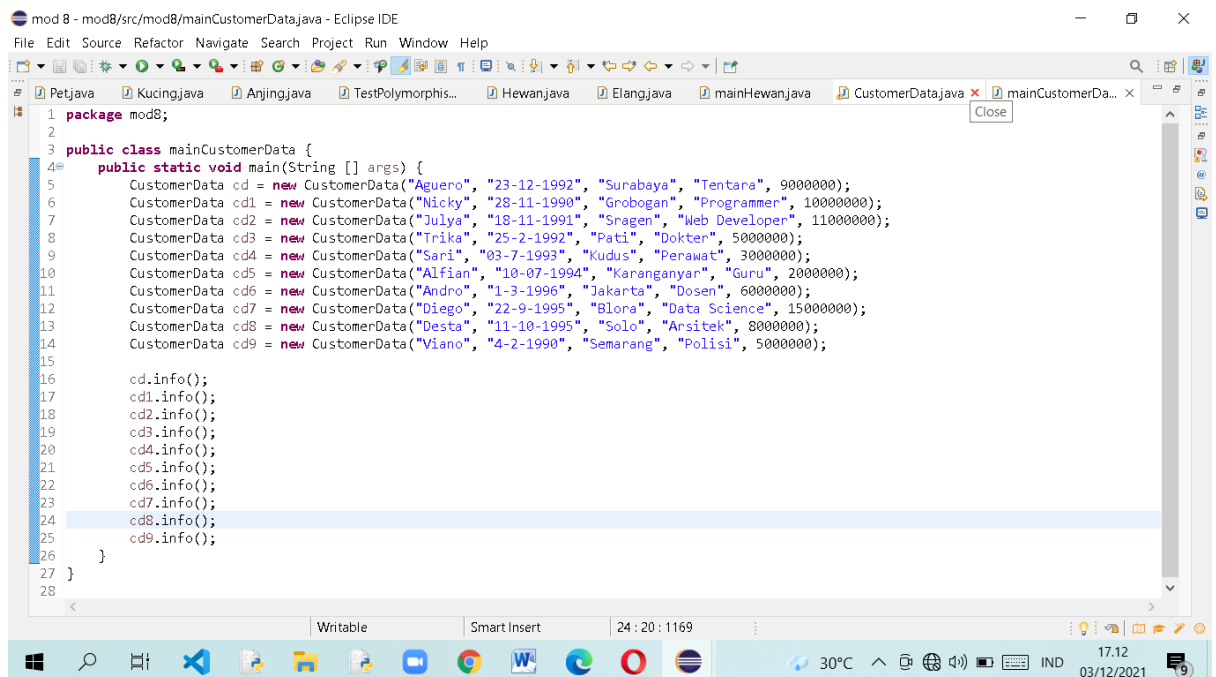
2. Buatlah class baru dengan nama CustomerData, tambahkan variabel nama, alamat, tanggal lahir, pekerjaan dan gaji. Selanjutnya buatlah overloading constructor dari class tersebut.
  - a. Class CustomerData



```
1 package mod8;
2
3 import java.util.Date;
4
5 public class CustomerData {
6     String nama, alamat, tanggalLahir, pekerjaan;
7     double gaji;
8
9     public CustomerData(String nama, String alamat, String tanggalLahir, String pekerjaan, double gaji) {
10         this.nama = nama;
11         this.tanggalLahir = tanggalLahir;
12         this.alamat = alamat;
13         this.pekerjaan = pekerjaan;
14         this.gaji = gaji;
15     }
16
17     void info() {
18         System.out.println("-----DATA CUSTOMER-----");
19         System.out.println(
20             "Nama      : " + nama + "\n" +
21             "Tanggal Lahir : " + tanggalLahir + "\n" +
22             "Alamat       : " + alamat + "\n" +
23             "Pekerjaan    : " + pekerjaan + "\n" +
24             "Gaji         : " + gaji + "\n";
25     }
26 }
27
```

3. Buatlah class baru dengan method main() yang disertai 10 object customer dari class CustomerData.

a. Class MainCustomerData



```
1 package mod8;
2
3 public class mainCustomerData {
4     public static void main(String [] args) {
5         CustomerData cd = new CustomerData("Aguero", "23-12-1992", "Surabaya", "Tentara", 9000000);
6         CustomerData cd1 = new CustomerData("Nicky", "28-11-1990", "Grobogan", "Programmer", 10000000);
7         CustomerData cd2 = new CustomerData("Julia", "18-11-1991", "Sragen", "Web Developer", 11000000);
8         CustomerData cd3 = new CustomerData("Trika", "25-2-1992", "Pati", "Dokter", 5000000);
9         CustomerData cd4 = new CustomerData("Sari", "03-7-1993", "Kudus", "Perawat", 3000000);
10        CustomerData cd5 = new CustomerData("Alfian", "10-07-1994", "Karanganyar", "Guru", 2000000);
11        CustomerData cd6 = new CustomerData("Andro", "1-3-1996", "Jakarta", "Dosen", 6000000);
12        CustomerData cd7 = new CustomerData("Diego", "22-9-1995", "Blora", "Data Science", 15000000);
13        CustomerData cd8 = new CustomerData("Desta", "11-10-1995", "Solo", "Arsitek", 8000000);
14        CustomerData cd9 = new CustomerData("Viano", "4-2-1990", "Semarang", "Polisi", 5000000);
15
16        cd.info();
17        cd1.info();
18        cd2.info();
19        cd3.info();
20        cd4.info();
21        cd5.info();
22        cd6.info();
23        cd7.info();
24        cd8.info();
25        cd9.info();
26    }
27 }
28
```

b. Class MainCustomerData

mod 8 - mod8/src/mod8/mainCustomerData.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Problems Javadoc Declaration Console x

<terminated> mainCustomerData [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (3 Des 2021 17.12.42 – 17.12.43)

```
-----DATA CUSTOMER-----
Nama      : Agüero
Tanggal Lahir : Surabaya
Alamat    : 23-12-1992
Pekerjaan  : Tentara
Gaji      : 9000000.0

-----DATA CUSTOMER-----
Nama      : Nicky
Tanggal Lahir : Grobogan
Alamat    : 28-11-1990
Pekerjaan  : Programmer
Gaji      : 1.0E7

-----DATA CUSTOMER-----
Nama      : Julia
Tanggal Lahir : Sragen
Alamat    : 18-11-1991
Pekerjaan  : Web Developer
Gaji      : 1.1E7

-----DATA CUSTOMER-----
Nama      : Trika
Tanggal Lahir : Pati
Alamat    : 25-2-1992
Pekerjaan  : Dokter
Gaji      : 5000000.0

-----DATA CUSTOMER-----
```

30°C 17.12 03/12/2021

mod 8 - mod8/src/mod8/mainCustomerData.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Problems Javadoc Declaration Console x

<terminated> mainCustomerData [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (3 Des 2021 17.12.42 – 17.12.43)

```
-----DATA CUSTOMER-----
Nama      : Sari
Tanggal Lahir : Kudus
Alamat    : 03-7-1993
Pekerjaan  : Perawat
Gaji      : 3000000.0

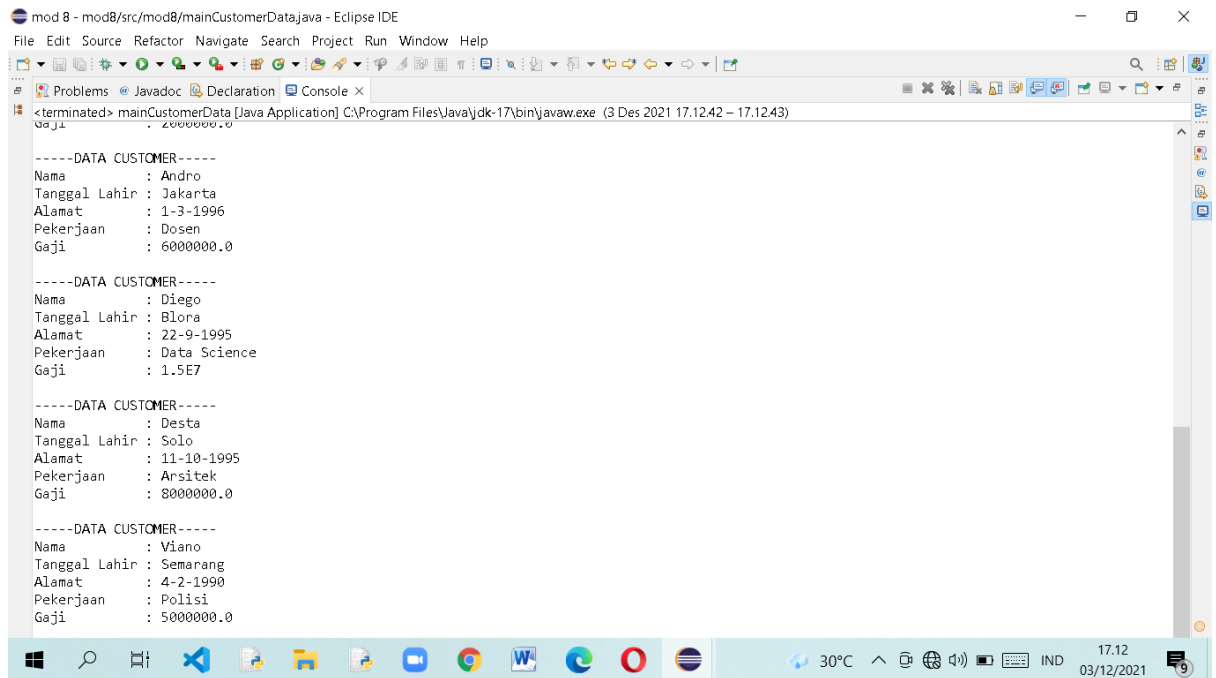
-----DATA CUSTOMER-----
Nama      : Alfian
Tanggal Lahir : Karanganyar
Alamat    : 10-07-1994
Pekerjaan  : Guru
Gaji      : 2000000.0

-----DATA CUSTOMER-----
Nama      : Andro
Tanggal Lahir : Jakarta
Alamat    : 1-3-1996
Pekerjaan  : Dosen
Gaji      : 6000000.0

-----DATA CUSTOMER-----
Nama      : Diego
Tanggal Lahir : Blora
Alamat    : 22-9-1995
Pekerjaan  : Data Science
Gaji      : 1.5E7
```

30°C 17.12 03/12/2021





The screenshot shows the Eclipse IDE interface with the console window open. The console displays the output of a Java application, showing four customer records. Each record is preceded by a separator line '----DATA CUSTOMER----'. The records are as follows:

```
<terminated> mainCustomerData [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (3 Des 2021 17.12.42 - 17.12.43)
Gaji      : 2000000.0

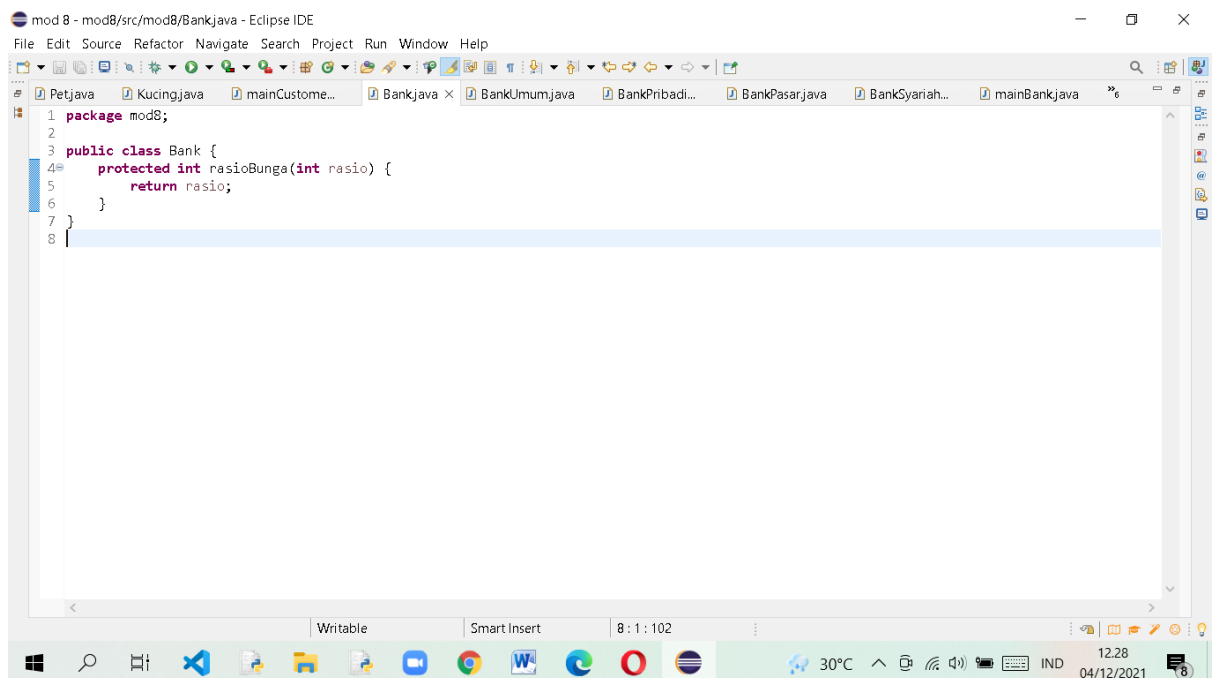
----DATA CUSTOMER----
Nama      : Andro
Tanggal Lahir : Jakarta
Alamat    : 1-3-1996
Pekerjaan : Dosen
Gaji      : 6000000.0

----DATA CUSTOMER----
Nama      : Diego
Tanggal Lahir : Blora
Alamat    : 22-9-1995
Pekerjaan : Data Science
Gaji      : 1.5E7

----DATA CUSTOMER----
Nama      : Desta
Tanggal Lahir : Solo
Alamat    : 11-10-1995
Pekerjaan : Arsitek
Gaji      : 8000000.0

----DATA CUSTOMER----
Nama      : Viano
Tanggal Lahir : Semarang
Alamat    : 4-2-1990
Pekerjaan : Polisi
Gaji      : 5000000.0
```

4. Buatlah class berdasarkan diagram UML berikut ini! Terapkan teknik polymorphism dan tampilkan hasil output program (screenshot)!
- a. Screenshot code program dan output



The screenshot shows the Eclipse IDE interface with the source code editor open. The code defines a `Bank` class within the `mod8` package. The class has a `protected` method `rasioBunga` that takes an `int` parameter `rasio` and returns it. The code is as follows:

```
1 package mod8;
2
3 public class Bank {
4     protected int rasioBunga(int rasio) {
5         return rasio;
6     }
7 }
8
```

mod 8 - mod8/src/mod8/BankUmum.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Petjava Kucing.java mainCustome... Bankjava BankUmum.java x BankPribadi... BankPasarjava BankSyariah... mainBank.java

```
1 package mod8;
2
3 public class BankUmum extends Bank{
4     protected int rasioBunga(int rasio) {
5         return rasio;
6     }
7 }
8
```

Writable Smart Insert 8 : 1 : 118

30°C 12.28 04/12/2021

mod 8 - mod8/src/mod8/BankPribadi.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Petjava Kucing.java mainCustome... Bankjava BankUmum.java x BankPribadi... BankPasarjava BankSyariah... mainBank.java

```
1 package mod8;
2
3 public class BankPribadi extends Bank{
4     protected int rasioBunga(int rasio) {
5         return rasio;
6     }
7 }
8
```

Writable Smart Insert 8 : 1 : 121

30°C 12.28 04/12/2021

mod 8 - mod8/src/mod8/BankPasar.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Petjava Kucing.java mainCustome... Bankjava BankUmum.java BankPribadi... BankPasar.java x BankSyariah... mainBank.java

```
1 package mod8;
2
3 public class BankPasar extends BankUmum {
4     protected int rasioBunga(int rasio) {
5         return rasio;
6     }
7 }
8
```

Writable Smart Insert 6:6:119

30°C 12.28 04/12/2021

mod 8 - mod8/src/mod8/BankSyariah.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Petjava Kucing.java mainCustome... Bankjava BankUmum.java BankPribadi... BankPasar.java BankSyariah... x mainBank.java

```
1 package mod8;
2
3 public class BankSyariah extends BankUmum{
4     protected int rasioBunga(int rasio) {
5         return rasio;
6     }
7 }
8
```

Writable Smart Insert 6:6:120

30°C 12.28 04/12/2021

mod 8 - mod8/src/mod8/mainBank.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

```
1 package mod8;
2
3 public class mainBank {
4     public static void main(String [] args) {
5         Bank bank = new Bank();
6         BankPribadi bprbd = new BankPribadi();
7         BankUmum bumm = new BankUmum();
8         BankPasar bpsr = new BankPasar();
9         BankSyariah bsyrrh = new BankSyariah();
10
11         System.out.println(
12             "Rasio Bunga Bank      : " + bank.rasioBunga(5) + "\n" +
13             "Rasio Bunga Bank Pribadi : " + bprbd.rasioBunga(4) + "\n" +
14             "Rasio Bunga Bank Umum    : " + bumm.rasioBunga(3) + "\n" +
15             "Rasio Bunga Bank Pasar   : " + bpsr.rasioBunga(2) + "\n" +
16             "Rasio Bunga Bank Syariah : " + bsyrrh.rasioBunga(1));
17     }
18 }
19
```

Writable Smart Insert 16:53:608

30°C 12.29 04/12/2021

mod 8 - mod8/src/mod8/mainBank.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Problems Javadoc Declaration Console

<terminated> mainBank [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (4 Des 2021 12.29.07 - 12.29.08)

```
Rasio Bunga Bank      : 5
Rasio Bunga Bank Pribadi : 4
Rasio Bunga Bank Umum    : 3
Rasio Bunga Bank Pasar   : 2
Rasio Bunga Bank Syariah : 1
```

30°C 12.29 04/12/2021