

**ULANGAN TENGAH SEMESTER  
PEMROGRAMAN BERORIENTASI OBJEK**



**Disusun Oleh :**

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

## 1. Class Car

- Car.java

JavaApplication33 - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

```
1 package library;
2
3 import java.util.Scanner;
4
5 public class Car {
6     String NamaMobil;
7     static int tahunpembuatan;
8     static final String Buatan = "Tesla";
9
10    Car() {
11        System.out.println("Anda telah berhasil membuat objek");
12    }
13
14    Scanner sc = new Scanner(System.in);
15    String NamaMobil() {
16        System.out.println("Masukkan Nama Mobil : ");
17        NamaMobil = sc.nextLine();
18        return NamaMobil;
19    }
20
21    int tahunpembuatan() {
22        System.out.println("Masukkan Tahun Pembuatan : ");
23        tahunpembuatan = sc.nextInt();
24        return tahunpembuatan;
25    }
26 }
27
```

- LibraryDemo.java

JavaApplication33 - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

```
1 package library;
2
3
4 public class LibraryDemo {
5     public static void main(String[] args) {
6         Car cr1 = new Car();
7         cr1.NamaMobil();
8         cr1.tahunpembuatan();
9         System.out.println("\nNama Mobil : " + cr1.NamaMobil +
10                             "\nTahun Pembuatan : " + cr1.tahunpembuatan() +
11                             "\nBuatan : " + cr1.Buatan);
12
13         Car cr2 = new Car();
14         cr2.NamaMobil();
15         cr2.tahunpembuatan();
16         System.out.println("\nNama Mobil : " + cr2.NamaMobil +
17                             "\nTahun Pembuatan : " + cr2.tahunpembuatan() +
18                             "\nBuatan : " + cr2.Buatan);
19
20         Car cr3 = new Car();
21         cr3.NamaMobil();
22         cr3.tahunpembuatan();
23         System.out.println("\nNama Mobil : " + cr3.NamaMobil +
24                             "\nTahun Pembuatan : " + cr3.tahunpembuatan() +
25                             "\nBuatan : " + cr3.Buatan);
26     }
27 }
28
29
```

- Output

```

Output - JavaApplication33 (run) #3

run:
Anda telah berhasil membuat objek
Masukkan Nama Mobil :
Model S
Masukkan Tahun Pembuatan :
2020
Masukkan Tahun Pembuatan :
2020

Nama Mobil : Model S
Tahun Pembuatan : 2020
Buatan : Tesla
Anda telah berhasil membuat objek
Masukkan Nama Mobil :

```

## 2. Penjelasan tentang acces modifier

### a. Private

Private Modifier akan membuat “member” hanya bisa diakses di kelas sendiri.

Bukti :

- Akses1.java

*Ket : Penjelasan ada di dalam code*

```

Paket1 - NetBeans IDE 8.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Source History

1 //Yoga Pramudita
2 //L200200182
3
4 package paket1;
5
6 //Membuat Private variable pada kelas akses1
7
8 public class akses1 {
9     private final int jam = 9;
10    private final int menit = 15;
11
12    public int getJam() {
13        return jam;
14    }
15
16    public static void main(String[] args) {
17        akses1 data = new akses1();
18        data.getJam();
19        //Memanggil tanpa terjadinya error
20        System.out.println(data.jam);
21        System.out.println(data.menit);
22    }
23
24 //Diatas kelas akses1.java
25 //Pada private hanya dapat diakses dikelas sendiri

```

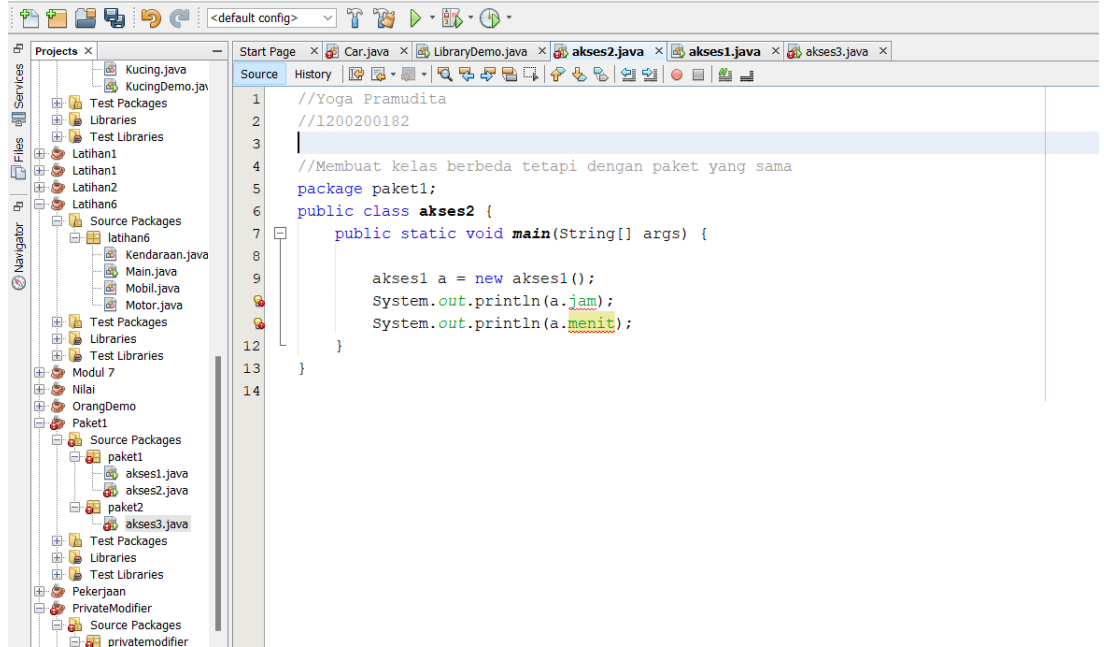
Output:

```
run:
9
15
BUILD SUCCESSFUL (total time: 0 seconds)
```

- Akses 2.java

Paket1 - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help



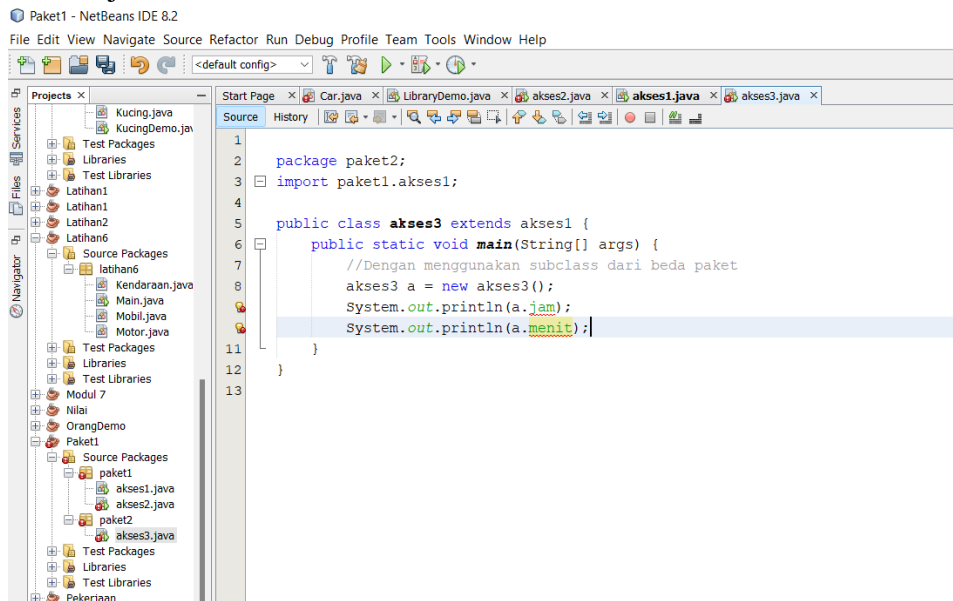
Output :

Output - Paket1 (run)

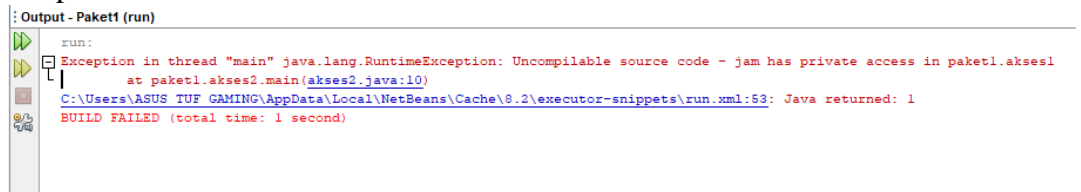
```
run:
Exception in thread "main" java.lang.RuntimeException: Uncompilable source code - jam has private access in paket1.akses1
    at paket1.akses2.main(akses2.java:10)
    at C:\Users\ASUS TUF GAMING\AppData\Local\NetBeans\Cache\8.2\executor-snippets\run.xml:53: Java returned: 1
BUILD FAILED (total time: 1 second)
```

Ket : Jika dirun maka akan terjadi error karena bersivat private.

- Akses3.java



### Output :



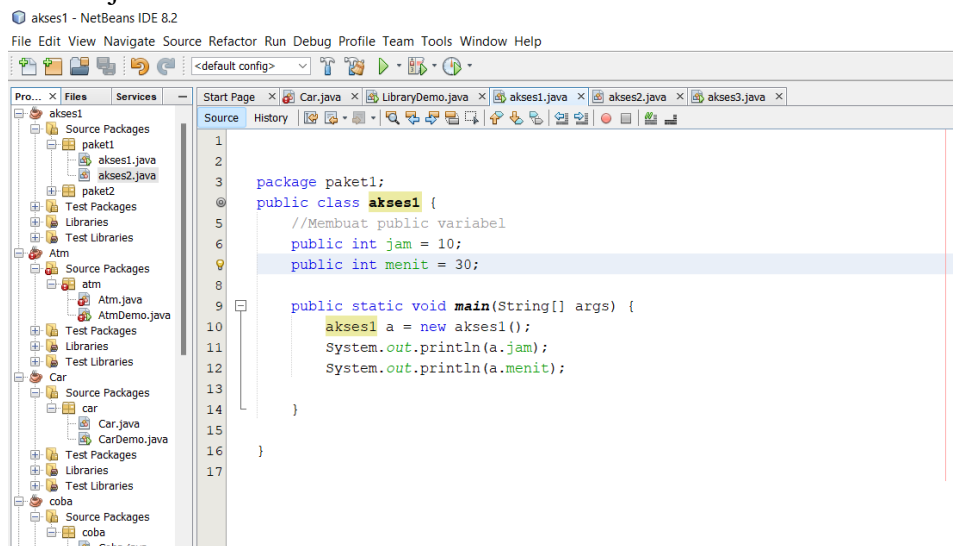
Ket : Jika dirun maka akan terjadi error karena bersivat private.

### b. Public

Bisa diakses disemuanya, meski beda paket.

Bukti :

- Akses1.java



Output :

```
Output - akses1 (run)

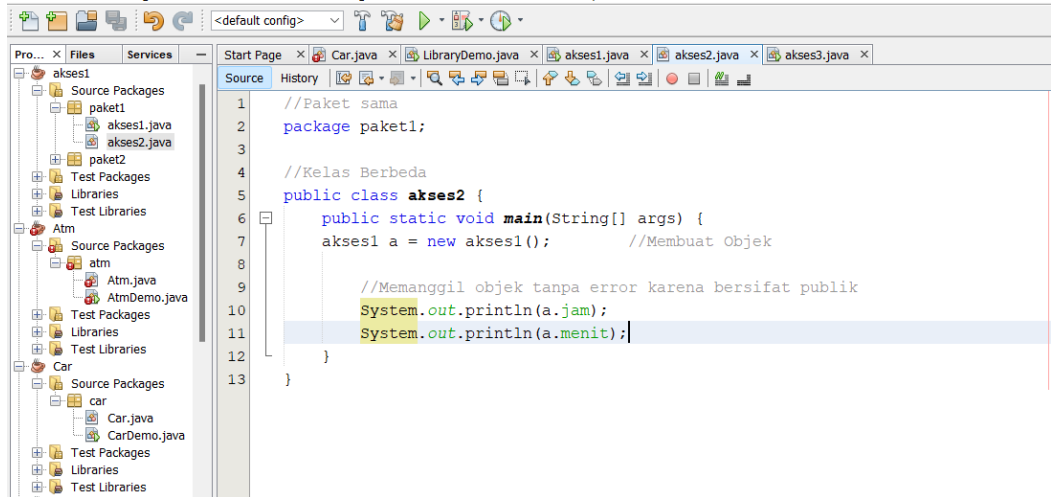
run:
10
30
BUILD SUCCESSFUL (total time: 0 seconds)
```

- Akses2.java

Paket sama kelas berbeda

akses1 - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help



Output :

```
Output - akses1 (run)

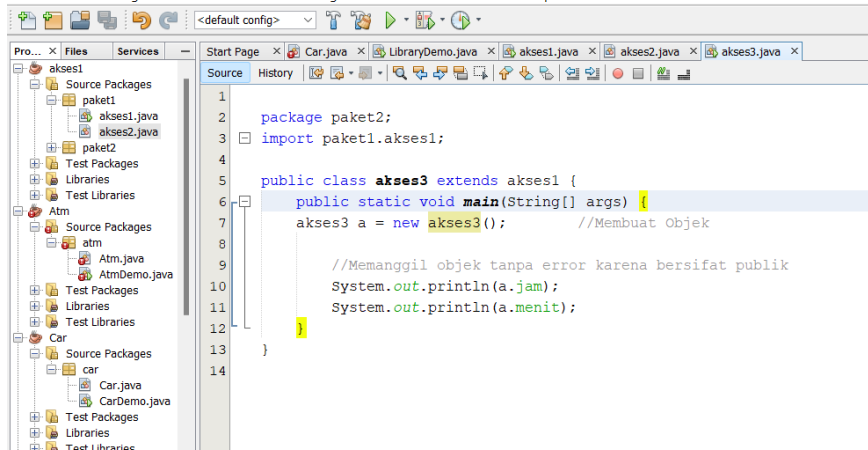
run:
10
30
BUILD SUCCESSFUL (total time: 0 seconds)
```

- Akses3.java

Berada di beda paket

akses1 - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help



Output :

```
Output - akses1 (run)
run:
10
30
BUILD SUCCESSFUL (total time: 0 seconds)
```

Kesimpulan : Bisa diakses di semuanya.

c. Default

Hanya dapat diakses oleh paket sendiri dan kelas sendiri.

Bukti :

- Akses1.java

default - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config>

Pro... x Files Services - Start Page x Car.java x LibraryDemo.java x akses1.java x akses2.java x

Source History

```
1 package paket1;
2 public class akses1 {
3     int jam = 3;
4     int menit = 50;
5
6 }
7 //Membuat variabel di kelas akses 1
8
```

- Akses2.java

default - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config>

Pro... x Files Services - Start Page x Car.java x LibraryDemo.java x akses1.java x akses2.java x

Source History

```
1
2 package paket1;
3
4 public class akses2 {
5     public static void main(String[] args) {
6         akses1 a = new akses1();
7         System.out.println(a.jam);
8         System.out.println(a.menit);
9     }
10
11 }
12
```

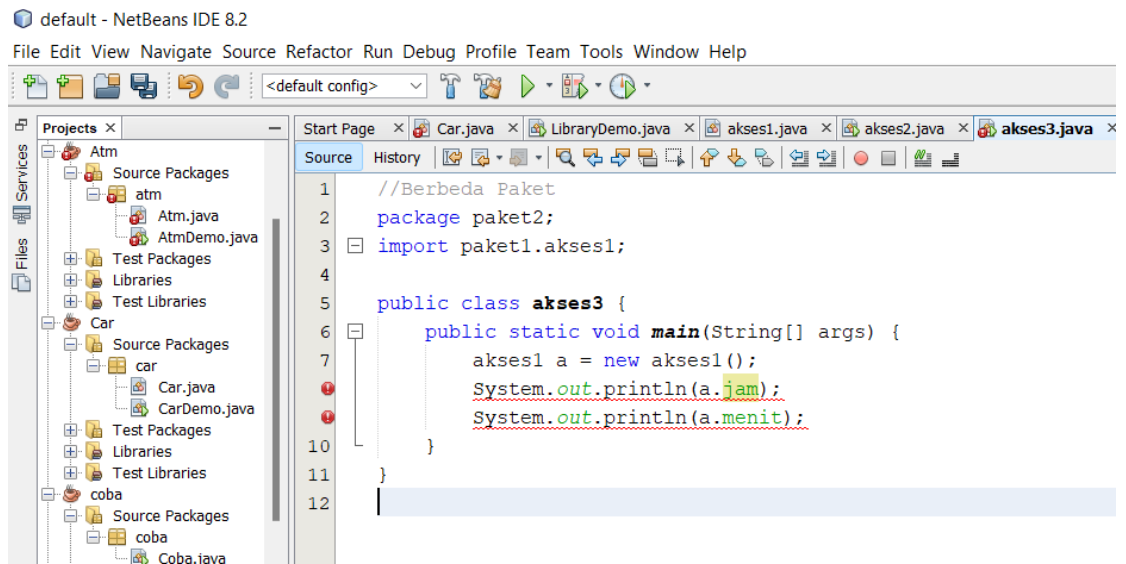
Output :

```
Output - default (run)

run:
3
50
BUILD SUCCESSFUL (total time: 0 seconds)
```

Ket : Jika di run masih bisa karena masih didalam paket yang sama, tanpa error.

- Akses3.java



Output :

```
Output - Paket1 (run)

run:
Exception in thread "main" java.lang.RuntimeException: Uncompilable source code - jam has private access in paket1.akses1
at paket1.akses2.main(Akses2.java:10)
C:\Users\ASUS TUF GAMING\AppData\Local\NetBeans\Cache\8.2\executor-snippets\run.xml:53: Java returned: 1
BUILD FAILED (total time: 1 second)
```

Ket : Jika diakses diluar paket akan mengalami error.

Kesimpulan : Selama paketnya sama default dapat diakses.

d. Protected

Bisa diakses didalam satu paket dan subclass.

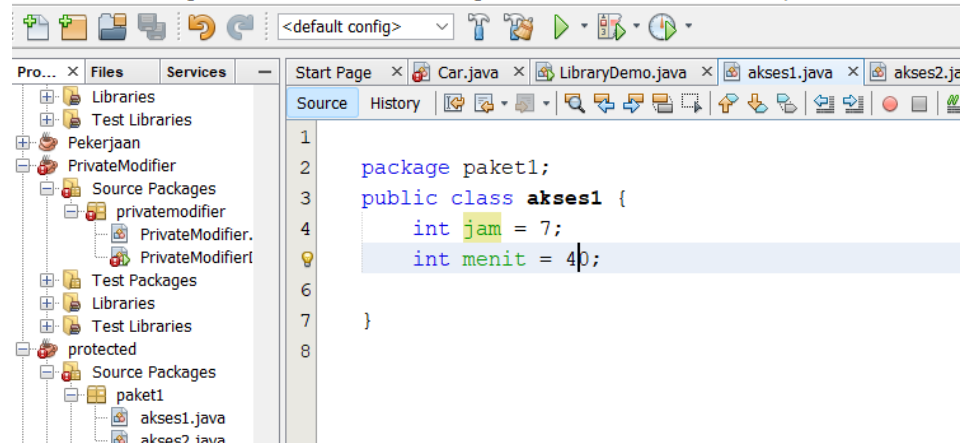
Bukti :



- Akses1.java

protected - NetBeans IDE 8.2

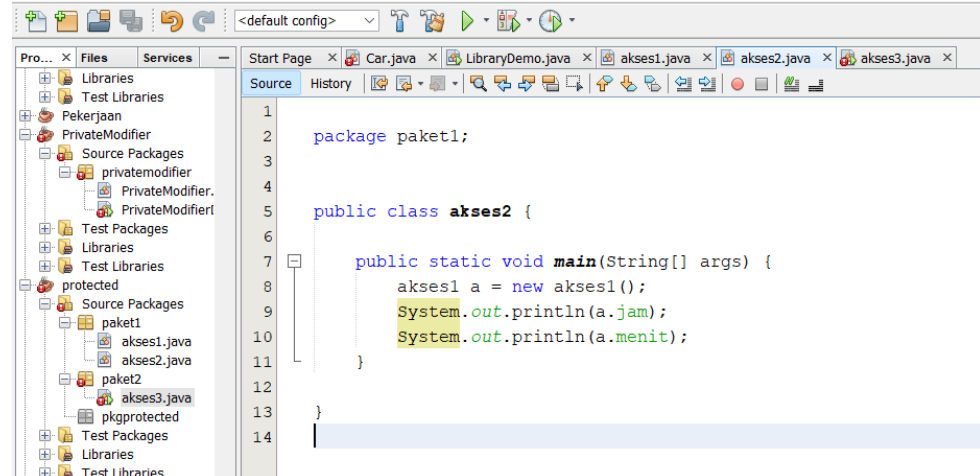
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help



- Akses2.java

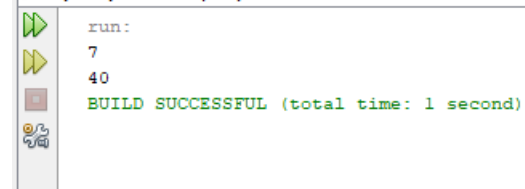
protected - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help



Output :

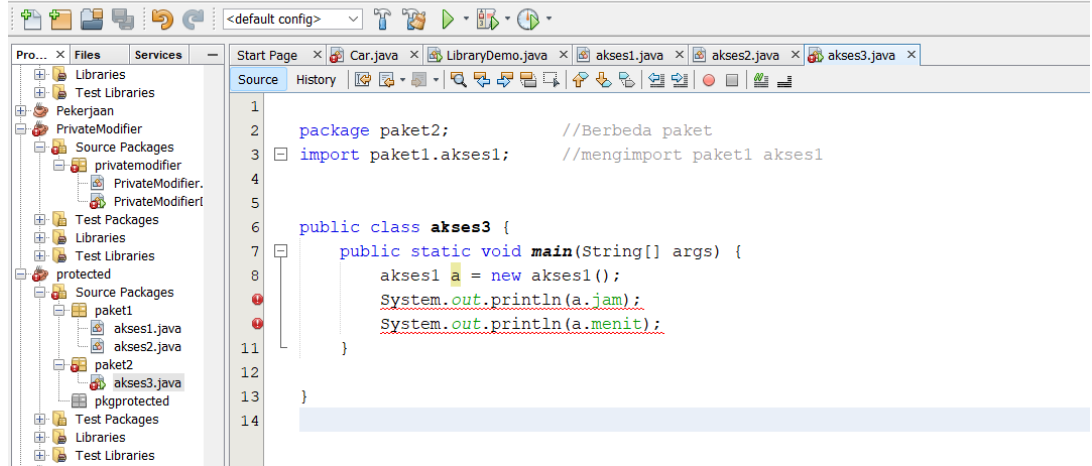
Output - protected (run)



- Akses3.java

protected - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help



Output :

: Output - Paket1 (run)

```

run:
Exception in thread "main" java.lang.RuntimeException: Uncompilable source code - jam has private access in paket1.akses1
at paket1.akses2.main(akses2.java:10)
C:\Users\ASUS TUF GAMING\AppData\Local\NetBeans\Cache\8.2\executor-snippets\run.xml:53: Java returned: 1
BUILD FAILED (total time: 1 second)

```

Ket : Kode diatas akan error meski diluar paket harus menggunakan “subclass”.

### 3. Program Encapsulation

- Actor.java

Encapsulation1 - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

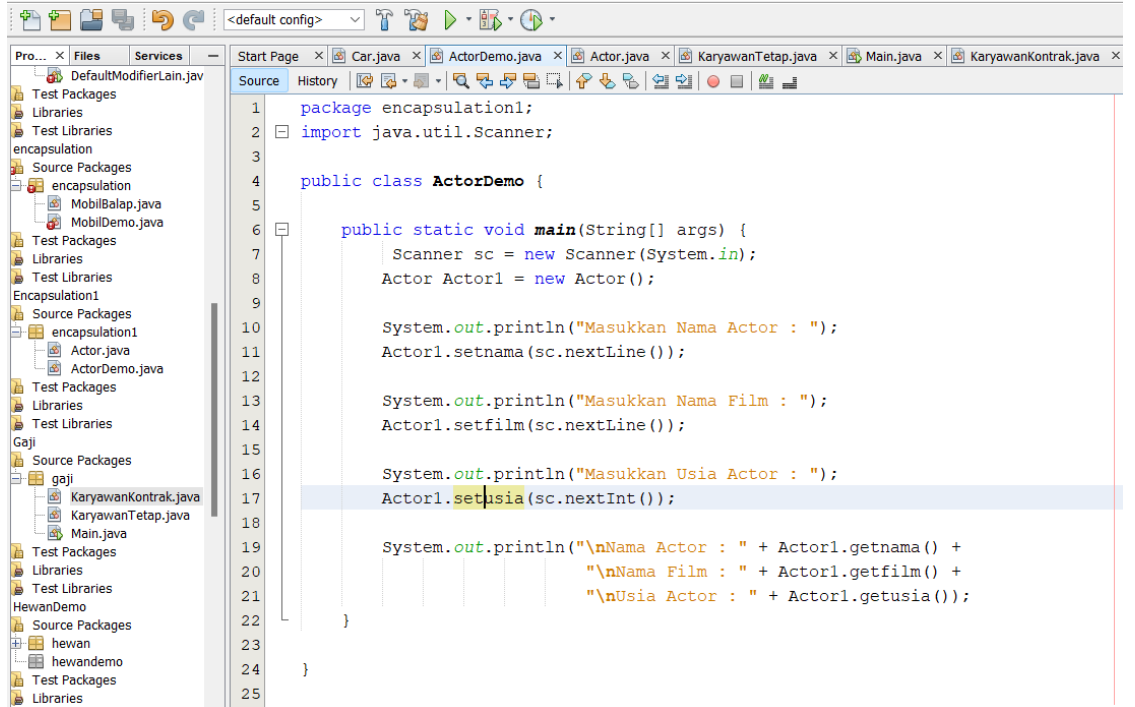
The screenshot shows the NetBeans IDE interface. On the left is the Project Explorer showing a project named 'Encapsulation1' with a package 'encapsulation1' containing 'Actor.java' and 'ActorDemo.java'. The main editor window displays the source code of 'Actor.java'.

```
1 package encapsulation1;
2
3
4 public class Actor {
5     private String nama;
6     private String film;
7     private int usia;
8
9     public void setnama(String nama) {
10         this.nama = nama ;
11     }
12
13     public String getnama() {
14         return nama;
15     }
16
17     public void setfilm(String film) {
18         this.film = film;
19     }
20
21     public String getfilm() {
22         return film;
23     }
24
25     public void setusia(int usia) {
26         this.usia = usia;
27     }
28
29     public int getusia() {
30         return usia;
31     }
32 }
33
34
```

- ActorDemo.java

Encapsulation1 - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

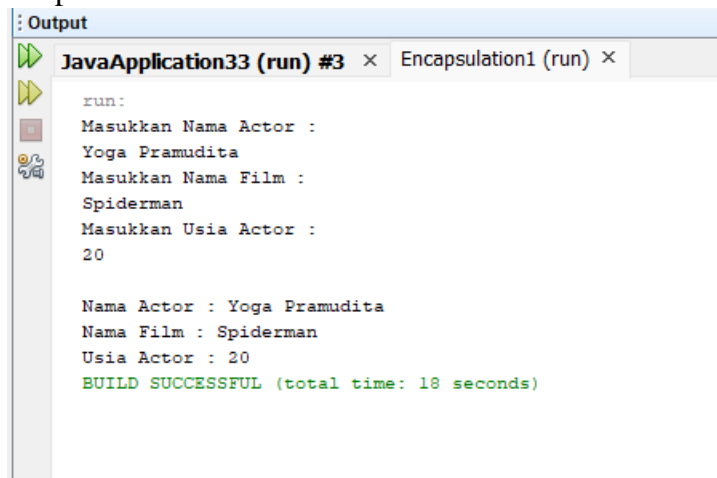


```

1 package encapsulation1;
2 import java.util.Scanner;
3
4 public class ActorDemo {
5
6     public static void main(String[] args) {
7         Scanner sc = new Scanner(System.in);
8         Actor Actor1 = new Actor();
9
10        System.out.println("Masukkan Nama Actor : ");
11        Actor1.setnama(sc.nextLine());
12
13        System.out.println("Masukkan Nama Film : ");
14        Actor1.setfilm(sc.nextLine());
15
16        System.out.println("Masukkan Usia Actor : ");
17        Actor1.setusia(sc.nextInt());
18
19        System.out.println("\nNama Actor : " + Actor1.getnama() +
20                            "\nNama Film : " + Actor1.getfilm() +
21                            "\nUsia Actor : " + Actor1.getusia());
22    }
23
24 }
25

```

- Output :



```

run:
Masukkan Nama Actor :
Yoga Pramudita
Masukkan Nama Film :
Spiderman
Masukkan Usia Actor :
20

Nama Actor : Yoga Pramudita
Nama Film : Spiderman
Usia Actor : 20
BUILD SUCCESSFUL (total time: 18 seconds)

```

#### 4. Program Gaji

- KaryawanTetap.java

Gaji - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config>

```
1 package gaji;
2 public class KaryawanTetap {
3     int gajiPokok=2000000;
4     //Membuat gaji Tambahan
5     int gajiLemburStaff = 30000;
6     int gajiLemburSuper = 40000;
7     int gajiManageSuper = 60000;
8     int gajiLemburManager = 50000;
9     int gajiProjectManager = 1000000;
10    int gajiManagerSu = 100000;
11    int gajiManagerSt = 60000;
12
13    //untuk mengatur berapa lama lembur, manage dan project
14    int lemburStaff;
15    int lemburSuper, manageSuper;
16    int lemburManager, projectManager, ManageManagerSu, ManageManagerSt;
17
18    //Staff
19    public void setLemburStaff(int lemburStaff) {
20        this.lemburStaff = lemburStaff;
21    }
22    public int getLemburStaff() {
23        return lemburStaff*gajiLemburStaff;
24    }
25    public int TotalGajiStaff() {
26        int ts = gajiPokok + getLemburStaff();
27        return ts;
28    }
29
30    //Supervisor
31    public void setLemburSuper(int lemburSuper) {
32        this.lemburSuper = lemburSuper;
33    }
34    public int getLemburSuper() {
35        return lemburSuper*gajiLemburSuper;
36    }
37    public void setManageSuper(int manageSuper) {
38        this.manageSuper = manageSuper;
```

Source History

```
28 }
29
30 //Supervisor
31 public void setLemburSuper(int lemburSuper) {
32     this.lemburSuper = lemburSuper;
33 }
34 public int getLemburSuper() {
35     return lemburSuper*gajiLemburSuper;
36 }
37 public void setManageSuper(int manageSuper) {
38     this.manageSuper = manageSuper;
39 }
40 public int getManageSuper() {
41     return manageSuper * gajiManageSuper;
42 }
43 public int TotalGajiSuper() {
44     int tss = gajiPokok + getLemburSuper() + getManageSuper();
45     return tss;
46 }
47
48 //Manager
49 public void setLemburManager(int lemburManager) {
50     this.lemburManager = lemburManager;
51 }
52 public int getLemburManager() {
53     return lemburManager * gajiLemburManager;
54 }
55 public void setProjectManager(int projectManager) {
56     this.projectManager = projectManager;
57 }
58 public int getProjectManager() {
59     return projectManager * gajiProjectManager;
60 }
61 public void setManageManagerSu(int ManageManagerSu) {
62     this.ManageManagerSu = ManageManagerSu;
63 }
64 public int getManageManagerSu() {
65     return ManageManagerSu * gajiManagerSu;
```

Project Explorer:

- Test Packages
  - DefaultModifierLain.jav
- Libraries
  - Test Libraries
    - encapsulation
      - Source Packages
        - encapsulation
          - MobilBalap.java
          - MobilDemo.java
- Test Packages
  - Libraries
    - Test Libraries
      - Encapsulation1
        - Source Packages
          - encapsulation1
            - Actor.java
            - ActorDemo.java
- Gaji
  - Source Packages
    - gaji
      - KaryawanKontrak.java
      - KaryawanTetap.java
      - Main.java
- Test Packages
  - Libraries
    - Test Libraries
      - HewanDemo
        - Source Packages
          - hewan
            - hewandemo
  - Jadwal
    - JavaApplication33
      - Source Packages
        - javaapplication33
          - library
            - Car.java
            - LibraryDemo.java
  - Test Packages
    - Libraries
      - Test Libraries
        - KucingDemo
          - Source Packages
            - kucingdemo
              - Kucing.java
              - KucingDemo.java

Gaji - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config>

Pro... x Files Services

Test Packages  
Libraries  
Test Libraries  
encapsulation  
Source Packages  
encapsulation  
MobilBalap.java  
MobilDemo.java  
Test Packages  
Libraries  
Test Libraries  
Encapsulation1  
Source Packages  
encapsulation1  
Actor.java  
ActorDemo.java  
Test Packages  
Libraries  
Test Libraries  
Gaji  
Source Packages  
gaji  
KaryawanKontrak.java  
KaryawanTetap.java  
Main.java  
Test Packages  
Libraries  
Test Libraries  
HewanDemo  
Source Packages  
hewan  
hewandemo  
Test Packages  
Libraries  
Test Libraries  
Jadwal  
JavaApplication33  
Source Packages  
javaapplication33  
library  
Car.java  
LibraryDemo.java  
Test Packages  
Libraries  
Test Libraries  
KucingDemo  
Source Packages  
kucingdemo

Start Page x Car.java x ActorDemo.java x Actor.java x Main.java x KaryawanTetap.java x KaryawanKontrak.java x

```
37 public void setManageSuper(int manageSuper) {  
46 }  
47  
48 //Manager  
49 public void setLemburManager(int lemburManager) {  
50     this.lemburManager = lemburManager;  
51 }  
52 public int getLemburManager() {  
53     return lemburManager * gajiLemburManager;  
54 }  
55 public void setProjectManager(int projectManager) {  
56     this.projectManager = projectManager;  
57 }  
58 public int getProjectManager() {  
59     return projectManager * gajiProjectManager;  
60 }  
61 public void setManageManagerSu(int ManageManagerSu) {  
62     this.ManageManagerSu = ManageManagerSu;  
63 }  
64 public int getManageManagerSu() {  
65     return ManageManagerSu * gajiManagerSu;  
66 }  
67 public void setManageManagerSt(int ManageManagerSt) {  
68     this.ManageManagerSt = ManageManagerSt;  
69 }  
70 public int getManageManagerSt() {  
71     return ManageManagerSt * gajiManagerSt;  
72 }  
73 public int TotalGajiManager() {  
74     int tm = gajiPokok + getLemburManager() + getProjectManager() +  
75         getManageManagerSu() + getManageManagerSt();  
76     return tm;  
77 }  
78  
79 }  
80
```

- KaryawanKontrak.java

Gaji - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config>

Pro... x Files Services

Test Packages  
Libraries  
Test Libraries  
encapsulation  
Source Packages  
encapsulation  
MobilBalap.java  
MobilDemo.java  
Test Packages  
Libraries  
Test Libraries  
Encapsulation1  
Source Packages  
encapsulation1  
Actor.java  
ActorDemo.java  
Test Packages  
Libraries  
Test Libraries  
Gaji  
Source Packages  
gaji  
KaryawanKontrak.java  
KaryawanTetap.java  
Main.java  
Test Packages  
Libraries  
Test Libraries

Start Page x Car.java x ActorDemo.java x Actor.java x Main.java x KaryawanTetap.java

Source History

```
1  
2 package gaji;  
3  
4 public class KaryawanKontrak {  
5     int upahKehadiran = 75000;  
6     int Kehadiran;  
7  
8     public void setKehadiran(int Kehadiran) {  
9         this.Kehadiran = Kehadiran;  
10    }  
11    public int getKehadiran() {  
12        return Kehadiran;  
13    }  
14    public int TotalGajiKontrak() {  
15        int tk = upahKehadiran * getKehadiran();  
16        return tk;  
17    }  
18  
19 }  
20
```

- Main.java

Gaji - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config>

Pro... X Files Services

Test Packages  
Libraries  
Test Libraries  
encapsulation  
Source Packages  
encapsulation  
MobilBalap.java  
MobilDemo.java  
Test Packages  
Libraries  
Test Libraries  
Encapsulation1  
Source Packages  
encapsulation1  
Actor.java  
ActorDemo.java  
Test Packages  
Libraries  
Test Libraries  
Gaji  
Source Packages  
gaji  
KaryawanKontrak.java  
KaryawanTetap.java  
Main.java  
Test Packages  
Libraries  
Test Libraries  
HewanDemo  
Source Packages  
hewan  
hewandemo  
Test Packages  
Libraries  
Test Libraries  
Jadwal  
JavaApplication33  
Source Packages  
javaapplication33

Start Page X Car.java X ActorDemo.java X Actor.java X Main.java X KaryawanTetap.java X KaryawanKontrak.java X

Source History

```

1
2 package gaji;
3
4 public class Main {
5     public static void main(String[] args) {
6         KaryawanTetap Kt = new KaryawanTetap();
7         //Staff
8         Kt.setLemburStaff(5);
9         //Supervisor
10        Kt.setLemburSuper(10);
11        Kt.setManageSuper(12);
12        //Manager
13        Kt.setLemburManager(15);
14        Kt.setProjectManager(2);
15        Kt.setManageManagerSu(3);
16        Kt.setManageManagerSt(7);
17
18        KaryawanKontrak Kk = new KaryawanKontrak();
19        Kk.setKehadiran(14);
20
21        System.out.println("Gaji Total Staff : Rp " + Kt.TotalGajiStaff() + "\n" +
22                           "Gaji Total Manager : Rp " + Kt.TotalGajiManager() + "\n" +
23                           "Gaji Total Supervisor : Rp " + Kt.TotalGajiSuper() + "\n" +
24                           "Gaji Total Karyawan Kontrak : Rp " + Kk.TotalGajiKontrak());
25    }
26
27 }
28
29

```

- Output

Output

JavaApplication33 (run) #3 X Gaji (run) X

```

run:
Gaji Total Staff : Rp 2150000
Gaji Total Manager : Rp 5470000
Gaji Total Supervisor : Rp 3120000
Gaji Total Karyawan Kontrak : Rp 1050000
BUILD SUCCESSFUL (total time: 0 seconds)

```