

PUPUT DEBBYLA WALZAHRA

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Rekayasa Perangkat Lunak 2

Konsep Dasar Object Relational Mapping (ORM) dan Framework Hibernate

1. Sebutkan dan jelaskan semua komponen GUI yang digunakan pada Jframe “mahasiswaView.java”!

Jawab:

1. JFrame:

- mahasiswaView itu sendiri adalah kelas yang memperluas javax.swing.JFrame. JFrame adalah komponen utama untuk membuat jendela GUI dalam aplikasi berbasis Swing.

2. JButton:

- jButton1 dan jButton2 adalah tombol yang digunakan untuk aksi tertentu.
 - jButton1 digunakan untuk menambahkan data mahasiswa baru ke dalam tabel ketika tombol ditekan.
 - jButton2 digunakan untuk menghapus data mahasiswa berdasarkan ID yang dimasukkan.

3. JTextField:

- jTextField1, jTextField2, jTextField3, dan jTextField4 adalah komponen teks input yang memungkinkan pengguna memasukkan data mahasiswa, seperti NPM, nama, semester, dan IPK.
- Metode clearTextField() akan mengosongkan semua JTextField ini setelah data berhasil ditambahkan atau dihapus.

4. JTable:

- dataTable digunakan untuk menampilkan daftar mahasiswa dalam bentuk tabel. Tabel ini diisi dengan data menggunakan modelTableMahasiswa yang merupakan TableModel khusus untuk menangani data mahasiswa.

5. JOptionPane:

- JOptionPane.showConfirmDialog() digunakan untuk menampilkan dialog konfirmasi ketika pengguna mencoba menghapus data. Pengguna diminta untuk mengonfirmasi apakah mereka ingin melanjutkan dengan penghapusan data.
- JOptionPane.showMessageDialog() digunakan untuk menampilkan pesan kepada pengguna, baik untuk menampilkan pesan sukses setelah data berhasil dihapus maupun pesan kesalahan jika ada input yang salah.

6. JLabel:

- Digunakan dalam JPanel untuk memberi label pada komponen input di dialog konfirmasi hapus (misalnya "Masukan ID yang ingin dihapus").

7. JPanel:

- JPanel digunakan untuk mengelompokkan beberapa komponen dalam dialog konfirmasi penghapusan data mahasiswa. Ini memberikan tata letak yang lebih teratur untuk label dan input ID.

2. Screenshot hasil codingan kalian lengkap dengan window project, navigator dan outputnya!

Jawab:

XAMPP Control Panel v3.3.0 [Compiled: Apr 6th 2021]

XAMPP Control Panel v3.3.0

| Modules | Service | Module | PID(s) | Port(s) | Actions | | | |
|---------|---------|-----------|--------------|---------|---------|-------|--------|------|
| | | Apache | 6384 6644 | 80, 443 | Stop | Admin | Config | Logs |
| | | MySQL | 5720 | 3306 | Stop | Admin | Config | Logs |
| | | FileZilla | | | Start | Admin | Config | Logs |
| | | Mercury | | | Start | Admin | Config | Logs |
| | | Tomcat | | | Start | Admin | Config | Logs |

13.55.23 [main] Initializing Control Panel
13.55.23 [main] Windows Version: Home 64-bit
13.55.23 [main] XAMPP Version: 8.1.10
13.55.23 [main] Control Panel Version: 3.3.0 [Compiled: Apr 6th 2021]
13.55.23 [main] Running with Administrator rights - good!
13.55.23 [main] XAMPP Installation Directory: "c:\xampp\"
13.55.23 [main] Checking for prerequisites
13.55.25 [main] All prerequisites found
13.55.25 [main] Initializing Modules
13.55.25 [main] Starting Check-Timer
13.55.25 [main] Control Panel Ready
13.55.46 [Apache] Attempting to start Apache app...
13.55.46 [Apache] Status change detected: running
13.55.46 [mysql] Attempting to start MySQL app...
13.55.48 [mysql] Status change detected: running

localhost / 127.0.0.1 | phpMyAdmin

localhost/phpmyadmin/index.php?route=/server/databases

phpMyAdmin

Server: 127.0.0.1

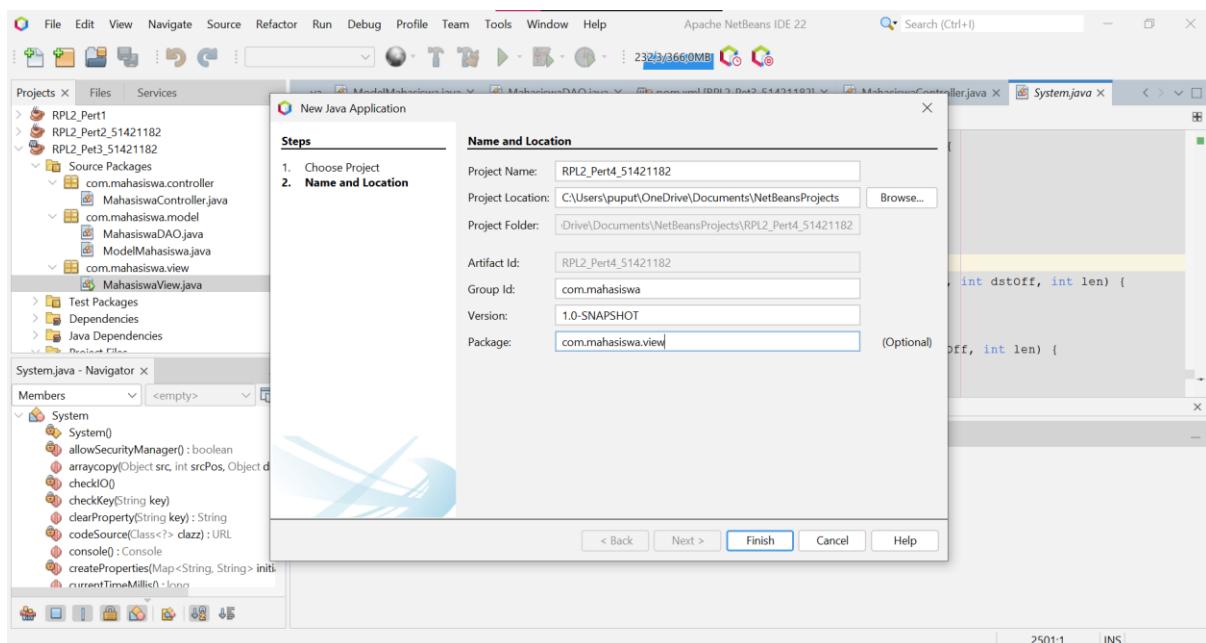
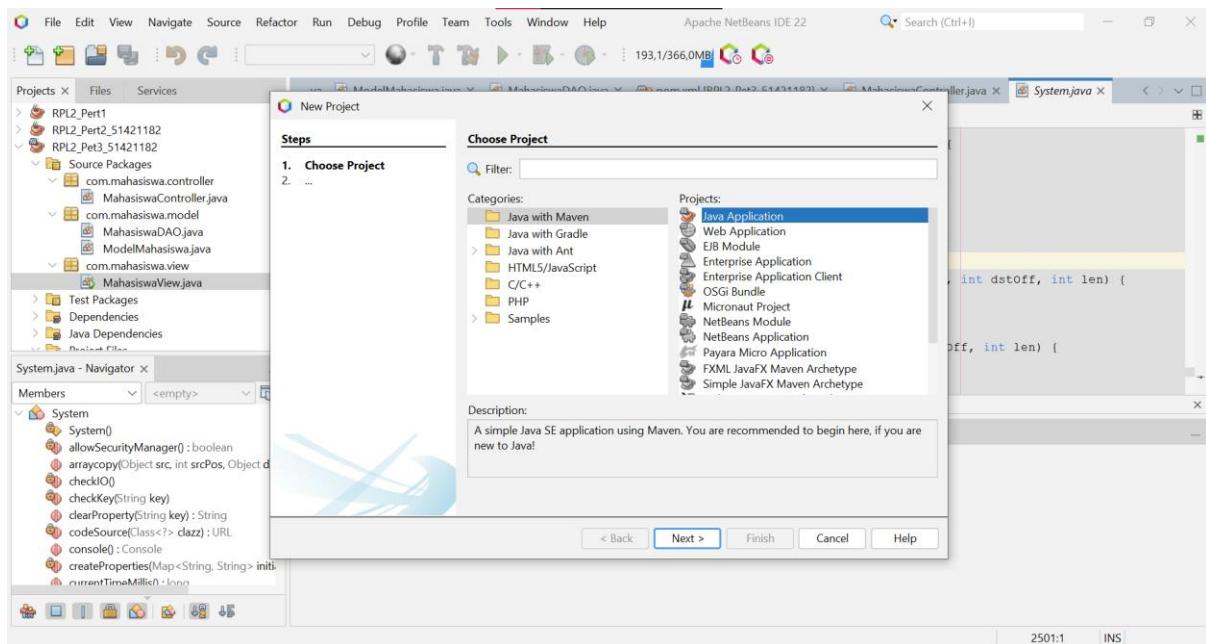
Databases

Create database: hibernate_db

Database hibernate_db has been created.

| Database | Collation | Action |
|--------------------|--------------------|---|
| databasestest | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| information_schema | utf8_general_ci | <input type="checkbox"/> Check privileges |
| kelas_kelompok | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| mahasiswa | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| mvc_db | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| mysql | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| performance_schema | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| person | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| person1 | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| phpmyadmin | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| reservasi_hotel | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| tblmhs | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| test | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |
| Console | utf8mb4_general_ci | <input type="checkbox"/> Check privileges |

Buat project baru pada Apache Netbeans



XML pada pom.xml

```

<dependencies>
    <dependency>
        <groupId>org.hibernate.orm</groupId>
        <artifactId>hibernate-core</artifactId>
        <version>6.6.0.Final</version>
    </dependency>

    <dependency>
        <groupId>mysql</groupId>
        <artifactId>mysql-connector-java</artifactId>
        <version>8.0.33</version>
    </dependency>
</dependencies>

<build>
    <resources>
        <resource>
            <directory>src/main/resources</directory>
            <filtering>false</filtering>
        </resource>
    </resources>
</build>

```

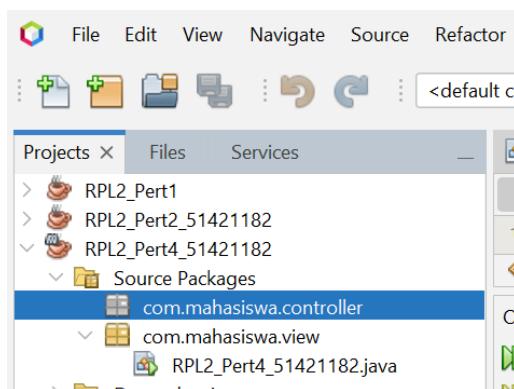
Hasil project build setelah membuat XML pada pom.xml

```

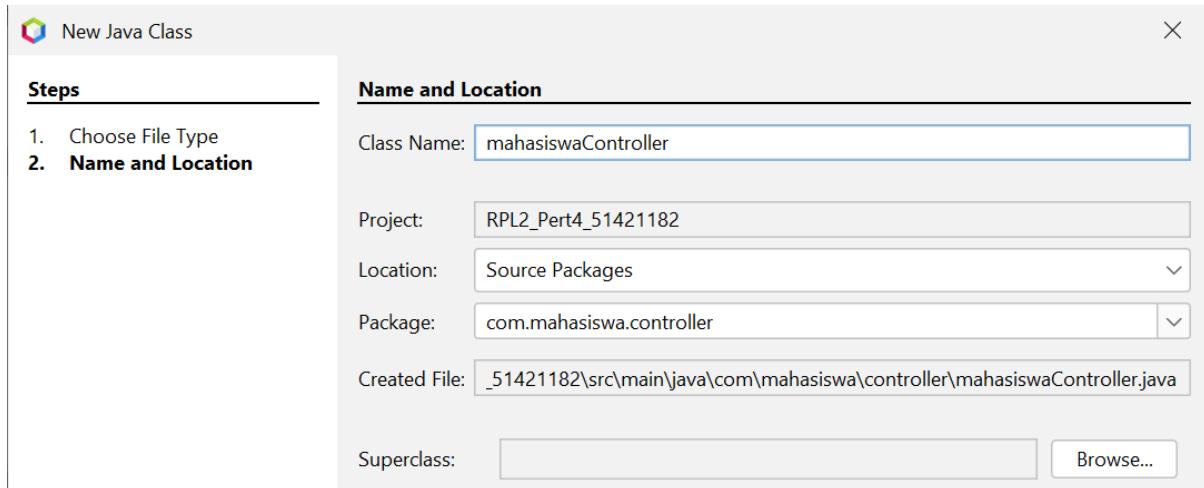
Output - Build (RPL2_Pert4_51421182) X
[INFO] --- compiler:3.11.0:compile (default-compile) @ RPL2_Pert4_51421182 ---
[INFO] Changes detected - recompiling the module! :dependency
[INFO] Compiling 1 source file with javac [debug target 22] to target\classes
[INFO]
[INFO] --- resources:3.3.1:testResources (default-testResources) @ RPL2_Pert4_51421182 ---
[INFO] skip non-existing resourceDirectory C:\Users\putup\OneDrive\Documents\NetBeansProjects\RPL2_Pert4_51421182\src\test\resources
[INFO]
[INFO] --- compiler:3.11.0:testCompile (default-testCompile) @ RPL2_Pert4_51421182 ---
[INFO] No sources to compile
[INFO]
[INFO] --- surefire:3.2.2:test (default-test) @ RPL2_Pert4_51421182 ---
[INFO] No tests to run.
[INFO]
[INFO] --- jar:3.3.0:jar (default-jar) @ RPL2_Pert4_51421182 ---
[INFO] Building jar: C:\Users\putup\OneDrive\Documents\NetBeansProjects\RPL2_Pert4_51421182\target\RPL2_Pert4_51421182-1.0-SNAPSHOT.jar
[INFO]
[INFO] --- install:3.1.1:install (default-install) @ RPL2_Pert4_51421182 ---
[INFO] Installing C:\Users\putup\OneDrive\Documents\NetBeansProjects\RPL2_Pert4_51421182\pom.xml to C:\Users\putup\.m2\repository\cc
[INFO] Installing C:\Users\putup\OneDrive\Documents\NetBeansProjects\RPL2_Pert4_51421182\target\RPL2_Pert4_51421182-1.0-SNAPSHOT.jar
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 11.854 s
[INFO] Finished at: 2024-11-05T14:09:01+07:00
[INFO]

```

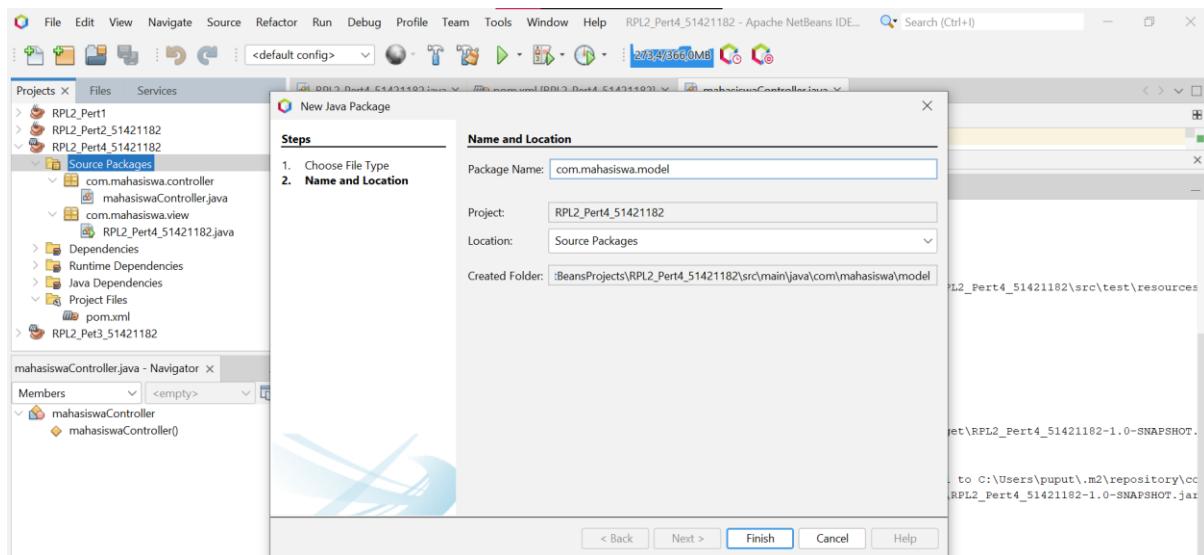
Membuat Java Package com.mahasiswa.controller



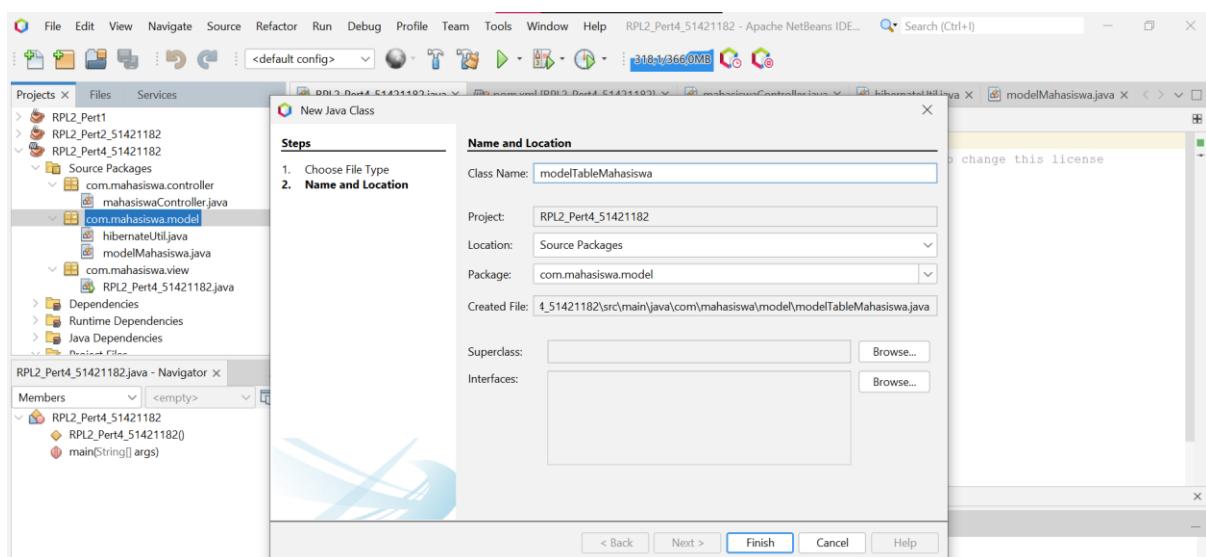
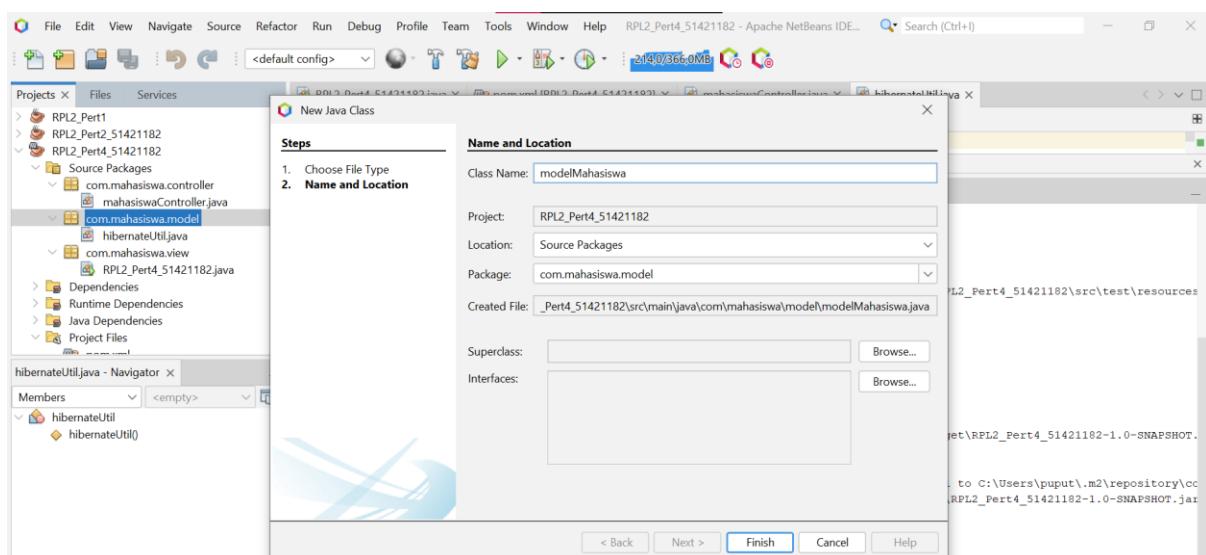
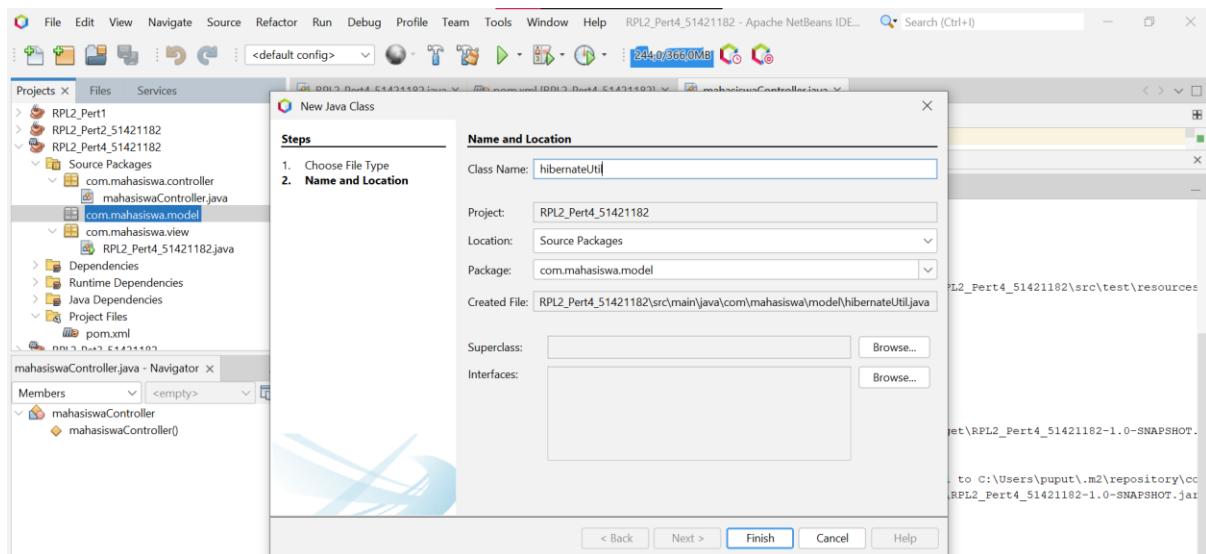
Yang di dalamnya terdapat Java Class



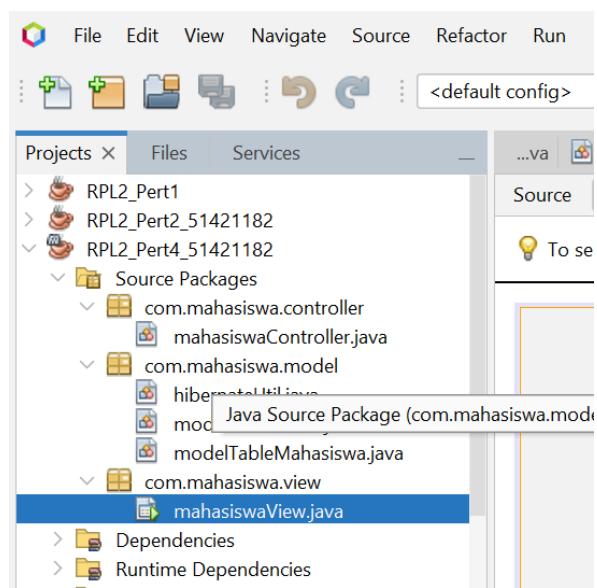
Membuat Java Package com.mahasiswa.model



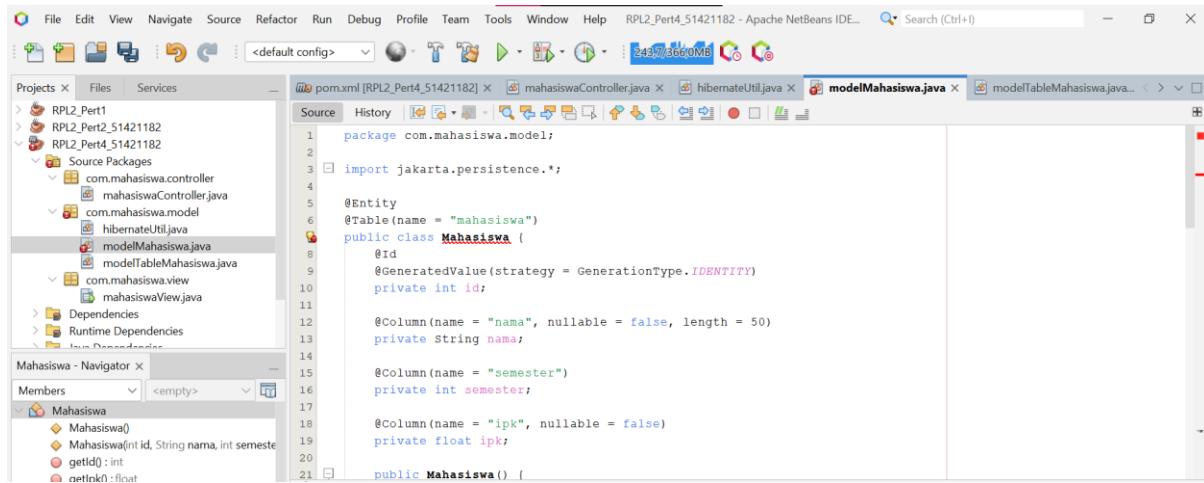
Yang di dalamnya terdapat Java Class hibernateUtil, modelMahasiswa dan modelTableMahasiswa



Buat Jfrom baru pada package com.mahasiswa.view



Code modelMahasiswa.java yang diberlakukan Getters and Setters

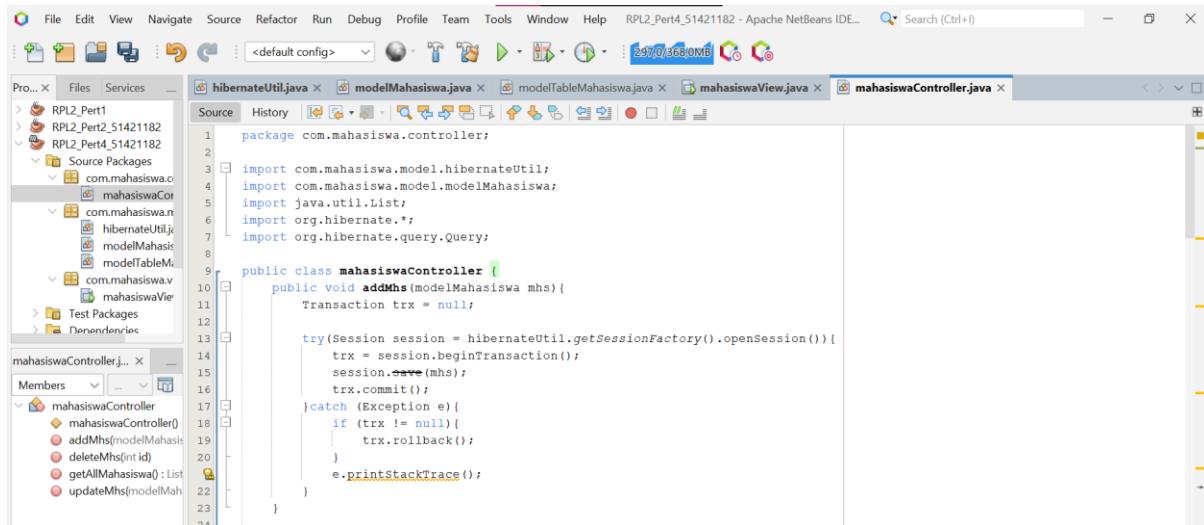


The screenshot shows the Apache NetBeans IDE interface with the following details:

- Project Explorer:** Shows the project structure under "Source Packages".
 - com.mahasiswa.controller: Contains mahasiswaController.java.
 - com.mahasiswa.model: Contains hibernateUtil.java, modelMahasiswa.java, and modelTableMahasiswa.java.
 - com.mahasiswa.view: Contains mahasiswaView.java.
- Code Editor:** Displays the code for **modelMahasiswa.java**. The code defines a class **Mahasiswa** with attributes **id**, **nama**, and **semester**, and a constructor **Mahasiswa()**.

```
1 package com.mahasiswa.model;
2
3 import jakarta.persistence.*;
4
5 @Entity
6 @Table(name = "mahasiswa")
7 public class Mahasiswa {
8     @Id
9     @GeneratedValue(strategy = GenerationType.IDENTITY)
10    private int id;
11
12    @Column(name = "nama", nullable = false, length = 50)
13    private String nama;
14
15    @Column(name = "semester")
16    private int semester;
17
18    @Column(name = "ipk", nullable = false)
19    private float ipk;
20
21    public Mahasiswa() {
```

Code mahasiswaController.java

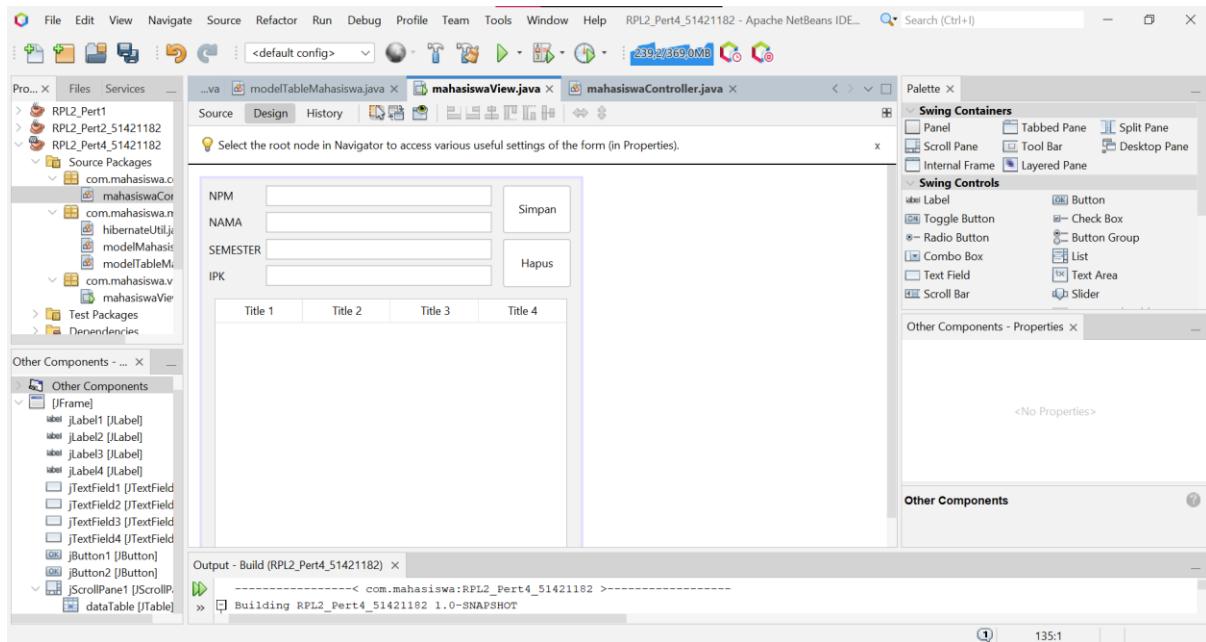


The screenshot shows the Apache NetBeans IDE interface with the following details:

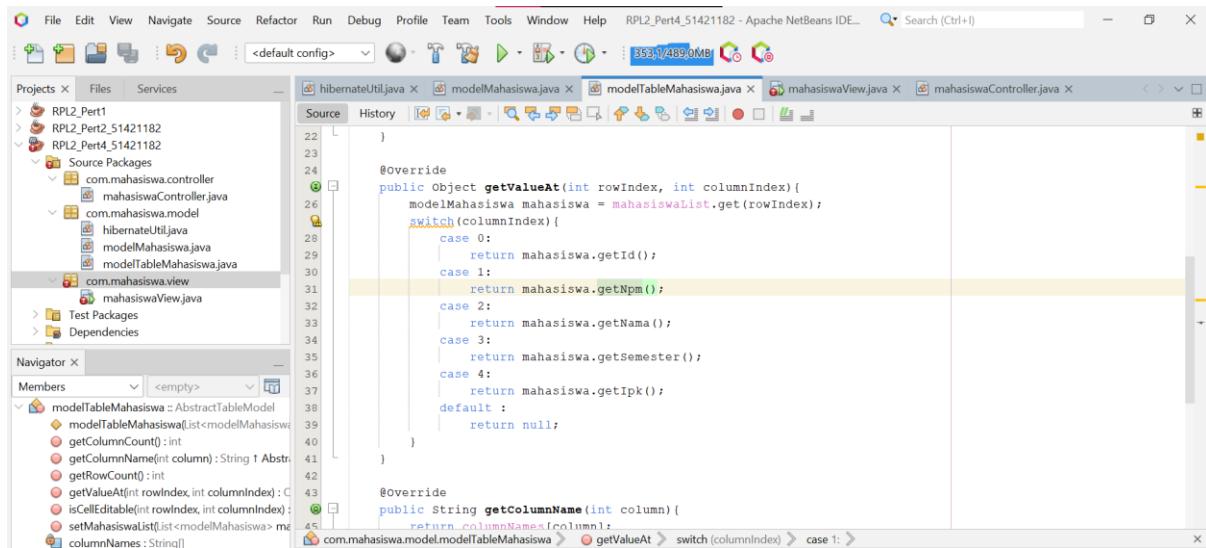
- Project Explorer:** Shows the project structure under "Source Packages".
 - com.mahasiswa.controller: Contains mahasiswaController.java.
- Code Editor:** Displays the code for **mahasiswaController.java**. The code contains a method **addMhs** which adds a **modelMahasiswa** object to a session and commits the transaction.

```
1 package com.mahasiswa.controller;
2
3 import com.mahasiswa.model.hibernateUtil;
4 import com.mahasiswa.model.modelMahasiswa;
5 import java.util.List;
6 import org.hibernate.*;
7 import org.hibernate.query.Query;
8
9 public class mahasiswaController {
10     public void addMhs(modelMahasiswa mhs){
11         Transaction trx = null;
12
13         try(Session session = hibernateUtil.getSessionFactory().openSession()){
14             trx = session.beginTransaction();
15             session.save(mhs);
16             trx.commit();
17         }catch (Exception e){
18             if (trx != null){
19                 trx.rollback();
20             }
21             e.printStackTrace();
22         }
23     }
24 }
```

Design mahasiswaView.java



Code modelTableMahasiswa.java



Code mahasiswaView.java (eror kak, saya nyerah)

