

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
```

	<code>);</code>
	<code>SELECT * FROM Mahasiswa</code> <code>SELECT * FROM Nilai</code> <code>SELECT m.NIM, m>Nama, n.Nilai</code> <code>FROM Mahasiswa m</code> <code>JOIN Nilai n ON n.NIM = m.NIM</code>

Tampilan Keluaran

SQLQuery1.sql - LA...aktikum15 (sa (75))*

```

1 CREATE DATABASE praktikum15
2 GO
3 USE praktikum15
4 GO
5
6 CREATE TABLE Mahasiswa (
7     NIM varchar(15),
8     Nama varchar(25)
9 );
10
11 CREATE TABLE Nilai (
12     NIM varchar(15),
13     Nilai float
14 );
15

```

110 %

Messages
Commands completed successfully.

Dani Adr × +
File Edit View
Dani Adrian
225150201111009

praktikum15.sql - L...raktikum15 (sa (70))* SQLQuery1.sql - LA...aktikum15 (sa (75))*

```

1 SELECT * FROM Mahasiswa
2
3 SELECT * FROM Nilai
4
5 SELECT m.NIM, m>Nama, n.Nilai
6 FROM Mahasiswa m
7 JOIN Nilai n ON n.NIM = m.NIM

```

110 %

Results Messages

NIM	Nama

NIM	Nilai

NIM	Nama	Nilai

Dani Adrian.txt

File Edit View

Dani Adrian
225150201111009

Ln 1, Col 12

Pembahasan dan Analisis

Nama : Dani Adrian

NIM : 225150201111009

CREATE DATABASE Untuk membuat database

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

The screenshot displays an IDE with a project named 'praktikum15'. The main editor shows a Java class 'SQLTaker.java' with a method 'preparedStatementInsert1' that inserts five records into a 'Mahasiswa' table. The records are: (225150201111009, 'Dani Adrian'), (225150201111010, 'Ahmad Fauzan Roziqin'), (225150201111011, 'Muhammad Zakki Islami'), (225150207111028, 'Senopati Fadhiilah Langit'), and (225150200111012, 'Zidan Rafi Nasrullah'). A final print statement confirms the successful insertion of data into the 'Mahasiswa' table.

On the right, a preview of the 'Dani Adrian.txt' file shows the first record inserted: 'Dani Adrian' followed by '225150201111009'.

The bottom output window shows the following messages:

```

run:
Koneksi berhasil!
Data berhasil dimasukkan ke dalam tabel Mahasiswa.
BUILD SUCCESSFUL (total time: 0 seconds)

```

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();

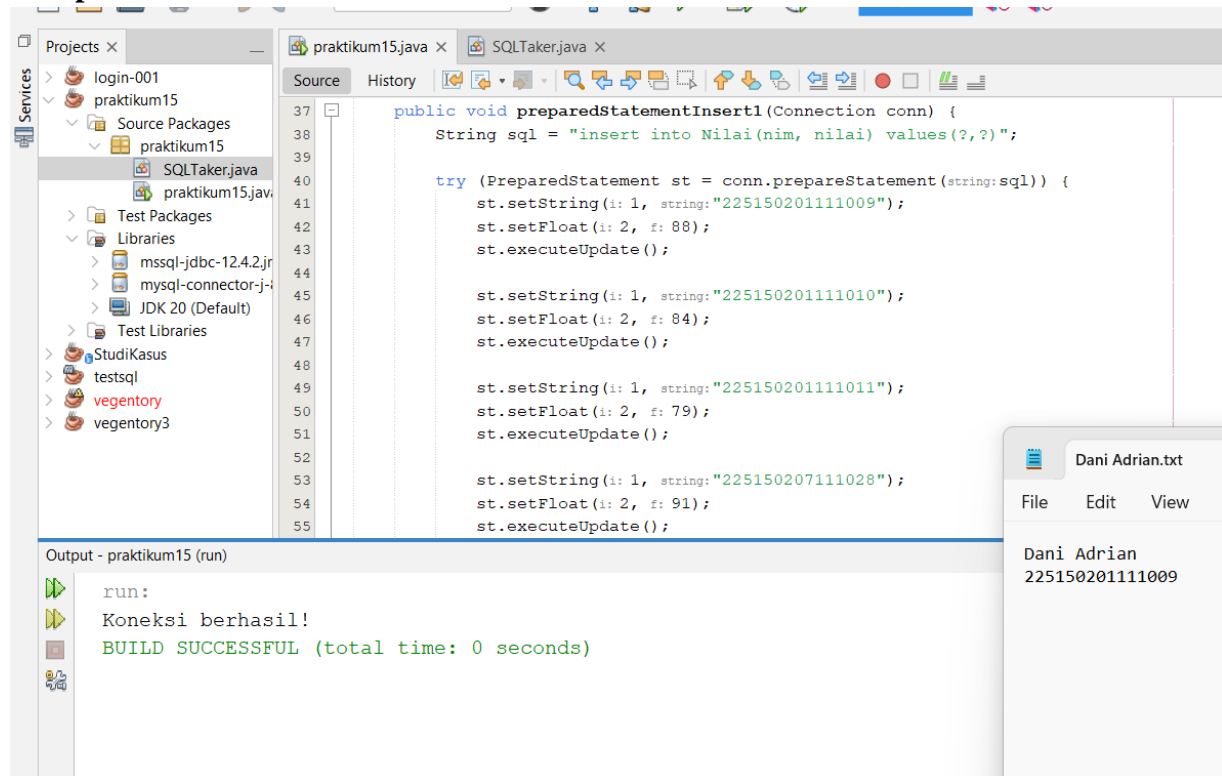
        st.setString(1, "225150201111010");
        st.setFloat(2, 84);
        st.executeUpdate();

        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

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.

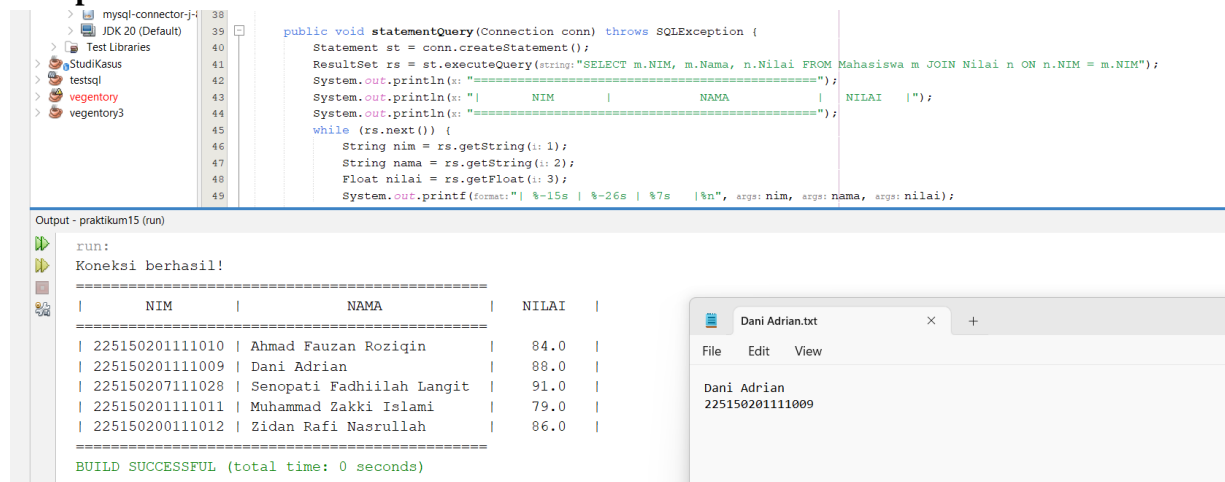
Implementasi

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



The screenshot displays an IDE with a Java file named `statementQuery`. The code connects to a MySQL database and executes a query to retrieve student data. The output window shows the following table:

NIM	NAMA	NILAI
225150201111010	Ahmad Fauzan Roziqin	84.0
225150201111009	Dani Adrian	88.0
225150207111028	Senopati Fadhiilah Langit	91.0
225150201111011	Muhammad Zakki Islami	79.0
225150200111012	Zidan Rafi Nasrullah	86.0

The output also includes the message "Koneksi berhasil!" and "BUILD SUCCESSFUL (total time: 0 seconds)".

Pembahasan dan Analisis

Nama : Dani Adrian

NIM : 225150201111009

Method Statement Query Untuk menampilkan data dari dua tabel dengan java. pada bagian st.executeQuery, stringnya dapat diisi query yang ingin ditampilkan, "SELECT m.NIM, m>Nama, n.Nilai FROM Mahasiswa m JOIN Nilai n ON n.NIM = m.NIM"

Untuk menampilkan data dari gabungan 2 tabel, tabel Mahasiswa dan Nilai

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


```

1 USE praktikum15
2
3 SELECT * FROM Mahasiswa
4
5 SELECT * FROM Nilai
6
7 SELECT m.NIM, m>Nama, n.Nilai
8 FROM Mahasiswa m
9 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("=====
=====");
}

}
```