

## ACTIVITY PERTEMUAN 5

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KELAS : 4IA01

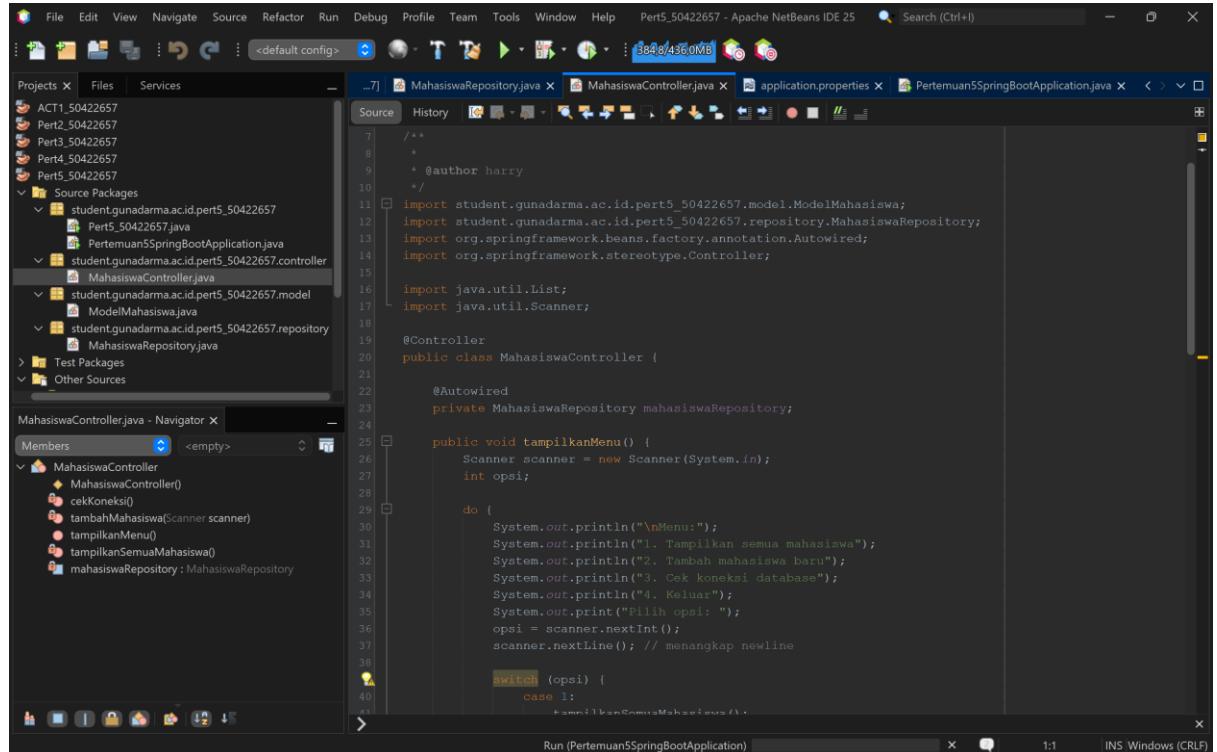
MATERI : Spring

### MATA PRAKTIKUM : Rekayasa Perangkat Lunak 2

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

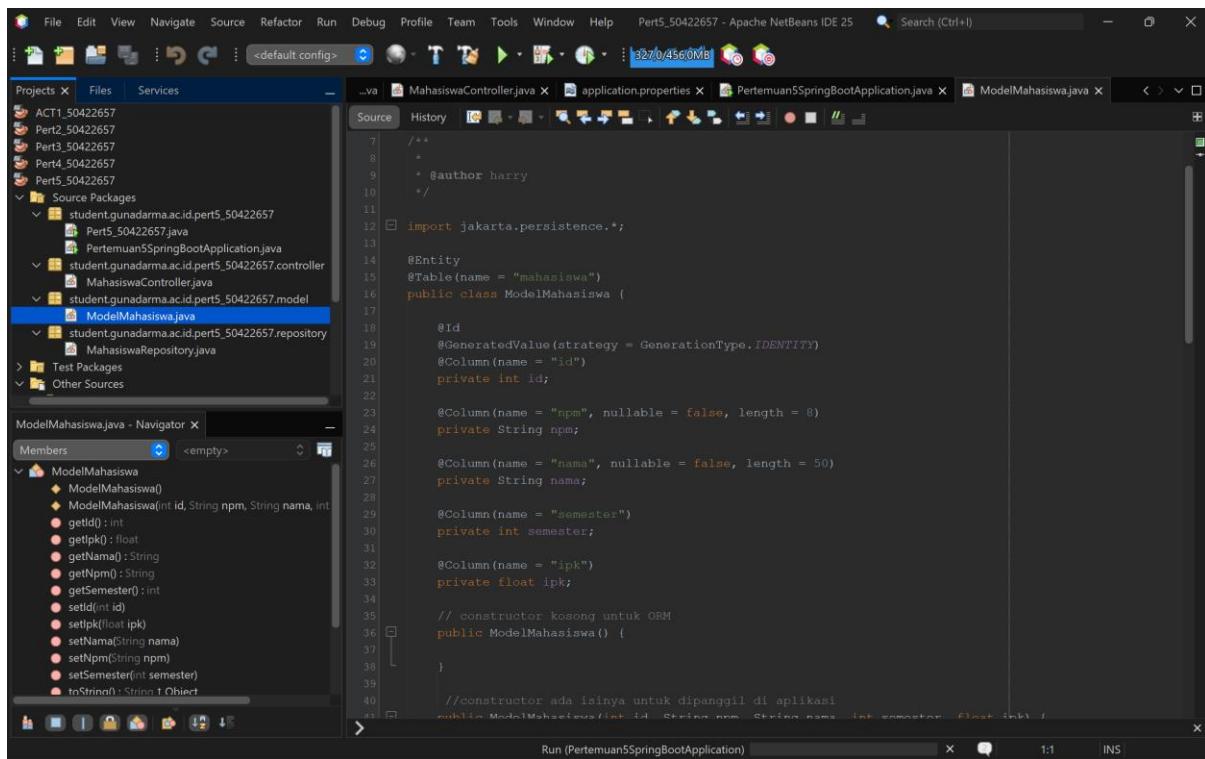
- MahasiswaController.java



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

- File Menu:** File, Edit, View, Navigate, Source, Refactor, Run, Debug, Profile, Team, Tools, Window, Help.
- Project Tree:** Projects (ACT1\_50422657, Pert2\_50422657, Pert3\_50422657, Pert4\_50422657, Pert5\_50422657), Files (application.properties), Services.
- Code Editor:** The current file is MahasiswaController.java, which contains Java code for a Spring Boot application. The code includes imports for ModelMahasiswa, MahasiswaRepository, Controller, and Scanner. It defines a MahasiswaController class with a method tampilkanMenu() that prints a menu and handles user input to display all students or add a new student.
- Navigator:** Shows the members of the MahasiswaController class, including its constructor, methods like cekKoneksi(), tambahMahasiswa(Scanner scanner), tampilkanMenu(), tampilkanSemuaMahasiswa(), and the repository field mahasiswaRepository.
- Bottom Status Bar:** Run (Pertemuan5SpringBootApplication), 1:1, INS Windows (CR/LF).

- ModelMahasiswa.java



```
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
 */
package student.gunadarma.ac.id.pert5_50422657.model;

import jakarta.persistence.*;
import org.springframework.stereotype.Repository;
import student.gunadarma.ac.id.pert5_50422657.model.ModelMahasiswa;
import student.gunadarma.ac.id.pert5_50422657.repository.MahasiswaRepository;

/**
 * @author harry
 */
@Entity
@Table(name = "mahasiswa")
public class ModelMahasiswa {

    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    @Column(name = "id")
    private int id;

    @Column(name = "npm", nullable = false, length = 8)
    private String npm;

    @Column(name = "nama", nullable = false, length = 50)
    private String nama;

    @Column(name = "semester")
    private int semester;

    @Column(name = "ipk")
    private float ipk;

    // constructor kosong untuk ORBM
    public ModelMahasiswa() {
    }

    //constructor ada isinya untuk dipanggil di aplikasi
    public ModelMahasiswa(int id, String npm, String nama, int semester, float ipk) {
        this.id = id;
        this.npm = npm;
        this.nama = nama;
        this.semester = semester;
        this.ipk = ipk;
    }

    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getNpm() {
        return npm;
    }

    public void setNpm(String npm) {
        this.npm = npm;
    }

    public String getNama() {
        return nama;
    }

    public void setNama(String nama) {
        this.nama = nama;
    }

    public int getSemester() {
        return semester;
    }

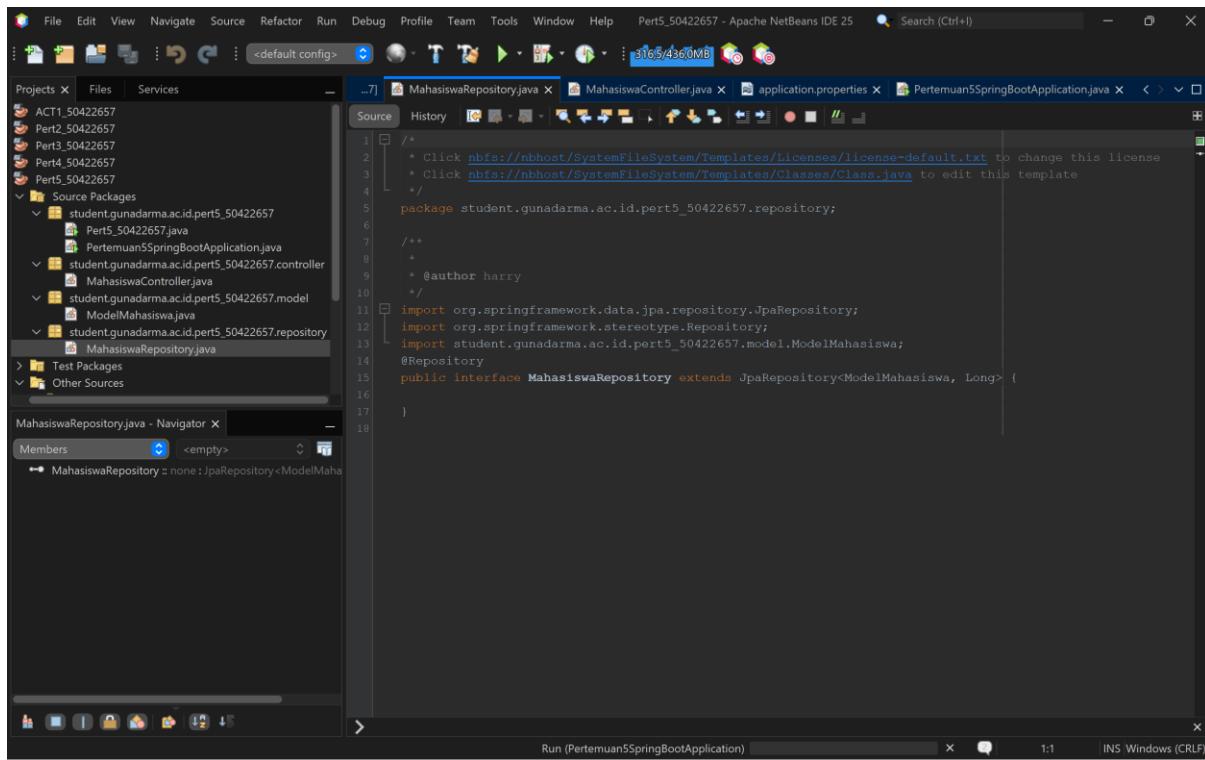
    public void setSemester(int semester) {
        this.semester = semester;
    }

    public float getIpk() {
        return ipk;
    }

    public void setIpk(float ipk) {
        this.ipk = ipk;
    }

    @Override
    public String toString() {
        return "ModelMahasiswa{" + "id=" + id + ", npm=" + npm + ", nama=" + nama + ", semester=" + semester + ", ipk=" + ipk + '}';
    }
}
```

- **MahasiswaRepository.java**



```
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
 * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
 */
package student.gunadarma.ac.id.pert5_50422657.repository;

import org.springframework.data.jpa.repository.JpaRepository;
import org.springframework.stereotype.Repository;
import student.gunadarma.ac.id.pert5_50422657.model.ModelMahasiswa;

/**
 * @author harry
 */
@Repository
public interface MahasiswaRepository extends JpaRepository<ModelMahasiswa, Long> {
```

- **Pertemuan5SpringBootApplication.java**

```

    package student.gunadarma.ac.id.pert5_50422657;

    /**
     * 
     * @author harry
     */
    import student.gunadarma.ac.id.pert5_50422657.controller.MahasiswaController;
    import org.springframework.beans.factory.annotation.Autowired;
    import org.springframework.boot.CommandLineRunner;
    import org.springframework.boot.SpringApplication;
    import org.springframework.boot.autoconfigure.SpringBootApplication;**

    /**
     * 
     * @author user
     */
    @SpringBootApplication
    public class Pertemuan5SpringBootApplication implements CommandLineRunner{
        @Autowired
        private MahasiswaController mhsController;
        public static void main(String[] args) {
            SpringApplication.run(Pertemuan5SpringBootApplication.class, args);
        }

        @Override
        public void run(String... args) throws Exception {
            mhsController.tampilkanMenu();
        }
    }

```

- Pom.xml

```

<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <parent>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-parent</artifactId>
    <version>3.3.3</version>
    <relativePath/>
  </parent>
  <dependencies>
    <!-- Hibernate + Spring Data JPA -->
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-data-jpa</artifactId>
    </dependency>
    <!-- MySQL Connector -->
    <dependency>
      <groupId>com.mysql</groupId>
      <artifactId>mysql-connector-j</artifactId>
      <scope>runtime</scope>
    </dependency>
    <!-- Spring Boot Web dependency (for MVC if needed) -->
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-web</artifactId>
    </dependency>
    <!-- Testing dependencies -->
    <dependency>
      <groupId>org.springframework.boot</groupId>
      <artifactId>spring-boot-starter-test</artifactId>
      <scope>test</scope>
    </dependency>
  </dependencies>
  <build>
    <plugins>

```

- Application.properties

The screenshot shows the Apache NetBeans IDE 25 interface. The left pane displays the project structure for 'Pert5\_50422657' with several subfolders like ACT1, Pert1, Pert2, Pert3, and Pert4. The right pane shows the 'application.properties' file with the following content:

```
# Database Configuration
spring.datasource.url=jdbc:mysql://localhost:3306/pert4_rpl2?useSSL=false&serverTimezone=UTC&allowPublicKeyRetrieval=true
spring.datasource.username=root
spring.datasource.password=
spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver

# JPA/Hibernate Configuration
spring.jpa.hibernate.ddl-auto=update
spring.jpa.show-sql=true
spring.jpa.database-platform=org.hibernate.dialect.MySQLDialect
spring.jpa.properties.hibernate.format_sql=true

# Connection Pool Configuration
spring.datasource.hikari.maximum-pool-size=10
spring.datasource.hikari.minimum-idle=5
spring.datasource.hikari.connection-timeout=20000

hibernate.cfg.xml - Navigator
version="1.0" encoding="utf-8"
<!-- hibernate-configuration
    <!-- session-factory -->
```

- **Output**

The screenshot shows the Apache NetBeans IDE 25 interface with the 'Output' tab selected. The output window displays the following terminal session:

```
Output - Run (Pertemuan5SpringBootApplication)
Menu:
1. Tampilkan semua mahasiswa
2. Tambah mahasiswa baru
3. Cek koneksi database
4. Keluar
Pilih opsi: 1
Hibernate:
select
    mml_0.id,
    mml_0.ipk,
    mml_0.nama,
    mml_0.npm,
    mml_0.semester
from
    mahasiswa mml_0
Tidak ada data mahasiswa.

Menu:
1. Tampilkan semua mahasiswa
2. Tambah mahasiswa baru
3. Cek koneksi database
4. Keluar
Pilih opsi: 2
Masukkan NPM : 50422657
Masukkan Nama : Harry Mardika
Masukkan Semester : 7
Masukkan IPK : 4
Hibernate:
insert
into
    mahasiswa
    (ipk, nama, npm, semester)
values
    (?, ?, ?, ?)
Mahasiswa berhasil ditambahkan.
```

Apache NetBeans IDE 25 - Pertemuan5SpringBootApplication - 254.456.0MB

Output - Run (Pertemuan5SpringBootApplication)

```
Menu:
1. Tampilkan semua mahasiswa
2. Tambah mahasiswa baru
3. Cek koneksi database
4. Keluar
Pilih opsi: 1
Hibernate:
    select
        mml_0.id,
        mml_0.ipk,
        mml_0.nama,
        mml_0.npm,
        mml_0.semester
    from
        mahasiswa mml_0
    Mahasiswa{id=2, nama='50422657', nama='Harry Mardika', nama='7', jurusan='4.0')

Menu:
1. Tampilkan semua mahasiswa
2. Tambah mahasiswa baru
3. Cek koneksi database
4. Keluar
Pilih opsi: 3
Hibernate:
    select
        mml_0.id,
        mml_0.ipk,
        mml_0.nama,
        mml_0.npm,
        mml_0.semester
    from
        mahasiswa mml_0
Koneksi ke database berhasil.

Menu:
1. Tampilkan semua mahasiswa
```

localhost/phpmyadmin/index.php?route=/sql&db=pert4\_rp2&table=mahasiswa

Terbaru | Favorit

Jelajahi Struktur SQL Cari Tambahan Eksport Import Hak Akses Operasi Pelacakan Trigger

Menampilkan baris 0 - 0 (total 1, Pencarian dilakukan dalam 0.0002 detik.)

SELECT \* FROM "mahasiswa"

Tampilan semua Jumlah baris: 25 Saring baris: Cari di tabel ini

	id	ipk	nama	npm	semester
Ubah	2	4	Harry Mardika	50422657	7

Pilih Semua Dengan pilihan: Ubah Salin Hapus Eksport

Tampilan semua Jumlah baris: 25 Saring baris: Cari di tabel ini

Operasi hasil query

Cetak Salin ke clipboard Eksport Tampilkan bagian Buat tampilan

Markahi kueri SQL ini

Judul: Izinkan semua pengguna untuk mengakses markah ini

Markahi kueri SQL ini

Konsol