

LAPORAN PRAKTIKUM PEMROGRAMAN BERORIENTASI OBYEK

MODUL 8

POLYMORPHISM



Disusun Oleh :

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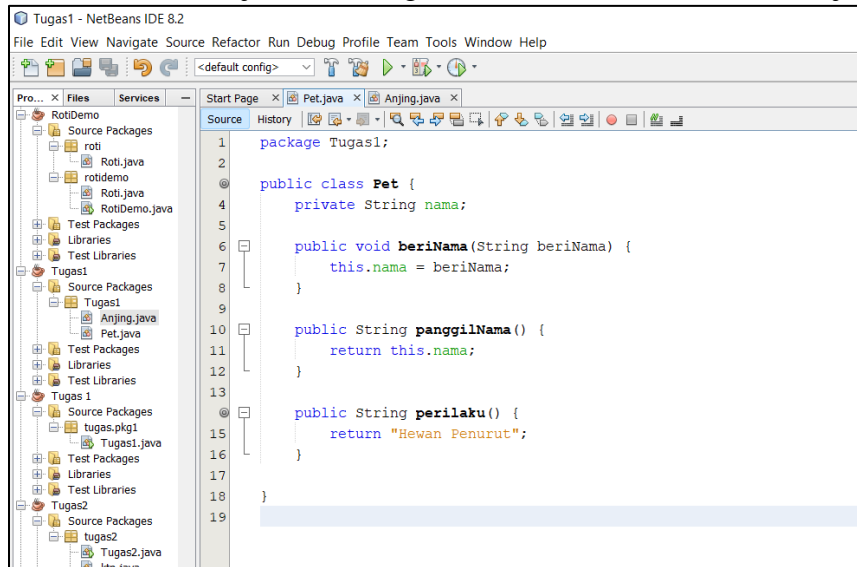
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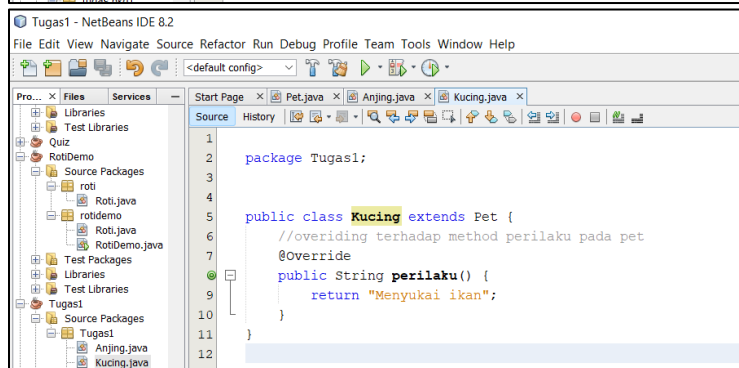
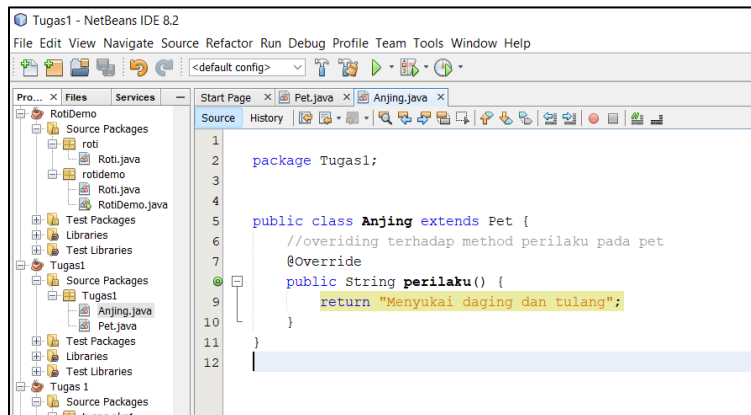
**PROGRAM STUDI TEKNIK INFORMATIKA
FAKULTAS KOMUNIKASI DAN INFORMATIKA
UNIVERSITAS MUHAMMADIYAH SURAKARTA
TAHUN 2021/2022**

8.2. LATIHAN

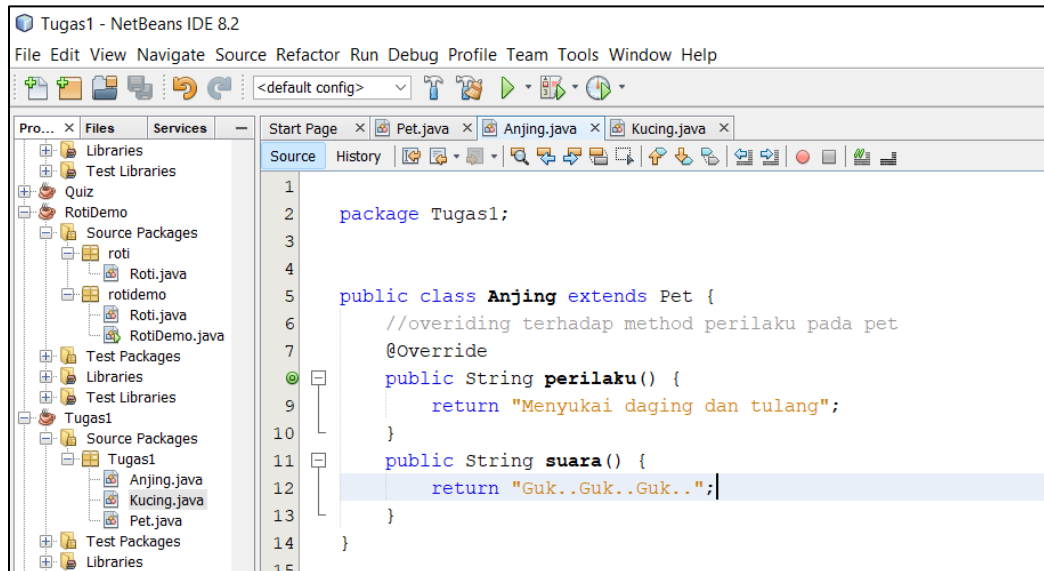
Silahkan tulis dan jalankan Program 8 berikut ini! Kemudian kerjakan soal setelahnya!



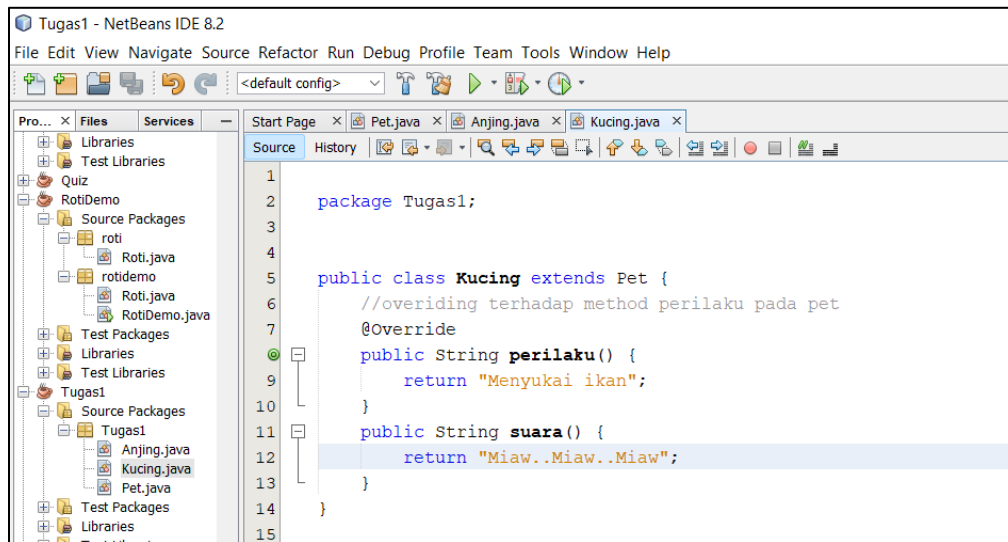
1. Buatlah class Kucing dan Anjing dimana kedua class tersebut melakukan overriding terhadap method perilaku()!



2. Tambahkan satu method pada masing-masing class yang secara khusus hanya berlaku pada masing-masing class tersebut.

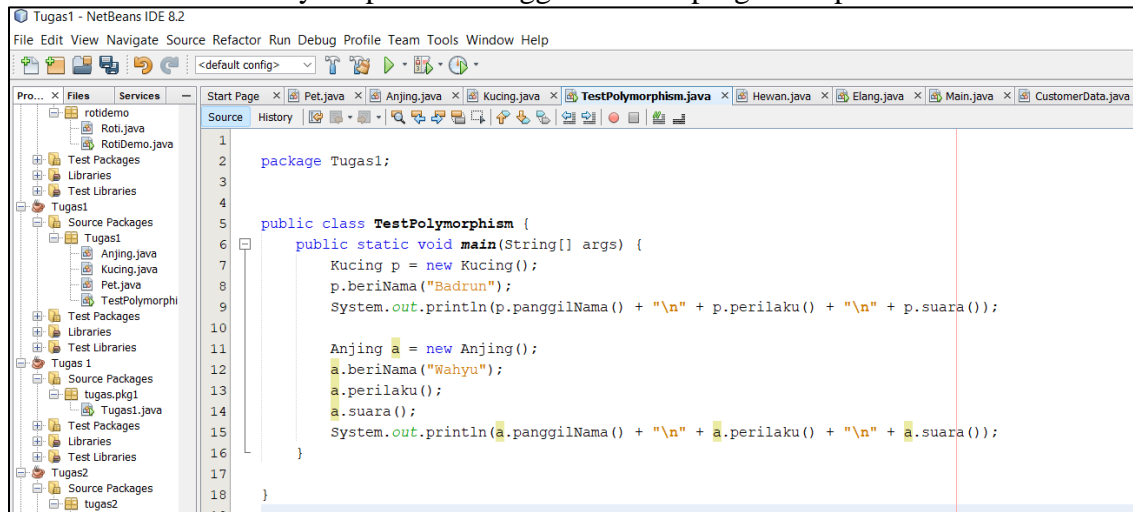


```
1 package Tugas1;
2
3
4
5 public class Anjing extends Pet {
6     //overiding terhadap method perilaku pada pet
7     @Override
8     public String perilaku() {
9         return "Menyukai daging dan tulang";
10    }
11    public String suara() {
12        return "Guk..Guk..Guk..";
13    }
14 }
15
```

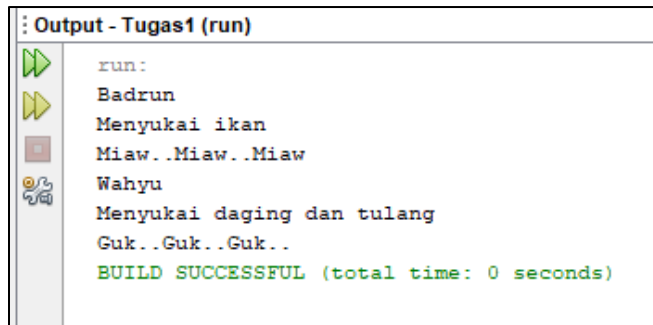


```
1 package Tugas1;
2
3
4
5 public class Kucing extends Pet {
6     //overiding terhadap method perilaku pada pet
7     @Override
8     public String perilaku() {
9         return "Menyukai ikan";
10    }
11    public String suara() {
12        return "Miaw..Miaw..Miaw..";
13    }
14 }
15
```

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



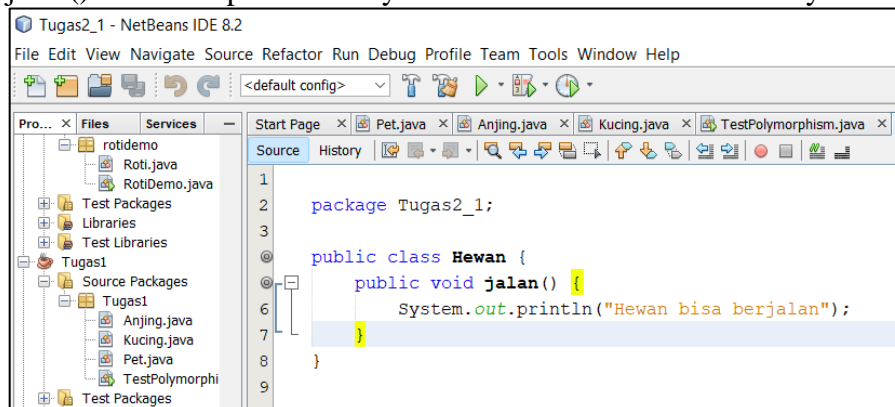
```
1 package Tugas1;
2
3
4
5 public class TestPolymorphism {
6     public static void main(String[] args) {
7         Kucing p = new Kucing();
8         p.beriNama("Badrun");
9         System.out.println(p.panggilNama() + "\n" + p.perilaku() + "\n" + p.suara());
10
11         Anjing a = new Anjing();
12         a.beriNama("Wahyu");
13         a.perilaku();
14         a.suara();
15         System.out.println(a.panggilNama() + "\n" + a.perilaku() + "\n" + a.suara());
16     }
17
18 }
```



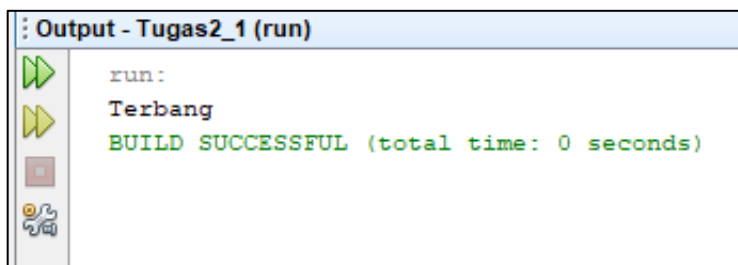
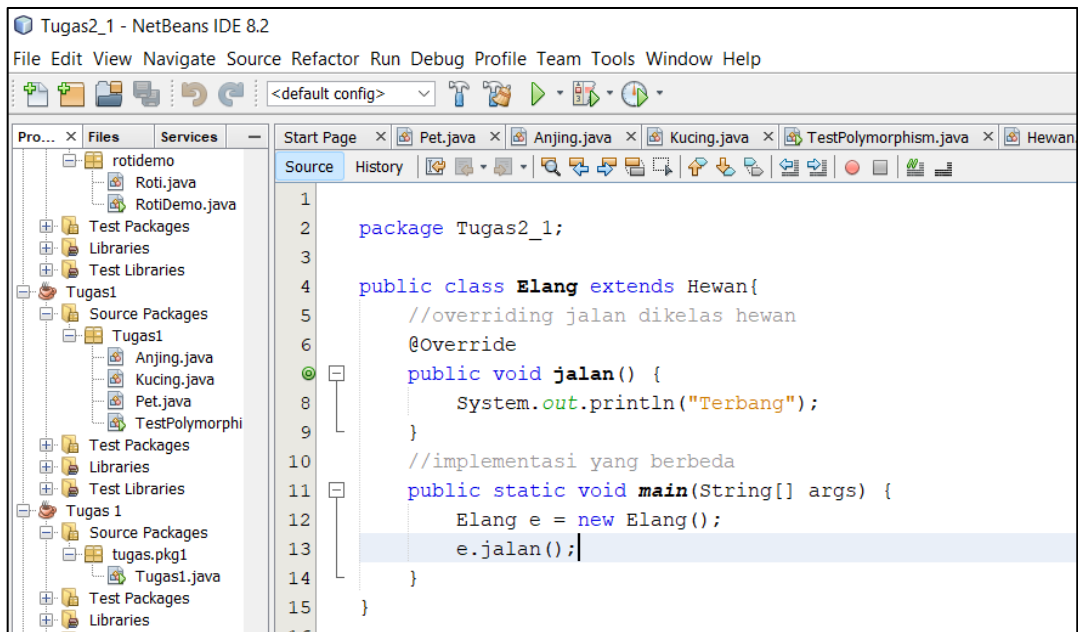
```
run:
Badrun
Menyukai ikan
Miaw..Miaw..Miaw
Wahyu
Menyukai daging dan tulang
Guk..Guk..Guk..
BUILD SUCCESSFUL (total time: 0 seconds)
```

8.3. TUGAS

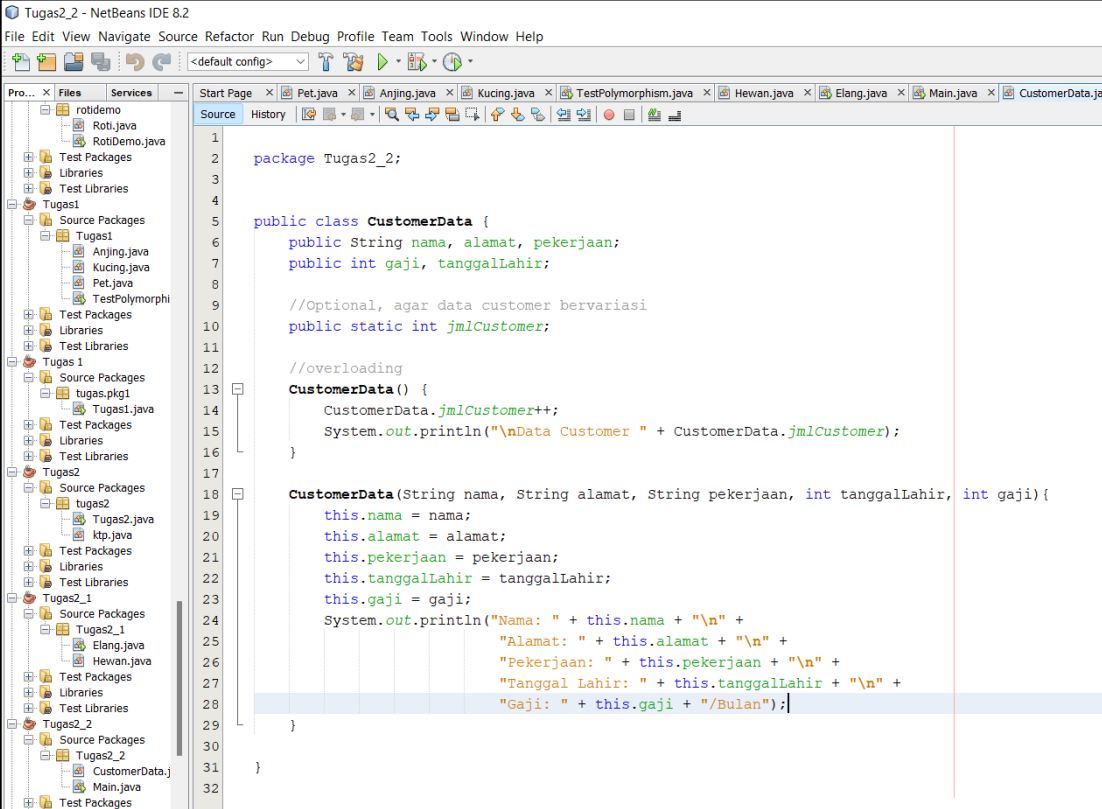
1. Lihat kembali Program 4 mengenai overriding, buatlah class Elang yang memiliki method jalan() namun implementasinya berbeda dari kedua class lainnya!



```
1 package Tugas2_1;
2
3
4 public class Hewan {
5     public void jalan() {
6         System.out.println("Hewan bisa berjalan");
7     }
8 }
9
```



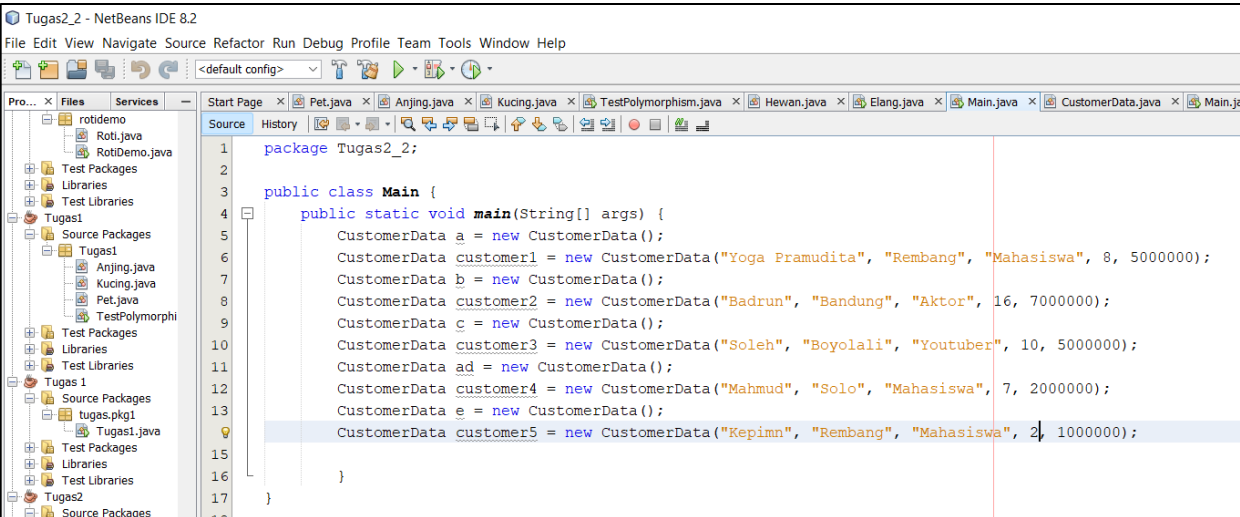
2. Buatlah class baru dengan nama **CustomerData**, tambahkan variabel **nama**, **alamat**, **tanggal lahir**, **pekerjaan** dan **gaji**. Selanjutnya buatlah **overloading constructor** dari class tersebut.



The screenshot shows the NetBeans IDE 8.2 interface. The left sidebar displays a project tree with 'Tugas2_2' selected. The main editor window shows the source code for 'CustomerData.java'. The code defines a package 'Tugas2_2' and a public class 'CustomerData'. It includes variables for 'nama', 'alamat', 'pekerjaan', 'tanggalLahir', and 'gaji', along with a static variable 'jmlCustomer'. Two constructors are implemented: a no-argument constructor that increments 'jmlCustomer' and prints a message, and a parameterized constructor that initializes the instance variables and prints a detailed customer record.

```
1 package Tugas2_2;
2
3
4
5 public class CustomerData {
6     public String nama, alamat, pekerjaan;
7     public int gaji, tanggalLahir;
8
9     //Optional, agar data customer bervariasi
10    public static int jmlCustomer;
11
12    //overloading
13    CustomerData() {
14        CustomerData.jmlCustomer++;
15        System.out.println("\nData Customer " + CustomerData.jmlCustomer);
16    }
17
18    CustomerData(String nama, String alamat, String pekerjaan, int tanggalLahir, int gaji){
19        this.nama = nama;
20        this.alamat = alamat;
21        this.pekerjaan = pekerjaan;
22        this.tanggalLahir = tanggalLahir;
23        this.gaji = gaji;
24        System.out.println("Nama: " + this.nama + "\n" +
25                            "Alamat: " + this.alamat + "\n" +
26                            "Pekerjaan: " + this.pekerjaan + "\n" +
27                            "Tanggal Lahir: " + this.tanggalLahir + "\n" +
28                            "Gaji: " + this.gaji + "/Bulan");
29    }
30
31 }
32
```

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



The screenshot shows the NetBeans IDE 8.2 interface. The left sidebar displays a project tree with 'Tugas2_2' selected. The main editor window shows the source code for 'Main.java'. The code defines a package 'Tugas2_2' and a public class 'Main'. It includes a static method 'main' that takes a String array 'args' as input. Inside the 'main' method, ten 'CustomerData' objects are created and initialized with specific data, including names, addresses, professions, birth dates, and salaries.

```
1 package Tugas2_2;
2
3
4 public class Main {
5     public static void main(String[] args) {
6         CustomerData a = new CustomerData();
7         CustomerData customer1 = new CustomerData("Yoga Pramudita", "Rembang", "Mahasiswa", 8, 5000000);
8         CustomerData b = new CustomerData();
9         CustomerData customer2 = new CustomerData("Badrun", "Bandung", "Aktor", 16, 7000000);
10        CustomerData c = new CustomerData();
11        CustomerData customer3 = new CustomerData("Soleh", "Boyolali", "Youtuber", 10, 5000000);
12        CustomerData ad = new CustomerData();
13        CustomerData customer4 = new CustomerData("Mahmud", "Solo", "Mahasiswa", 7, 2000000);
14        CustomerData e = new CustomerData();
15        CustomerData customer5 = new CustomerData("Kepimn", "Rembang", "Mahasiswa", 2, 1000000);
16
17    }
18 }
19
```

Output - Tugas2_2 (run)



Data Customer 1
Nama: Yoga Pramudita
Alamat: Rembang
Pekerjaan: Mahasiswa
Tanggal Lahir: 8
Gaji: 5000000/Bulan

Data Customer 2
Nama: Badrun
Alamat: Bandung
Pekerjaan: Aktor
Tanggal Lahir: 16
Gaji: 7000000/Bulan

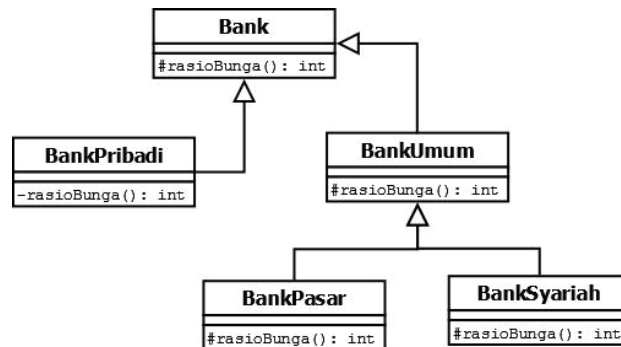
Data Customer 3
Nama: Soleh
Alamat: Boyolali
Pekerjaan: Youtuber
Tanggal Lahir: 10
Gaji: 5000000/Bulan

Data Customer 4
Nama: Mahmud
Alamat: Solo
Pekerjaan: Mahasiswa
Tanggal Lahir: 7
Gaji: 2000000/Bulan

Data Customer 5
Nama: Kepimn
Alamat: Rembang
Pekerjaan: Mahasiswa
Tanggal Lahir: 2
Gaji: 1000000/Bulan

BUILD SUCCESSFUL (total time: 0 seconds)

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



```
1 package Tugas2_4;
2
3 public class Bank {
4     @ protected int rasioBunga() {
5         int bungapertahun = 9;
6         System.out.println("Bank Memiliki Bunga : " + bungapertahun + "%");
7         return bungapertahun;
8     }
9 }
10
11
12
```

```
1 package Tugas2_4;
2
3
4 public class BankPribadi extends Bank {
5     @ protected int rasioBunga() {
6         int bungapertahun = 7;
7         System.out.println("Bank Pribadi Memiliki Bunga : " + bungapertahun + "%");
8         return bungapertahun;
9     }
10 }
11
```


Tugas2_4 - NetBeans IDE 8.2

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RotiDemo.java
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Libraries
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Tugas 1
Source Packages

Start Page x Pet.java x Anjing.java x Kucing.java x TestPolymorphism.java x Hewan.java x Elang.java x Main.java x

Source History

```
1  
2 package Tugas2_4;  
3  
4 public class BankUmum extends Bank{  
5     protected int rasioBunga(){  
6         int bungapertahun = 5;  
7         System.out.println("Bank Umum Memiliki Bunga : " + bungapertahun + "%");  
8         return bungapertahun;  
9     }  
10  
11 }  
12
```

Tugas2_4 - NetBeans IDE 8.2

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Source Packages

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Source History

```
1  
2 package Tugas2_4;  
3  
4 public class BankPasir extends BankUmum{  
5     protected int rasioBunga(){  
6         int bungapertahun = 6;  
7         System.out.println("Bank Pasir Memiliki Bunga : " + bungapertahun + "%");  
8         return bungapertahun;  
9     }  
10  
11 }  
12
```

Tugas2_4 - NetBeans IDE 8.2

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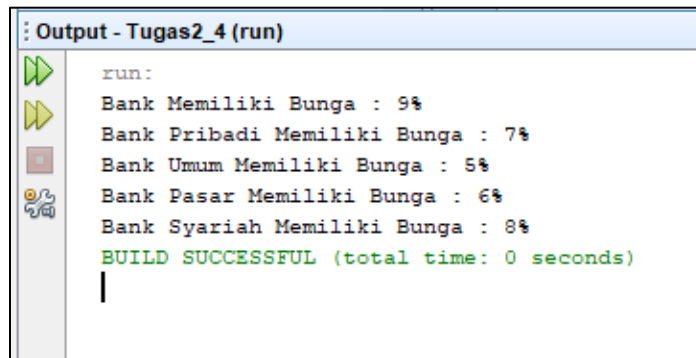
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Tugas 1
Source Packages

...ave x Kucing.java x TestPolymorphism.java x Hewan.java x Elang.java x Main.java x CustomerData.java x Main.java x

Source History

```
1  
2 package Tugas2_4;  
3  
4 public class BankSyariah extends BankUmum {  
5     protected int rasioBunga(){  
6         int bungapertahun = 8;  
7         System.out.println("Bank Syariah Memiliki Bunga : " + bungapertahun + "%");  
8         return bungapertahun;  
9     }  
10  
11 }
```

Untuk menampilkan hasilnya :



```
run:
Bank Memiliki Bunga : 9%
Bank Pribadi Memiliki Bunga : 7%
Bank Umum Memiliki Bunga : 5%
Bank Pasar Memiliki Bunga : 6%
Bank Syariah Memiliki Bunga : 8%
BUILD SUCCESSFUL (total time: 0 seconds)
|
```