PRAKTIKUM BASIS DATA

BAB	:	DASAR PEMROGRAMAN DATABASE
NAMA	:	DANI ADRIAN
NIM	:	225150201111009
ASISTEN	:	NATHAN DAUD
		RAKHA HANIF MAHESWARA
		NAUFAL PUTRA SUTRISNA
		STANISLAUS FRANS BERNADO
TGL PRAKTIKUM	:	06/12/2023 TGL PENGUMPULAN :11/12/2023

Pertanyaan

1. Buatlah dua table berikut :

. Tabel Mahasiswa dengan kolom sebagai berikut:

Nama Kolom	**Tipe data**
NIM	Varchar
Nama	Varchar

a. Tabel Nilai dengan kolom sebagai berikut:

Nama Kolom	**Tipe data**
NIM	Varchar
Nilai	Float

b. Buatlah program untuk menampilkan data berikut dari dua tabel di atas.

NIM	**Nama**	**Nilai**

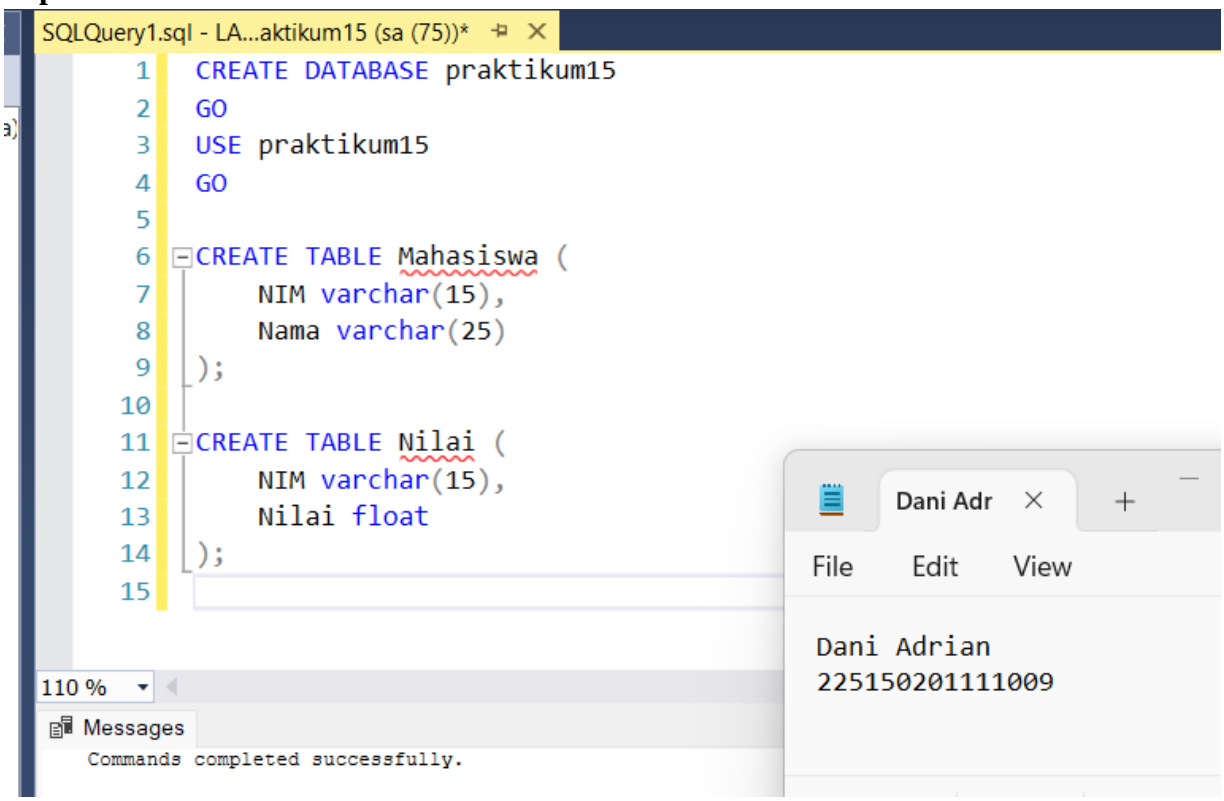
Implementasi

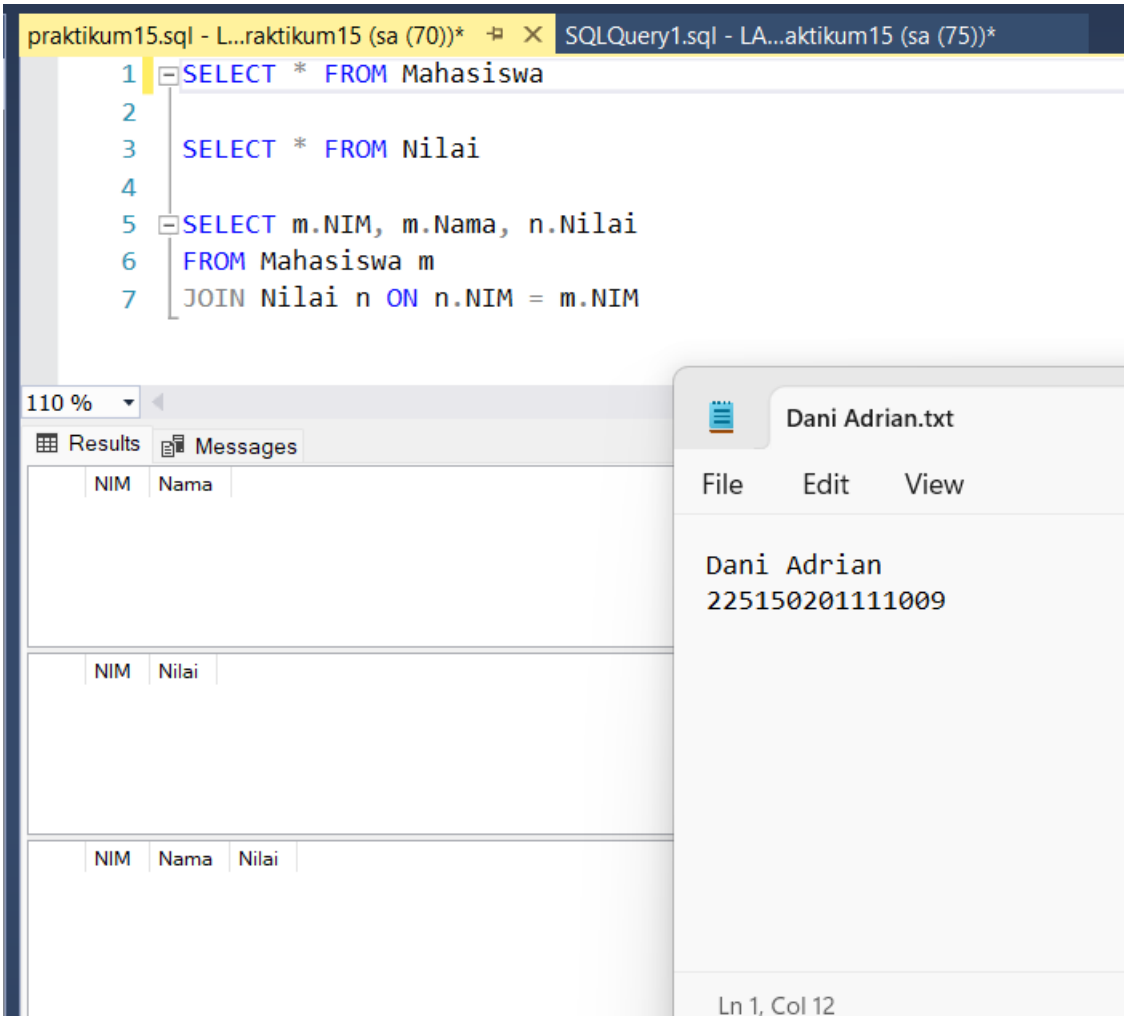
```
CREATE DATABASE praktikum15
GO
USE praktikum15
GO

CREATE TABLE Mahasiswa (
     NIM varchar(15),
     Nama varchar(25)
);

CREATE TABLE Nilai (
     NIM varchar(15),
     Nilai float
```

```
);
```

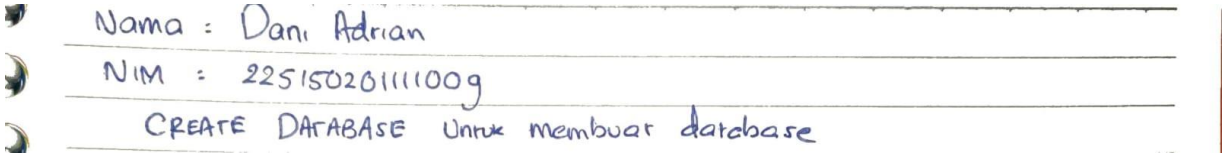
```
SELECT * FROM Mahasiswa

SELECT * FROM Nilai

SELECT m.NIM, m.Nama, n.Nilai
FROM Mahasiswa m
JOIN Nilai n ON n.NIM = m.NIM
```

Tampilan Keluaran





Pembahasan dan Analisis



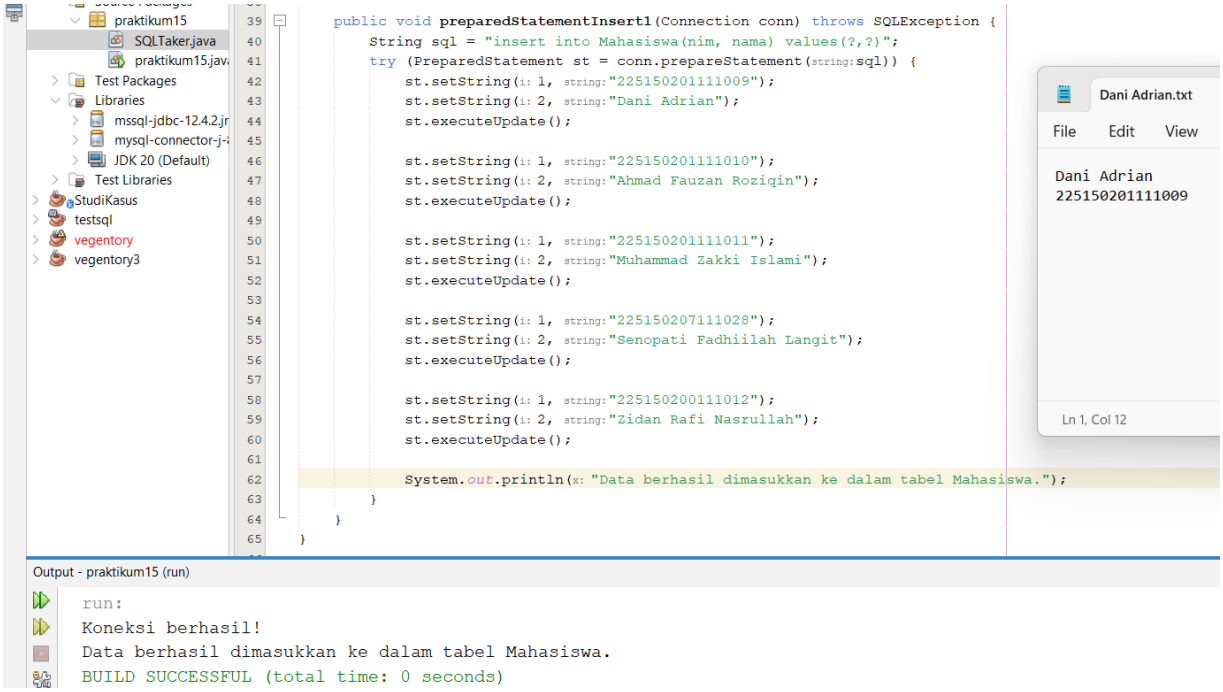
Implementasi

Insert Data Tabel Mahasiswa Menggunakan Java

```
   public void preparedStatementInsert1(Connection conn)
throws SQLException {
        String sql = "insert into Mahasiswa(nim, nama)
values(?,?)";
        try (PreparedStatement st =
conn.prepareStatement(sql)) {
            st.setString(1, "225150201111009");
            st.setString(2, "Dani Adrian");
            st.executeUpdate();
```

```
            st.setString(1, "225150201111010");
            st.setString(2, "Ahmad Fauzan Roziqin");
            st.executeUpdate();

            st.setString(1, "225150201111011");
            st.setString(2, "Muhammad Zakki Islami");
            st.executeUpdate();

            st.setString(1, "225150207111028");
            st.setString(2, "Senopati Fadhiilah Langit");
            st.executeUpdate();

            st.setString(1, "225150200111012");
            st.setString(2, "Zidan Rafi Nasrullah");
            st.executeUpdate();

            System.out.println("Data berhasil dimasukkan
ke dalam tabel Mahasiswa.");
        }
    }
```

Tampilan Keluaran



Pembahasan dan Analisis

Nama : Dani Adrian
NIM : 225150201111009

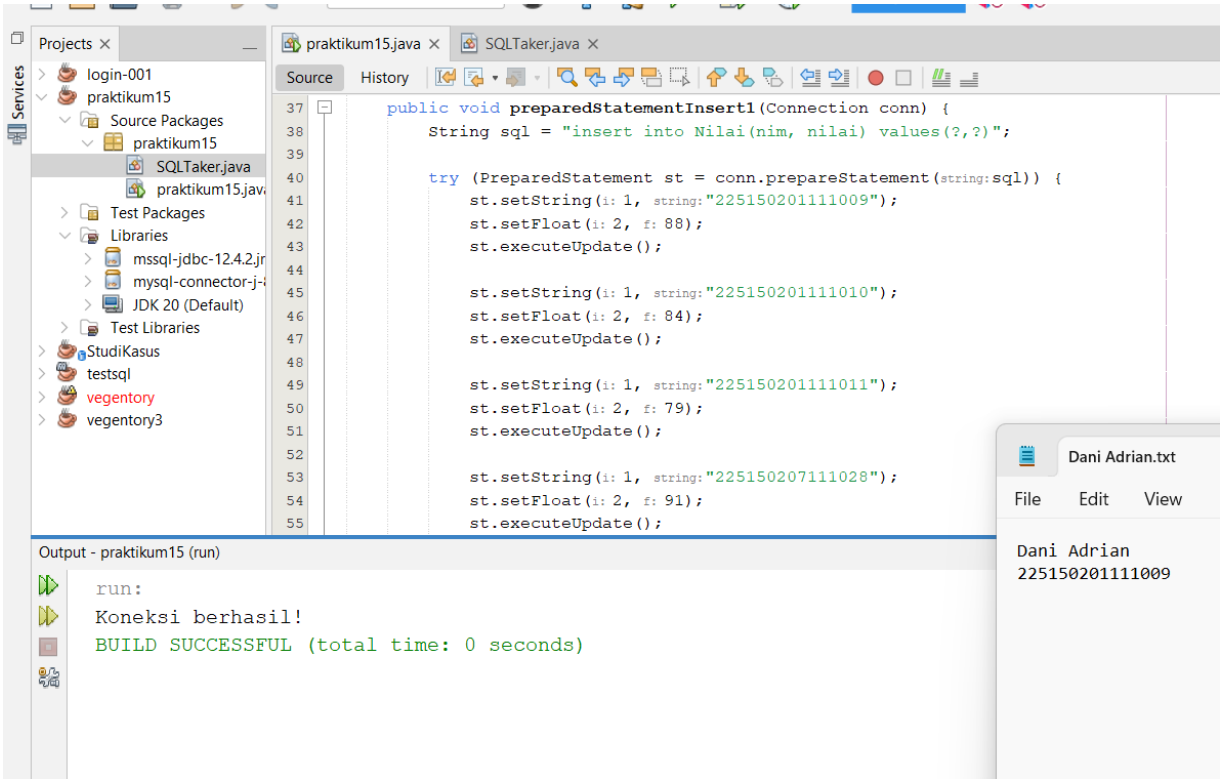
Method preparedstatementInsert1 digunakan untuk melakukan Insert data tabel mahasiswa di java. Method ini berfungsi untuk melakukan perubahan data dalam tabel yang bisa dilakukan dalam beberapa baris sekaligus.

Implementasi

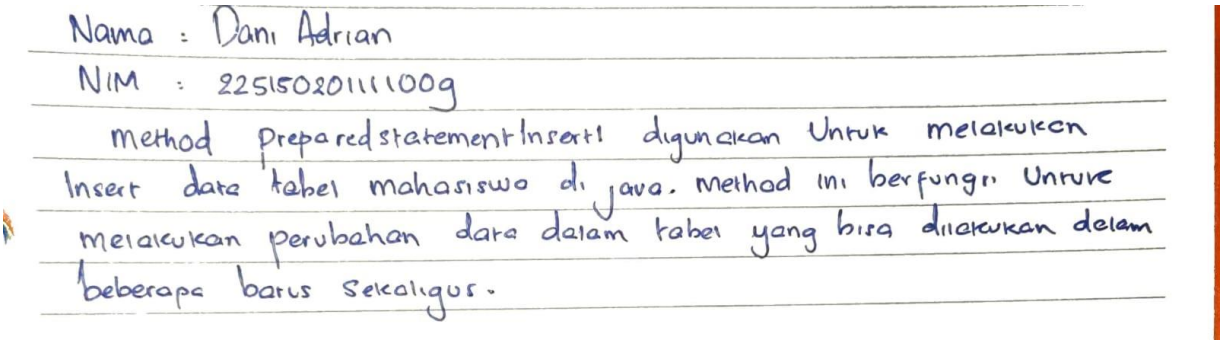
Insert Data tabel Nilai Menggunakan Java

```
   public void preparedStatementInsert1(Connection
conn) {
        String sql = "insert into Nilai(nim, nilai)
values(?,?)";

        try (PreparedStatement st =
conn.prepareStatement(sql)) {
            st.setString(1, "225150201111009");
            st.setFloat(2, 88);
            st.executeUpdate();

            st.setString(1, "225150201111010");
            st.setFloat(2, 84);
            st.executeUpdate();

            st.setString(1, "225150201111011");
            st.setFloat(2, 79);
            st.executeUpdate();

            st.setString(1, "225150207111028");
            st.setFloat(2, 91);
            st.executeUpdate();

            st.setString(1, "225150200111012");
            st.setFloat(2, 86);
            st.executeUpdate();
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }
```

Tampilan Keluaran



Pembahasan dan Analisis



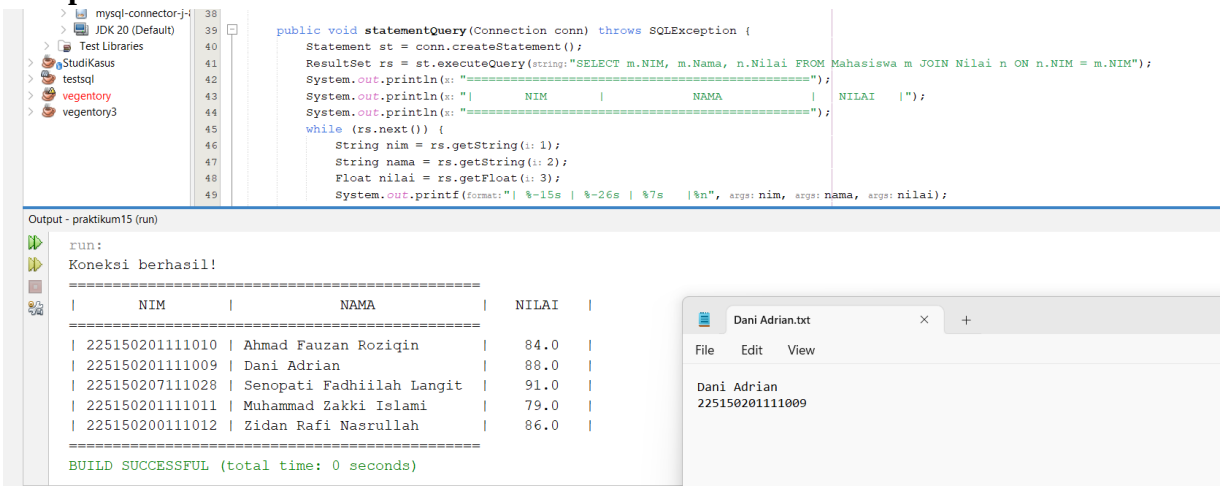
Implementasi

Menampilkan Data dari Dua Tabel di atas Menggunakan Java :

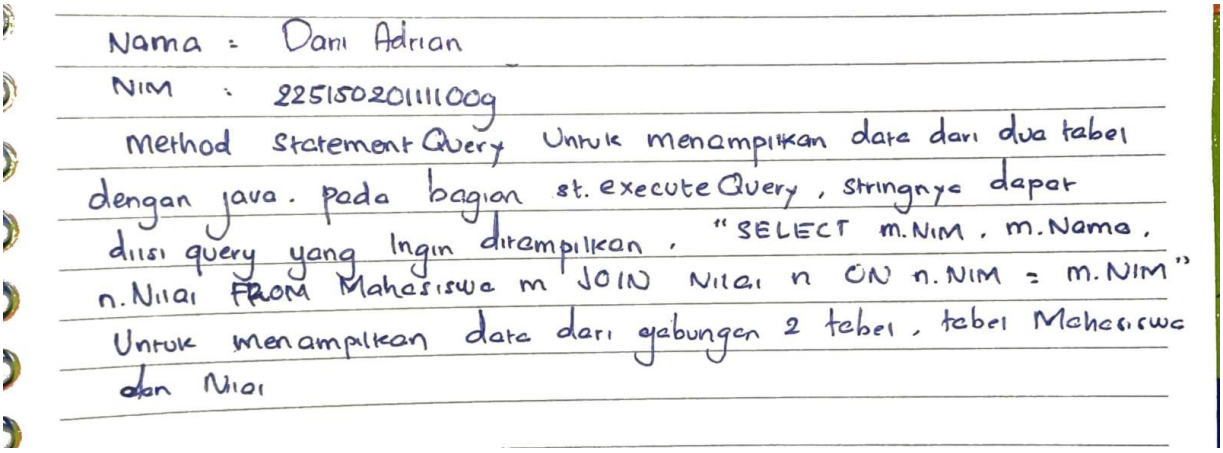
```
 public void statementQuery(Connection conn) throws SQLException {
        Statement st = conn.createStatement();
        ResultSet rs = st.executeQuery("SELECT m.NIM, m.Nama, n.Nilai FROM Mahasiswa m JOIN Nilai n ON n.NIM = m.NIM");
```

```
System.out.println("=================================
============");
        System.out.println("|       NIM       |
NAMA            |   NILAI   |");

System.out.println("=================================
============");
        while (rs.next()) {
            String nim = rs.getString(1);
            String nama = rs.getString(2);
            Float nilai = rs.getFloat(3);
            System.out.printf("| %-15s | %-26s | %7s
|%n", nim, nama, nilai);
        }

System.out.println("=================================
============");
    }
```

Tampilan Keluaran



Pembahasan dan Analisis

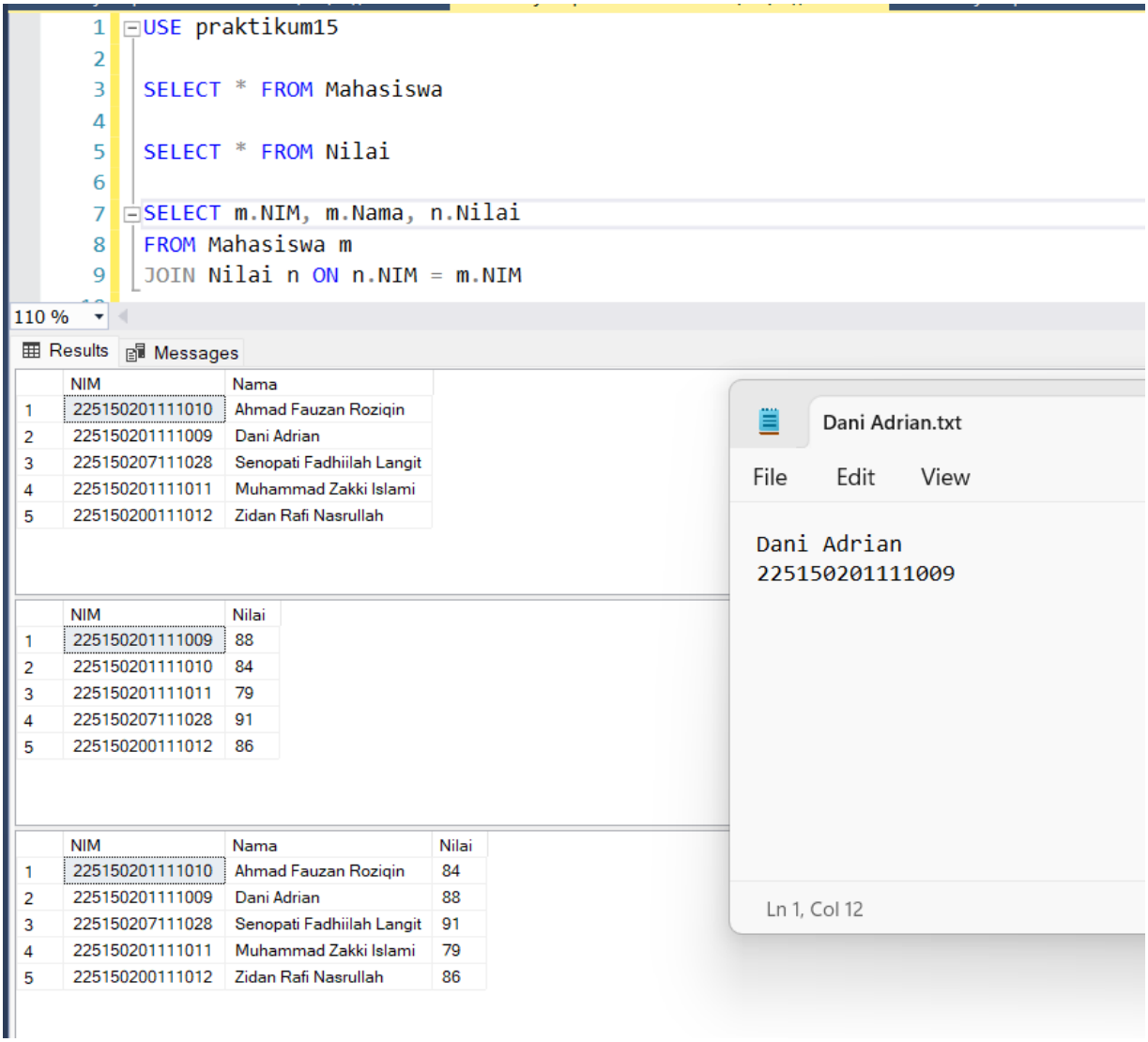


Implementasi

Cek tabel setelah insert data di MSSQL Server :

```
USE praktikum15

SELECT * FROM Mahasiswa

SELECT * FROM Nilai

SELECT m.NIM, m.Nama, n.Nilai
FROM Mahasiswa m
JOIN Nilai n ON n.NIM = m.NIM
```

Tampilan Keluaran



```
USE praktikum15

SELECT * FROM Mahasiswa

SELECT * FROM Nilai

SELECT m.NIM, m.Nama, n.Nilai
FROM Mahasiswa m
JOIN Nilai n ON n.NIM = m.NIM
```

110 %

Results | Messages

	NIM	Nama
1	225150201111010	Ahmad Fauzan Roziqin
2	225150201111009	Dani Adrian
3	225150207111028	Senopati Fadhiilah Langit
4	225150201111011	Muhammad Zakki Islami
5	225150200111012	Zidan Rafi Nasrullah

	NIM	Nilai
1	225150201111009	88
2	225150201111010	84
3	225150201111011	79
4	225150207111028	91
5	225150200111012	86

	NIM	Nama	Nilai
1	225150201111010	Ahmad Fauzan Roziqin	84
2	225150201111009	Dani Adrian	88
3	225150207111028	Senopati Fadhiilah Langit	91
4	225150201111011	Muhammad Zakki Islami	79
5	225150200111012	Zidan Rafi Nasrullah	86

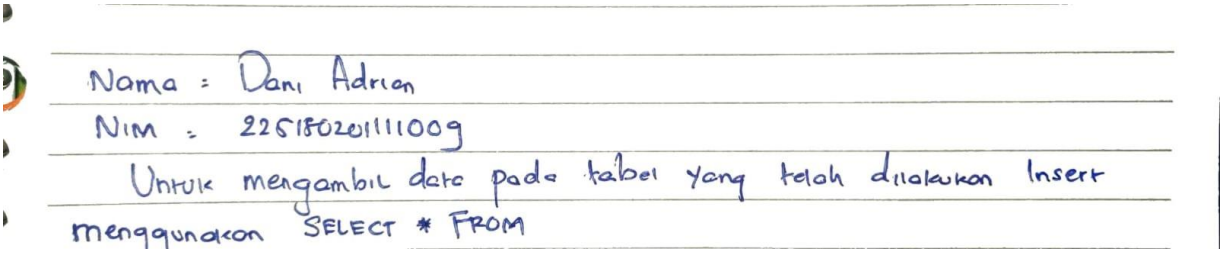
Dani Adrian.txt

File Edit View

Dani Adrian
225150201111009

Ln 1, Col 12

Pembahasan dan Analisis



Nama : Dani Adrian
Nim : 225150201111009
Untuk mengambil data pada tabel yang telah dilakukan Insert menggunakan SELECT * FROM

Implementasi

Full Implementasi

```
package praktikum15;

import java.sql.Connection;
import java.sql.DriverManager;
```

```
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;

public class praktikum15 {

    public static void main(String[] args) {
        try {
            String connectionUrl = "jdbc:sqlserver://"
+ SQLTaker.instanceName +
                    "database=" + SQLTaker.dbName +
                    "user=" + SQLTaker.id +
                    "password=" + SQLTaker.pass +
                    "encrypt=false;" +
                    "trustServerCertificate=false;" +
                    "loginTimeout=10;";

            try (Connection connection =
DriverManager.getConnection(connectionUrl)) {

                if (connection != null) {
                    System.out.println("Koneksi
berhasil!");
                    praktikum15 praktikum = new
praktikum15();

praktikum.preparedStatementInsert1(connection);

praktikum.preparedStatementInsert2(connection);

praktikum.statementQuery(connection);
                }

            } catch (SQLException e) {
                e.printStackTrace();
                System.err.println("Koneksi gagal: " +
e.getMessage());
            }
        } catch (Exception e) {
            e.printStackTrace();
        }
```

```
    }

    public void preparedStatementInsert1(Connection
conn) {
        String sql = "insert into Mahasiswa(nim, nama)
values(?,?)";
        try (PreparedStatement st =
conn.prepareStatement(sql)) {
            st.setString(1, "225150201111009");
            st.setString(2, "Dani Adrian");
            st.executeUpdate();

            st.setString(1, "225150201111010");
            st.setString(2, "Ahmad Fauzan Roziqin");
            st.executeUpdate();

            st.setString(1, "225150201111011");
            st.setString(2, "Muhammad Zakki Islami");
            st.executeUpdate();

            st.setString(1, "225150207111028");
            st.setString(2, "Senopati Fadhiilah
Langit");
            st.executeUpdate();

            st.setString(1, "225150200111012");
            st.setString(2, "Zidan Rafi Nasrullah");
            st.executeUpdate();

            System.out.println("Data berhasil
dimasukkan ke dalam tabel Mahasiswa.");
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }

    public void preparedStatementInsert2(Connection
conn) {
        String sql = "insert into Nilai(nim, nilai)
values(?,?)";
```

```
        try (PreparedStatement st =
conn.prepareStatement(sql)) {
            st.setString(1, "225150201111009");
            st.setFloat(2, 88);
            st.executeUpdate();

            st.setString(1, "225150201111010");
            st.setFloat(2, 84);
            st.executeUpdate();

            st.setString(1, "225150201111011");
            st.setFloat(2, 79);
            st.executeUpdate();

            st.setString(1, "225150207111028");
            st.setFloat(2, 91);
            st.executeUpdate();

            st.setString(1, "225150200111012");
            st.setFloat(2, 86);
            st.executeUpdate();
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }

    public void statementQuery(Connection conn) throws
SQLException {
        Statement st = conn.createStatement();
        ResultSet rs = st.executeQuery("SELECT m.NIM,
m.Nama, n.Nilai FROM Mahasiswa m JOIN Nilai n ON n.NIM
= m.NIM");

System.out.println("==================================
============");
        System.out.println("|       NIM       |
NAMA            |   NILAI   |");

System.out.println("==================================
============");
        while (rs.next()) {
            String nim = rs.getString(1);
```

```
            String nama = rs.getString(2);
            Float nilai = rs.getFloat(3);
            System.out.printf("| %-15s | %-26s | %7s
|%n", nim, nama, nilai);
        }

System.out.println("==================================
============");
    }
}
```