

## ACTIVITY PERTEMUAN 4

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**MATA PRAKTIKUM : Rekayasa Perangkat Lunak 2**

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1. Screenshot kode dan output dari program yang telah dibuat.

- MahasiswaController.java

The screenshot shows the Apache NetBeans IDE interface. The left pane displays the 'Projects' view with a tree structure of Java files under the package 'per4\_50422657'. The central pane shows the code editor for 'MahasiswaController.java'. The code implements the 'MahasiswaController' interface with methods for adding, deleting, updating, and getting all students. The right pane shows the 'Output' window. The bottom status bar indicates 'Run (MahasiswaController) 1/1'.

```
package per4_50422657;

import java.util.List;
import javax.swing.JOptionPane;
import per4_50422657.model.Mahasiswa;
import per4_50422657.model.MahasiswaDAO;
import per4_50422657.model.MahasiswaDAOImpl;
import per4_50422657.view.MahasiswaControllerView;
import per4_50422657.view.MahasiswaView;

public interface MahasiswaController {
    void add(Mahasiswa m);
    void delete(Mahasiswa m);
    void update(Mahasiswa m);
    void insert(Mahasiswa m);
    List<Mahasiswa> getAllMahasiswa();
}
```

- MahasiswaControllerImpl.java

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

- Toolbar:** File, Edit, View, Navigator, Source, Refactor, Run, Debug, Profile, Team, Window, Help.
- Project Explorer (Projects tab):** Shows the project structure with modules like `src/main/resources`, `Dependencies`, `java Dependencies`, `Project Files`, and `Punt_50422657`. The `Source Packages` node is expanded, showing packages such as `studentguiafinal`, `studentguiafinal.controller`, `studentguiafinal.model`, and `studentguiafinal.view`.
- Code Editor:** Displays Java code for `MahasiswaController.java`. The code uses JPA annotations (`@Entity`, `@Table`, `@Id`, `@GeneratedValue`, `@Column`, `@ManyToMany`) and includes methods for adding, deleting, and updating students. It also uses `HibernateSessionUtil` for session management.
- Navigator:** Shows the class members for `MahasiswaController`, including methods like `addMahasiswa`, `deleteMahasiswa`, `getMahasiswa`, `getMahasiswa`, `getMahasiswa`, `getMahasiswa`, and `updateMahasiswa`.
- Status Bar:** Shows the current file is `MahasiswaController.java`, and the bottom right corner indicates "INC Windows (DRIVE)".

- `HibernateUtil.java`

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

- File**, **Edit**, **View**, **Navigator**, **Source**, **Refactor**, **Run**, **Debug**, **Profile**, **Team**, **Tools**, **Window**, **Help**, **Port4\_5042657 - Apache NetBeans IDE 25**, **Search (Ctrl+F)**
- Projects** tab: Shows a project structure with **src/main/resources** (containing `hibernate.cfg.xml`), **Dependencies**, **java Dependencies**, **Project Files**, **Port4\_5042657**, and **Searched Packages**. Under **Port4\_5042657**, there are **studentguanlimei** and **studentguanlimei** packages, each containing **HibernateController.java**, **HibernateControllerImpl.java**, **HibernateUtil.java**, **NoteWritemanager.java**, **ModelTableManager.java**, and **Studentguanlimei** or **studentguanlimei** views.
- Server** tab: Shows a connection named **MySQL57** with status **Connected**.
- HibernateUtil.java** (selected in the Navigator):

```
import org.hibernate.HibernateException;
import org.hibernate.SessionFactory;
import org.hibernate.cfg.Configuration;

public class HibernateUtil {
    private static SessionFactory sessionFactory;
    static {
        Configuration configuration = new Configuration().configure();
        configuration.configure("hibernate.cfg.xml");
        sessionFactory = configuration.buildSessionFactory();
    }
}
```
- HibernateUtil.java** (Members):
  - HibernateUtil**
  - HibernateUtil()**
  - getSessionFactory() SessionFactory**
  - testConnection()**
  - sendFactory() SessionFactory**
- HibernateUtil.java** (Editor):

```
import org.hibernate.HibernateException;
import org.hibernate.SessionFactory;
import org.hibernate.cfg.Configuration;

public class HibernateUtil {
    private static SessionFactory sessionFactory;
    static {
        Configuration configuration = new Configuration().configure();
        configuration.configure("hibernate.cfg.xml");
        sessionFactory = configuration.buildSessionFactory();
    }
}
```
- Output**: Shows a single entry: **Run (HibernateView)**.

- ModelMahasiswa.java

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

- Top Bar:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help, Port\_50422857 - Apache Netbeans IDE 25, Search (Ctrl+F).
- Left Sidebar (Projects X):** Shows the project structure with nodes like Project Resources, Dependencies, Web Dependencies, Project Files, and Test\_50422857. Under Test\_50422857, there are Source Packages: studentjuridikmasukperi4\_50422857 containing ModelMahasiswa.java, ModelMahasiswaController.java, ModelMahasiswaKtp.java, and studentjuridikmasukperi4\_50422857.model containing ModelMahasiswaModel.java, ModelMahasiswa.java, ModelTableMahasiswa.java, and ModelViewMahasiswa.java.
- Central Area:** The code editor displays the `ModelMahasiswa.java` file. The code defines a class `ModelMahasiswa` with various fields and methods. Fields include `id`, `nim`, `name`, `gender`, `dateOfBirth`, `isFemale`, `isMale`, `isMarried`, `isSingle`, and `isSeparated`. Methods include `getNim`, `getGender`, `getIsFemale`, `getIsMale`, `getIsMarried`, `getIsSingle`, `getIsSeparated`, `getLastName`, `getMiddleName`, `getFirstName`, `getGenderString`, `getIsFemaleString`, `getIsMaleString`, `getIsMarriedString`, `getIsSingleString`, `getIsSeparatedString`, and `setIsFemale`.
- Bottom Status Bar:** Shows Run (ModelMahasiswa), X (more...), 1/1, and INS Windows (DRF).

- ModelTableMahasiswa.java

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

- File Menu:** File, Edit, View, Navigator, Source, Refactor, Run, Debug, Profile, Team, Tools, Windows, Help.
- Project Tree (Projects X):** Shows the project structure with files like ModelTableMahasiswa.java, MahasiswaUtil.java, ModelMahasiswa.java, MahasiswaController.java, MahasiswaControllerImpl.java, ModelMahasiswaView.java, and MahasiswaView.java.
- Code Editor:** Displays the Java code for `ModelTableMahasiswa.java`. The code includes imports for `java.util.List`, `java.util.ArrayList`, and `java.util.ListIterator`. It defines a class `ModelTableMahasiswa` with methods such as `getRowCount()`, `getColumnName(int column)`, `getCellValue(int rowindex, int columnindex)`, and `getHeaderCount()`.
- Navigator:** Shows the members of the `ModelTableMahasiswa` class, including its constructor, various getters, and setters for columns and rows.

- MahasiswaView.java

The screenshot shows the NetBeans IDE interface with several windows open:

- Projects**: Shows the project structure with Source Packages, Test Packages, and Other Sources.
- Search Results**: Displays search results for "MahasiswaView.java". The results include various Java files and XML configurations related to the MahasiswaView class.
- Navigator**: Shows the methods and fields of the MahasiswaView class, including overridden methods like `getComponents()`, `loadMahasiswaTable()`, and `refreshTable()`.
- Code Editor**: The main editor window displays the `MahasiswaView.java` file, which contains code for initializing components, loading data into tables, and handling button actions.

- Output

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

- Projects View:** Shows the project structure for "Per4\_50422657".
- Hibernate Configuration:** The configuration file `hibernate.cfg.xml` is open, showing settings like `dialect`, `connection.url`, `connection.username`, `connection.password`, `connection.driver\_class`, `connection.pool\_size`, and `show\_sql`.
- Data Entry Dialog:** A modal dialog box titled "Add" is displayed, containing fields for "NPM" (50422657), "Name" (Harry Mandika), "Semester" (7), and "PK" (4). It includes "Simpan", "Reset", and "Tutup" buttons.
- Output Window:** Displays SQL commands being executed:
  - CREATE TABLE mahasiswa (ID INT NOT NULL AUTO\_INCREMENT, NPM CHAR(13) NOT NULL, NAME VARCHAR(50) NOT NULL, SEMESTER INT NOT NULL, PRIMARY KEY (ID)) ENGINE=InnoDB DEFAULT CHARSET=latin1;
  - INSERT INTO mahasiswa (NPM, NAME, SEMESTER) VALUES ('50422657', 'Harry Mandika', 7);
  - SELECT \* FROM mahasiswa;



