

**LAPORAN PRAKTIKUM
MODUL 8
POLYMORPHISM
PRAKTIKUM PEMROGRAMAN BERORIENTASI OBJEK**



**Senopati Bkti W
L200190143
Praktikum PBO D**

INFORMATIKA

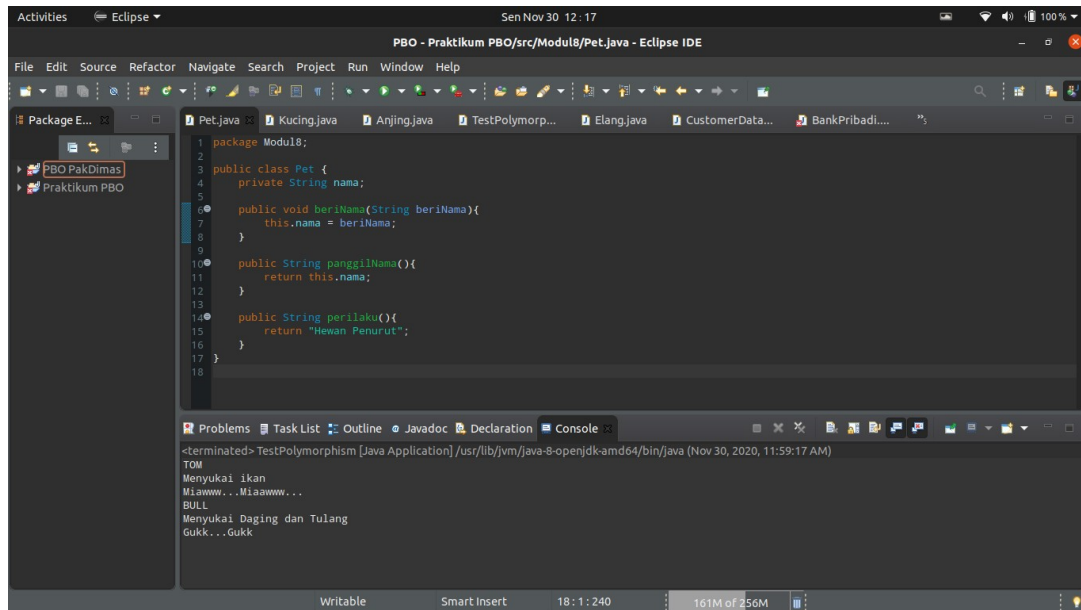
FAKULTAS KOMUNIKASI DAN INFORMATIKA

UNIVERSITAS MUHAMMADIYAH SURAKARTA

2020

Latihan Praktikum :

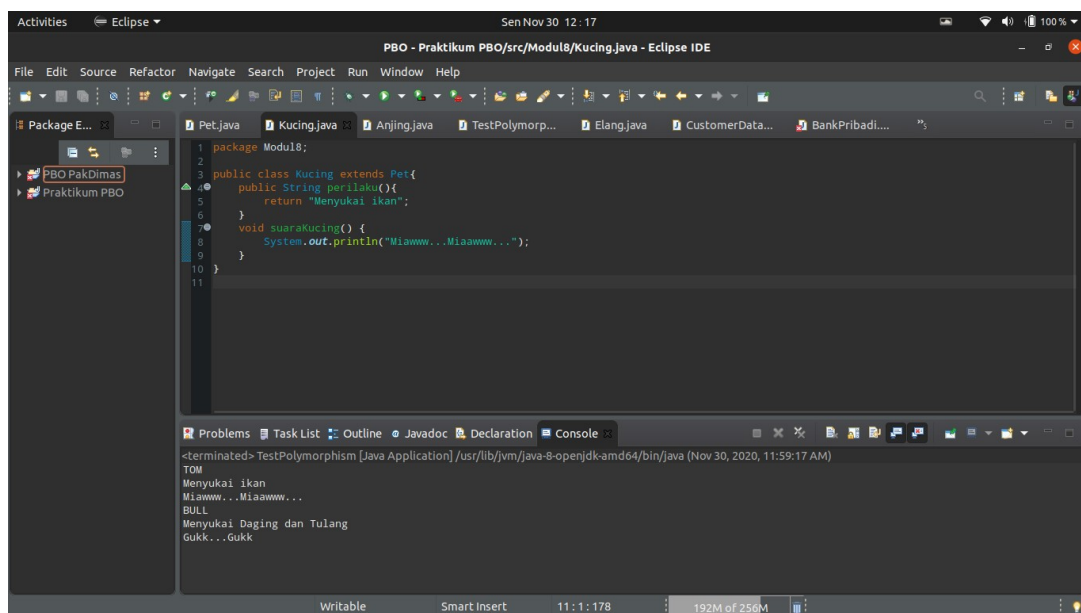
1. Buatlah class kucing dan Anjing dimana kedua class tersebut melakukan overriding terhadap method perilaku()!
2. Tambahkan satu method pada masing-masing class yang secara khusus hanya berlaku pada masing-masing class tersebut.
3. Buat class TestPolymorphism sehingga keluaran program seperti berikut ini!



```
1 package Modul8;
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
```

Console Output:

```
<terminated> TestPolymorphism [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 11:59:17 AM)
TOM
Menyukai ikan
Miaaww...Miaaww...
BULL
Menyukai Daging dan Tulang
Gukk...Gukk
```

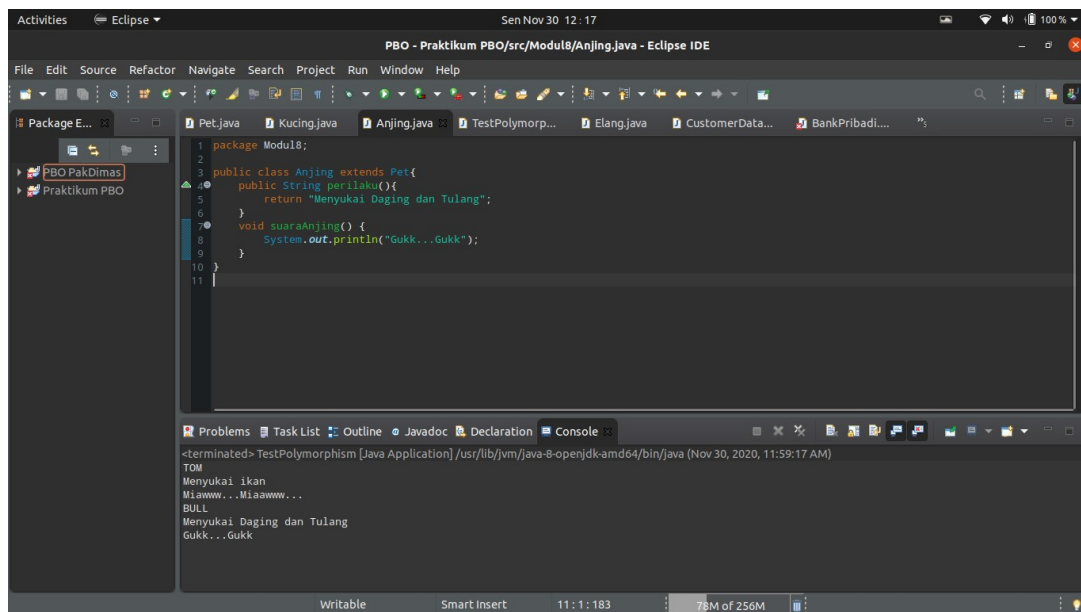


```
1 package Modul8;
2
3 public class Kucing extends Pet{
4     public String perilaku(){
5         return "Menyukai ikan";
6     }
7
8     void suaraKucing() {
9         System.out.println("Miaaww...Miaaww...");
10    }
11 }

```

Console Output:

```
<terminated> TestPolymorphism [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 11:59:17 AM)
TOM
Menyukai ikan
Miaaww...Miaaww...
BULL
Menyukai Daging dan Tulang
Gukk...Gukk
```



Activities Eclipse Sen Nov 30 12:17

PBO - Praktikum PBO/src/Modul8/Anjing.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer: PBO PakDimas, Praktikum PBO

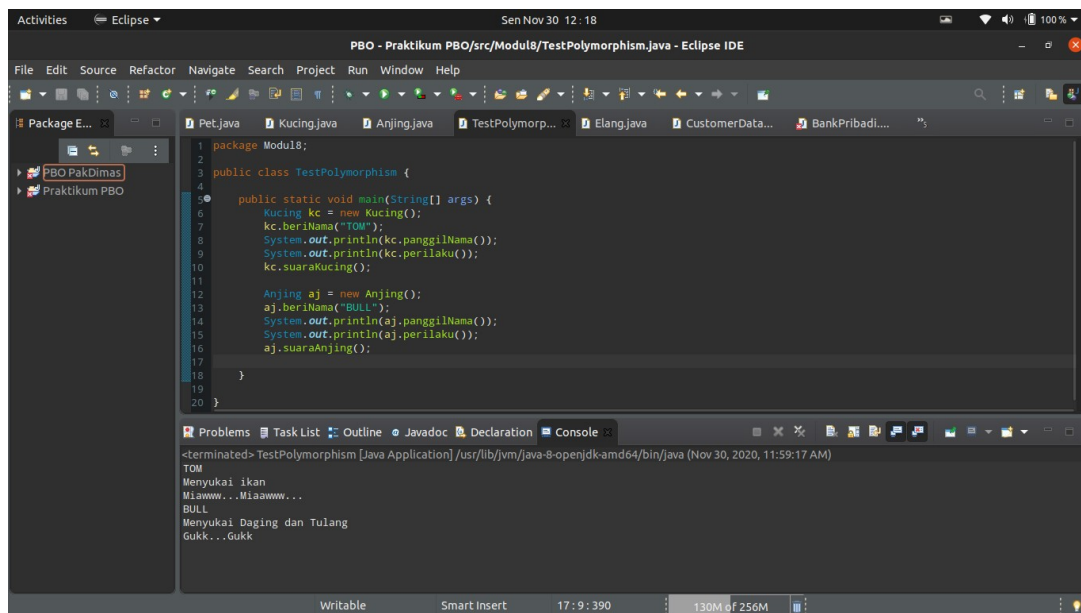
```
1 package Modul8;
2
3 public class Anjing extends Pet{
4     public String perilaku(){
5         return "Menyukai daging dan Tulang";
6     }
7     void suaraAnjing() {
8         System.out.println("Gukk...Gukk");
9     }
10 }
11
```

Problems Task List Outline Javadoc Declaration Console

<terminated> TestPolymorphism [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 11:59:17 AM)

TOM
Menyukai ikan
Miaaww...Miaaww...
BULL
Menyukai daging dan Tulang
Gukk...Gukk

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Activities Eclipse Sen Nov 30 12:18

PBO - Praktikum PBO/src/Modul8/TestPolymorphism.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer: PBO PakDimas, Praktikum PBO

```
1 package Modul8;
2
3 public class TestPolymorphism {
4
5     public static void main(String[] args) {
6         Kucing kc = new Kucing();
7         kc.beriNama("TOM");
8         System.out.println(kc.panggilNama());
9         System.out.println(kc.perilaku());
10        kc.suaraKucing();
11
12        Anjing aj = new Anjing();
13        aj.beriNama("BULL");
14        System.out.println(aj.panggilNama());
15        System.out.println(aj.perilaku());
16        aj.suaraAnjing();
17    }
18 }
19
20
```

Problems Task List Outline Javadoc Declaration Console

<terminated> TestPolymorphism [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 11:59:17 AM)

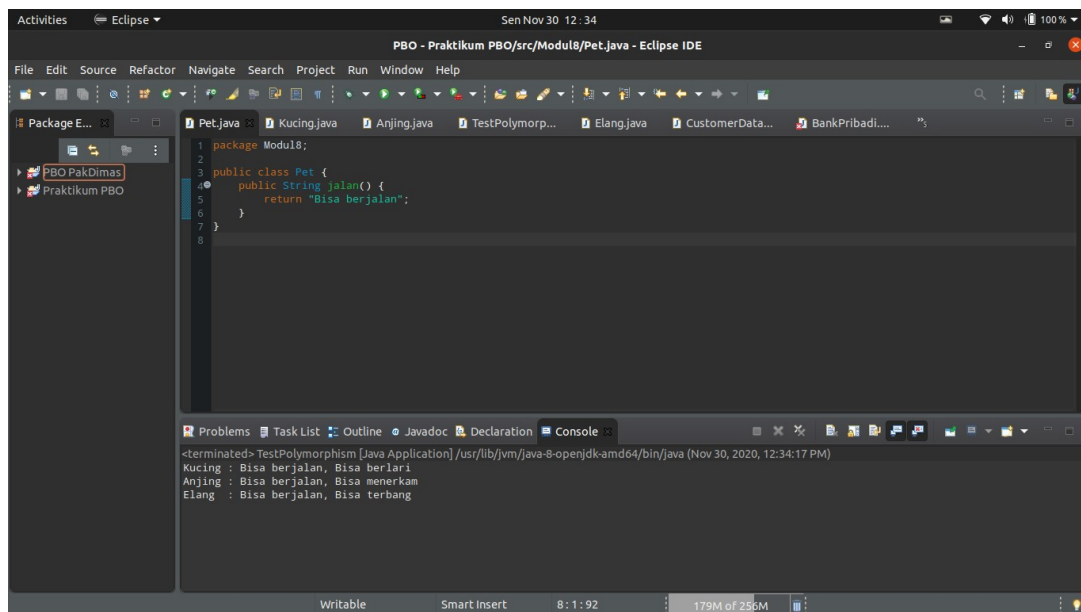
TOM
Menyukai ikan
Miaaww...Miaaww...
BULL
Menyukai daging dan Tulang
Gukk...Gukk

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TUGAS PRAKTIKUM :

1. Lihat kembali Program 4 mengenai overriding, buatlah class Elang yang memiliki method jalan()

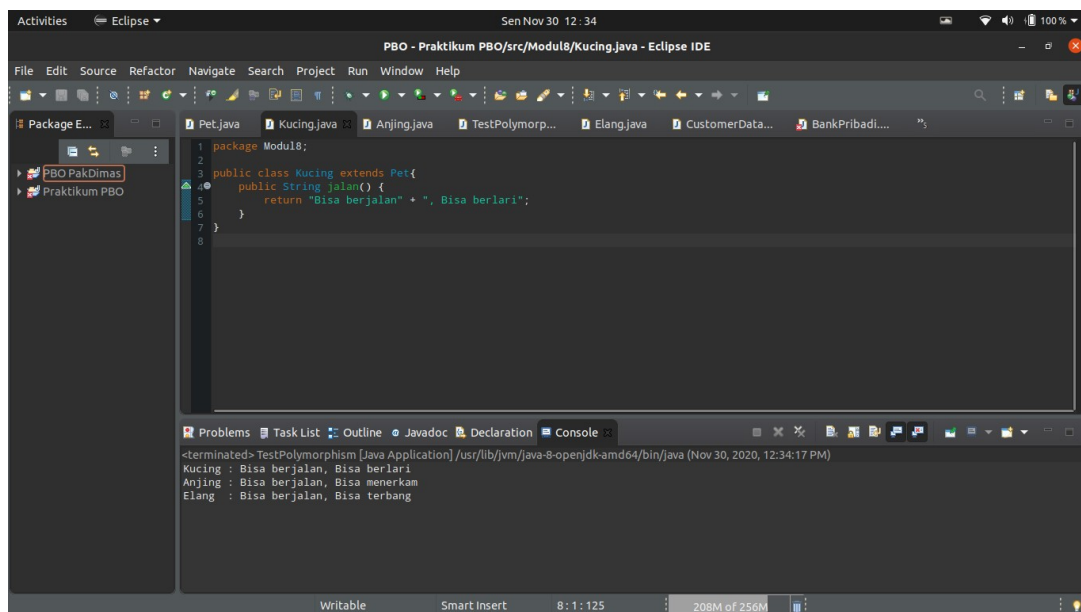
namun implementasinya berbeda dari kedua class lainnya!



```
1 package Modul8;
2
3 public class Pet {
4     public String jalan() {
5         return "Bisa berjalan";
6     }
7 }
8
```

Console output:

```
<terminated> TestPolymorphism [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 12:34:17 PM)
Kucing : Bisa berjalan, Bisa berlari
Anjing : Bisa berjalan, Bisa menerkam
Elang : Bisa berjalan, Bisa terbang
```



```
1 package Modul8;
2
3 public class Kucing extends Pet {
4     public String jalan() {
5         return "Bisa berjalan" + ", Bisa berlari";
6     }
7 }
8
```

Console output:

```
<terminated> TestPolymorphism [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 12:34:17 PM)
Kucing : Bisa berjalan, Bisa berlari
Anjing : Bisa berjalan, Bisa menerkam
Elang : Bisa berjalan, Bisa terbang
```

Activities Eclipse Sen Nov 30 12:34 PBO - Praktikum PBO/src/Modul8/Anjing.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer: PBO PakDimas, Praktikum PBO

Editors: Pet.java, Kucing.java, Anjing.java, TestPolymorp..., Elang.java, CustomerData..., BankPriadi...

```
1 package Modul8;
2
3 public class Anjing extends Pet{
4     public String jalan() {
5         return "Bisa berjalan" + ", Bisa menerkam";
6     }
7 }
8
```

Problems Task List Outline Javadoc Declaration Console

```
<terminated> TestPolymorphism [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 12:34:17 PM)
Kucing : Bisa berjalan, Bisa berlari
Anjing : Bisa berjalan, Bisa menerkam
Elang : Bisa berjalan, Bisa terbang
```

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Activities Eclipse Sen Nov 30 12:34 PBO - Praktikum PBO/src/Modul8/TestPolymorphism.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer: PBO PakDimas, Praktikum PBO

Editors: Pet.java, Kucing.java, Anjing.java, TestPolymorp..., Elang.java, CustomerData..., BankPriadi...

```
1 package Modul8;
2
3 public class TestPolymorphism {
4
5     public static void main(String[] args) {
6         Kucing kc = new Kucing();
7         System.out.println("Kucing : " + kc.jalan());
8
9         Anjing aj = new Anjing();
10        System.out.println("Anjing : " + aj.jalan());
11
12        Elang el = new Elang();
13        System.out.println("Elang : " + el.jalan());
14    }
15 }
16
17
```

Problems Task List Outline Javadoc Declaration Console

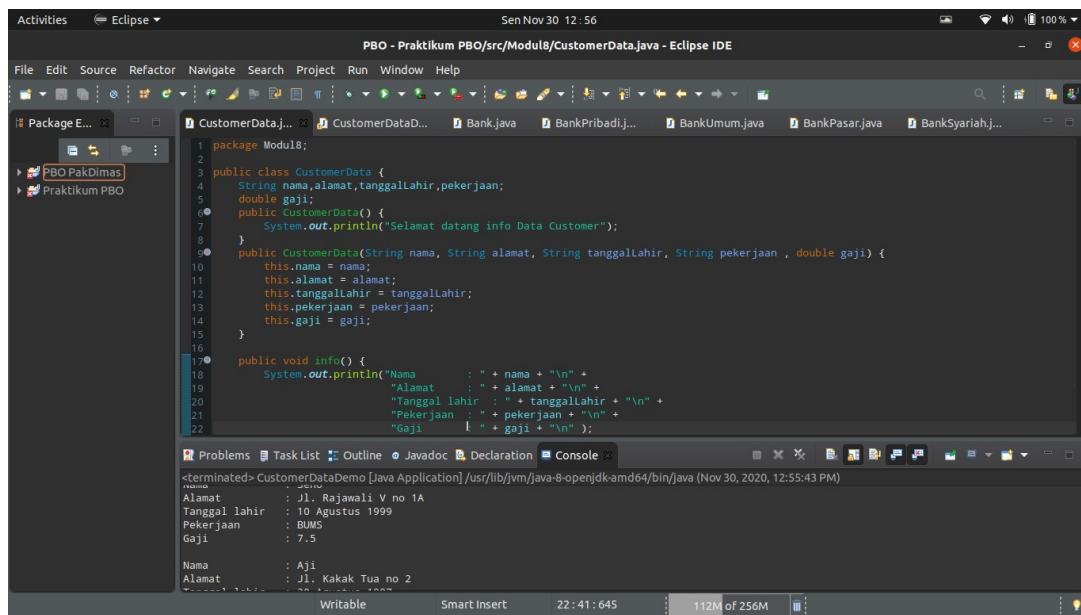
```
<terminated> TestPolymorphism [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 12:34:17 PM)
Kucing : Bisa berjalan, Bisa berlari
Anjing : Bisa berjalan, Bisa menerkam
Elang : Bisa berjalan, Bisa terbang
```

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

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

CustomerData

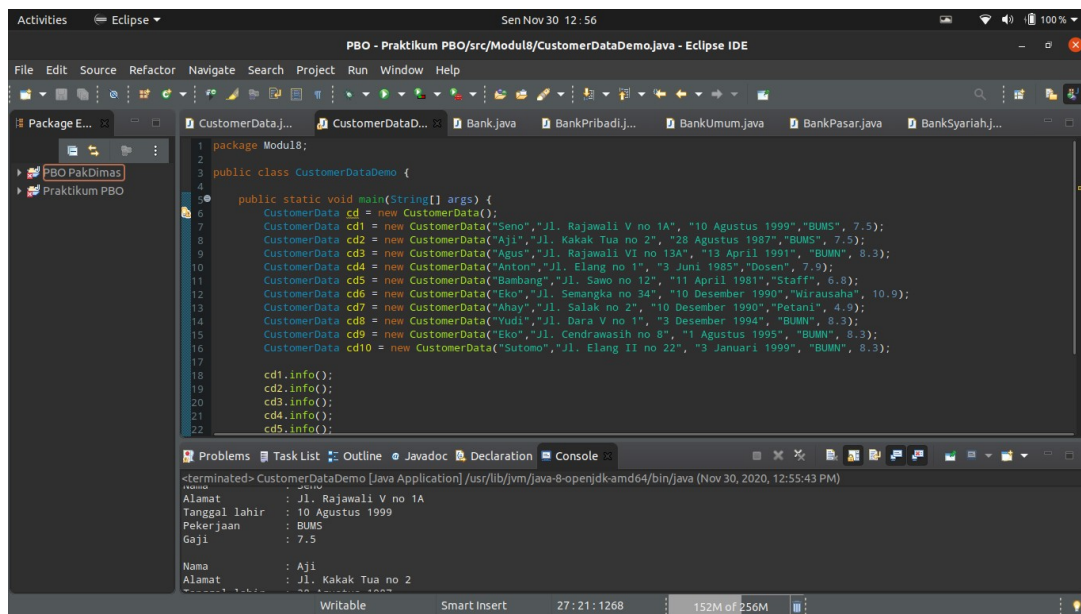


```
1 package Modul8;
2
3 public class CustomerData {
4     String nama, alamat, tanggalLahir, pekerjaan;
5     double gaji;
6     public CustomerData() {
7         System.out.println("Selamat datang info Data Customer");
8     }
9     public CustomerData(String nama, String alamat, String tanggalLahir, String pekerjaan, double gaji) {
10         this.nama = nama;
11         this.alamat = alamat;
12         this.tanggalLahir = tanggalLahir;
13         this.pekerjaan = pekerjaan;
14         this.gaji = gaji;
15     }
16
17     public void info() {
18         System.out.println("Nama      : " + nama + "\n" +
19                             "Alamat    : " + alamat + "\n" +
20                             "Tanggal lahir : " + tanggalLahir + "\n" +
21                             "Pekerjaan  : " + pekerjaan + "\n" +
22                             "Gaji       : " + gaji + "\n");
23     }
24 }
```

terminated> CustomerDataDemo [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 12:55:43 PM)

```
Alamat      : Jl. Rajawali V no 1A
Tanggal lahir : 10 Agustus 1999
Pekerjaan   : BUMS
Gaji        : 7.5

Nama       : Aji
Alamat     : Jl. Kakak Tua no 2
```



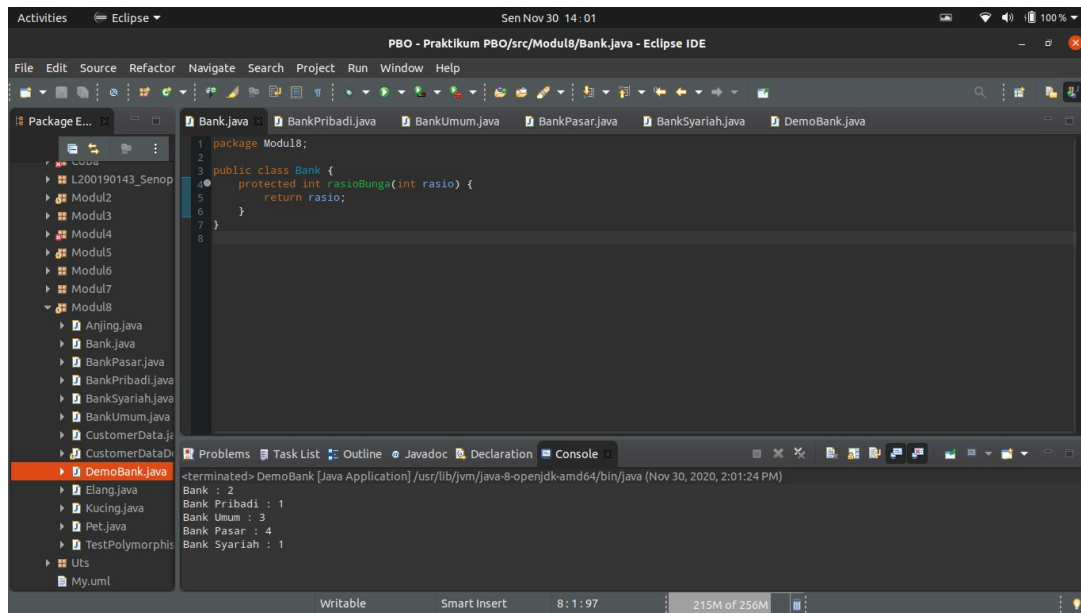
```
1 package Modul8;
2
3 public class CustomerDataDemo {
4
5     public static void main(String[] args) {
6         CustomerData cd = new CustomerData();
7         CustomerData cd1 = new CustomerData("Seno", "Jl. Rajawali V no 1A", "10 Agustus 1999", "BUMS", 7.5);
8         CustomerData cd2 = new CustomerData("Aji", "Jl. Kakak Tua no 2", "28 Agustus 1987", "BUMS", 7.5);
9         CustomerData cd3 = new CustomerData("Agus", "Jl. Rajawali VI no 13A", "13 April 1991", "BUMN", 8.3);
10        CustomerData cd4 = new CustomerData("Anton", "Jl. Elang no 1", "3 Juni 1985", "Dosen", 7.9);
11        CustomerData cd5 = new CustomerData("Bangang", "Jl. Samu no 12", "11 April 1981", "Staff", 6.8);
12        CustomerData cd6 = new CustomerData("Eko", "Jl. Semangka no 34", "10 Desember 1990", "Mirusaha", 10.9);
13        CustomerData cd7 = new CustomerData("Ahay", "Jl. Salak no 2", "10 Desember 1990", "Petani", 4.9);
14        CustomerData cd8 = new CustomerData("Yudi", "Jl. Dara V no 1", "3 Desember 1994", "BUMN", 8.3);
15        CustomerData cd9 = new CustomerData("Eko", "Jl. Cendrawasih no 8", "1 Agustus 1995", "BUMN", 8.3);
16        CustomerData cd10 = new CustomerData("Sutomo", "Jl. Elang II no 22", "3 Januari 1999", "BUMN", 8.3);
17
18        cd1.info();
19        cd2.info();
20        cd3.info();
21        cd4.info();
22        cd5.info();
23    }
24 }
```

terminated> CustomerDataDemo [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 12:55:43 PM)

```
Alamat      : Jl. Rajawali V no 1A
Tanggal lahir : 10 Agustus 1999
Pekerjaan   : BUMS
Gaji        : 7.5

Nama       : Aji
Alamat     : Jl. Kakak Tua no 2
```


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

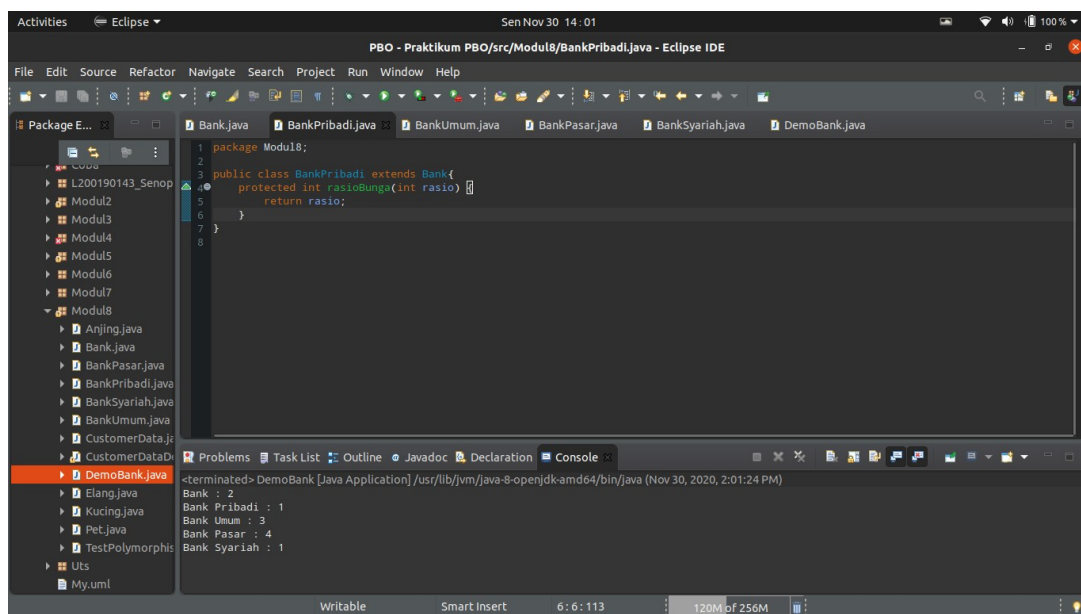


The screenshot shows the Eclipse IDE with the following details:

- Package Explorer:** Shows a project structure with packages L200190143_Senop, Modul2 through Modul8, and a package named DemoBank.java which is currently selected.
- Editor:** Displays the `Bank.java` file with the following code:

```
1 package Modul8;
2
3 public class Bank {
4     protected int rasioBunga(int rasio) {
5         return rasio;
6     }
7 }
8
```
- Console:** Shows the output of the program execution:

```
<terminated> DemoBank [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 2:01:24 PM)
Bank : 2
Bank Pribadi : 1
Bank Umum : 3
Bank Pasar : 4
Bank Syariah : 1
```



The screenshot shows the Eclipse IDE with the following details:

- Package Explorer:** Similar to the first screenshot, but the package `DemoBank.java` is no longer selected.
- Editor:** Displays the `BankPribadi.java` file with the following code:

```
1 package Modul8;
2
3 public class BankPribadi extends Bank{
4     protected int rasioBunga(int rasio) {
5         return rasio;
6     }
7 }
8
```
- Console:** Shows the same output as the first screenshot:

```
<terminated> DemoBank [Java Application] /usr/lib/jvm/java-8-openjdk-amd64/bin/java (Nov 30, 2020, 2:01:24 PM)
Bank : 2
Bank Pribadi : 1
Bank Umum : 3
Bank Pasar : 4
Bank Syariah : 1
```

