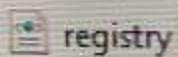




Control Panel (2)

- Edit environment variables for your account
- Edit the system environment variables

Files (1)

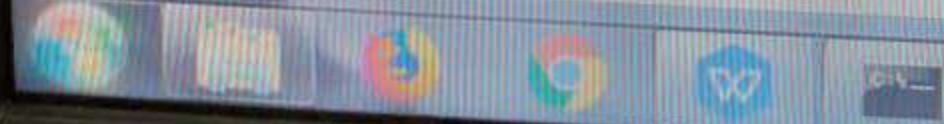


registry

[See more results](#)

environment

Shut down



Environment Variables

New User Variable

Variable name:

Variable value:

OK

Cancel

System variables

Variable	Value
ComSpec	C:\Windows\system32\cmd.exe
FP_NO_HOST_C...	NO
NUMBER_OF_P...	4
OS	Windows_NT

New...

Edit...

Delete

OK

Cancel

Environment Variables

X

User variables for LABRPL-4

Variable	Value
MOZ_PLUGIN_P...	C:\Program Files (x86)\Foxit Software\...
path	C:\Program Files\Java\jdk1.8.0_111\bin
PT7HOME	C:\Program Files\Cisco Packet Tracer 7....
QT_DEVICE_PIX...	auto

New...

Edit...

Delete

System variables

Variable	Value
ComSpec	C:\Windows\system32\cmd.exe
FP_NO_HOST_C...	NO
NUMBER_OF_P...	4
OS	Windows_NT

New...

Edit...

Delete

OK

Cancel

C:\Windows\system32\cmd.exe

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\>Users\LABRPL-4>java -version
java version "1.8.0_111"
Java(TM) SE Runtime Environment (build 1.8.0_111-b14)
Java HotSpot(TM) 64-Bit Server VM (build 25.111-b14, mixed mode)

C:\>Users\LABRPL-4>java
Usage: java [-options] class [args...]
           (to execute a class)
  or  java [-options] -jar jarfile [args...]
           (to execute a jar file)
where options include:
  -d32          use a 32-bit data model if available
  -d64          use a 64-bit data model if available
  -server        to select the "server" VM
                 The default VM is server.

  -cp <class search path of directories and zip/jar files>
  -classpath <class search path of directories and zip/jar files>
             A ; separated list of directories, JAR archives,
             and ZIP archives to search for class files.

  -D<name>=<value>
             set a system property
  -verbose:[class|gc|jni]
             enable verbose output
  -version   print product version and exit
  -version:<value>
             Warning: this feature is deprecated and will be removed
             in a future release.
  -showversion print product version and continue
  -jre-restrict-search ! -no-jre-restrict-search
             Warning: this feature is deprecated and will be removed
             in a future release.
  -? -help     print this help message
  -X          print help on non-standard options
  -ea[:<packagename>...|:<classname>]
  -enableassertions[:<packagename>...|:<classname>]
             enable assertions with specified granularity
  -da[:<packagename>...|:<classname>]
  -disableassertions[:<packagename>...|:<classname>]
             disable assertions with specified granularity
  -esa ! -enablesystemassertions
             enable system assertions
  -dsa ! -disablesystemassertions
             disable system assertions
```

C:\Windows\system32\cmd.exe

```
-splash::<imagepath>
      show splash screen with specified image
See http://www.oracle.com/technetwork/java/javase/documentation/index.html for more details.

C:\Users\LABEPL-4>cd..
C:\Users>cd..
C:\>d :
'd' is not recognized as an internal or external command,
operable program or batch file.

C:\>d:

D:\>dir
Volume in drive D has no label.
Volume Serial Number is DC46-F4AC

Directory of D:\

09/10/2019  08:07 AM           12,193 ab.png
09/10/2019  07:33 AM          3,656,667 abc.png
09/06/2019  04:08 AM         71,130,904 construct2-r269-setup.exe
07/14/2009  12:32 PM        8,414,449 Kalimba.mp3
09/10/2019  12:08 PM       <DIR>      multimedia
09/11/2019  12:59 PM           419 program.class
09/13/2019  02:51 PM           108 program.java
09/11/2019  01:40 PM       <DIR>      ProjectDiko
09/10/2019  08:26 AM        1,179,884 space.capx
               7 File(s)   84,393,824 bytes
               2 Dir(s)  263,854,579,712 bytes free

D:\>javac program.java
D:\>java program
Hello World
D:\>
```

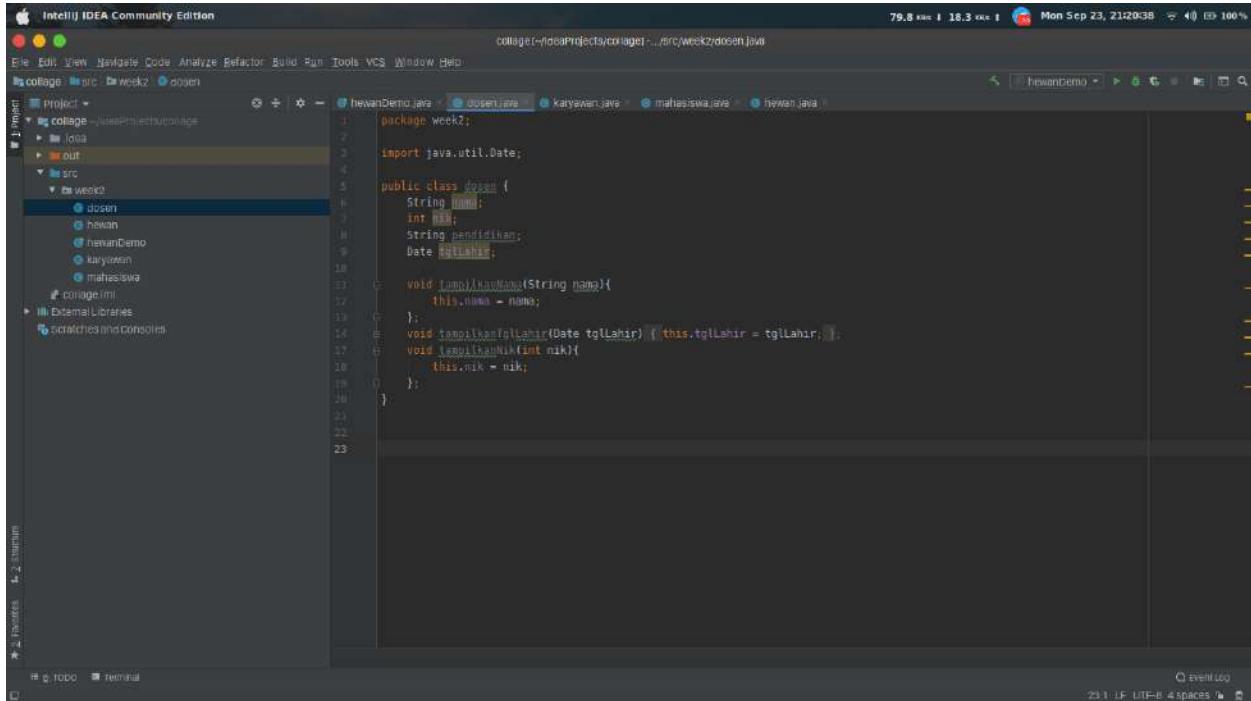
PBO Praktikum module ke 2

Nama : Dzaki Fadhlurrohman

NIM : L200180064

Kelas : B

Class Dosen



The screenshot shows the IntelliJ IDEA interface with the following details:

- Project Structure:** The project is named "collage". It contains a "src" directory which includes "dosen.java", "hewan.java", "karyawan.java", and "mahasiswa.java". There is also a "hewanDemo.java" file in the root.
- Code Editor:** The "dosen.java" file is open. The code defines a class "dosen" with attributes name (String), nIK (int), pendidikan (String), and tglLahir (Date). It has three methods: "tambahNama" (takes a String parameter and sets it to "this.nama"), "tambahTglLahir" (takes a Date parameter and sets it to "this.tglLahir"), and "isiNik" (sets "this.nIK" to a value).
- Toolbars and Status Bar:** The top bar shows "File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help". The status bar at the bottom right shows "79.8 min 18.3 min Mon Sep 23, 21:20:38 40 100%".
- Bottom Navigation:** The bottom navigation bar includes icons for Favorites, Home, TODO, Terminal, and eventLog.

Class Karyawan

The screenshot shows the IntelliJ IDEA interface with the title bar "IntelliJ IDEA Community Edition". The status bar indicates the file path "collage-idea/projects/collage-.../src/week2/karyawan.java", the date "Mon Sep 23, 21:27:35", and the battery level "1.38 km". The code editor displays the following Java code:

```
package week2;

public class Karyawan {
    String name;
    String alamat;
    String jabatan;
    Double gaji;

    void tampilkanNama(String nama) { this.name = nama; }
    void tampilkanAlamat(String alamat){
        this.alamat = alamat;
    }
    void tampilkanJabatan(String jabatan){
        this.jabatan = jabatan;
    }
    void tampilkanGaji(Double gaji){
        this.gaji = gaji;
    }
}
```

Class Mahasiswa

The screenshot shows the IntelliJ IDEA interface with the title bar "IntelliJ IDEA Community Edition". The status bar indicates the file path "collage-idea/projects/collage-.../src/week2/mahasiswa.java", the date "Mon Sep 23, 21:28:20", and the battery level "1.38 km". The code editor displays the following Java code:

```
package week2;

public class Mahasiswa {
    String name;
    String il;
    String alamat;
    int semester;

    void tampilkanNama(String name) { this.name = name; }
    void tampilkanIM(String nim){ this.nim = nim; }
    void tampilkanAlamat(String alamat){
        this.alamat = alamat;
    }
    void tampilkanSemester(int semester) { this.semester = semester; }
}
```

Class Hewan

IntelliJ IDEA Community Edition

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

collage (~\ideaProjects\collage) /src/week2/hewan.java

Mon Sep 23, 21:25:39 64.6 KB | 9.85 KB | 40 100%

Project

collage

src

out

week2

dozen

hewan

hewanDemo

karyawan

mahasiswa

collage.iml

External Libraries

Scratches and Consoles

hewanDemo.java

```
package week2;

public class hewan {
    String name;
    int footTotal;
    String food;
    String animType;

    void getName(String name){ this.name = name; }
    void getFootTotal(int footTotal){ this.footTotal = footTotal; }
    void getFood(String food){ this.food = food; }
    void getAnimType(String animType){ this.animType = animType; }

    void getInfoAnimal(){
        System.out.println(
            "Nama Hewan : " + name + "\n" +
            "Jumlah Kaki : " + footTotal + "\n" +
            "Makanan : " +
            food + "\n" +
            "Tipe Hewan : " + animType + "\n"
        );
    }
}
```

4.2 Structure

Properties

1 TODO

Terminal

Event Log

30.1 LF UTF-8 4 spaces

Class hewanDemo

IntelliJ IDEA Community Edition

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

collage (~\ideaProjects\collage) /src/week2/mahasiswa.java

Mon Sep 23, 21:28:20 438 KB | 1.86 KB | 40 100%

Project

collage

src

out

week2

dozen

hewan

hewanDemo

karyawan

mahasiswa

collage.iml

External Libraries

Scratches and Consoles

hewanDemo.java

```
package week2;

public class mahasiswa {
    String name;
    String lln;
    String alamat;
    int semester;

    void setNama(String name){ this.name = name; }
    void tampilkanLn(String lln){ this.lln = lln; }
    void setIsiAlamat(String alamat){
        this.alamat = alamat;
    }
    void tampilkanSemester(int semester){ this.semester = semester; }
}
```

2.2 Structure

Properties

1 TODO

Terminal

Event Log

15.24 LF UTF-8 4 spaces

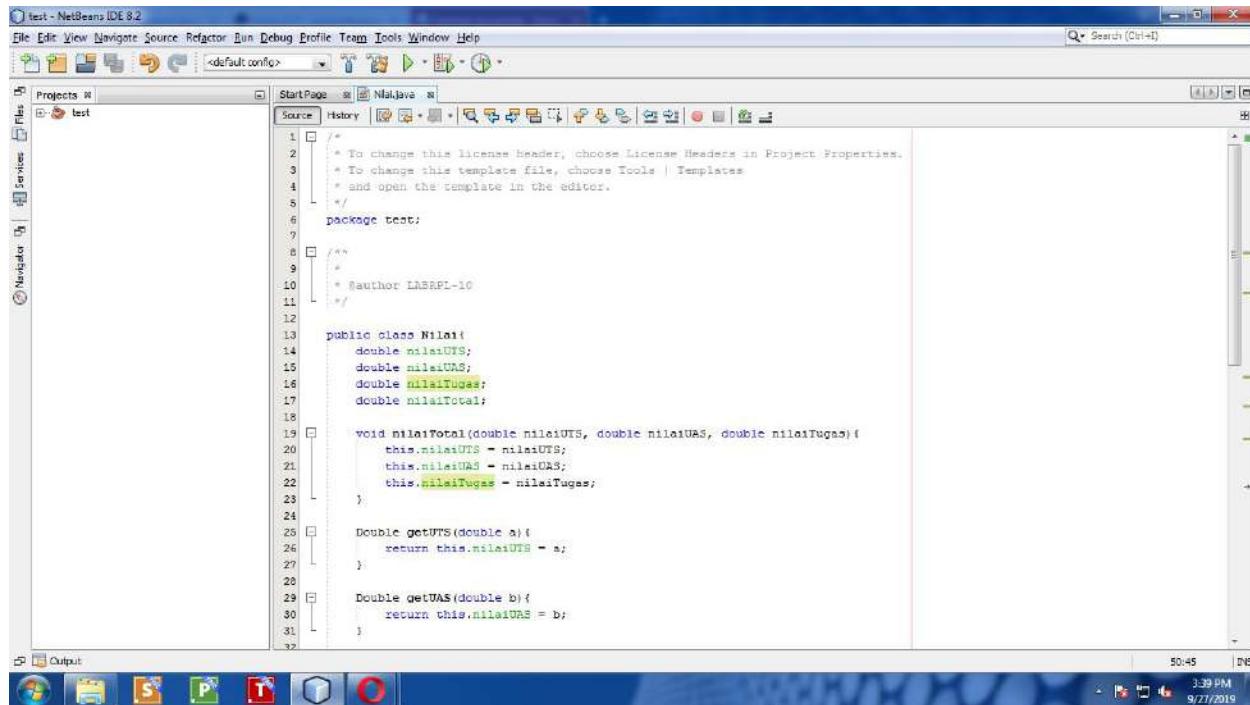
Tugas Module 3

Nama : Dzaki Fadhlurrohman

NIM : L200180064

Kelas : B

Part 1



The screenshot shows the NetBeans IDE interface with a Java file named `Nilai.java` open. The code defines a class `Nilai` with four double fields: `nilaiUTS`, `nilaiUAS`, `nilaiTugas`, and `nilaiTotal`. It includes a constructor that initializes these fields and two methods: `getUTS` and `getUAS`.

```
1  /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates.
4  * and open the template in the editor.
5  */
6 package test;
7
8 /**
9 *
10 * @author LABRPL-10
11 */
12
13 public class Nilai {
14     double nilaiUTS;
15     double nilaiUAS;
16     double nilaiTugas;
17     double nilaiTotal;
18
19     void nilaiTotal(double nilaiUTS, double nilaiUAS, double nilaiTugas){
20         this.nilaiUTS = nilaiUTS;
21         this.nilaiUAS = nilaiUAS;
22         this.nilaiTugas = nilaiTugas;
23     }
24
25     Double getUTS(double a){
26         return this.nilaiUTS = a;
27     }
28
29     Double getUAS(double b){
30         return this.nilaiUAS = b;
31     }
32 }
```

Part 2

test - NetBeans IDE 8.2

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

<default config>

Projects Files Services Navigator

StartPage Nilai.java

Source History

```
28
29     Double getUAS(double b){
30         return this.nilaiUAS = b;
31     }
32
33     Double getTugas(double c){
34         return this.nilaiTugas = c;
35     }
36
37     Double getResult(){
38         return this.nilaiTotal = (this.nilaiTugas + this.nilaiUAS + this.nilaiUTS)/3;
39     }
40
41     void showResult(){
42         System.out.println(
43             "Nilai Tugas : " + this.nilaiTugas + "\n" +
44             "Nilai UTS : " + this.nilaiUTS + "\n" +
45             "Nilai UAS : " + this.nilaiUAS + "\n" +
46             "Nilai Akumulasi Anda adalah : " + this.nilaiTotal
47         );
48     }
49
50 public static void main(String[] args) {
51     Nilai n = new Nilai();
52     n.getTugas(30);
53     n.getUTS(90);
54     n.getUAS(78);
55     n.getResult();
56     n.showResult();
57
58 }
```

Output

50:45 3:40 PM 9/27/2019

Modul ke 4 | Latihan

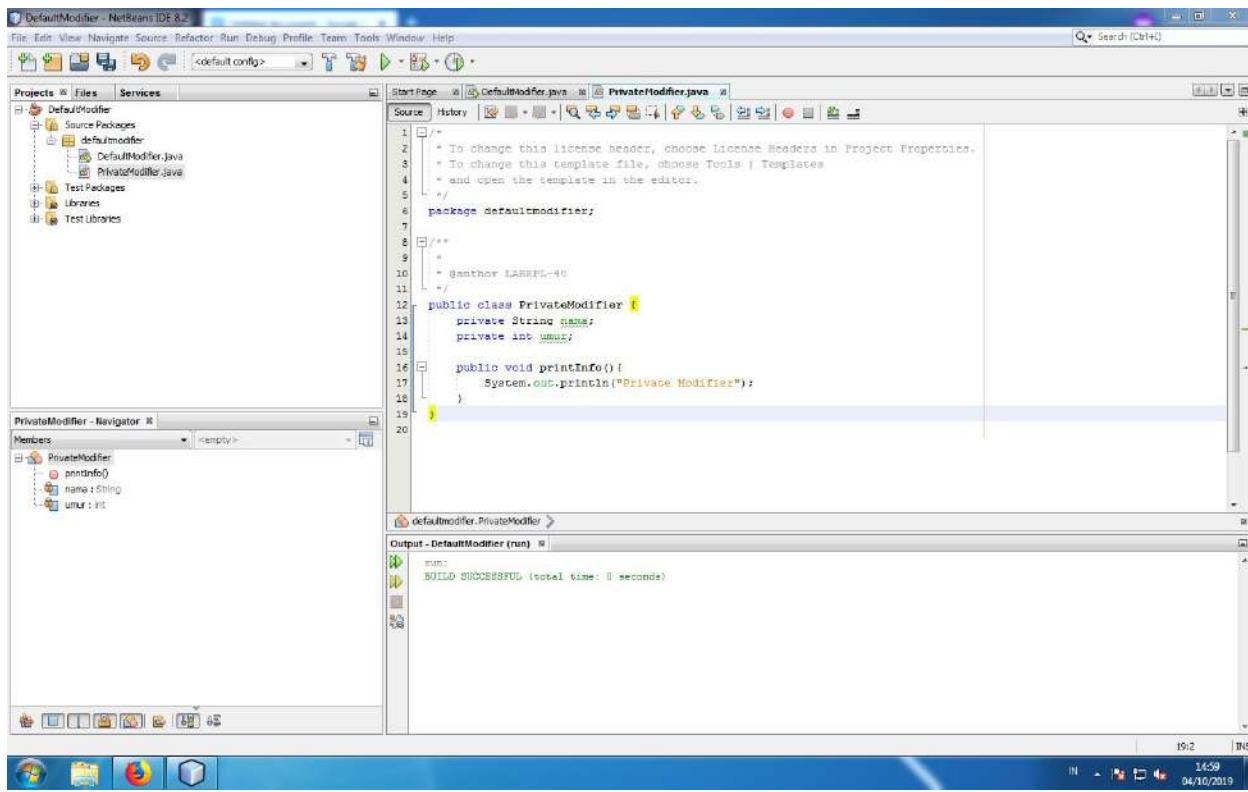
TIDAK ADA TUGAS RUMAH

Nama : Dzaki Fadhlurrohman

NIM : L200180064

Kelas : B

1. Latihan 4.1.1 (Private Modifier)



The screenshot shows the NetBeans IDE interface with the following details:

- Title Bar:** DefaultModifier - NetBeans IDE 8.2
- Menu Bar:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help
- Toolbar:** Standard NetBeans toolbar icons.
- Project Explorer:** Shows a project named "DefaultModifier" with a "Source Packages" node containing "defaultmodifier" and two files: "DefaultModifier.java" and "PrivateModifier.java".
- Code Editor:** Displays the content of "PrivateModifier.java".

```
1  /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates.
4  * and open the template in the editor.
5  */
6 package defaultmodifier;
7
8 /**
9 *
10 * Author: Dzaki Fadhlurrohman
11 */
12 public class PrivateModifier {
13     private String name;
14     private int umur;
15
16     public void printInfo() {
17         System.out.println("Private Modifier");
18     }
19 }
```
- Navigator:** Shows the members of the "PrivateModifier" class: "printInfo()", "name", and "umur".
- Output:** Shows the build log:

```
Output - DefaultModifier (run) [Run]
run:
BUILD SUCCESSFUL (total time: 0 seconds)
```
- System Tray:** Shows standard Windows system tray icons.

Jawaban : Tidak bisa, karena mempunya akses modifier berupa private

2. Latihan 4.2.1 (Default Modifier)

The screenshot shows the NetBeans IDE interface with the following details:

- Title Bar:** DefaultModifier - NetBeans IDE 8.2
- Menu Bar:** File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
- Search Bar:** Search (Ctrl+F)
- Toolbar:** Standard NetBeans toolbar icons.
- Project Explorer:** Shows a project named "DefaultModifier" with "Source Packages" containing "DefaultModifier.java" and "PrivateModifier.java".
- Navigator:** Shows members of "DefaultModifier" including "jumblah()", "main(String[] args)", and variables "a", "b", "c".
- Code Editor:** Displays the content of DefaultModifier.java:

```
4  * and open the template in the editor.
5  */
6  package defaultmodifier;
7
8  /**
9   * 
10  * Author: LABRPL-40
11  */
12 public class DefaultModifier {
13
14     int a = 1;
15     int b = 2;
16     int c;
17
18     void jumblah(){
19         c = a + b;
20         System.out.println(c);
21     }
22     public static void main(String[] args) {
23         // TODO code application logic here
24     }
25 }
26 }
```
- Output Window:** Shows the build log:

```
main:
BUILD SUCCESSFUL (total time: 0 seconds)
```
- System Tray:** Shows standard Windows system tray icons.

Jawaban 1 : Bisa di akses dari kelas lain, selama berada dalam satu package

Jawaban 2 : Tidak bisa diakses, krn ini variabel/method yang ingin diakses memiliki default modifier, dengan kata lain hanya bisa digunakan dalam satu package saja

3. Latihan 4.3.1 (Protected Modifier)

The screenshot shows the NetBeans IDE interface with the following details:

- Title Bar:** DefaultModifier - NetBeans IDE 8.2
- Menu Bar:** File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
- Search Bar:** Search (Ctrl+F)
- Projects Tab:** Shows a project named "DefaultModifier" containing "Source Packages" (defaultmodifier) with files: DefaultModifier.java, PrivateModifier.java, and ProtectedModifier.java.
- Files Tab:** Shows files: Start Page, DefaultModFor.java, PrivateModifier.java, and ProtectedModifier.java.
- Services Tab:** Not visible.
- Editor Area:** Displays the code for ProtectedModifier.java:

```
1  /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates.
4  * and open the template in the editor.
5  */
6  package defaultmodifier;
7
8  /**
9  *
10 * @author LARIFU-40
11 */
12 public class ProtectedModifier {
13     protected void printInfo(){
14         System.out.println("Protected Modifier");
15     }
16
17     protected void sendMessage(){
18         System.out.println("This is a message");
19     }
20 }
```
- Navigator Tab:** Shows members of ProtectedModifier: printInfo() and sendMessage().
- Output Tab:** Shows build output:

```
sun:
BUILD SUCCESSFUL (total time: 0 seconds)
```
- Bottom Status Bar:** IN 15:11 04/10/2019

Jawaban 1 : Jika selama dalam satu class. Subclass atau package, variabel/method dengan akses proteceted modifier bisa di akses, jika global maka tidak bisa.

4. Latihan 4.4.1 (Public Modifier)

The screenshot shows the NetBeans IDE interface with the following details:

- Menu Bar:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help.
- Toolbar:** Standard NetBeans toolbar icons.
- Project Explorer:** Shows a project named "DefaultModifier" with packages "Source Packages" and "Test Packages".
- Code Editor:** Displays the "PublicModifier.java" file content. The code defines a public class "PublicModifier" with four methods: kali(), tambah(), kurang(), and rata_rata(). Each method performs arithmetic operations on instance variables a, b, and c, and prints the results.

```
1 /*  
2  * To change this license header, choose License Headers in Project Properties.  
3  * To change this template file, choose Tools | Templates.  
4  * and open the template in the editor.  
5  */  
6 package defaultmodifier;  
7  
8 /**  
9  *  
10 * Author LARIFU-40  
11 */  
12 public class PublicModifier {  
13     public int a = 2;  
14     public int b = 5;  
15     public int c = 9;  
16  
17     public void kali(){  
18         int d = a*b*c;  
19         System.out.println("Hasil kali = "+d);  
20     }  
21     public void tambah(){  
22         int d = a+b+c;  
23         System.out.println("Hasil tambah = "+d);  
24     }  
25     public void kurang(){  
26         int d = a-b-c;  
27         System.out.println("Hasil kurang = "+d);  
28     }  
29     public void bagi(){  
30         int d = a/b/c;  
31         System.out.println("Hasil bagi = "+d);  
32     }  
33     public void rata_rata(){  
34         int d = (a+b+c)/3;  
35         System.out.println("Hasil rata-rata = "+d);  
36     }  
37 }  
38  
39 }
```

- Navigator:** Shows the members of the "PublicModifier" class, including the three instance variables (a, b, c) and the four methods (kali(), tambah(), kurang(), rata_rata()).
- Output:** Shows standard Windows taskbar icons.

Jawaban 1 : Bisa diakses dimana saja, karena public modifier memiliki cakupan paling luas diantara keluarga modifier yang ada :)

Jawaban 2 : Sudah

Modul ke 5

Nama : Dzaki Fadhlurrohman

NIM : L200180064

Kelas : B

1. Latihan 1

The screenshot shows the NetBeans IDE 8.2 interface. The top menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and a Search field. The bottom status bar shows the time as 14:00 and the date as 10/11/2019.

Projects panel: Shows a single project named "Construct". Inside "Source Packages", there is a package named "construct" containing four files: Buku.java, Construct.java, Data.java, and DataTest.java. There are also "Test Packages", "Libraries", and "Test Libraries" sections.

Data.java code:

```
6 package construct;
7
8 /**
9 * 
10 * @author LABRPL-40
11 */
12 public class Data {
13     Data(String name) {
14         System.out.println("Selamat Datang Mr." + name + " di perpustakaan kami");
15     }
16     String nama = "Dzaki Fadhlurrohman";
17     String nim = "L200180064";
18     String alamat = "Tangerang";
19
20     public Data() {
21         System.out.println("Nama = " + nama + "\n" + "NIM = " + nim + "\n" + "Alamat = " + alamat);
22     }
23 }
24
```

Output panel: Displays the run output. It shows the execution of the Data constructor with the name "Dzaki Fadhlurrohman" and the output of the Data() constructor showing the values of nama, nim, and alamat.

```
run:
Nama = Dzaki Fadhlurrohman
NIM = L200180064
Alamat = Tangerang

Selamat Datang Mr.Dzaki di perpustakaan
BUILD SUCCESSFUL (total time: 0 seconds)
```

Construct - NetBeans IDE 8.2

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

Projects Files Services Start Page **Buku.java** Data.java Construct.java

Source History

Projects **Construct**

- Source Packages **construct**
 - Buku.java
 - Construct.java
 - Data.java
- Test Packages
- Libraries
- Test Libraries

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

```
/*
 * Author LABRPL-40
 */
public class Construct {

    /**
     * Sparam args the command line arguments
     */
    public static void main(String[] args) {
        Data d = new Data();
        Data b = new Data("Daski");
    }
}
```

main - Navigator Members **Construct**

- main(String[] args)

Output - Construct(run) run:

```
run:
Nama = Deaki Fadhlurrohman
NIM = 1200120064
Alamat = Tangerang

Selamat Datang Mr.Daski di perpusstekan
BUILD SUCCESSFUL (total time: 0 seconds)
```

19:33 3:02 PM 10/11/2019

2. Latihan 2

Construct - NetBeans IDE 8.2

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

Projects Files Services Start Page **Buku.java** Data.java Construct.java

Source History

Projects **Construct**

- Source Packages **construct**
 - Buku.java
 - Construct.java
 - Data.java
- Test Packages
- Libraries
- Test Libraries

All - Navigator Members **Buku**

- Buku(String a, String b, int c, int d, int e)
- fill(String a, String b, int c, int d, double e)
- cetakAnke: int
- hargaJual: double
- judulBuku: String
- namPengarang: String
- tahunPenerbit: int

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package construct;

/**
 *
 * Author LABRPL-40
 */
public class Buku {

    String namPengarang;
    String judulBuku;
    int tahunPenerbit;
    int cetakanKe;
    double hargaJual;

    Buku(String a, String b, int c, int d, int e){

    }

    void fill(String a, String b, int c, int d, double e){
        this.namPengarang = a;
        this.judulBuku = b;
        this.tahunPenerbit = c;
        this.cetakanKe = d;
        this.hargaJual = e;
    }
}
```

Output 26:32 3:03 PM 10/11/2019

Construct - NetBeans IDE 8.2

```

public class Construct {
    /**
     * Sparaw args the command line arguments
     */
    public static void main(String[] args) {
        Buku x = new Buku();
        Buku a = new Buku("Dekki");
        Buku b = new Buku("Ali", "Meru nikah", 2019, 928, 126000);
        Buku c = new Buku("Hasan", "Judul satu", 2013, 924, 156000);
        Buku d = new Buku("Uzaz", "Judul dua", 2018, 239, 127000);
        Buku e = new Buku("Rey", "Judul tiga", 2013, 567, 126700);
        Buku f = new Buku("Akbar", "Judul empat", 2011, 554, 226700);
        Buku g = new Buku("Seny", "Judul lima", 2007, 902, 420000);
        Buku h = new Buku("Dika", "Judul enam", 2009, 82, 156000);
        Buku i = new Buku("Mr x", "Judul tujuh", 2004, 28, 178000);
        Buku j = new Buku("Mr y", "Judul delapan", 2012, 20, 323400);
        Buku k = new Buku("Fizal", "Mari sembilan", 2015, 85, 237000);
        x.show();
        a.show();
        b.show();
        c.show();
        d.show();
        e.show();
        f.show();
        g.show();
        h.show();
        i.show();
        j.show();
        k.show();
    }
}

```

Tugas

1. Default parameter & Parameterized Constructor

Construct - NetBeans IDE 8.2

```

public class Buku {
    /**
     * Author LAKERPL-40
     */
    public class Buku {
        String namaPengarang;
        String judulBuku;
        int tahunPenerbit;
        int cetakanKe;
        double hargaJual;

        Buku(String name){
            System.out.println("Hai " + name);
        }

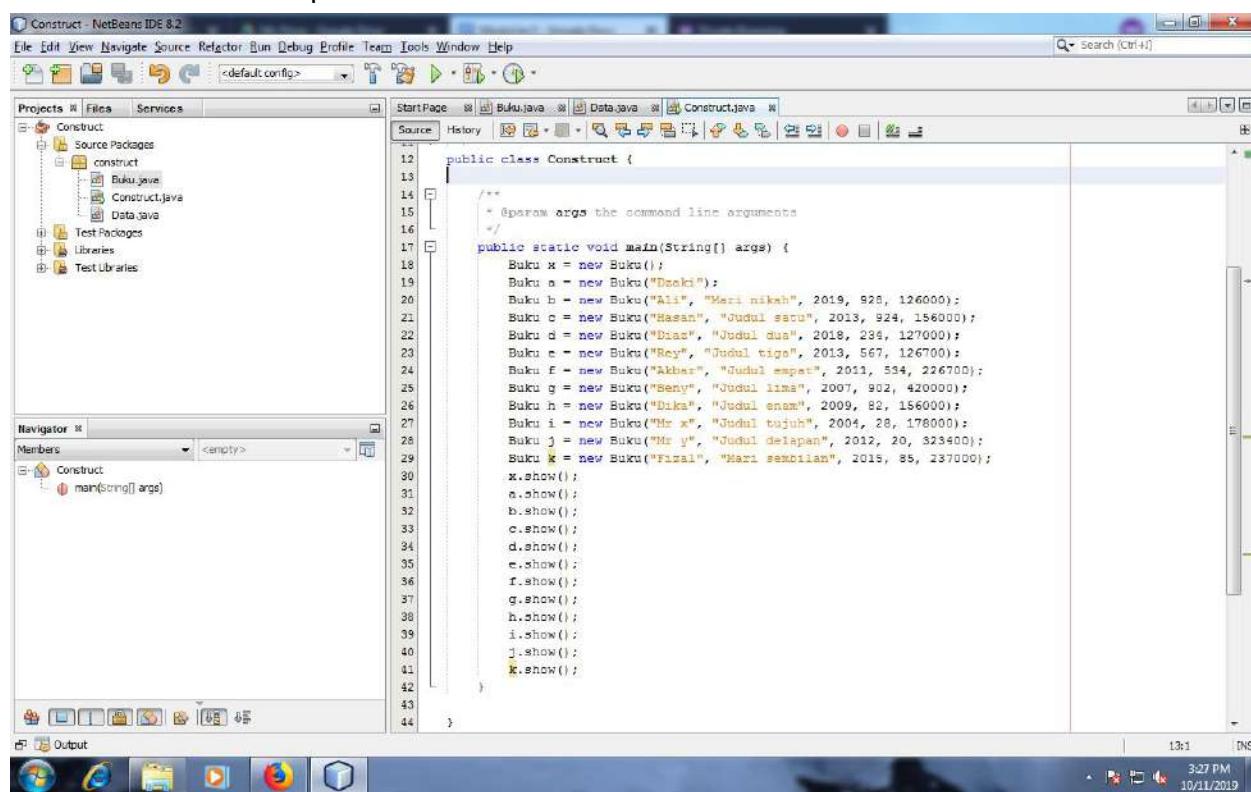
        Buku(){
            System.out.println("Selamat Datang di Toko Buku");
        }

        Buku(String a, String b, int c, int d, double e){
            this.namaPengarang = a;
            this.judulBuku = b;
            this.tahunPenerbit = c;
            this.cetakanKe = d;
            this.hargaJual = e;
        }

        void show(){
            System.out.println("Nama Pengarang= " + namaPengarang + "\n" + "Judul Buku = " + judulBuku + 

```

2. Method main implementasi dari kelas diatas



The screenshot shows the NetBeans IDE 8.2 interface with the following details:

- Project Tree:** Shows a project named "Construct" containing a "Source Packages" folder with subfolders "construct" and "Data". Inside "construct" are files "Buku.java", "Construct.java", and "Data.java".
- Navigator:** Shows the members of the "Construct" class, specifically the "main(String[] args)" method.
- Code Editor:** Displays the source code for the "Construct" class. The code defines a main method that creates 13 instances of the "Buku" class and calls their "show()" methods. The "Buku" class has fields for title, author, year, pages, and price.
- Status Bar:** Shows the time as 13:1 and the date as 10/11/2019.

```
public class Construct {
    /**
     * Sparaw args the command line arguments
     */
    public static void main(String[] args) {
        Buku x = new Buku();
        Buku a = new Buku("Dzaki");
        Buku b = new Buku("Ali", "Mari nikah", 2019, 928, 126000);
        Buku c = new Buku("Hasan", "Judul satu", 2013, 924, 156000);
        Buku d = new Buku("Dzaz", "Judul dua", 2018, 234, 127000);
        Buku e = new Buku("Rey", "Judul tiga", 2013, 567, 126700);
        Buku f = new Buku("Akbar", "Judul empat", 2011, 534, 226700);
        Buku g = new Buku("Seny", "Judul lima", 2007, 902, 420000);
        Buku h = new Buku("Duka", "Judul enam", 2009, 82, 156000);
        Buku i = new Buku("Mr x", "Judul tujuh", 2004, 28, 178000);
        Buku j = new Buku("Mr y", "Judul delapan", 2012, 20, 323400);
        Buku k = new Buku("Fizal", "Mari sembilan", 2015, 85, 237000);
        x.show();
        a.show();
        b.show();
        c.show();
        d.show();
        e.show();
        f.show();
        g.show();
        h.show();
        i.show();
        j.show();
        k.show();
    }
}
```

Modul ke 6

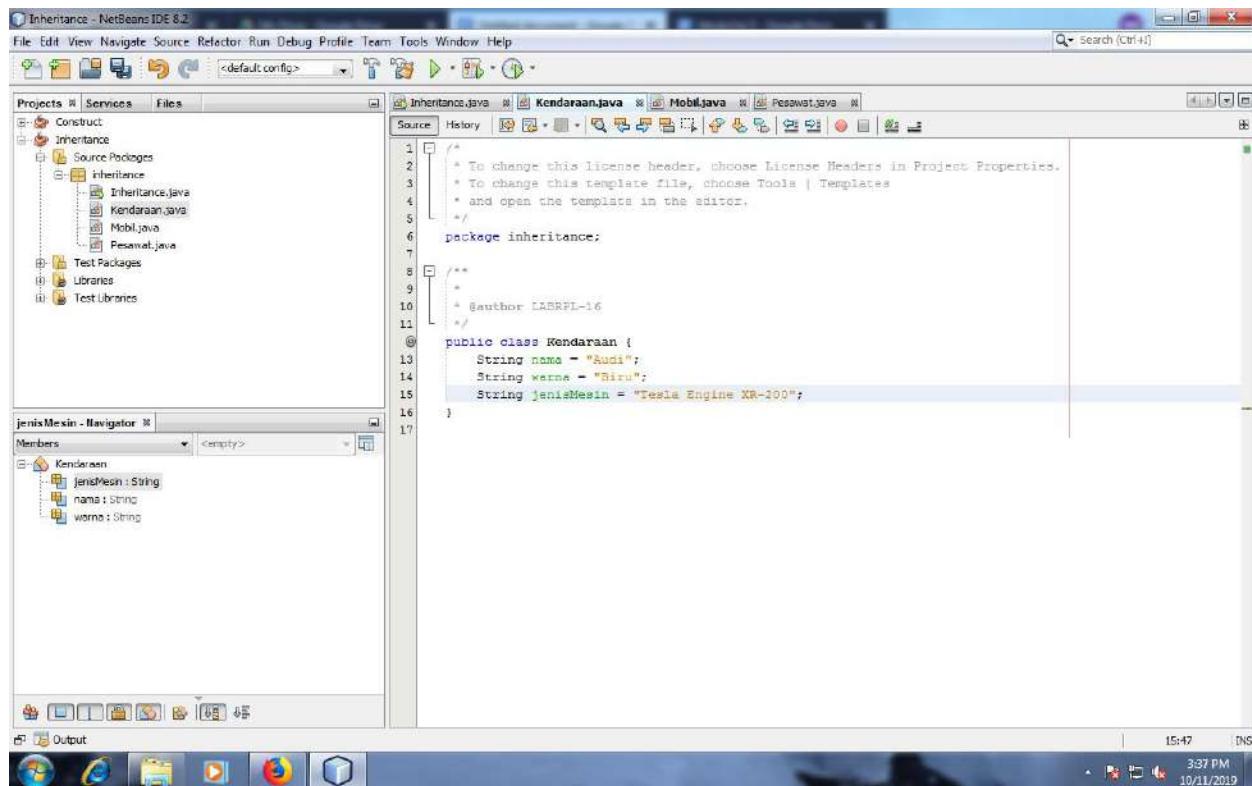
Nama : Dzaki Fadhlurrohman

NIM : L200180064

Kelas : B

Latihan 6.2

Nomor 1



The screenshot shows the NetBeans IDE 8.2 interface. The title bar reads "Inheritance - NetBeans IDE 8.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for New Project, Open Project, Save, Run, Stop, and others. The Projects tab shows a single project named "Inheritance" with three source packages: Inheritance, Kendaraan, and Pesawat. The Files tab shows four files: Inheritance.java, Kendaraan.java, Mobil.java, and Pesawat.java. The Source tab displays the code for Kendaraan.java:

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package inheritance;

/**
 *
 * @author LABRPL-16
 */
public class Kendaraan {
    String nama = "Audi";
    String warna = "Biru";
    String jenisMesin = "Tesla Engine XR-100";
}
```

The Navigator tab shows the members of the Kendaraan class: jenisMesin, nama, and warna. The Output tab is empty. The status bar at the bottom shows the time as 15:47 and the date as 10/11/2019.

NetBeans IDE 8.2

Inheritance.java

```

1 /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6 package inheritance;
7
8 /**
9  *
10  * @author LABRPL-16
11  */
12 public class Mobil extends Kendaraan{
13 }
14
15

```

Mobil - Navigator

Members <empty>

- Mobil :: Kendaraan

Pesawat.java

```

1 /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6 package inheritance;
7
8 /**
9  *
10  * @author LABRPL-16
11  */
12 public class Pesawat extends Kendaraan{
13 }
14
15

```

Pesawat - Navigator

Members <empty>

- Pesawat :: Kendaraan

Nomor 2

NetBeans IDE 8.2

Inheritance.java

```

1 /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6 package inheritance;
7
8 /**
9  *
10 * @author LABRPL-16
11 */
12 public class Mobil extends Kendaraan{
13     String nama = "Ferrari";
14 }
15

```

Mobil - Navigator

Members <empty>

- Mobil :: Kendaraan
 - nama : String

Output

14:2 3:40 PM 10/11/2019

NetBeans IDE 8.2

Pesawat.java

```

1 /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6 package inheritance;
7
8 /**
9  *
10 * @author LABRPL-16
11 */
12 public class Pesawat extends Kendaraan{
13     String name = "Boeing";
14 }
15

```

names - Navigator

Members <empty>

- Pesawat :: Kendaraan
 - name : String

Output

13:26 3:40 PM 10/11/2019

Nomor 3

Khumale Inheritance - NetBeans IDE 8.2

```

1 /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates.
4  * and open the template in the editor.
5  */
6 package Latihan;
7
8 /**
9  *
10 * @author LABRPL-28
11 */
12 public class AksesKendaraan {
13     public static void main(String[] args) {
14         Kendaraan kendaraan = new Kendaraan();
15         kendaraan.info();
16
17         Mobil mobil = new Mobil();
18         mobil.info();
19
20         Pesawat pesawat = new Pesawat();
21     }
22 }

```

Output - Khamala_Inheritance (run)

```

run:
Janis : Kendaraan : Bencak
Warna : Hitam
Roda : 4
Merek : Toyota
Warna : Merah
Maskapai : Garuda Indonesia
Warna : Biru
BUILD SUCCESSFUL (total time: 0 seconds)

```

Output

Tugas

AksesTugas.java

Khumale Inheritance - NetBeans IDE 8.2

```

1 /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates.
4  * and open the template in the editor.
5  */
6 package Tugas;
7
8 /**
9  *
10 * @author LABRPL-28
11 */
12 public class AksesTugas {
13     public static void main(String[] args) {
14         Segitiga s=new Segitiga();
15         s.luas(20,10);
16         Persegi persegi = new Persegi();
17
18         persegi.luas(3);
19         persegi.keliling(5);
20     }
21 }

```

BangunDatar.java

The screenshot shows the NetBeans IDE interface with the title bar "Khumaila_Inheritance - NetBeans IDE 8.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for New Project, Open Project, Save, Run, Stop, and others. The left sidebar shows the project structure under "Source Packages" for the "Khumaila_Inheritance" project. The main editor window displays the following Java code:

```
1  /*
2   * To change this license header, choose License Headers in Project Properties.
3   * To change this template file, choose Tools | Templates.
4   * and open the template in the editor.
5   */
6  package Tugas;
7
8  /**
9   * @author LABRPL-28
10  */
11 public class BangunDatar {
12     protected double luas;
13     protected double keliling;
14
15     protected void hitungLuas() {
16
17     }
18
19     protected double hitungKeliling() {
20         return hitungKeliling();
21     }
22 }
23 }
```

Persegi.java

The screenshot shows the NetBeans IDE interface with the title bar "Khumaila_Inheritance - NetBeans IDE 8.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for New Project, Open Project, Save, Run, Stop, and others. The left sidebar shows the project structure under "Source Packages" for the "Khumaila_Inheritance" project. The main editor window displays the following Java code:

```
1  /*
2   * To change this license header, choose License Headers in Project Properties.
3   * To change this template file, choose Tools | Templates.
4   * and open the template in the editor.
5   */
6  package Tugas;
7
8  /**
9   * @author LABRPL-28
10  */
11 public class Persegi extends BangunDatar {
12     protected double sisi;
13
14     public void luas(int sisi) {
15         luas = sisi*sisi;
16         System.out.println("Luas Persegi: " + luas);
17     }
18
19     public void keliling(int sisi) {
20         keliling = 4 * sisi;
21         System.out.println("Keliling Persegi: " + keliling);
22     }
23 }
24 }
```

PersegiPanjang.java

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates.
 * and open the template in the editor.
 */
package Tugas;

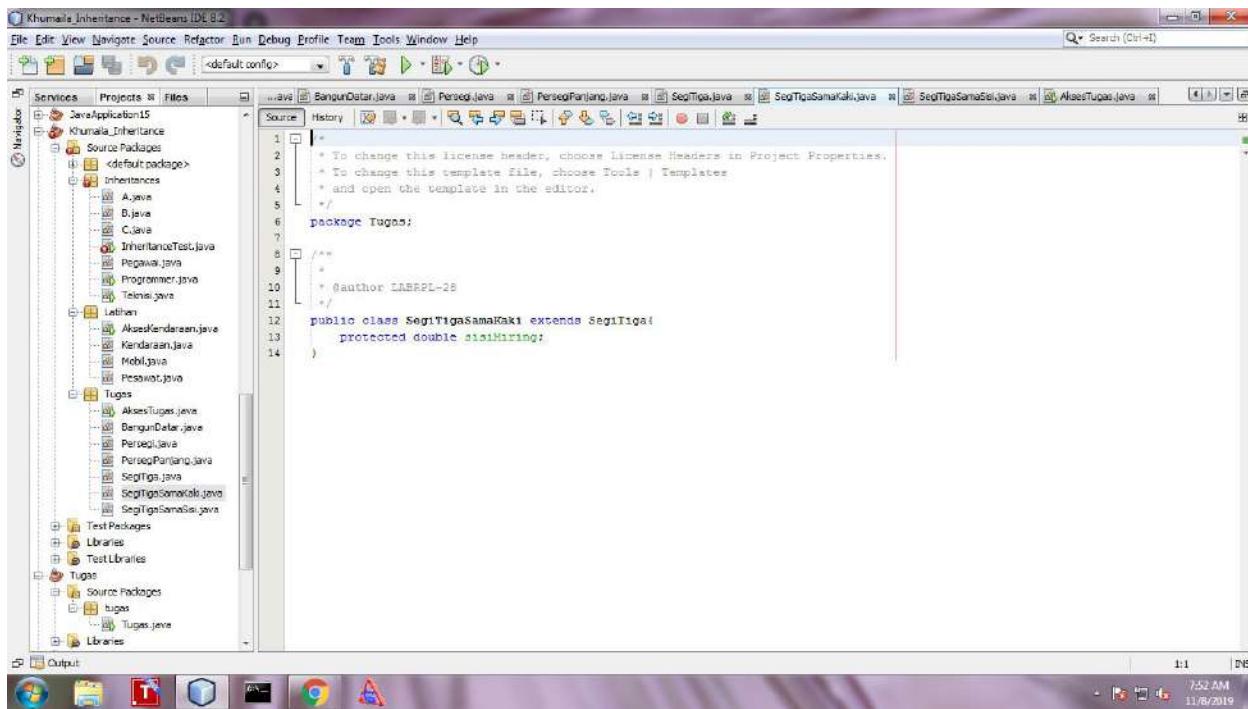
/**
 *
 * @author LABRPL-28
 */
public class PersegiPanjang extends BangunDatar{
    protected int panjang;
    protected double lebar;
}
```

SegiTiga.java

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates.
 * and open the template in the editor.
 */
package Tugas;

/**
 *
 * @author LABRPL-28
 */
public class SegiTiga extends BangunDatar{
    protected double alas;
    int tinggi;
    public void luas(double alas,int tinggi){
        luas = alas*tinggi;
        System.out.println("Luas Segitiga: " + luas);
    }
}
```

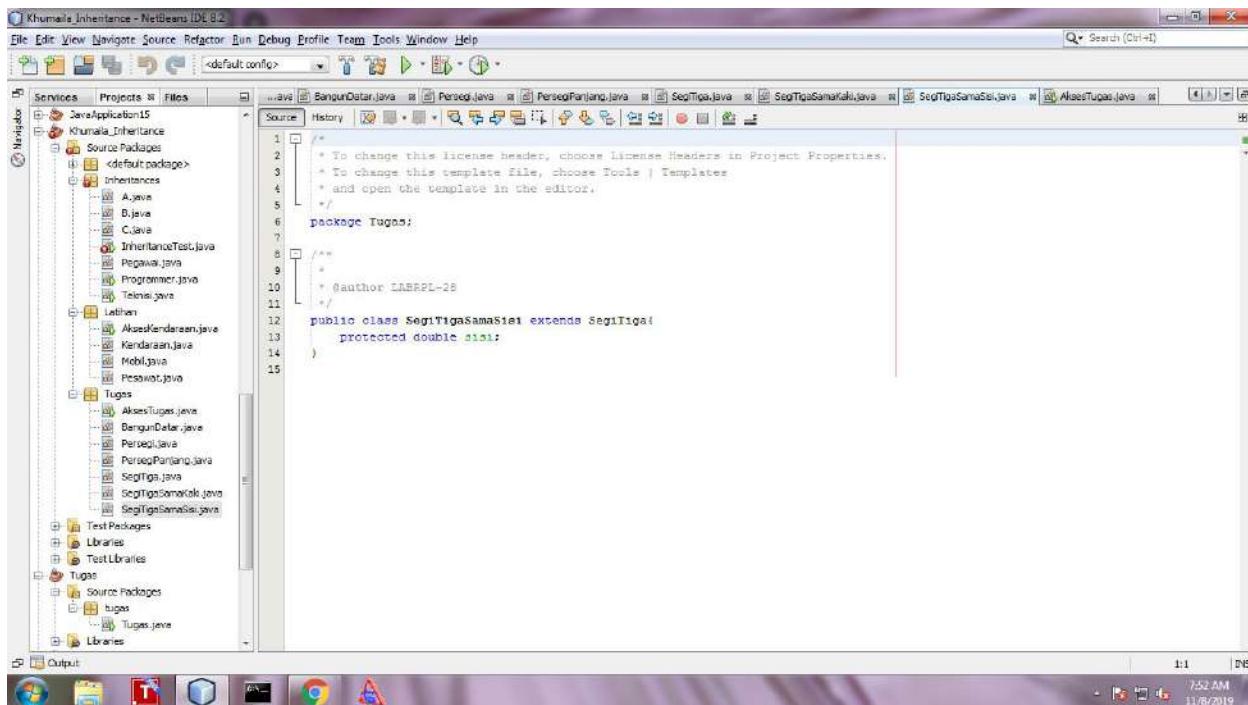
SegiTigaSamaKaki.java



```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package Tugas;

/**
 *
 * @author LABRPL-28
 */
public class SegiTigaSamaKaki extends SegiTiga{
    protected double sisiMiring;
}
```

SegiTigaSamaSisi.java



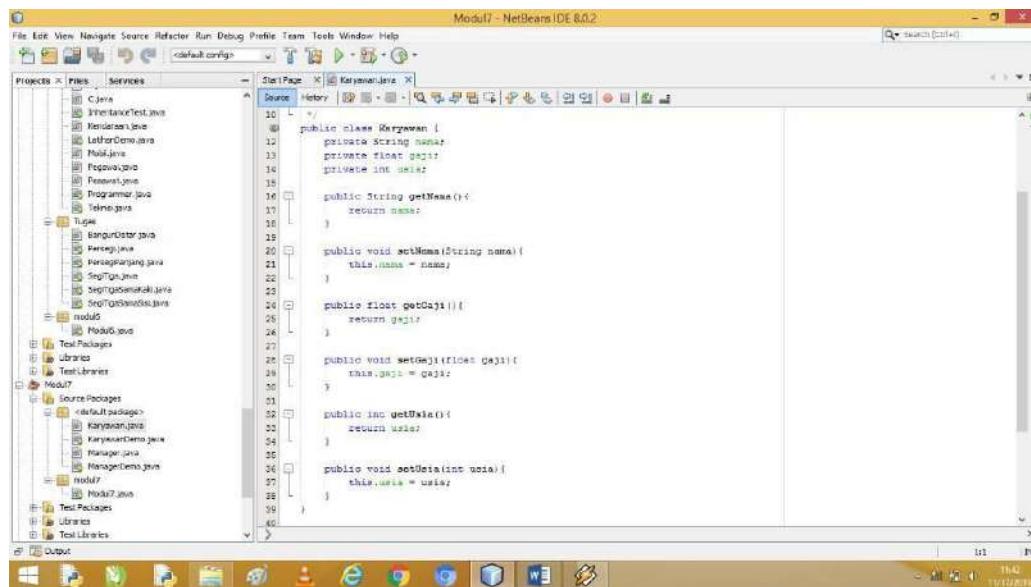
```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package Tugas;

/**
 *
 * @author LABRPL-28
 */
public class SegiTigaSamaSisi extends SegiTiga{
    protected double sisi;
}
```

MODUL 7

Nama : Dzaki Fadhlurrohman
NIM : L200180064
Kelas : B

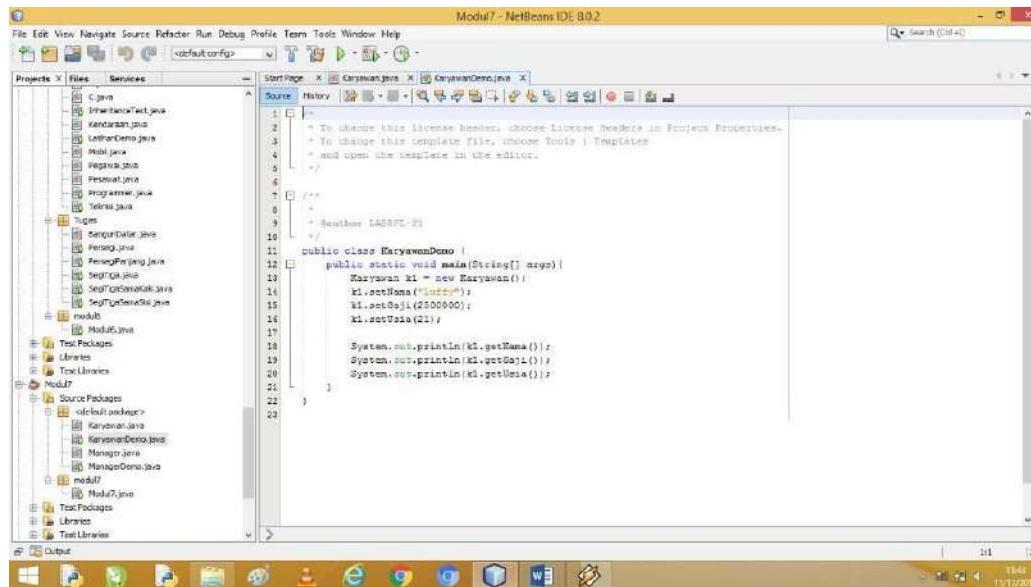
Akses Modifier Private pada Encapsulation



```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config < Start Page > Karyawan.java X
Projects > Files > Services
  + Cava
    - KaryawanTest.java
    - Karyawan.java
    - LahanDemo.java
    - Mod.java
    - Pegawai.java
    - Pekerjaan.java
    - Present.java
    - Programmer.java
    - Telepon.java
  = Tipe
    - Bangunan.java
    - Persegi.java
    - PersegiPanjang.java
    - Segitiga.java
    - SegitigaSamaSisi.java
  = modul7
    - Modul.java
  = Test Packages
  = Libraries
  = Test Libraries
  + Modul7
    + Source Packages
      + default package>
        - Karyawan.java
        - Karyawandemo.java
        - Manager.java
        - ManagerDemo.java
      - modul7
    - Modul7.java
  = Test Packages
  = Libraries
  = Test Libraries
  Output
  111 184 15/11/2019
  111 184 15/11/2019
```

```
public class Karyawan {
    private String nama;
    private float gaji;
    private int usia;
    public String getName(){
        return nama;
    }
    public void setName(String nama){
        this.nama = nama;
    }
    public float getGaji(){
        return gaji;
    }
    public void setGaji(float gaji){
        this.gaji = gaji;
    }
    public int getUsia(){
        return usia;
    }
    public void setUsia(int usia){
        this.usia = usia;
    }
}
```

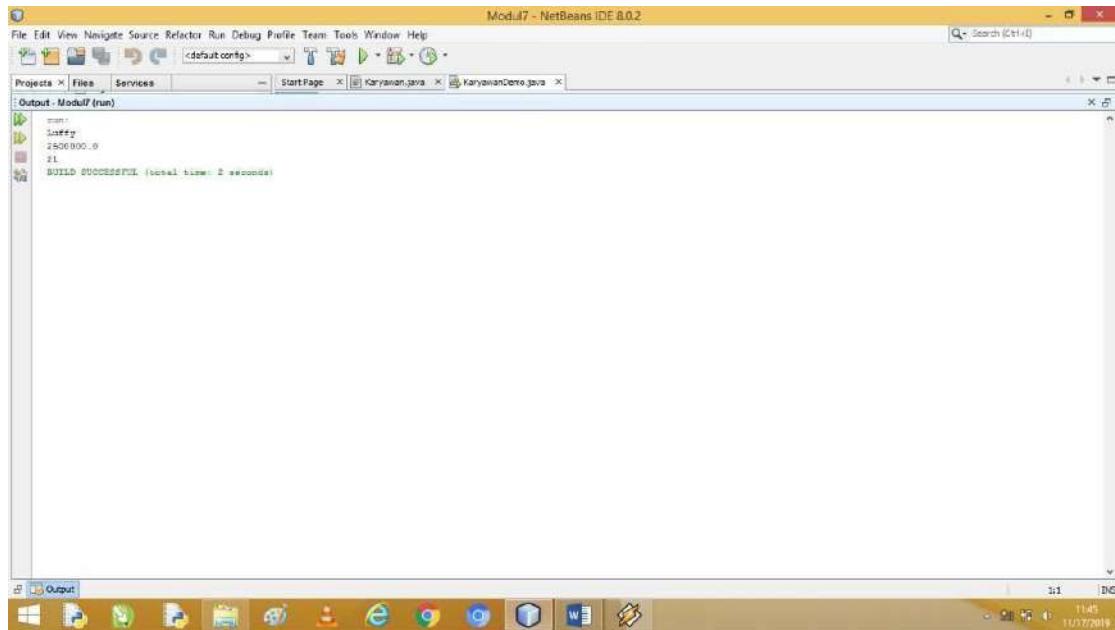
Pemanfaatan Getter dan Setter



```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config < Start Page > Karyawan.java X Karyawandemo.java X
Projects > Files > Services
  + Cava
    - KaryawanTest.java
    - Karyawan.java
    - LahanDemo.java
    - Mod.java
    - Pegawai.java
    - Pekerjaan.java
    - Present.java
    - Programmer.java
    - Telepon.java
  = Tipe
    - Bangunan.java
    - Persegi.java
    - PersegiPanjang.java
    - Segitiga.java
    - SegitigaSamaSisi.java
  = modul7
    - Modul.java
  = Test Packages
  = Libraries
  = Test Libraries
  + Modul7
    + Source Packages
      + default package>
        - Karyawan.java
        - Karyawandemo.java
        - Manager.java
        - ManagerDemo.java
      - modul7
    - Modul7.java
  = Test Packages
  = Libraries
  = Test Libraries
  Output
  111 184 15/11/2019
  111 184 15/11/2019
```

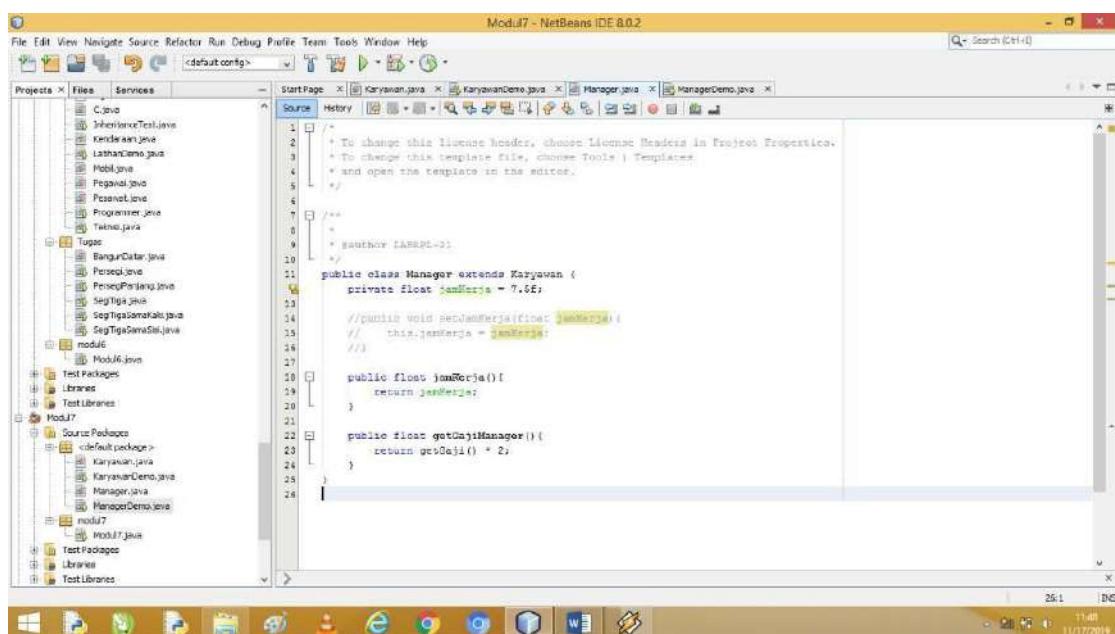
```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
public class Karyawandemo {
    public static void main(String[] args) {
        Karyawan k1 = new Karyawan();
        k1.setNama("Dzaki");
        k1.setGaji(2500000);
        k1.setUsia(21);
        System.out.println(k1.getNama());
        System.out.println(k1.getGaji());
        System.out.println(k1.getUsia());
    }
}
```

Output ketika program 2 atau class KaryawanDemo dijalankan



The screenshot shows the NetBeans IDE interface with the title bar "Modul7 - NetBeans IDE 8.0.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for file operations like New, Open, Save, and Run. The Projects tab shows several Java files under the "Karyawan" and "Tugas" packages. The Output tab displays the message "BUILD SUCCESSFUL (total time: 2 seconds)". The status bar at the bottom right shows the date and time: 11/17/2019 11:45.

Contoh Program Single Inheritance



The screenshot shows the NetBeans IDE interface with the title bar "Modul7 - NetBeans IDE 8.0.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for file operations like New, Open, Save, and Run. The Projects tab shows several Java files under the "Karyawan" and "Tugas" packages. The Editor tab shows the "Manager.java" code:

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates.
 * and open the template in the editor.
 */
/*
 * Author: LABRIEL-21
 */
public class Manager extends Karyawan {
    private float jenMajaja = 7.5f;

    //public void setJenMajaja(float jenMajaja) {
    //    this.jenMajaja = jenMajaja;
    //}

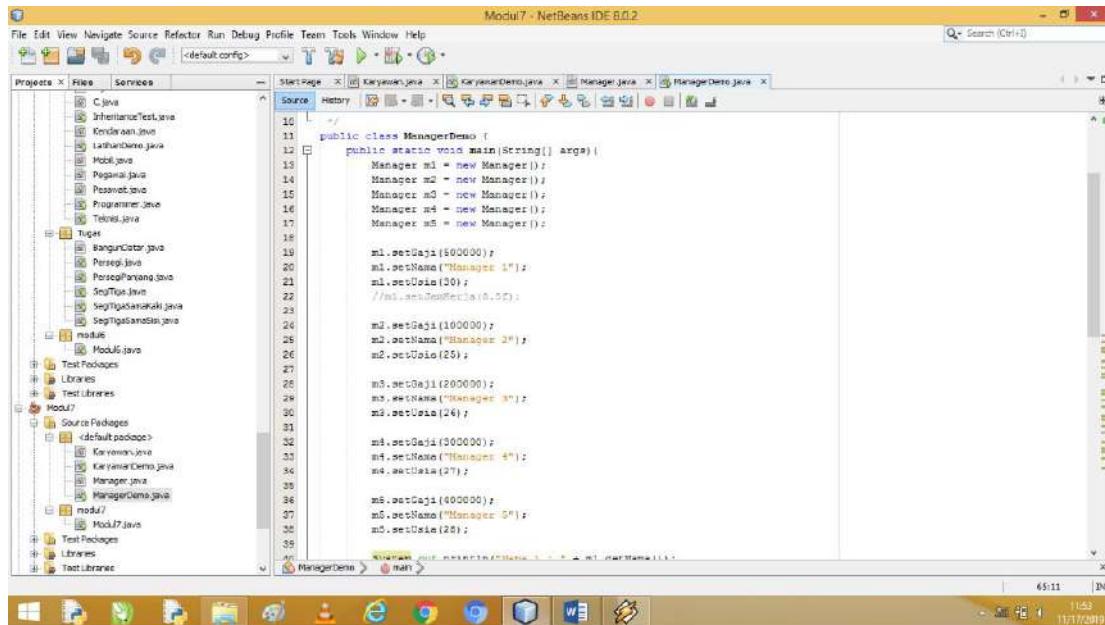
    public float jenMajaja() {
        return jenMajaja;
    }

    public float getGajiManager() {
        return getGaji() * 2;
    }
}
```

The status bar at the bottom right shows the date and time: 11/17/2019 11:46.

Latihan

1. Membuat class dengan fungsi main() dan 5 objek berbeda yang dihasilkan dari class Manager. Kemudian melalui objek tersebut, menampilkan nilai private variable dari class Manager dan class Karyawan.



```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Source History <default config> Start Page Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java
Projects File Services
C:\Java InheritanceTest.java Kendraan.java LahanDemo.java Mobil.java Pegawai.java Pekerjaan.java Programmer.java Telek.java Tugas BangunDatar.java Perseg.java PersegPjng.java Segitiga.java SegitigaSanakku.java SegitigaSandali.java modul Modul.java Test Packages Libraries Modul7 Source Packages <default package> Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java modul Modul.java Test Packages Libraries Modul7 Source Packages <default package> Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java modul Modul.java
public class ManagerDemo {
    public static void main(String[] args) {
        Manager m1 = new Manager();
        Manager m2 = new Manager();
        Manager m3 = new Manager();
        Manager m4 = new Manager();
        Manager m5 = new Manager();

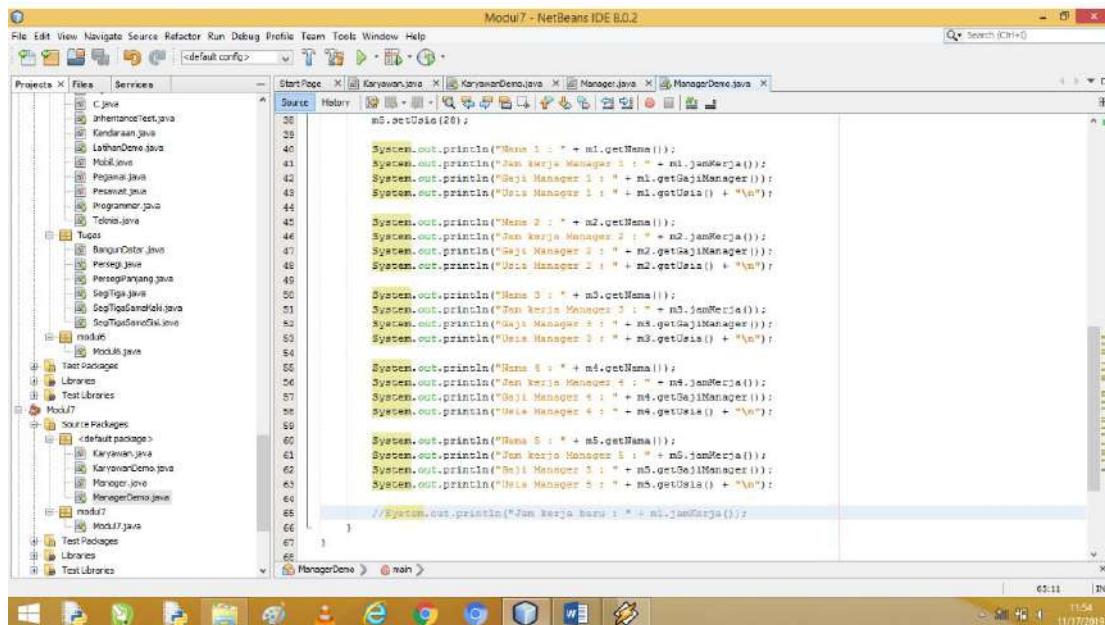
        m1.setGaji(500000);
        m1.setName("Manager 1");
        m1.setUsia(30);
        //m1.setJamKerja(0.5);

        m2.setGaji(100000);
        m2.setName("Manager 2");
        m2.setUsia(25);

        m3.setGaji(200000);
        m3.setName("Manager 3");
        m3.setUsia(26);

        m4.setGaji(300000);
        m4.setName("Manager 4");
        m4.setUsia(27);

        m5.setGaji(400000);
        m5.setName("Manager 5");
        m5.setUsia(28);
    }
}
```



```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Source History <default config> Start Page Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java
Projects File Services
C:\Java InheritanceTest.java Kendraan.java LahanDemo.java Mobil.java Pegawai.java Pekerjaan.java Programmer.java Telek.java Tugas BangunDatar.java Perseg.java PersegPjng.java Segitiga.java SegitigaSanakku.java SegitigaSandali.java modul Modul.java Test Packages Libraries Modul7 Source Packages <default package> Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java modul Modul.java Test Packages Libraries Modul7 Source Packages <default package> Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java modul Modul.java
public class ManagerDemo {
    public static void main(String[] args) {
        Manager m1 = new Manager();
        Manager m2 = new Manager();
        Manager m3 = new Manager();
        Manager m4 = new Manager();
        Manager m5 = new Manager();

        System.out.println("Nama 1 : " + m1.getName());
        System.out.println("Pekerja Manager 1 : " + m1.jamKerja());
        System.out.println("Gaji Manager 1 : " + m1.getGajiManager());
        System.out.println("Usia Manager 1 : " + m1.getUsia() + "\n");

        System.out.println("Nama 2 : " + m2.getName());
        System.out.println("Pekerja Manager 2 : " + m2.jamKerja());
        System.out.println("Gaji Manager 2 : " + m2.getGajiManager());
        System.out.println("Usia Manager 2 : " + m2.getUsia() + "\n");

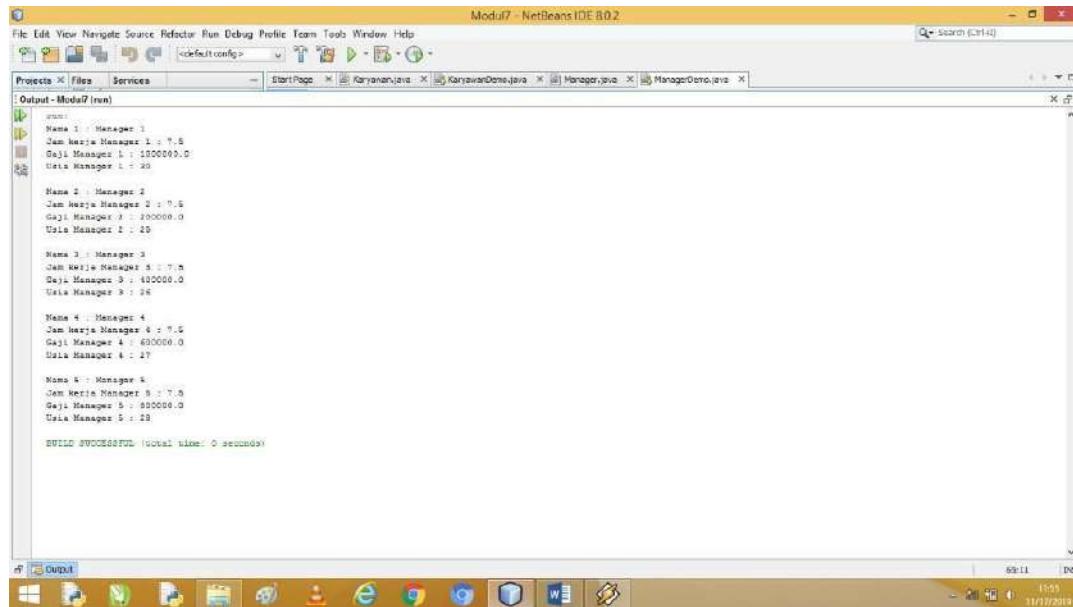
        System.out.println("Nama 3 : " + m3.getName());
        System.out.println("Pekerja Manager 3 : " + m3.jamKerja());
        System.out.println("Gaji Manager 3 : " + m3.getGajiManager());
        System.out.println("Usia Manager 3 : " + m3.getUsia() + "\n");

        System.out.println("Nama 4 : " + m4.getName());
        System.out.println("Pekerja Manager 4 : " + m4.jamKerja());
        System.out.println("Gaji Manager 4 : " + m4.getGajiManager());
        System.out.println("Usia Manager 4 : " + m4.getUsia() + "\n");

        System.out.println("Nama 5 : " + m5.getName());
        System.out.println("Pekerja Manager 5 : " + m5.jamKerja());
        System.out.println("Gaji Manager 5 : " + m5.getGajiManager());
        System.out.println("Usia Manager 5 : " + m5.getUsia() + "\n");
    }
}

//System.out.println("Pekerja baru : " + m1.jamKerja());
}
```

Output dari program diatas



```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Projects Files Services StartPage Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java
Output - Modul7 (run)
sun:
  Nama 1 : Manager 1
  Jam kerja Manager 1 : 7.5
  Gaji Manager 1 : 1000000.0
  Utsia Manager 1 : 20

  Nama 2 : Manager 2
  Jam kerja Manager 2 : 7.5
  Gaji Manager 2 : 1000000.0
  Utsia Manager 2 : 20

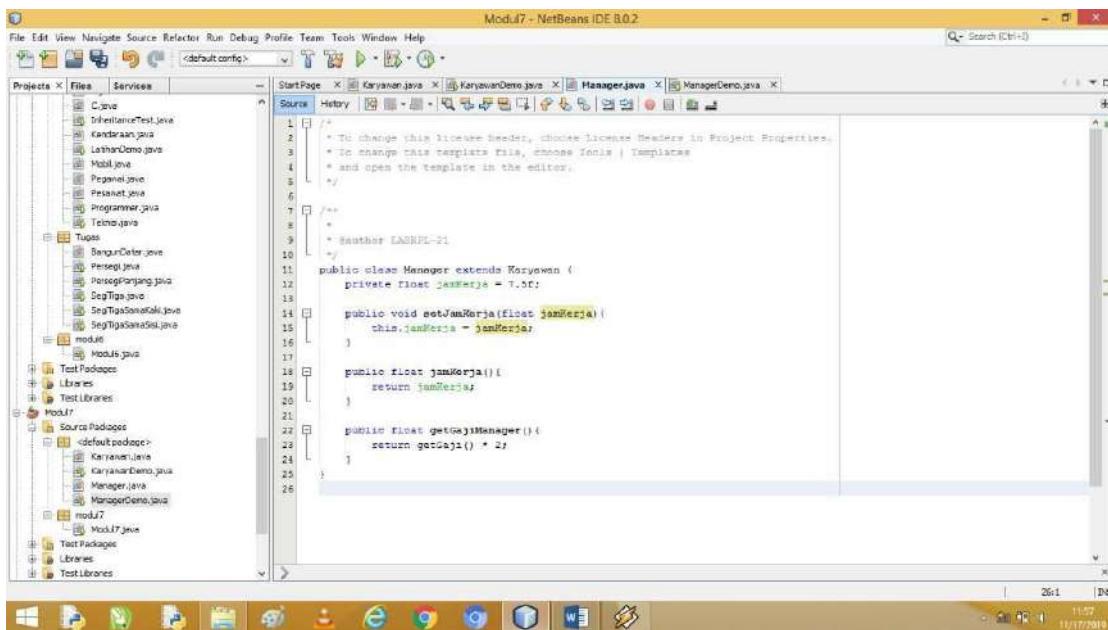
  Nama 3 : Manager 3
  Jam kerja Manager 3 : 7.5
  Gaji Manager 3 : 1000000.0
  Utsia Manager 3 : 20

  Nama 4 : Manager 4
  Jam kerja Manager 4 : 7.5
  Gaji Manager 4 : 1000000.0
  Utsia Manager 4 : 20

  Nama 5 : Manager 5
  Jam kerja Manager 5 : 7.5
  Gaji Manager 5 : 1000000.0
  Utsia Manager 5 : 20

BUILD SUCCESSFUL (total time: 0 seconds)
```

2. Menambahkan setter pada class Manager untuk memodifikasi nilai baru jamKerja menjadi 8.5



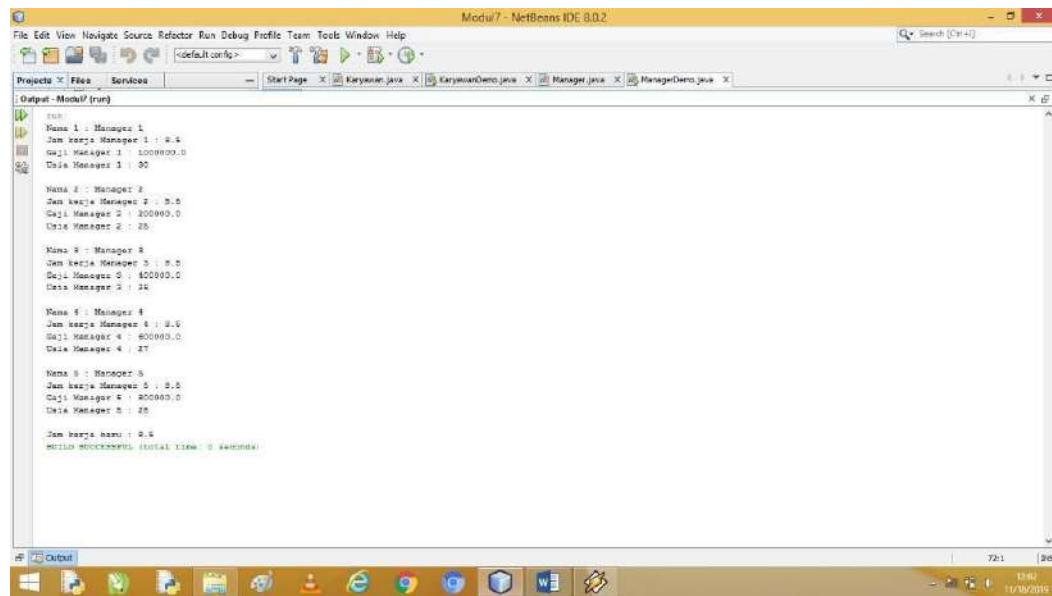
```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Projects Files Services StartPage Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java
Source History Search Tools Help
1  /*
2   * To change this license header, choose License Headers in Project Properties.
3   * To change this template file, choose Tools | Templates
4   * and open the template in the editor.
5   */
6
7 /**
8  * Author LASHPL-21
9  */
10 public class Manager extends Karyawan {
11     private float jamKerja = 7.5f;
12
13     public void setJamKerja(float jamKerja) {
14         this.jamKerja = jamKerja;
15     }
16
17     public float jamKerja() {
18         return jamKerja;
19     }
20
21
22     public float getGajiManager() {
23         return gajiKerja() * 2;
24     }
25 }
```

```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config> Search (Ctrl+F)
Projects Files Services Start Page Karavan.java X ManagerDemo.java X Manager.java X ManagerDemo.java X
Source History < > <> << >> <<< >>>
1 /* To change this license header, choose License Headers in Project Properties.
2 * To change this template file, choose Tools | Templates
3 * and open the template in the editor.
4 */
5
6 /**
7 * Author : LAKERL-JI
8 */
9
10 public class ManagerDemo {
11     public static void main(String[] args) {
12         Manager m1 = new Manager();
13         Manager m2 = new Manager();
14         Manager m3 = new Manager();
15         Manager m4 = new Manager();
16         Manager m5 = new Manager();
17
18         m1.setGaji(500000);
19         m1.setNama("Manager 1");
20         m1.setUsia(50);
21         m1.setJamKerja(6.15);
22
23         m2.setGaji(100000);
24         m2.setNama("Manager 2");
25         m2.setUsia(25);
26         m2.setJamKerja(6.5);
27
28         m3.setGaji(200000);
29         m3.setNama("Manager 3");
30         m3.setUsia(26);
31         m3.setJamKerja(6.5);
32
33         m4.setGaji(400000);
34         m4.setNama("Manager 4");
35         m4.setUsia(27);
36         m4.setJamKerja(6.5);
37
38         m5.setGaji(800000);
39         m5.setNama("Manager 5");
40         m5.setUsia(28);
41         m5.setJamKerja(6.5);
42
43         System.out.println("Nama 1 : " + m1.getNama());
44         System.out.println("Gaji Kerja Manager 1 : " + m1.jamKerja());
45         System.out.println("Usia Manager 1 : " + m1.getUsia() + "\n");
46
47         System.out.println("Nama 2 : " + m2.getNama());
48         System.out.println("Gaji Kerja Manager 2 : " + m2.jamKerja());
49         System.out.println("Usia Manager 2 : " + m2.getUsia() + "\n");
50
51         System.out.println("Nama 3 : " + m3.getNama());
52         System.out.println("Gaji Kerja Manager 3 : " + m3.jamKerja());
53         System.out.println("Usia Manager 3 : " + m3.getUsia() + "\n");
54
55         System.out.println("Nama 4 : " + m4.getNama());
56         System.out.println("Gaji Kerja Manager 4 : " + m4.jamKerja());
57         System.out.println("Usia Manager 4 : " + m4.getUsia() + "\n");
58
59         System.out.println("Nama 5 : " + m5.getNama());
60         System.out.println("Gaji Kerja Manager 5 : " + m5.jamKerja());
61         System.out.println("Usia Manager 5 : " + m5.getUsia() + "\n");
62
63         System.out.println("Jumlah gaji para : " + m1.jamKerja());
64
65         System.out.println("Jumlah gaji para : " + m2.jamKerja());
66
67         System.out.println("Jumlah gaji para : " + m3.jamKerja());
68
69         System.out.println("Jumlah gaji para : " + m4.jamKerja());
70
71
72 }
```

```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config> Search (Ctrl+F)
Projects Files Services Start Page Karavan.java X ManagerDemo.java X Manager.java X ManagerDemo.java X
Source History < > <> << >> <<< >>>
29 m3.setGaji(200000);
30 m3.setNama("Manager 3");
31 m3.setUsia(26);
32 m3.setJamKerja(6.5);
33
34 m4.setGaji(800000);
35 m4.setNama("Manager 4");
36 m4.setUsia(27);
37 m4.setJamKerja(6.5);
38
39 m5.setGaji(400000);
40 m5.setNama("Manager 5");
41 m5.setUsia(28);
42 m5.setJamKerja(6.5);
43
44 System.out.println("Nama 1 : " + m1.getNama());
45 System.out.println("Gaji Kerja Manager 1 : " + m1.jamKerja());
46 System.out.println("Usia Manager 1 : " + m1.getUsia() + "\n");
47
48 System.out.println("Nama 2 : " + m2.getNama());
49 System.out.println("Gaji Kerja Manager 2 : " + m2.jamKerja());
50 System.out.println("Usia Manager 2 : " + m2.getUsia() + "\n");
51
52 System.out.println("Nama 3 : " + m3.getNama());
53 System.out.println("Gaji Kerja Manager 3 : " + m3.jamKerja());
54 System.out.println("Usia Manager 3 : " + m3.getUsia() + "\n");
55
56 System.out.println("Nama 4 : " + m4.getNama());
57 System.out.println("Gaji Kerja Manager 4 : " + m4.jamKerja());
58 System.out.println("Usia Manager 4 : " + m4.getUsia() + "\n");
59
60 System.out.println("Nama 5 : " + m5.getNama());
61 System.out.println("Gaji Kerja Manager 5 : " + m5.jamKerja());
62 System.out.println("Usia Manager 5 : " + m5.getUsia() + "\n");
63
64 System.out.println("Jumlah gaji para : " + m1.jamKerja());
65
66 System.out.println("Jumlah gaji para : " + m2.jamKerja());
67
68 System.out.println("Jumlah gaji para : " + m3.jamKerja());
69
70 System.out.println("Jumlah gaji para : " + m4.jamKerja());
71
72 }
```

```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config> Search (Ctrl+F)
Projects Files Services Start Page Karavan.java X ManagerDemo.java X Manager.java X ManagerDemo.java X
Source History < > <> << >> <<< >>>
45 System.out.println("Nama kerja Manager 1 : " + m1.jamKerja());
46 System.out.println("Gaji Manager 1 : " + m1.getGajiManager());
47 System.out.println("Usia Manager 1 : " + m1.getUsia() + "\n");
48
49 System.out.println("Nama kerja Manager 2 : " + m2.jamKerja());
50 System.out.println("Gaji Manager 2 : " + m2.getGajiManager());
51 System.out.println("Usia Manager 2 : " + m2.getUsia() + "\n");
52
53 System.out.println("Nama kerja Manager 3 : " + m3.jamKerja());
54 System.out.println("Gaji Manager 3 : " + m3.getGajiManager());
55 System.out.println("Usia Manager 3 : " + m3.getUsia() + "\n");
56
57 System.out.println("Nama kerja Manager 4 : " + m4.jamKerja());
58 System.out.println("Gaji Manager 4 : " + m4.getGajiManager());
59 System.out.println("Usia Manager 4 : " + m4.getUsia() + "\n");
60
61 System.out.println("Nama kerja Manager 5 : " + m5.jamKerja());
62 System.out.println("Gaji Manager 5 : " + m5.getGajiManager());
63 System.out.println("Usia Manager 5 : " + m5.getUsia() + "\n");
64
65 System.out.println("Jumlah kerja para : " + m1.jamKerja());
66
67 System.out.println("Jumlah kerja para : " + m2.jamKerja());
68
69 System.out.println("Jumlah kerja para : " + m3.jamKerja());
70
71 System.out.println("Jumlah kerja para : " + m4.jamKerja());
72
73 }
```

Output dari program diatas:



```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Project Files Services StartPage Keysean.java KeyseanDemo.java Manager.java ManagerDemo.java
Output - Modul7 (run)
[Run]
Kunci 1 : Manager 1
Jan karya Manager 1 : 2.5
Gaji Manager 1 : 1000000.0
Daik Manager 1 : 30
Kunci 2 : Manager 2
Jan karya Manager 2 : 3.5
Gaji Manager 2 : 200000.0
Daik Manager 2 : 25
Kunci 3 : Manager 3
Jan karya Manager 3 : 5.5
Gaji Manager 3 : 400000.0
Daik Manager 3 : 34
Kunci 4 : Manager 4
Jan karya Manager 4 : 8.5
Gaji Manager 4 : 800000.0
Daik Manager 4 : 27
Kunci 5 : Manager 5
Jan karya Manager 5 : 2.5
Gaji Manager 5 : 200000.0
Daik Manager 5 : 25
Jan karya name : 2.5
HURRAH SUCCESSFUL (TOTAL TIME : 0 seconds)
```

MODUL 8

Nama : Dzaki Fadhlurrohman

NIM : L200180064

Kelas : B

8.1.1 Overriding

The screenshot shows a Java code editor with four tabs open:

- ParentClass.java**: A class named ParentClass with a printOut() method that prints "Ini adalah super class".
- ChildClass.java**: A class named ChildClass that extends ParentClass. It overrides the printOut() method to print "Ini adalah sub class" and adds a hello() method that prints "Hello world".
- DemoOverriding.java**: A main class that creates instances of ParentClass and ChildClass and calls their printOut() methods.
- Hewan.java**: A class named Hewan with a jalan() method that prints "Hewan berjalan".

```
1 package Modul8;
2
3 public class ParentClass {
4     void printOut(){
5         System.out.println("Ini adalah super class");
6     }
7 }
8
9
10
11
12 package Modul8;
13
14 public class ChildClass extends ParentClass {
15     void printOut(){
16         System.out.println("Ini adalah sub class");
17     }
18     void hello(){
19         System.out.println("Hello world");
20     }
21 }
22
23
24 package Modul8;
25
26 public class DemoOverriding {
27     public static void main(String[] args) {
28         ParentClass cs = new ParentClass();
29         ChildClass cc = new ChildClass();
30         cs.printOut();
31         cc.printOut();
32     }
33 }
34
35
36 package Modul8;
37
38 public class Hewan {
39     public void jalan(){
40         System.out.println("Hewan berjalan");
41     }
42 }
```

```
1 Kucing.java 2 Anjing.java 3 Pet.java 4 TestPolymorphism.java 5 Elang.java 6 CustomerData.java 7 ParentClass.java 8 ChildClass.java 9 DemoOverriding.java 10 Hewan.java
1 package Modul8;
2
3 public class Kucing extends Pet{
4     public void jalan(){
5         System.out.println("Kucing bisa berjalan dan berlari");
6     }
7     private String nama;
8
9     public void beriNama(String beriNama){
10         this.nama = beriNama;
11     }
12     public String panggilNama(){
13         return this.nama;
14     }
15
16     public String perilaku(){
17         return "Menyukai Ikan\nMeoww... Meoww";
18     }
19
20 }
```

8.1.2 Upcasting

```
1 Kucing.java 2 Sepeda.java 3 Anjing.java 4 TestPolymorphism.java 5 Elang.java 6 CustomerData.java 7 ParentClass.java 8 ChildClass.java 9 DemoOverriding.java 10 Hewan.java
1 package Modul8;
2
3 public class Sepeda{
4     void run(){
5         System.out.println("Hanya bisa berjalan diatas air");
6     }
7
8     public static void main(String[] args){
9         Sepeda s = new Sepeda();
10        s.run();
11    }
12
13 }
```

8.1.3 Overloading

```
1 Kucing.java 2 Sepeda.java 3 OverloadingConstructor.java 4 TestPolymorphism.java 5 Elang.java 6 CustomerData.java 7 ParentClass.java 8 ChildClass.java 9 DemoOverriding.java 10 Hewan.java
1 package Modul8;
2 import java.util.Date;
3 public class OverloadingConstructor {
4     int idUser;
5     String username;
6     int level;
7     Date lastLogin;
8     public OverloadingConstructor(){
9     }
10    public OverloadingConstructor(int idUser, String username){
11        this.idUser = idUser;
12        this.username = username;
13    }
14
15 }
```

8.2 Latihan

IntelliJ IDEA Community Edition

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

collage [~/ideaProjects/collage] -.../src/Modul8/testPolymorphism.java

Project collage -> idea -> out -> src -> Modul8 -> Tugas -> TestPolymorphism

```
1 package Modul8;
2
3 public class TestPolymorphism{
4     public static void main(String[] args) {
5         Kucing k = new Kucing();
6         Anjing a = new Anjing();
7
8         k.beriNama("Tom");
9         System.out.println(k.panggilNama());
10        System.out.println(k.perilaku());
11
12        a.beriNama("Bull");
13        System.out.println(a.panggilNama());
14        System.out.println(a.perilaku());
15    }
16 }
17
```

TestPolymorphism.java:1: main() -> main()

Run TestPolymorphism > /usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-community/185/lib/idea_rt.jar=41611:/snap/intellij-idea-community/185/lib/idea_rt.jar

Tom
Menyukai Ikan:
Meeooww... Meeooww.
Bull
Menyukai Daging dan Tulang
Guk... Guk...

Process finished with exit code 0

8.3 Tugas

Kucing.java Sepeda.java TestPolymorphism.java Bang.java OverloadingConstructor.java ParentClass.java Pet.java

```
1 package Modul8.Tugas;
2
3 import Modul8.Pet;
4
5 public class Elang extends Pet {
6     public void jalan() { System.out.println("Elang bisa berjalan dan terbang"); }
7 }
```

IntelliJ IDEA Community Edition

File Edit Run Debug Data Analyze Refactor Tools Help Dictionaries Window Help

143 202 Fri Nov 22, 15:52:29 100%

File Project Modules Settings Help

CustomerData.java

```
package Modul8.Topik;

public class CustomerData {
    String name;
    int umur;
    float gaji;

    CustomerData(String nama, String alamat, String pekerjaan) {
        this.name = nama;
        this.alamat = alamat;
        this.pekerjaan = pekerjaan;
        System.out.println("Nama : " + this.name + " Alamat : " + this.alamat + " Pekerjaan : " + this.pekerjaan);
    }

    CustomerData(int tgl_lhr) {
        this.tanggal_lahir = tgl_lhr;
        System.out.println("Tanggal Lahir : " + this.tanggal_lahir + " April");
    }

    CustomerData(float gaji) {
        this.gaji = gaji;
        System.out.println("Gaji Anda sekarang : " + this.gaji);
        System.out.println("\n");
    }

    public static void main(String[] args) {
        CustomerData c01 = new CustomerData("Dzaki", "Salah", "Freelance");
        CustomerData c02 = new CustomerData("Dzaki", 20);
        CustomerData c03 = new CustomerData(25000000);

        CustomerData c04 = new CustomerData("Dzaki", "Salah", "Designer");
        CustomerData c05 = new CustomerData("Dzaki", 21);
        CustomerData c06 = new CustomerData(25000000);

        CustomerData c07 = c01;
    }
}
```

Run CustomerData

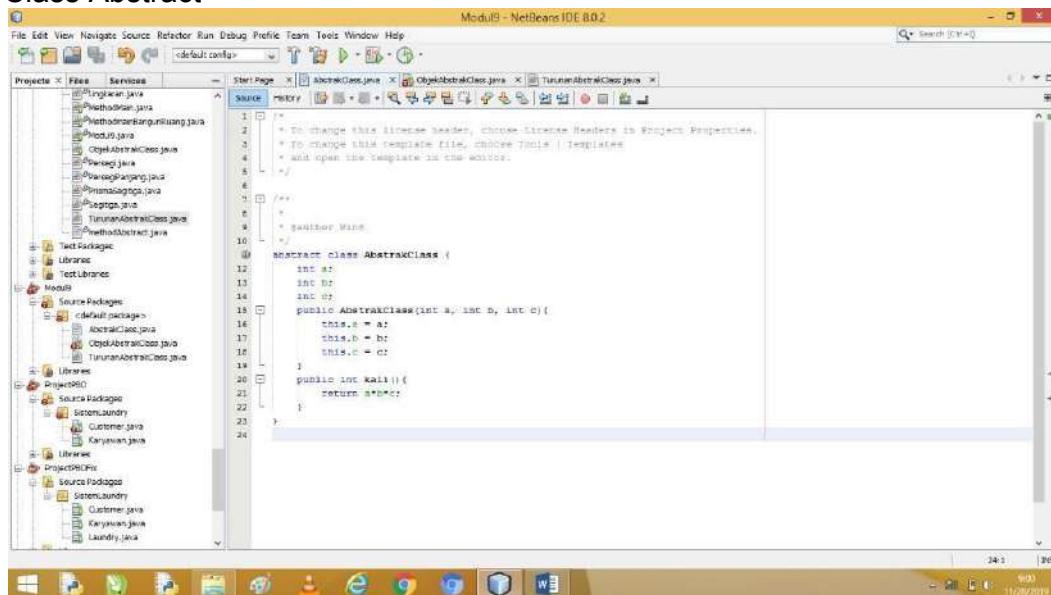
/usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-community/185/lib/idea_rt.jar=1515:/snap/intellij-idea-community/185/bin -Dfile.encoding=UTF-8 -classpath /home/dzakifudh/IdeaProjects/college

Name : Dzaki
Alamat : Salah
Pekerjaan : Freelance
Tanggal Lahir : 20 April
Gaji Anda sekarang : 2.6E7

MODUL 9

Nama : Dzaki Fadhlurrohman
NIM : L200180064
Kelas : B

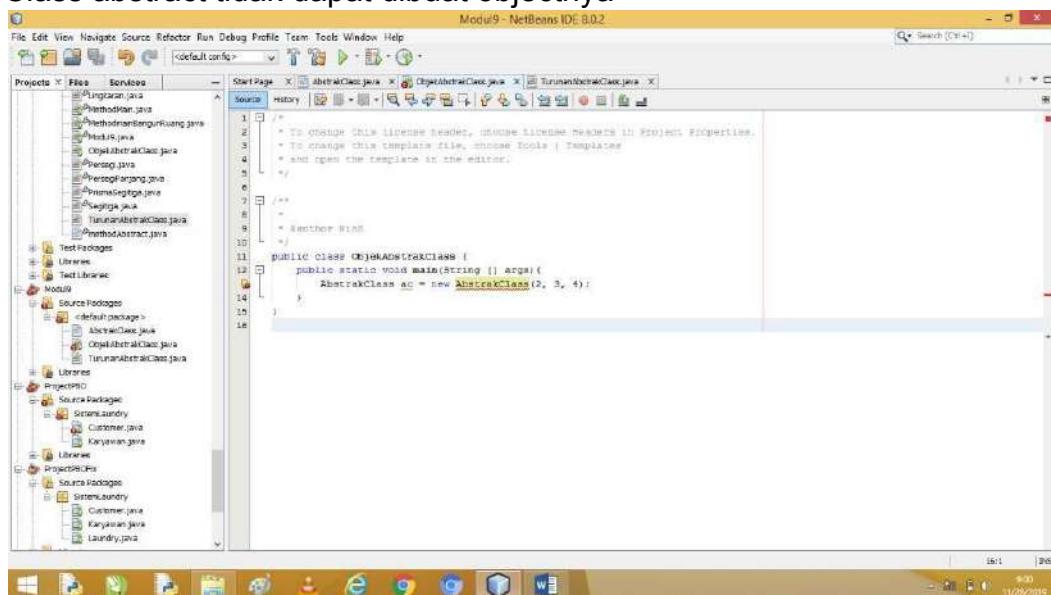
Class Abstract



The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The left sidebar displays a project structure with several Java files like "AbsrakClass.java", "ObjectAbstractClass.java", and "TurunanAbstractClass.java". The main editor window contains the following code:

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates.
 * and open the template in the editor.
 */
/*
 * Author: Wina
 */
abstract class AbstrakClass {
    int a;
    int b;
    int c;
    public AbstrakClass(int a, int b, int c) {
        this.a = a;
        this.b = b;
        this.c = c;
    }
    public int kali() {
        return a*b*c;
    }
}
```

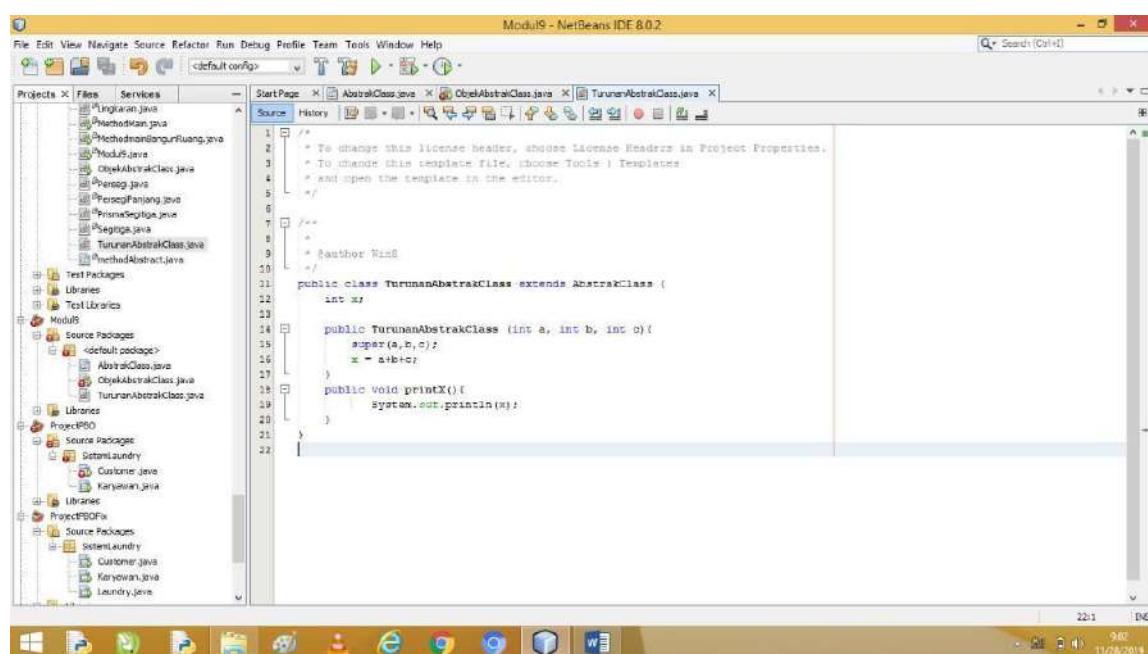
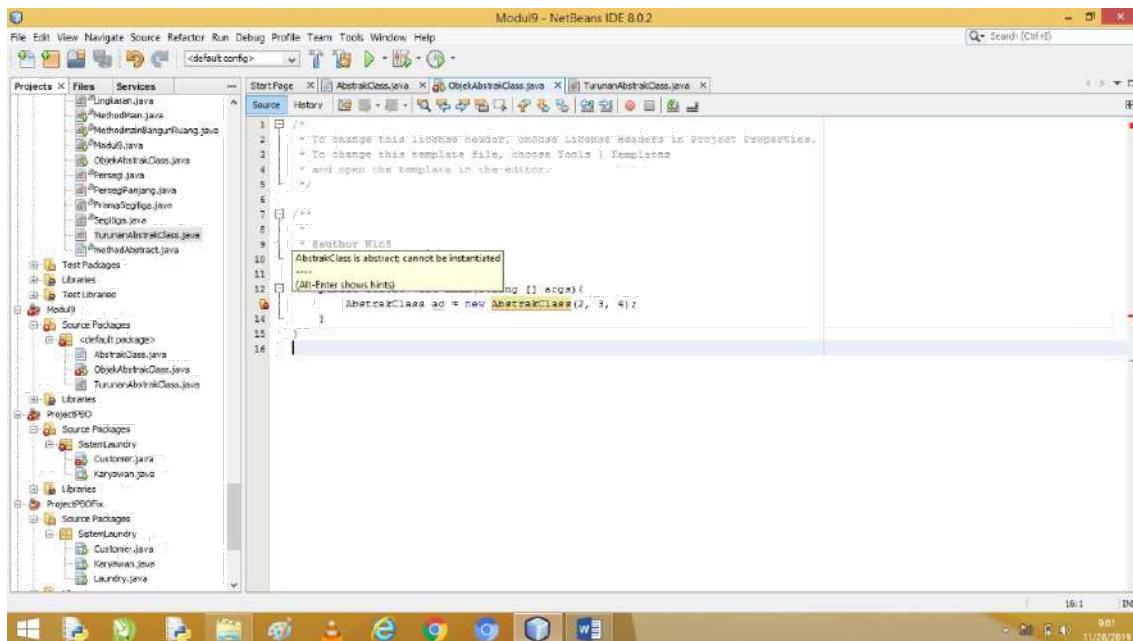
Class abstract tidak dapat dibuat objectnya



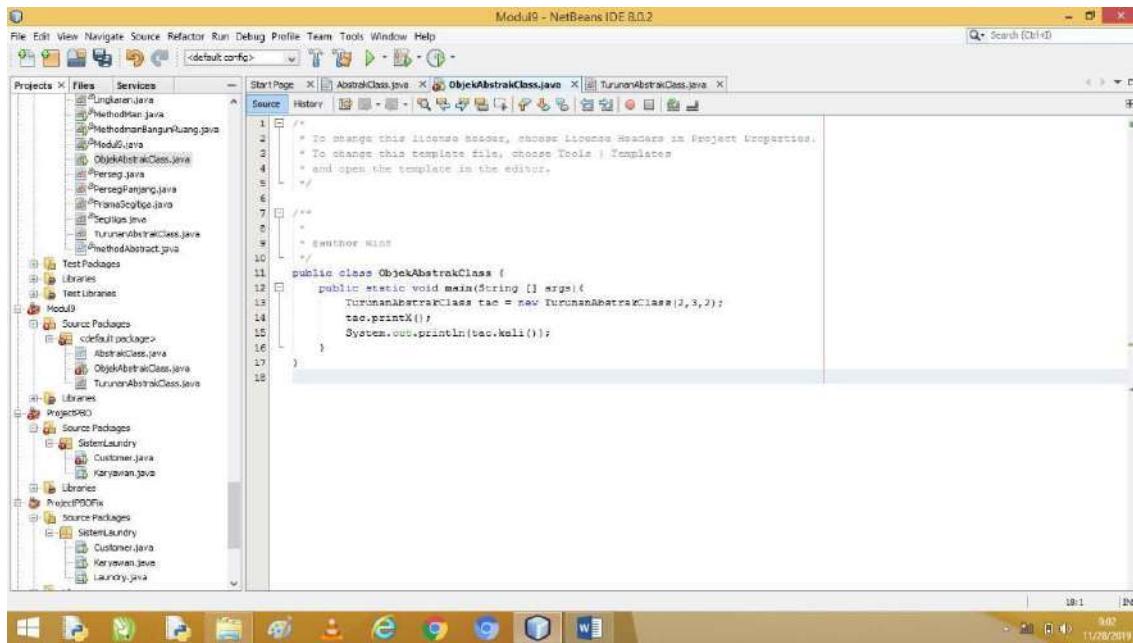
The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The left sidebar displays a project structure with Java files like "AbsrakClass.java", "ObjectAbstractClass.java", and "TurunanAbstractClass.java". The main editor window contains the following code:

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates.
 * and open the template in the editor.
 */
/*
 * Author: Wina
 */
public class ObjectAbstractClass {
    public static void main(String [] args) {
        AbstrakClass ac = new AbstrakClass(2, 3, 4);
    }
}
```

A red squiggly underline is under the word "AbstrakClass" in the line "AbstrakClass ac = new AbstrakClass(2, 3, 4);", indicating a compilation error.

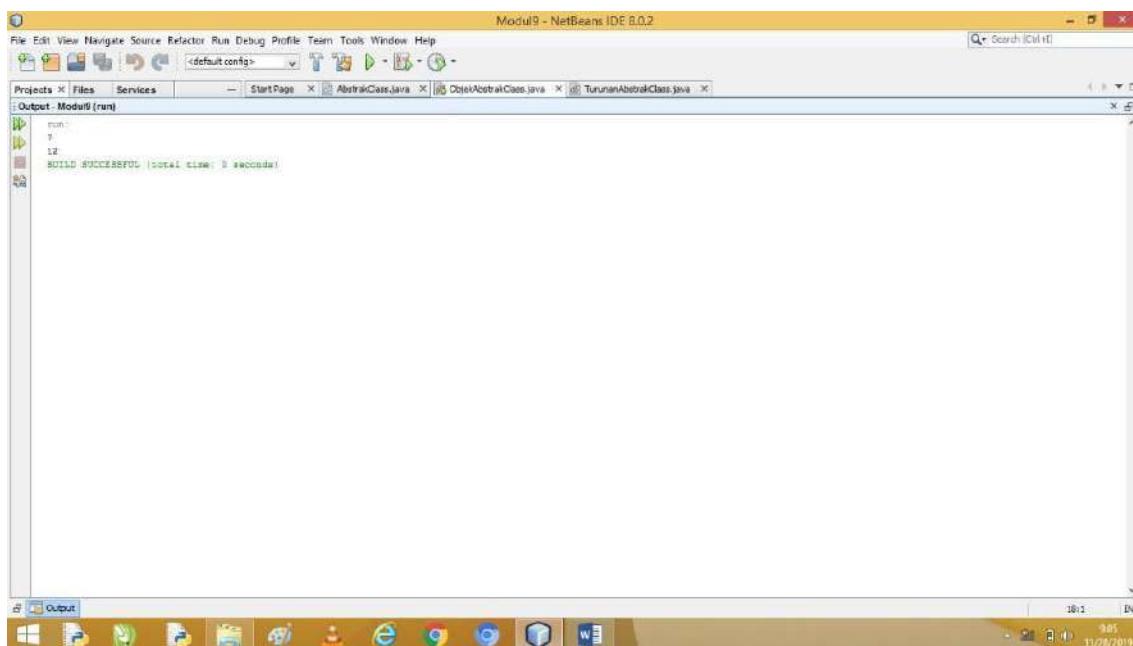


Penggunaan properties class abstract melalui object subclass



The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for New Project, Open Project, Save, Cut, Copy, Paste, Find, Replace, and others. The Projects tab shows several Java files like Punggolen.java, MethodDariPunggolWang.java, ObjekAbstract.java, Perserang.java, PersegPjng.java, PrismeScrgp.java, Segitiga.java, and TurunanAbstrakClass.java. The current file is ObjectAbstrakClass.java, which contains the following code:

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package com.sistemlaundry;
public class ObjectAbstrakClass {
    public static void main(String [] args){
        TurunanAbstrakClass tao = new TurunanAbstrakClass(2,3,2);
        tao.printX();
        System.out.println(tao.kali());
    }
}
```

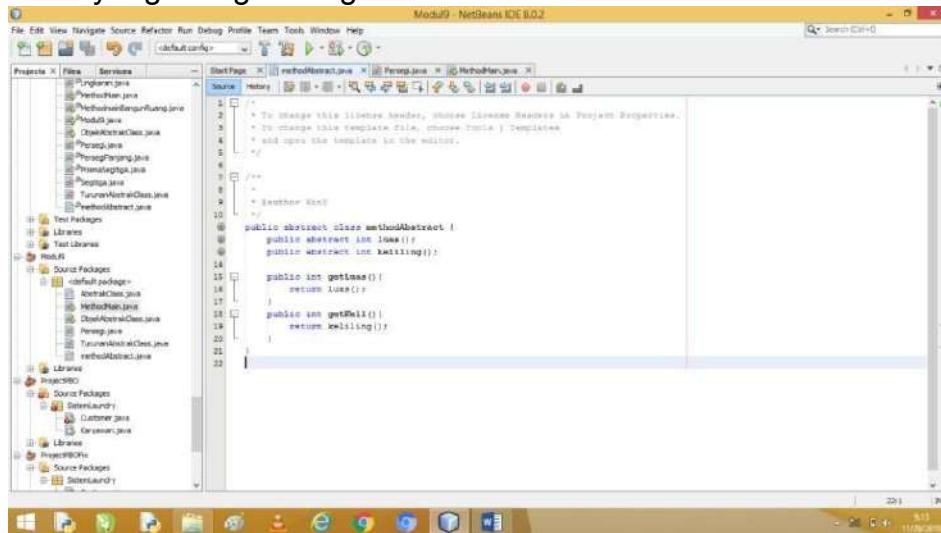


The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The menu bar and toolbar are identical to the previous screenshot. The Projects tab shows the same Java files. The current file is still ObjectAbstrakClass.java. The Output tab shows the build results:

```
run:
12
BUILD SUCCESSFUL (total time: 0 seconds)
```

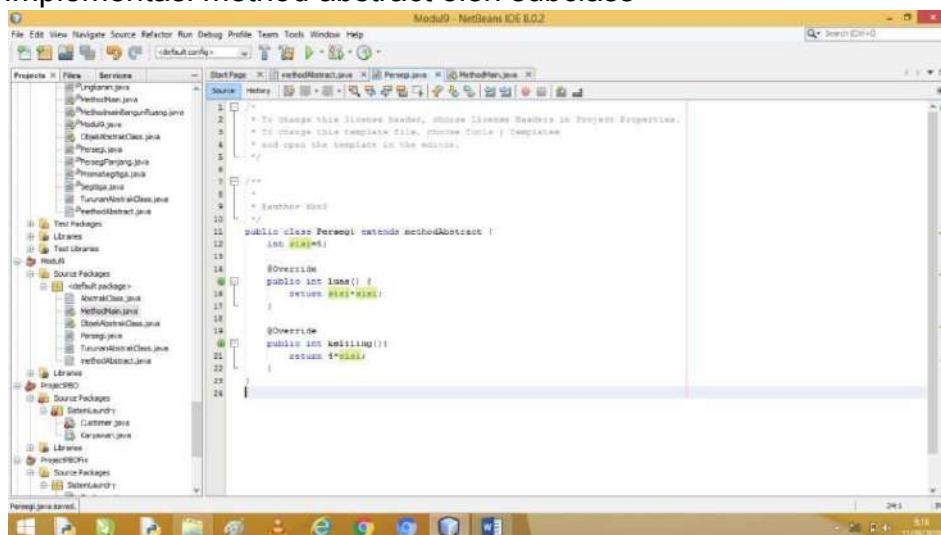
METHOD ABSTRACT

Class yang mengandung method abstract



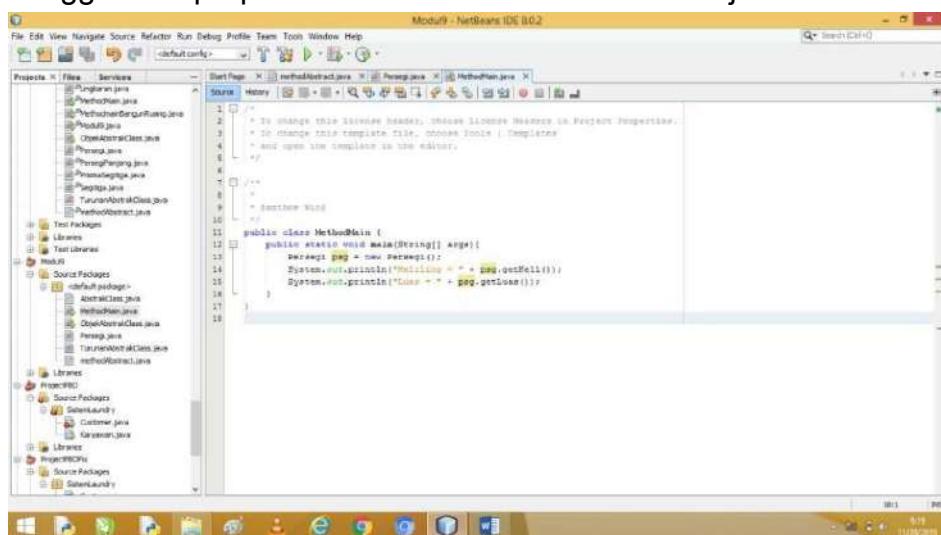
```
1 // To change this license header, choose License Headers in Project Properties.
2 // To change this template file, choose Tools | Templates
3 // and open the template in the editor.
4
5 /**
6  * Author : Kinal
7 */
8
9 public abstract class methodAbstract {
10     public abstract int luas();
11     public abstract int keliling();
12 }
13
14 /**
15  * Author : Kinal
16 */
17
18 public int getLuas(){
19     return luas();
20 }
21
22 /**
23  * Author : Kinal
24 */
25
26 public int getKeliling(){
27     return keliling();
28 }
```

Implementasi method abstract oleh subclass



```
1 // To change this license header, choose License Headers in Project Properties.
2 // To change this template file, choose Tools | Templates
3 // and open the template in the editor.
4
5 /**
6  * Author : Kinal
7 */
8
9 public class Persegi extends methodAbstract {
10     int width;
11
12     @Override
13     public int luas(){
14         return width*width;
15     }
16
17     @Override
18     public int keliling(){
19         return 4*width;
20     }
21 }
22
23 /**
24  * Author : Kinal
25 */
26
27 public class methodAbstract {
28 }
```

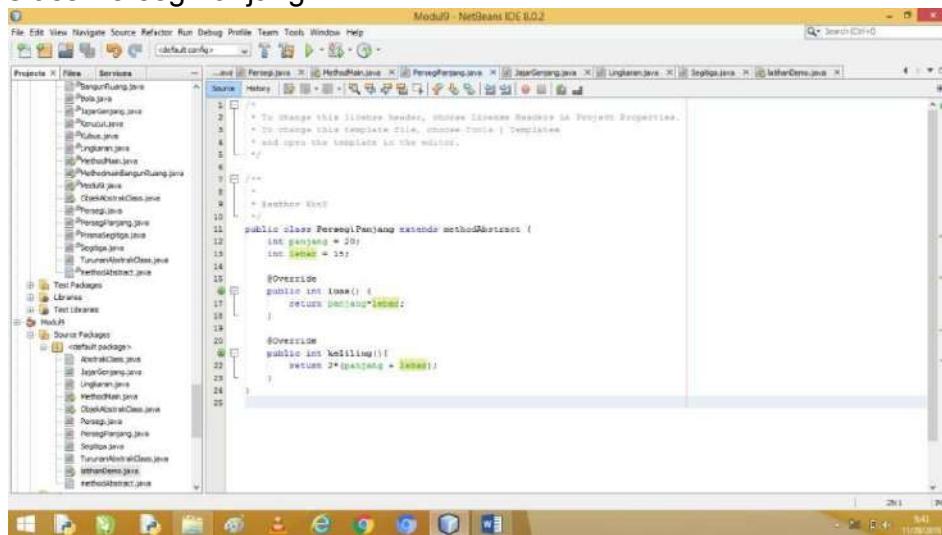
Penggunaan properties method abstract melalui object subclass



```
1 // To change this license header, choose License Headers in Project Properties.
2 // To change this template file, choose Tools | Templates
3 // and open the template in the editor.
4
5 /**
6  * Author : Kinal
7 */
8
9 public class MethodMain {
10     public static void main(String[] args){
11         Persegi pg = new Persegi();
12         System.out.println("keliling = " + pg.getKeliling());
13         System.out.println("Luas = " + pg.getLuas());
14     }
15 }
```

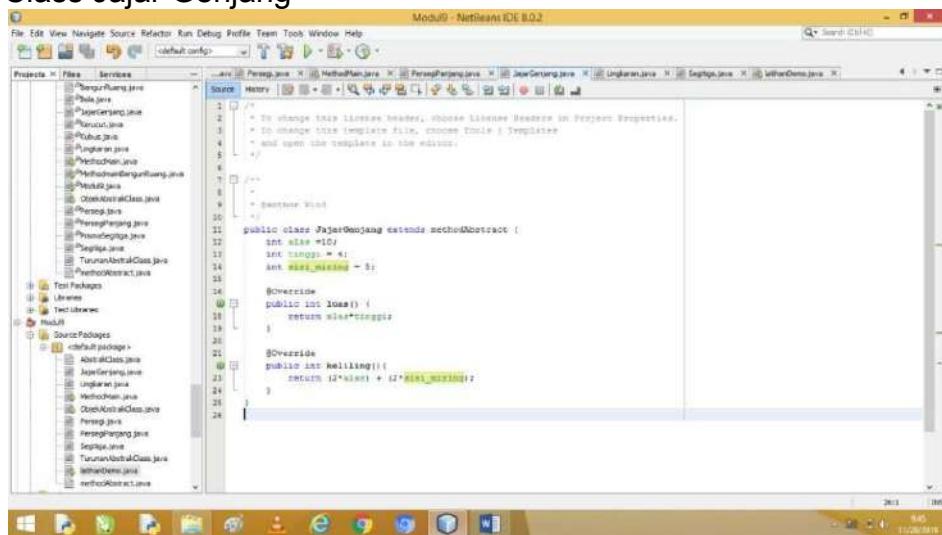
LATIHAN

Class PersegiPanjang



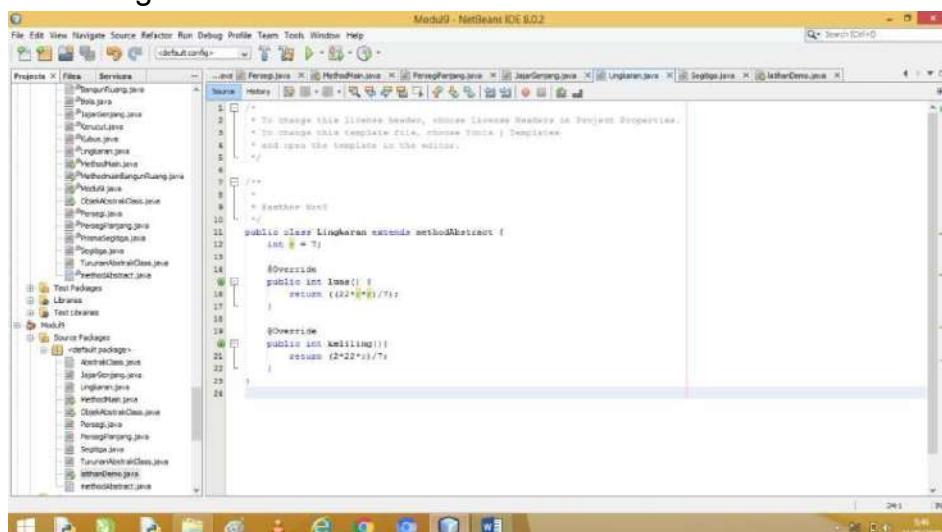
```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config
Project Files Services
Source History
1 /* To change this license header, choose License Headers in Project Properties.
2  * To change this template file, choose Tools | Templates.
3  * and open the template in the editor.
4 */
5
6 /**
7  * Author: Vins
8  */
9
10 public class PersegiPanjang extends methodAbstract {
11     int panjang = 20;
12     int lebar = 15;
13
14     @Override
15     public int luas() {
16         return panjang*lebar;
17     }
18
19     @Override
20     public int keliling() {
21         return 2*(panjang + lebar);
22     }
23 }
24
25 
```

Class Jajar Genjang



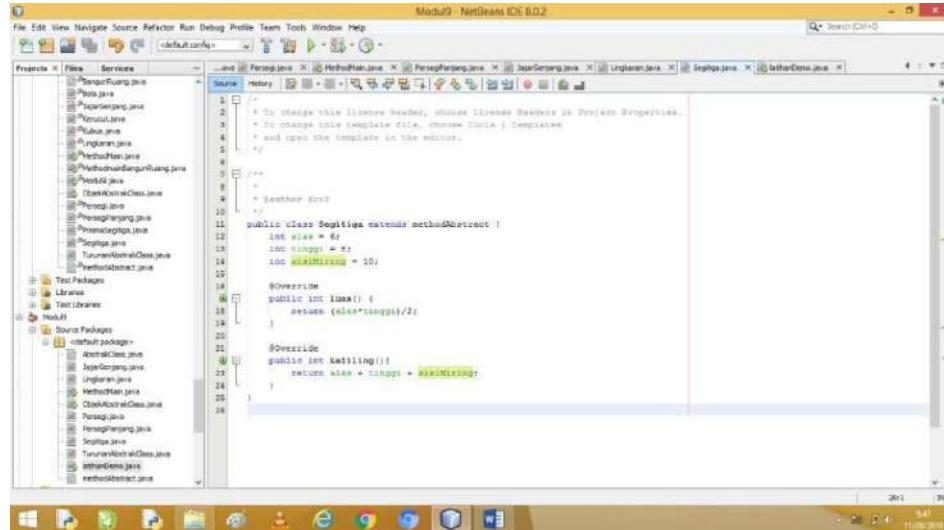
```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config
Project Files Services
Source History
1 /* To change this license header, choose License Headers in Project Properties.
2  * To change this template file, choose Tools | Templates.
3  * and open the template in the editor.
4 */
5
6 /**
7  * Author: Vins
8  */
9
10 public class JajarGenjang extends methodAbstract {
11     int alas = 10;
12     int tinggi = 4;
13     int sisi_miring = 5;
14
15     @Override
16     public int luas() {
17         return alas*tinggi;
18     }
19
20     @Override
21     public int keliling() {
22         return 2*alas + 2*sisi_miring;
23     }
24 }
25 
```

Class Lingkaran



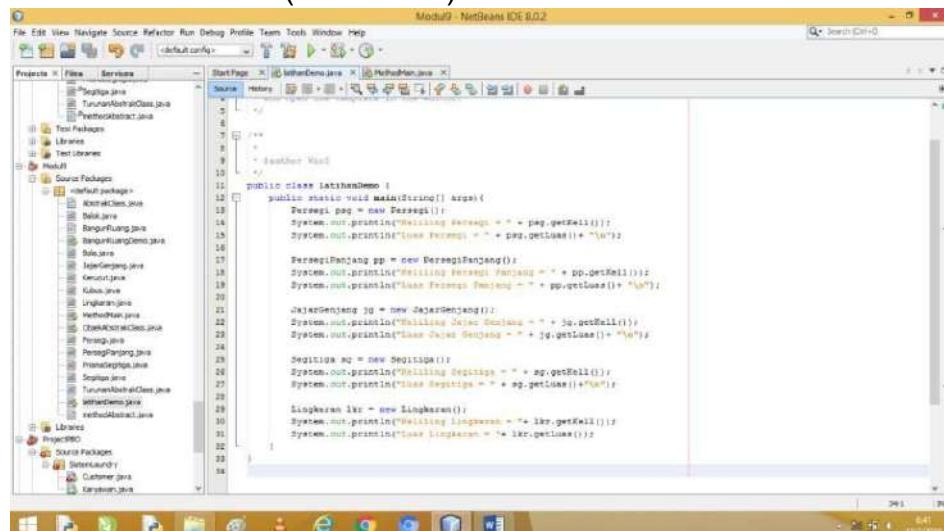
```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config
Project Files Services
Source History
1 /* To change this license header, choose License Headers in Project Properties.
2  * To change this template file, choose Tools | Templates.
3  * and open the template in the editor.
4 */
5
6 /**
7  * Author: Vins
8  */
9
10 public class Lingkaran extends methodAbstract {
11     int r = 5;
12
13     @Override
14     public int luas() {
15         return ((22/7)*r)*r;
16     }
17
18     @Override
19     public int keliling() {
20         return (2*22*r)/7;
21     }
22 }
23 
```

Class Segitiga



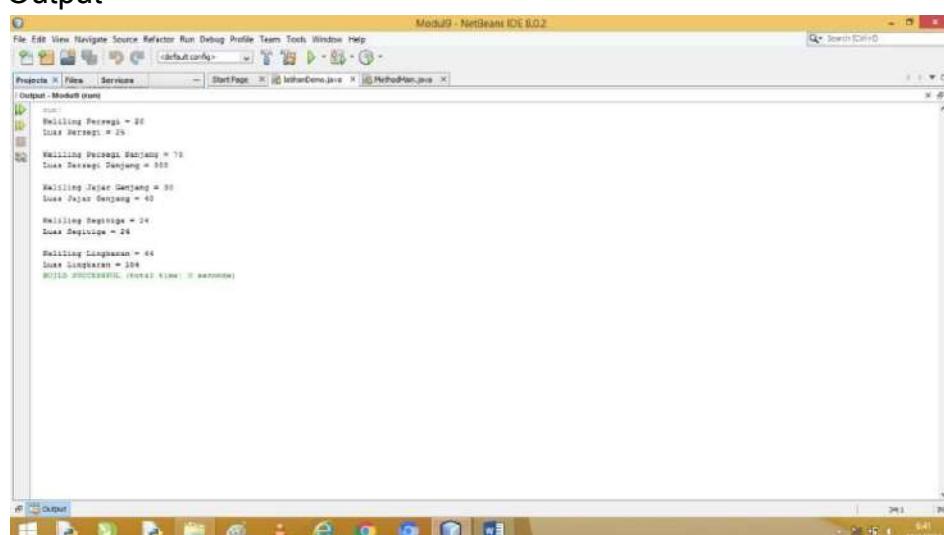
```
Modul9 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Tools Window Help
default config - Start Page - Segitiga.java - MethodMain.java - PersegiPanjang.java - JavaGaming.java - Lingkaran.java - Segitiga.java - latihanDemo.java - 
Projects Files Services - Segitiga.java - MethodMain.java - PersegiPanjang.java - JavaGaming.java - Lingkaran.java - Segitiga.java - latihanDemo.java - 
Source History - Segitiga.java - MethodMain.java - PersegiPanjang.java - JavaGaming.java - Lingkaran.java - Segitiga.java - latihanDemo.java - 
1 /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose File | Templates.
4  * and open the template in the editor.
5  */
6 
7 /**
8  * Author: Vix3
9  */
10 public class Segitiga extends methodAbstract {
11     int alas = 6;
12     int tinggi = 5;
13     int keliling = 10;
14 
15     @Override
16     public int luas() {
17         return alas * tinggi / 2;
18     }
19 
20     @Override
21     public int keliling() {
22         return alas + tinggi + keliling;
23     }
24 }
25 
```

Class latihanDemo (main class)



```
Modul9 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Tools Window Help
default config - Start Page - latihanDemo.java - MethodMain.java - 
Projects Files Services - latihanDemo.java - MethodMain.java - 
Source History - latihanDemo.java - MethodMain.java - 
1 package latihanDemo;
2 
3 public class latihanDemo {
4     public static void main(String[] args) {
5         Persegi pg = new Persegi();
6         System.out.println("Menghitung Persegi = " + pg.getLuas());
7         System.out.println("Menghitung Persegi = " + pg.getKelil());
8 
9         PersegiPanjang pp = new PersegiPanjang();
10        System.out.println("Menghitung Persegi Panjang = " + pp.getLuas());
11        System.out.println("Menghitung Persegi Panjang = " + pp.getKelil());
12 
13        JavaGaming jg = new JavaGaming();
14        System.out.println("Menghitung Java Gamed = " + jg.getLuas());
15        System.out.println("Menghitung Java Gamed = " + jg.getKelil());
16 
17        Segitiga sg = new Segitiga();
18        System.out.println("Menghitung Segitiga = " + sg.getLuas());
19        System.out.println("Menghitung Segitiga = " + sg.getKelil());
20 
21        Lingkaran lk = new Lingkaran();
22        System.out.println("Menghitung Lingkaran = " + lk.getLuas());
23        System.out.println("Menghitung Lingkaran = " + lk.getKelil());
24 
25    }
26 }
```

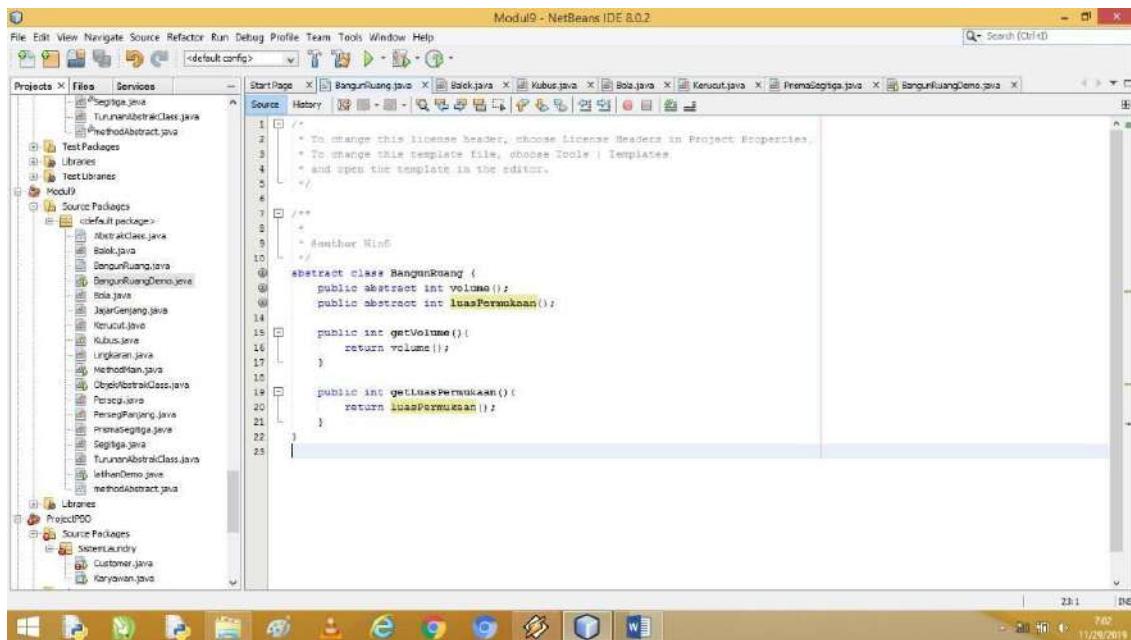
Output



```
Modul9 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Tools Window Help
default config - Start Page - latihanDemo.java - MethodMain.java - 
Projects Files Services - Output - Modul9.out - 
Output - Modul9.out - 
1 Menghitung Persegi = 36
2 Luas Persegi = 36
3 
4 Menghitung Persegi Panjang = 70
5 Luas Persegi Panjang = 70
6 
7 Menghitung Jajar Genjang = 30
8 Luas Jajar Genjang = 30
9 
10 Menghitung Segitiga = 15
11 Luas Segitiga = 15
12 
13 Menghitung Lingkaran = 44
14 Luas Lingkaran = 104
15 Build successful, total time: 0 seconds
```

TUGAS

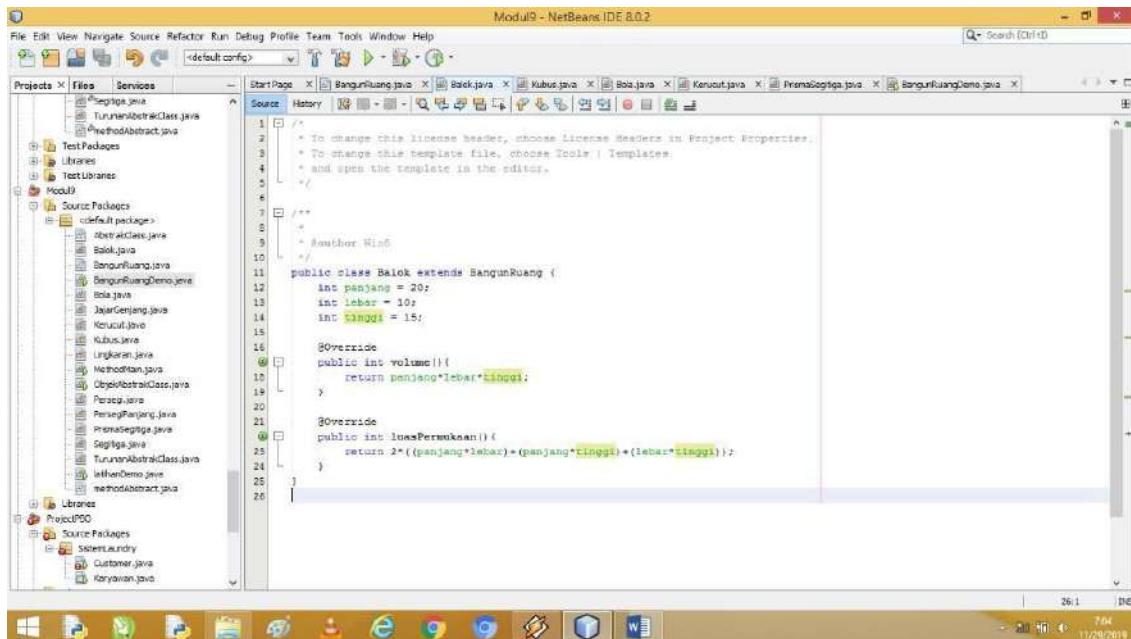
Class BangunRuang (Abstract Class)



The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The left sidebar displays the project structure under "Modul9" with various Java files listed. The main editor window contains the code for the abstract class `BangunRuang.java`. The code includes a license header and the definition of the abstract class with its methods `volume()` and `luasPermukaan()`.

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates.
 * and open the template in the editor.
 */
package com.sistemlaundry;
abstract class BangunRuang {
    public abstract int volume();
    public abstract int luasPermukaan();
    public int getVolume(){
        return volume();
    }
    public int getLuasPermukaan(){
        return luasPermukaan();
    }
}
```

Class Balok



The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The left sidebar displays the project structure under "Modul9" with various Java files listed. The main editor window contains the code for the concrete class `Balok.java`, which extends the abstract class `BangunRuang`. The class has three integer fields: `panjang`, `lebar`, and `tinggi`. It overrides the `volume()` method to calculate volume as `panjang*lebar*tinggi` and overrides the `luasPermukaan()` method to calculate surface area as `2*((panjang*lebar)+(panjang*tinggi)+(lebar*tinggi))`.

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates.
 * and open the template in the editor.
 */
package com.sistemlaundry;
public class Balok extends BangunRuang {
    int panjang = 20;
    int lebar = 10;
    int tinggi = 15;
    @Override
    public int volume(){
        return panjang*lebar*tinggi;
    }
    @Override
    public int luasPermukaan(){
        return 2*((panjang*lebar)+(panjang*tinggi)+(lebar*tinggi));
    }
}
```

Class Kubus

The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The left sidebar displays a project structure with several Java files. The main editor window shows the code for the class `Rubus`, which extends `BangunRuang`. The code includes a constructor setting `sisi = 10`, and two overridden methods: `volume()` returning $sisi \times sisi \times sisi$, and `luasPermukaan()` returning $6 \times (sisi \times sisi)$.

```
public class Rubus extends BangunRuang {
    int sisi = 10;

    @Override
    public int volume() {
        return sisi*sisi*sisi;
    }

    @Override
    public int luasPermukaan() {
        return 6*(sisi*sisi);
    }
}
```

Class Bola

The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The left sidebar displays a project structure with several Java files. The main editor window shows the code for the class `Bola`, which extends `BangunRuang`. The code includes a constructor setting `r = 21`, and two overridden methods: `volume()` returning $(4/3 \pi r^3)/7/5$, and `luasPermukaan()` returning $(4 \cdot 21 \cdot r^2)/7$.

```
public class Bola extends BangunRuang {
    int r = 21;

    @Override
    public int volume() {
        return ((4/3)*3.14*r*r*r)/7/5;
    }

    @Override
    public int luasPermukaan() {
        return (4*21*r*r)/7;
    }
}
```

Class Kerucut

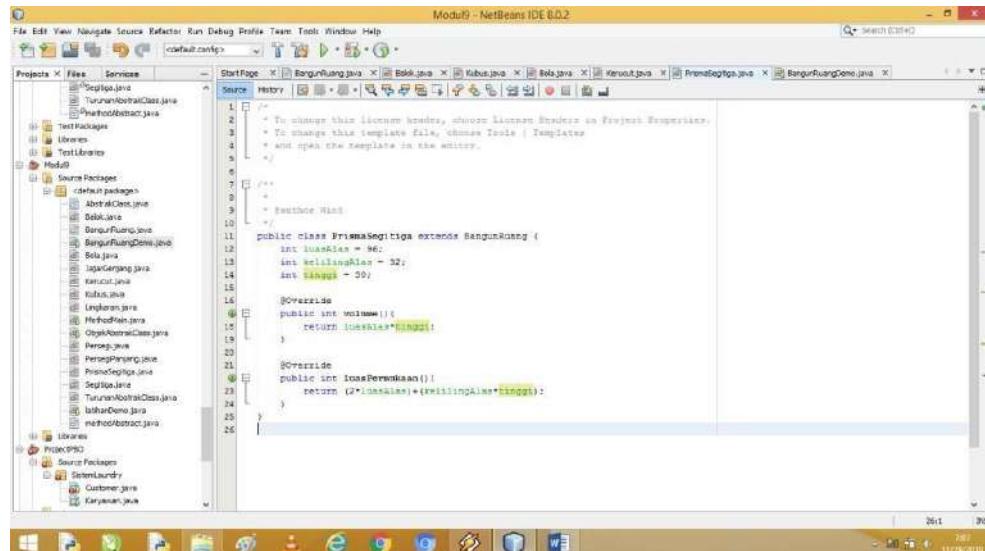
The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The left sidebar displays a project structure with several Java files. The main editor window shows the code for the class `Kerucut`, which extends `BangunRuang`. The code includes a constructor setting `r = 21`, `s = 56`, and `tinggi = 30. It also includes two overridden methods: volume() returning $(122*\pi*\r*\r)/7/3z$, and luasPermukaan() returning $((22*\pi)/7)*(r+s)$.`

```
public class Kerucut extends BangunRuang {
    int r = 21;
    int s = 56;
    int tinggi = 30;

    @Override
    public int volume() {
        return (122*\pi*\r*\r)/7/3z;
    }

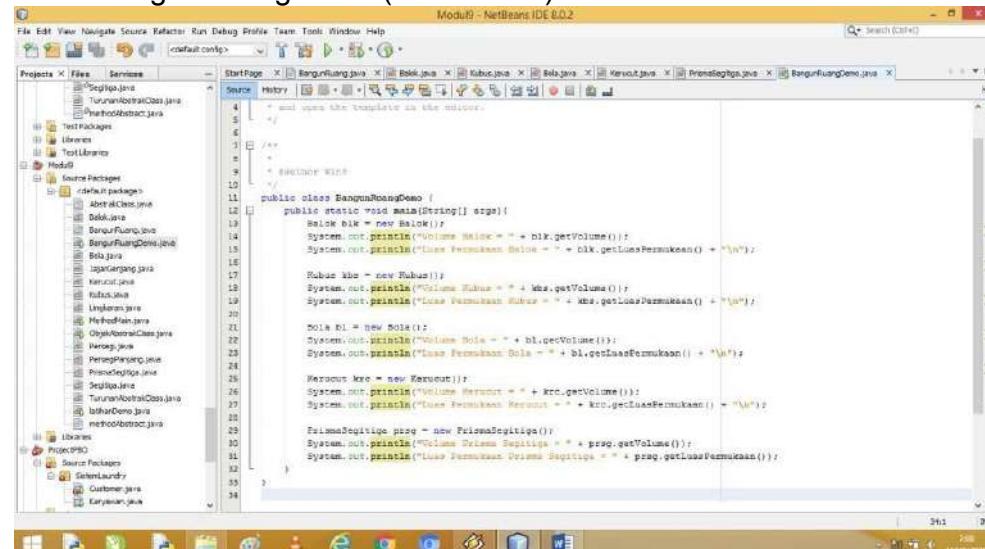
    @Override
    public int luasPermukaan() {
        return ((22*\pi)/7)*(r+s);
    }
}
```

Class PrismaSegitiga

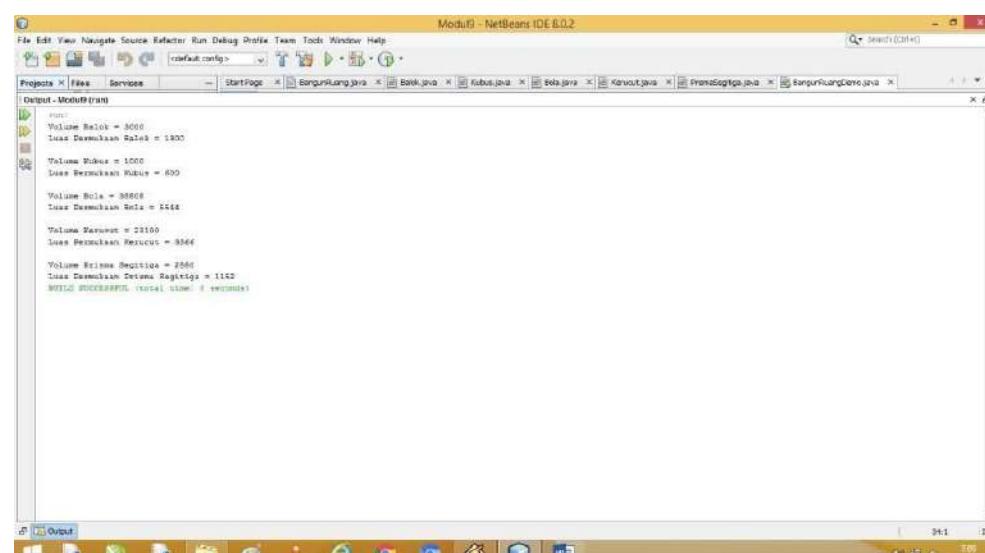


```
Module9 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > StartPage BangunRuang.java Edik.java Kubus.java Bola.java Krukut.java PrismaSegitiga.java BangunRuangDemo.java
Projects Files Services
Source Packages
Test Packages Libraries Test Libraries Modul9
Modul9
Source Packages
default packages
AbstractClient.java Balok.java BangunRuang.java BangunRuangDemo.java Bola.java JapangCarang.java Krukut.java Kubus.java UmlahPrism.java MethodPrism.java ObjekAmerika.java Persegi.java PersegiPiramida.java PrismaSegitiga.java Segitiga.java TurunanBola.java TurunanBrukut.java TurunanKubus.java UmlahDemo.java methodAbstract.java
Libraries ProjectMod9
Source Packages SistemLaundry Customer.java Karyawan.java
Search (Ctrl+F) 261 395 11/26/2019
1 /*
2 * To change this template file, choose Tools | Templates
3 * and open the template in the editor.
4 */
5
6 /**
7 * Author: Rival
8 */
9
10 public class PrismaSegitiga extends BangunRuang {
11     int alasKaki = 96;
12     int kelilingAlas = 32;
13     int tinggi = 30;
14
15     @Override
16     public int volume() {
17         return alasKaki*tinggi;
18     }
19
20     @Override
21     public int luasPermukaan() {
22         return (2*alasKaki)+(kelilingAlas*tinggi);
23     }
24
25 }
26
```

Class BangunRuangDemo (Main Class)



```
Module9 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > StartPage BangunRuang.java Edik.java Kubus.java Bola.java Krukut.java PrismaSegitiga.java BangunRuangDemo.java
Projects Files Services
Source Packages
Test Packages Libraries Test Libraries Modul9
Modul9
Source Packages
default packages
AbstractClient.java Balok.java BangunRuang.java BangunRuangDemo.java Bola.java JapangCarang.java Krukut.java Kubus.java UmlahPrism.java MethodPrism.java ObjekAmerika.java Persegi.java PersegiPiramida.java PrismaSegitiga.java Segitiga.java TurunanBola.java TurunanBrukut.java TurunanKubus.java UmlahDemo.java methodAbstract.java
Libraries ProjectMod9
Source Packages SistemLaundry Customer.java Karyawan.java
Search (Ctrl+F) 261 395 11/26/2019
1 /*
2 * and open the template in the editor.
3 */
4
5 /**
6 * Author: Rival
7 */
8
9
10 public class BangunRuangDemo {
11     public static void main(String[] args){
12         Balok blk = new Balok();
13         System.out.println("Volume Balok = " + blk.getVolume());
14         System.out.println("Luas Permukaan Balok = " + blk.getLuasPermukaan() + "\n");
15
16         Kubus kubus = new Kubus();
17         System.out.println("Volume Kubus = " + kubus.getVolume());
18         System.out.println("Luas Permukaan Kubus = " + kubus.getLuasPermukaan() + "\n");
19
20         Bola bl = new Bola();
21         System.out.println("Volume Bola = " + bl.getVolume());
22         System.out.println("Luas Permukaan Bola = " + bl.getLuasPermukaan() + "\n");
23
24         Kerucut krc = new Kerucut();
25         System.out.println("Volume Kerucut = " + krc.getVolume());
26         System.out.println("Luas Permukaan Kerucut = " + krc.getLuasPermukaan() + "\n");
27
28         PrismaSegitiga prsg = new PrismaSegitiga();
29         System.out.println("Volume Prisma Segitiga = " + prsg.getVolume());
30         System.out.println("Luas Permukaan Prisma Segitiga = " + prsg.getLuasPermukaan());
31     }
32 }
33
```



```
Module9 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > StartPage BangunRuang.java Edik.java Kubus.java Bola.java Krukut.java PrismaSegitiga.java BangunRuangDemo.java
Projects Files Services
Output - Modul9 (BangunRuangDemo)
Output
Volume Balok = 3600
Luas Permukaan Balok = 1300
Volume Kubus = 1000
Luas Permukaan Kubus = 600
Volume Bola = 38608
Luas Permukaan Bola = 15144
Volume Kerucut = 2160
Luas Permukaan Kerucut = 3048
Volume Prisma Segitiga = 2880
Luas Permukaan Prisma Segitiga = 1142
BUILD SUCCESSFUL (total time: 1 seconds)
```

MODUL 10

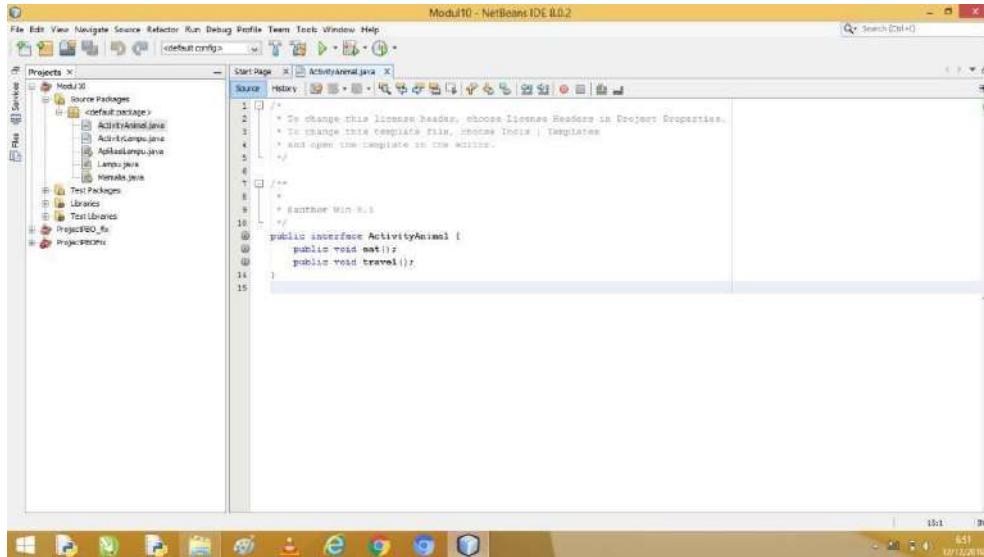
Nama : Dzaki Fadhlurrohman

NIM : L200180064

Kelas : B

DEKLARASI INTERFACE

Contoh Sebuah Interface Sederhana

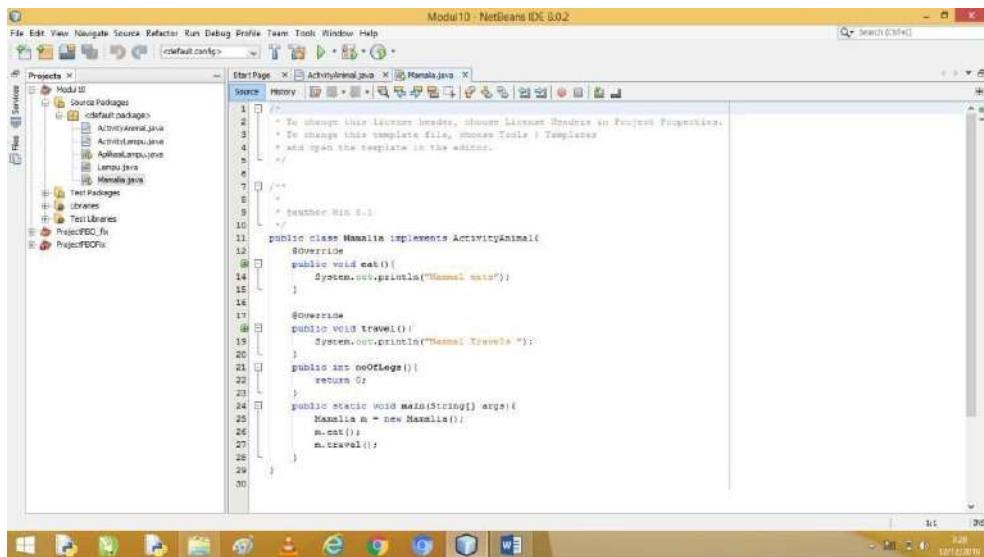


The screenshot shows the NetBeans IDE interface with the title "Modul10 - NetBeans IDE 8.0.2". The left sidebar displays the project structure under "Projects" for "Modul10", showing packages like "default package" containing files such as "ActivityAnimal.java", "AdminLampu.java", "AplikasiLampu.java", "Lemur.java", and "Mamalia.java". The main editor window shows the code for "ActivityAnimal.java":

```
1  /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6
7  /**
8  *
9  * Author: Mira R.
10 */
11 public interface ActivityAnimal {
12     public void eat();
13     public void travel();
14 }
```

IMPLEMENTASI INTERFACE

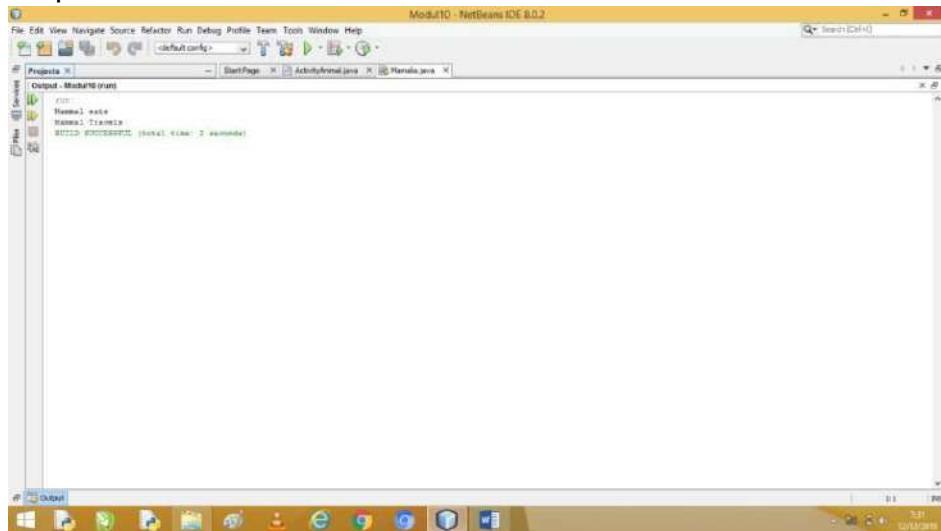
Program 3. Class yang mengimplementasikan sebuah interface



The screenshot shows the NetBeans IDE interface with the title "Modul10 - NetBeans IDE 8.0.2". The left sidebar displays the project structure under "Projects" for "Modul10", showing packages like "default package" containing files such as "ActivityAnimal.java", "AdminLampu.java", "AplikasiLampu.java", "Lemur.java", and "Mamalia.java". The main editor window shows the code for "Mamalia.java":

```
1  /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6
7  /**
8  *
9  * Author: Mira R.
10 */
11 public class Mamalia implements ActivityAnimal {
12     @Override
13     public void eat() {
14         System.out.println("Mamail eat");
15     }
16
17     @Override
18     public void travel() {
19         System.out.println("Mamail Travel");
20     }
21     public int noOfLegs() {
22         return 0;
23     }
24
25     public static void main(String[] args) {
26         Mamalia m = new Mamalia();
27         m.eat();
28         m.travel();
29     }
30 }
```

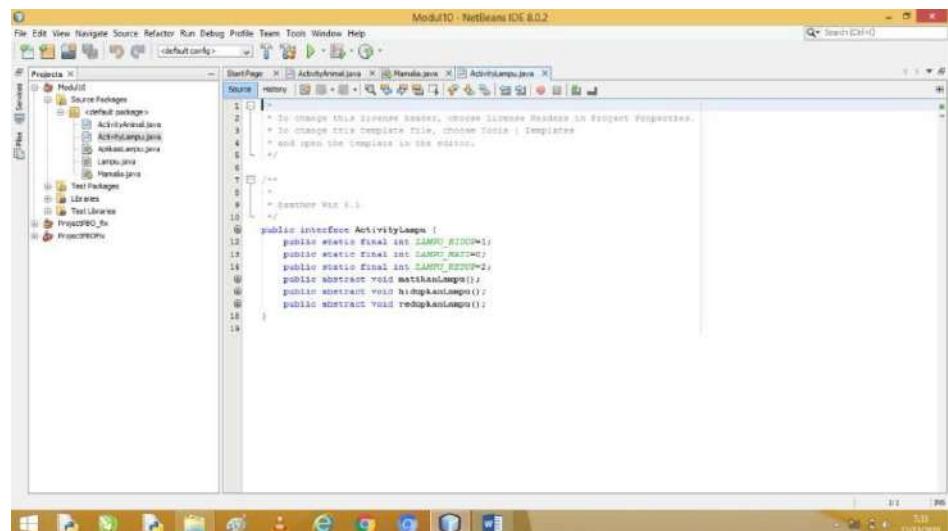
Output:



```
RUN
Hannal
Hannal
BUILD SUCCESSFUL (total time: 2 seconds)
```

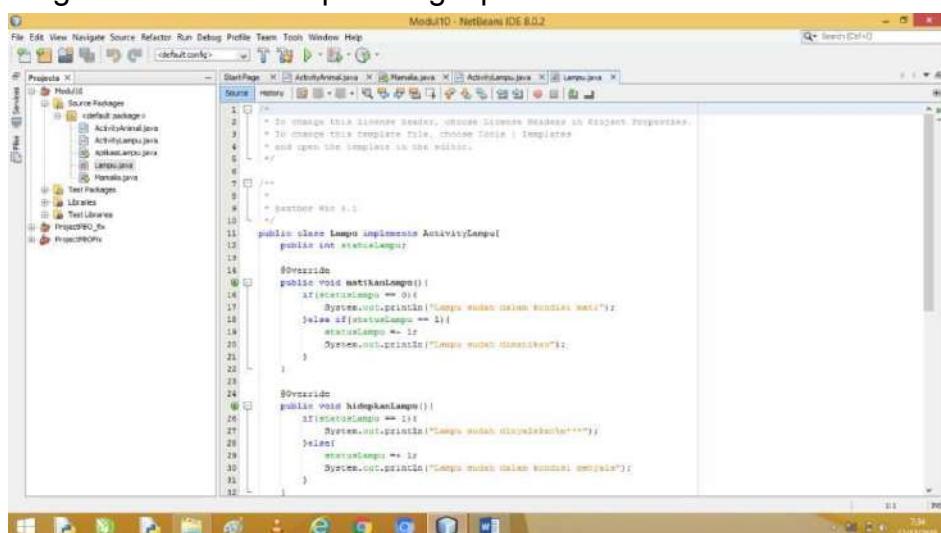
PERCOBAAN

Program 4. Interface ActivityLampu dengan Method dan Variabelnya



```
public interface ActivityLampu {
    public static final int LAMPU_KEDUAP=1;
    public static final int LAMPU_MATWO=2;
    public static final int LAMPU_SEIWU=3;
    public abstract void matikanLampu();
    public abstract void hidupkanLampu();
    public abstract void rediupkanLampu();
}
```

Program 5. Class Lampu Mengimplementasikan Interface



```
public class Lampu implements ActivityLampu {
    public int statustampu;
    @Override
    public void matikanLampu() {
        if(statustampu == 0){
            System.out.println("Lampu sudah dalam status mati");
        }else if(statustampu == 1){
            statustampu = 0;
            System.out.println("Lampu sudah dimatikan");
        }
    }
    @Override
    public void hidupkanLampu() {
        if(statustampu == 1){
            System.out.println("Lampu sudah dipermalukan");
        }else{
            statustampu = 1;
            System.out.println("Lampu sudah dalam status hidup");
        }
    }
}
```

```

Module10 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
ActivityMain.java Manala.java ActivityLampu.java Lampu.java
Projects Sources History Start Page
Module10
Source Packages
<default package>
    ActivityMain.java
    ActivityLampu.java
    Manala.java
    Lampu.java
    LampuTest.java
    ManalaTest.java
    Test Packages
        Libraries
        Test Libraries
    ProjectFDO_fx
    ProjectFDFx
18     if(statutLampu == 1){
19         statutLampu == 2;
20         System.out.println("Lampu sudah dimatikan");
21     }
22 }
23
24 @Override
25 public void hidupkanLampu(){
26     if(statutLampu == 1){
27         System.out.println("Lampu sudah dimatikan\n*****");
28     }else{
29         statutLampu == 2;
30         System.out.println("Lampu sudah dalam kondisi menyala");
31     }
32 }
33
34     public int setKeklar(int kekclar){
35         return statutLampu = kekclar;
36     }
37
38 @Override
39 public void redupukanLampu(){
40     if(statutLampu == 2){
41         statutLampu == 1;
42         System.out.println("Lampu telah dicedupkan");
43     }else{
44         statutLampu == 2;
45         System.out.println("Terduga Lampu telah ditarik");
46     }
47 }
48
49

```

Fungsi main() Untuk Menjalankan Program Interface

```

Module10 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
ActivityMain.java Manala.java ActivityLampu.java Lampu.java AplikasiLampu.java
Projects Sources History Start Page
Module10
Source Packages
<default package>
    ActivityMain.java
    ActivityLampu.java
    AplikasiLampu.java
    Lampu.java
    LampuTest.java
    Manala.java
    Test Packages
        Libraries
        Test Libraries
    ProjectFDO_fx
    ProjectFDFx
1
2 import java.util.Scanner;
3
4 /**
5 * To change this license header, choose License Headers in Project Properties.
6 * To change this template file, choose Tools | Templates.
7 * and open the template in the editor.
8 */
9
10 /**
11 *
12 * Author: Win 8.1
13 */
14
15 public class AplikasiLampu {
16     public static void main(String[] args) {
17         Lampu lampu = new Lampu();
18         Scanner sc = new Scanner(System.in);
19         intLUKU.setKeklar(0);
20         System.out.println("1.Untuk menyalaikan Lampu\n2.Untuk mematikan Lampu\n3.Untuk meredupkan Lampu\n4.Untuk mengetahui status Lampu\n");
21
22         if(lampu.setKeklar(sc.nextInt()) == 0){
23             lampu.matiLampu();
24         }else if(lampu.setKeklar == 1){
25             lampu.hidupkanLampu();
26         }else{
27             lampu.redupukanLampu();
28         }
29     }
30 }
31

```

Output:

```

Module10 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
ActivityMain.java Manala.java ActivityLampu.java Lampu.java AplikasiLampu.java
Projects Sources History Start Page
Module10
Output Finished building Module10 (run).
Status Lampu = 0
Matikan
1.Untuk menyalaikan Lampu
2.Untuk mematikan Lampu
3.Untuk meredupkan Lampu
4.Untuk mengetahui status Lampu
...
Lampu sudah dimatikan
...
BUILD SUCCESSFUL (total time: 12 seconds)

```

The screenshot shows the NetBeans IDE interface with the title bar "Modul10 - NetBeans IDE 8.0.2". The main window displays the "Output" tab for the run configuration "Modul10 (run) #2". The output pane shows the following text:

```
Run Status Lampu = 0
Metrikas
1 Untuk menyalaikan Lampu
2 Untuk mematikan Lampu
3 Untuk mengecek Lampu
0
Lampu sudah dalam kondisi mati
BUILD SUCCESSFUL (total time: 9 seconds)
```

TUGAS Class ActivityLampu (Class Interface)

The screenshot shows the NetBeans IDE interface with the title bar "Modul10 - NetBeans IDE 8.0.2". The main window displays the "Source" tab for the file "ActivityLampu.java". The code for the interface is as follows:

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package com.ubaya.its;
public interface ActivityLampu {
    public static final int LAMPU_HIDUP=1;
    public static final int LAMPU_MATI=0;
    public static final int LAMPU_DENGAN_KONSEP=2;
    public abstract void matikanLampu();
    public abstract void hidangkanLampu();
    public abstract void redangkanLampu();
}
```

Class Lampu (Class yang mengimplementasikan interface)

The screenshot shows the NetBeans IDE interface with the title bar "Modul10 - NetBeans IDE 8.0.2". The main window displays the "Source" tab for the file "Lampu.java". The code for the class is as follows:

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package com.ubaya.its;
public class Lampu implements ActivityLampu {
    public int statusLampu;
    @Override
    public void matikanLampu() {
        if(statusLampu == 0) {
            System.out.println("Lampu sudah mati tidak ada yang nyalanya");
        } else if(statusLampu == 1) {
            statusLampu = 0;
            System.out.println("Lampu sudah dimatikan");
        }
    }
    @Override
    public void hidangkanLampu() {
        if(statusLampu == 1)
            System.out.println("Lampu sudah dimatikan");
        else
            statusLampu = 1;
            System.out.println("Lampu sudah dalam kondisi menyala");
    }
}
```

```

    10     else if(statusLampu == 1)
    11         statusLampu = 0;
    12         System.out.println("Lampu sudah dimatikan");
    13     }
    14 
    15     @Override
    16     public void hidupkanLampu(){
    17         if(statusLampu == 0){
    18             System.out.println("Lampu belum dimatikan\n");
    19         }
    20         else{
    21             statusLampu = 1;
    22             System.out.println("Lampu sudah dalam kondisi menyala");
    23         }
    24     }
    25 
    26     @Override
    27     public int setSaklar(int saklar){
    28         return statusLampu = saklar;
    29     }
    30 
    31     @Override
    32     public void redupkanLampu(){
    33         if(statusLampu == 1){
    34             System.out.println("Lampu telah dimatikan");
    35         }
    36         else{
    37             statusLampu = 0;
    38             System.out.println("Percikan lampu telah dimatikan");
    39         }
    40     }
    41 }

```

Class AplikasiLampu (main class)

```

    1 import java.util.Scanner;
    2 /**
    3  * To change this license header, choose License Headers in Project Properties.
    4  * To change this template file, choose Tools | Templates.
    5  * And open the template in the editor.
    6  */
    7 
    8 /**
    9  * Another Win 4.1
    10 */
    11 
    12 public class AplikasiLampu {
    13     public static void main(String[] args) {
    14         Lampu lampu = new Lampu();
    15         Scanner sc = new Scanner(System.in);
    16         lampu.setSaklar(0);
    17         System.out.println("Status Lampu = " + lampu.getStatusLampu());
    18         System.out.println("1 Untuk menyalaan lampu dan 0 Untuk mematikan lampu");
    19 
    20         if(lampu.getKaliKlikLampu() == 0){
    21             lampu.matiKlikLampu();
    22         }
    23         else if(lampu.getStatusLampu() == 1){
    24             lampu.hidupkanLampu();
    25         }
    26         else{
    27             lampu.redupkanLampu();
    28         }
    29     }
    30 }

```

Output:

```

    Status Lampu = 0
    Ketikkan
    1 Untuk menyalaan Lampu
    0 Untuk mematikan Lampu
    2 Untuk mematikan Lampu

    Lampu telah dimatikan
    BUILD SUCCESSFUL (total time: 45 seconds)

```

MODUL 11

Nama : Dzaki Fadhlurrohman
NIM : L200180064
Kelas : B

11.1 INNER CLASS (NON-STATIC NESTED CLASS)

Program 2. Pengaksesan Properties pada Inner Class

```
Module1 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config> Start Page OuterDemo.java Myclass.java OuterDemo2.java OuterDemoMain.java Outer.java
Projects > Modul1 > Source Packages > default package > OuterDemo.java
OuterDemo.java
OuterDemo2.java
OuterDemoMain.java
Outer.java
OuterDemoInner.java
OuterDemo2Inner.java
OuterDemoMainInner.java
Test Packages
Libraries
Test Libraries

public class OuterDemo {
    int num;

    //inner class
    private class InnerDemo{
        private void print(){
            System.out.println("Ini merupakan method inner class");
        }
    }

    //akses method inner class dari method outer class
    void displayInner(){
        InnerDemo inner = new InnerDemo();
        inner.print();
    }
}
```

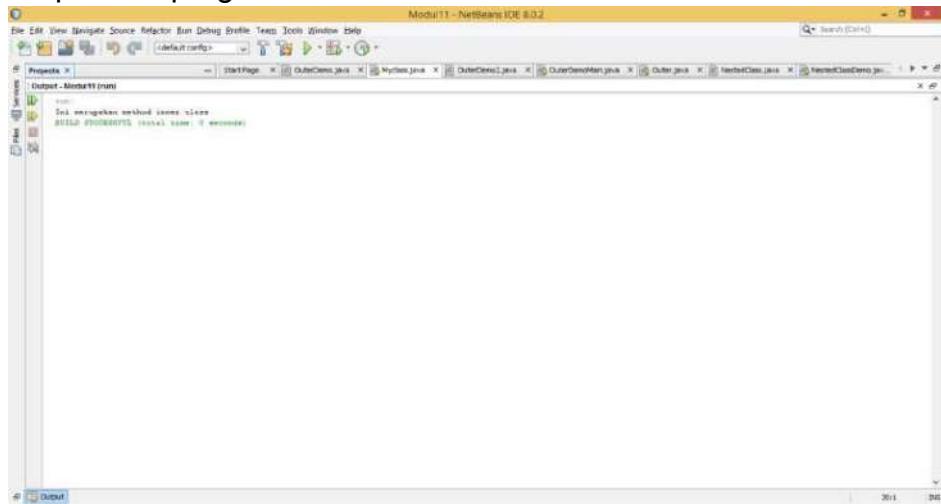
Menjalankan (run) Inner Class Melalui Metode main()

```
Module1 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config> Start Page OuterDemo.java Myclass.java OuterDemo2.java OuterDemoMain.java Outer.java
Projects > Modul1 > Source Packages > default package > Myclass.java
Myclass.java
OuterDemo.java
OuterDemo2.java
OuterDemoMain.java
Outer.java

PUBLIC CLASS Myclass {
    PUBLIC STATIC VOID MAIN(STRING[] ARGV){
        //instant outer class
        OuterDemo outer = new OuterDemo();

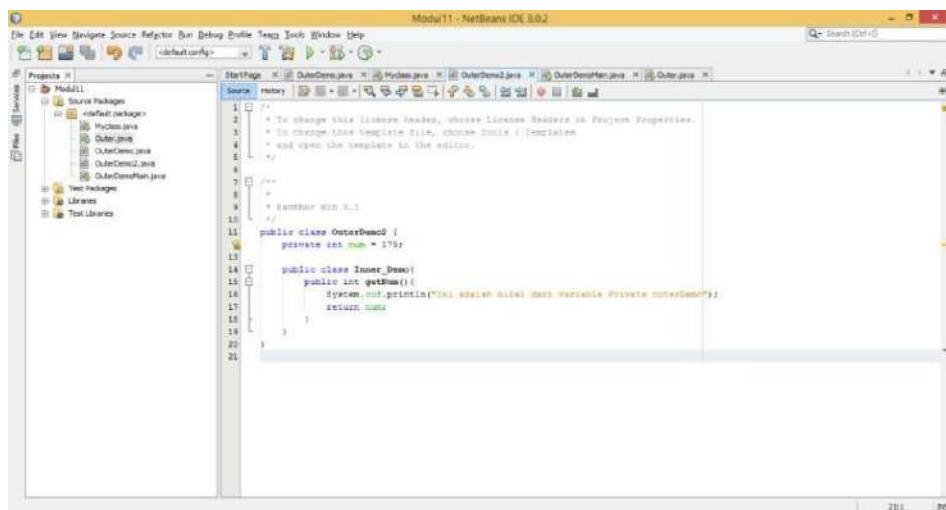
        //mengakses method outer class
        outer.DISPLAYINNER();
    }
}
```

Output dari program 3



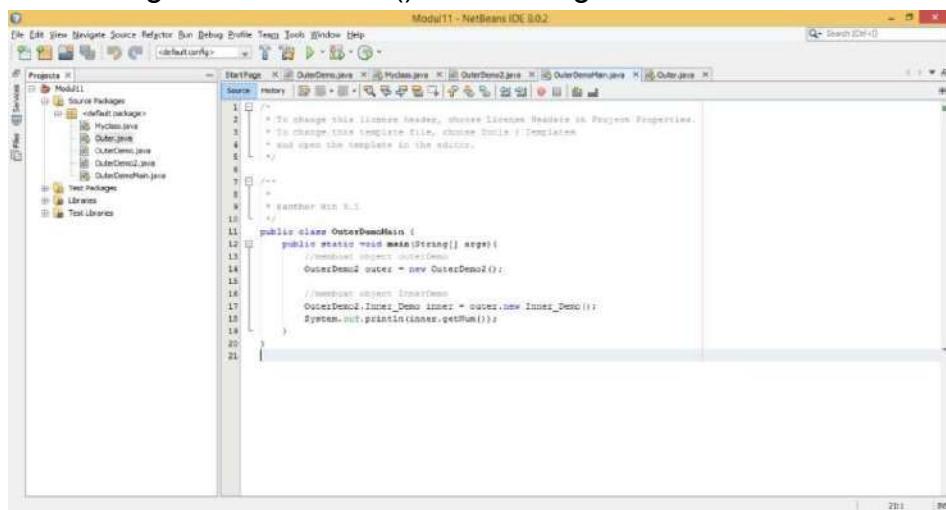
```
Sisi merupakan method inner class
BUILD FINISHED: total time: 0 seconds
```

Program 4. Mengakses Variable Private



```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package default_package;
public class OuterDemo0 {
    private int num = 179;
}
public class Inner_Demo {
    public int getNum(){
        System.out.println("ini adalah nilai dari variable private outerDemo0");
        return num;
    }
}
```

Class dengan Method main() untuk Mengakses Variable Private



```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package default_package;
public class OuterDemoMain {
    public static void main(String[] args) {
        //create object outerDemo
        OuterDemo0 outer = new OuterDemo0();
        //create object innerDemo
        OuterDemo0.Inner_Demo inner = outer.new Inner_Demo();
        System.out.println(inner.getNum());
    }
}
```

Output Program 5

```
Int adalah nilai dari variable outerDemo
276
BUILD SUCCESSFUL (TOTAL TIME: 1 seconds)
```

STATIC NESTED CLASS

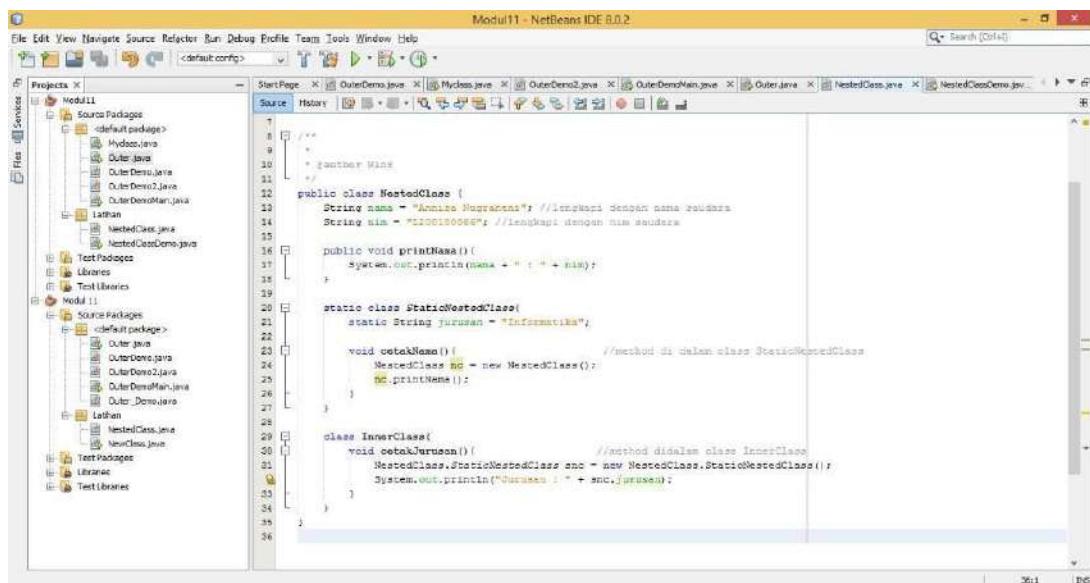
Membuat Instance dari Static Nested Class

```
1  To change this license header, choose License Headers in Project Properties.
2  To change this license header, choose License Headers in Project Properties
3  *
4  */
5
6 /**
7 * Another file E:\1
8 */
9
10 public class Outer {
11     static class NestedDemo {
12         public void myMethod() {
13             System.out.println("Int adalah method " + "static nested class");
14         }
15     }
16
17     public static void main(String[] args) {
18         Outer.NestedDemo nested = new Outer.NestedDemo();
19         nested.myMethod();
20     }
21
22 }
23
```

```
Int adalah method static nested class
BUILD SUCCESSFUL (TOTAL TIME: 2 seconds)
```

LATIHAN

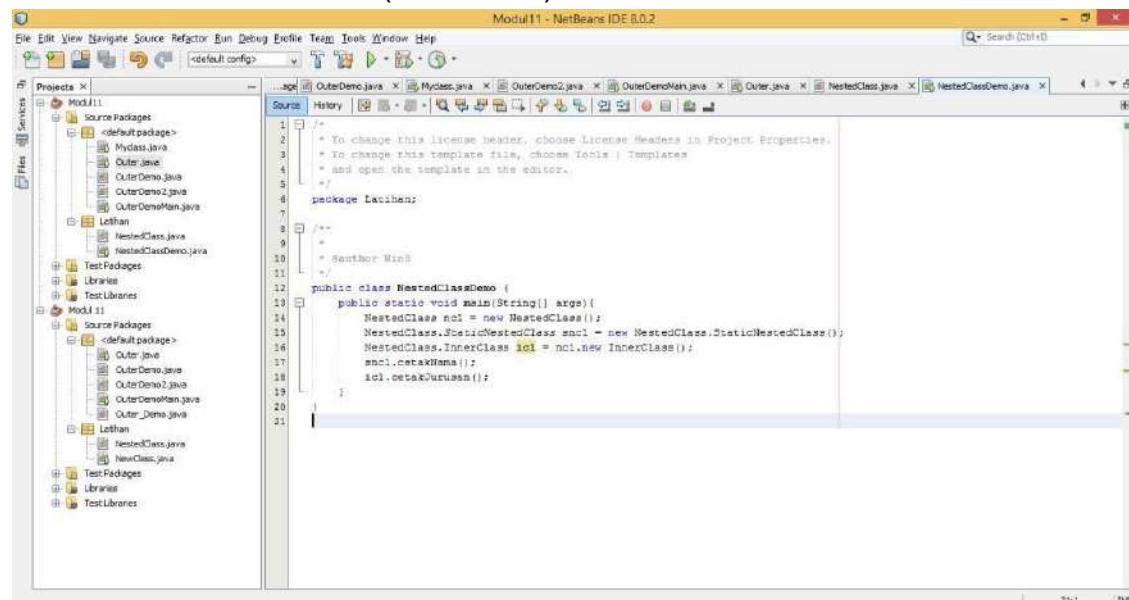
Soal Latihan Nested Class



The screenshot shows the NetBeans IDE interface with the title bar "Modul11 - NetBeans IDE 8.0.2". The left pane displays the project structure under "Projects X" for "Modul11". The "Source Packages" section contains several Java files: OuterDemo.java, Myclass.java, Outer.java, OuterDemo2.java, OuterDemoMan.java, OuterDemoNan.java, NestedClass.java, and NestedClassDemo.java. The right pane shows the source code for NestedClassDemo.java:

```
1 //  
2 *  
3 * Santhor Wink  
4 */  
5 public class NestedClass {  
6     String name = "Anissa Nugraheni"; // lengkap dengan nama sendiri  
7     String nim = "51201310069"; // lengkap dengan nim sendiri  
8  
9     public void printName(){  
10         System.out.println(name + " : " + nim);  
11     }  
12  
13     static class StaticNestedClass{  
14         static String jurusan = "informatika";  
15  
16         void cetakNama(){  
17             NestedClass nc = new NestedClass();  
18             nc.printName();  
19         }  
20     }  
21  
22     class InnerClass{  
23         void cetakJurusan(){  
24             NestedClass.NestedClass nc = new NestedClass.StaticNestedClass();  
25             System.out.println("Jurusan : " + nc.jurusan);  
26         }  
27     }  
28 }  
29  
30  
31  
32  
33  
34  
35  
36
```

Class Nested ClassDemo (main class)



The screenshot shows the NetBeans IDE interface with the title bar "Modul11 - NetBeans IDE 8.0.2". The left pane displays the project structure under "Projects X" for "Modul11". The "Source Packages" section contains several Java files: OuterDemo.java, Myclass.java, Outer.java, OuterDemo2.java, OuterDemoMan.java, OuterDemoNan.java, NestedClass.java, and NestedClassDemo.java. The right pane shows the source code for NestedClassDemo.java:

```
1 /*  
2  * To change this license header, choose License Headers in Project Properties.  
3  * To change this template file, choose Tools | Templates  
4  * and open the template in the editor.  
5  */  
6 package latihan;  
7  
8 /**  
9  *  
10 * Santhor Wink  
11 */  
12 public class NestedClassDemo {  
13     public static void main(String[] args){  
14         NestedClass nc1 = new NestedClass();  
15         NestedClass.NestedClass nc1 = new NestedClass.StaticNestedClass();  
16         NestedClass.InnerClass ic1 = nc1.new InnerClass();  
17         ic1.cetakNama();  
18         ic1.cetakJurusan();  
19     }  
20 }  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36
```

Output dari program pada latihan

The screenshot shows the NetBeans IDE interface with the title bar "Modul11 - NetBeans IDE 8.0.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for New Project, Open Project, Save, Undo, Redo, Cut, Copy, Paste, Find, Replace, and Run. The Projects tab shows files like OuterDemo.java, Mydass.java, OuterDemo2.java, OuterDemoMain.java, Outer.java, NestedClass.java, and NestedClassDemo.java. The Output tab shows the following text:

```
ARMADA PROGRAMERI : 1200180068  
JURUSAN : Teknologi  
BUILD SUCCESSFUL (total time: 0 seconds)
```

The bottom status bar shows the time as 21:11 and the build status as 100%.

MODUL 12

Nama : Dzaki Fadhlurrohman

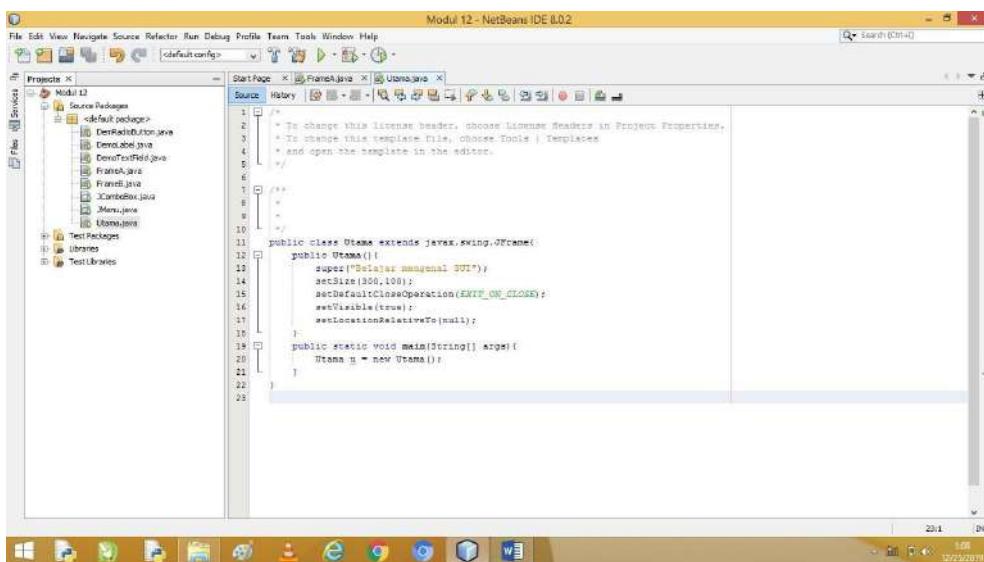
NIM : L200180064

Kelas : B

12.5. LATIHAN

12.5.1. Frame

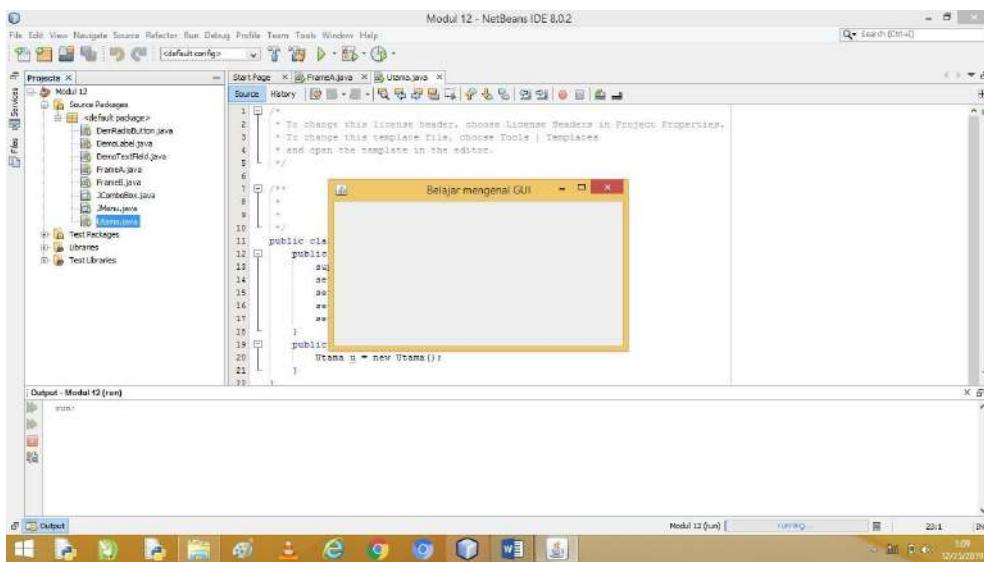
Program 1. Implementasi JFrame



The screenshot shows the NetBeans IDE interface with the title bar "Modul 12 - NetBeans IDE 8.0.2". The left sidebar displays the project structure under "Project X" with packages like "Source Packages" containing "Utama.java" and "Test Packages" containing "UtamaTest". The main editor window shows the source code for "Utama.java". The code defines a class "Utama" that extends "java.awt.JFrame". It sets the title to "Belajar mengenal GUI", sets the size to 300x100 pixels, and specifies that closing the window should result in exit operation. The main method creates an instance of "Utama".

```
/* To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package Modul12;
import javax.swing.JFrame;
public class Utama extends javax.swing.JFrame {
    public Utama() {
        super("Belajar mengenal GUI");
        setSize(300,100);
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setVisible(true);
        setLocationRelativeTo(null);
    }
    public static void main(String[] args) {
        Utama u = new Utama();
    }
}
```

Output dari program 1



The screenshot shows the NetBeans IDE interface with the title bar "Modul 12 - NetBeans IDE 8.0.2". The left sidebar shows the project structure. The main editor window shows the same "Utama.java" code as above. Below the editor, the "Output" window displays the command "run:" followed by the text "run: [no output]" and "Modul 12 [run] running 2011 100 12/9/2011". A screenshot of the Java application window titled "Belajar mengenal GUI" is overlaid on the NetBeans interface, showing its title bar and a small portion of its content area.

Konstruktor	Keterangan
JFrame()	<ul style="list-style-type: none"> • Jendela utama yang digunakan untuk menampilkan komponen yang kita inginkan. • Membuat JFrame tanpa judul.
JFrame(String Judul)	<ul style="list-style-type: none"> • Pemberian nama pada jendela utama yang ditampilkan. • Membuat JFrame dengan judul.

Metode	Keterangan
void setSize(int lebar, int tinggi)	Mengatur ukuran frame.
void setLocation(int x, int y)	Mengatur lokasi frame dihitung dari kiri atas.
void setVisible(boolean)	Menentukan JFrame ditampilkan atau tidak.
void setLocationRelativeTo(Component)	Menentukan letak JFrame relative dengan komponen lainnya. Jika diset null, maka JFrame akan ditampilkan di tengah.

12.5.2 Button

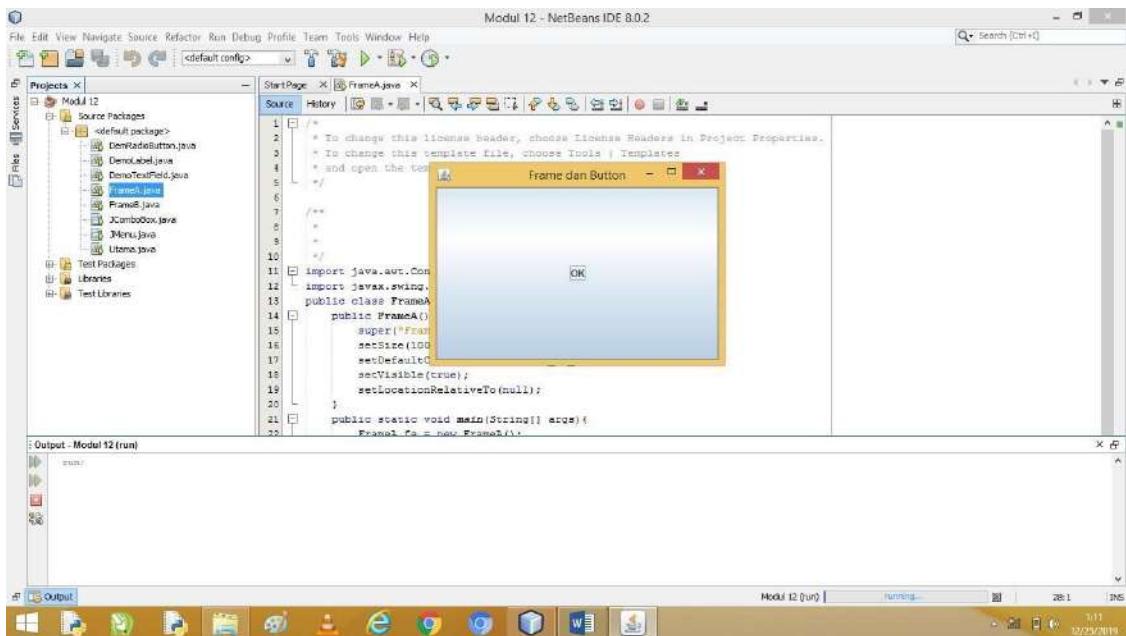
Program 2. Implementasi JButton

```

Module 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Windows Help
Projects | Start Page | FrameA.java | 
File Services
File Packages
Source Packages
  Default package
    -> FrameA.java
    -> DemoJLabel.java
    -> DemoJText.java
    -> FrameA.java
    -> FrameB.java
    -> FrameC.java
    -> JComboBox.java
    -> Menu.java
    -> User.java
Test Packages
Libraries
Test Libraries
FrameA.java
1 /**
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates.
4  * and open the template in the editor.
5 */
6
7 /**
8  * 
9  *
10 */
11 import java.awt.Container;
12 import javax.swing.JButton;
13 public class FrameA extends javax.swing.JFrame{
14     public FrameA(){
15         super("Frame dan Button");
16         setSize(300, 200);
17         setDefaultCloseOperation(EXIT_ON_CLOSE);
18         setVisible(true);
19         setLocationRelativeTo(null);
20     }
21     public static void main(String[] args){
22         FrameA fa = new FrameA();
23         Container kontainer = fa.getContentPane();
24         JButton jbOK = new JButton("OK");
25         kontainer.add(jbOK);
26     }
27 }
28

```

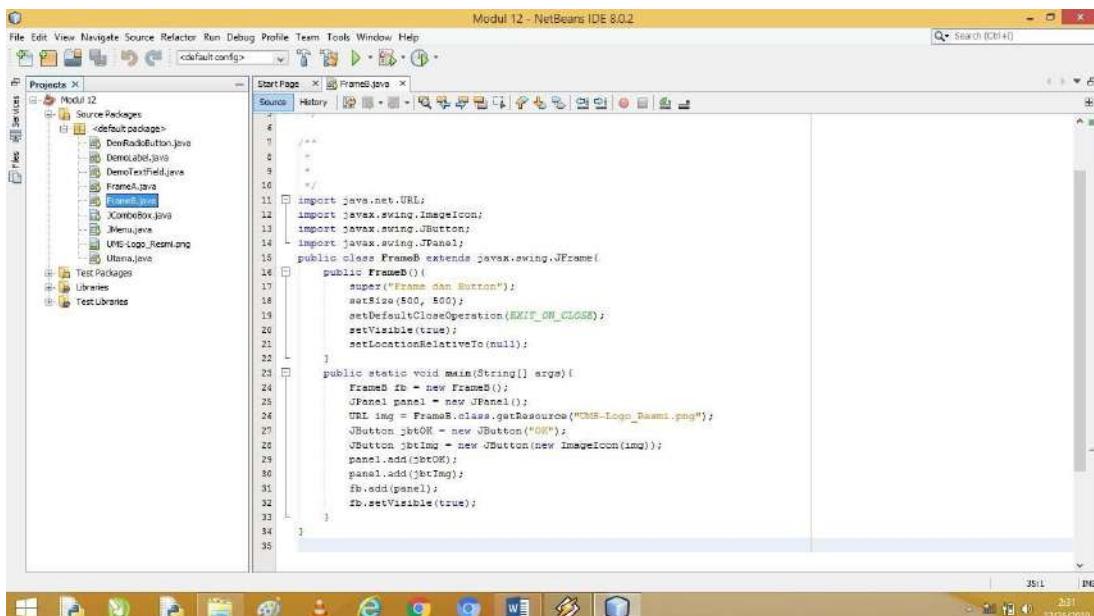
Output dari program 2



Konstruktor	Keterangan
JButton()	Membuat JButton tanpa teks maupun icon.
JButton(String teks)	Membuat JButton dengan teks.
JButton(Icon icon)	Membuat JButton dengan icon.
JButton(String teks, Icon icon)	Membuat JButton dengan teks dan icon.

12.5.3 Container

Program 3. Implementasi Container

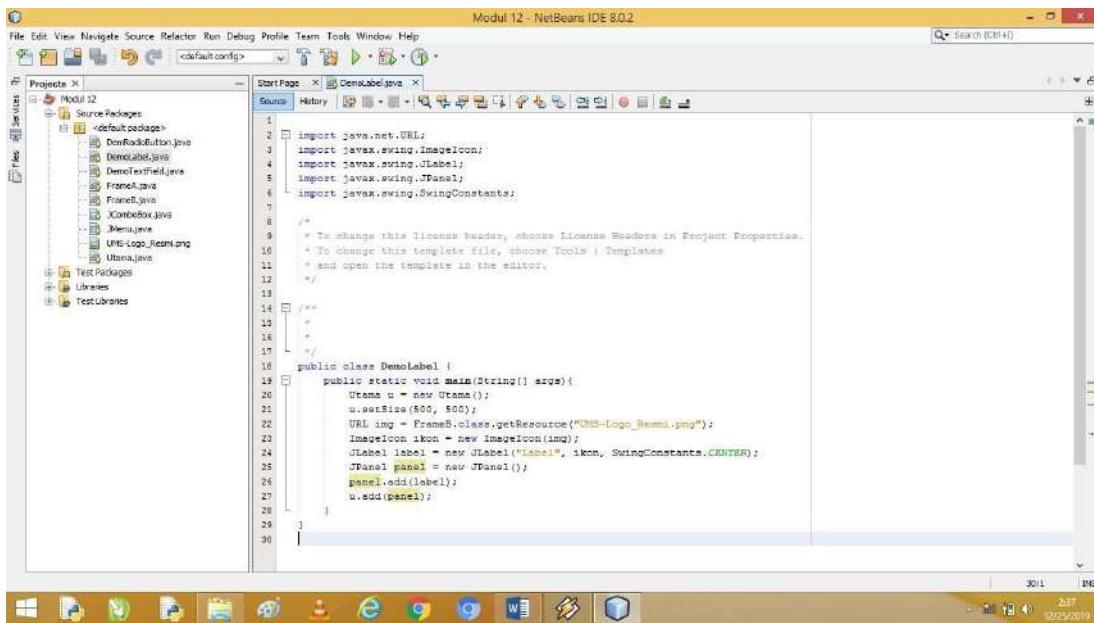


Output dari program 3



12.5.4 Label

Program 4. Implementasi JLabel



Output dari program 4



Konstruktor	Keterangan
JLabel(String teks)	Label dengan teks.
JLabel(String teks, int i)	Label dengan teks dan alignment (perataan). Terdapat tiga jenis alignment, yaitu LEFT, CENTER, dan RIGHT.
JLabel(String teks, Icon ic, int i)	Label dengan teks, icon, dan alignment.

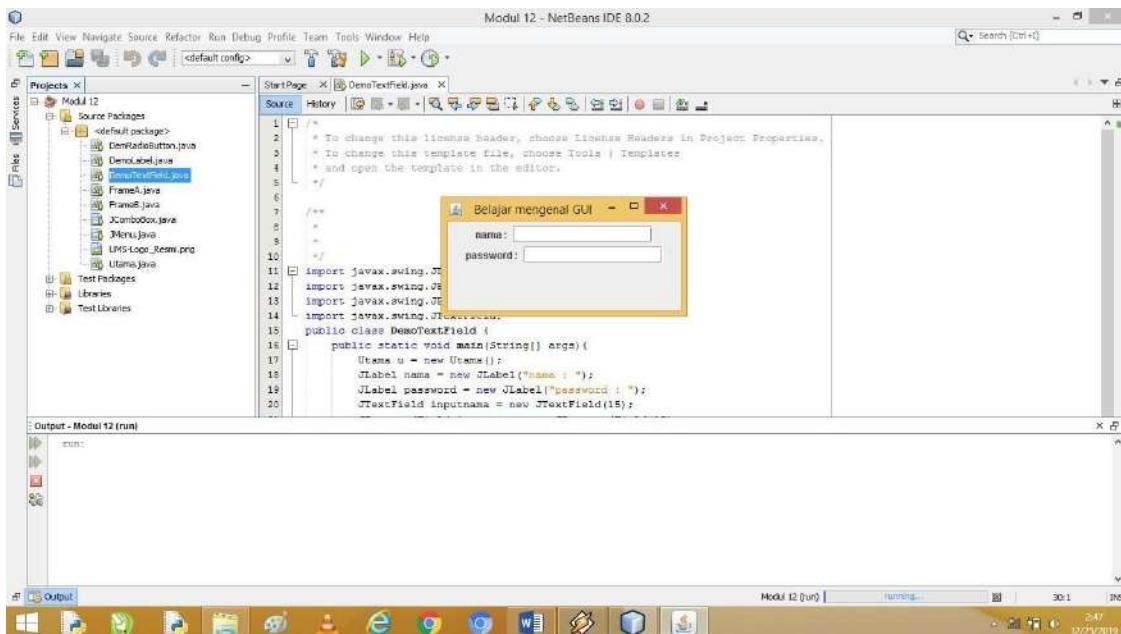
12.5.5 TextField dan Password Field

Program 5. Implementasi JTextField dan JPasswordField

The screenshot shows the NetBeans IDE interface with the title bar "Modul 12 - NetBeans IDE 8.0.2". The central area displays the Java code for "DemoTextField.java". The code imports necessary classes and defines a class "DemoTextField" with a main method. The main method creates a frame, adds a panel, and adds labels and text fields for name and password. The code uses annotations for JavaDoc and imports from javax.swing and java.awt.

```
1  /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6
7 /**
8 *
9 *
10 */
11 import javax.swing.JLabel;
12 import javax.swing.JPanel;
13 import javax.swing.JPasswordField;
14 import javax.swing.JTextField;
15 public class DemoTextField {
16     public static void main(String[] args){
17         Utama u = new Utama();
18         JLabel name = new JLabel("name : ");
19         JLabel password = new JLabel("password : ");
20         JTextField inputnama = new JTextField(15);
21         JPasswordField inputpw = new JPasswordField(15);
22         JPanel panel = new JPanel();
23         panel.add(name);
24         panel.add(inputnama);
25         panel.add(password);
26         panel.add(inputpw);
27         u.add(panel);
28     }
29 }
```

Output dari program 5

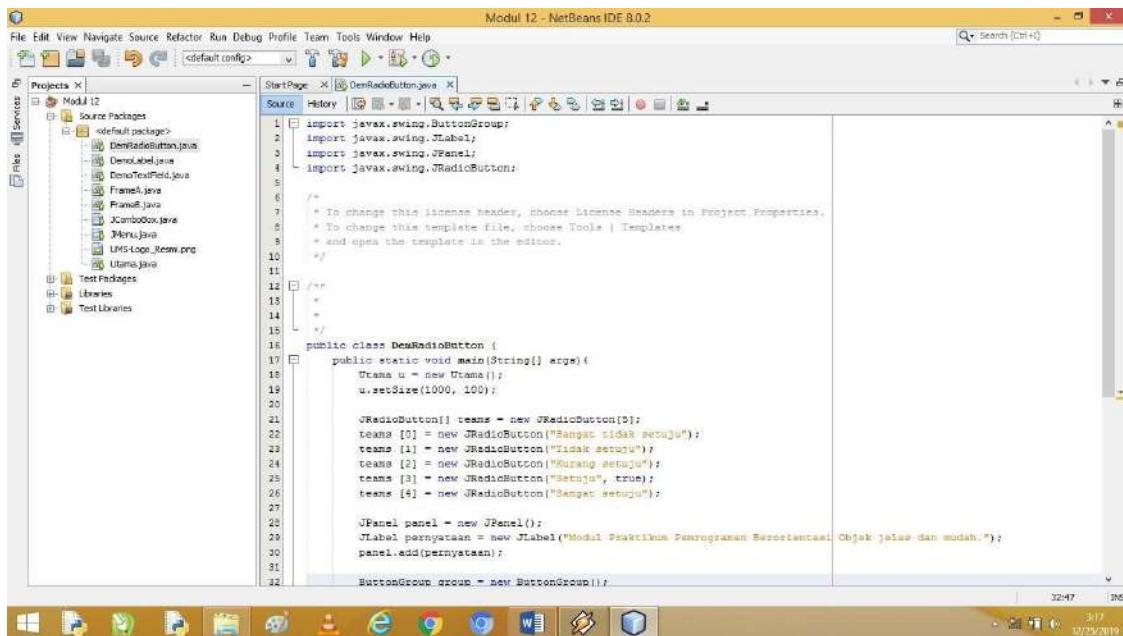


Konstruktor	Penjelasan
JTextField()	Text Field kosong tanpa tulisan.
JTextField(int i)	Text Field dengan panjang yang ditentukan.
JTextField(String i)	Teks Field dengan teks yang sudah ditentukan.
JTextField(String teks, int i)	Teks Field dengan teks dan panjang kolom yang sudah ditentukan

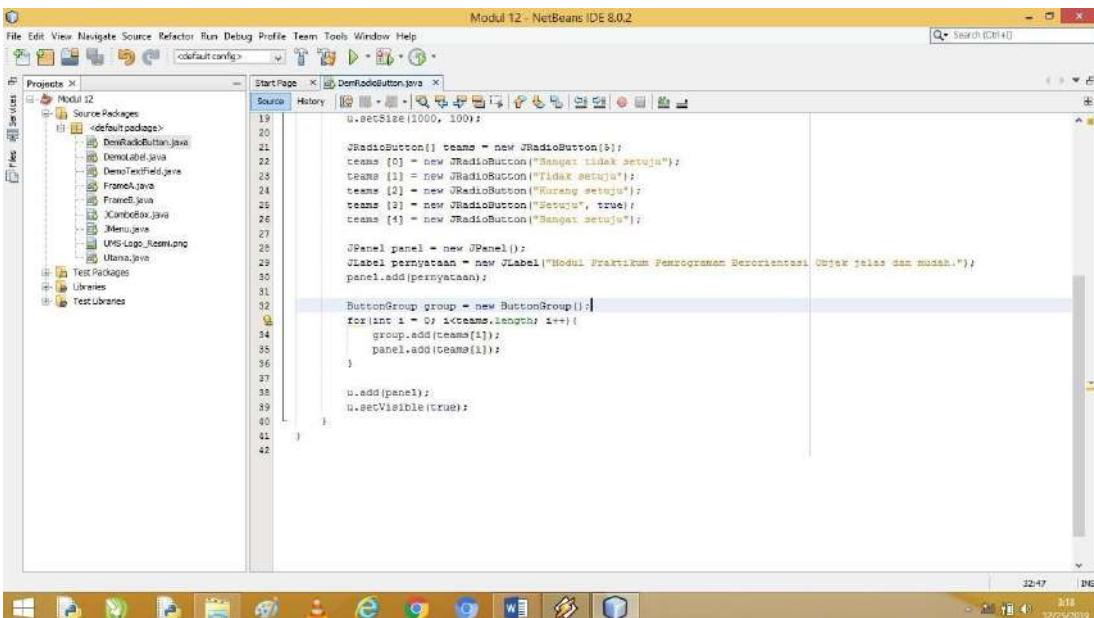
Parameter dalam class JTextField	Penjelasan
String Text	Teks dalam Text Field.
Boolean Editable	Menentukan bisa tidaknya teks dalam Text Field untuk diedit.
Int columns	Jumlah kolom pada Text Field.
Int horizontalAlignment	Perataan horizontal pada Text Field.

12.5.6 Radio Button dan Checkbox

Program 6. Implementasi JRadioButton

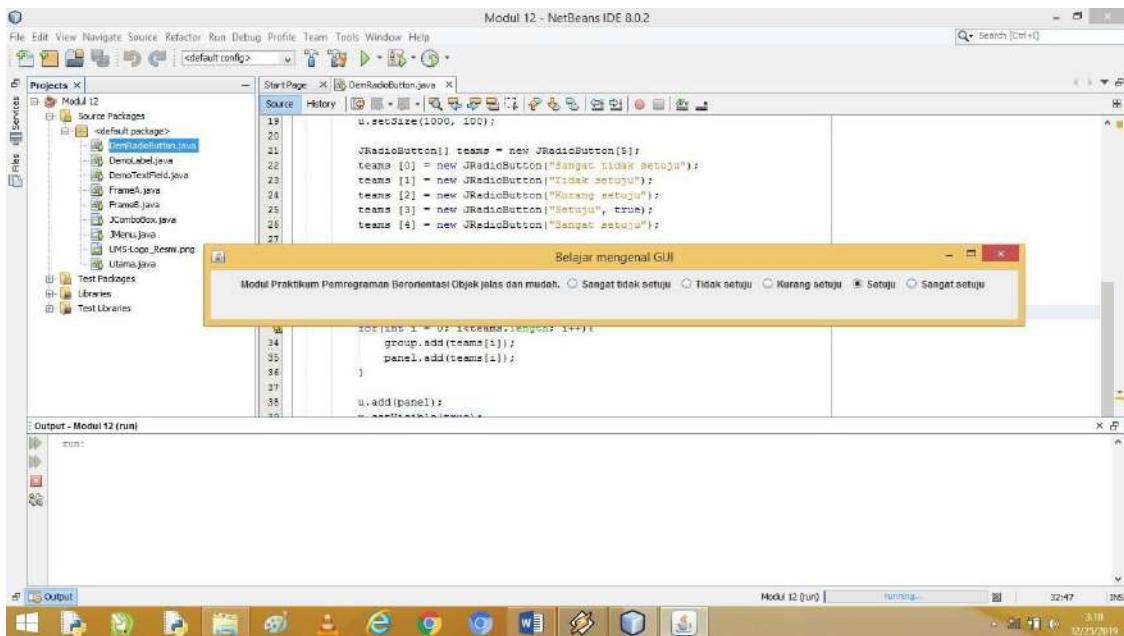


```
Modul 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > DemRadioButton.java X
Projects X StartPage X DemRadioButton.java X
Source History | 32/47 3/17 12/23/2019
Modul 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > DemRadioButton.java X
Projects X StartPage X DemRadioButton.java X
Source History | 32/47 3/17 12/23/2019
1 import javax.swing.ButtonGroup;
2 import javax.swing.JLabel;
3 import javax.swing.JPanel;
4 import javax.swing.JRadioButton;
5
6 /*
7 * To change this license header, choose License Headers in Project Properties.
8 * To change this template file, choose Tools | Templates.
9 * and open the template in the editor.
10 */
11
12 /**
13 *
14 */
15
16 public class DemRadioButton {
17     public static void main(String[] args) {
18         Utama u = new Utama();
19         u.setSize(1000, 100);
20
21         JRadioButton[] teams = new JRadioButton[5];
22         teams [0] = new JRadioButton("Sangat tidak setuju");
23         teams [1] = new JRadioButton("Tidak setuju");
24         teams [2] = new JRadioButton("Rung setuju");
25         teams [3] = new JRadioButton("Setuju", true);
26         teams [4] = new JRadioButton("Sangat setuju");
27
28         JPanel panel = new JPanel();
29         JLabel pernyataan = new JLabel("Modul Praktikum Pemrograman Berorientasi Objek jelas dan mudah.");
30         panel.add(pernyataan);
31
32         ButtonGroup group = new ButtonGroup();
33         for(int i = 0; i<teams.length; i++) {
34             group.add(teams[i]);
35             panel.add(teams[i]);
36         }
37
38         u.add(panel);
39         u.setVisible(true);
40     }
41 }
42
```



```
Modul 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > DemRadioButton.java X
Projects X StartPage X DemRadioButton.java X
Source History | 32/47 3/17 12/23/2019
Modul 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > DemRadioButton.java X
Projects X StartPage X DemRadioButton.java X
Source History | 32/47 3/17 12/23/2019
19
20         JRadioButton[] teams = new JRadioButton[5];
21         teams [0] = new JRadioButton("Sangat tidak setuju");
22         teams [1] = new JRadioButton("Tidak setuju");
23         teams [2] = new JRadioButton("Rung setuju");
24         teams [3] = new JRadioButton("Setuju", true);
25         teams [4] = new JRadioButton("Sangat setuju");
26
27         JPanel panel = new JPanel();
28         JLabel pernyataan = new JLabel("Modul Praktikum Pemrograman Berorientasi Objek jelas dan mudah.");
29         panel.add(pernyataan);
30
31         ButtonGroup group = new ButtonGroup();
32         for(int i = 0; i<teams.length; i++) {
33             group.add(teams[i]);
34             panel.add(teams[i]);
35         }
36
37         u.add(panel);
38         u.setVisible(true);
39
40     }
41 }
42
```

Output dari program 6

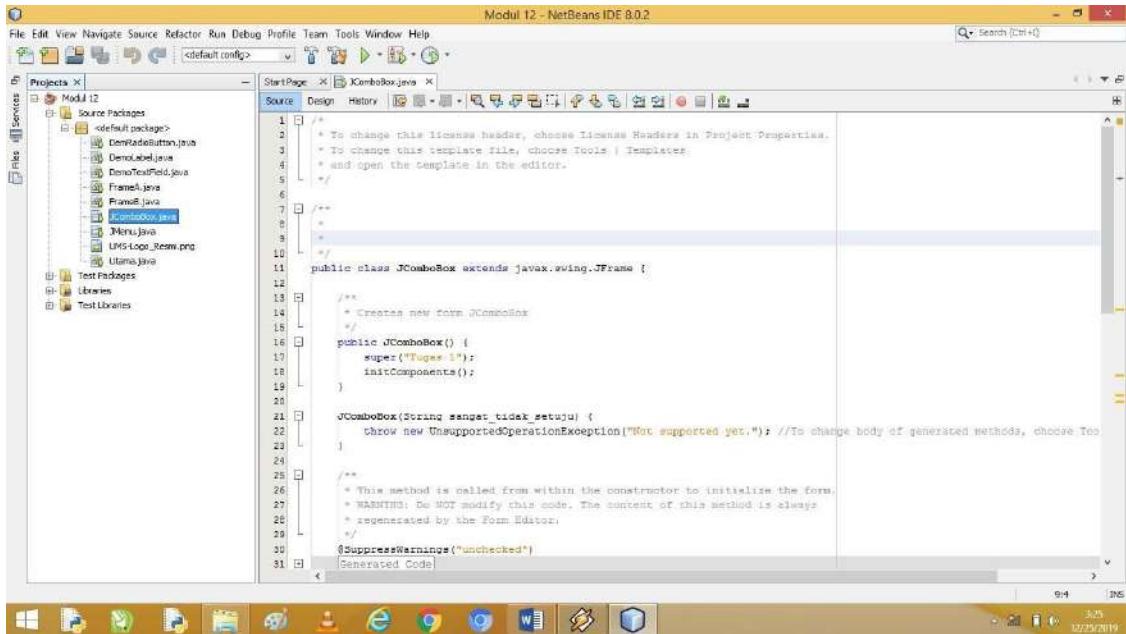


Konstruktor	Penjelasan
JCheckBox(String Teks)	Check box dengan teks yang ditentukan.
JCheckBox(String, Boolean)	Check box dengan teks yang ditentukan, jika kondisi pada parameter kedua true, maka Check box ini akan dipilih.
JCheckBox(icon)	Check box dengan gambar icon.
JCheckBox(icon, Boolean)	Check box dengan gambar icon dan terpilih jika true.
JCheckBox(String, Icon)	Check box dengan tulisan dan gambar icon.
JCheckBox(String, Icon, Boolean)	Check box dengan tulisan dan gambar icon, akan dipilih secara default jika kondisi true.

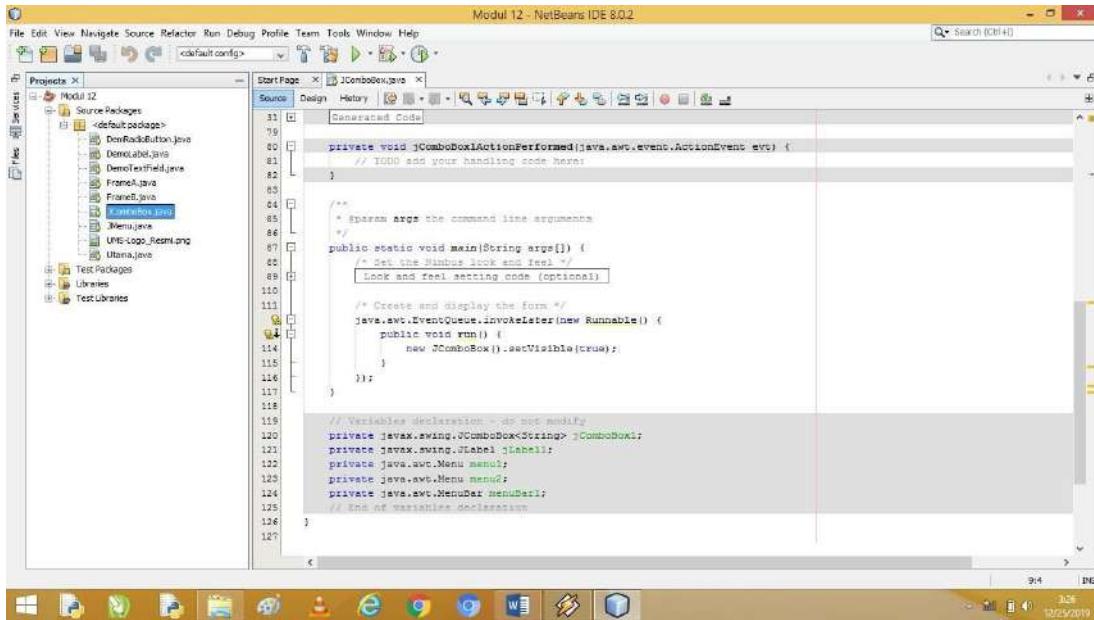
12.6 TUGAS

Membuat program GUI berdasarkan output

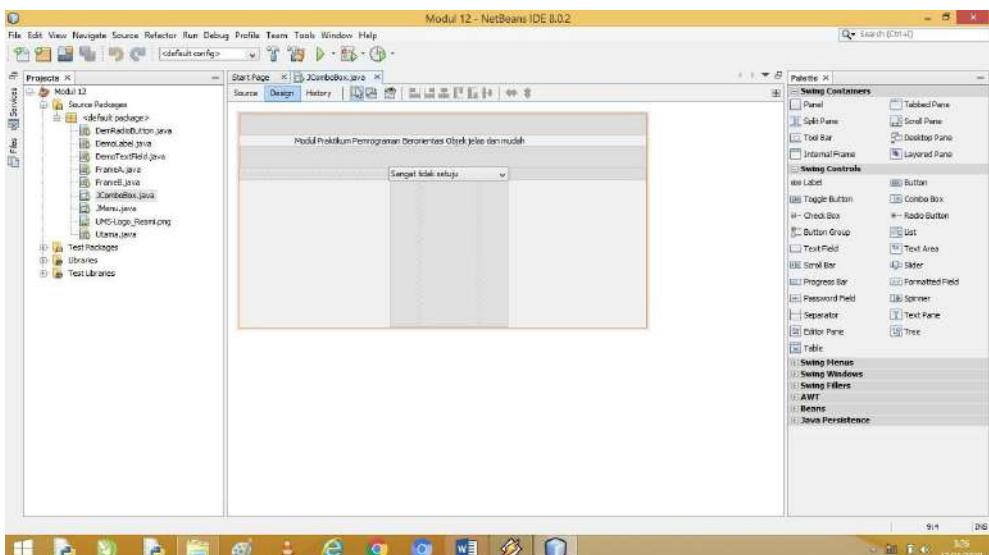
1. Menggunakan class JComboBox untuk membuat program GUI berdasarkan gambar



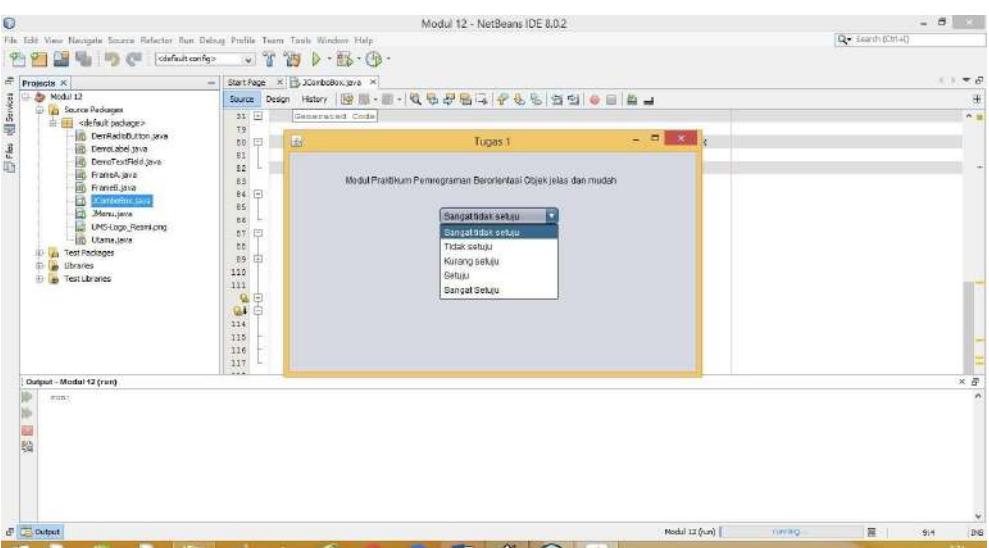
```
Modul 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config <StartPage> Kombobox.java
Projects X StartPage X Kombobox.java
Source Design History <> << >> <<< >>> <<<< >>>> <<<<< >>>>>
File Services
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Projects X StartPage X Kombobox.java
Source Design History <> << >> <<< >>> <<<< >>>>>
1 /* To change this license header, choose License Headers in Project Properties.
2 * To change this template file, choose Tools | Templates.
3 * and open the template in the editor.
4 */
5
6
7 /**
8 * Creates new form JComboBox
9 */
10 public class JComboBox extends javax.swing.JFrame {
11
12     /**
13      * Creates new form JComboBox
14      */
15     public JComboBox() {
16         super("Tugas 1");
17         initComponents();
18     }
19
20
21     /**
22      * This method is called from within the constructor to initialize the form.
23      * WARNING: Do NOT modify this code. The content of this method is always
24      * regenerated by the Form Editor.
25      */
26     @SuppressWarnings("unchecked")
27     // Generated Code
28 }
```



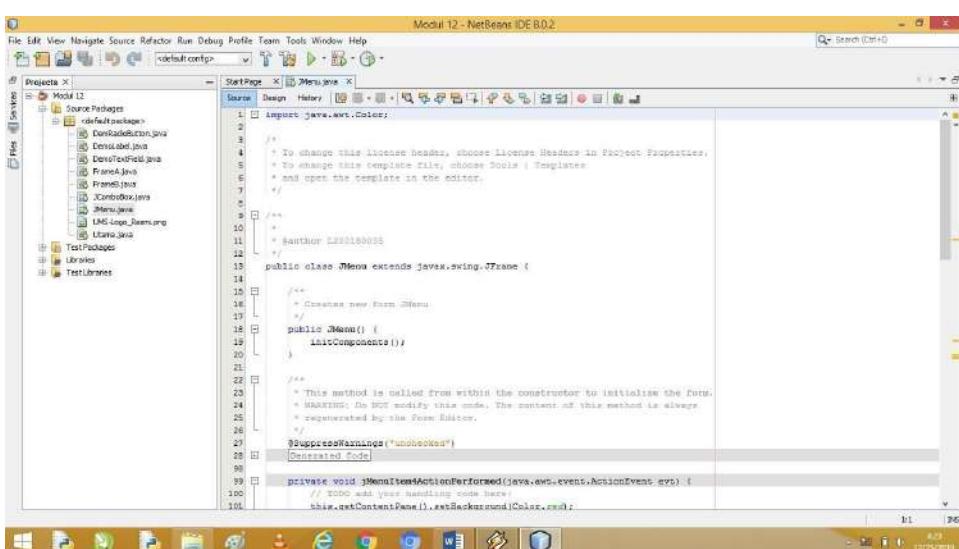
```
Modul 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config <StartPage> JCombobox.java
Projects X StartPage X JCombobox.java
Source Design History <> << >> <<< >>> <<<< >>>>>
File Services
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Projects X StartPage X JCombobox.java
Source Design History <> << >> <<< >>> <<<< >>>>>
31 /**
32  * Spans args the command line arguments
33 */
34 public static void main(String args[]) {
35     /* Set the Nimbus look and feel */
36     // Look and feel setting code (optional)
37
38     /* Create and display the form */
39     java.awt.EventQueue.invokeLater(new Runnable() {
40         public void run() {
41             new JComboBox().setVisible(true);
42         }
43     });
44
45     // Variables declaration - do not modify
46     private javax.swing.JComboBox<String> jComboBox1;
47     private javax.swing.JLabel jLabel1;
48     private java.awt.Menu menu1;
49     private java.awt.Menu menu2;
50     private java.awt.MenuItem menuItem1;
51     // End of variables declaration
52 }
```

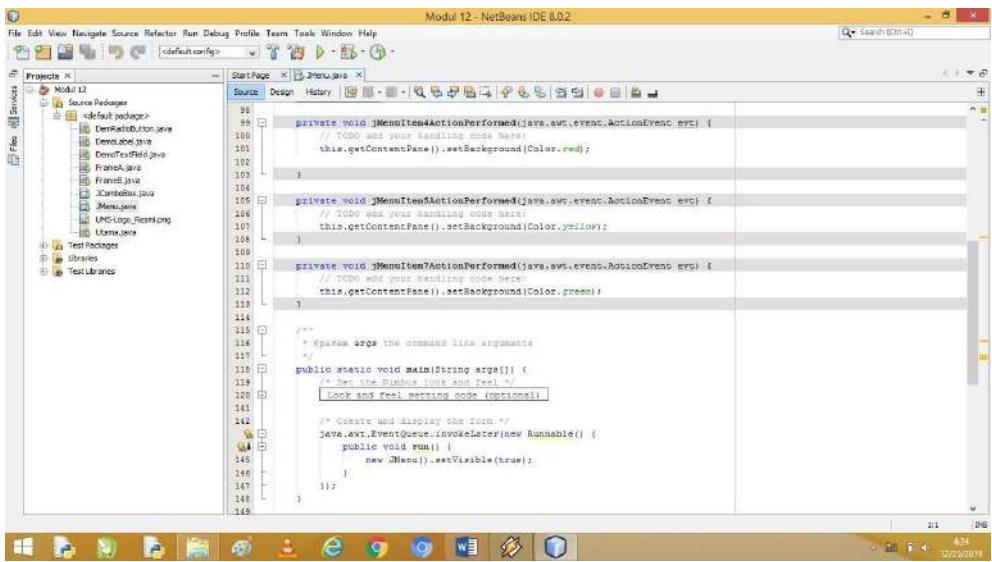


Output dari program diatas:



2. Membuat program GUI untuk menambah menu. Apabila salah satu menu dipilih maka akan mengubah warna background

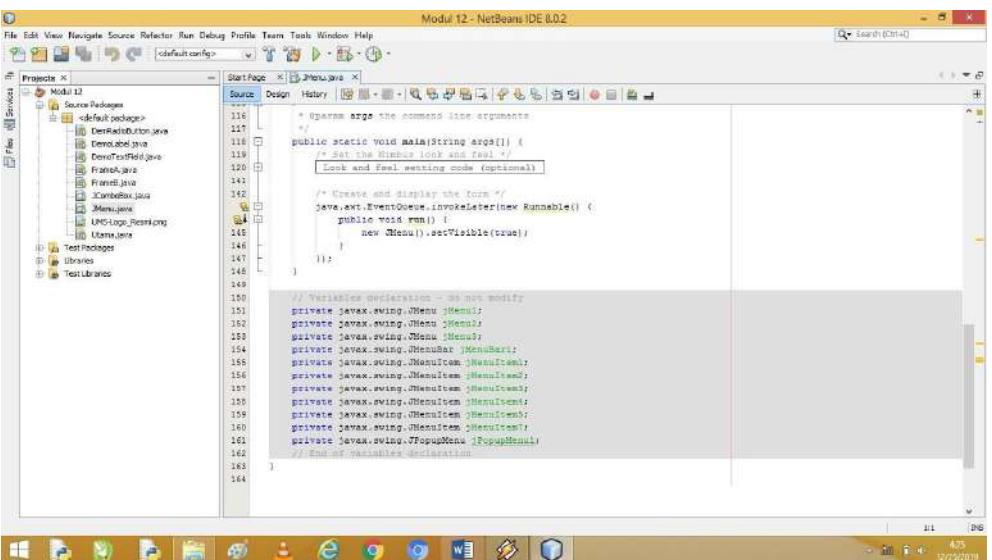




```

Module 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Projects Services
Modul 12
Source Packages
<default package>
  DemoRadioButton.java
  DemoLabel.java
  DemoTextFiled.java
  Frame.java
  FrontEnd.java
  JComboBox.java
  Menu.java
  UMSLogo_Removing.java
  Utama.java
Test Packages
Libraries
Test Libraries
File Start Page Design History ...
Source JMenu.java
private void jMenuItem1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    this.getContentPane().setBackground(Color.cyan);
}
private void jMenuItem5ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    this.getContentPane().setBackground(Color.yellow);
}
private void jMenuItem7ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    this.getContentPane().setBackground(Color.green);
}
/*
 * Sparcs args the command line arguments
 */
public static void main(String args[]) {
    /* Set the Nimbus look and feel */
    Look and Feel setting code (optional)
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new JMenu().setVisible(true);
    }
});
}
*/
/* Variables declaration - do not modify
 */
private javax.swing.JMenuBar jMenuBar1;
private javax.swing.JMenuBar jMenuBar2;
private javax.swing.JMenuBar jMenuBar3;
private javax.swing.JMenuBar jMenuBar4;
private javax.swing.JMenuItem jMenuItem1;
private javax.swing.JMenuItem jMenuItem2;
private javax.swing.JMenuItem jMenuItem3;
private javax.swing.JMenuItem jMenuItem4;
private javax.swing.JMenuItem jMenuItem5;
private javax.swing.JMenuItem jMenuItem6;
private javax.swing.JMenuItem jMenuItem7;
private javax.swing.JPopupMenu jPopupMenu1;
private javax.swing.JSeparator jSeparator1;

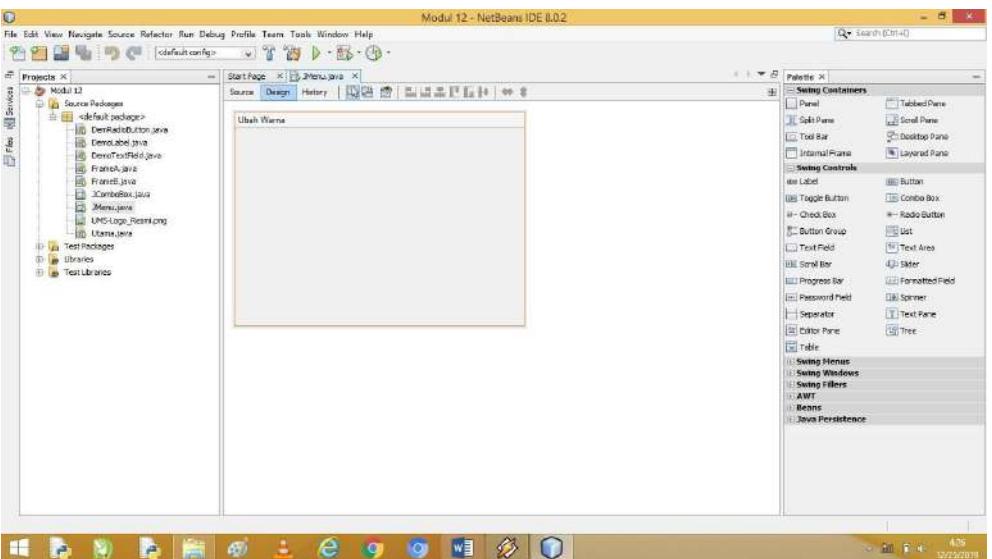
```



```

Module 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Projects Services
Modul 12
Source Packages
<default package>
  DemoRadioButton.java
  DemoLabel.java
  DemoTextFiled.java
  Frame.java
  FrontEnd.java
  JComboBox.java
  Menu.java
  UMSLogo_Removing.java
  Utama.java
Test Packages
Libraries
Test Libraries
File Start Page Design History ...
Source JMenu.java
/*
 * Sparcs args the command line arguments
 */
public static void main(String args[]) {
    /* Set the Nimbus look and feel */
    Look and Feel setting code (optional)
/* Create and display the form */
java.awt.EventQueue.invokeLater(new Runnable() {
    public void run() {
        new JMenu().setVisible(true);
    }
});
}
*/
/* Variables declaration - do not modify
 */
private javax.swing.JMenuBar jMenuBar1;
private javax.swing.JMenuBar jMenuBar2;
private javax.swing.JMenuBar jMenuBar3;
private javax.swing.JMenuBar jMenuBar4;
private javax.swing.JMenuItem jMenuItem1;
private javax.swing.JMenuItem jMenuItem2;
private javax.swing.JMenuItem jMenuItem3;
private javax.swing.JMenuItem jMenuItem4;
private javax.swing.JMenuItem jMenuItem5;
private javax.swing.JMenuItem jMenuItem6;
private javax.swing.JMenuItem jMenuItem7;
private javax.swing.JPopupMenu jPopupMenu1;
private javax.swing.JSeparator jSeparator1;

```



Utama Warna

Palette X

- Swing Containers**
 - Panel
 - Split Panel
 - Tab Bar
 - Internal Frame
 - Layered Panel
- Swing Controls**
 - Label
 - ToggleButton
 - CheckBox
 - Button Group
 - TextField
 - Small Icon
 - Progress Bar
 - Password Field
 - Separator
 - Editor Panel
 - Tabs
 - Swing Header
 - Swing Windows
 - Swing Filters
 - AWT
 - Beans
 - Java Persistence

Output dari program diatas:

