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Kelas : A

Laporan Praktikum Sistem Basis Data

Modul 12 (Aplikasi dengan Database)

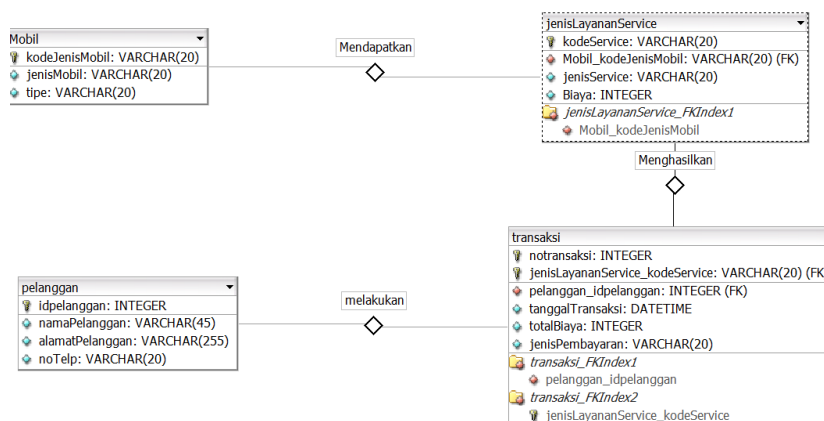
1. Membuat aplikasi service mobil berbasis Java dengan entitas sebagai berikut:

- Mobil
- Jenis layanan service
- Transaksi
- Pelanggan

2. Atribut yang dimiliki pada tiap-tiap entitas:

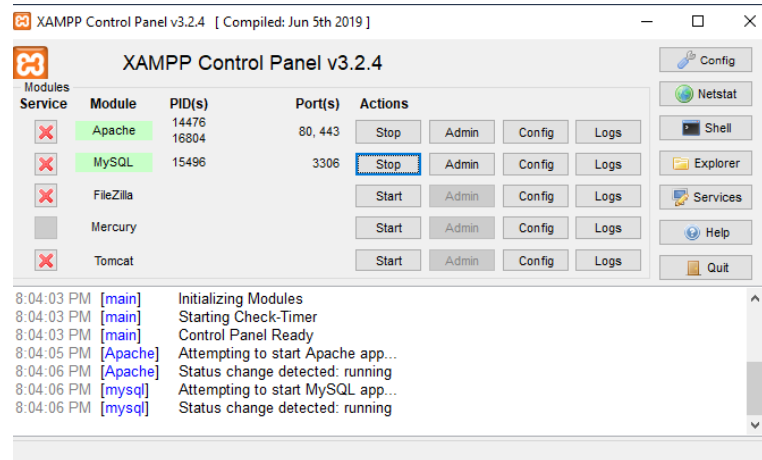
- Pelanggan:
 - i. Id Pelanggan
 - ii. Nama Pelanggan
 - iii. Alamat
 - iv. No Telp
- Mobil:
 - i. Kode jenis mobil
 - ii. Jenis mobil
 - iii. Tipe
- Jenis layanan service:
 - i. Kode service
 - ii. Jenis service
 - iii. Biaya
- Transaksi:
 - i. Nomor transaksi
 - ii. Tanggal transaksi
 - iii. Total biaya
 - iv. Jenis pembayaran

3. ER-Diagram

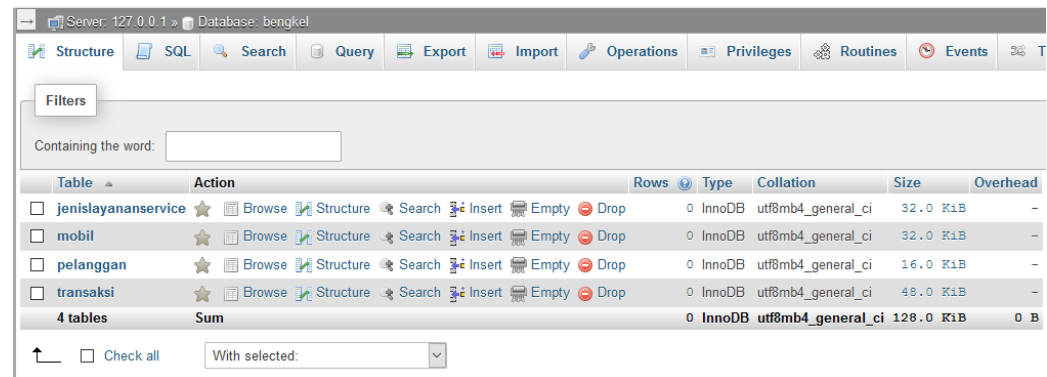


4. Membuat database dan tabel

- Menjalankan mysql dan apache pada xampp



- Membuat database dan tabel



5. Menghubungkan database dengan netbeans

```
1 package bengkel;
2 import java.sql.Connection;
3 import java.sql.DriverManager;
4 import java.sql.SQLException;
5
6 /**
7  * @author GALIH
8  */
9 public class Bengkel {
10     public static Connection getConnection(){
11         Connection conn = null;
12         String url = "jdbc:mysql://localhost/bengkel";
13         String user = "root";
14         String password = "";
15         try {
16             conn = DriverManager.getConnection(url, user, password);
17         } catch (SQLException e) {
18             System.out.println(e);
19         }
20         return conn;
21     }
22     public static void main(String[] args) {
23         try{
24             Connection c = Bengkel.getConnection();
25             System.out.println(String.format("Connected to database %s " + "successfully.", c.getCatalog()));
26         } catch (SQLException e) {
27             System.out.println(e);
28         }
29     }
30 }
```

6. Halaman utama pada aplikasi



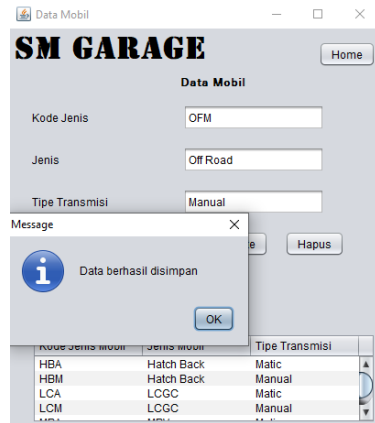
Kode jButton:

```
private void btn_mobilActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
    new mobil().setVisible(true);  
    new mobil().setDefaultCloseOperation(new mobil().DISPOSE_ON_CLOSE);  
    this.setVisible(false);  
}  
  
private void btn_layananActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
    new layanan().setVisible(true);  
    new layanan().setDefaultCloseOperation(new layanan().DISPOSE_ON_CLOSE);  
    this.setVisible(false);  
}  
  
private void btn_transaksiActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
    new Transaksi().setVisible(true);  
    new Transaksi().setDefaultCloseOperation(new Transaksi().DISPOSE_ON_CLOSE);  
    this.setVisible(false);  
}  
  
private void btn_pelangganActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
    new pelanggan().setVisible(true);  
    new pelanggan().setDefaultCloseOperation(new pelanggan().DISPOSE_ON_CLOSE);  
    this.setVisible(false);  
}
```

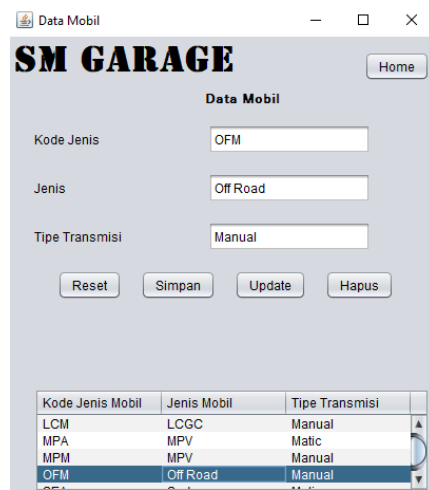
7. Mobil

Kode Jenis Mobil	Jenis Mobil	Tipe Transmisi
HBA	Hatch Back	Matic
HBM	Hatch Back	Manual
LCA	LCGC	Matic
LCM	LCGC	Manual

- Menyimpan data



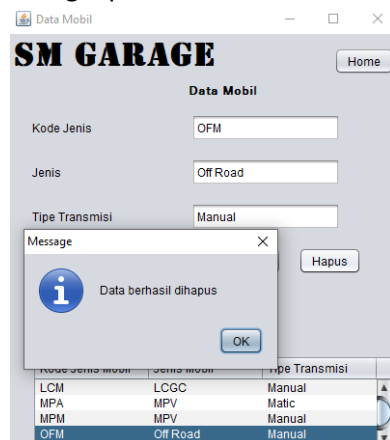
Hasil:



Kode:

```
private void btn_simpanActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    try{
        String sql = "INSERT INTO mobil VALUES ('"+tf_kodeJenisMobil.getText()+"','"+tf_jenisMobil.getText()+"',"+
            "'"+tf_tipe.getText()+"')";
        java.sql.Connection conn = (Connection)Koneksi.getConnection();
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);
        pstmt.execute();
        JOptionPane.showMessageDialog(null, "Data berhasil disimpan");
        showData();
        reset();
    }catch(SQLException e){
        JOptionPane.showMessageDialog(this, e.getMessage());
    }
}
```

- Menghapus data



Hasil:

Kode Jenis Mobil	Jenis Mobil	Tipe Transmisi
LCM	LCGC	Manual
MPV	MPV	Matic
MPV	MPV	Manual
SEA	Sedan	Matic

Kode:

```
private void btn_hapusActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
    try {  
        String sql = "DELETE FROM mobil WHERE kodeJenisMobil='"+tf_kodeJenisMobil.getText()+"'";  
        java.sql.Connection conn = (Connection)Koneksi.getConnection();  
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);  
        pstmt.execute();  
        JOptionPane.showMessageDialog(null, "Data berhasil dihapus");  
    } catch (SQLException e) {  
        JOptionPane.showMessageDialog(this, e.getMessage());  
    }  
    showData();  
    reset();  
}
```

- Mengupdate data

Kode Jenis Mobil	Jenis Mobil	Tipe Transmisi
SEA	Sedan	Triptonic
SEM	Sedan	Manual
SUA	SUV	Matic
SUM	SUV	Manual

Hasil:

Kode Jenis Mobil	Jenis Mobil	Tipe Transmisi
SEA	Sedan	Triptonic
SEM	Sedan	Manual
SUA	SUV	Matic
SUM	SUV	Manual

Kode:

```
private void btn_updateActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
    try {  
        String sql = "UPDATE mobil SET kodeJenisMobil='"+tf_kodeJenisMobil.getText()+"',"  
            + "jenisMobil='"+tf_jenisMobil.getText()+"', tipe=" "  
            +tf_tipe.getText()+"WHERE kodeJenisMobil = '"+tf_kodeJenisMobil.getText()+"'";  
        java.sql.Connection conn = (Connection)Koneksi.getConnection();  
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);  
        pstmt.execute();  
        JOptionPane.showMessageDialog(null, "Data berhasil diubah");  
    } catch (SQLException e) {  
        JOptionPane.showMessageDialog(this, e.getMessage());  
    }  
    showData();  
    reset();  
}
```

8. Jenis Layanan

The screenshot shows a Java Swing window titled "Jenis Layanan". It contains a form titled "Jenis Layanan Servis" with the following fields and values:

- Kode Service: FS-HBA
- Kode Jenis Mobil: HBA
- Jenis Service: Full Servis
- Biaya: 800000

Below the form are four buttons: "Reset", "Simpan", "Update", and "Hapus". At the bottom, there is a table with the following data:

Kode Service	Kode Jenis ...	Jenis Service	Biaya
FS-HBA	HBA	Full Servis	800000
FS-HBM	HBM	Full Servis	750000
FS-LCA	LCA	Full Servis	590000
FS-LCM	LCM	Full Servis	550000
FS-MBA	MBA	Full Servis	850000

- Menyimpan data

The screenshot shows the same "Jenis Layanan" window, but with updated data in the form:

- Kode Service: HS-SEM
- Kode Jenis Mobil: SEM
- Jenis Service: Heavy Service
- Biaya: 900000

A "Message" dialog box is displayed in the center, containing an information icon and the text "Data berhasil disimpan" (Data successfully saved), with an "OK" button.

The table at the bottom remains the same as in the previous screenshot.

Hasil:

Jenis Layanan

SM GARAGE

Home

Jenis Layanan Servis

Kode Service: HS-SEM

Kode Jenis Mobil: SEM

Jenis Service: Heavy Service

Biaya: 900000

Reset Simpan Update Hapus

Kode Service	Kode Jenis ...	Jenis Service	Biaya
FS-SUM	SUM	Full Servis	1000000
HS-SEM	SEM	Heavy Service	900000
LS-HBA	HBA	Servis Ringan	550000
LS-HBM	HBM	Servis Ringan	500000

Kode:

```
private void btn_simpanActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    try{
        String sql = "INSERT INTO jenislayanananservice VALUES ('"+tf_kodeService.getText()+"','"+tf_jenisMobil.getTex
            "','"+tf_jenisService.getText()+"','"+tf_biaya.getText()+"')";
        java.sql.Connection conn = (Connection)Koneksi.getConnection();
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);
        pstmt.execute();
        JOptionPane.showMessageDialog(null, "Data berhasil disimpan");
        showData();
        reset();
    }catch(SQLException e){
        JOptionPane.showMessageDialog(this, e.getMessage());
    }
}
```

- Mengupdate data

Jenis Layanan

SM GARAGE

Home

Jenis Layanan Servis

Kode Service: HS-SEM

Kode Jenis Mobil: SEM

Jenis Service: Heavy Service

Biaya: 1200000

Reset Simpan Update Hapus

Message

Data berhasil diubah

OK

Kode Service	Kode Jenis ...	Jenis Service	Biaya
FS-SUM	SUM	Full Servis	1000000
HS-SEM	SEM	Heavy Service	900000
LS-HBA	HBA	Servis Ringan	550000
LS-HBM	HBM	Servis Ringan	500000

Hasil:

Jenis Layanan

SM GARAGE

Home

Jenis Layanan Servis

Kode Service:

Kode Jenis Mobil:

Jenis Service:

Biaya:

Reset Simpan Update Hapus

Kode Service	Kode Jenis ...	Jenis Service	Biaya
FS-SUM	SUM	Full Servis	1000000
HS-SEM	SEM	Heavy Service	1200000
LS-HBA	HBA	Servis Ringan	550000
LS-HBM	HBM	Servis Ringan	500000

Kode:

```
private void btn_updateActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    try{
        String sql = "UPDATE jenislayanananservice SET kodeService='"+tf_kodeService.getText()+"',kodeJenisMobilFK='"+
            + "jenisService='"+tf_jenisService.getText()+"',biaya='"+tf_biaya.getText()+"'WHERE kodeService = "
            + tf_kodeService.getText()+"'";
        java.sql.Connection conn = (Connection)Koneksi.getConnection();
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);
        pstmt.execute();
        JOptionPane.showMessageDialog(null, "Data berhasil diubah");
    }catch( SQLException e){
        JOptionPane.showMessageDialog(this, e.getMessage());
    }
    showData();
    reset();
}
```

- Menghapus data

Jenis Layanan

SM GARAGE

Home

Jenis Layanan Servis

Kode Service:

Kode Jenis Mobil:

Jenis Service:

Biaya:

Reset Simpan Update Hapus

Message

 Data berhasil dihapus

OK

Kode Service	Kode Jenis ...	Jenis Service	Biaya
FS-SUM	SUM	Full Servis	1000000
HS-SEM	SEM	Heavy Service	1200000
LS-HBA	HBA	Servis Ringan	550000
LS-HBM	HBM	Servis Ringan	500000

Hasil:

Jenis Layanan

SM GARAGE

Home

Jenis Layanan Servis

Kode Service

Kode Jenis Mobil

Jenis Service

Biaya

Reset Simpan Update Hapus

Kode Service	Kode Jenis ...	Jenis Service	Biaya
FS-SUM	SUM	Full Servis	1000000
LS-HBA	HBA	Servis Ringan	550000
LS-HBM	HBM	Servis Ringan	500000
LS-LCA	LCA	Servis Ringan	420000

Kode:

```
private void btn_hapusActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    try{
        String sql = "DELETE FROM jenislayananservice WHERE kodeService='"+tf_kodeService.getText()+"'";
        java.sql.Connection conn = (Connection)Koneksi.getConnection();
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);
        pstmt.execute();
        JOptionPane.showMessageDialog(null, "Data berhasil dihapus");
    }catch(SQLException e){
        JOptionPane.showMessageDialog(this, e.getMessage());
    }
    showData();
    reset();
}
```

9. Pelanggan

Data Pelanggan

SM GARAGE

Home

Data Pelanggan

ID Pelanggan

Nama Pelanggan

Alamat

No Telp

Reset Simpan Update Hapus

ID Pelanggan	Nama Pelan...	Alamat	No Telp
1	Al Yusufa	Wonogiri	08123456789
2	Ika Kusuma	Sukoharjo	085643221...
3	Ridho Nuh	Karanganyar	081229666...
4	Doni Kusmi...	Surakarta	089776454...

- Menyimpan data

SM GARAGE

Home

Data Pelanggan

ID Pelanggan: 6

Nama Pelanggan: Rendy Juli

Alamat: Semarang

No Telp: 081229333444

Reset Simpan Update Hapus

Message: Data berhasil disimpan

ID Pelanggan	Nama Pelan...	Alamat	No Telp
1	Ika Kusuma	Sukoharjo	085643221...
2	Ridho Nuh	Karanganyar	081229666...
3	Doni Kusmi...	Surakarta	089776454...
4	Devi Novita	Wonogiri	087454298...

Hasil:

SM GARAGE

Home

Data Pelanggan

ID Pelanggan: 6

Nama Pelanggan: Rendy Juli

Alamat: Semarang

No Telp: 081229333444

Reset Simpan Update Hapus

ID Pelanggan	Nama Pelan...	Alamat	No Telp
1	Ika Kusuma	Sukoharjo	085643221...
2	Ridho Nuh	Karanganyar	081229666...
3	Doni Kusmi...	Surakarta	089776454...
4	Devi Novita	Wonogiri	087454298...
5	Rendy Juli	Semarang	081229333...

Code:

```
private void btn_simpanActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    try {
        String sql = "INSERT INTO pelanggan VALUES ('"+cf_id.getText()+"', '"+cf_nama.getText()+"', '"+cf_alamat.getText()+"', '"+cf_telp.getText()+"')";
        java.sql.Connection conn = (Connection)Koneksi.getConnection();
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);
        pstmt.execute();
        JOptionPane.showMessageDialog(null, "Data berhasil disimpan");
        showData();
        reset();
    } catch (SQLException e) {
        JOptionPane.showMessageDialog(this, e.getMessage());
    }
}
```

- Mengupdate data

SM GARAGE

Home

Data Pelanggan

ID Pelanggan: 6

Nama Pelanggan: Rendy Juli

Alamat: Boyolali

No Telp: 081229333444

Reset Simpan Update Hapus

Message: Data berhasil diubah

ID Pelanggan	Nama Pelan...	Alamat	No Telp
1	Ika Kusuma	Sukoharjo	085643221...
2	Ridho Nuh	Karanganyar	081229666...
3	Doni Kusmi...	Surakarta	089776454...
4	Devi Novita	Wonogiri	087454298...
5	Rendy Juli	Semarang	081229333...

Hasil:

The screenshot shows the 'Data Pelanggan' form in the SM GARAGE application. The form has fields for ID Pelanggan (6), Nama Pelanggan (Rendy Juli), Alamat (Boyolali), and No Telp (08122933444). Below the form are buttons for Reset, Simpan, Update, and Hapus. A table at the bottom displays the customer data:

ID Pelanggan	Nama Pelan...	Alamat	No Telp
2	Ika Kusuma	Sukoharjo	085643221...
3	Ridho Nuh	Karanganyar	081229666...
4	Doni Kusmi...	Surakarta	089776454...
5	Devi Novita	Wonogiri	087454298...
6	Rendy Juli	Boyolali	081229333...

Kode:

```
private void btn_updateActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
    try {  
        String sql = "UPDATE pelanggan SET idPelanggan='"+tf_id.getText()+"',namaPelanggan='"+tf_nama.getText()+"',"+  
            + "alamatPelanggan='"+tf_alamat.getText()+"',noTelp='"+tf_telp.getText()+"'WHERE idPelanggan = '"+  
            + tf_id.getText()+"'";  
        java.sql.Connection conn = (Connection)Koneksi.getConnection();  
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);  
        pstmt.executeUpdate();  
        JOptionPane.showMessageDialog(null, "Data berhasil diubah");  
    } catch (SQLException e) {  
        JOptionPane.showMessageDialog(this, e.getMessage());  
    }  
    showData();  
    reset();  
}
```

- Menghapus data

The screenshot shows the 'Data Pelanggan' form with a confirmation message dialog box overlaid. The message says "Data berhasil dihapus" (Data successfully deleted) with an "OK" button. The form fields and table are the same as in the previous screenshot.

Hasil:

The screenshot shows the 'Data Pelanggan' form after the deletion of the customer with ID 6. The form fields are empty, and the table now only contains the first five customers:

ID Pelanggan	Nama Pelan...	Alamat	No Telp
1	Ika Kusuma	Wonogiri	081229666...
2	Ika Kusuma	Sukoharjo	085643221...
3	Ridho Nuh	Karanganyar	081229666...
4	Doni Kusmi...	Surakarta	089776454...
5	Devi Novita	Wonogiri	087454298...

Kode:

```
private void btn_hapusActionPerformed(java.awt.event.ActionEvent evt) {  
    // TODO add your handling code here:  
    try{  
        String sql = "DELETE FROM pelanggan WHERE idPelanggan='"+tf_id.getText()+"'";  
        java.sql.Connection conn = (Connection)Koneksi.getConnection();  
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);  
        pstmt.execute();  
        JOptionPane.showMessageDialog(null, "Data berhasil dihapus");  
    }catch(SQLException e){  
        JOptionPane.showMessageDialog(this, e.getMessage());  
    }  
    showData();  
    reset();  
}
```

10. Transaksi

No Trans...	Kode Serv...	ID Pelang...	Tanggal T...	Total Biaya	Jenis Pe...
1	FS-HBA	1	2020-06-...	800000	Tunai
2	FS-HBM	4	2020-06-...	750000	Non Tunai

- Menyimpan data

No Trans...	Kode Serv...	ID Pelang...	Tanggal T...	Total Biaya	Jenis Pe...
1	FS-HBA	1	2020-06-...	800000	Tunai
2	FS-HBM	4	2020-06-...	750000	Non Tunai

Hasil:

SM GARAGE

Transaksi

No Transaksi: 3 Total Biaya: 650000

Kode Service: FS-SEM Jenis Pembayaran: Tunai

ID Pelanggan: 2

Tanggal: 10-06-30 00:00:00.0

Reset Simpan Update Hapus

No Trans...	Kode Serv...	ID Pelang...	Tanggal T...	Total Biaya	Jenis Pe...
1	FS-HBA	1	2020-06-...	800000	Tunai
2	FS-HBM	4	2020-06-...	750000	Non Tunai
3	FS-SEM	2	2020-06-...	650000	Tunai

Kode:

```
private void btn_simpanActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    try {
        String sql = "INSERT INTO transaksi VALUES ('"+tf_noTransaksi.getText()+"','"+tf_kodeService.getText()+"',"+tf_idPelanggan.getText()+"','"+tf_tgl.getText()+"','"+tf_total.getText()+"','"+tf_jenisPembaya";
        java.sql.Connection conn = (Connection)Koneksi.getConnection();
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);
        pstmt.execute();
        JOptionPane.showMessageDialog(null, "Data berhasil disimpan");
        showData();
        reset();
    } catch (SQLException e) {
        JOptionPane.showMessageDialog(this, e.getMessage());
    }
}
```

- Mengupdate data

SM GARAGE

Transaksi

No Transaksi: 3 Total Biaya: 500000

Kode Service: MS-SEM Jenis Pembayaran: Non Tunai

ID Pelanggan: 2

Tanggal: 10-06-30 00:00:00.0

Reset Simpan Update

Message
Data berhasil diubah
OK

No Trans...	Kode Serv...	ID Pelang...	Tanggal T...	Total Biaya	Jenis Pe...
1	FS-HBA	1	2020-06-...	800000	Tunai
2	FS-HBM	4	2020-06-...	750000	Non Tunai
3	MS-SEM	2	2020-06-...	500000	Non Tunai

Hasil:

SM GARAGE

Transaksi

No Transaksi: 3 Total Biaya: 500000

Kode Service: MS-SEM Jenis Pembayaran: Non Tunai

ID Pelanggan: 2

Tanggal: 10-06-30 00:00:00.0

Reset Simpan Update Hapus

No Trans...	Kode Serv...	ID Pelang...	Tanggal T...	Total Biaya	Jenis Pe...
1	FS-HBA	1	2020-06-...	800000	Tunai
2	FS-HBM	4	2020-06-...	750000	Non Tunai
3	MS-SEM	2	2020-06-...	500000	Non Tunai

Kode:

```
private void btn_updateActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    try{
        String sql = "UPDATE transaksi SET noTransaksi='"+tf_noTransaksi.getText()+"',kodeServiceFK='"+tf_kodeService
        + "idPelangganFK='"+tf_idPelanggan.getText()+"',tanggalTransaksi='"+tf_tgl.getText()+"',totalBiaya='
        '+tf_jenisPembayaran='"+tf_jenisPembayaran.getText()+"'WHERE noTransaksi = '"+tf_noTransaksi.getText()
        java.sql.Connection conn = (Connection)Koneksi.getConnection();
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);
        pstmt.execute();
        JOptionPane.showMessageDialog(null, "Data berhasil diubah");
    }catch( SQLException e){
        JOptionPane.showMessageDialog(this, e.getMessage());
    }
    showData();
    reset();
}
}
```

- Menghapus data

The screenshot shows the 'SM GARAGE' application window. The 'Transaksi' form is active, displaying fields for No Transaksi (3), Kode Service (MS-SEM), ID Pelanggan (2), and Tanggal (10-06-30 00:00:00). The Total Biaya is 500000 and Jenis Pembayaran is Non Tunai. A message dialog box is displayed over the form, stating 'Data berhasil dihapus' (Data successfully deleted) with an 'OK' button. Below the form, a table lists the transaction data:

No Trans...	Kode Serv...	ID Pelang...	Tanggal T...	Total Biaya	Jenis Pe...
1	FS-HBA	1	2020-06-...	800000	Tunai
2	FS-HBM	4	2020-06-...	750000	Non Tunai
3	MS-SEM	2	2020-06-...	500000	Non Tunai

Hasil:

The screenshot shows the 'SM GARAGE' application window after the deletion of the transaction with ID 3. The 'Transaksi' form is now empty, with fields for No Transaksi, Kode Service, ID Pelanggan, and Tanggal. The Total Biaya and Jenis Pembayaran fields are also empty. The 'Hapus' button is now visible next to the 'Reset', 'Simpan', and 'Update' buttons. Below the form, a table lists the remaining transaction data:

No Trans...	Kode Serv...	ID Pelang...	Tanggal T...	Total Biaya	Jenis Pe...
1	FS-HBA	1	2020-06-...	800000	Tunai
2	FS-HBM	4	2020-06-...	750000	Non Tunai

Kode:

```
private void btn_hapusActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    try{
        String sql = "DELETE FROM transaksi WHERE noTransaksi='"+tf_noTransaksi.getText()+"'";
        java.sql.Connection conn = (Connection)Koneksi.getConnection();
        java.sql.PreparedStatement pstmt = conn.prepareStatement(sql);
        pstmt.execute();
        JOptionPane.showMessageDialog(null, "Data berhasil dihapus");
    }catch( SQLException e){
        JOptionPane.showMessageDialog(this, e.getMessage());
    }
    showData();
    reset();
}
}
```