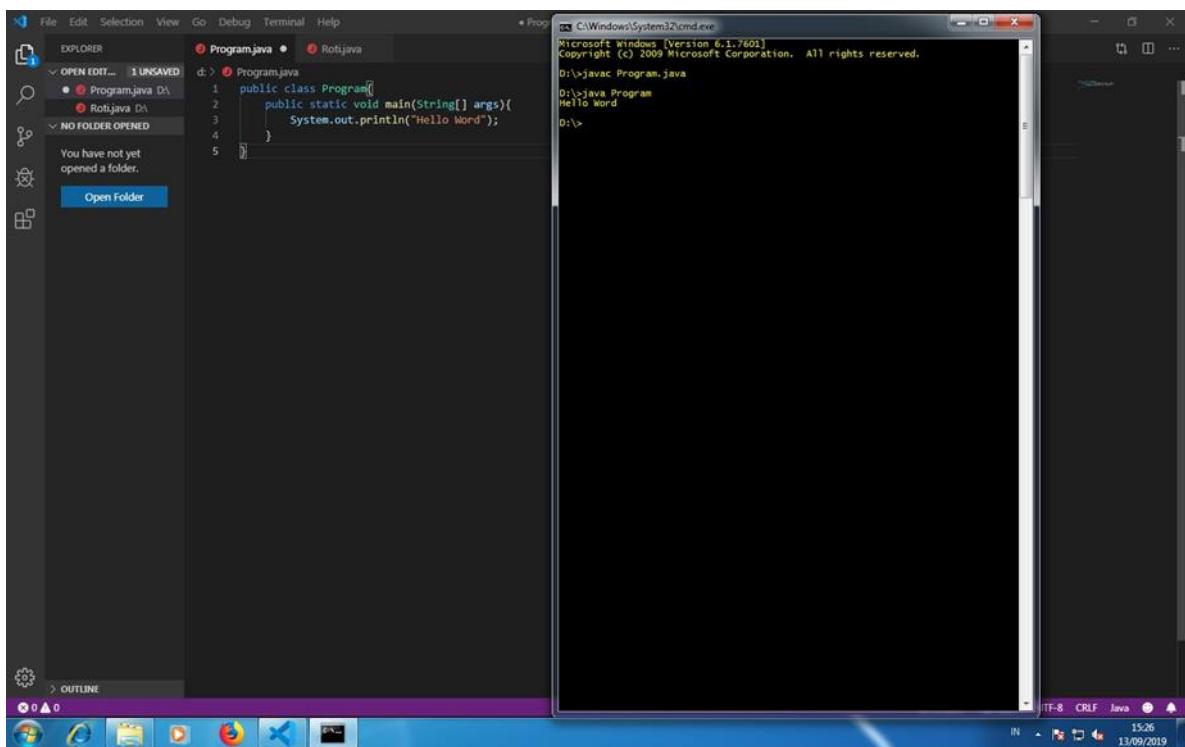


Modul 1



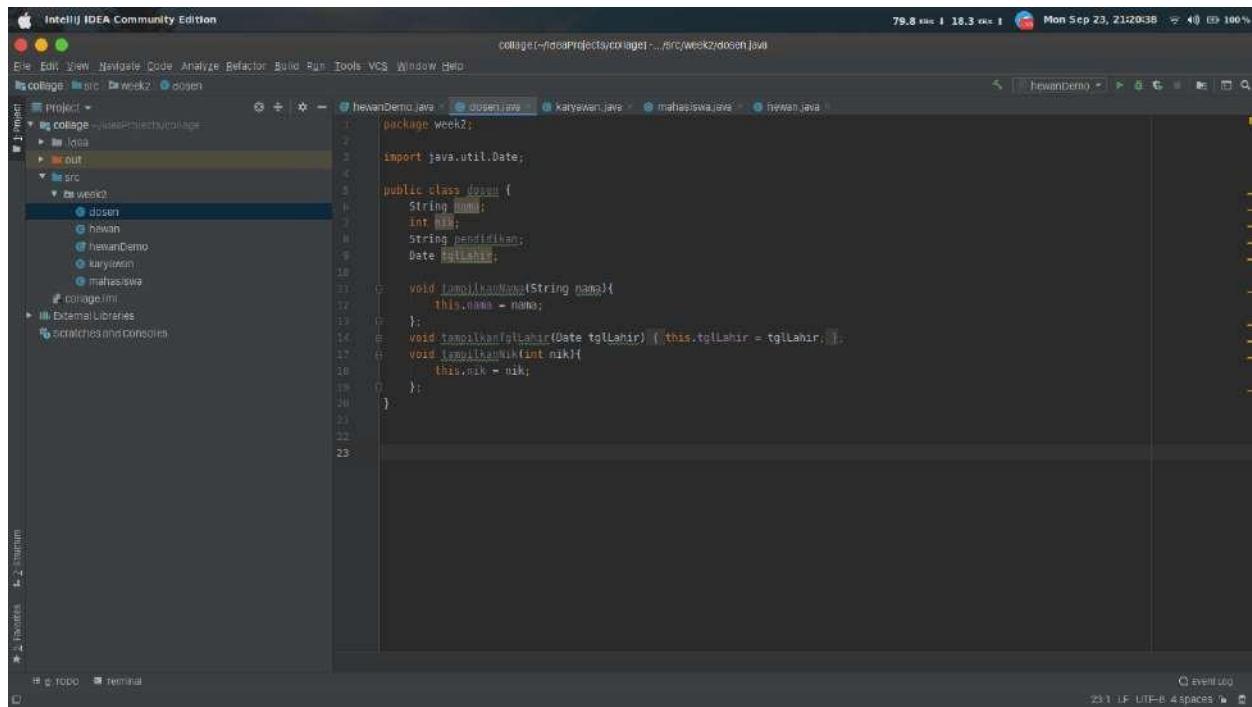
PBO Praktikum module ke 2

Nama : Akbar Probo B.

NIM : L200180078

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 package named "week2" which further contains classes "dosen", "hewan", "hewanDemo", "karyawan", and "mahasiswa".
- Code Editor:** The current file being edited is "dosen.java". The code defines a class "dosen" with attributes name (String), nik (int), penitikan (String), and tglLahir (Date). It includes three methods: "tambahNama(String nama)", "tempatkanTglLahir(Date tglLahir)", and "lengkapiNik(int nik)".
- Toolbars and Status Bar:** The top bar shows the application name "IntelliJ IDEA Community Edition" and the status "Mon Sep 23, 21:20:38". The bottom status bar indicates "79.8 sec" and "18.3 sec".
- Bottom Navigation:** Includes tabs for "Issues", "TODO", "Terminal", and "event Log".

Class Karyawan

The screenshot shows the IntelliJ IDEA interface with the title bar "IntelliJ IDEA Community Edition" and the status bar "collage:/Users/idear/Downloads/collage/.../src/week2/karyawan.java" and "Mon Sep 23, 21:27:35". The project structure on the left shows a package named "week2" containing classes "dosen", "hewan", "hewanDemo", "karyawan", and "mahasiswa". The "karyawan.java" file is open in the editor, displaying the following Java code:

```
package week2;

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

    void tambahNama(String nama){ this.name = nama; }
    void tambahAlamat(String alamat){
        this.alamat = alamat;
    }
    void tambahJabatan(String jabatan){
        this.jabatan = jabatan;
    }
    void tambahGaji(Double gaji){
        this.gaji = gaji;
    }
}
```

Class Mahasiswa

The screenshot shows the IntelliJ IDEA interface with the title bar "IntelliJ IDEA Community Edition" and the status bar "collage:/Users/idear/Downloads/collage/.../src/week2/mahasiswa.java" and "Mon Sep 23, 21:28:20". The project structure on the left shows a package named "week2" containing classes "dosen", "hewan", "hewanDemo", "karyawan", and "mahasiswa". The "mahasiswa.java" file is open in the editor, displaying the following Java code:

```
package week2;

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

    void tambahNama(String name){ this.name = name; }
    void tambahLgi(String lgi){ this.lgi = lgi; }
    void tambahAlamat(String alamat){
        this.alamat = alamat;
    }
    void tambahSemester(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

Project

src

out

src

week2

hewan

hewanDemo

kyayawan

mahasiswa

collage.iml

External Libraries

Scratches and Closures

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(
            "Name Hewan : " + name + "\n" +
            "Jumlah Kaki : " + footTotal + "\n" +
            "Makanan : " +
            food + "\n" +
            "Tipe Hewan : " + animType + "\n"
        );
    }
}
```

438+ 1 1.88+ 1 Mon Sep 23, 21:26:20 64.6 xx 1 9.85 xx 1 48 100% 64.6 xx 1 9.85 xx 1 Mon Sep 23, 21:25:39 48 100%

4.2.1 Minimum

Properties

Issues

TODO

Terminal

hewanDemo

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

Project

src

out

src

week2

dosen

hewan

hewanDemo

kyayawan

mahasiswa

collage.iml

External Libraries

Scratches and Closures

hewanDemo.java

```
package week2;

public class mahasiswa {
    String nama;
    String nim;
    String alamat;
    int semester;

    void tambilkanNama(String name) { this.nama = name; }
    void tambilkanNim(String nim) { this.nim = nim; }
    void tambilkanAlamat(String alamat){
        this.alamat = alamat;
    }
    void tambilkanSemester(int semester) { this.semester = semester; }
}
```

438+ 1 1.88+ 1 Mon Sep 23, 21:26:20 64.6 xx 1 9.85 xx 1 48 100% 64.6 xx 1 9.85 xx 1 Mon Sep 23, 21:25:39 48 100%

4.2.1 Minimum

Properties

Issues

TODO

Terminal

mahasiswa

13.24 LF UTF-8 4 spaces

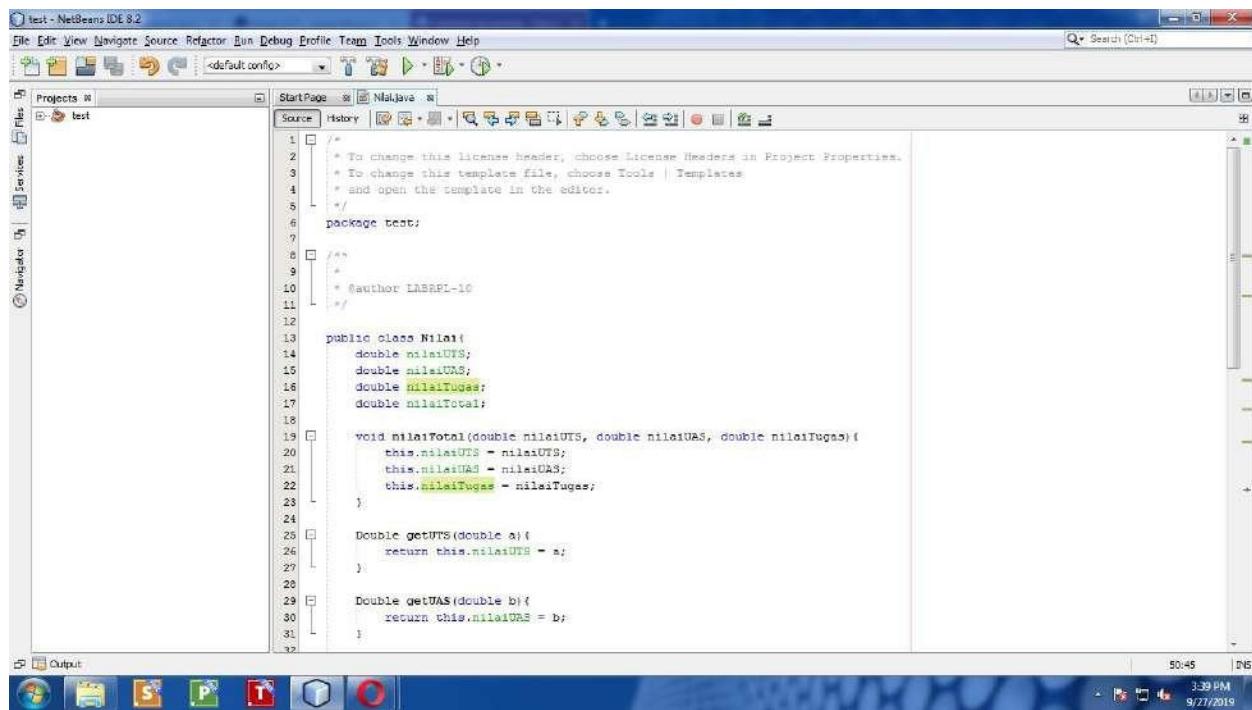
Tugas Module 3

Nama : Akbar Probo B.

NIM : L200180078

Kelas : B

Part 1

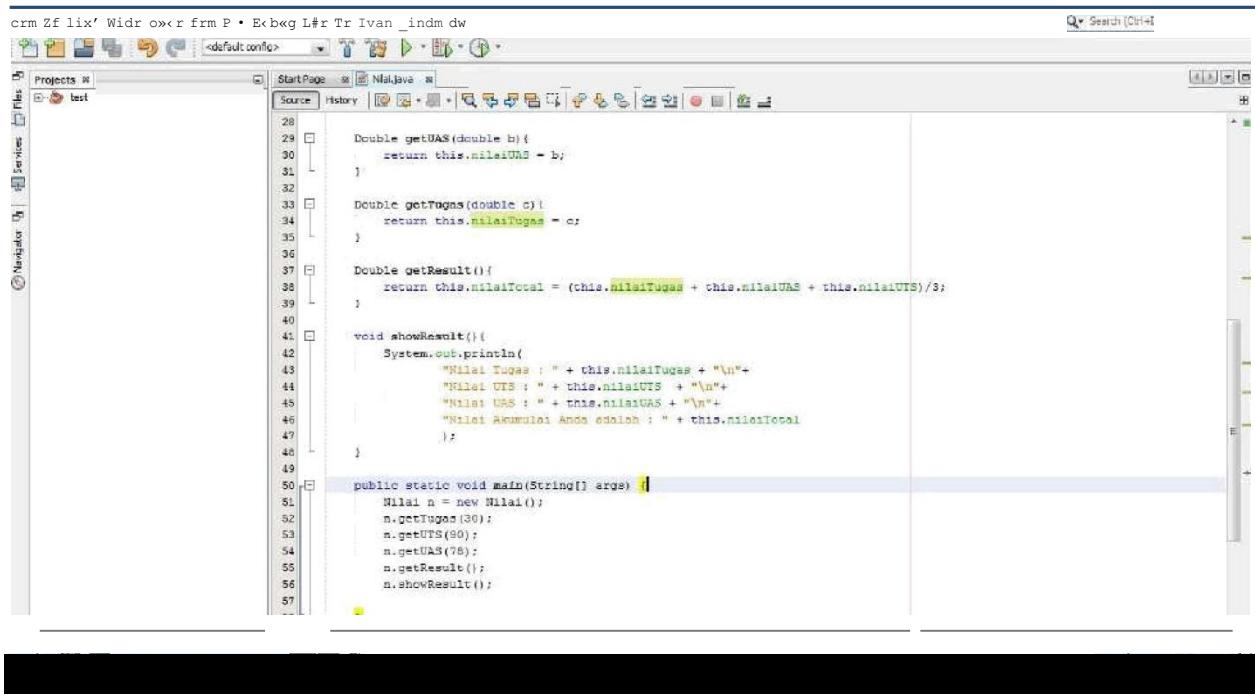


The screenshot shows the NetBeans IDE interface with the following details:

- Title Bar:** test - 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 single project named "test".
- Source Editor:** Displays Java code for a "Nilai" class.

```
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 LhBRPL-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 }
```
- Output:** Shows standard Java build output icons.
- Status Bar:** 50:45, 3:39 PM, 9/27/2019

Part 2



```
28
29     Double getUAS(double b){
30         return this.nilaiUAS = b;
31     }
32
33     Double getUTS(double c){
34         return this.nilaiUTS = c;
35     }
36
37     Double getResult(){
38         return this.nilaiTotal = (this.nilaiTugas + this.nilaiUTS + this.nilaiUAS)/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 Andas 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     }
}
```

Modul ke 4 | Latihan

TIDAK ADA TUGAS RUMAH

Nama : Akbar Probo B.

NIM : L200180078

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, Navigator, 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 "DefaultModifier.java".
- Code Editor:** Displays the "PrivateModifier.java" file with the following 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 defaultmodifier;
7
8 /**
9 *
10 * @author LABRPL-40
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 "PrivateModifier - Navigator" panel with members: "printInfo()", "name : String", and "umur : int".
- Output:** Shows the "Output - DefaultModifier (run)" panel with the message: "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 title "DefaultModifier - 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, Save, Run, Stop, and others. The Projects tab shows a project named "DefaultModifier" with Source Packages (default modifier, DefaultModifier.java, PrivateModifier.java), Test Packages, Libraries, and Test Libraries. The main editor window displays two files: "DefaultModifier.java" and "PrivateModifier.java". "DefaultModifier.java" contains the following code:

```
4  * and open the template in the editor.
5  */
6 package defaultmodifier;
7
8 /**
9  *
10 * Author: LASEKI-40
11 */
12 public class DefaultModifier {
13
14     int a = 1;
15     int b = 2;
16     int c;
17
18     void jumlah(){
19         c = a + b;
20         System.out.println(c);
21     }
22
23     public static void main(String[] args) {
24         // TODO code application logic here
25     }
26
27 }
```

The "Output" window shows the build log:

```
num:
BUILD SUCCESSFUL (total time: 1 seconds)
```

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:** Projects, Files, Services
- Source Editor:** Displays the `ProtectedModifier.java` file content:

```
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 LAMHPL-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:** Shows Members of ProtectedModifier class: printInfo() and sendMessage()
- Output:** DefaultModifier (run) output:

```
sun:
Protected Modifier
BUILD SUCCESSFUL (total time: 0 seconds)
```
- System Tray:** Shows icons for Taskbar, Task View, Firefox, and a lock icon.
- Bottom Bar:** Shows the date (04/10/2019), time (15:11), and a TNS icon.

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" containing packages "Source Packages" and "Test Packages".
- Navigator:** Shows the members of the "PublicModifier" class, including methods like `hasil()`, `kali()`, `kurang()`, `rata_rata()`, and `tambah()`, along with variables `a`, `b`, and `c`.
- Code Editor:** Displays the Java code for the `PublicModifier.java` file. The code includes a header note about license headers, a package declaration, and a class definition with several methods that perform arithmetic operations and print results.
- Bottom Status Bar:** Shows system icons, the date (04/10/2019), and the time (15:19).

```
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 LAKERPL-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 }
```

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

Jawaban 2 : Sudah

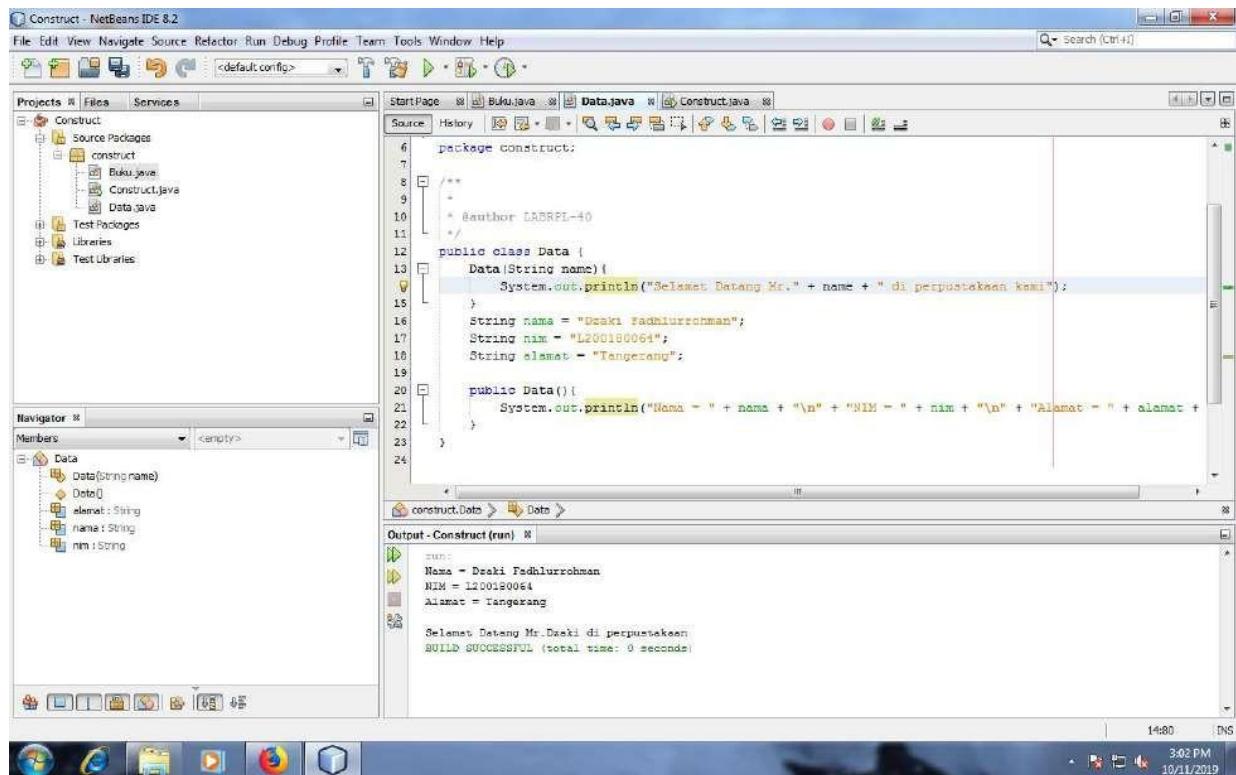
Modul ke 5

Nama : Akbar Probo B.

NIM : L200180078

Kelas : B

1. Latihan 1



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

- Projects:** A project named "Construct" is open, containing Source Packages (construct, Data) and Test Packages (Libraries, Test Libraries).
- Code Editor:** The "Data.java" file is selected. The code defines a class "Data" with a constructor that prints a welcome message and initializes variables with specific values.
- Output:** The "Output - Construct (run)" window shows the program's output: "Selamat Datang Mr. Dzaki Fadhlurrohman", "NIM = L200180078", and "Alamat = Tangerang". It also shows a successful build message: "BUILD SUCCESSFUL (total time: 0 seconds)".
- Bottom Bar:** Shows the system tray with icons for network, battery, and date/time (10/11/2019, 3:02 PM).

```
6 package construct;
7
8 /**
9 * 
10 * @author LABRPL-40
11 */
12
13 public class Data {
14     Data(String name){
15         System.out.println("Selamat Datang Mr. " + name + " di perpustakaan kami");
16         String nama = "Dzaki Fadhlurrohman";
17         String nim = "L200180078";
18         String alamat = "Tangerang";
19
20     public Data(){
21         System.out.println("Nama = " + nama + "\n" + "NIM = " + nim + "\n" + "Alamat = " + alamat +
22     }
23 }
```

Construct - NetBeans IDE 8.2

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

Search (Ctrl+F)

Projects Files Services

Start Page | [Buku.java](#) | [Data.java](#) | [Construct.java](#)

Source History Find Replace Go To Type Help

```

9  *
10 * @author LABRFL-40
11 */
12 public class Construct {
13
14     /**
15      * Spares args the command line arguments
16      */
17     public static void main(String[] args) {
18         Data d = new Data();
19         Data b = new Data("Dasaki");
20     }
21
22 }
23

```

main - Navigator

Members

Construct

main(String[] args)

Output - Construct (run)

```

run:
Name = Dasaki Fadhlurrohman
NIM = 1200120064
Alamat = Tangerang
Selamat Datang Mr.Dasaki di perpustakaan
BUILD SUCCESSFUL (total time: 0 seconds)

```

19:33 DNS

2. Latihan 2

Construct - NetBeans IDE 8.2

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

Search (Ctrl+F)

Projects Files Services

Start Page | [Buku.java](#) | [Data.java](#) | [Construct.java](#)

Source History Find Replace Go To Type 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 package construct;
7
8 /**
9  *
10 * @author LABRFL-40
11 */
12
13 public class Buku {
14     String namPengarang;
15     String judulBuku;
16     int tahunPenerbit;
17     int cetakanKe;
18     double hargaJual;
19
20     Buku(String a, String b, int c, int d, int e){
21         fill(a, b, c, d, e);
22     }
23
24     void fill(String a, String b, int c, int d, double e){
25         this.namPengarang = a;
26         this.judulBuku = b;
27         this.tahunPenerbit = c;
28         this.cetakanKe = d;
29         this.hargaJual = e;
30     }
31

```

BIL - 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

Output

26:32 DNS

3:03 PM 10/11/2019

Construct - NetBeans IDE 8.2

```

public class Construct {
    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, 239, 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, 802, 420000);
        Buku h = new Buku("Dika", "Judul enam", 2009, 82, 156000);
        Buku i = new Buku("Nir x", "Judul tujuh", 2004, 28, 178000);
        Buku j = new Buku("Nir 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 {
    String namaPenerang;
    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.namaPenerang = a;
        this.judulBuku = b;
        this.tahunPenerbit = c;
        this.cetakanKe = d;
        this.hargaJual = e;
    }

    void show(){
        System.out.println("Nama Penerang= " + namaPenerang + "\n" + "Judul Buku = " + judulBuku + 
    }
}

```

2. Method main implementasi dari kelas diatas

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

- Title Bar:** Construct - 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 "Construct" with a "Source Packages" node containing "Buku.java", "Construct.java", and "Data.java".
- Navigator:** Shows the "Members" section with one item: "main(String[] args)".
- Code Editor:** Displays the "Construct.java" source code. The code defines a class "Construct" with a static main method. The main method creates 10 instances of the "Buku" class and calls their "show" method. The "Buku" class has fields: title, author, year, pages, and price.
- Status Bar:** Shows the time as 13:1 and 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("Osaki");
        Buku b = new Buku("Ali", "Mari nikah", 2019, 925, 126000);
        Buku c = new Buku("Hasan", "Judul satu", 2013, 924, 156000);
        Buku d = new Buku("Bac", "Judul dua", 2018, 294, 127000);
        Buku e = new Buku("Roy", "Judul tiga", 2013, 567, 126700);
        Buku f = new Buku("Akbar", "Judul empat", 2011, 554, 226700);
        Buku g = new Buku("Beny", "Judul lima", 2007, 902, 420000);
        Buku h = new Buku("Buka", "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("Yuzal", "Mari sempilan", 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

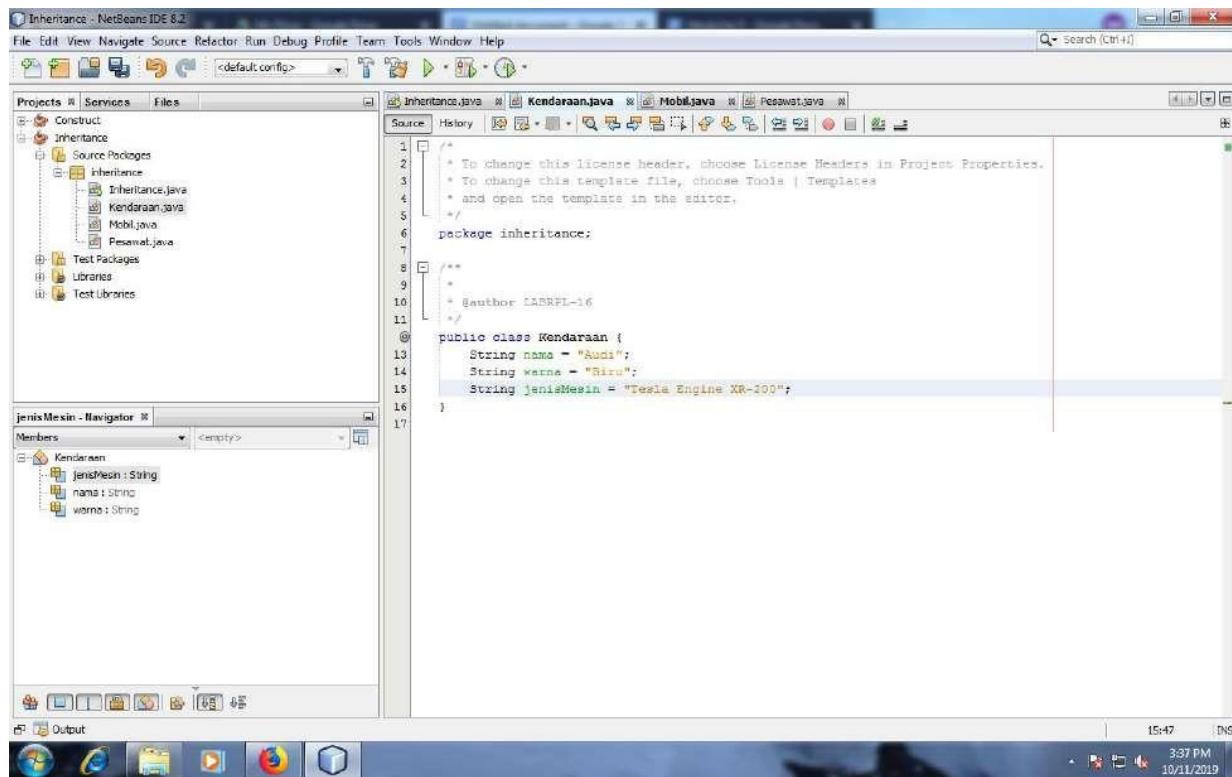
Nama : Akbar Probo B.

NIM : L200180078

Kelas : B

Latihan 6.2

Nomor 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, and Help. The title bar says "Inheritance - NetBeans IDE 8.2". The main area displays the Inheritance.java file. The code defines a package named inheritance and a class named Kendaraan with three string fields: jenismesin, nama, and warna. The Navigator pane on the left shows the project structure with Source Packages (Inheritance) containing Inheritance.java, Kendaraan.java, Mobil.java, and Pesawat.java, and Test Packages (Libraries and Test Libraries). The bottom status bar shows the time as 15:47 and date as 10/11/2019.

```
/*
 * 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.
 */
package inheritance;

/**
 *
 * @author LABRPL-16
 */
public class Kendaraan {
    String jenismesin;
    String nama;
    String warna;
}
```

The screenshot shows the NetBeans IDE interface with the title bar "Inheritance - NetBeans IDE 8.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and a search field "search (Ctrl+F)".

The Projects tab is selected, displaying the project structure:

- Construct
- Inheritance (selected)
- Source Packages
 - Inheritance
 - Inheritance.java
 - Kendaraan.java
 - Mobil.java
 - Pesawat.java
- Test Packages
- Libraries
- Test Libraries

The Editor tab shows the file "Mobil.java" with the following 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 inheritance;
7
8  /**
9   *
10  * @author LABRPL-16
11  */
12 public class Mobil extends Kendaraan{
13
14 }
15
```

The Navigator tab shows the members of the "Mobil" class:

- Mobil :: Kendaraan

The bottom status bar shows the date and time: 12:20/1:17 3:37 PM 10/11/2019.

The screenshot shows the NetBeans IDE interface with the title "Inheritance - NetBeans IDE 8.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and a search bar at the top right. The toolbar has icons for file operations like New, Open, Save, and Build.

The Projects tab is selected in the left sidebar, showing a project named "Inheritance" with source packages "Inheritance" containing "Inheritance.java", "Kendaraan.java", "Mobil.java", and "Pesawat.java", and a test package "Test Packages" containing "TestInheritance.java".

The central editor area displays the "Inheritance.java" source 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 inheritance;
7
8  /**
9   * @author LABRPL-16
10  */
11 public class Pesawat extends Kendaraan{
12
13 }
14
15 }
```

The Navigator pane below shows the members of the "Pesawat" class, which includes "Pesawat :: Kendaraan".

The bottom status bar shows the time as 12:39 and the date as 10/11/2019. The taskbar at the bottom includes icons for the operating system, browser, and other applications.

Nomor 2

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

- File Menu:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help.
- Search Bar:** search (Ctrl+F).
- Projects Tab:** Projects, Services, Files. The "Inheritance" project is selected.
- Source Editor:** Displays the contents of `Mobil.java`. The code includes a package declaration for `inheritance`, a copyright notice, and a class definition for `Mobil` extending `Kendaraan` with a field `String name = "Porselli";`.
- Mobil - Navigator:** Shows the members of the `Mobil` class, specifically the field `name : string`.
- Output Tab:** Shows standard output and error logs.

The screenshot shows the NetBeans IDE interface with the title bar "Inheritance - NetBeans IDE 8.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and a search bar at the top right. The toolbar has icons for file operations like New, Open, Save, and Build.

The Projects tab is selected in the left sidebar, showing a project named "Inheritance" with source packages "Inheritance" containing files Inheritance.java, Kendaraan.java, Mobil.java, and Pesawat.java, and a test package "Test Packages".

The central editor window displays the code for Pesawat.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 Pesawat extends Kendaraan{
    String name = "Boeing";
}
```

The Navigator tab below shows members of the Pesawat class: "name : String".

The bottom status bar shows the time as 13:26 and date as 10/11/2019.

Nomor 3

Khumaila_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 - Khumaila_Inheritance (run)

```

run:
Jenis Kendaraan : Bencak
Nama : Hitam
Roda : 3
Merek : Toyota
Warna : Merah
Masapai : Garuda Indonesia
Nama : Biru
BUILD SUCCESSFUL (total time: 0 seconds)

```

Tugas

AksesTugas.java

Khumaila_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 segitiga = new Segitiga();
15         segitiga.luas(20,10);
16
17         Persegi persegi = new Persegi();
18
19         persegi.luas(3);
20         persegi.keliling(5);
21     }
22 }

```

BangunDatar.java

The screenshot shows the NetBeans IDE interface with the project 'Khumala_Inheritance' open. The code editor displays the 'BangunDatar.java' file, 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 Tugas;

/**
 *
 * @author LABRPL-28
 */
public class BangunDatar {
    protected double luas;
    protected double keliling;

    protected void hitungLuas() {
    }

    protected double hitungKeliling() {
        return hitungKeliling();
    }
}
```

Persegi.java

The screenshot shows the NetBeans IDE interface with the project 'Khumala_Inheritance' open. The code editor displays the 'Persegi.java' file, which extends the 'BangunDatar' class and 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 Tugas;

public class Persegi extends BangunDatar {
    protected double sisi;

    public void luas(int sisi) {
        luas = sisi*sisi;
        System.out.println("Luas Persegi: " + luas);
    }

    public void keliling(int sisi) {
        keliling = 6 * sisi;
        System.out.println("Keliling Persegi: " + keliling);
    }
}
```

PersegiPanjang.java

The screenshot shows the NetBeans IDE interface with the title bar "Khumala_Inheritance - NetBeans IDE 8.2". The code editor displays the following 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.
 */
package Tugas;

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

The project navigation pane on the left shows the structure of the "Khumala_Inheritance" project, including packages like Inheritance, Lahan, and Tugas, and various source files such as A.java, B.java, C.java, InheritanceTest.java, Pegawai.java, Programmer.java, Televisi.java, AksesKendaraan.java, Kendaraan.java, Mobil.java, Personer.java, and several files under the Tugas package.

SegiTiga.java

The screenshot shows the NetBeans IDE interface with the title bar "Khumala_Inheritance - NetBeans IDE 8.2". The code editor displays the following 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.
 */
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);
    }
}
```

The project navigation pane on the left shows the structure of the "Khumala_Inheritance" project, including packages like Inheritance, Lahan, and Tugas, and various source files such as A.java, B.java, C.java, InheritanceTest.java, Pegawai.java, Programmer.java, Televisi.java, AksesKendaraan.java, Kendaraan.java, Mobil.java, Personer.java, and several files under the Tugas package.

SegiTigaSamaKaki.java

The screenshot shows the NetBeans IDE interface with the title bar "Khumaila_Inheritance - NetBeans IDE 8.2". The main window displays the source code for the class `SegiTigaSamaKaki`. The code 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 Tugas;

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

The project navigation pane on the left shows a package named `Khumaila_Inheritance` containing several source files like `A.java`, `B.java`, `C.java`, `InheritanceTest.java`, etc. A folder named `Tugas` contains the `SegiTigaSamaKaki.java` file. The bottom status bar shows the time as 7:52 AM and the date as 11/6/2019.

SegiTigaSamaSisi.java

The screenshot shows the NetBeans IDE interface with the title bar "Khumaila_Inheritance - NetBeans IDE 8.2". The main window displays the source code for the class `SegiTigaSamaSisi`. The code 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 Tugas;

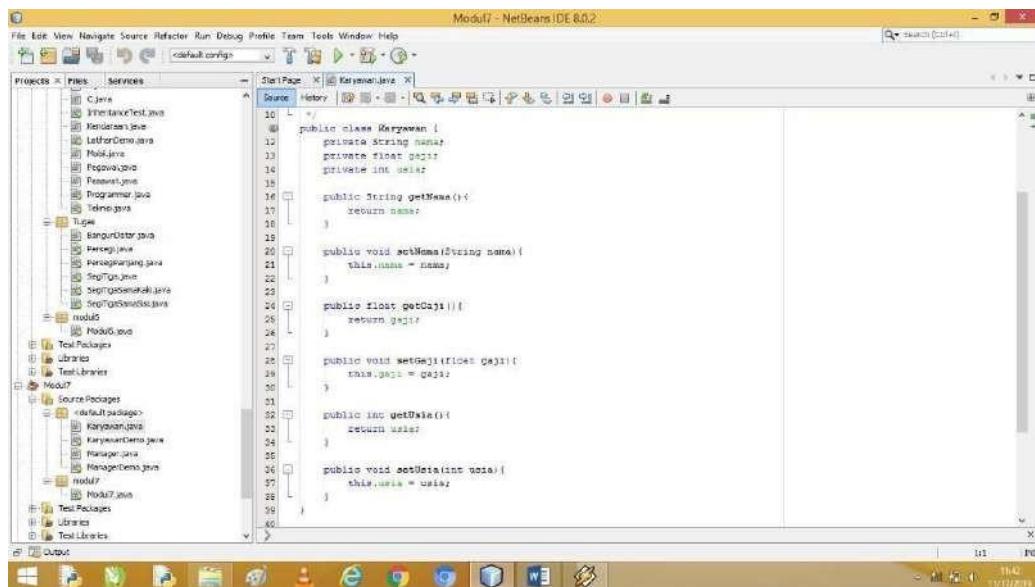
/**
 *
 * @author LABRPL-28
 */
public class SegiTigaSamaSisi extends SegiTiga{
    protected double sisi;
}
```

The project navigation pane on the left shows a package named `Khumaila_Inheritance` containing several source files like `A.java`, `B.java`, `C.java`, `InheritanceTest.java`, etc. A folder named `Tugas` contains the `SegiTigaSamaSisi.java` file. The bottom status bar shows the time as 7:52 AM and the date as 11/6/2019.

MODUL 7

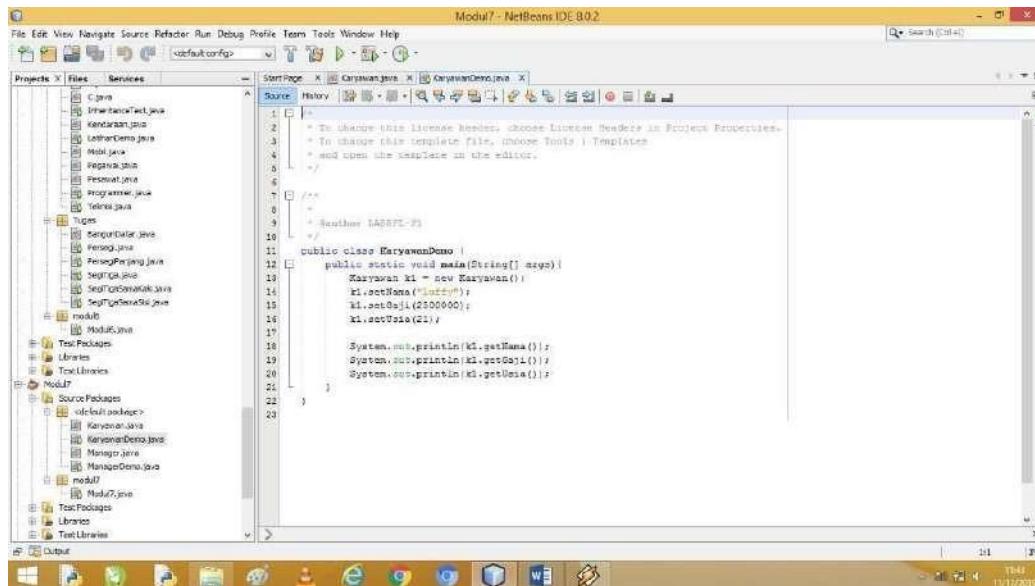
Nama : Akbar Probo B.
NIM : L200180078
Kelas : B

Akses Modifier Private pada Encapsulation



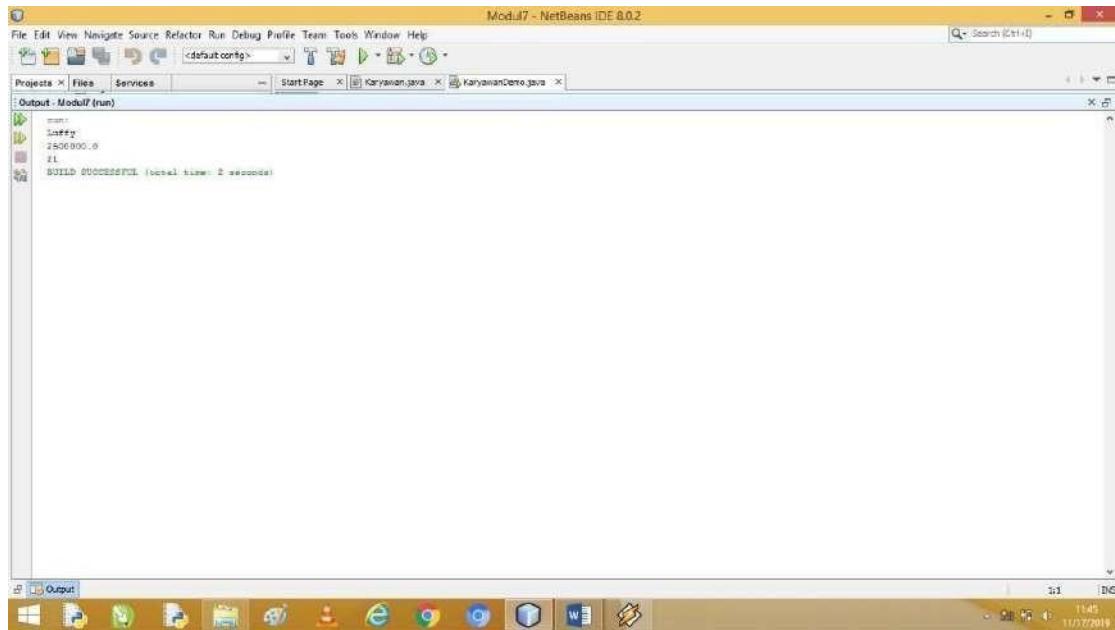
```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
defaultconfig < defaultconfig > Start Page X Karyawan.java X search (Ctrl+F)
Projects Files Services
  C:\Java
    -> Classes
      -> Karyawan.java
      -> KaryawanDemo.java
      -> Main.java
      -> Pegawai.java
      -> Person.java
      -> Programmer.java
      -> Telepon.java
    -> Types
      -> BangunDatar.java
      -> Perseg.java
      -> PersegiPjng.java
      -> Segitiga.java
      -> SegitigaMatriks.java
      -> SegitigaSejajar.java
    -> modul7
      -> Modul7.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
  10  /*
  11   * To change this license header, choose License Headers in Project Properties.
  12   * To change this template file, choose Tools | Templates.
  13   * and open the template in the editor.
  14   */
  15   public class Karyawan {
  16     private String nama;
  17     private float gaji;
  18     private int usia;
  19
  20     public String getName(){
  21       return nama;
  22     }
  23
  24     public void setName(String nama){
  25       this.nama = nama;
  26     }
  27
  28     public float getGaji(){
  29       return gaji;
  30     }
  31
  32     public void setGaji(float gaji){
  33       this.gaji = gaji;
  34     }
  35
  36     public int getUsia(){
  37       return usia;
  38     }
  39
  40     public void setUsia(int usia){
  41       this.usia = usia;
  42     }
  43   }
```

Pemanfaatan Getter dan Setter



```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
defaultconfig < defaultconfig > Start Page X Karyawan.java X KaryawanDemo.java X search (Ctrl+F)
Projects Files Services
  C:\Java
    -> Classes
      -> Karyawan.java
      -> KaryawanDemo.java
      -> Main.java
      -> Pegawai.java
      -> Person.java
      -> Programmer.java
      -> Telepon.java
    -> Types
      -> BangunDatar.java
      -> Perseg.java
      -> PersegiPjng.java
      -> Segitiga.java
      -> SegitigaMatriks.java
      -> SegitigaSejajar.java
    -> modul7
      -> Modul7.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
  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   * Another LAB7PL-FS
  9   */
 10
 11  public class KaryawanDemo {
 12    public static void main(String[] args) {
 13      Karyawan k1 = new Karyawan();
 14      k1.setName("Iatif");
 15      k1.setGaji(2500000);
 16      k1.setUsia(21);
 17
 18      System.out.println(k1.getName());
 19      System.out.println(k1.getGaji());
 20      System.out.println(k1.getUsia());
 21    }
 22  }
```

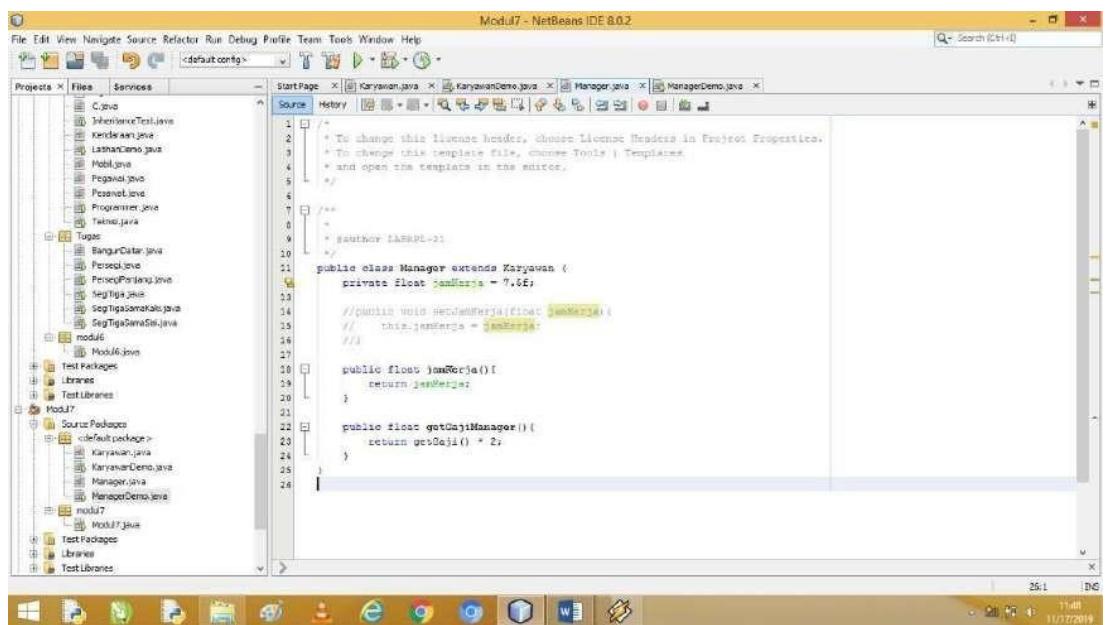
Output ketika program 2 atau class KaryawanDemo dijalankan



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 New Project, Open Project, Save, Undo, Redo, Cut, Copy, Paste, Find, Replace, and Run. The Projects tab shows a single project named "Modul7". The Output tab displays the build log:

```
Info: Javac 1.8.0_201
Info: 2500000.0
Info: 11
Info: BUILD SUCCESSFUL (total time: 2 seconds)
```

Contoh Program Single Inheritance

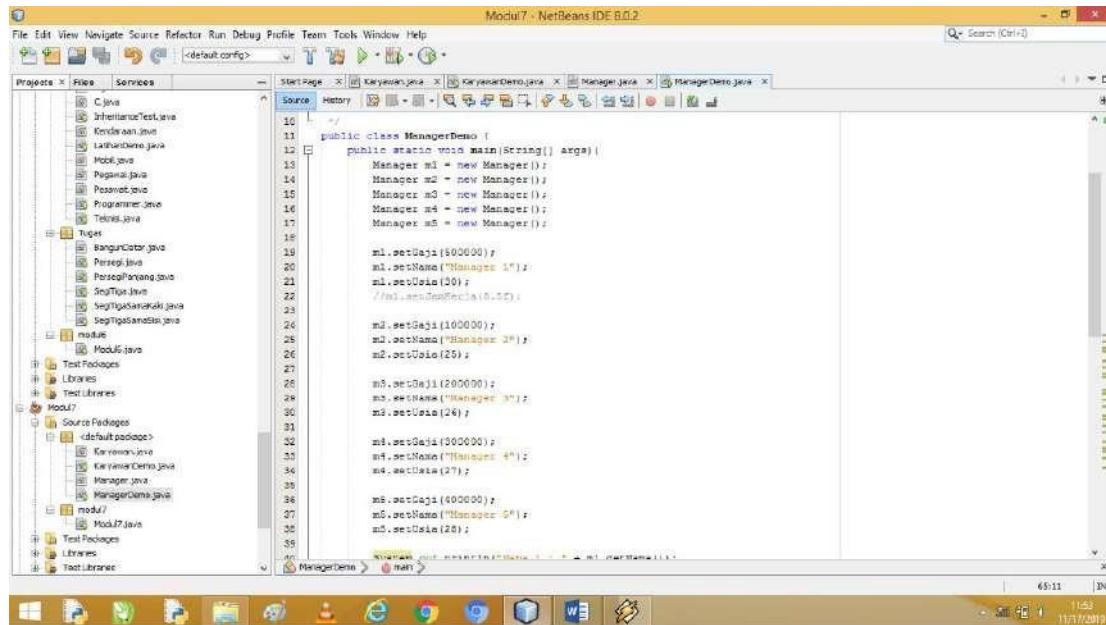


The screenshot shows the NetBeans IDE interface with the title bar "Modul7 - NetBeans IDE 8.0.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help. The toolbar has icons for New Project, Open Project, Save, Undo, Redo, Cut, Copy, Paste, Find, Replace, and Run. The Projects tab shows a project named "Modul7" with several source files like Karyawan.java, Manager.java, and ManagerDemo.java. The Manager.java code is displayed in the editor:

```
/*
 * 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 modul7;
public class Manager extends Karyawan {
    private float jmlGaji = 7.5f;
    //public void setJmlGaji(float jmlGaji) {
    //    this.jmlGaji = jmlGaji;
    //}
    public float jmlGaji(){
        return jmlGaji;
    }
    public float getGajiManager(){
        return getGaji() * 2;
    }
}
```

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 Karyawan.java LatihanDemo.java Modul.java Pegawai.java Pekerja.java Programmer.java Tela... java
Tugas Bangunan.java Persegi.java PersegiPjng.java Segitiga.java SegitigaSamaKaki.java SegitigaSamaSisi.java
modul Modul.java
Test Packages Libraries Test Libraries Modul7
Source Packages <default package>
Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java
modul Modul.java
Test Packages Libraries Test Libraries
ManagerDemo.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();

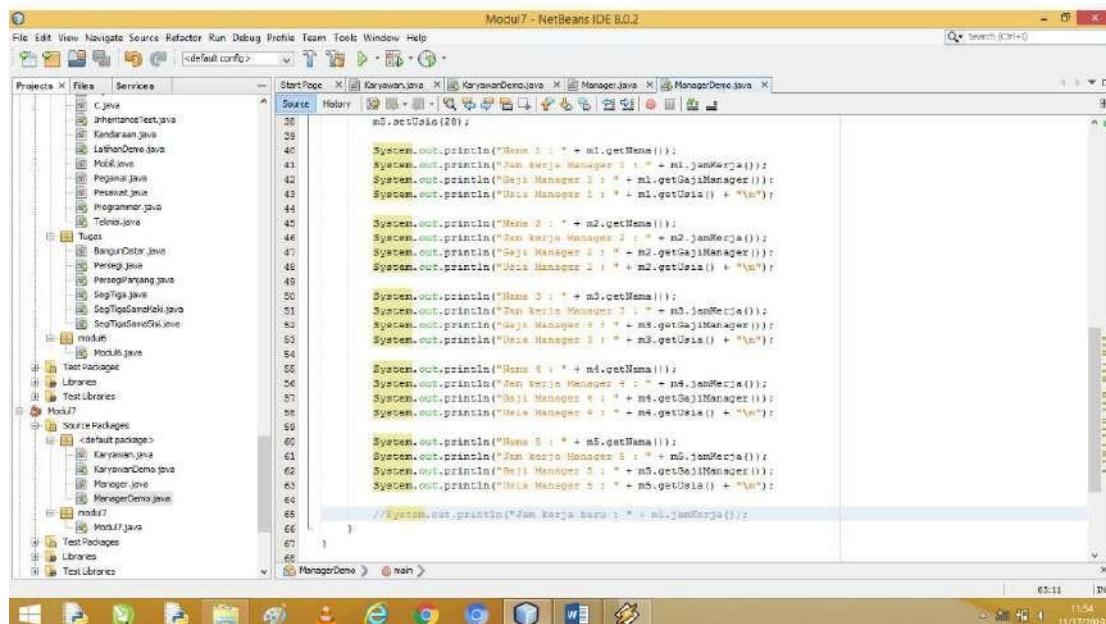
        m1.setGaji(500000);
        m1.setName("Manager 1");
        m1.setUsia(30);
        //m1.setJamRkja(m1, 8.5);

        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 Karyawan.java LatihanDemo.java Modul.java Pegawai.java Pekerja.java Programmer.java Tela... java
Tugas Bangunan.java Persegi.java PersegiPjng.java Segitiga.java SegitigaSamaKaki.java SegitigaSamaSisi.java
modul Modul.java
Test Packages Libraries Test Libraries Modul7
Source Packages <default package>
Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java
modul Modul.java
Test Packages Libraries Test Libraries
ManagerDemo.java
m5.setUsia(28);

System.out.println("Nama 1 : " + m1.getName());
System.out.println("Jen Krsja Manager 1 : " + m1.jamRkja());
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("Jen Krsja Manager 2 : " + m2.jamRkja());
System.out.println("Gaji Manager 2 : " + m2.getGajiManager());
System.out.println("Usia Manager 2 : " + m2.getUsia() + "\n");

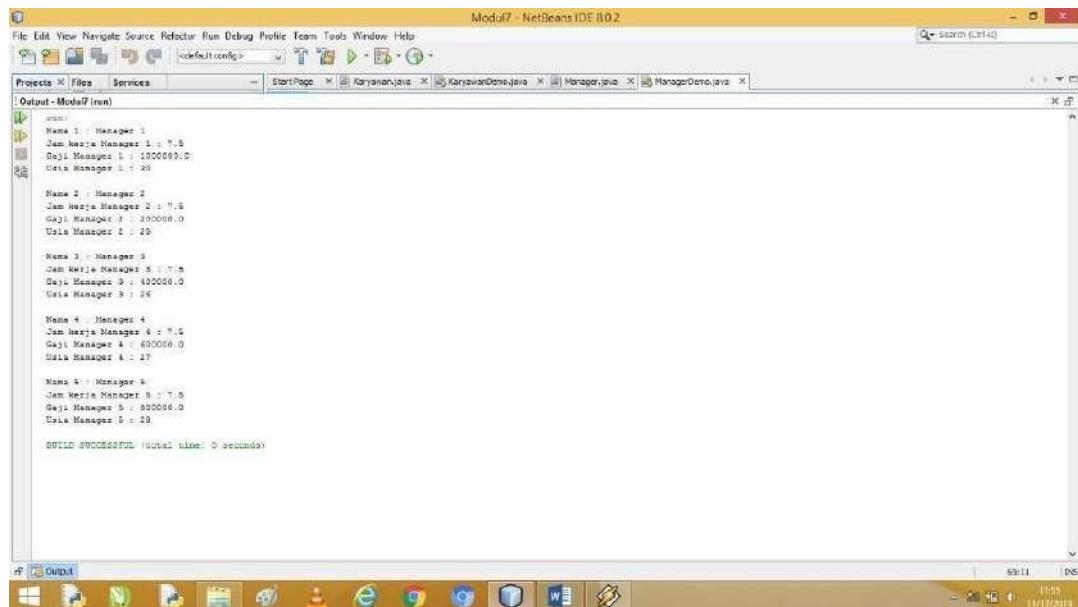
System.out.println("Nama 3 : " + m3.getName());
System.out.println("Jen Krsja Manager 3 : " + m3.jamRkja());
System.out.println("Gaji Manager 3 : " + m3.getGajiManager());
System.out.println("Usia Manager 3 : " + m3.getUsia() + "\n");

System.out.println("Nama 4 : " + m4.getName());
System.out.println("Jen Krsja Manager 4 : " + m4.jamRkja());
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("Jen Krsja Manager 5 : " + m5.jamRkja());
System.out.println("Gaji Manager 5 : " + m5.getGajiManager());
System.out.println("Usia Manager 5 : " + m5.getUsia() + "\n");

//System.out.println("Jen Krsja baru : " + m1.jamRkja());
}
}
```

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)
Name 1 : Manager 1
Jam kerja Manager 1 : 7.5
Gaji Manager 1 : 1500000.0
Uraian Manager 1 : 20

Name 2 : Manager 2
Jam kerja Manager 2 : 7.5
Gaji Manager 2 : 1000000.0
Uraian Manager 2 : 20

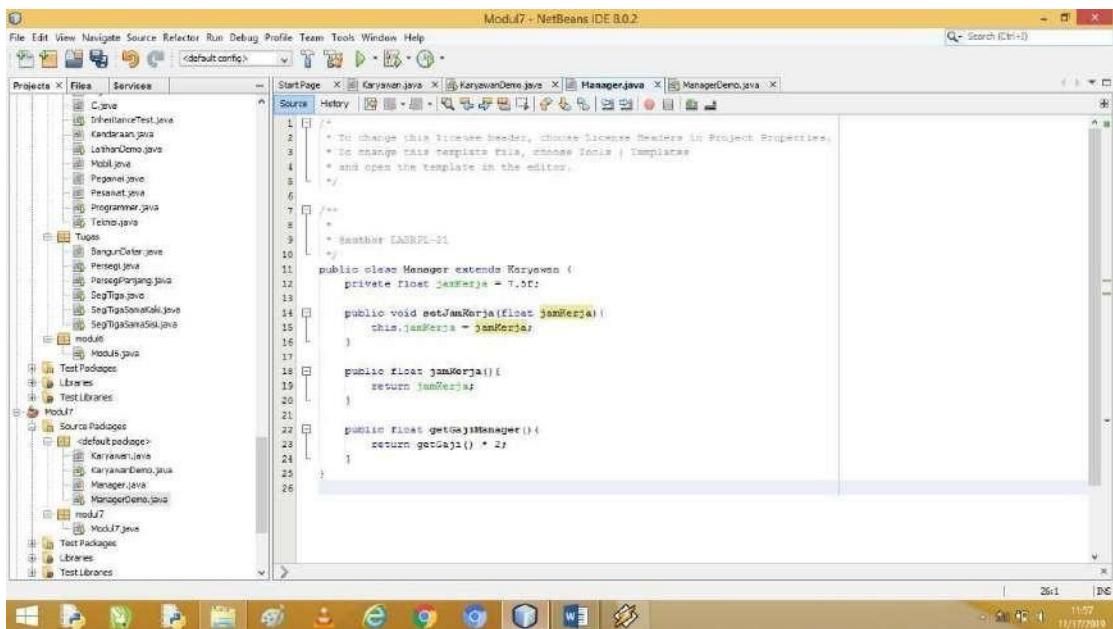
Name 3 : Manager 3
Jam kerja Manager 3 : 7.5
Gaji Manager 3 : 400000.0
Uraian Manager 3 : 20

Name 4 : Manager 4
Jam kerja Manager 4 : 7.5
Gaji Manager 4 : 600000.0
Uraian Manager 4 : 20

Name 5 : Manager 5
Jam kerja Manager 5 : 7.5
Gaji Manager 5 : 500000.0
Uraian 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 Find Replace Go To Typeahead
Source Manager.java
1 /**
2  * To change this template 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 : DASKPL-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 getJamKerja() {
18         return jamKerja;
19     }
20
21     public float getGajiManager() {
22         return getGaji() * 2f;
23     }
24
25 }
```

The screenshot shows the NetBeans IDE interface with the title "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 New Project, Open, Save, Build, Run, Stop, and others. The left sidebar shows the project structure under "Projects": Cleve (InheritanceTest.java, Kediri.java, LahirBersama.java, Mobil.java, Pegawai.java, Pesawat.java, Programma.java, Teman.java); Tugas (BangunDatar.java, Persegi.java, PersegiPanjang.java, Segitiga.java, SegitigaCancan.java, SegitigaGanteng.java); modul5 (Modul5.java); Test Packages; Libraries; Modul7 (Karyawan.java, KaryawanDemo.java, Manager.java, ManagerDemo.java); modul7 (Modul7.java); Test Packages; Libraries; Test Libraries. The main editor window displays Java code for the Manager class:

```
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: LABANUZ
7 */
8
9 public class ManagerDemo {
10     public static void main(String[] args) {
11         Manager m1 = new Manager();
12         Manager m2 = new Manager();
13         Manager m3 = new Manager();
14         Manager m4 = new Manager();
15         Manager m5 = new Manager();
16
17         m1.setGaji(500000);
18         m1.setNama("Manager 1");
19         m1.setTulis(50);
20         m1.setUmur(25);
21
22         m2.setGaji(1000000);
23         m2.setNama("Manager 2");
24         m2.setTulis(25);
25         m2.setUmur(25);
26
27         m3.setGaji(200000);
28         m3.setNama("Manager 3");
29         m3.setTulis(26);
30
31     }
32 }
```

Modul7 - NetBeans IDE 8.0.2

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

Search (Ctrl+F)

Projects Files Services

KaryawanDemo.java Manager.java ManagerDemo.java

Citra InheritanceTest.java Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java

Kendaraan.java LahirBatin.java Main.java Program.java Prasasti.java Programmet.java Teksita.java

Tipez BanggaDotor.java Persegip.java Persegipding.java Segitiga.java SegitigaSemua.java SegitigaSemua.java

modul6 Modul6.java

Test Packages Libraries Test Libraries Modul7

source includes default package Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java

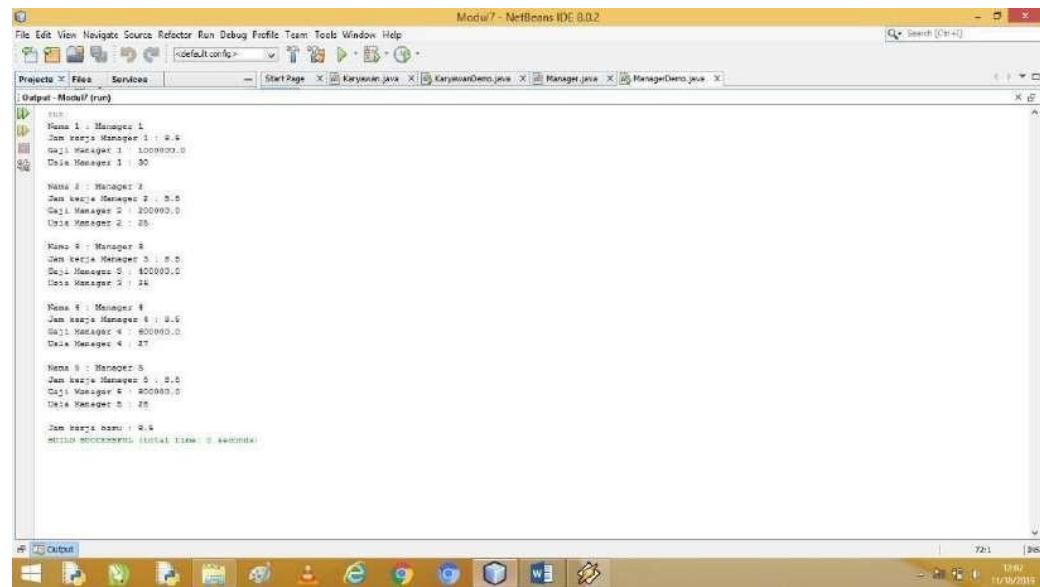
modul7 Modul7.java

Test Packages Libraries Test Libraries

Start Page History

28 m3.setGaji(200000);
29 m3.setNama("Manager 3");
30 m3.setUsia(26);
31 m3.setJmlRkja(0.5);
32
33
34 m4.setGaji(300000);
35 m4.setNama("Managers 4");
36 m4.setUsia(27);
37 m4.setJmlRkja(0.5);
38
39 m5.setGaji(400000);
40 m5.setNama("Managers 5");
41 m5.setUsia(28);
42 m5.setJmlRkja(0.5);
43
44 System.out.println("Name 1 : " + m1.getNama());
45 System.out.println("Jml kerja Manager 1 : " + m1.jmlRkja());
46 System.out.println("Usia Manager 1 : " + m1.getUsia());
47 System.out.println("Name Managers 1 : " + m1.getNama());
48
49 System.out.println("Name 2 : " + m2.getNama());
50 System.out.println("Jml kerja Manager 2 : " + m2.jmlRkja());
51 System.out.println("Usia Manager 2 : " + m2.getUsia());
52 System.out.println("Name Manager 2 : " + m2.getNama() + "\n");
53
54 System.out.println("Name 3 : " + m3.getNama());
55 System.out.println("Jml kerja Manager 3 : " + m3.jmlRkja());
56 System.out.println("Usia Manager 3 : " + m3.getUsia());
57 System.out.println("Name Manager 3 : " + m3.getNama() + "\n");

Output dari program diatas:



```
Modul7 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Projects Services | Start Page Karyawan.java KaryawanDemo.java Manager.java ManagerDemo.java
Output - Modul7 (run)
[Output]
Name 1 : Manager 1
Jan karya Manager 1 : 2.4
Gaji Manager 1 : 1000000.0
Diksi Manager 1 : 30

Name 2 : Manager 2
Jan karya Manager 2 : 3.5
Gaji Manager 2 : 2000000.0
Upta Manager 2 : 25

Name 3 : Manager 3
Jan karya Manager 3 : 5.5
Gaji Manager 3 : 4000000.0
Della Manager 3 : 28

Name 4 : Manager 4
Jan karya Manager 4 : 8.0
Gaji Manager 4 : 6000000.0
Dika Manager 4 : 27

Name 5 : Manager 5
Jan karya Manager 5 : 8.5
Gaji Manager 5 : 2000000.0
Dela Manager 5 : 26

Jan karya name : 2.4
BUILD SUCCESSFUL (total time: 0 seconds)
```

MODUL 8

Nama : Akbar Probo B.

NIM : L200180078

Kelas : B

8.1.1 Overriding

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

- ParentClass.java**: Contains a public class ParentClass with a printOut() method that prints "Ini adalah super class".
- ChildClass.java**: Contains a public class 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**: Contains a public class DemoOverriding with a main() method. It creates instances of ParentClass and ChildClass and calls their printOut() methods.
- Hewan.java**: Contains a public class 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 package Modul8;
11
12 public class ChildClass extends ParentClass {
13     void printOut(){
14         System.out.println("Ini adalah sub class");
15     }
16     void hello(){
17         System.out.println("Hello world");
18     }
19 }
20
21
22 package Modul8;
23
24 public class DemoOverriding {
25     public static void main(String[] args) {
26         ParentClass cs = new ParentClass();
27         ChildClass cc = new ChildClass();
28         cs.printOut();
29         cc.printOut();
30     }
31 }
32
33
34 package Modul8;
35
36 public class Hewan {
37     public void jalan(){
38         System.out.println("Hewan berjalan");
39     }
40 }
```

```
1 Kucing.java 2 Anjing.java 3 Pet.java 4 TestPolymorphism.java 5 Bang.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 iSalan(){
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\nMaoow... Maoow";
18     }
19 }
20
```

8.1.2 Upcasting

```
1 Kucing.java 2 Sepeda.java 3 Anjing.java 4 TestPolymorphism.java 5 Bang.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 Bang.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     @Override
9     public OverloadingConstructor(){
10 }
11     @Override
12     public OverloadingConstructor(int idUser, String username){
13         this.idUser = idUser;
14         this.username = username;
15     }
16 }
```

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

src

out

bin

lib

modul8

Modul8

Tugas

CustomerData

Elang

Anjing

ChicClass

DemoOverriding

Hewan

Kucing

OverloadingConstructor

ParentClass

Pet

Sepeda

TestPolymorphism

Week2

Week3

collage.iml

External Libraries

Scratches and Consoles

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

```
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
```

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... Guk...

Process finished with exit code 0

8.3 Tugas

Kucing.java Sepeda.java TestPolymorphism.java Elang.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 View Insert Tools Window Help Fri Nov 22, 15:52:29 143 202 100% 143 202 Fri Nov 22, 15:52:29 100%

File Project Structure Modules CustomerData.java

CustomerData.java

```
package Modul3.Tugas;

public class CustomerData {
    String name;
    int alamat;
    float pekerjaan;
}

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

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

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

public static void main(String[] args) {
    CustomerData cd1 = new CustomerData("Dikas", "Suloharjo", "Freelance");
    CustomerData cd2 = new CustomerData("Dikas", 20);
    CustomerData cd3 = new CustomerData(28000000);

    CustomerData cd4 = new CustomerData("Dikas", "Janitra", "Designer");
    CustomerData cd5 = new CustomerData(20);
    CustomerData cd6 = new CustomerData(20000000);
}
```

CustomerData

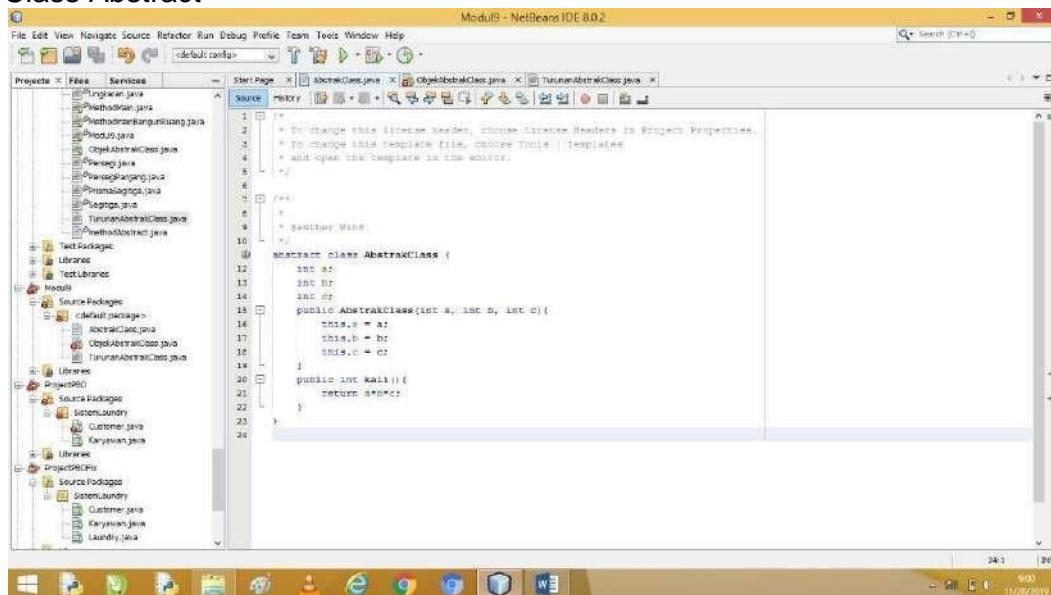
/usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-community/185/lib/idea_rt.jar=1533:/snap/intellij-idea-community/185/bin -Dfile.encoding=UTF-8 -classpath /home/dzakifadz/IdeaProjects/02/Modul3/Tugas/CustomerData.java

Name : Dikas
Alamat : Suloharjo
Pekerjaan : Freelance
Tanggal Lahir : 20 April
Gaji Anda adalah : 2.0E7

MODUL 9

Nama : Akbar Probo B.
NIM : L200180078
Kelas : B

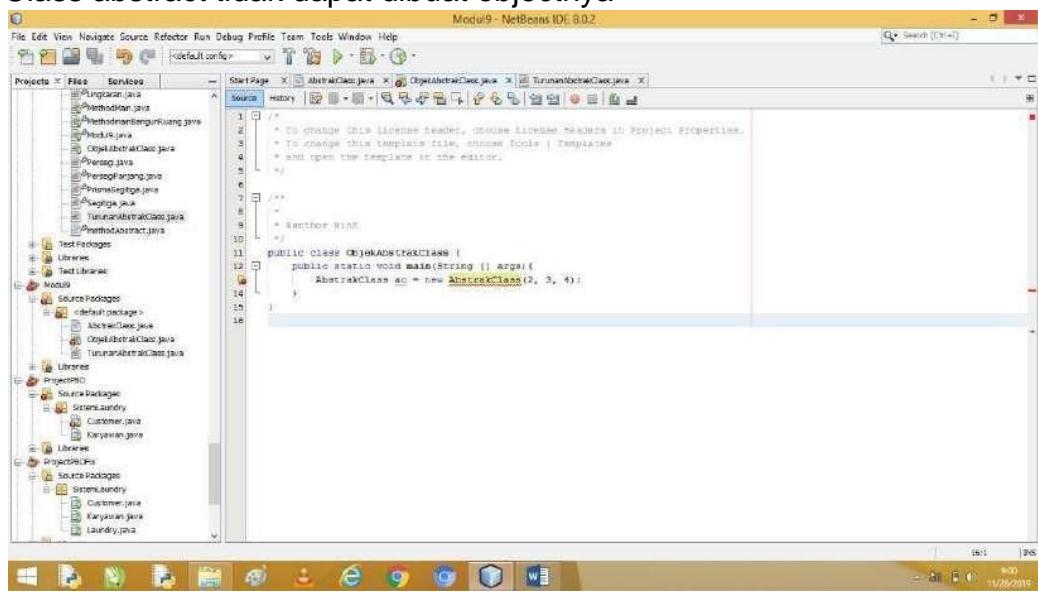
Class Abstract



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 PingPong.java, MethodAbstract.java, and various SystemLaundry and Laundry class files. The main editor window shows the code for AbstractClass.java:

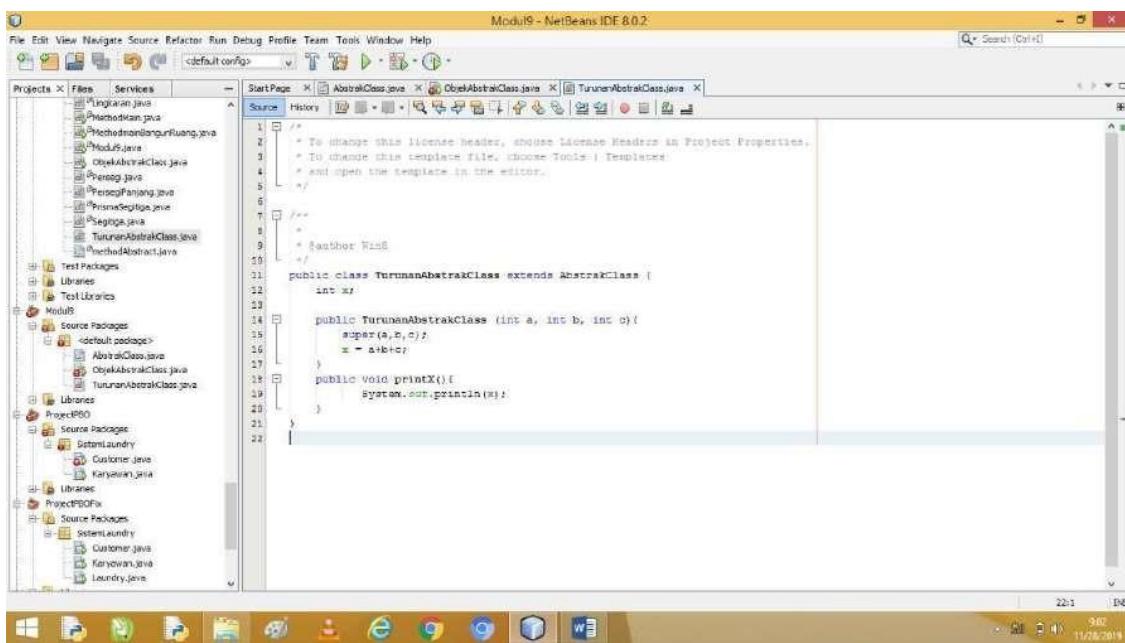
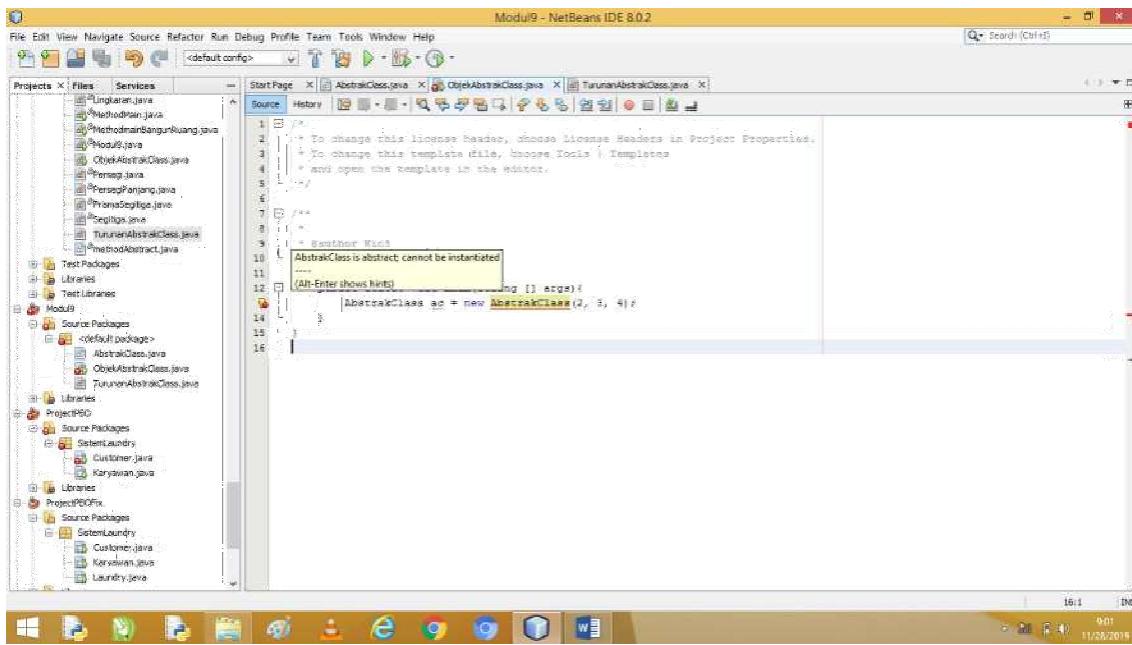
```
1  /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates.
4  * and open the template in the editor.
5  */
6
7  /**
8  * Author: Winifreda
9  */
10
11 abstract class AbstractClass {
12     int a;
13     int b;
14     int c;
15     public AbstractClass(int a, int b, int c) {
16         this.a = a;
17         this.b = b;
18         this.c = c;
19     }
20     public int kali() {
21         return a*b*c;
22     }
23 }
```

Class abstract tidak dapat dibuat objectnya

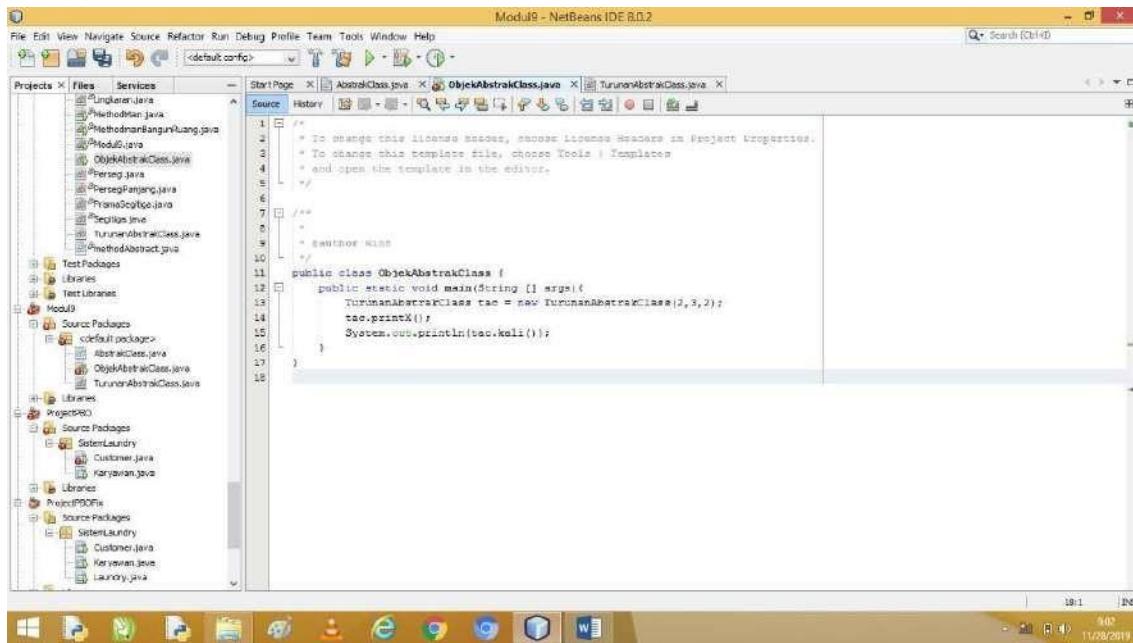


The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The left sidebar displays a project structure with Java files like AbstractClass.java, Main.java, and various SystemLaundry and Laundry class files. The main editor window shows the code for Main.java:

```
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  * Author: Winifreda
9  */
10
11 public class Main {
12     public static void main(String[] args) {
13         AbstractClass ac = new AbstractClass(2, 3, 4);
14     }
15 }
```

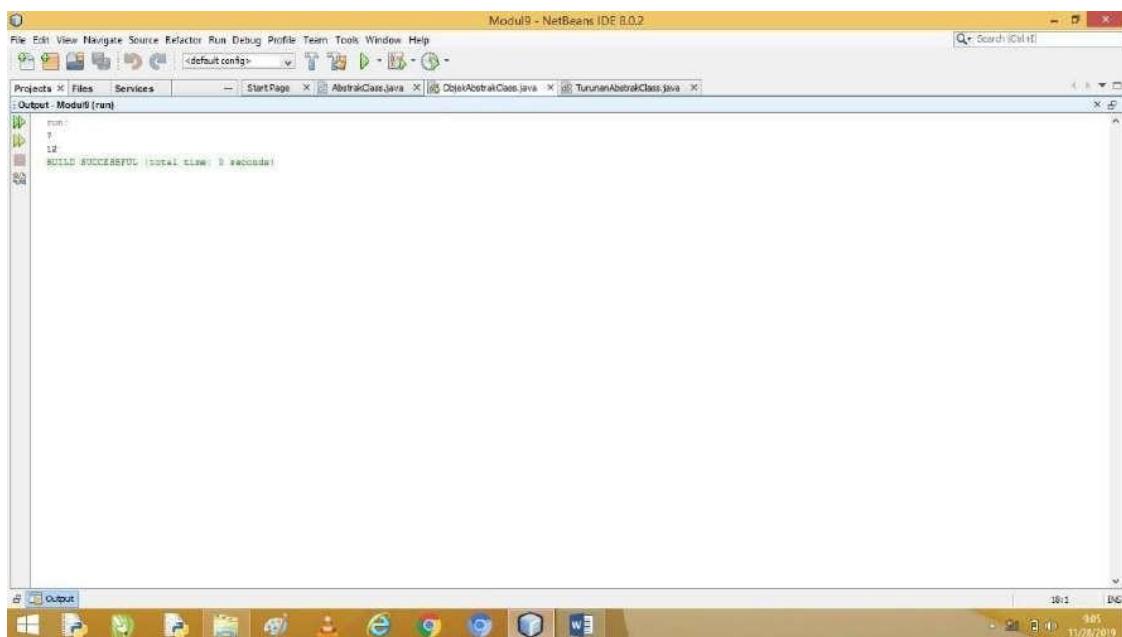


Penggunaan properties class abstract melalui object subclass



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 under the "Modul9" project. The Files tab is selected, showing the code for "ObjectAbstrakClass.java". The code is as follows:

```
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 : Kurniawan
7  */
8
9 public class ObjekAbstrakClass {
10     public static void main(String [] args){
11         TurunanAbstrakClass tao = new TurunanAbstrakClass(2,3,2);
12         tao.printX();
13         System.out.println(tao.kali());
14     }
15 }
16
17 }
```



The screenshot shows the NetBeans IDE interface with the title bar "Modul9 - NetBeans IDE 8.0.2". The menu bar is identical to the previous screenshot. The Projects tab shows the "Modul9" project. The Output tab is selected, showing the build results:

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

METHOD ABSTRACT

Class yang mengandung method abstract

Implementasi method abstract oleh subclass

Penggunaan properties method abstract melalui object subclass

The screenshot shows the NetBeans IDE interface with the title bar "MethodMain - NetBeans IDE 16.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Tools, Window, Help. The toolbar has icons for New, Open, Save, Cut, Copy, Paste, Find, Replace, and others. The left sidebar displays the Project Explorer with packages like "methodMain package", "methodMainTest", "methodMainClient", "AbstractClass", "ConcreteClass", "Customer", "Employee", "SalesOrder", and "SalesOrderLine". The Libraries and Properties sections are also visible. The right side shows the Source Editor with the code for MethodMain.java:

```
21 * To change this license header, choose License Headers in Project Properties.
22 * To change this template file, choose Tools | Templates.
23 * and open the template in the editor.
24 */
25 /**
26 * Another Note
27 */
28
29 public class MethodMain {
30     public static void main(String[] args){
31         Person ppp = new Person();
32         System.out.println("Name = " + ppp.getName());
33         System.out.println("Age = " + ppp.getAge());
34     }
35 }
```

LATIHAN

Class PersegiPanjang

The screenshot shows the NetBeans IDE interface with the title "Modul09 - NetBeans IDE 8.0.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, and a search bar. The project tree on the left lists packages like "com.ubaya.modul09", "Test Package", "Libraries", and "Modul09". Under "Source Packages", there are files such as "AsterixChess.java", "JavaGaming.java", "Unguanji.java", "Nethack.java", "RockPaperScissors.java", "PrayingMantis.java", "Poopigee.java", "TuringMachine.java", and "Pythagorean.java". The main code editor window displays the following Java code for "Person.java":

```
1 // To change this template, choose Tools | Templates.
2 // To change this file template, choose Tools | Templates.
3 // and open the template in the editor.
4
5 /**
6 * Author: Vasil
7 */
8
9 public class Person implements methodAbstract {
10     int ganggang = 10;
11     int setengah = 15;
12
13     @Override
14     public int dom() {
15         return ganggang + setengah;
16     }
17
18     @Override
19     public int kelingking() {
20         return 3 * (ganggang + setengah);
21     }
22
23     @Override
24     public int keling() {
25         return 3 * (ganggang + setengah);
26     }
27 }
```

Class Jajar Genjang

Class Lingkaran

The screenshot shows the NetBeans IDE interface with the title "Modul9 - NetBeans IDE 8.0.2". The code editor displays the Java file "Lingkaran.java" which contains the following code:

```
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: Nurdin
7 */
8
9 public class Lingkaran extends methodAbstract {
10     int r = 7;
11
12     @Override
13     public int luas() {
14         return (22*7*7)/7;
15     }
16
17     @Override
18     public int keliling() {
19         return (2*22*7)/7;
20     }
21 }
22
23
24
```

Class Segitiga

The screenshot shows the NetBeans IDE interface with the title "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, Save, Run, Stop, and Exit. The top status bar shows "Search (Ctrl+F) ...". The left sidebar displays the Project Explorer with packages like "com.ubaya.modul9", "Test Package", "Libraries", "Test Libraries", and "modul9". It also shows the "Source Packages" section with files such as "AbstractClass.java", "ArrayList.java", "ArrayListSeq.java", "Inheritance.java", "Vertebrates.java", "DekstopIconCreator.java", "Pengaruh.java", "PengaruhSeq.java", "Sequence.java", "TuturankWebClient.java", "attributeList.java", and "refreshAbstract.java". The main editor window shows Java code for a "Sequence" class:

```
1 package com.ubaya.modul9;
2
3 import java.util.ArrayList;
4 import java.util.List;
5
6 public class Sequence extends methodAbstract {
7     int size = 0;
8     int index = 0;
9     int MAXINDEX = 10;
10
11     @Override
12     public int loss() {
13         return size * length();
14     }
15
16     @Override
17     public int kitting() {
18         return size + length() + MAXINDEX;
19     }
20
21 }
```

Class latihanDemo (main class)

The screenshot shows the NetBeans IDE interface with the title bar "ModulU - 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, Open, Save, Cut, Copy, Paste, Find, Replace, and others. The left sidebar shows the Project Explorer with a tree view of packages, source files like "Begitul.java", and libraries. The right pane displays the code editor for "BahanBakar.java" with the following content:

```
public class BahanBakar {
    public static void main(String[] args) {
        Persegi pan = new Persegi();
        System.out.println("Persegi Panjang = " + pan.getKell());
        System.out.println("Area Persegi = " + pan.getArea() + "\n");

        PersegiPanjang pp = new PersegiPanjang();
        System.out.println("Persegi Panjang = " + pp.getKell());
        System.out.println("Area Persegi Panjang = " + pp.getArea() + "\n");

        Lingkaran lg = new Lingkaran();
        System.out.println("Lingkaran = " + lg.getKell());
        System.out.println("Area Lingkaran = " + lg.getArea() + "\n");

        Lingkaran lk = new Lingkaran();
        System.out.println("Lingkaran = " + lk.getKell());
        System.out.println("Area Lingkaran = " + lk.getArea());
    }
}
```

Output

Modul9 - NetBeans IDE 8.0.2

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

default config - Main.java - MethodManager.java -

Projects Files Services Start Page InherDemo.java MethodManager.java

Output - Modul9 (run)

```
Swelling Penyang = 20
Isik Penyang = 15

Swelling Penyang Sanjang = 10
Isik Sanjang = 100

Swelling Tatar Gengang = 90
Isik Tatar Gengang = 90

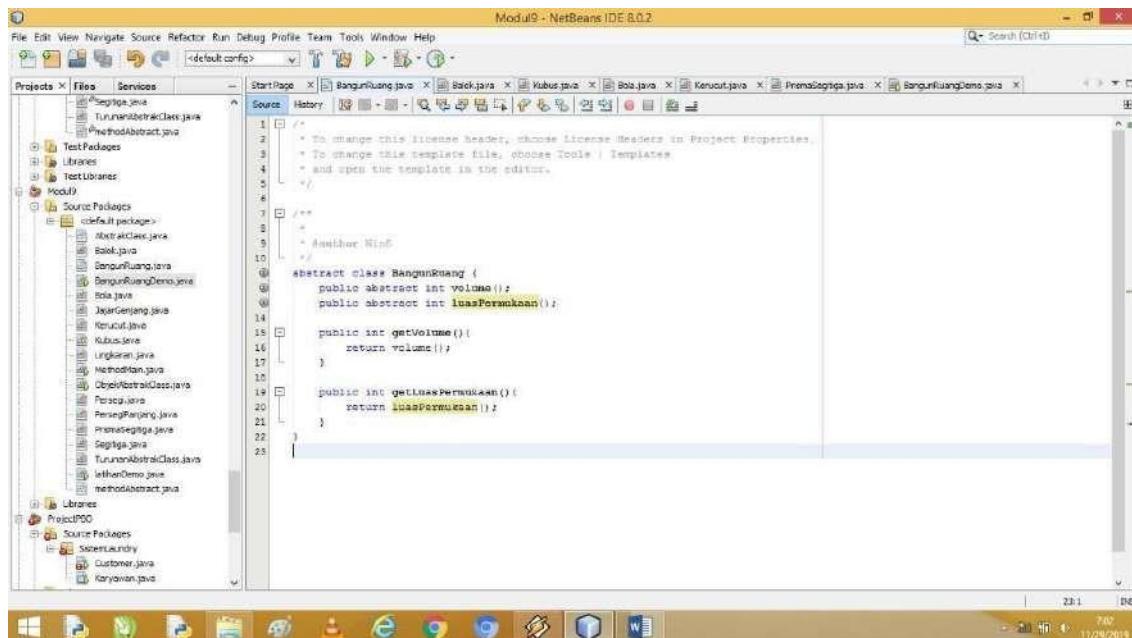
Swelling Renggang = 24
Isik Renggang = 24

Swelling Langgam = 44
Isik Langgam = 104

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

TUGAS

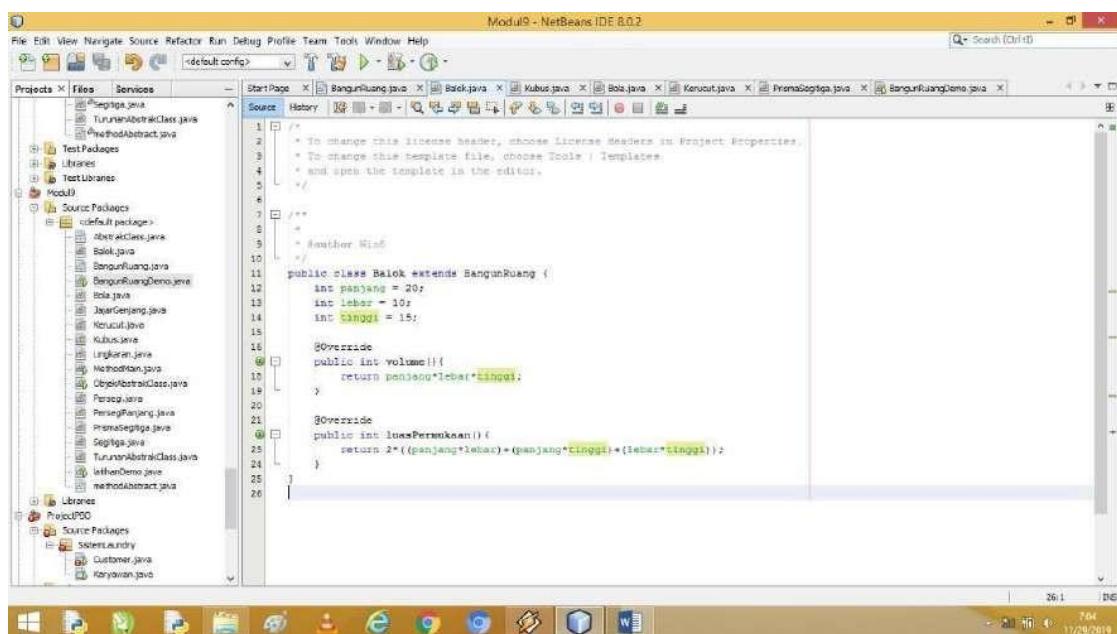
Class BangunRuang (Abstract Class)



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 header comment, a class definition with abstract methods `volume()` and `luasPermukaan()`, and implementations for `getVolume()` and `getLuasPermukaan()`.

```
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: Winifred
9 */
10 abstract class BangunRuang {
11     public abstract int volume();
12     public abstract int luasPermukaan();
13
14     public int getVolume(){
15         return volume();
16     }
17
18     public int getLuasPermukaan(){
19         return luasPermukaan();
20     }
21 }
22
```

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 instance variables (`panjang`, `lebar`, `tinggi`) and overrides the abstract methods `volume()` and `luasPermukaan()`.

```
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: Winifred
9 */
10
11 public class Balok extends BangunRuang {
12     int panjang = 20;
13     int lebar = 10;
14     int tinggi = 15;
15
16     @Override
17     public int volume(){
18         return panjang*lebar*tinggi;
19     }
20
21     @Override
22     public int luasPermukaan(){
23         return 2*(panjang*lebar+(panjang*tinggi)+(lebar*tinggi));
24     }
25 }
```

Class Kubus

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 "Projects" with several Java files listed. The main editor window shows the code for the "Kubus.java" class, which extends "BangunRuang". The code includes a constructor setting side length to 10, and overridden methods for volume and surface area calculation.

```
public class Kubus extends BangunRuang {
    int side = 10;

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

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

Class Bola

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 "Projects" with several Java files listed. The main editor window shows the code for the "Bola.java" class, which extends "BangunRuang". The code includes a constructor setting radius to 21, and overridden methods for volume and surface area calculation.

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

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

    @Override
    public int luasPermukaan() {
        return (4*3.14*r*r);
    }
}
```

Class Kerucut

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 "Projects" with several Java files listed. The main editor window shows the code for the "Kerucut.java" class, which extends "BangunRuang". The code includes a constructor setting radius to 21 and height to 50, and overridden methods for volume and surface area calculation.

```
public class Kerucut extends BangunRuang {
    int r = 21;
    int t = 50;

    @Override
    public int volume() {
        return ((22/7)*r*r*t)/3;
    }

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

Class PrismaSegitiga

Module9 - NetBeans IDE 8.0.2

```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
File StartPage BangunRuang.java Edit Balok.java Kubus.java Kelout.java PrismaSegitiga.java BangunRuangDemo.java
Projects Services
Modul9
Source Packages Segitiga
    SegitigaClass.java
    TestAbstract.java
    TestConcrete.java
    TestLibraries
    Modul9
        Source Packages
            default package
                AbstrakClass.java
                Balok.java
                BangunRuang.java
                Balok.java
                BangunRuangDemo.java
                Bola.java
                JajarGenggang.java
                Kercut.java
                Kubus.java
                PrismaSegitiga.java
                Segitiga.java
                TurunanAbstractClass.java
                IothanDemo.java
                methodAbstract.java
        Libraries
    Project999
        Source Packages
            SistemLaundry
                Customer.java
                Karyawan.java
Search (Ctrl+F)
```

```
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: Rival
7 */
8
9 public class PrismaSegitiga extends BangunRuang {
10     int alasKet = 96;
11     int tinggiAlas = 32;
12     int tinggi = 30;
13
14     @Override
15     public int volume(){
16         return alasKet*tinggi;
17     }
18
19     @Override
20     public int luasPermukaan(){
21         return (2*alasKet)+(tinggiAlas*tinggi);
22     }
23
24 }
```

Class BangunRuangDemo (Main Class)

Module - NetBeans IDE 8.0.2

```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
File StartPage BangunRuang.java Edit Balok.java Kubus.java Kelout.java PrismaSegitiga.java BangunRuangDemo.java
Projects Services
Modul9
Source Packages Segitiga
    SegitigaClass.java
    TestAbstract.java
    TestConcrete.java
    TestLibraries
    Modul9
        Source Packages
            default package
                AbstrakClass.java
                Balok.java
                BangunRuang.java
                Balok.java
                BangunRuangDemo.java
                Bola.java
                JajarGenggang.java
                Kercut.java
                Kubus.java
                PrismaSegitiga.java
                Segitiga.java
                TurunanAbstractClass.java
                IothanDemo.java
                methodAbstract.java
        Libraries
    Project999
        Source Packages
            SistemLaundry
                Customer.java
                Karyawan.java
Search (Ctrl+F)
```

```
1 // and now the template is the source.
2
3 /**
4 * Author: Rival
5 */
6
7 public class BangunRuangDemo {
8     public static void main(String[] args){
9         Balok blk = new Balok();
10        System.out.println("Volume Balok = " + blk.getVolume());
11        System.out.println("Luas Permukaan Balok = " + blk.getLuasPermukaan() + "\n");
12
13        Kubus kubus = new Kubus();
14        System.out.println("Volume Kubus = " + kubus.getVolume());
15        System.out.println("Luas Permukaan Kubus = " + kubus.getLuasPermukaan() + "\n");
16
17        Bola bl = new Bola();
18        System.out.println("Volume Bola = " + bl.getVolume());
19        System.out.println("Luas Permukaan Bola = " + bl.getLuasPermukaan() + "\n");
20
21        Kercut krcut = new Kercut();
22        System.out.println("Volume Kercut = " + krcut.getVolume());
23        System.out.println("Luas Permukaan Kercut = " + krcut.getLuasPermukaan() + "\n");
24
25        PrismaSegitiga prsg = new PrismaSegitiga();
26        System.out.println("Volume Prisma Segitiga = " + prsg.getVolume());
27        System.out.println("Luas Permukaan Prisma Segitiga = " + prsg.getLuasPermukaan());
28    }
29 }
```

Module - NetBeans IDE 8.0.2

```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
File StartPage BangunRuang.java Edit Balok.java Kubus.java Bola.java Kelout.java PrismaSegitiga.java BangunRuangDemo.java
Projects Services
Modul9
Source Packages Segitiga
    SegitigaClass.java
    TestAbstract.java
    TestConcrete.java
    TestLibraries
    Modul9
        Source Packages
            default package
                AbstrakClass.java
                Balok.java
                BangunRuang.java
                Balok.java
                BangunRuangDemo.java
                Bola.java
                JajarGenggang.java
                Kercut.java
                Kubus.java
                PrismaSegitiga.java
                Segitiga.java
                TurunanAbstractClass.java
                IothanDemo.java
                methodAbstract.java
        Libraries
    Project999
        Source Packages
            SistemLaundry
                Customer.java
                Karyawan.java
Search (Ctrl+F)
```

```
Volume Balok = 3000
Luas Permukaan Balok = 1300
Volume Kubus = 1000
Luas Permukaan Kubus = 600
Volume Bola = 38888
Luas Permukaan Bola = 1444
Volume Kercut = 22100
Luas Permukaan Kercut = 3544
Volume Prisma Segitiga = 2880
Luas Permukaan Prisma Segitiga = 1142
BUILD SUCCESSFUL (total time: 1 seconds)
```

MODUL 10

Nama : Akbar Probo B.

NIM : L200180078

Kelas : B

DEKLARASI INTERFACE

Contoh Sebuah Interface Sederhana

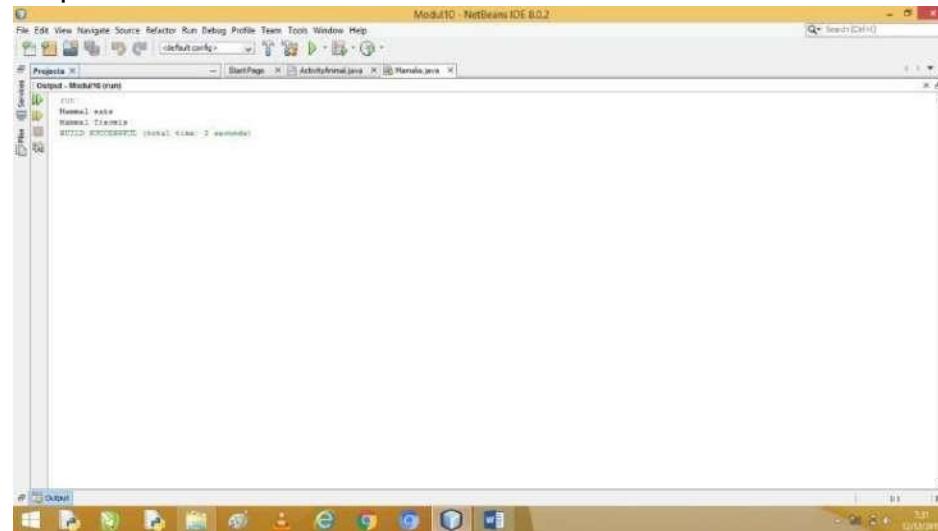
```
Module10 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
File Services Projects Modules Tools Window Help
ActivityAnimal.java X
Source History Diff Find Replace Undo Redo Cut Copy Paste Select All
1 /**
2  * To change this license header, choose 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: Mira
9 */
10 public interface ActivityAnimal {
11     public void eat();
12     public void travel();
13 }
14
15 
```

IMPLEMENTASI INTERFACE

Program 3. Class yang mengimplementasikan sebuah interface

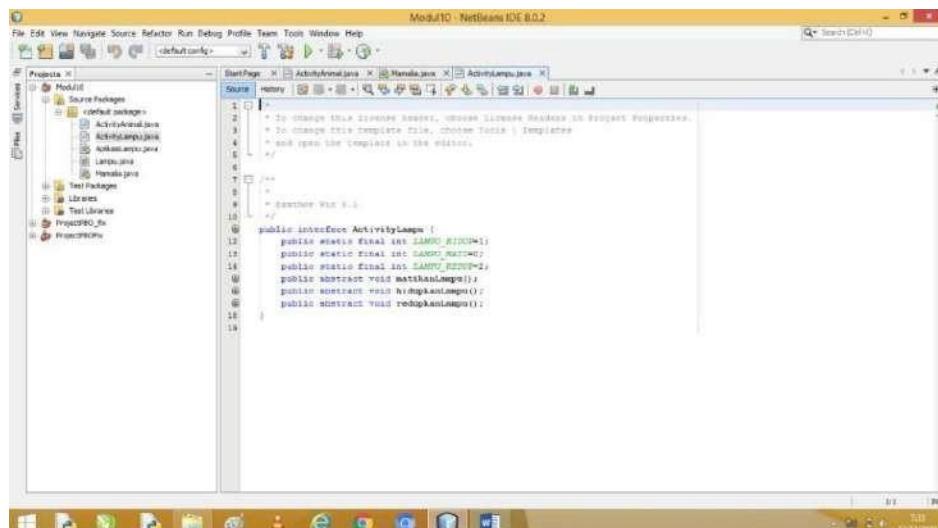
```
Module10 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
File Services Projects Modules Tools Window Help
ActivityAnimal.java X Mammal.java X
Source History Diff Find Replace Undo Redo Cut Copy Paste Select All
1 /**
2  * To change this license 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: Mira
9 */
10
11 public class Mammal implements ActivityAnimal {
12     @Override
13     public void eat() {
14         System.out.println("Mammal eating");
15     }
16
17     @Override
18     public void travel() {
19         System.out.println("Mammal travels");
20     }
21     public int noOfLegs() {
22         return 4;
23     }
24
25     public static void main(String[] args) {
26         Mammal m = new Mammal();
27         m.eat();
28         m.travel();
29     }
30 }
```

Output:

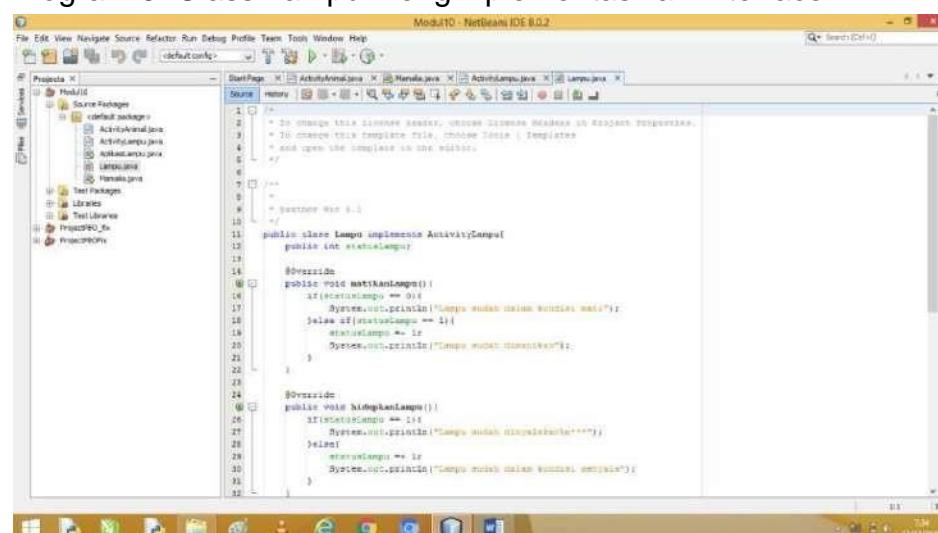


PERCOBAAN

Program 4. Interface ActivityLampu dengan Method dan Variabelnya



Program 5. Class Lampu Mengimplementasikan Interface



```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Modul10 - NetBeans IDE 6.0.2
Search (Ctrl+F)
Project Services
Modul10
Source Packages
  <default package>
    ActivityKondisi.java
    ActivityLampu.java
    AktifkanLampu.java
    Lampu.java
    MatikanLampu.java
  Test Packages
  Libraries
  Test Libraries
ProjectPOO_fix
ProjectPOOPK

Start Page < ActivityKondisi.java < Lampa.java < ActivityLampu.java < Lampa.java
Source History
18     if(statusLampu == 1){
19         if(statusLampu == 1){
20             System.out.println("Lampu sudah diaktifkan");
21         }
22     }
23
24     @Override
25     public void hidangkanLampu(){
26         if(statusLampu == 1){
27             System.out.println("Lampu sudah dimakanan(*^__^*)");
28         } else{
29             statusLampu = 1;
30             System.out.println("Lampu sudah dalam kondisi menyala");
31         }
32     }
33
34     public int wktKehabisanBahanMakanan(){
35         return statusLampu == 0 ? 1 : 0;
36     }
37
38     @Override
39     public void redmakananLampu(){
40         if(statusLampu == 0){
41             System.out.println("Lampu telah disengat");
42         } else{
43             statusLampu = 0;
44             System.out.println("Karakter Lampu telah dimakan");
45         }
46     }
47
48
49
```

Fungsi main() Untuk Menjalankan Program Interface

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

- Title Bar:** Modul10 - NetBeans IDE 6.0.2
- Menu Bar:** File Edit View Navigate Source Refactor Run Debug Profile Tools Window Help
- Toolbar:** Standard toolbar with icons for New Project, Open Project, Save, Run, Stop, and Exit.
- Search Bar:** search (Ctrl+F)
- Project Explorer (Left):** Shows the project structure under "Modul10".
 - Source Packages:
 - com.its.uts.lampu
 - com.its.uts.lampu.kontrol
 - com.its.uts.lampu.pengontrol
 - Test Packages
 - Libraries
 - Test Libraries
 - ProjectPOO_fix
 - ProjectPOOFix
- Code Editor (Right):** Displays the Java code for the `ApikasiLampu` class.

```
1 import java.util.Scanner;
2
3 /**
4 * To change this license header, choose License Headers in Project Properties.
5 * To change this template file, choose Tools | Templates
6 * and open the template in the editor.
7 */
8
9 /**
10 * Another file 8.1
11 */
12
13 public class ApikasiLampu {
14     public static void main(String[] args) {
15         Lampu lampu = new Lampu();
16         Scanner sc = new Scanner(System.in);
17         int pilih = 0;
18         System.out.println("Ketik Lampu = " + lampu.getStatusLampu() + "\n Terikat!");
19         System.out.println("Untuk menyalaikan Lampu\nUntuk memadamkan Lampu\nUntuk mengetahui Lampu");
20
21         if(lampu.setSaklar(sc.nextInt()) == 0){
22             lampu.matiLampu();
23         }else if(lampu.getStatusLampu() == 1){
24             lampu.hidupkanLampu();
25         }
26         lampu.readLampu();
27     }
28 }
29 }
```
- Bottom Bar:** Standard Windows-style taskbar with icons for Start, Task View, File Explorer, Edge, Google Chrome, FileZilla, and File Manager.

Output:

Module10 - NetBeans IDE 8.0.2

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

Output: Module10 [run]

```
Projects x Start Page x ActivityAental.java x Main.java x ActivityAntara.java x Lampu.java x AplikasiLampu.java x
```

```
status Lampu = 0
Baris 1:
0 Detik mengaktifkan Lampu
0 Detik menonaktifkan Lampu
2 Detik memerlukan Lampu
1
Lampu sudah diaktifkan
**
BUILD SUCCESSFUL (total time: 10 seconds)
```

Output Published building Module10 [run]

```
Modul10 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > Start Page ActivityAmanLampu Hamalaja ActivityLampu Lampu AplikasiLampu
Projects Modul10 (run) #2
Output Modul10 (run) #2
Status Lampu : 0
Ketikkan:
1 Untuk menyalaikan Lampu
2 Untuk mematikan Lampu
3 Untuk mengetahui Lampu
0
Lampu sudah dalam kondisi mati.
BUILD SUCCESSFUL (total time: 9 seconds)

Output Finished building Modul10 (run) #2
Windows Taskbar: 340 13/12/2019
```

TUGAS Class ActivityLampu (Class Interface)

```
Modul10 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > Start Page ActivityAmanLampu Hamalaja ActivityLampu
Projects Modul10
Source Packages
  com.ubaya.java
    ActivityAmanLampu.java
    ActivityLampu.java
    AplikasiLampu.java
    Hamalaja.java
    Lampu.java
    HamalajaTest.java
  Test Packages
  Libraries
  Test Libraries
  ProjectProperties
  ProjectPROPs
  ProjectPROPs
  ProjectPROPs

public interface ActivityLampu {
    public static final int LAMPU_HIDUP=1;
    public static final int LAMPU_MATI=0;
    public abstract void matikanLampu();
    public abstract void hidupkanLampu();
}
```

Class Lampu (Class yang mengimplementasikan interface)

```
Modul10 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > Start Page ActivityAmanLampu Hamalaja ActivityLampu Lampu
Projects Modul10
Source Packages
  com.ubaya.java
    ActivityAmanLampu.java
    ActivityLampu.java
    AplikasiLampu.java
    Hamalaja.java
    Lampu.java
    HamalajaTest.java
  Test Packages
  Libraries
  Test Libraries
  ProjectProperties
  ProjectPROPs
  ProjectPROPs

public class Lampu implements ActivityLampu {
    public int statusLampu;
}

@Override
public void matikanLampu() {
    if(statusLampu == 0)
        System.out.println("Lampu sudah dalam kondisi mati");
    else if(statusLampu == 1)
        statusLampu = 0;
        System.out.println("Lampu sudah dimatikan");
}

@Override
public void hidupkanLampu() {
    if(statusLampu == 0)
        System.out.println("Lampu sudah dimatikan");
    else
        statusLampu = 1;
        System.out.println("Lampu sudah dalam kondisi hidup");
}
```

Modul10 - NetBeans IDE 8.0.2

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

default config

Projects X StartPage X Activitylevel.java X Hamada.java X ActivityLampu.java X Lampu.java X AplikasiLampu.java

```
18     else if(statusLampu == 1){
19         statusLampu = 0;
20         System.out.println("Lampu sudah dimatikan");
21     }
22 }
23
24 @Override
25 public void hidupkanLampu(){
26     if(statusLampu == 1){
27         System.out.println("Lampu sudah dimatikan");
28     }
29     else {
30         statusLampu = 1;
31         System.out.println("Lampu sudah dalam kondisi menyala");
32     }
33 }
34
35 @Override
36 public int setSaklar(int saklar){
37     return statusLampu = saklar;
38 }
39
40 @Override
41 public void redupkanLampu(){
42     if(statusLampu == 0){
43         System.out.println("Lampu telah dimatikan");
44     }
45     else {
46         statusLampu = 1;
47         System.out.println("Redupkan lampu telah dimatikan");
48     }
49 }
50 }
```

Class AplikasiLampu (main class)

Modul10 - NetBeans IDE 8.0.2

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

default config

Projects X StartPage X Activitylevel.java X Hamada.java X ActivityLampu.java X Lampu.java X AplikasiLampu.java

```
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 package id.videofajar;
9
10 public class AplikasiLampu {
11     public static void main(String[] args) {
12         Lampu lampu = new Lampu();
13         Scanner sc = new Scanner(System.in);
14         lampu.setSaklar(0);
15         System.out.println("Status Lampu = " + lampu.getStatusLampu() + "(= Matikan)");
16         System.out.println("1 Untuk menyala lampu\n2 Untuk mematikan lampu\n3 Untuk menyalakan lampu\n4 Untuk mematikan lampu");
17
18         if(lampu.getSaklar().getNextInt() == 0){
19             lampu.menyalaLampu();
20         }
21         else if(lampu.getSaklar() == 1){
22             lampu.hidupkanLampu();
23         }
24         else{
25             lampu.redupkanLampu();
26         }
27     }
28 }
29 }
```

Output:

Modul10 - NetBeans IDE 8.0.2

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

default config

Projects X StartPage X Activitylevel.java X Hamada.java X ActivityLampu.java X Lampu.java X AplikasiLampu.java

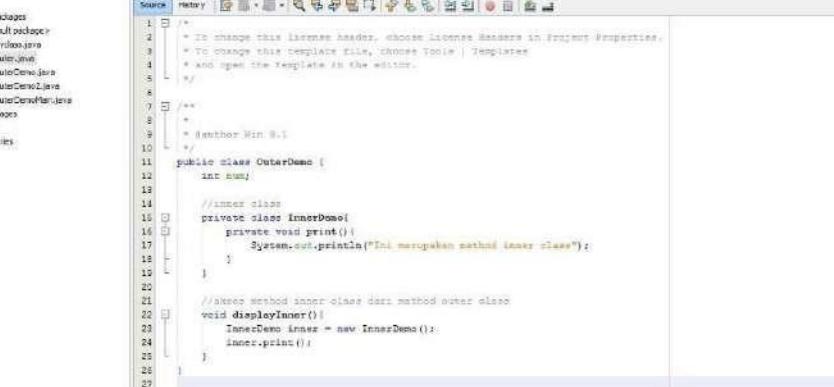
Output - Modul10 (run)

```
Status Lampu = 0
Matikan
1 Untuk menyala lampu
2 Untuk mematikan lampu
3 Untuk menyalakan lampu
4 Untuk mematikan lampu
Untuk menyala lampu. total time: 45 seconds
```

MODUL 11

Nama : Akbar Probo B.
NIM : L200180078
Kelas : B

11.1 INNER CLASS (NON-STATIC NESTED CLASS)
Program 2. Pengaksesan Properties pada Inner Class



The screenshot shows the NetBeans IDE interface with the title bar "Modul11 - NetBeans IDE 8.0.2". The left sidebar displays the project structure under "Modul11" with packages like "MyClass.java", "Outer.java", "OuterDemo.java", "OuterDemo2.java", "OuterDemoRun.java", and "Outer.java". The main editor window shows Java code for an inner class:

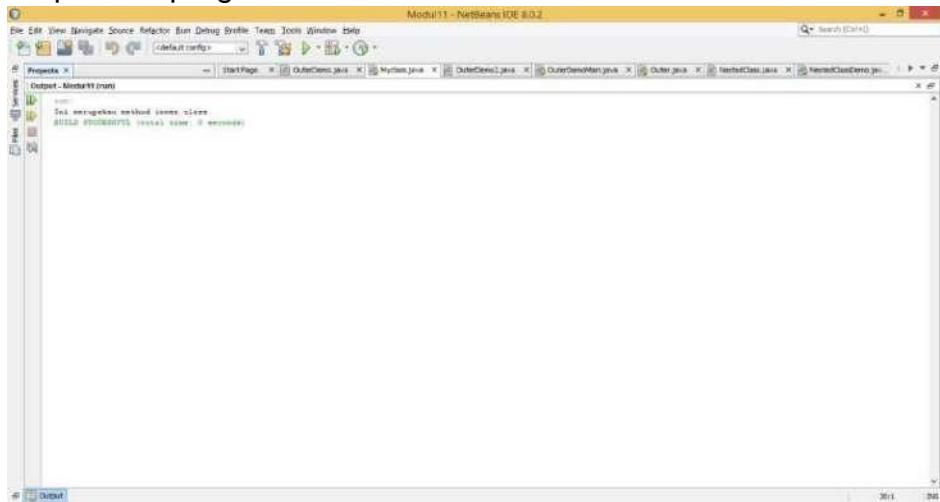
```
1  /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6
7 /**
8 * Author: Win - 8.1
9 */
10
11 public class OuterDemo {
12     int num;
13
14     //inner class
15     private class InnerDemo{
16         private void print(){
17             System.out.println("Ini merupakan method inner class");
18         }
19     }
20
21     //Access Method inner-class dari method outer class
22     void displayInner(){
23         InnerDemo inner = new InnerDemo();
24         inner.print();
25     }
26 }
27
```

Menjalankan (run) Inner Class Melalui Metode main()

The screenshot shows the NetBeans IDE interface with the title bar "Module1 - NetBeans IDE 8.0.2". The menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Tools, Window, Help. The toolbar has icons for New Project, Open, Save, Run, Stop, and others. The left sidebar shows the "Projects" view with "Module1" selected, displaying source packages like "default package", "Myclass.java", "Outer.java", "OuterDemo.java", "OuterDemo2.java", and "OuterDemoMain.java". It also shows "Test Packages", "Libraries", and "Test Libraries". The main editor area displays the following Java code:

```
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: Win 8.1
7 */
8
9 public class Myclass {
10     public static void main(String[] args) {
11         // instantiates Outer class
12         OuterDemo outer = new OuterDemo();
13
14         // invokes method outer class
15         outer.displayValue();
16     }
17 }
```

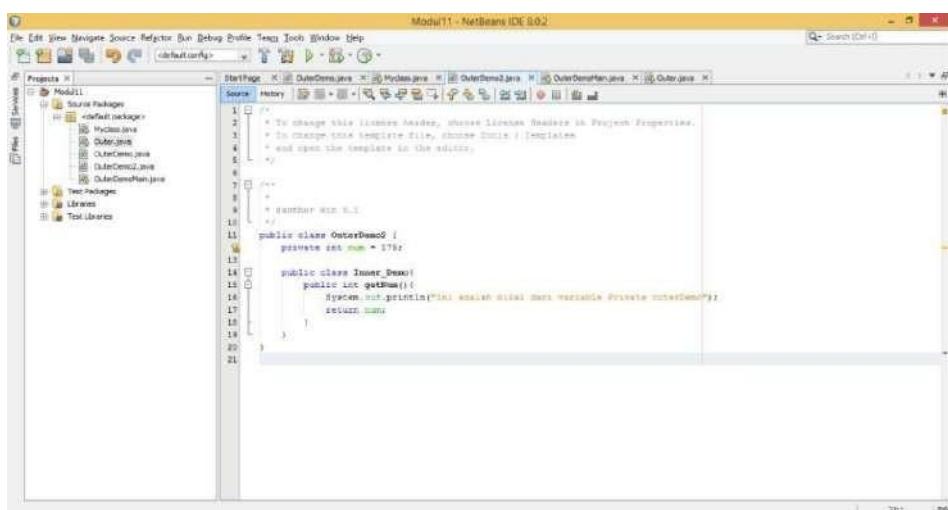
Output dari program 3



```
Output - MainWithInner.java
Info: BUILD FINISHED: total time: 0 seconds

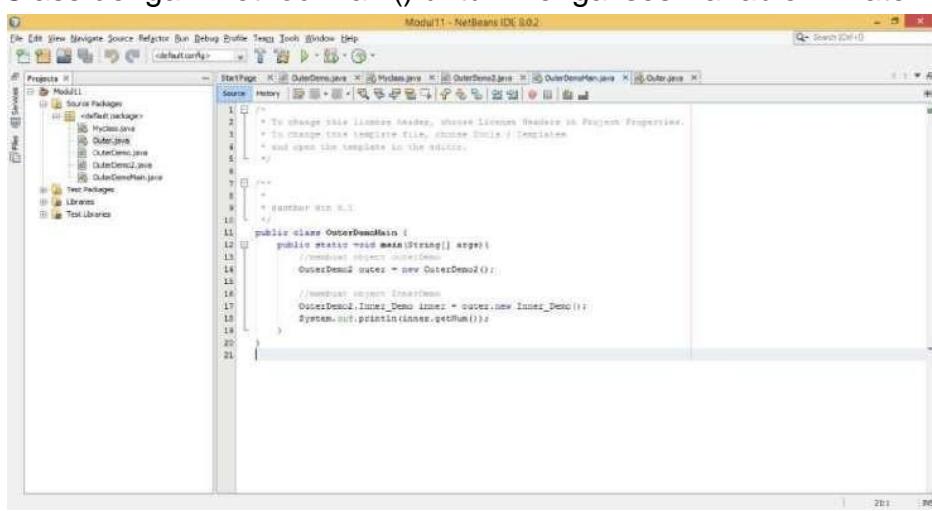
1 package main;
2
3 public class MainWithInner {
4     public static void main(String[] args) {
5         OuterDemo inner = new OuterDemo();
6
7         System.out.println(inner.getnum());
8     }
9 }
```

Program 4. Mengakses Variable Private



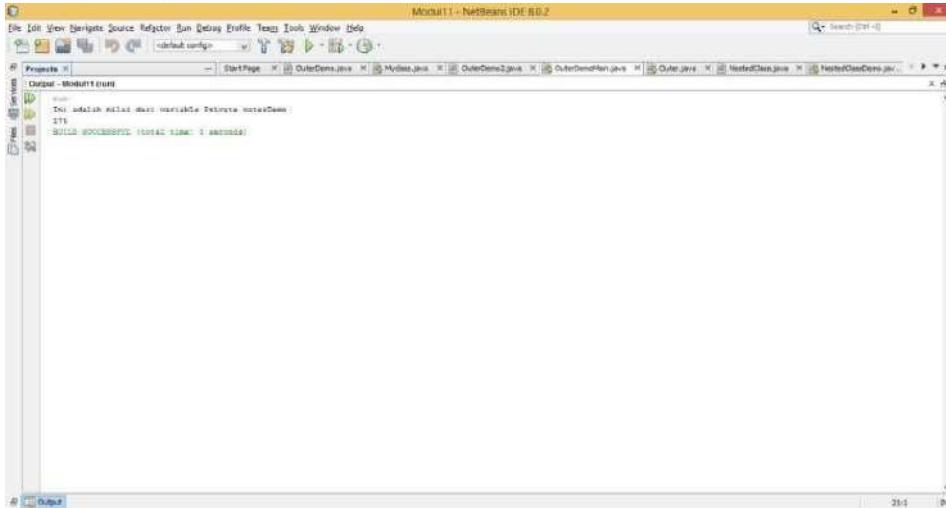
```
OuterDemo.java
1 /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6
7 /**
8  * Author : R.I.
9  */
10 public class OuterDemo {
11     private int num = 179;
12
13     public int getnum() {
14         System.out.println("INI adalah nilai dari variable Private outerDemo");
15         return num;
16     }
17 }
18
19
20
21 
```

Class dengan Method main() untuk Mengakses Variable Private



```
OuterDemoMain.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  * Author : R.I.
9  */
10 public class OuterDemoMain {
11     public static void main(String[] args) {
12         //Create object outerDemo
13         OuterDemo outer = new OuterDemo();
14
15         //Prints output
16         OuterDemo inner_Demo inner = outer.new Inner_Demo();
17         System.out.println(inner.getnum());
18     }
19 }
20
21 
```

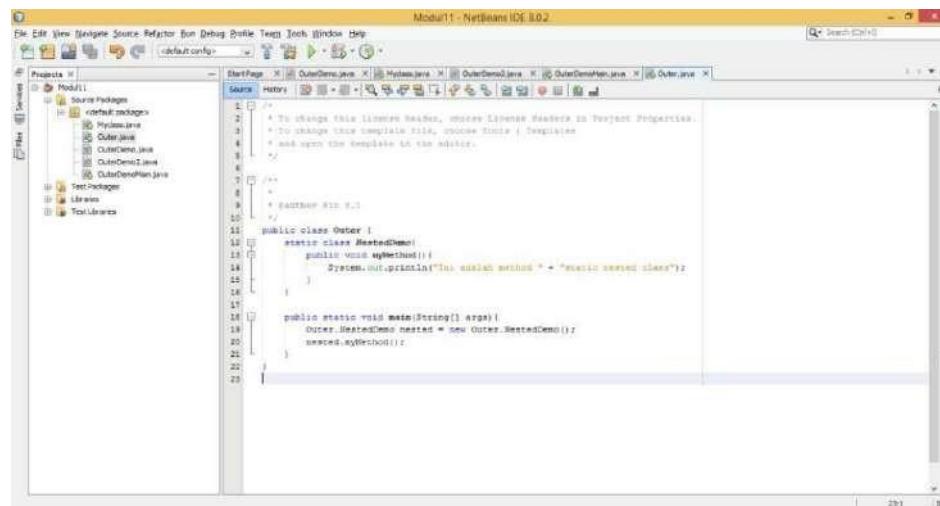
Output Program 5



```
Ini adalah nilai dari variabel outer.outerName
276
BUILD SUCCESSFUL (total time: 1 second)
```

STATIC NESTED CLASS

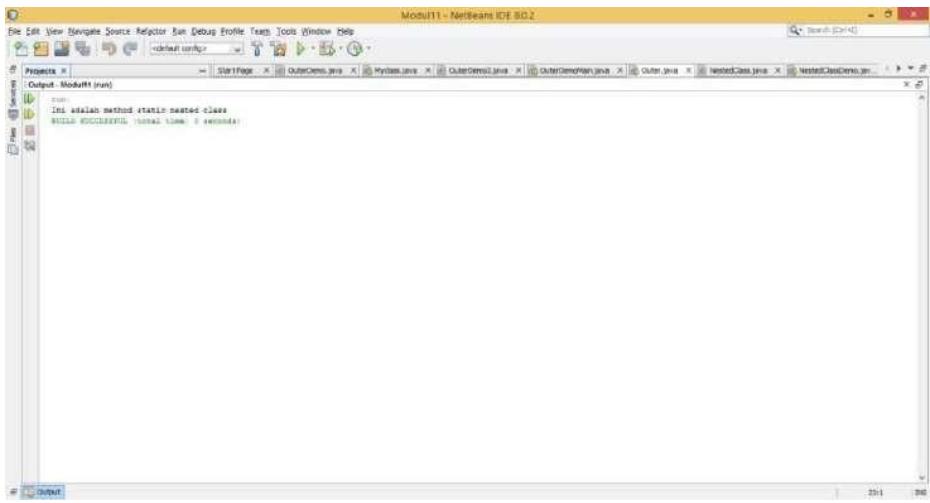
Membuat Instance dari Static Nested Class



```
/*
 * 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 modul11;

public class Outer {
    static class NestedDemo{
        public void myMethod(){
            System.out.println("Ini adalah method " + "static nested class");
        }
    }

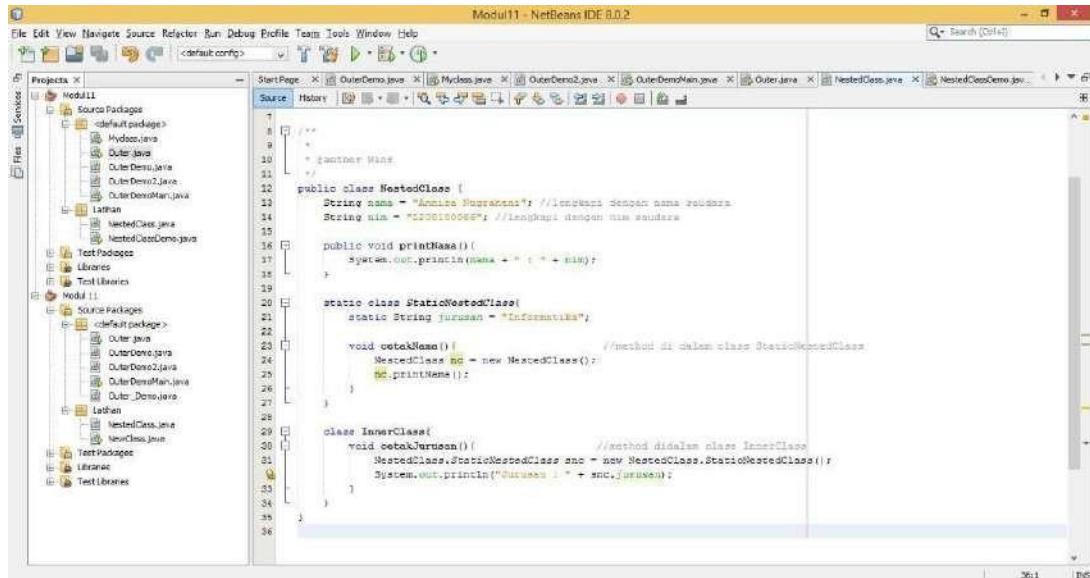
    public static void main(String[] args) {
        Outer.NestedDemo nested = new Outer.NestedDemo();
        nested.myMethod();
    }
}
```



```
Ini adalah method static nested class
BUILD SUCCESSFUL (total time: 0 seconds)
```

LATIHAN

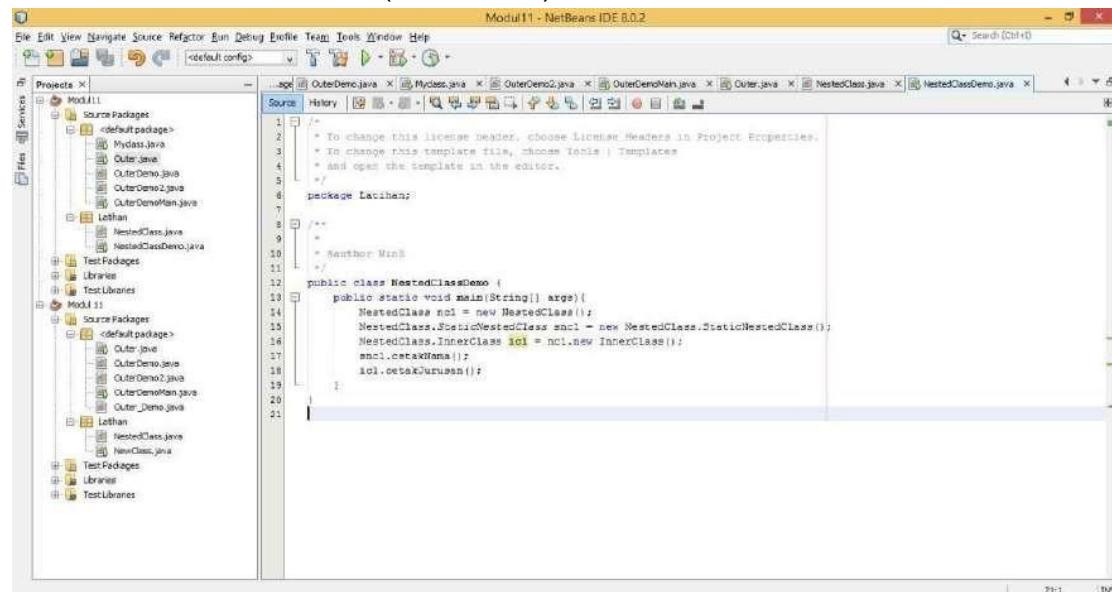
Soal Latihan Nested Class



The screenshot shows the NetBeans IDE interface with the title "Modul11 - NetBeans IDE 8.0.2". The left panel displays the project structure under "Projects X". The "NestedClassDemo.java" file is open in the editor. The code defines a nested class "NestedClass" within the "Outer" class. It includes a main method, a static nested class "StaticNestedClass", and an inner class "InnerClass". The code uses System.out.println statements to output variable values.

```
1 //  
2 *  
3 * Author Win8  
4 */  
5 public class NestedClass {  
6     String name = "Andrea Nugraha"; //lengkap dengan nama sendiri.  
7     String nim = "51201100067"; //lengkap dengan nim sendiri  
8     public void printName(){  
9         System.out.println(name + " : " + nim);  
10    }  
11  
12    static class StaticNestedClass{  
13        static String jurusan = "Informatika";  
14  
15        void cetakJurusan(){  
16            NestedClass nc = new NestedClass();  
17            nc.printName();  
18        }  
19    }  
20  
21    class InnerClass{  
22        void cetakJurusan(){  
23            NestedClass.StaticNestedClass snc = new NestedClass.StaticNestedClass();  
24            System.out.println("Jurusan : " + snc.jurusan);  
25        }  
26    }  
27}  
28  
29
```

Class Nested ClassDemo (main class)



The screenshot shows the NetBeans IDE interface with the title "Modul11 - NetBeans IDE 8.0.2". The left panel displays the project structure under "Projects X". The "NestedClassDemo.java" file is open in the editor. The code defines a main class "NestedClassDemo" with a static main method. It creates an instance of "NestedClass", calls its "printName" method, and then calls the "cetakJurusan" method of its "InnerClass" object.

```
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 Lacibien;  
7  
8 /**  
9  *  
10 * Author Win8  
11 */  
12  
13 public class NestedClassDemo {  
14     public static void main(String[] args){  
15         NestedClass nc1 = new NestedClass();  
16         NestedClass.StaticNestedClass snc1 = new NestedClass.StaticNestedClass();  
17         NestedClass.InnerClass ici1 = nc1.new InnerClass();  
18         snc1.cetakName();  
19         ici1.cetakJurusan();  
20     }  
21 }
```

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 Services tab is empty. The Output tab shows the following build log:

```
Ant file: C:\NetBeans\Modul11\src\Modul11\build.xml
Buildfile: C:\NetBeans\Modul11\src\Modul11\build.xml
    [javac] Compiling 1 source file
    [javac] 
    [javac] BUILD SUCCESSFUL (total time: 0 seconds)
```

The status bar at the bottom shows the time as 21:11 and the build number as 185.

MODUL 12

Nama : Akbar Probo B.

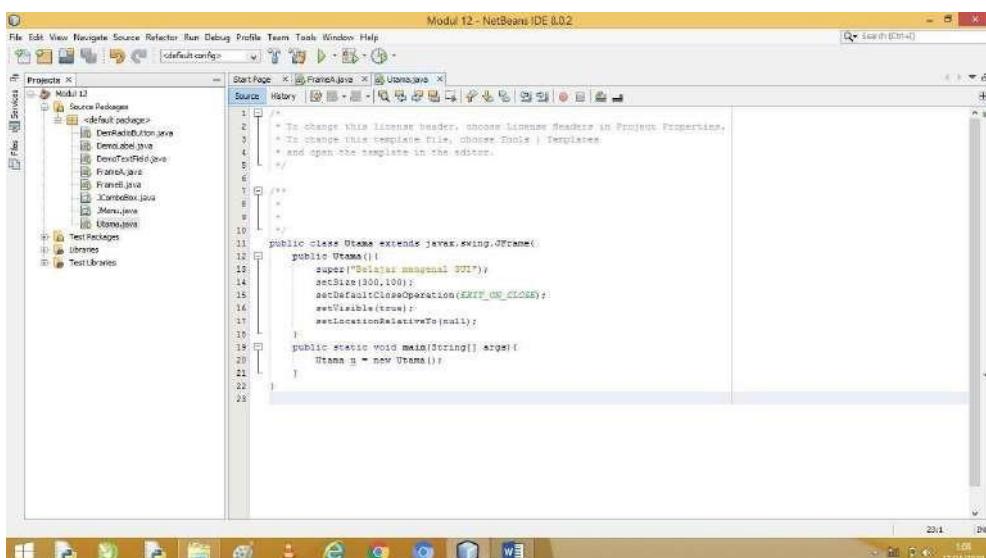
NIM : L200180078

Kelas : B

12.5. LATIHAN

12.5.1. Frame

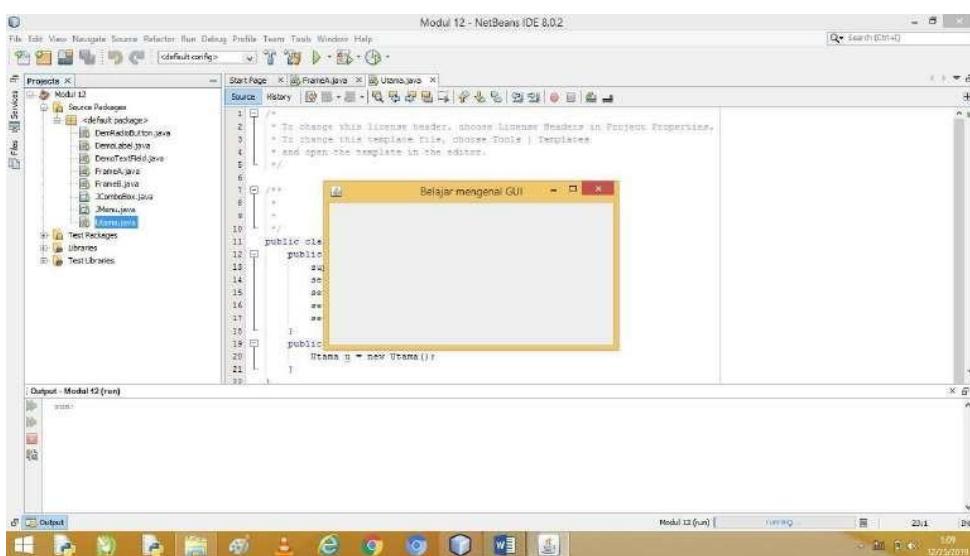
Program 1. Implementasi JFrame



The screenshot shows the NetBeans IDE interface with the title bar "Modul 12 - NetBeans IDE 8.0.2". The main window displays the code for the "Utama.java" file. The code implements a simple JFrame application:

```
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  */
9
10 public class Utama extends javax.swing.JFrame{
11     public Utama(){
12         super("Belajar mengenal GUI");
13         setSize(300,100);
14         setDefaultCloseOperation(EXIT_ON_CLOSE);
15         setVisible(true);
16         setLocationRelativeTo(null);
17     }
18     public static void main(String[] args){
19         Utama u = new Utama();
20     }
21 }
```

Output dari program 1

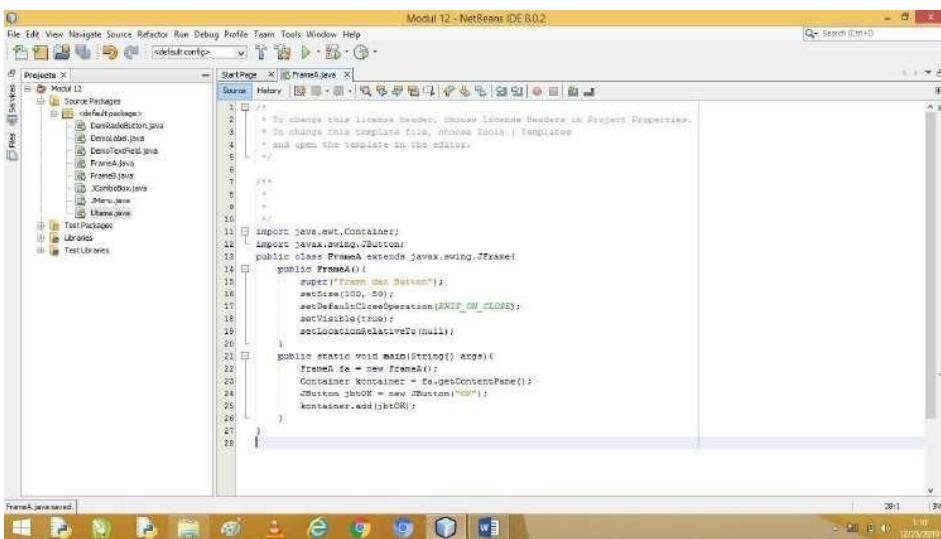


Konstruktor	Keterangan
JFrame()	<ul style="list-style-type: none"> • Jendela utama yang digunakan untuk menampilkan komponen yang kita inginkan. • Membuat JFrame tanpa judul.
JFrame(String Judul)	<ul style="list-style-type: none"> • Pemberian nama pada jendela utama yang ditampilkan. • Membuat JFrame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



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

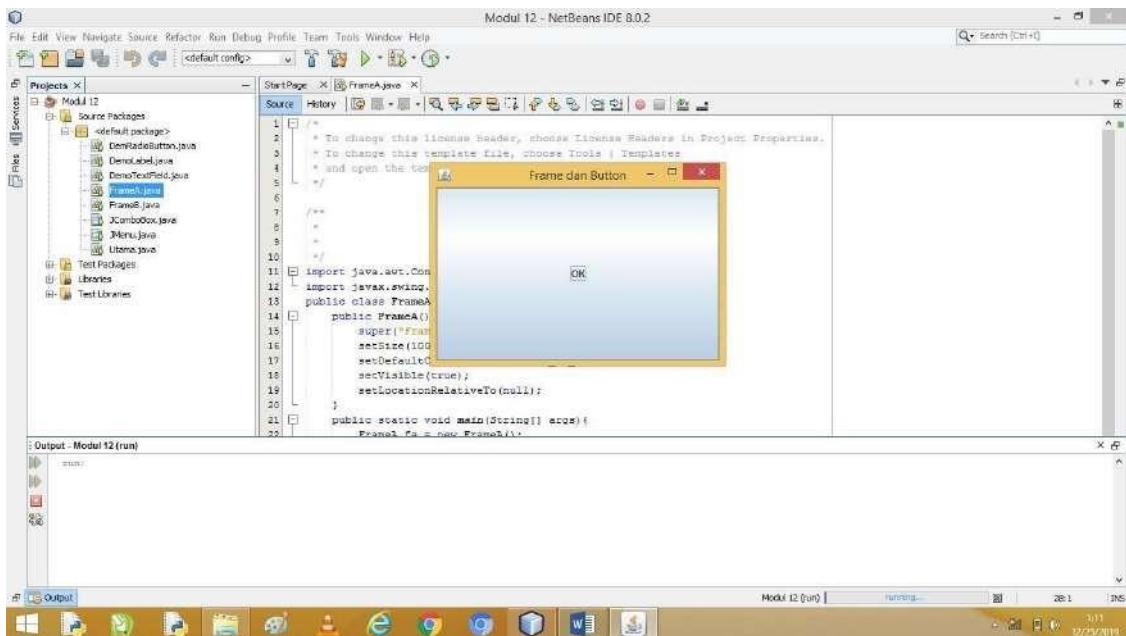
- Title Bar:** Modul 12 - NetBeans IDE 8.0.2
- Menu Bar:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Tools, Window, Help
- Toolbar:** Standard NetBeans toolbar icons.
- Project Explorer:** Shows a project named "Modul 12" with source packages like "DefaultTemplate.java", "FrameA.java", and "FrameB.java".
- Code Editor:** Displays Java code for a JButton implementation. The code includes imports for Container and JButton, defines a FrameA class extending JFrame, and contains a main method creating a frame, adding a button, and setting its properties.
- Status Bar:** Shows the current file is "FrameA.java", and the bottom right corner shows the date as 22/02/2019.

```

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
9
10 */
11 import java.awt.Container;
12 import javax.swing.JButton;
13 public class FrameA extends javax.swing.JFrame{
14     public FrameA() {
15         JButton btOK = new JButton("OK");
16         btOK.setSize(100, 50);
17         setDefaultCloseOperation(javax.swing.WindowConstants.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 btOK = new JButton("OK");
25         kontainer.add(btOK);
26     }
27 }

```

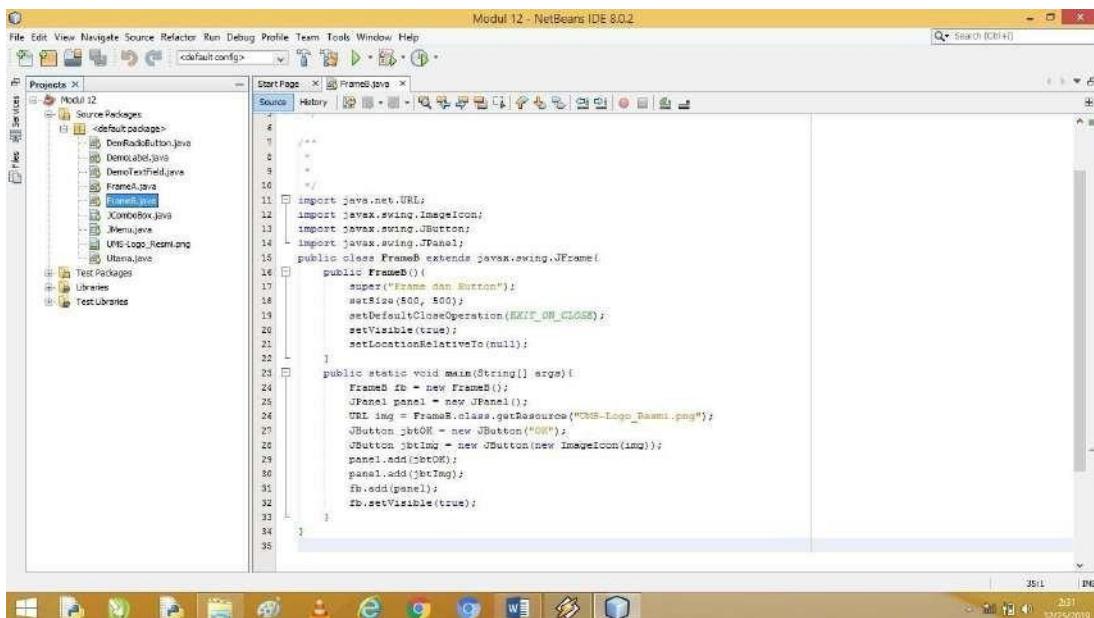
Output dari program 2



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

The screenshot shows the NetBeans IDE interface with the title "Modul 12 - NetBeans IDE 8.0.2". The left sidebar displays the project structure under "Projects X" for "Modul 12", including source packages like "default package" containing "DemoLabel.java", "DemoLabelFrame.java", and "DemoTextfield.java", as well as test packages and libraries. The main editor window shows the Java code for "DemoLabel.java". The code imports necessary classes from java.net and javax.swing, creates a URL object, sets up a frame with a logo icon, and adds a label to the center of the panel. The code is annotated with a license header and a note about changing it.

```
1 import java.net.URL;
2 import javax.swing.ImageIcon;
3 import javax.swing.JFrame;
4 import javax.swing.JPanel;
5 import javax.swing.SwingConstants;
6
7 /**
8 * To change this license header, choose License Headers in Project Properties.
9 * To change this template file, choose Tools | Templates
10 * and open the template in the editor.
11 */
12
13 /**
14 */
15 /**
16 */
17 /**
18 */
19 public class DemoLabel {
20     public static void main(String[] args) {
21         JFrame u = new JFrame();
22         u.setSize(500, 500);
23         URL img = JFrame.class.getResource("CMB-Logo_Besmi.png");
24         ImageIcon ikon = new ImageIcon(img);
25         JLabel label = new JLabel("Label", ikon, SwingConstants.CENTER);
26         JPanel panel = new JPanel();
27         panel.add(label);
28         u.add(panel);
29     }
30 }
```

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" and the window title "DemoTextField.java". The central part of the window shows the Java code for "DemoTextField.java". The code imports necessary classes (java.awt, javax.swing), defines a class "DemoTextField", and contains a main method that creates a frame with two labels ("name:" and "password:"), two text fields ("inputnama" and "inputpw"), and a password field ("inputpw"). The code uses JPanel and JFrame components. The code is as follows:

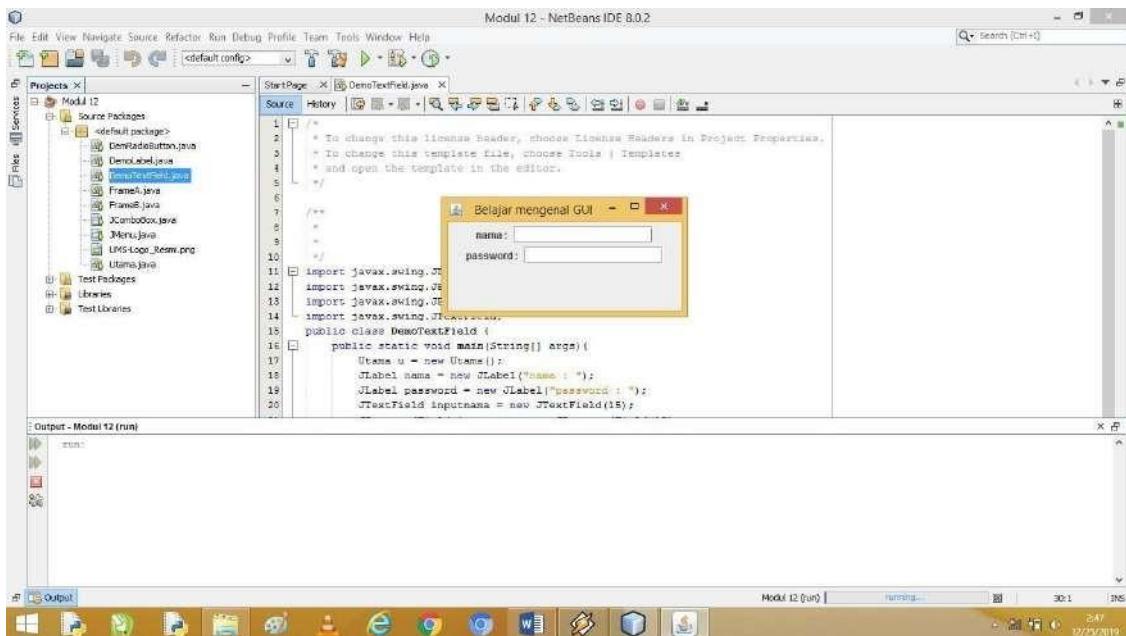
```

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
16 public class DemoTextField {
17
18     public static void main(String[] args){
19         Utama u = new Utama();
20         JLabel name = new JLabel("name : ");
21         JLabel password = new JLabel("password : ");
22         JTextField inputnama = new JTextField(15);
23         JPasswordField inputpw = new JPasswordField(15);
24         JPanel panel = new JPanel();
25         panel.add(name);
26         panel.add(inputnama);
27         panel.add(password);
28         panel.add(inputpw);
29         u.add(panel);
30     }
31 }

```

The bottom of the screen shows the Windows taskbar with various icons.

Output dari program 5

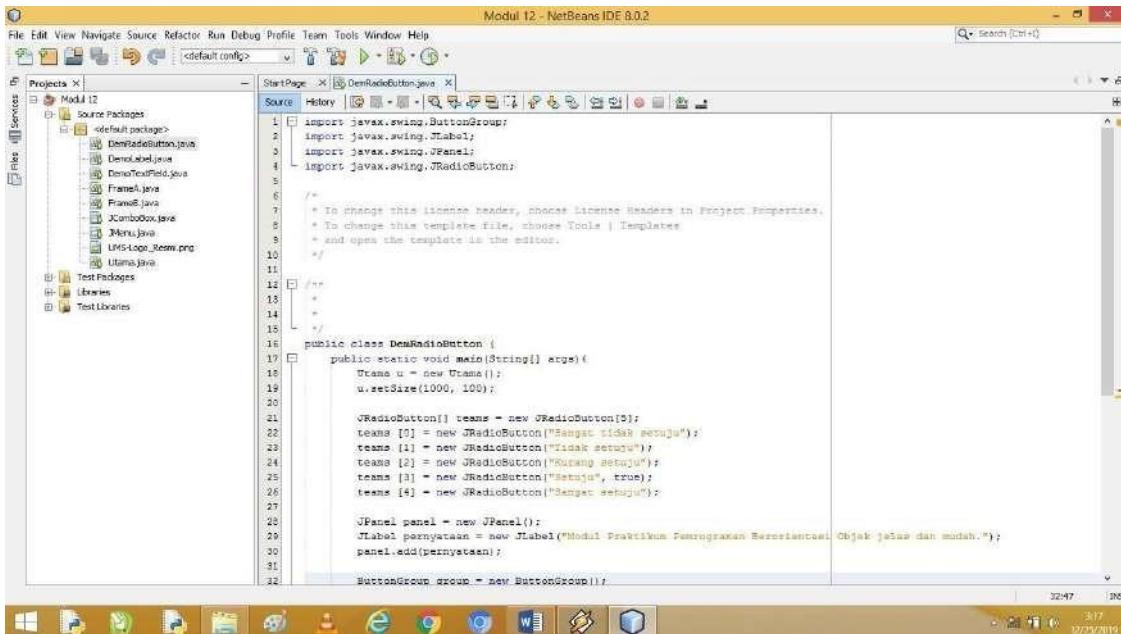


Konstruktur	Penjelasan
JTextField()	Text Field kosong tanpa tulisan.
JTextField(int i)	Text Field dengan panjang yang ditentukan.
JTextField(String i)	Teks Field dengan teks yang sudah ditentukan.
JTextField(String teks, int i)	Teks Field dengan teks dan panjang kolom yang sudah ditentukan

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



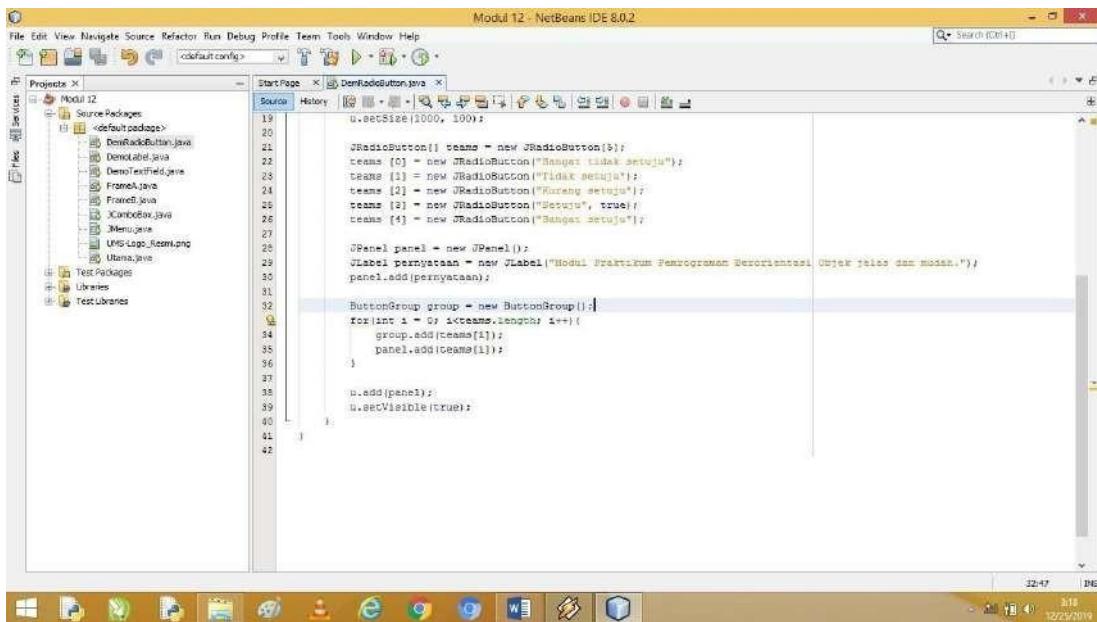
```
Modul 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config> StartPage DemRadioButton.java
Projects X Services X
Modul 12
Source Packages
  <default package>
    DemRadioButton.java
    DemoTextfield.java
    Frame.java
    JPanel.java
    JMenuBar.java
    LMS-Logo_Reimagine.png
    Utama.java
Test Packages X Libraries X Test Libraries X
Search (Ctrl+F) 3247 317 12/25/2019
public class DemRadioButton {
    public static void main(String[] args){
        Utama u = new Utama();
        u.setSize(1000, 100);

        JRadioButton[] teams = new JRadioButton[5];
        teams [0] = new JRadioButton("Sangat tidak setuju");
        teams [1] = new JRadioButton("Tidak setuju");
        teams [2] = new JRadioButton("Ragu-ragu setuju");
        teams [3] = new JRadioButton("Setuju", true);
        teams [4] = new JRadioButton("Sangat setuju");

        JPanel panel = new JPanel();
        JLabel pernyataan = new JLabel("Modul Praktikum Pemrograman Berorientasi Objek jelas dan mudah.");
        panel.add(pernyataan);

        ButtonGroup group = new ButtonGroup();
        for(int i = 0; i<teams.length; i++){
            group.add(teams[i]);
            panel.add(teams[i]);
        }

        u.add(panel);
        u.setVisible(true);
    }
}
```



```
Modul 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config> StartPage DemRadioButton.java
Projects X Services X
Modul 12
Source Packages
  <default package>
    DemRadioButton.java
    DemoTextfield.java
    Frame.java
    JPanel.java
    JMenuBar.java
    LMS-Logo_Reimagine.png
    Utama.java
Test Packages X Libraries X Test Libraries X
Search (Ctrl+F) 3247 318 12/25/2019
public class DemRadioButton {
    public static void main(String[] args){
        Utama u = new Utama();
        u.setSize(1000, 100);

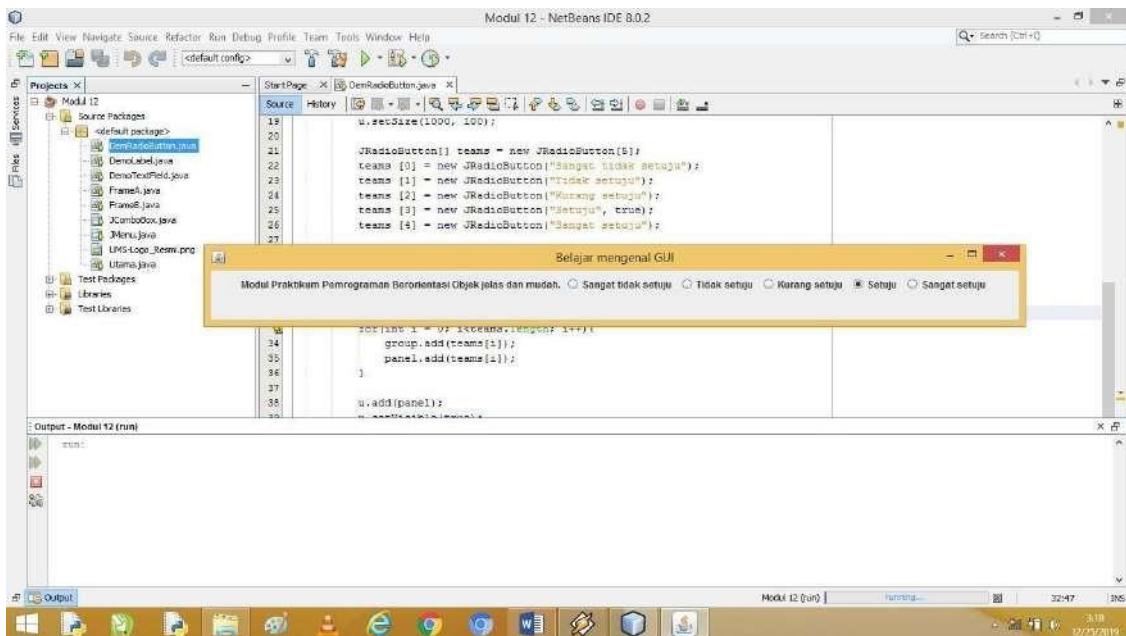
        JRadioButton[] teams = new JRadioButton[5];
        teams [0] = new JRadioButton("Sangat tidak setuju");
        teams [1] = new JRadioButton("Tidak setuju");
        teams [2] = new JRadioButton("Ragu-ragu setuju");
        teams [3] = new JRadioButton("Setuju", true);
        teams [4] = new JRadioButton("Sangat setuju");

        JPanel panel = new JPanel();
        JLabel pernyataan = new JLabel("Modul Praktikum Pemrograman Berorientasi Objek jelas dan mudah.");
        panel.add(pernyataan);

        ButtonGroup group = new ButtonGroup();
        for(int i = 0; i<teams.length; i++){
            group.add(teams[i]);
            panel.add(teams[i]);
        }

        u.add(panel);
        u.setVisible(true);
    }
}
```

Output dari program 6

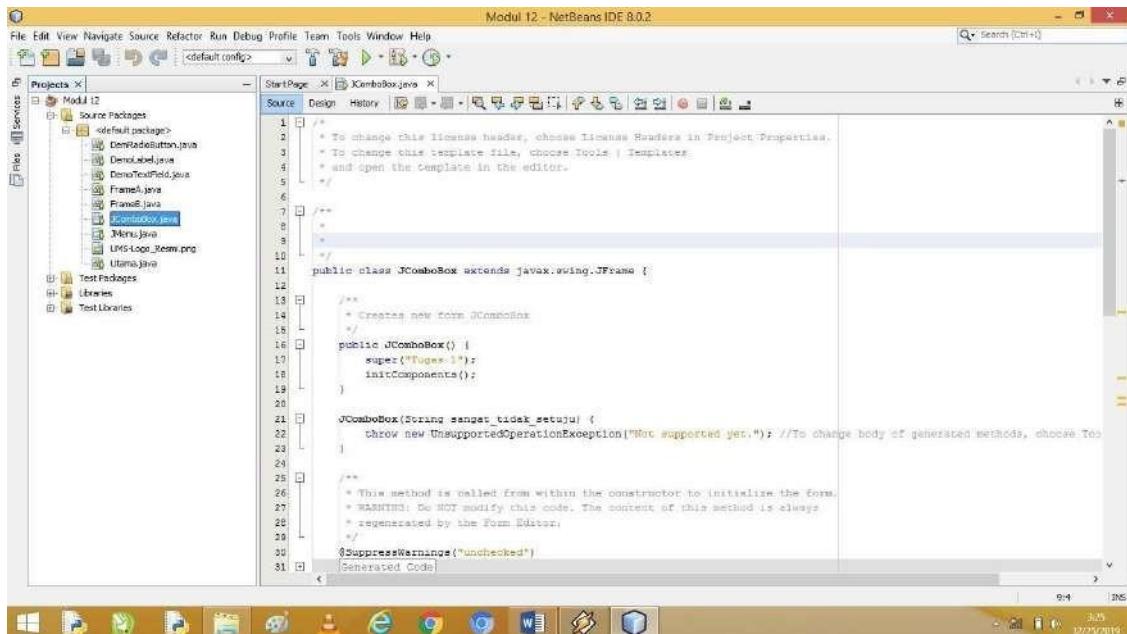


Konstruktor	Penjelasan
JCheckBox(String Teks)	Check box dengan teks yang ditentukan.
JCheckBox(String, Boolean)	Check box dengan teks yang ditentukan, jika kondisi pada parameter kedua true, maka Check box ini akan dipilih.
JCheckBox(icon)	Check box dengan gambar icon.
JCheckBox(icon, Boolean)	Check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

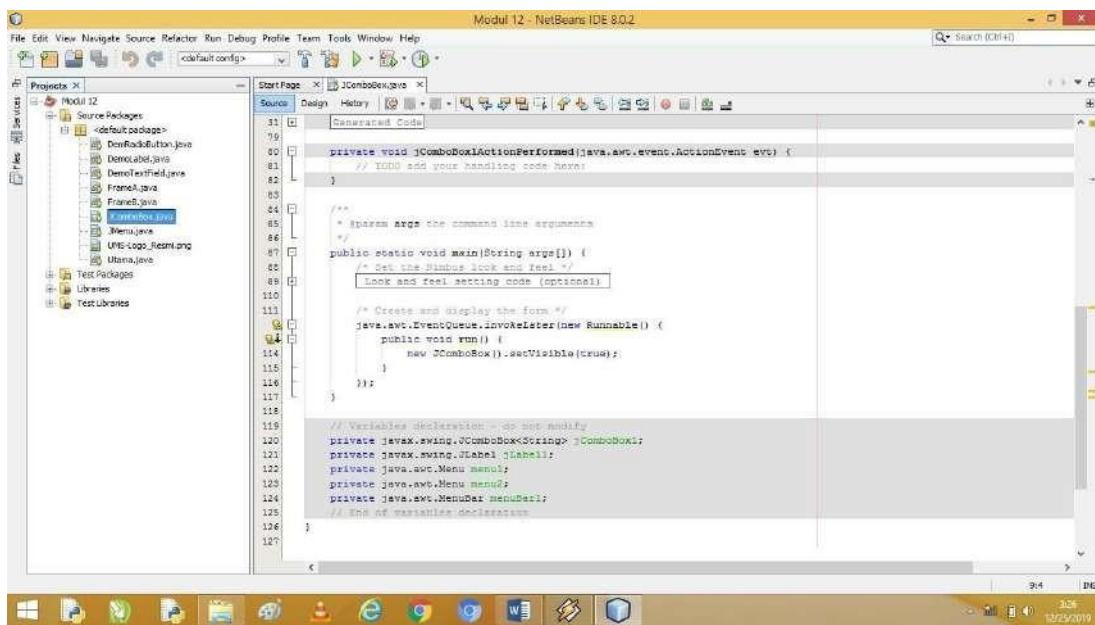
12.6 TUGAS

Membuat program GUI berdasarkan output

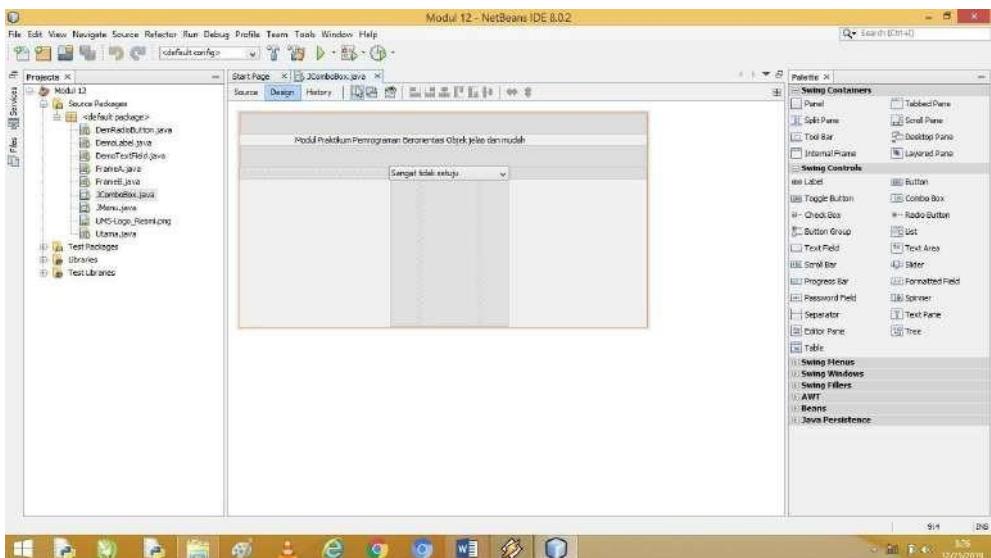
1. Menggunakan class JComboBox untuk membuat program GUI berdasarkan gambar



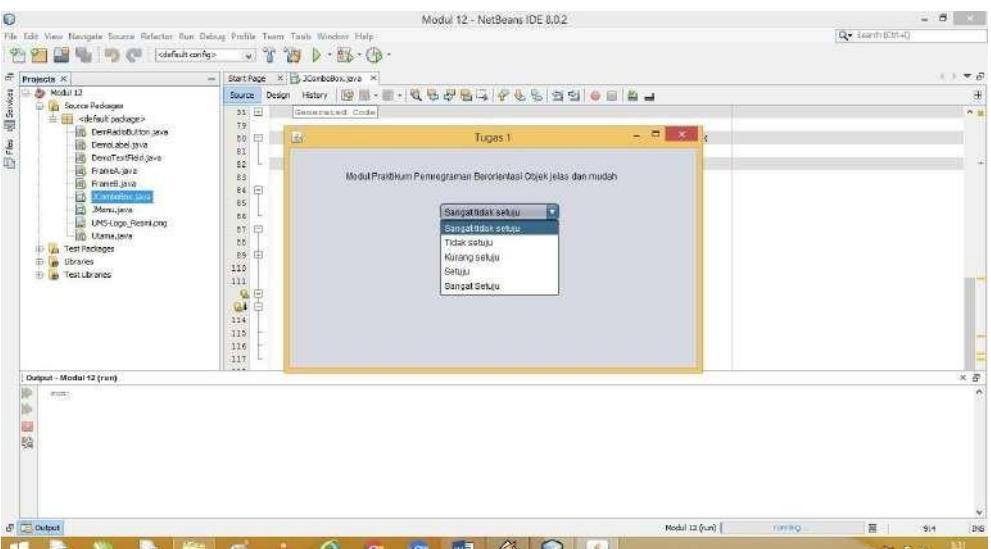
```
Modul 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > StartPage X JcomboBox.java
Projects X Services
Module 12
Source Packages
<default package>
    DemoButton.java
    DemoLabel.java
    DemoTextField.java
    FrameA.java
    FrameB.java
    JcomboBox.java
    Menu.java
    UMS-Logo_3em.png
    Utama.java
Test Packages
Libraries
Test Libraries
Source Design History
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 public class JcomboBox extends javax.swing.JFrame {
12
13     /**
14      * Creates new form JcomboBox
15     */
16     public JcomboBox() {
17         super("Tugas");
18         initComponents();
19     }
20
21     JComboBox(STRING sangeet_tidak_setuju) {
22         throw new UnsupportedOperationException("Not supported yet."); //To change body of generated methods, choose Tools | Templates.
23     }
24
25     /**
26      * This method is called from within the constructor to initialize the form.
27      * WARNING: Do NOT modify this code. The content of this method is always
28      * regenerated by the Form Editor.
29     */
30     @SuppressWarnings("unchecked")
31     // Generated Code
32 }
```



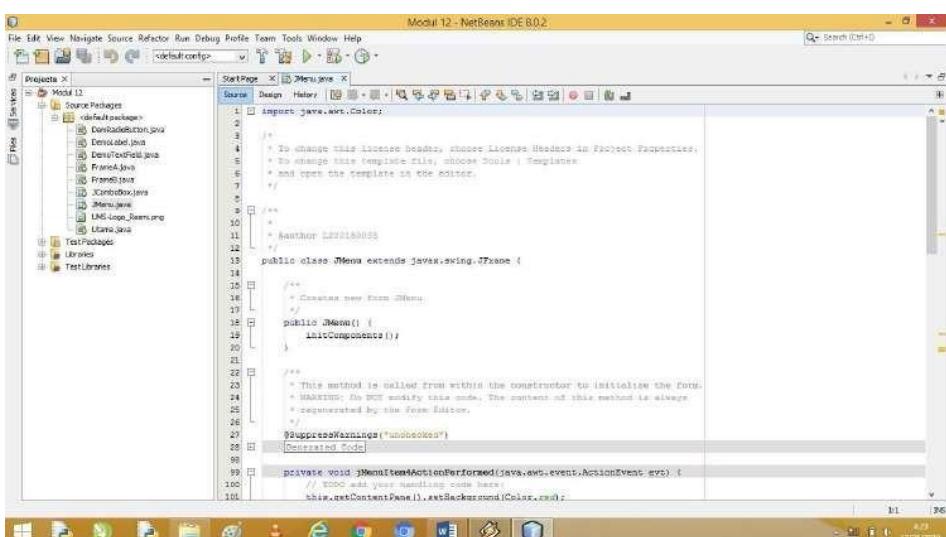
```
Modul 12 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
default config > StartPage X JcomboBox.java
Projects X Services
Module 12
Source Packages
<default package>
    DemoButton.java
    DemoLabel.java
    DemoTextField.java
    FrameA.java
    FrameB.java
    JcomboBox.java
    Menu.java
    UMS-Logo_3em.png
    Utama.java
Test Packages
Libraries
Test Libraries
Source Design History
11 /**
12  * Spans args the command line arguments
13  */
14 public static void main(String args[]) {
15     /* Set the Nimbus look and feel */
16     //<code> UIManager.setLookAndFeel("Nimbus");
17
18     /* Create and display the form */
19     java.awt.EventQueue.invokeLater(new Runnable() {
20         public void run() {
21             new JcomboBox().setVisible(true);
22         }
23     });
24
25     // Variables declaration - do not modify
26     private javax.swing.JComboBox<String> JcomboBox;
27     private javax.swing.JLabel jLabel1;
28     private java.awt.Menu menu1;
29     private java.awt.Menu menu2;
30     private java.awt.MenuItem menuItem1;
31     // End of variables declaration
32 }
```



Output dari program diatas:



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



The screenshot shows the NetBeans IDE interface with the title "Modul 12 - NetBeans IDE 8.0.2". The left pane displays the project structure for "Modul 12" under "Source Packages" and "Test Packages". The right pane shows the code editor for "JMenuBar.java" with the following content:

```
private void jMenuItem4ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    this.getContentPane().setBackground(Color.red);
}

private void jMenuItem5ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    this.getContentPane().setBackground(Color.yellow);
}

private void jMenuItem6ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    this.getContentPane().setBackground(Color.green);
}

/**
 * If you run args the command line arguments
 */
public static void main(String args[]) {
    /* Set the Nimbus look and feel */
    LookAndFeel.setLookAndFeel("Nimbus");
    /* Create and display the form */
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new JMenuBar().setVisible(true);
        }
    });
}
```

The screenshot shows the NetBeans IDE interface with the title "Modul 12 - NetBeans IDE 8.0.2". The left sidebar displays the project structure for "Modul 12" under "Source Packages" and "Test Packages". The main editor window shows Java code for a menu application. The code includes imports for javax.swing, java.awt, and java.awt.event. It defines a class with a main method that creates and displays a form. The main method contains logic to set the menu icon and title, and to make the menu visible. The code also includes variable declarations for JMenuBar, JMenu, JMenuItem, and JPopupMenu. The code is annotated with line numbers from 116 to 184.

```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Modul 12 - NetBeans IDE 8.0.2
Search (Ctrl+F)
Projects Modul 12
  Source Packages
    default package
      DefaultReduction.java
      Denable.java
      DenoteReduction.java
      Frame.java
      Form.java
      Interface.java
      MainFrame.java
      UMSLogo_Bounding.java
      UMSLogo_Bounding.java
    Test Packages
    Libraries
    Test Libraries
default config Start Page Previous Next
Source Design History
  116 * @param args the command line arguments
  117
  118 public static void main(String args[]) {
  119     /* Set the Nimbus look and feel */
  120     // Look and Feel setting code (optional)
  121
  122     /* Create and display the form */
  123     java.awt.EventQueue.invokeLater(new Runnable() {
  124         public void run() {
  125             new MainFrame().setVisible(true);
  126         }
  127     });
  128
  129     // Variables declaration - do not modify
  130     private javax.swing.JMenuBar jMenuBar;
  131     private javax.swing.JMenu jMenu;
  132     private javax.swing.JMenuItem jMenuItem;
  133     private javax.swing.JPopupMenu jPopupMenu;
  134     private javax.swing.JMenuBar jMenuBar1;
  135     private javax.swing.JMenuItem jMenuItem1;
  136     private javax.swing.JMenuItem jMenuItem2;
  137     private javax.swing.JMenuItem jMenuItem3;
  138     private javax.swing.JMenuItem jMenuItem4;
  139     private javax.swing.JMenuItem jMenuItem5;
  140     private javax.swing.JMenuItem jMenuItem6;
  141     private javax.swing.JMenuItem jMenuItem7;
  142     private javax.swing.JPopupMenu jPopupMenu1;
  143
  144 }
  145
  146
  147
  148
  149
  150
  151
  152
  153
  154
  155
  156
  157
  158
  159
  160
  161
  162
  163
  164 }
```

Output dari program diatas:

