

NAMA : INTAN LARASATI

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KELAS : D

MODUL 1

1. Jelaskan mengapa dibutuhkan data!

Data diperlukan dalam segala hal, baik berupa pengukuran, pencatatan, pengumpulan informasi, maupun pengambilan keputusan semuanya memerlukan data. Dengan kata lain data sangat dibutuhkan karena informasi yang ada akan memberikan arti yang sangat penting baik untuk saat ini maupun untuk akan datang. Sehingga definisi dari data adalah informasi yang mengandung arti.

2. Jelaskan manfaat database dan contohnya!

Adapun keuntungan database terhadap sistem pemrosesan adalah:

- 1) Kemubajiran data berkurang.
- 2) Integritas data dapat selalu terjaga.
- 3) Berbagai data dapat selalu dilakukan oleh setiap user.
- 4) Penggunaan data lebih mudah.
- 5) Konsistensi data dapat selalu terjaga. Manfaat Database

Adapun manfaat database adalah:

- 1) Sebagai komponen utama atau penting dalam sistem informasi, karena merupakan dasar dalam menyediakan informasi.
- 2) Menentukan kualitas informasi yaitu cepat, akurat, dan relevan, sehingga informasi yang disajikan tidak basi. Informasi dapat dikatakan bernilai bila manfaatnya lebih efektif dibandingkan dengan biaya mendapatkannya.
- 3) Mengatasi kerangkapan data (redundancy data).
- 4) Menghindari terjadinya inkonsistensi data.
- 5) Mengatasi kesulitan dalam mengakses data.
- 6) Menyusun format yang standar dari sebuah data.

- 7) Penggunaan oleh banyak pemakai (multiple user). Sebuah database bisa dimanfaatkan sekaligus secara bersama oleh banyak pengguna (multiuser).
- 8) Melakukan perlindungan dan pengamanan data. Setiap data hanya bisa diakses atau dimanipulasi oleh pihak yang diberi otoritas dengan memberikan login dan password terhadap masing-masing data.
- 9) Agar pemakai mampu menyusun suatu pandangan (view) abstraksi dari data. Hal ini bertujuan menyederhanakan interaksi antara pengguna dengan sistemnya dan database dapat mempresentasikan pandangan yang berbeda kepada para pengguna, programmer dan administratornya

3. Untuk menentukan jenis database yang digunakan, apa yang menjadi acuan dalam pemilihan database tersebut?

Yang menjadi acuan dalam pemilihan database adalah sebagai berikut.

- 1) Pendeskripsian kebutuhan informasi dan data
- 2) Spesifikasi data
- 3) Pemrosesan yang diperlukan oleh data
- 4) Pertimbangan keamanan
- 5) Kecocokan dengan tipe aplikasi
- 6) Bahasa query
- 7) Biaya tak langsung terhadap pemrosesan

4. Jelaskan istilah atau terminology yang digunakan dalam Database (database, table, field, record)

Database: Sekumpulan data yang saling berhubungan untuk mencapai suatu tujuan.

Tabel: Merupakan hal yang paling mendasar dalam hal penyimpanan data yang terdiri dari field dan record.

Field (kolom) : Merupakan elemen dari tabel yang berisikan informasi tertentu yang spesifik tentang subjudul tabel pada sebuah item data.

Syarat-syarat pembentukan Field Name pada tabel:

- a) Harus Unik atau Spesifik
- b) Boleh disingkat
- c) Pemisah sebagai pengganti spasi dalam pembentuk field adalah tanda lambang "_"

Contoh: Kode Barang menjadi KdBarang, KodeBrg, Kd_Brg, Kd_Barang.

Record (baris): Sekumpulan data yang saling berkaitan tentang sebuah subjek tertentu, misalnya data seorang siswa akan disimpan dalam record yang terdiri dari beberapa kolom / field.

5. Bandingkan perbedaan pengolahan data secara manual dengan menggunakan system database.

Pengolahan data secara manual segala bentuk pengolahan juga dilakukan secara manual (disusun, dihitung atau dibuat laporannya secara manual). Cara ini tentu saja membutuhkan ekstra tenaga dan waktu. Dan lebih sering lagi, diperlukan pengumpulan data-data yang sejenis secara berkali-kali dan dilakukan juga pengolahan dan pembuatan laporan secara berkali-kali pula. Sedangkan pengolahan data pada sistem database lebih praktis, dapat meminimalkan duplikasi data, integritas data tinggi, keamanan lebih terjamin, dan sharing data lebih mudah.

6. Mengapa dibutuhkan DBMS?

Tujuan utama DBMS adalah untuk menyediakan tinjauan abstrak dari data bagi user. Jadi sistem menyembunyikan informasi mengenai bagaimana data disimpan dan dirawat, tetapi data tetap dapat diambil dengan efisien. Pertimbangan efisien yang digunakan adalah bagaimana merancang struktur data yang kompleks, tetapi tetap dapat digunakan oleh pengguna yang masih awam, tanpa mengetahui kompleksitas struktur data. Basis data menjadi penting karena munculnya beberapa masalah bila tidak menggunakan data yang terpusat, seperti adanya duplikasi data, hubungan antar data tidak jelas, organisasi data dan update menjadi rumit.

7. Pada percobaan diatas ada beberapa field yang tipe data dan ukurannya berbeda. Jelaskan!

Pada tabel Mhs, ada 6 field yaitu: NIM, NAMA, TEMPAT_LAHIR, TANGGAL_LAHIR, ALAMAT, TELEPON. Masing-masing field diatur sesuai tipe data yang dibutuhkan, pada field NIM diatur tipe data text, berarti pada record dapat diisikan data berupa teks huruf, angka, dan simbol-simbol lain. Ukuran tipe data pada field NIM diatur sepanjang 10, artinya digit maksimum yang dapat dimasukkan ke dalam record adalah 10 digit. Jika data yang dimasukkan lebih dari 10 digit, maka digit ke-11 dan berikutnya tidak akan terbaca. Untuk pengaturan maksimum defaultnya sendiri adalah

sepanjang 255 digit. Kemudian pada field NAMA, sama-sama diatur tipe data text, namun panjang ukurannya berbeda, yaitu 30, artinya kita dapat memasukkan digit maksimum ke dalam record yaitu sepanjang 30 digit, melebihi 30 data ke-31 dan seterusnya tidak akan terbaca. Pada field TANGGAL_LAHIR diatur tipe date/time yang berarti pada record dapat diisi data berupa angka dan simbol.

MODUL 2

Tugas :

1) langkah-langkah perancangan database perbangkan :

1. menentukan entities

- mahasiswa: menyimpan semua data pribadi semua mahasiswa
- dosen: menyimpan semua data pribadi semua dosen
- mata_kuliah: menyimpan informasi semua mata kuliah
- ruang_kelas: menyimpan semua informasi ruang kelas

2. menentukan atribut

- mahasiswa
 - ✓ nim : nomor id untuk mahasiswa (varchar(12)) pk
 - ✓ nama_mahasiswa: nama lengkap mahasiswa (varchar(50))
 - ✓ alamat_mahasiswa: alamat lengkap mahasiswa (varchar(255))
- dosen
 - ✓ nip: nomor id untuk dosen (varchar(12)) pk
 - ✓ nama_dosen: nama lengkap mahasiswa (varchar(50))
 - ✓ alamat_dosen: alamat lengkap dosen (varchar(255))
- mata_kuliah
 - ✓ kode_mk: kode untuk mata kuliah (varchar(10))
 - ✓ nama_mk: nama mata kuliah (varchar(45))
 - ✓ sks: jumlah sks mata kuliah tersebut (integer(2))
- ruang_kelas
 - ✓ kode_ruang : kode untuk ruangan (varchar(10))
 - ✓ nama_ruang : nama ruang kelas (varchar(20))
 - ✓ nama_gedung : nama gedung (varchar (20))

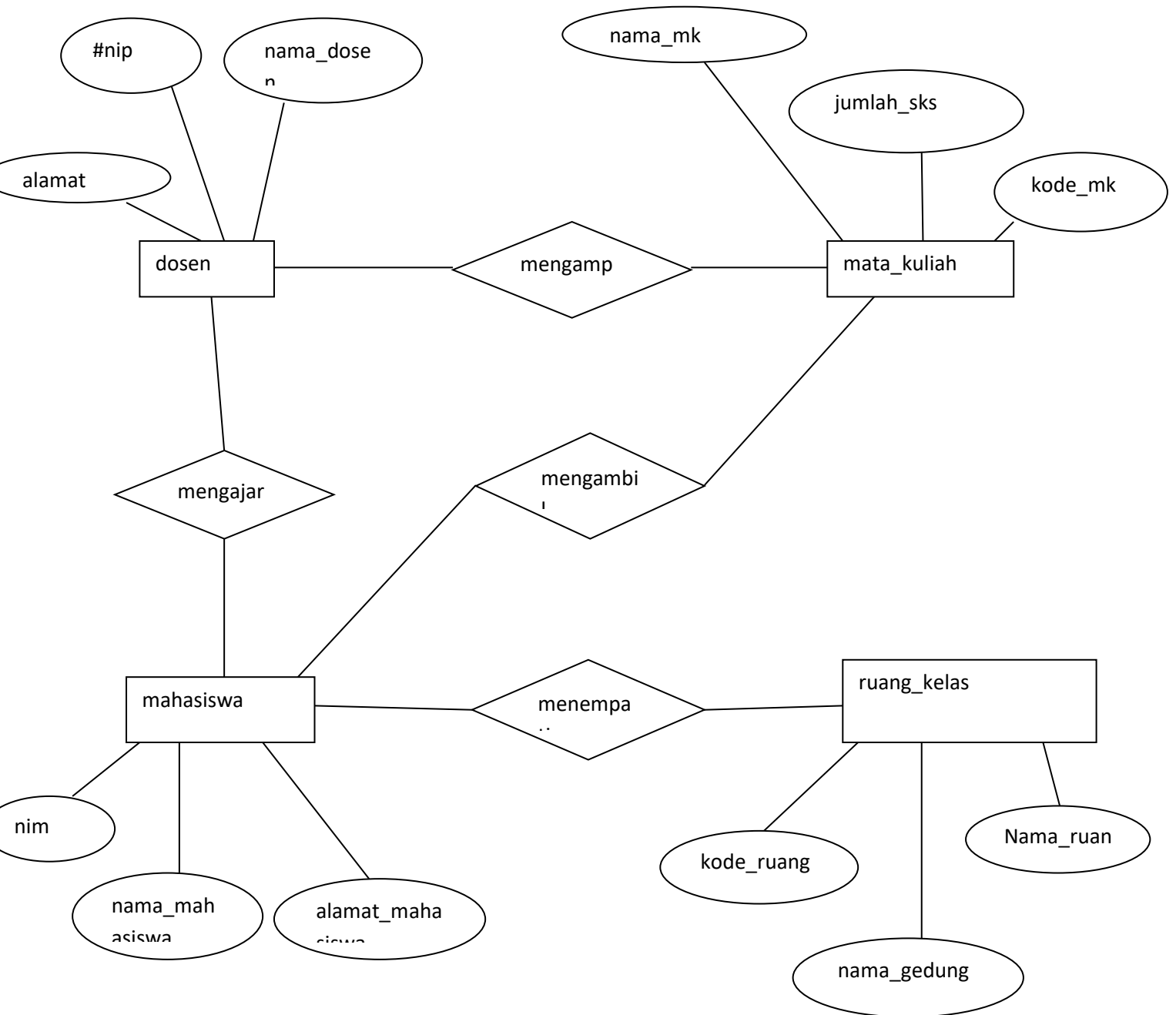
3. menentukan relationship

	mahasiswa	dosen	mata_kuliah	ruang_kelas
mahasiswa	-	m:n	m:n	n:1
dosen		-	m:n	-
mata_kuliah			-	-
ruang_kelas				-

Hubungan

- dosen mengampu mahasiswa:
 - ✓ tabel utama : mahasiswa, dosen
 - ✓ tabel kedua : dosen_has_mahasiswa
 - ✓ relationship : many-to-many (m:n)
 - ✓ attribute penghubung : nim, nip (FK nim, nip di dosen_has_mahasiswa)
- mahasiswa mengambil mata_kuliah :
 - ✓ tabel utama : mahasiswa, mata_kuliah
 - ✓ tabel kedua : mahasiswa_has_mata_kuliah
 - ✓ relationship : many-to-many (m:n)
 - ✓ attribute penghubung : nim, kode_mk (FK nim, kode_mk di mahasiswa_has_mata_kuliah)
- mahasiswa kuliah di ruang_kelas :
 - ✓ tabel utama: mahasiswa, ruang_kelas
 - ✓ tabel kedua : mahasiswa_has_ruang_kelas
 - ✓ relationship : many-to-one (n:1)
 - ✓ attribute penghubung : nim, kode_ruang (FK nim, kode_ruang di mahasiswa_has_ruang_kelas)

4. ER Diagram



2) langkah-langkah perancangan database penjualan

1. entities

- Distributor : menyimpan semua data pribadi distributor
- Penjual : menyimpan semua data pribadi penjual
- Konsumen : menyimpan semua data pribadi konsumen
- Produk : menyimpan semua data pribadi produk

2.attribute

- Distributor :
 - id_dis : nomor id untuk distributor (integer(10)) PK
 - nama_dis : nama distributor (varchar(50))
 - alamat_dis : alamat lengkap distributor (varchar(100))
- Penjual :
 - id_pjl : nomor id untuk penjual (integer(10)) PK
 - nama_pjl : nama lengkap penjual (varchar(55))
 - alamat_pjl : alamat lengkap penjual (varchar(100))
- Konsumen :
 - id_kons : nomor id untuk konsumen (integer(10)) PK
 - nama_kons : nama lengkap konsumen (varchar (55))
 - alamat_kons : alamat lengkap konsumen (varchar(100))
- Produk :
 - id_produk : nomor id untuk produk (integer(10))PK
 - nama_produk : nama lengkap produk (varchar(50))

3. relationship

	Distributor	Penjual	Konsumen	Produk
Distributor	-	m:n	-	-
Penjual		-	m:n	1:n
Konsumen			-	1:n
Produk				-

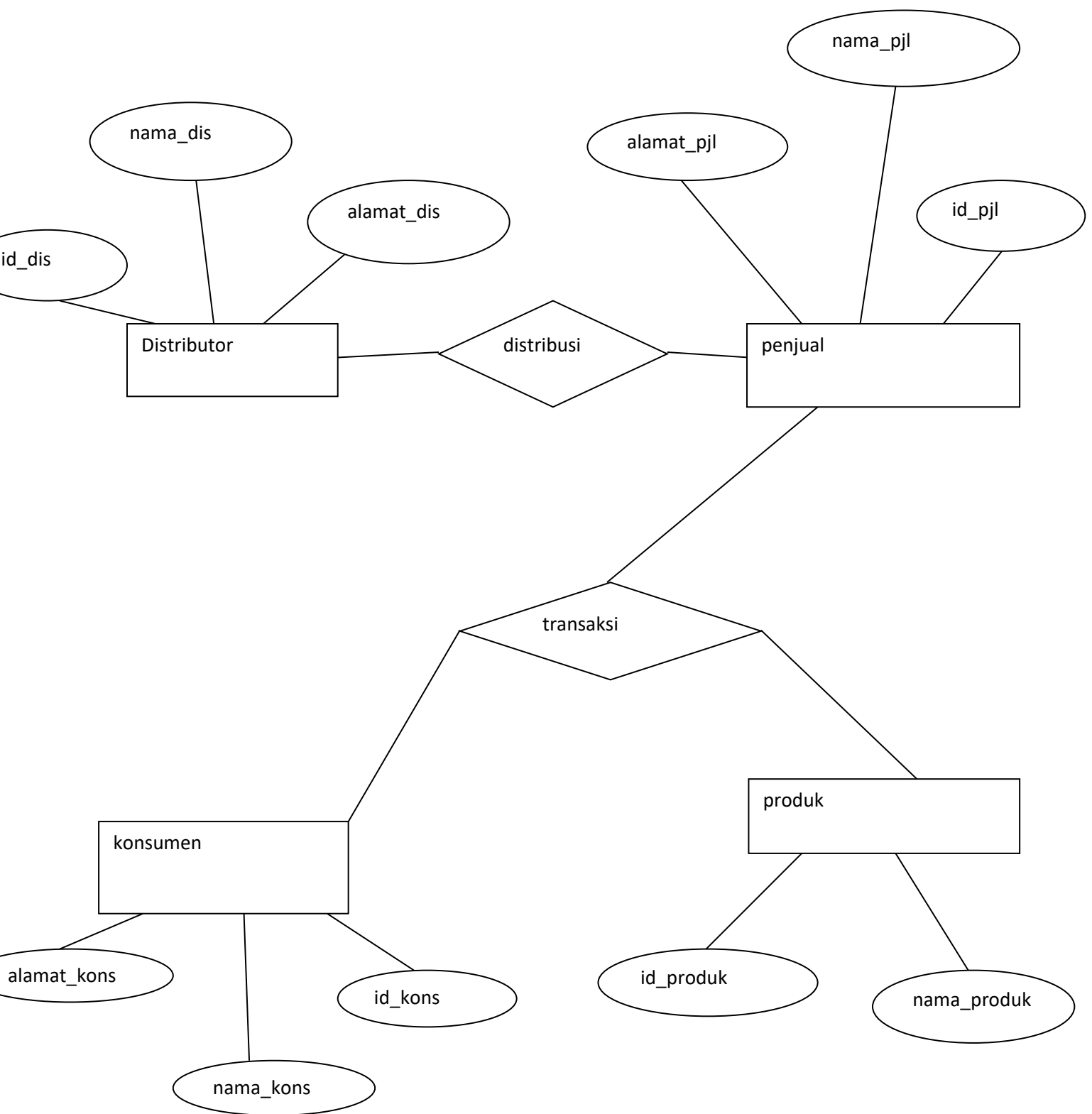
Hubungan :

1) Distributor distribusi penjual :

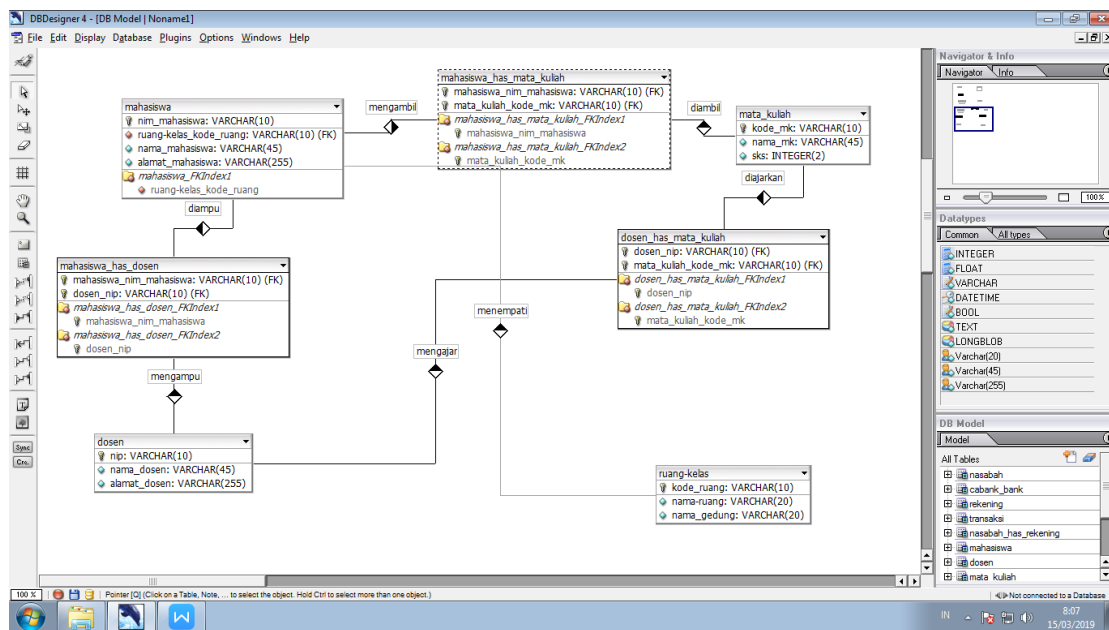
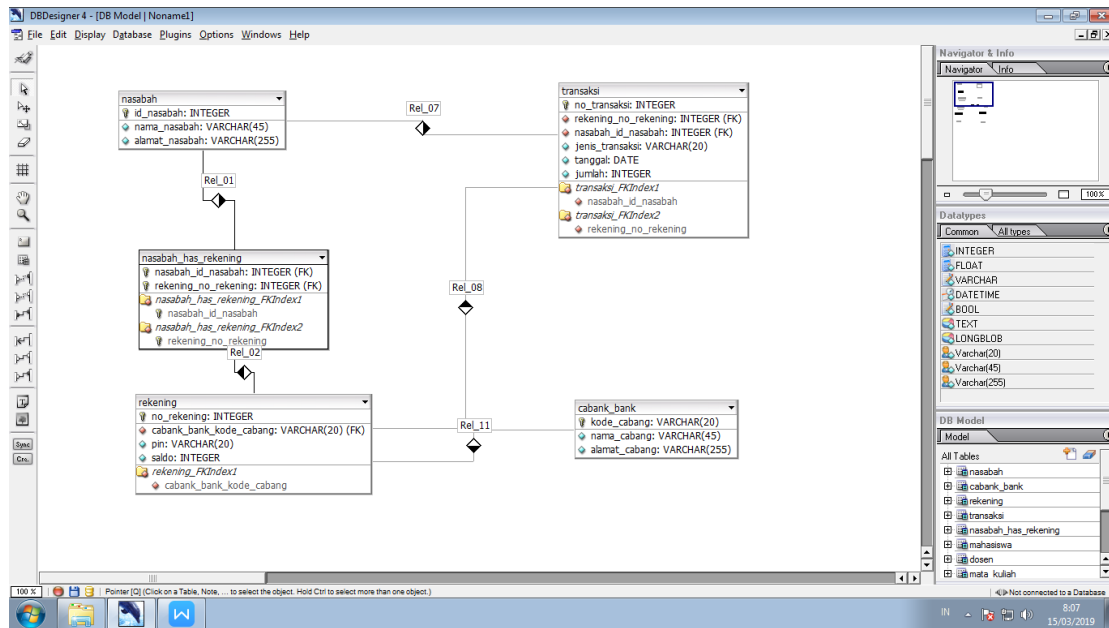
- Tabel utama : Distributor, Penjual
- Tabel kedua : Distributor_distribusi_Penjual
- Relationship : many-to-many (m:n)

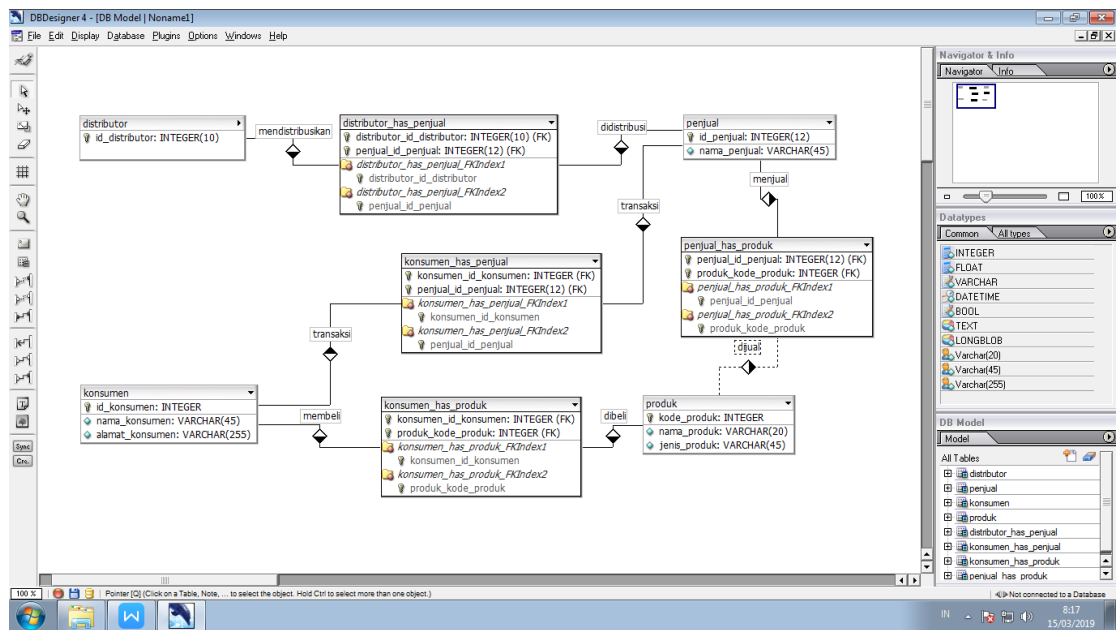
- Attribute : id_dis, id_pjl (FK id_dis, id_pjl di Distributor_distribusi_penjual)
- 2) Penjual menjual Produk :
- Tabel utama : Penjual, Produk
 - Tabel kedua : Penjual_has_Produk
 - Relationship : one-to-many (1:n)
 - Attribute : id_pjl, id_produk (FK id_pjl, id_produk di Penjual_has_Produk)
- 3) Penjual transaksi konsumen :
- Tabel utama : Penjual, Kosumen
 - Tabel kedua : Penjual_has_Konsumen
 - Relationship : many-to-many (m:n)
 - Attribute : id_pjl, id_kons (FK id_pjl, id_kons di Penjual_has_Konsumen)
- 4) Konsumen membeli Produk:
- Tabel utama : Konsumen, Produk
 - Tabel kedua : Konsumen_buy_Produk
 - Relationship : one-to-many (1:n)
 - Attribute : id_kons, id_produk (FK id_kons, id_produk di Konsumen_buy_Produk)

4. ER Diagram



MODUL 3





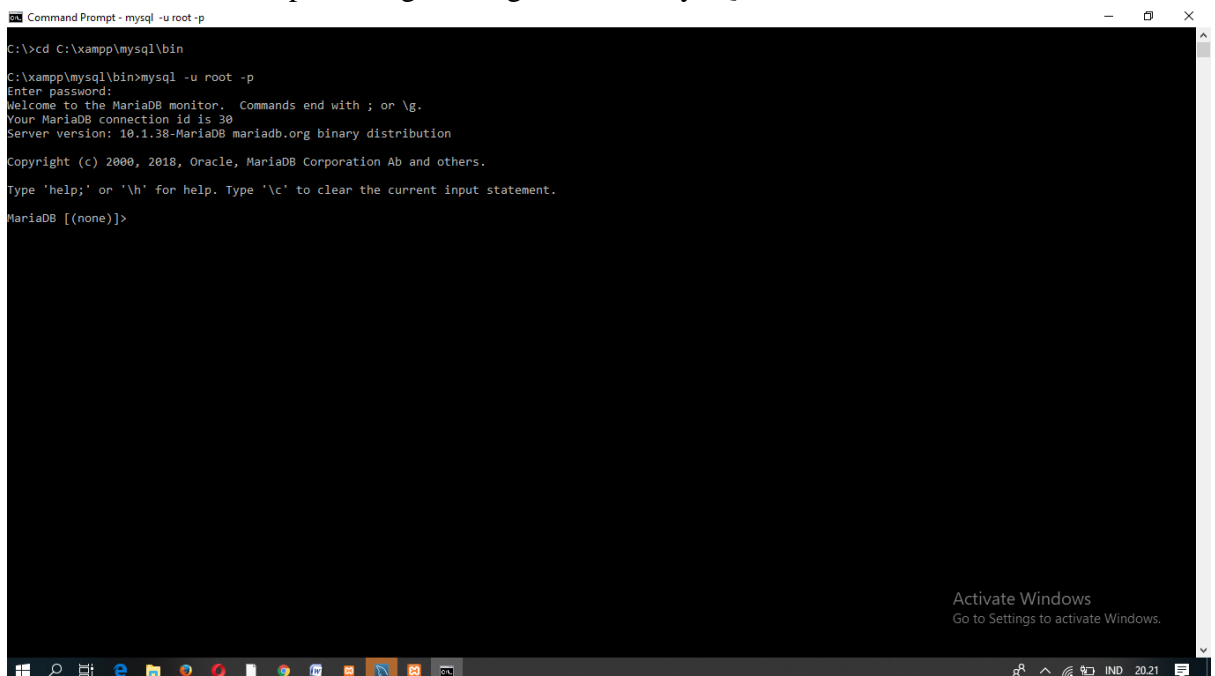
MODUL 4

Langkah – Langkah Praktikum

1. Jalankan XAMPP Control Panel.
2. Jalankan server Apache dan MySQL.



3. Buka Command Prompt dan login sebagai root ke MySQL



4. Buat database baru dengan perintah berikut ini.
create database perbankan;

```
Command Prompt - mysql -u root -p

C:\>cd C:\xampp\mysql\bin

C:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 30
Server version: 10.1.38-MariaDB mariadb.org binary distribution
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> _
```

5. Hubungkan kedalam database yang telah dibuat dengan perintah berikut. Sehingga akan muncul pemberitahuan “database changed”.
use perbankan;

```
Command Prompt - mysql -u root -p

C:\>cd C:\xampp\mysql\bin

C:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 30
Server version: 10.1.38-MariaDB mariadb.org binary distribution
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use perbankan;
Database changed
MariaDB [perbankan]> _
```

6. Membuat tabel nasabah dengan scrip berikut.
CREATE TABLE nasabah(
 id_nasabah INTEGER PRIMARY KEY,
 nama_nasabah VARCHAR(45) NOT NULL,
 alamat_nasabah VARCHAR(255) NOT NULL
);

```
Command Prompt - mysql -u root -p

C:\>cd C:\xampp\mysql\bin

C:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 30
Server version: 10.1.38-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use perbankan;
Database changed
MariaDB [perbankan]> CREATE TABLE nasabah(
    -> id_nasabah INTEGER PRIMARY KEY,
    -> nama_nasabah VARCHAR(45) NOT NULL,
    -> alamat_nasabah VARCHAR(255) NOT NULL
    -> );
Query OK, 0 rows affected (0.72 sec)

MariaDB [perbankan]>
```

7. Membuat tabel cabang_bank dengan scrip berikut :
- ```
CREATE TABLE cabang_bank(
Kode_cabang VARCHAR(20) PRIMARY KEY,
Nama_cabang VARCHAR(45) UNIQUE NOT NULL,
Alamat_cabang VARCHAR(255) NOT NULL
);
```

```
Command Prompt - mysql -u root -p

C:\>cd C:\xampp\mysql\bin

C:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 30
Server version: 10.1.38-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use perbankan;
Database changed
MariaDB [perbankan]> CREATE TABLE nasabah(
 -> id_nasabah INTEGER PRIMARY KEY,
 -> nama_nasabah VARCHAR(45) NOT NULL,
 -> alamat_nasabah VARCHAR(255) NOT NULL
 ->);
Query OK, 0 rows affected (0.72 sec)

MariaDB [perbankan]> CREATE TABLE cabang_bank(
 -> kode_cabang VARCHAR(20) PRIMARY KEY,
 -> nama_cabang VARCHAR(45) UNIQUE NOT NULL,
 -> alamat_cabang VARCHAR(255) NOT NULL
 ->);
Query OK, 0 rows affected (0.26 sec)

MariaDB [perbankan]>
```

8. Membuat tabel rekening dengan script berikut.
- ```
CREATE TABLE rekening (
no_rekening INTEGER PRIMARY KEY,
```



```

kode_cabangFK VARCHAR(20) REFERENCES cabang_bank(kode_cabang)
ON DELETE CASCADE ON UPDATE CASCADE,
pin VARCHAR(20) DEFAULT '1234' NOT NULL,
saldo INTEGER DEFAULT 0 NOT NULL
);

```

```

Command Prompt - mysql -u root -p
Your MariaDB connection id is 30
Server version: 10.1.38-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use perbankan;
Database changed
MariaDB [perbankan]> CREATE TABLE nasabah(
  -> id_nasabah INTEGER PRIMARY KEY,
  -> nama_nasabah VARCHAR(45) NOT NULL,
  -> alamat_nasabah VARCHAR(255) NOT NULL
  -> );
Query OK, 0 rows affected (0.72 sec)

MariaDB [perbankan]> CREATE TABLE cabang_bank(
  -> kode_cabang VARCHAR(20) PRIMARY KEY,
  -> nama_cabang VARCHAR(45) UNIQUE NOT NULL,
  -> alamat_cabang VARCHAR(255) NOT NULL
  -> );
Query OK, 0 rows affected (0.26 sec)

MariaDB [perbankan]> CREATE TABLE rekening(
  -> no_rekening INTEGER PRIMARY KEY,
  -> kode_cabangFK VARCHAR(20) REFERENCES cabang_bank(kode_cabang)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> pin VARCHAR(20) DEFAULT '1234' NOT NULL,
  -> );
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near ')' at line 6
MariaDB [perbankan]> CREATE TABLE rekening (
  -> no_rekening INTEGER PRIMARY KEY,
  -> kode_cabangFK VARCHAR(20) REFERENCES cabang_bank(kode_cabang)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> pin VARCHAR(20) DEFAULT '1234' NOT NULL,
  -> saldo INTEGER DEFAULT 0 NOT NULL
  -> );
Query OK, 0 rows affected (0.24 sec)

MariaDB [perbankan]>

```

9. Membuat tabel transaksi dnegan script berikut ini.

```

CREATE TABLE transaksi (
No_transaksi SERIAL PRIMARY KEY,
Id_nasabahFK INTEGER REFERENCES rekening(no_rekening) ON DELETE SET
NULL ON UPDATE CASCADE,
No_rekeningFK INTEGER REFERENCES rekening(no_rekening)
ON DELETE SET NULL ON UPDATE CASCADE,
Jenis_transaksi VARCHAR(20) DEFAULT 'debit' NOT NULL,
Tanggal DATETIME NOT NULL DEFAULT CURRENT_TIMESTAMP,
Jumlah INTEGER NOT NULL CHECK (jumlah>=20000)
);

```

```
Command Prompt - mysql -u root -p
MariaDB [perbankan]> CREATE TABLE nasabah(
-> id_nasabah INTEGER PRIMARY KEY,
-> nama_nasabah VARCHAR(45) NOT NULL,
-> alamat_nasabah VARCHAR(255) NOT NULL
-> );
Query OK, 0 rows affected (0.72 sec)

MariaDB [perbankan]> CREATE TABLE cabang_bank(
-> kode_cabang VARCHAR(20) PRIMARY KEY,
-> nama_cabang VARCHAR(45) UNIQUE NOT NULL,
-> alamat_cabang VARCHAR(255) NOT NULL
-> );
Query OK, 0 rows affected (0.26 sec)

MariaDB [perbankan]> CREATE TABLE rekening(
-> no_rekening INTEGER PRIMARY KEY,
-> kode_cabangFK VARCHAR(20) REFERENCES cabang_bank(kode_cabang)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> pin VARCHAR(20) DEFAULT '1234' NOT NULL,
-> );
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near ')' at line 6

MariaDB [perbankan]> CREATE TABLE rekening (
-> no_rekening INTEGER PRIMARY KEY,
-> kode_cabangFK VARCHAR(20) REFERENCES cabang_bank(kode_cabang)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> pin VARCHAR(20) DEFAULT '1234' NOT NULL,
-> saldo INTEGER DEFAULT 0 NOT NULL
-> );
Query OK, 0 rows affected (0.24 sec)

MariaDB [perbankan]> CREATE TABLE transaksi (
-> no_transaksi SERIAL PRIMARY KEY,
-> id_nasabahFK INTEGER REFERENCES nasabah(id_nasabah)
-> ON DELETE SET NULL ON UPDATE CASCADE,
-> no_rekeningFK INTEGER REFERENCES rekening(no_rekening)
-> ON DELETE SET NULL ON UPDATE CASCADE,
-> jenis_transaksi VARCHAR(20) DEFAULT 'debit' NOT NULL,
-> tanggal DATETIME NOT NULL DEFAULT CURRENT_TIMESTAMP,
-> jumlah INTEGER NOT NULL CHECK (jumlah>=20000)
-> );
Query OK, 0 rows affected (0.17 sec)

MariaDB [perbankan]>
```

10. Membuat tabel nasabah_has_rekening dengan script berikut ini

```
CREATE TABLE nasabah_has_rekening (
Id_nasabahFK INTEGER REFERENCES nasabah(id_nasabah)
ON DELETE CASCADE ON UPDATE CASCADE,
PRIMARY KEY (id_nasabahFK, no_rekeningFK)
);
```

```
Command Prompt - mysql -u root -p
MariaDB [perbankan]> CREATE TABLE rekening(
-> no_rekening INTEGER PRIMARY KEY,
-> kode_cabangFK VARCHAR(20) REFERENCES cabang_bank(kode_cabang)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> pin VARCHAR(20) DEFAULT '1234' NOT NULL,
-> );
Query OK, 0 rows affected (0.26 sec)

MariaDB [perbankan]> CREATE TABLE rekening(
-> no_rekening INTEGER PRIMARY KEY,
-> kode_cabangFK VARCHAR(20) REFERENCES cabang_bank(kode_cabang)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> pin VARCHAR(20) DEFAULT '1234' NOT NULL,
-> saldo INTEGER DEFAULT 0 NOT NULL
-> );
Query OK, 0 rows affected (0.24 sec)

MariaDB [perbankan]> CREATE TABLE transaksi (
-> no_transaksi SERIAL PRIMARY KEY,
-> id_nasabahFK INTEGER REFERENCES nasabah(id_nasabah)
-> ON DELETE SET NULL ON UPDATE CASCADE,
-> no_rekeningFK INTEGER REFERENCES rekening(no_rekening)
-> ON DELETE SET NULL ON UPDATE CASCADE,
-> jenis_transaksi VARCHAR(20) DEFAULT 'debit' NOT NULL,
-> tanggal DATETIME NOT NULL DEFAULT CURRENT_TIMESTAMP,
-> jumlah INTEGER NOT NULL CHECK (jumlah>=20000)
-> );
Query OK, 0 rows affected (0.17 sec)

MariaDB [perbankan]> CREATE TABLE nasabah_has_rekening (
-> id_nasabahFK INTEGER REFERENCES nasabah(id_nasabah)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> no_rekeningFK INTEGER REFERENCES rekening(no_rekening)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> PRIMARY KEY(id_nasabahFK, no_rekeningFK)
-> );
Query OK, 0 rows affected (0.16 sec)

MariaDB [perbankan]>
```

11. Untuk mengecek hasil pembuatan database gunakan perintah show tables;

```
Command Prompt - mysql -u root -p
MariaDB [perbankan]> CREATE TABLE rekening (
  -> no_rekening INTEGER PRIMARY KEY,
  -> kode_cabangFK VARCHAR(20) REFERENCES cabang_bank(kode_cabang)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> pin VARCHAR(20) DEFAULT '1234' NOT NULL,
  -> saldo INTEGER DEFAULT 0 NOT NULL
  -> );
Query OK, 0 rows affected (0.24 sec)

MariaDB [perbankan]> CREATE TABLE transaksi (
  -> no_transaksi SERIAL PRIMARY KEY,
  -> id_nasabahFK INTEGER REFERENCES nasabah(id_nasabah)
  -> ON DELETE SET NULL ON UPDATE CASCADE,
  -> no_rekeningFK INTEGER REFERENCES rekening(no_rekening)
  -> ON DELETE SET NULL ON UPDATE CASCADE,
  -> jenis_transaksi VARCHAR(20) DEFAULT 'debit' NOT NULL,
  -> tanggal DATETIME NOT NULL DEFAULT CURRENT_TIMESTAMP,
  -> jumlah INTEGER NOT NULL CHECK (jumlah>=20000)
  -> );
Query OK, 0 rows affected (0.17 sec)

MariaDB [perbankan]> CREATE TABLE nasabah_has_rekening (
  -> id_nasabahFK INTEGER REFERENCES nasabah(id_nasabah)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> no_rekeningFK INTEGER REFERENCES rekening(no_rekening)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(id_nasabahFK, no_rekeningFK)
  -> );
Query OK, 0 rows affected (0.16 sec)

MariaDB [perbankan]> show tables;
+-----+
| Tables_in_perbankan |
+-----+
| cabang_bank          |
| nasabah              |
| nasabah_has_rekening |
| rekening             |
| transaksi            |
+-----+
5 rows in set (0.00 sec)

MariaDB [perbankan]>
```

12. Kemudian untuk melihat struktur tiap tabel dapat dilakukan dengan perintah describe. Misalkan untuk melihat struktur tabel nasabah dapat dilakukan dengan perintah describe nasabah;

```
Command Prompt - mysql -u root -p
Query OK, 0 rows affected (0.16 sec)

MariaDB [perbankan]> show tables;
+-----+
| Tables_in_perbankan |
+-----+
| cabang_bank          |
| nasabah              |
| nasabah_has_rekening |
| rekening             |
| transaksi            |
+-----+
5 rows in set (0.00 sec)

MariaDB [perbankan]> exit
Bye

C:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 45
Server version: 10.1.38-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database universitas
  -> ;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use perbankan;
Database changed
MariaDB [perbankan]> describe nasabah;
+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+
| id_nasabah | int(11)   | NO   | PRI | NULL    |       |
| nama_nasabah | varchar(45) | NO   |     | NULL    |       |
| alamat_nasabah | varchar(255) | NO   |     | NULL    |       |
+-----+
3 rows in set (0.06 sec)

MariaDB [perbankan]>
```

Tugas

1. Universitas

1) Membuat database universitas

```
C:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 45
Server version: 10.1.38-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database universitas
-> ;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> _
```

2) Membuat tabel mata_kuliah

```
MariaDB [(none)]> use universitas;
Database changed
MariaDB [universitas]> CREATE TABLE mata_kuliah(
-> kode_mk VARCHAR(10) PRIMARY KEY,
-> nama_mk VARCHAR(50) NOT NULL,
-> sks INTEGER(2) NOT NULL
-> );
Query OK, 0 rows affected (0.14 sec)

MariaDB [universitas]> _
```

3) Membuat tabel dosen

```
MariaDB [universitas]> CREATE TABLE dosen(
-> id_dosen INTEGER PRIMARY KEY,
-> nip VARCHAR(10) NOT NULL,
-> nama_dosen VARCHAR(50) NOT NULL,
-> alamat_dosen VARCHAR(250) NOT NULL
-> );
Query OK, 0 rows affected (0.15 sec)

MariaDB [universitas]> _
```

- 4) Membuat tabel ruang_kelas

```
Query OK, 0 rows affected (0.13 sec)

MariaDB [universitas]> CREATE TABLE ruang_kelas(
  -> kode_ruang VARCHAR(10) NOT NULL,
  -> nama_ruang VARCHAR(30) NOT NULL,
  -> nama_gedung VARCHAR(30) NOT NULL
  -> );
Query OK, 0 rows affected (0.14 sec)

MariaDB [universitas]>
```

- 5) Membuat tabel mahasiswa

```
MariaDB [universitas]> CREATE TABLE mahasiswa (
  -> id_mahasiswa INTEGER PRIMARY KEY,
  -> nim VARCHAR(10) NOT NULL,
  -> nama_mahasiswa VARCHAR(50) NOT NULL,
  -> alamat_mahasiswa VARCHAR(250) NOT NULL,
  -> kode_ruangFK VARCHAR(10) REFERENCES ruang_kelas(kode_ruang)
  -> );
Query OK, 0 rows affected (0.16 sec)

MariaDB [universitas]>
```

- 6) Membuat tabel mahasiswa_has_mata_kuliah

```
MariaDB [universitas]> CREATE TABLE mahasiswa_has_mata_kuliah(
  -> id_mahasiswaFK INTEGER REFERENCES mahasiswa(id_mahasiswa),
  -> kode_mkFK VARCHAR(10) REFERENCES mata_kuliah(kode_mk)
  -> );
Query OK, 0 rows affected (0.29 sec)

MariaDB [universitas]>
```

- 7) Membuat tabel dosen_has_mata_kuliah

```
MariaDB [universitas]> CREATE TABLE dosen_has_mata_kuliah(
  -> id_dosen INTEGER REFERENCES dosen(id_dosen),
  -> kode_mkFK VARCHAR(10) REFERENCES mata_kuliah(kode_mk)
  -> );
Query OK, 0 rows affected (0.24 sec)

MariaDB [universitas]>
```

- 8) Membuat tabel mahasiswa_has_dosen

```
MariaDB [universitas]> CREATE TABLE mahasiswa_has_dosen(  
  -> id_mahasiswaFK INTEGER REFERENCES mahasiswa(id_mahasiswa),  
  -> id_dosenFK INTEGER REFERENCES dosen(id_dosen)  
  -> );  
Query OK, 0 rows affected (0.22 sec)  
  
MariaDB [universitas]> _
```

- 9) Mengecek hasil pembuatan database

```
MariaDB [universitas]> show tables;  
+-----+  
| Tables_in_universitas |  
+-----+  
| dosen                  |  
| dosen_has_mata_kuliah  |  
| mahasiswa              |  
| mahasiswa_has_dosen    |  
| mahasiswa_has_mata_kuliah |  
| mata_kuliah            |  
| ruang_kelas            |  
+-----+  
7 rows in set (0.07 sec)  
  
MariaDB [universitas]>
```

- 10) Melihat struktur tabel dosen

```
MariaDB [universitas]> describe dosen;  
+-----+-----+-----+-----+-----+-----+  
| Field      | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| id_dosen   | int(11)       | NO   | PRI | NULL    |       |  
| nip        | varchar(10)   | NO   |     | NULL    |       |  
| nama_dosen | varchar(50)   | NO   |     | NULL    |       |  
| alamat_dosen | varchar(250) | NO   |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
4 rows in set (0.08 sec)  
  
MariaDB [universitas]> _
```

2. Toko

1) Membuat database toko

```
Command Prompt - mysql -u root -p

C:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 55
Server version: 10.1.38-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database toko;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> _
```

2) Membuat tabel distributor

```
MariaDB [(none)]> use toko;
Database changed
MariaDB [toko]> CREATE TABLE distributor(
    -> id_dist INTEGER PRIMARY KEY,
    -> nama_dist VARCHAR(45) NOT NULL
    -> );
Query OK, 0 rows affected (0.13 sec)

MariaDB [toko]>
```

3) Membuat tabel penjual

```
MariaDB [toko]> CREATE TABLE penjual(
    -> id_penjual INTEGER PRIMARY KEY,
    -> nama_penjual VARCHAR(50) NOT NULL,
    -> alamat_penjual VARCHAR(255) NOT NULL
    -> );
Query OK, 0 rows affected (0.18 sec)

MariaDB [toko]>
```

- 4) Membuat tabel konsumen

```
MariaDB [toko]> CREATE TABLE konsumen(  
  -> id_konsumen INTEGER PRIMARY KEY,  
  -> nama_konsumen VARCHAR(50) NOT NULL,  
  -> alamat_kosumen VARCHAR(255) NOT NULL  
  -> );  
Query OK, 0 rows affected (0.15 sec)  
  
MariaDB [toko]> _
```

- 5) Membuat tabel produk

```
MariaDB [toko]> CREATE TABLE produk(  
  -> kode_produk INTEGER PRIMARY KEY,  
  -> nama_produk VARCHAR(20) NOT NULL,  
  -> jenis_produk VARCHAR(45) NOT NULL  
  -> );  
Query OK, 0 rows affected (0.19 sec)  
  
MariaDB [toko]> _
```

- 6) Membuat tabel distributor_has_penjual

```
MariaDB [toko]> CREATE TABLE distributor_has_penjual(  
  -> id_dist INTEGER REFERENCES distributor(id_dist),  
  -> id_penjualFK INTEGER REFERENCES penjual(id_penjual)  
  -> );  
Query OK, 0 rows affected (0.13 sec)  
  
MariaDB [toko]> _
```

- 7) Membuat tabel penjual_has_produk

```
MariaDB [toko]> CREATE TABLE penjual_has_produk(  
  -> id_penjualFK INTEGER REFERENCES penjual(id_penjual),  
  -> kode_produkFK INTEGER REFERENCES produk(kode_produk)  
  -> );  
Query OK, 0 rows affected (0.19 sec)  
  
MariaDB [toko]> _
```


- 8) Membuat tabel konsumen_has_penjual

```
MariaDB [toko]> CREATE TABLE konsumen_has_penjual(
-> id_konsumenFK INTEGER REFERENCES konsumen(id_konsumen),
-> id_penjualFK INTEGER REFERENCES penjual(id_konsumen)
-> );
Query OK, 0 rows affected (0.19 sec)

MariaDB [toko]>
```

- 9) Membuat tabel konsumen_has_produk

```
MariaDB [toko]> CREATE TABLE konsumen_has_produk(
-> id_konsumenFK INTEGER REFERENCES konsumen(id_konsumen),
-> kode_produkFK INTEGER REFERENCES produk(kode_produk)
-> );
Query OK, 0 rows affected (0.17 sec)

MariaDB [toko]> _
```

- 10) Mengecek tabel database toko

```
MariaDB [toko]> show tables;
+-----+
| Tables_in_toko |
+-----+
| distributor      |
| distributor_has_penjual |
| konsumen         |
| konsumen_has_penjual |
| konsumen_has_produk |
| penjual          |
| penjual_has_produk |
| produk           |
+-----+
8 rows in set (0.00 sec)

MariaDB [toko]> _
```

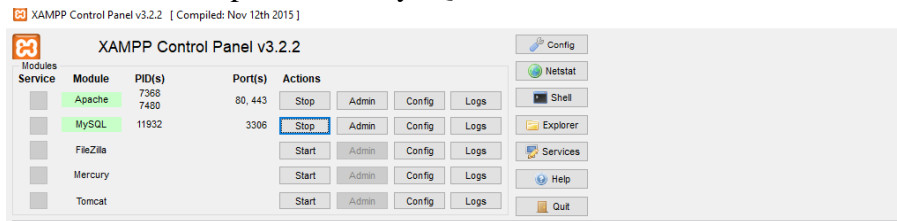
- 11) Menampilkan detail tabel distributor

```
MariaDB [toko]> describe distributor;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_dist    | int(11)       | NO   | PRI | NULL    |       |
| nama_dist  | varchar(45)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [toko]> _
```

MODUL 5

1. Jalankan XAMPP Control Panel.
2. Jalankan server Apache dan MySQL.



3. Buka Command Prompt dan login sebagai root ke MySQL seperti langkah pada Modul 1.

```
cmd Command Prompt - mysql -u root -p
Microsoft Windows [Version 10.0.17134.648]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\Asus>cd ..

C:\Users>cd ..

C:\>cd C:\xampp\mysql\bin

C:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 4
Server version: 10.1.38-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> _
```

4. Pilih database perbankan dengan perintah “use perbankan”. Sehingga akan muncul pemberitahuan “database changed”.

```
cmd Command Prompt - mysql -u root -p
Microsoft Windows [Version 10.0.17134.648]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\Asus>cd ..

C:\Users>cd ..

C:\>cd C:\xampp\mysql\bin

C:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 4
Server version: 10.1.38-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> use perbankan;
Database changed
MariaDB [perbankan]> _
```

5. Kemudian masukkan data-data ke dalam database perbankan.

Tabel : nasabah

```
MariaDB [perbankan]> INSERT INTO nasabah(id_nasabah, nama_nasabah, alamat_nasabah) VALUES (1, 'Sutopo', 'Jl. Jendral Su
-> (2, 'Maryati', 'Jl. MT. Haryono 31'),
-> (3, 'Superman', 'Jl. Hasanudin 81'),
-> (4, 'Kartika Padmasari', 'Jl. Manggis 15'),
-> (5, 'Budi Eko Prayogo', 'Jl. Kantil 30'),
-> (6, 'Satria Eka Jaya', 'Jl. Slamet Riyadi 45'),
-> (7, 'Indri Hapsari', 'Jl. Sutoyo 5'),
-> (8, 'Sari Murti', 'Jl. Pangandaran 11'),
-> (9, 'Canka Lokananta', 'Jl. Tidar 86'),
-> (10, 'Budi Murtono', 'Jl. Merak 22');
ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'
MariaDB [perbankan]> INSERT INTO nasabah(id_nasabah, nama_nasabah, alamat_nasabah) VALUES (3, 'Superman', 'Jl. Hasanudi
-> (4, 'Kartika Padmasari', 'Jl. Manggis 15'),
-> (5, 'Budi Eko Prayogo', 'Jl. Kantil 30'),
-> (6, 'Satria Eka Jaya', 'Jl. Slamet Riyadi 45'),
-> (7, 'Indri Hapsari', 'Jl. Sutoyo 5'),
-> (8, 'Sari Murti', 'Jl. Pangandaran 11'),
-> (9, 'Canka Lokananta', 'Jl. Tidar 86'),
-> (10, 'Budi Murtono', 'Jl. Merak 22');
Query OK, 8 rows affected (0.08 sec)
Records: 8 Duplicates: 0 Warnings: 0
```



	id_nasabah	nama_nasabah	alamat_nasabah
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	1	Sutopo	Jl. Jendral Sudirman 12
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	2	Maryati	Jl. MT. Haryono 31
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	3	Superman	Jl. Hasanudin 81
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	4	Kartika Padmasari	Jl. Manggis 15
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	5	Budi Eko Prayogo	Jl. Kantil 30
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	6	Satria Eka Jaya	Jl. Slamet Riyadi 45
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	7	Indri Hapsari	Jl. Sutoyo 5
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	8	Sari Murti	Jl. Pangandaran 11
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	9	Canka Lokananta	Jl. Tidar 86
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	10	Budi Murtono	Jl. Merak 22

Tabel : cabang_bank

```
MariaDB [perbankan]> INSERT INTO cabang_bank(kode_cabang, nama_cabang, alamat_cabang) VALUES ('BRUS', 'Bank Rut Unit Surakarta', 'Jl. Slamet Riyadi')
-> ('BRUM', 'Bank Rut Unit Magelang', 'Jl. P. Tendeana 63'),
-> ('BRUB', 'Bank Rut Unit Boyolali', 'Jl. Ahmad Yani 45'),
-> ('BRUK', 'Bank Rut Unit Klaten', 'Jl. Superman 23'),
-> ('BRUY', 'Bank Rut Unit Yogyakarta', 'Jl. Anggrek 21'),
-> ('BRUW', 'Bank Rut Unit Wonogiri', 'Jl. Untung Suropati 12');
Query OK, 6 rows affected (0.09 sec)
Records: 6 Duplicates: 0 Warnings: 0
MariaDB [perbankan]>
```

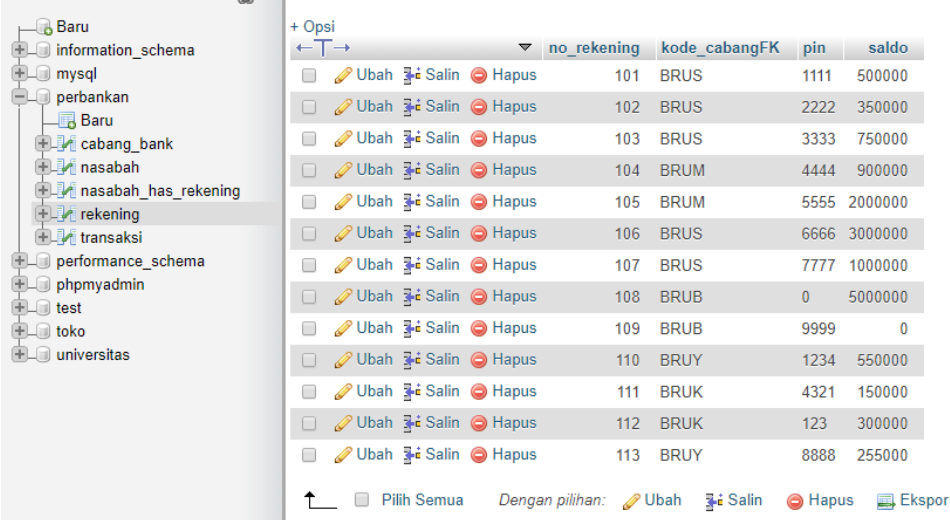


	kode_cabang	nama_cabang	alamat_cabang
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUB	Bank Rut Unit Boyolali	Jl. Ahmad Yani 45
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUK	Bank Rut Unit Klaten	Jl. Superman 23
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUM	Bank Rut Unit Magelang	Jl. P. Tendeana 63
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUS	Bank Rut Unit Surakarta	Jl. Slamet Riyadi
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUW	Bank Rut Unit Wonogiri	Jl. Untung Suropati 12
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUY	Bank Rut Unit Yogyakarta	Jl. Anggrek 21

Tabel : rekening

```
MariaDB [perbankan]> INSERT INTO rekening(no_rekening, kode_cabangFK, pin, saldo) VALUES (101, 'BRUS', 1111, 500000),
-> (102, 'BRUS', 2222, 350000),
-> (103, 'BRUS', 3333, 750000),
-> (104, 'BRUM', 4444, 900000),
-> (105, 'BRUM', 5555, 2000000),
-> (106, 'BRUS', 6666, 3000000),
-> (107, 'BRUS', 7777, 1000000),
-> (108, 'BRUB', 0000, 5000000),
-> (109, 'BRUB', 9999, 0),
-> (110, 'BRUY', 1234, 550000),
-> (111, 'BRUK', 4321, 150000),
-> (112, 'BRUK', 0123, 300000),
-> (113, 'BRUY', 8888, 255000);
Query OK, 13 rows affected (0.26 sec)
Records: 13 Duplicates: 0 Warnings: 0

MariaDB [perbankan]> describe rekening;
```



	no_rekening	kode_cabangFK	pin	saldo
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	101	BRUS	1111	500000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	102	BRUS	2222	350000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	103	BRUS	3333	750000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	104	BRUM	4444	900000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	105	BRUM	5555	2000000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	106	BRUS	6666	3000000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	107	BRUS	7777	1000000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	108	BRUB	0	5000000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	109	BRUB	9999	0
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	110	BRUY	1234	550000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	111	BRUK	4321	150000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	112	BRUK	123	300000
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	113	BRUY	8888	255000

↑ ☐ Pilih Semua Dengan pilihan: ☐ Ubah ☐ Salin ☐ Hapus ☐ Ekspor

Tabel : nasabah_has_rekening

```
MariaDB [perbankan]> INSERT INTO nasabah_has_rekening(id_nasabahFK, no_rekeningFK) VALUES (1, 104),
-> (2, 103),
-> (3, 105),
-> (3, 106),
-> (4, 101),
-> (4, 107),
-> (5, 102),
-> (5, 107),
-> (6, 109),
-> (7, 109),
-> (8, 111),
-> (9, 110),
-> (10, 113),
-> (8, 112),
-> (10, 108);
Query OK, 15 rows affected (0.09 sec)
Records: 15 Duplicates: 0 Warnings: 0

MariaDB [perbankan]>
```

Baru	+	Opsi		id_nasabahFK	no_rekeningFK
information_schema		Ubah Salin Hapus		1	104
mysql		Ubah Salin Hapus		2	103
perbankan		Ubah Salin Hapus		3	105
Baru		Ubah Salin Hapus		3	106
cabang_bank		Ubah Salin Hapus		4	101
nasabah		Ubah Salin Hapus		4	107
nasabah_has_rekening		Ubah Salin Hapus		5	102
rekening		Ubah Salin Hapus		5	107
transaksi		Ubah Salin Hapus		6	109
performance_schema		Ubah Salin Hapus		7	109
phpmyadmin		Ubah Salin Hapus		8	111
test		Ubah Salin Hapus		8	112
toko		Ubah Salin Hapus		9	110
universitas		Ubah Salin Hapus		10	108
		Ubah Salin Hapus		10	113

Tabel : transaksi

```

Command Prompt - mysql -u root -p
MariaDB [perbankan]> INSERT INTO transaksi(no_transaksi, no_rekeningFK, id_nasabahFK, jenis_transaksi, tanggal, jumlah) VALUES (2, 103, 2, 'debit', '2009-11-10', 40000),
-> (3, 101, 4, 'kredit', '2009-11-12', 20000),
-> (4, 106, 3, 'debit', '2009-11-13', 50000),
-> (5, 107, 5, 'kredit', '2009-11-13', 30000),
-> (6, 104, 1, 'kredit', '2009-11-15', 200000),
-> (7, 110, 9, 'kredit', '2009-11-15', 150000),
-> (8, 102, 5, 'debit', '2009-11-16', 20000),
-> (9, 105, 3, 'kredit', '2009-11-18', 50000),
-> (10, 107, 4, 'debit', '2009-11-19', 100000),
-> (11, 103, 2, 'debit', '2009-11-19', 100000),
-> (12, 104, 1, 'debit', '2009-11-19', 50000),
-> (13, 107, 4, 'kredit', '2009-11-20', 200000),
-> (14, 105, 3, 'debit', '2009-11-21', 40000),
-> (15, 104, 1, 'kredit', '2009-11-22', 100000),
-> (16, 101, 4, 'kredit', '2009-11-22', 20000),
-> (17, 103, 2, 'debit', '2009-11-22', 50000),
-> (18, 102, 5, 'debit', '2009-11-25', 50000),
-> (19, 108, 10, 'debit', '2009-11-26', 100000),
-> (20, 106, 3, 'kredit', '2009-11-27', 50000),
-> (21, 103, 2, 'kredit', '2009-11-28', 200000),
-> (22, 105, 3, 'kredit', '2009-11-28', 100000),
-> (23, 102, 5, 'debit', '2009-11-30', 20000),
-> (24, 104, 1, 'debit', '2009-12-1', 50000),
-> (25, 103, 2, 'debit', '2009-12-2', 40000),
-> (26, 101, 4, 'debit', '2009-12-4', 50000),
-> (27, 103, 2, 'kredit', '2009-12-5', 100000),
-> (28, 102, 5, 'kredit', '2009-12-5', 200000),
-> (29, 109, 7, 'debit', '2009-12-5', 100000),
-> (30, 110, 9, 'debit', '2009-12-6', 20000);
Query OK, 29 rows affected (0.04 sec)
Records: 29 Duplicates: 0 Warnings: 0

MariaDB [perbankan]>

```

Baru	+	Opsi		no_transaksi	id_nasabahFK	no_rekeningFK	jenis_transaksi	tanggal	jumlah
information_schema		Ubah Salin Hapus		1	3	105	debit	2009-11-10 00:00:00	50000
mysql		Ubah Salin Hapus		2	2	103	debit	2009-11-10 00:00:00	40000
perbankan		Ubah Salin Hapus		3	4	101	kredit	2009-11-12 00:00:00	20000
Baru		Ubah Salin Hapus		4	3	106	debit	2009-11-13 00:00:00	50000
cabang_bank		Ubah Salin Hapus		5	5	107	kredit	2009-11-13 00:00:00	30000
nasabah		Ubah Salin Hapus		6	1	104	kredit	2009-11-15 00:00:00	200000
nasabah_has_rekening		Ubah Salin Hapus		7	9	110	kredit	2009-11-15 00:00:00	150000
rekening		Ubah Salin Hapus		8	5	102	debit	2009-11-16 00:00:00	20000
transaksi		Ubah Salin Hapus		9	3	105	kredit	2009-11-18 00:00:00	50000
performance_schema		Ubah Salin Hapus		10	4	107	debit	2009-11-19 00:00:00	100000
phpmyadmin		Ubah Salin Hapus		11	2	103	debit	2009-11-19 00:00:00	100000
test		Ubah Salin Hapus		12	1	104	debit	2009-11-19 00:00:00	50000
toko		Ubah Salin Hapus		13	4	107	kredit	2009-11-20 00:00:00	200000
universitas		Ubah Salin Hapus		14	3	105	debit	2009-11-21 00:00:00	40000
		Ubah Salin Hapus		15	1	104	kredit	2009-11-22 00:00:00	100000
		Ubah Salin Hapus		16	4	101	kredit	2009-11-22 00:00:00	20000
		Ubah Salin Hapus		17	2	103	debit	2009-11-22 00:00:00	50000
		Ubah Salin Hapus		18	5	102	debit	2009-11-25 00:00:00	50000
		Ubah Salin Hapus		19	10	108	debit	2009-11-26 00:00:00	100000
		Ubah Salin Hapus		20	3	106	kredit	2009-11-27 00:00:00	50000

6. Lakukan update untuk kasus-kasus berikut ini :
- Nasabah dengan nama “Indri Hapsari” pindah alamat ke “Jalan Slamet Riyadi No.34”.

```
MariaDB [perbankan]> UPDATE nasabah
-> SET alamat_nasabah = 'Jl. Slamet Riyadi 34'
-> WHERE nama_nasabah = 'Indri Hapsari';
Query OK, 1 row affected (0.08 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [perbankan]>
```

	id_nasabah	nama_nasabah	alamat_nasabah
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	1	Sutopo	Jl. Jendral Sudirman 12
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	2	Maryati	Jl. MT. Haryono 31
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	3	Suparman	Jl. Hasanudin 81
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	4	Kartika Padmasari	Jl. Manggis 15
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	5	Budi Eko Prayogo	Jl. Kantil 30
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	6	Satria Eka Jaya	Jl. Slamet Riyadi 45
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	7	Indri Hapsari	Jl. Slamet Riyadi 34
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	8	Sari Murti	Jl. Pangandaran 11
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	9	Canka Lokananta	Jl. Tidar 86
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	10	Budi Murtono	Jl. Merak 22

- Cabang dengan kode “BRUW” pindah ke alamat “Jalan A. Yani NO.23”.

```
MariaDB [perbankan]> UPDATE cabang_bank
-> SET alamat_cabang = 'Jl. A. Yani 23'
-> WHERE kode_cabang = 'BRUW';
Query OK, 1 row affected (0.06 sec)
Rows matched: 1  Changed: 1  Warnings: 0


MariaDB [perbankan]>
```

	kode_cabang	nama_cabang	alamat_cabang
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUB	Bank Rut Unit Boyolali	Jl. Ahmad Yani 45
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUK	Bank Rut Unit Klaten	Jl. Suparman 23
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUM	Bank Rut Unit Magelang	Jl. P. Tendean 63
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUS	Bank Rut Unit Surakarta	Jl. Slamet Riyadi
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUW	Bank Rut Unit Wonogiri	Jl. A. Yani 23
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUY	Bank Rut Unit Yogyakarta	Jl. Anggrek 21

7. Lakukan penghapusan untuk kasus-kasus berikut :
- a. Nasabah dengan id “7” menutup rekeningnya.

```
MariaDB [perbankan]> DELETE FROM nasabah  
-> WHERE id_nasabah = 7;  
Query OK, 1 row affected (0.10 sec)
```

```
MariaDB [perbankan]> _
```

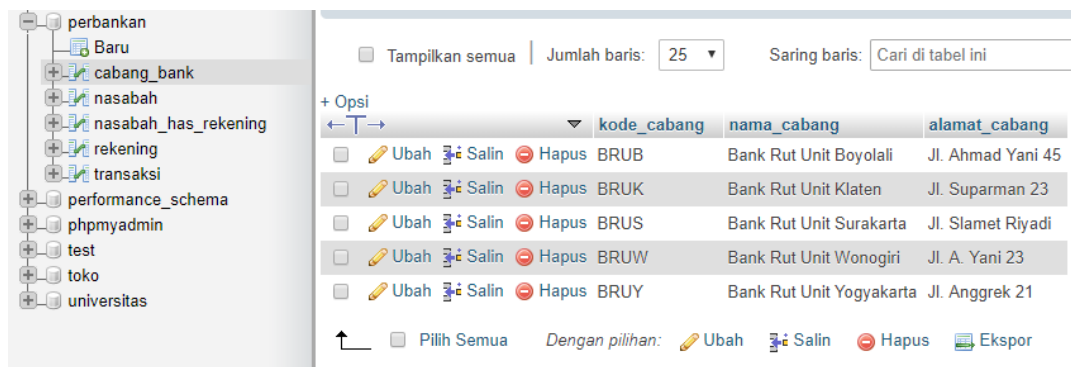


	id_nasabah	nama_nasabah	alamat_nasabah
<input type="checkbox"/>	1	Sutopo	Jl. Jendral Sudirman 12
<input type="checkbox"/>	2	Maryati	Jl. MT. Haryono 31
<input type="checkbox"/>	3	Suparman	Jl. Hasanudin 81
<input type="checkbox"/>	4	Kartika Padmasari	Jl. Manggis 15
<input type="checkbox"/>	5	Budi Eko Prayogo	Jl. Kantil 30
<input type="checkbox"/>	6	Satria Eka Jaya	Jl. Slamet Riyadi 45
<input type="checkbox"/>	7	Sari Murti	Jl. Pangandaran 11
<input type="checkbox"/>	8	Canka Lokananta	Jl. Tidar 86
<input type="checkbox"/>	9	Budi Murtono	Jl. Merak 22
<input type="checkbox"/>	10	Budi Murtono	Jl. Merak 22

- b. Cabang dengan nama_cabang “Bank Rut Unit Magelang” menutup kantornya.

```
MariaDB [perbankan]> DELETE FROM cabang_bank  
-> WHERE nama_cabang = 'Bank Rut Unit Magelang';  
Query OK, 1 row affected (0.10 sec)
```

```
MariaDB [perbankan]> _
```



	kode_cabang	nama_cabang	alamat_cabang
<input type="checkbox"/>	BRUB	Bank Rut Unit Boyolali	Jl. Ahmad Yani 45
<input type="checkbox"/>	BRUK	Bank Rut Unit Klaten	Jl. Superman 23
<input type="checkbox"/>	BRUS	Bank Rut Unit Surakarta	Jl. Slamet Riyadi
<input type="checkbox"/>	BRUW	Bank Rut Unit Wonogiri	Jl. A. Yani 23
<input type="checkbox"/>	BRUY	Bank Rut Unit Yogyakarta	Jl. Anggrek 21

TUGAS

Masukkan beberapa record ke setiap tabel dalam database yang telah di buat pada modul 4 (masing-masing 10record untuk tabel master, dan 20 record untuk tabel transaksi:

1. Tabel : nasabah

```
Command Prompt - mysql -u root -p
MariaDB [perbankan]>
MariaDB [perbankan]> INSERT INTO nasabah(id_nasabah, nama_nasabah, alamat_nasabah) VALUES ('11', 'Intan Larasati', 'Jl. Mliwis 20'),
-> ('12', 'Palistya Nesty', 'Jl. Blewah 30'),
-> ('13', 'Sri Hajiati', 'Jl. Rambutan 11'),
-> ('14', 'Fitri Cahya', 'Jl. Mangga 20'),
-> ('15', 'Bangkit Arfandio', 'Jl. Garuda 15'),
-> ('16', 'Azka Wardana', 'Jl. Merpati 5'),
-> ('17', 'Syaiful Rahmad', 'Jl. Belibis 50'),
-> ('18', 'Maulana Azka', 'Jl. Elang 24'),
-> ('19', 'Clavaria Devinci', 'Jl. Manggis 10'),
-> ('20', 'Nayalia Devava', 'Jl. Dana 35');
Query OK, 10 rows affected (0.09 sec)
Records: 10 Duplicates: 0 Warnings: 0

MariaDB [perbankan]> select * from nasabah;
+-----+-----+-----+
| id_nasabah | nama_nasabah | alamat_nasabah |
+-----+-----+-----+
| 1 | Sutopo | Jl. Jendral Sudirman 12 |
| 2 | Manyati | Jl. MT. Haryono 31 |
| 3 | Suparman | Jl. Hasanudin 81 |
| 4 | Kartika Padmasari | Jl. Manggis 15 |
| 5 | Budi Eko Prayogo | Jl. Kantil 30 |
| 6 | Satria Eka Jaya | Jl. Slamet Riyadi 45 |
| 7 | Sari Murti | Jl. Pangandanan 11 |
| 8 | Canka Lokananta | Jl. Tidar 06 |
| 9 | Budi Murtono | Jl. Merak 22 |
| 10 | Intan Larasati | Jl. Mliwis 20 |
| 11 | Palistya Nesty | Jl. Blewah 30 |
| 12 | Sri Hajiati | Jl. Rambutan 11 |
| 13 | Fitri Cahya | Jl. Mangga 20 |
| 14 | Bangkit Arfandio | Jl. Garuda 15 |
| 15 | Azka Wardana | Jl. Merpati 5 |
| 16 | Syaiful Rahmad | Jl. Belibis 50 |
| 17 | Maulana Azka | Jl. Elang 24 |
| 18 | Clavaria Devinci | Jl. Manggis 10 |
| 19 | Nayalia Devava | Jl. Dana 35 |
+-----+-----+-----+
19 rows in set (0.00 sec)

MariaDB [perbankan]>
```

2. Tabel cabang_bank

```
Command Prompt - mysql -u root -p
MariaDB [perbankan]> INSERT INTO cabang_bank(kode_cabang, nama_cabang, alamat_cabang) VALUES ('BRUSL', 'Bank Rut Unit Salatiga', 'Jl. Dahlia 11'),
-> ('BRUKA', 'Bank Rut Unit Karanganyar', 'Jl. Melati 13'),
-> ('BRUJ', 'Bank Rut Unit Jakarta', 'Jl. Mawar 1'),
-> ('BRUG', 'Bank Rut Unit Gorontalo', 'Jl. Apel 39'),
-> ('BRUP', 'Bank Rut Unit Padang', 'Jl. Anggur 15'),
-> ('BRUD', 'Bank Rut Unit Depok', 'Jl. Mangga 20'),
-> ('BRUA', 'Bank Rut Unit Aceh', 'Jl. Kelengkeng 13'),
-> ('BRUT', 'Bank Rut Unit Tangerang', 'Jl. Pisang 16'),
-> ('BRUC', 'Bank Rut Unit Cimahi', 'Jl. Manggis 21'),
-> ('BRUL', 'Bank Rut Unit Lombok', 'Jl. Jeruk 23');
Query OK, 10 rows affected (0.08 sec)
Records: 10 Duplicates: 0 Warnings: 0

MariaDB [perbankan]> select * from cabang_bank;
+-----+-----+-----+
| kode_cabang | nama_cabang | alamat_cabang |
+-----+-----+-----+
| BRUA | Bank Rut Unit Aceh | Jl. Kelengkeng 13 |
| BRUB | Bank Rut Unit Boyolali | Jl. Ahmad Yani 45 |
| BRUC | Bank Rut Unit Cimahi | Jl. Manggis 21 |
| BRUD | Bank Rut Unit Depok | Jl. Mangga 20 |
| BRUG | Bank Rut Unit Gorontalo | Jl. Apel 39 |
| BRUJ | Bank Rut Unit Jakarta | Jl. Mawar 1 |
| BRUK | Bank Rut Unit Klaten | Jl. Suparman 23 |
| BRUKA | Bank Rut Unit Karanganyar | Jl. Melati 13 |
| BRUL | Bank Rut Unit Lombok | Jl. Jeruk 23 |
| BRUP | Bank Rut Unit Padang | Jl. Anggur 15 |
| BRUS | Bank Rut Unit Surakarta | Jl. Slamet Riyadi |
| BRUSL | Bank Rut Unit Salatiga | Jl. Dahlia 11 |
| BRUT | Bank Rut Unit Tangerang | Jl. Pisang 16 |
| BRUW | Bank Rut Unit Wonogiri | Jl. A. Yani 23 |
| BRUY | Bank Rut Unit Yogyakarta | Jl. Anggrek 21 |
+-----+-----+-----+
15 rows in set (0.00 sec)

MariaDB [perbankan]>
```


3. Tabel rekening

```
Command Prompt - mysql -u root -p
4 rows in set (0.01 sec)

MariaDB [perbankan]> INSERT INTO rekening(no_rekening, kode_cabangFK, pin, saldo) VALUES(114, 'BRUG', 6789, 1000000),
-> (115, 'BRUKA', 9876, 2500000),
-> (116, 'BRUSL', 4567, 3500000),
-> (117, 'BRUP', 7654, 1500000),
-> (118, 'BRUJ', 5678, 5000000),
-> (119, 'BRUT', 8765, 2000000),
-> (120, 'BRUD', 3456, 2500000),
-> (121, 'BRUA', 6543, 1500000),
-> (122, 'BRUC', 2345, 5000000),
-> (123, 'BRUL', 5432, 1000000);
Query OK, 10 rows affected (0.09 sec)
Records: 10 Duplicates: 0 Warnings: 0

MariaDB [perbankan]> select * from rekening;
+-----+-----+-----+-----+
| no_rekening | kode_cabangFK | pin | saldo |
+-----+-----+-----+-----+
| 101 | BRUS | 1111 | 500000 |
| 102 | BRUS | 2222 | 350000 |
| 103 | BRUS | 3333 | 750000 |
| 104 | BRUM | 4444 | 900000 |
| 105 | BRUM | 5555 | 2000000 |
| 106 | BRUS | 6666 | 3000000 |
| 107 | BRUS | 7777 | 1000000 |
| 108 | BRUB | 0 | 5000000 |
| 109 | BRUB | 9999 | 0 |
| 110 | BRUY | 1234 | 550000 |
| 111 | BRUK | 4321 | 150000 |
| 112 | BRUK | 123 | 3000000 |
| 113 | BRUY | 8888 | 255000 |
| 114 | BRUG | 6789 | 100000 |
| 115 | BRUKA | 9876 | 250000 |
| 116 | BRUSL | 4567 | 350000 |
| 117 | BRUP | 7654 | 150000 |
| 118 | BRUJ | 5678 | 5000000 |
| 119 | BRUT | 8765 | 2000000 |
| 120 | BRUD | 3456 | 2500000 |
| 121 | BRUA | 6543 | 1500000 |
| 122 | BRUC | 2345 | 500000 |
| 123 | BRUL | 5432 | 1000000 |
+-----+-----+-----+-----+
23 rows in set (0.00 sec)
```

4. Tabel nasabah_has_rekening

```
Command Prompt - mysql -u root -p
2 rows in set (0.00 sec)

MariaDB [perbankan]> INSERT INTO nasabah_has_rekening(id_nasabahFK, no_rekeningFK) VALUES
-> (11, 105), (12, 103),
-> (13, 102), (14, 106),
-> (15, 115), (16, 118),
-> (17, 100), (18, 109),
-> (19, 112), (20, 111);
Query OK, 10 rows affected (0.10 sec)
Records: 10 Duplicates: 0 Warnings: 0

MariaDB [perbankan]> select * from nasabah_has_rekening;
+-----+-----+
| id_nasabahFK | no_rekeningFK |
+-----+-----+
| 1 | 104 |
| 2 | 103 |
| 3 | 105 |
| 3 | 106 |
| 4 | 101 |
| 4 | 107 |
| 5 | 102 |
| 5 | 107 |
| 6 | 109 |
| 7 | 109 |
| 8 | 111 |
| 8 | 112 |
| 9 | 110 |
| 10 | 108 |
| 10 | 113 |
| 11 | 105 |
| 12 | 103 |
| 13 | 102 |
| 14 | 106 |
| 15 | 115 |
| 16 | 118 |
| 17 | 108 |
| 18 | 109 |
| 19 | 112 |
| 20 | 111 |
+-----+-----+
25 rows in set (0.00 sec)

MariaDB [perbankan]>
```

5. Tabel transaksi

```
MariaDB [perbankan]> INSERT INTO transaksi(no_transaksi, no_rekeningFk, id_nasabahFK, jenis_transaksi, tanggal, jumlah) VALUES
-> (31, 111, 20, 'debit', '2019-1-1', 50000),
-> (32, 109, 18, 'debit', '2019-1-1', 100000),
-> (33, 111, 8, 'kredit', '2019-1-2', 100000),
-> (34, 107, 5, 'debit', '2019-1-3', 150000),
-> (35, 102, 5, 'kredit', '2019-1-3', 200000),
-> (36, 105, 11, 'kredit', '2019-1-3', 50000),
-> (37, 112, 8, 'debit', '2019-1-5', 50000),
-> (38, 110, 9, 'debit', '2019-1-5', 100000),
-> (39, 108, 10, 'debit', '2019-1-5', 100000),
-> (40, 113, 10, 'kredit', '2019-1-6', 150000),
-> (41, 105, 11, 'kredit', '2019-1-6', 100000),
-> (42, 103, 12, 'debit', '2019-1-7', 200000),
-> (43, 105, 11, 'kredit', '2019-1-7', 150000),
-> (44, 111, 20, 'debit', '2019-1-8', 50000),
-> (45, 111, 8, 'kredit', '2019-1-8', 100000),
-> (46, 105, 11, 'kredit', '2019-1-9', 100000),
-> (47, 108, 10, 'debit', '2019-1-10', 100000),
-> (48, 112, 8, 'debit', '2019-1-10', 50000),
-> (49, 102, 5, 'kredit', '2019-1-11', 200000),
-> (50, 109, 18, 'debit', '2019-1-11', 100000);
Query OK, 20 rows affected (0.06 sec)
Records: 20 Duplicates: 0 Warnings: 0

MariaDB [perbankan]> _
```

Command Prompt - mysql -u root -p

MariaDB [perbankan]> select * from transaksi;

no_transaksi	id_nasabahFK	no_rekeningFK	jenis_transaksi	tanggal	jumlah
1	3	105	debit	2009-11-10 00:00:00	50000
2	2	103	debit	2009-11-10 00:00:00	40000
3	4	101	kredit	2009-11-12 00:00:00	20000
4	3	106	debit	2009-11-13 00:00:00	50000
5	5	107	kredit	2009-11-13 00:00:00	30000
6	1	104	kredit	2009-11-15 00:00:00	200000
7	9	110	kredit	2009-11-15 00:00:00	150000
8	5	102	debit	2009-11-16 00:00:00	20000
9	3	105	kredit	2009-11-18 00:00:00	50000
10	4	107	debit	2009-11-19 00:00:00	100000
11	2	103	debit	2009-11-19 00:00:00	100000
12	1	104	debit	2009-11-19 00:00:00	50000
13	4	107	kredit	2009-11-20 00:00:00	200000
14	3	105	debit	2009-11-21 00:00:00	40000
15	1	104	kredit	2009-11-22 00:00:00	100000
16	4	101	kredit	2009-11-22 00:00:00	20000
17	2	103	debit	2009-11-22 00:00:00	50000
18	5	102	debit	2009-11-25 00:00:00	50000
19	10	108	debit	2009-11-26 00:00:00	100000
20	3	106	kredit	2009-11-27 00:00:00	50000
21	2	103	kredit	2009-11-28 00:00:00	200000
22	3	105	kredit	2009-11-28 00:00:00	100000
23	5	102	debit	2009-11-30 00:00:00	20000
24	1	104	debit	2009-12-01 00:00:00	50000
25	2	103	debit	2009-12-02 00:00:00	40000
26	4	101	debit	2009-12-04 00:00:00	50000
27	2	103	kredit	2009-12-05 00:00:00	100000
28	5	102	kredit	2009-12-05 00:00:00	200000
29	7	109	debit	2009-12-05 00:00:00	100000
30	9	110	debit	2009-12-06 00:00:00	20000
31	20	111	debit	2019-01-01 00:00:00	50000
32	18	109	debit	2019-01-01 00:00:00	100000
33	8	111	kredit	2019-01-02 00:00:00	100000
34	5	107	debit	2019-01-03 00:00:00	150000
35	5	102	kredit	2019-01-03 00:00:00	200000
36	11	105	kredit	2019-01-03 00:00:00	50000
37	8	112	debit	2019-01-05 00:00:00	50000
38	9	110	debit	2019-01-05 00:00:00	100000
39	10	108	debit	2019-01-05 00:00:00	100000

Command Prompt - mysql -u root -p

14	3	105	debit	2009-11-21 00:00:00	40000
15	1	104	kredit	2009-11-22 00:00:00	100000
16	4	101	kredit	2009-11-22 00:00:00	20000
17	2	103	debit	2009-11-22 00:00:00	50000
18	5	102	debit	2009-11-25 00:00:00	50000
19	10	108	debit	2009-11-26 00:00:00	100000
20	3	106	kredit	2009-11-27 00:00:00	50000
21	2	103	kredit	2009-11-28 00:00:00	200000
22	3	105	kredit	2009-11-28 00:00:00	100000
23	5	102	debit	2009-11-30 00:00:00	20000
24	1	104	debit	2009-12-01 00:00:00	50000
25	2	103	debit	2009-12-02 00:00:00	40000
26	4	101	debit	2009-12-04 00:00:00	50000
27	2	103	kredit	2009-12-05 00:00:00	100000
28	5	102	kredit	2009-12-05 00:00:00	200000
29	7	109	debit	2009-12-05 00:00:00	100000
30	9	110	debit	2009-12-06 00:00:00	20000
31	20	111	debit	2019-01-01 00:00:00	50000
32	18	109	debit	2019-01-01 00:00:00	100000
33	8	111	kredit	2019-01-02 00:00:00	100000
34	5	107	debit	2019-01-03 00:00:00	150000
35	5	102	kredit	2019-01-03 00:00:00	200000
36	11	105	kredit	2019-01-03 00:00:00	50000
37	8	112	debit	2019-01-05 00:00:00	50000
39	9	110	debit	2019-01-05 00:00:00	100000
39	10	108	debit	2019-01-05 00:00:00	100000
40	10	113	kredit	2019-01-06 00:00:00	150000
41	11	105	kredit	2019-01-06 00:00:00	100000
42	12	103	debit	2019-01-07 00:00:00	200000
43	11	105	kredit	2019-01-07 00:00:00	150000
44	20	111	debit	2019-01-08 00:00:00	50000
45	8	111	kredit	2019-01-08 00:00:00	100000
46	11	105	kredit	2019-01-09 00:00:00	100000
47	10	108	debit	2019-01-10 00:00:00	100000
48	8	112	debit	2019-01-10 00:00:00	50000
49	5	102	kredit	2019-01-11 00:00:00	200000
50	18	109	debit	2019-01-11 00:00:00	100000

50 rows in set (0.00 sec)

MariaDB [perbankan]>

MODUL 6

TUGAS

1. Menampilkan nama nasabah dan alamat nasabah diurutkan berdasarkan nama nasabah

```
CA Command Prompt - mysql -u root -p
MariaDB [perbankan]> select nama_nasabah, alamat_nasabah from nasabah order by nama_nasabah;
```

nama_nasabah	alamat_nasabah
Budi Eko Prayogo	Jl. Kantil 30
Budi Murtono	Jl. Merak 22
Canka Lokananta	Jl. Tidar 86
Kartika Padmasari	Jl. Manggis 15
Maryati	Jl. MT. Haryono 31
Sari Murti	Jl. Pangandaran 11
Satria Eka Jaya	Jl. Slamet Riyadi 45
Suparman	Jl. Hasanudin 81
Sutopo	Jl. Jendral Sudirman 12

```
9 rows in set (0.00 sec)
```

2. Menampilkan jenis transaksi dan jumlah transaksi dimana jenis transaksinya adalah kredit

```
MariaDB [perbankan]> select jenis_transaksi, jumlah from transaksi where jenis_transaksi = 'kredit';
```

jenis_transaksi	jumlah
kredit	20000
kredit	30000
kredit	200000
kredit	150000
kredit	50000
kredit	200000
kredit	100000
kredit	20000
kredit	50000
kredit	200000
kredit	100000
kredit	100000
kredit	200000
kredit	100000
kredit	200000
kredit	50000
kredit	150000
kredit	100000
kredit	150000
kredit	100000
kredit	100000
kredit	200000

```
22 rows in set (0.00 sec)
```

3. Menampilkan jenis transaksi dan jumlah transaksi yang melakukan transaksi pada tanggal 21 November 2009 dan diurutkan berdasarkan jumlah transaksi

```
MariaDB [perbankan]> select jenis_transaksi, jumlah from transaksi where tanggal = '2009-11-21' order by jumlah;
```

jenis_transaksi	jumlah
debit	40000

```
1 row in set (0.00 sec)
```

```
MariaDB [perbankan]> _
```

4. Menampilkan nama nasabah, jenis transaksi dan jumlah transaksi dimana jumlah transaksi = Rp 20.000

```
MariaDB [perbankan]> select nama_nasabah, jenis_transaksi, jumlah from nasabah, transaksi  
-> where nasabah.id_nasabah = transaksi.id_nasabahFK and jumlah = '20000';
```

nama_nasabah	jenis_transaksi	jumlah
Kartika Padmasari	kredit	20000
Budi Eko Prayogo	debit	20000
Kartika Padmasari	kredit	20000
Budi Eko Prayogo	debit	20000
Canka Lokananta	debit	20000

```
5 rows in set (0.04 sec)
```

```
MariaDB [perbankan]> _
```

5. Menampilkan nama nasabah dan alamat nasabah dimana nama nasabah diawali dengan kata 'Su'

```
MariaDB [perbankan]> select nama_nasabah, alamat_nasabah from nasabah  
-> where nama_nasabah like 'Su%';
```

nama_nasabah	alamat_nasabah
Sutopo	Jl. Jendral Sudirman 12
Suparman	Jl. Hasanudin 81

```
2 rows in set (0.00 sec)
```

```
MariaDB [perbankan]>
```

MODUL 7

TUGAS

1. Menampilkan nama nasabah, alamat nasabah, jenis transaksi, dan jumlah transaksi dimana jenis transaksinya adalah kredit dan diurutkan berdasarkan nama nasabah

```
MariaDB [perbankan]> select nama_nasabah, alamat_nasabah, jenis_transaksi, jumlah from nasabah, transaksi
-> where nasabah.id_nasabah = transaksi.id_nasabahFK
-> and jenis_transaksi = 'kredit' order by nama_nasabah;
```

nama_nasabah	alamat_nasabah	jenis_transaksi	jumlah
Budi Eko Prayogo	Jl. Kantil 30	kredit	200000
Budi Eko Prayogo	Jl. Kantil 30	kredit	30000
Budi Eko Prayogo	Jl. Kantil 30	kredit	200000
Budi Eko Prayogo	Jl. Kantil 30	kredit	200000
Budi Murtono	Jl. Merak 22	kredit	150000
Canka Lokananta	Jl. Tidar 86	kredit	150000
Kartika Padmasari	Jl. Manggis 15	kredit	200000
Kartika Padmasari	Jl. Manggis 15	kredit	20000
Kartika Padmasari	Jl. Manggis 15	kredit	20000
Maryati	Jl. MT. Haryono 31	kredit	100000
Maryati	Jl. MT. Haryono 31	kredit	200000
Sari Murti	Jl. Pangandaran 11	kredit	100000
Sari Murti	Jl. Pangandaran 11	kredit	100000
Suparman	Jl. Hasanudin 81	kredit	50000
Suparman	Jl. Hasanudin 81	kredit	50000
Suparman	Jl. Hasanudin 81	kredit	100000
Sutopo	Jl. Jendral Sudirman 12	kredit	200000
Sutopo	Jl. Jendral Sudirman 12	kredit	100000

18 rows in set (0.00 sec)

```
MariaDB [perbankan]>
```

2. Menampilkan nomor rekening, nama nasabah, jenis transaksi, dan jumlah transaksi yang melakukan transaksi pada tanggal 21 November 2009 dan diurutkan berdasarkan nama nasabah

```
Command Prompt - mysql -u root -p
```

18 rows in set (0.00 sec)

```
MariaDB [perbankan]> select no_rekening, nama_nasabah, jenis_transaksi, jumlah
-> from nasabah, rekening, transaksi
-> where rekening.no_rekening = transaksi.no_rekeningFK and nasabah.id_nasabah = transaksi.id_nasabahFK
-> and tanggal = '2009-11-21' order by nama_nasabah;
```

no_rekening	nama_nasabah	jenis_transaksi	jumlah
105	Suparman	debit	40000

1 row in set (0.00 sec)

```
MariaDB [perbankan]> █
```

3. Menampilkan nomor rekening, nama nasabah, jenis transaksi dan jumlah transaksi dimana jumlah transaksi = Rp 20.000

C:\> Command Prompt - mysql -u root -p

```
MariaDB [perbankan]> select no_rekening, nama_nasabah, jenis_transaksi, jumlah
-> from rekening, nasabah, transaksi
-> where rekening.no_rekening = transaksi.no_rekeningFK
-> and nasabah.id_nasabah = transaksi.id_nasabahFK
-> and jumlah = '20000';
```

no_rekening	nama_nasabah	jenis_transaksi	jumlah
101	Kartika Padmasari	kredit	20000
102	Budi Eko Prayogo	debit	20000
101	Kartika Padmasari	kredit	20000
102	Budi Eko Prayogo	debit	20000
110	Canka Lokananta	debit	20000

5 rows in set (0.00 sec)

MariaDB [perbankan]>

4. Menampilkan nomor rekening, nama nasabah dan alamat nasabah dimana nama nasabah diawali dengan kata 'Su'

C:\> Command Prompt - mysql -u root -p

```
MariaDB [perbankan]> select no_rekening, nama_nasabah, alamat_nasabah
-> from rekening, nasabah, nasabah_has_rekening
-> where nasabah.id_nasabah = nasabah_has_rekening.id_nasabahFK
-> and rekening.no_rekening = nasabah_has_rekening.no_rekeningFK
-> and nama_nasabah like 'Su%';
```

no_rekening	nama_nasabah	alamat_nasabah
104	Sutopo	Jl. Jendral Sudirman 12
105	Suparman	Jl. Hasanudin 81
106	Suparman	Jl. Hasanudin 81

3 rows in set (0.00 sec)

MariaDB [perbankan]> █

5. Menampilkan nomor rekening dengan alias 'Nomor Rekening', nama nasabah dengan alias 'Nama Nasabah', jumlah transaksi dengan alias 'Jenis Transaksi' dimana jenis transaksinya adalah debit dan di urutkan berdasarkan nama nasabah

Command Prompt - mysql -u root -p

```
MariaDB [perbankan]> select no_rekening as 'Nomor Rekening', nama_nasabah as 'Nama Nasabah', jumlah as 'Jumlah Transaksi'
-> from rekening, nasabah, transaksi
-> where rekening.no_rekening = transaksi.no_rekeningFK
-> and nasabah.id_nasabah = transaksi.id_nasabahFK
-> and jenis_transaksi = 'debit' order by nama_nasabah;
```

Nomor Rekening	Nama Nasabah	Jumlah Transaksi
102	Budi Eko Prayogo	20000
107	Budi Eko Prayogo	150000
102	Budi Eko Prayogo	20000
102	Budi Eko Prayogo	50000
108	Budi Murtono	100000
108	Budi Murtono	100000
108	Budi Murtono	100000
110	Canka Lokananta	20000
110	Canka Lokananta	100000
101	Kartika Padmasari	50000
107	Kartika Padmasari	100000
103	Maryati	100000
103	Maryati	40000
103	Maryati	50000
103	Maryati	40000
112	Sari Murti	50000
112	Sari Murti	50000
106	Superman	50000
105	Superman	40000
105	Superman	50000
104	Sutopo	50000
104	Sutopo	50000

22 rows in set (0.00 sec)

MariaDB [perbankan]>

MODUL 8

Tugas!

1. Menampilkan jenis transaksi, jumlah transaksi dalam Rp dan total transaksi untuk nasabah yang bernama akhiran “Kartika Padmasari” untuk masing-masing jenis transaksi

```
MariaDB [(none)]> use perbankan;
Database changed
MariaDB [perbankan]> select jenis_transaksi as "Jenis Transaksi", sum(jumlah) as "Jumlah (Rp)", count(jumlah) as "Total Transaksi"
-> from transaksi, nasabah
-> where nama_nasabah = "Kartika Padmasari" and nasabah.id_nasabah = transaksi.id_nasabahFK group by transaksi.jenis_transaksi;
```

Jenis Transaksi	Jumlah (Rp)	Total Transaksi
debit	150000	2
kredit	240000	3

```
2 rows in set (0.00 sec)

MariaDB [perbankan]> _
```

2. Jumlah total saldo yang dimiliki oleh Maryati

```
MariaDB [perbankan]> select nama_nasabah as "Nama Nasabah", sum(saldo) as "Saldo (Rp)" from rekening, nasabah, nasabah_has_rekening
-> where nasabah.id_nasabah = nasabah_has_rekening.id_nasabahFK and rekening.no_rekening = nasabah_has_rekening.no_rekeningFK and nama_nasabah = "Maryati";
```

Nama Nasabah	Saldo (Rp)
Maryati	750000

```
1 row in set (0.00 sec)

MariaDB [perbankan]> _
```

3. Menampilkan jumlah transaksi yang ditangani oleh masing-masing cabang bank

```
MariaDB [perbankan]> select count(jumlah) as "Jumlah Transaksi", nama_cabang from transaksi, cabang_bank, rekening
-> where transaksi.no_rekeningFK = rekening.no_rekening
-> and rekening.kode_cabangFK = cabang_bank.kode_cabang
-> group by kode_cabang;
```

Jumlah Transaksi	nama_cabang
6	Bank Rut Unit Boyolali
6	Bank Rut Unit Klaten
12	Bank Rut Unit Magelang
22	Bank Rut Unit Surakarta
4	Bank Rut Unit Yogyakarta

```
5 rows in set (0.00 sec)

MariaDB [perbankan]> _
```

4. Menampilkan nama nasabah dan jumlah saldo yang memiliki saldo antara Rp 500.000 sampai Rp 2000.000

```
MariaDB [perbankan]> select nama_nasabah as "Nama Nasabah", saldo as "Saldo (Rp)"
-> from nasabah, rekening, nasabah_has_rekening
-> where nasabah.id_nasabah = nasabah_has_rekening.id_nasabahFK and rekening.no_rekening = nasabah_has_rekening.no_rekeningFK
-> and rekening.saldo between 500000 and 2000000;
```

Nama Nasabah	Saldo (Rp)
Sutopo	900000
Maryati	750000
Suparman	2000000
Kartika Padmasari	500000
Kartika Padmasari	1000000
Budi Eko Prayogo	1000000
Canka Lokananta	550000

```
7 rows in set (0.00 sec)

MariaDB [perbankan]>
```

5. Menampilkan nama nasabah, tanggal transaksi, dan jumlah transaksi dalam Rp dimana jumlah transaksi diatas Rp 100.000 dan diurutkan berdasarkan jumlah transaksi dari yang besar ke yang kecil


```

MariaDB [perbankan]> select nama_nasabah as "Nama Nasabah", tanggal as "Tanggal transaksi", jumlah as "Jumlah (Rp)"
-> from nasabah, transaksi
-> where nasabah.id_nasabah = transaksi.id_nasabahFK
-> and jumlah >= 100000 order by jumlah;

```

Nama Nasabah	Tanggal transaksi	Jumlah (Rp)
Sari Murti	2019-01-02 00:00:00	100000
Canka Lokananta	2019-01-05 00:00:00	100000
Budi Murtono	2019-01-05 00:00:00	100000
Sari Murti	2019-01-08 00:00:00	100000
Budi Murtono	2019-01-10 00:00:00	100000
Maryati	2009-12-05 00:00:00	100000
Suparman	2009-11-28 00:00:00	100000
Maryati	2009-11-19 00:00:00	100000
Kartika Padmasari	2009-11-19 00:00:00	100000
Sutopo	2009-11-22 00:00:00	100000
Budi Murtono	2009-11-26 00:00:00	100000
Budi Murtono	2019-01-06 00:00:00	150000
Canka Lokananta	2009-11-15 00:00:00	150000
Budi Eko Prayogo	2019-01-03 00:00:00	150000
Budi Eko Prayogo	2019-01-11 00:00:00	200000
Kartika Padmasari	2009-11-20 00:00:00	200000
Budi Eko Prayogo	2009-12-05 00:00:00	200000
Budi Eko Prayogo	2019-01-03 00:00:00	200000
Maryati	2009-11-28 00:00:00	200000
Sutopo	2009-11-15 00:00:00	200000

20 rows in set (0.00 sec)

```

MariaDB [perbankan]>

```

MODUL 9

1. Buatlah user masing-masing dengan nama anda

```
C:\xampp\mysql\bin>mysql -u root
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 6
Server version: 10.1.37-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> use mysql;
Database changed
MariaDB [mysql]> GRANT SELECT on perbankan.cabang_bank to Ati@localhost;
Query OK, 0 rows affected (0.00 sec)

MariaDB [mysql]> exit;
Bye

C:\xampp\mysql\bin>mysql -u Ati -p
Enter password: *****
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 7
Server version: 10.1.37-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

```
C:\xampp\mysql\bin>mysql -u root
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 6
Server version: 10.1.37-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> use mysql;
Database changed
MariaDB [mysql]> GRANT SELECT on perbankan.cabang_bank to Ati@localhost;
Query OK, 0 rows affected (0.00 sec)

MariaDB [mysql]> exit;
Bye

C:\xampp\mysql\bin>mysql -u Ati -p
Enter password: *****
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 7
Server version: 10.1.37-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> select nama_nasabah FROM nasabah;
ERROR 1046 (3D000): No database selected
MariaDB [(none)]> insert into nasabah(id_nasabah, nama_nasabah, alamat_nasabah)
values(1,'Sutopo','Jl. Jendral Sudirman 12');
ERROR 1046 (3D000): No database selected
MariaDB [(none)]> use perbankan ;
Database changed
MariaDB [perbankan]> select nama_nasabah FROM nasabah;
ERROR 1142 (42000): SELECT command denied to user 'Ati'@'localhost' for table 'nasabah'
MariaDB [perbankan]> insert into nasabah(id_nasabah, nama_nasabah, alamat_nasabah)
values(3,'Somat','Jl. Jendral Manggis 02');
ERROR 1062 (23000): Duplicate entry '3' for key 'PRIMARY'
MariaDB [perbankan]> insert into nasabah(id_nasabah, nama_nasabah, alamat_nasabah)
values(27,'Somat','Jl. Jendral Manggis 02');
Query OK, 1 row affected (0.07 sec)

MariaDB [perbankan]> insert into cabang_bank(kode_cabang, nama_cabang, alamat_cabang)
values(BRAY,'Bank Unit Sragen','Jl. elang emas No 28');
ERROR 1142 (42000): INSERT command denied to user 'Ati'@'localhost' for table 'cabang_bank'
MariaDB [perbankan]>
```

```
MariaDB [perbankan]> insert into nasabah(id_nasabah, nama_nasabah, alamat_nasabah)
values(27,'Somat','Jl. Jendral Manggis 02');
Query OK, 1 row affected (0.07 sec)
```

MODUL 10

1. Ambil salah satu mata kuliah. Tampilkan data mahasiswa yang tidak mengambil mata kuliah tersebut.

```
MariaDB [(none)]> use perkuliahan3
Database changed
MariaDB [perkuliahan3]> select mhs.nim,mhs.nama from mahasiswa mhs, link_mahasiswa_matkul lmm, matkul mk where mhs.nim = lmm.nim and mk.kode_matkul = lmm.kode_matkul and mhs.nim not in (select mhs.nim from mahasiswa mhs, link_mahasiswa_matkul lmm, matkul mk where mhs.nim = lmm.nim and mk.kode_matkul = lmm.kode_matkul and mk.kode_matkul = 'TIF003') group by mhs.nim;
ERROR 1054 (42S22): Unknown column 'lmm.nim.kode_matkul' in 'where clause'
MariaDB [perkuliahan3]> select mhs.nim,mhs.nama from mahasiswa mhs, link_mahasiswa_matkul lmm, matkul mk where mhs.nim = lmm.nim and mk.kode_matkul = lmm.kode_matkul and mhs.nim not in (select mhs.nim from mahasiswa mhs, link_mahasiswa_matkul lmm, matkul mk where mhs.nim = lmm.nim and mk.kode_matkul = lmm.kode_matkul and mk.kode_matkul = 'TIF003') group by mhs.nim;
+-----+-----+
| nim      | nama                                |
+-----+-----+
| L200150118 | Rina Kurniasari                    |
| L200150125 | Indra Bayu Candra Gupta            |
+-----+-----+
2 rows in set (0.00 sec)
```

2. Menampilkan daftar mahasiswa yang mengambil semua mata kuliah yang diampu oleh salah satu dosen.

```
MariaDB [perkuliahan3]> select mhs.nim, mhs.nama from mahasiswa mhs, matkul mk, link_mahasiswa_matkul lmm where mhs.nim = lmm.nim and mk.kode_matkul = lmm.kode_matkul and mk.kode_matkul in (select kode_matkul from matkul where kode_dosen = 'D004') group by mhs.nim having count(mk.kode_matkul) = (select count(kode_matkul) from matkul where kode_dosen = 'D004');
+-----+-----+
| nim      | nama                                |
+-----+-----+
| L200150088 | Khofa Prayoga                      |
| L200150099 | Purwantinah                        |
| L200150117 | Widiyarti Endang Saputri           |
| L200150123 | Danindya Puput Muliana Putri       |
| L200150128 | Sulthana Dzakira Drajat            |
| L200150129 | Fendy                              |
| L200150144 | Sam'an Alghozy                     |
| L200150146 | Fakhrur Razi                       |
| L200154001 | Khilyatin Ulin Fitri               |
+-----+-----+
9 rows in set (0.00 sec)
MariaDB [perkuliahan3]>
```

3. Melakukan update , karena salah satu matkul(A) dihilangkan, seluruh mahasiswa yang mengambil mata kuliah tersebut dipindahkan untuk mengambil mata kuliah lain(B).

```
MariaDB [perkuliahan3]> update link_mahasiswa_matkul
  -> set kode_matkul = (select kode_matkul from matkul where nama_matkul like 'Metode Penelitian & Publikasi Ilmiah')
  -> where kode_matkul = (select kode_matkul from matkul where nama_matkul like 'Sistem Digital');
Query OK, 12 rows affected (0.09 sec)
Rows matched: 12  Changed: 12  Warnings: 0

MariaDB [perkuliahan3]>
```

```
"SBD-11.py - G:/SBD-11.py (3.4.4)"
File Edit Format Run Options Window Help
from datetime import date, datetime, timedelta
import mysql.connector

cnx = mysql.connector.connect(user='root', database='perbankan')
cursor = cnx.cursor()
tanggal = datetime.now().date()
update_transaksi = ("update nasabah set nama_nasabah = 'Lala' where id_nasabah = 3")
cursor.execute(update_transaksi)

cnx.commit()
cursor.close()
cnx.close()

##from datetime import date, datetime, timedelta
##import mysql.connector
##
##cnx = mysql.connector.connect(user='root', database = 'perbankan')
##cursor = cnx.cursor()
##tanggal = datetime.now().date()
##delete_transaksi = ('delete from transaksi where no_transaksi = 52')
##cursor.execute(delete_transaksi)
##
##cnx.commit()
##cursor.close()
##cnx.close()
```

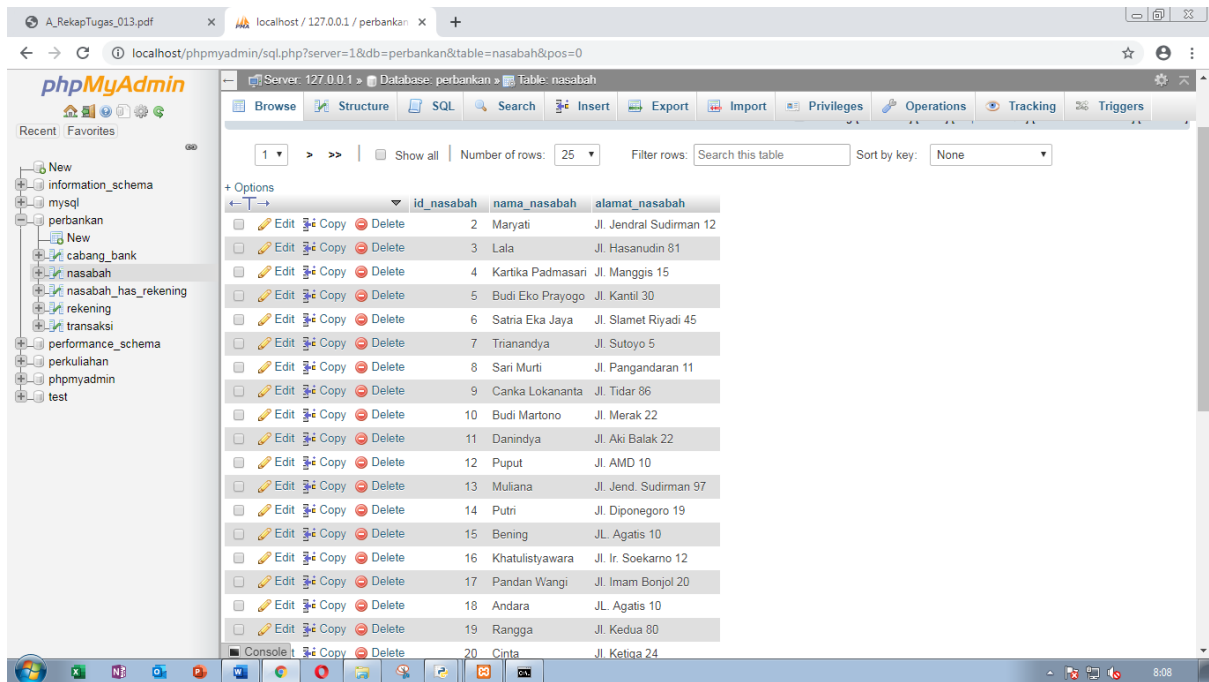
A_RekapTugas_013.pdf x localhost / 127.0.0.1 / perbankan x +

localhost/phpmyadmin/sql.php?server=1&db=perbankan&table=nasabah&pos=0

Server: 127.0.0.1 > Database: perbankan > Table: nasabah

Options: 1 > >> Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

	id_nasabah	nama_nasabah	alamat_nasabah
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	2	Maryati	Jl. Jendral Sudirman 12
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	3	Suparman	Jl. Hasanudin 81
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	4	Kartika Padmasari	Jl. Manggis 15
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	5	Budi Eko Prayogo	Jl. Kantil 30
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	6	Satria Eka Jaya	Jl. Slamet Riyadi 45
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	7	Triandanya	Jl. Sutoyo 5
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	8	Sari Murti	Jl. Pangandaran 11
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	9	Canka Lokananta	Jl. Tidar 86
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	10	Budi Martono	Jl. Merak 22
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	11	Danindya	Jl. Aki Balak 22
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	12	Puput	Jl. AMD 10
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	13	Muliana	Jl. Jend. Sudirman 97
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	14	Putri	Jl. Diponegoro 19
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	15	Bening	Jl. Agatis 10
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	16	Khatulistyawara	Jl. Ir. Soekarno 12
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	17	Pandan Wangi	Jl. Imam Bonjol 20
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	18	Andara	Jl. Agatis 10
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	19	Rangga	Jl. Kedua 80
<input type="checkbox"/> Edit <input type="checkbox"/> Copy <input type="checkbox"/> Delete	20	Cinta	Jl. Ketiga 24



Tugas

UPDATE data transaksi

```

SBD-11.py - G/SBD-11.py (3.4.4)
File Edit Format Run Options Window Help
from datetime import date, datetime, timedelta
import mysql.connector

cnx = mysql.connector.connect(user='root', database='perbankan')
cursor = cnx.cursor()
tanggal = datetime.now().date()
update_transaksi = ("update transaksi set jumlah = '500000' where no_transaksi = 4")
cursor.execute(update_transaksi)

cnx.commit()
cursor.close()
cnx.close()

##from datetime import date, datetime, timedelta
##import mysql.connector
##
##cnx = mysql.connector.connect(user='root', database = 'perbankan')
##cursor = cnx.cursor()
##tanggal = datetime.now().date()
##delete_transaksi = ("delete from transaksi where no_transaksi = 52")
##cursor.execute(delete_transaksi)
##
##cnx.commit()
##cursor.close()
##cnx.close()

```

Sebelum

```
*SBD-11.py - G:/SBD
File Edit Format
from datetime import datetime
import mysql.connector

cnx = mysql.connector
cursor = cnx.cursor()
tanggal = datetime
update_transaksi
cursor.execute(
cnx.commit()
cursor.close()
cnx.close()

##from datetime i
##import mysql.co
##
##cnx = mysql.con
##cursor = cnx.cu
##tanggal = datet
##delete_transaksi
##cursor.execute(
##
##cnx.commit()
##cursor.close()
##cnx.close()

MariaDB [perbankan]> select * from transaksi;

+-----+-----+-----+-----+-----+-----+
| no_transaksi | id_nasabahFK | no_rekeningFK | jenis_transaksi | tanggal | jumlah |
+-----+-----+-----+-----+-----+-----+
| 1 | 3 | 105 | debit | 2009-11-10 00:00:00 | 200000 |
| 2 | 3 | 103 | debit | 2009-11-10 00:00:00 | 40000 |
| 3 | 4 | 101 | kredit | 2009-11-12 00:00:00 | 20000 |
| 4 | 3 | 106 | debit | 2009-11-13 00:00:00 | 50000 |
| 5 | 1 | 104 | kredit | 2009-11-15 00:00:00 | 200000 |
| 6 | 1 | 110 | kredit | 2009-11-15 00:00:00 | 70000 |
| 7 | 9 | 105 | kredit | 2009-11-15 00:00:00 | 50000 |
| 8 | 3 | 107 | debit | 2009-11-19 00:00:00 | 100000 |
| 9 | 4 | 103 | kredit | 2009-11-19 00:00:00 | 50000 |
| 10 | 2 | 103 | debit | 2009-11-19 00:00:00 | 100000 |
| 11 | 2 | 104 | debit | 2009-11-19 00:00:00 | 50000 |
| 12 | 4 | 107 | kredit | 2009-11-20 00:00:00 | 200000 |
| 13 | 4 | 105 | debit | 2009-11-20 00:00:00 | 200000 |
| 14 | 3 | 105 | debit | 2009-11-21 00:00:00 | 40000 |
| 15 | 4 | 104 | kredit | 2009-11-22 00:00:00 | 100000 |
| 16 | 4 | 101 | kredit | 2009-11-22 00:00:00 | 20000 |
| 17 | 2 | 103 | debit | 2009-11-22 00:00:00 | 50000 |
| 18 | 10 | 106 | kredit | 2009-11-26 00:00:00 | 100000 |
| 19 | 2 | 106 | kredit | 2009-11-27 00:00:00 | 50000 |
| 20 | 3 | 103 | kredit | 2009-11-28 00:00:00 | 200000 |
| 21 | 2 | 105 | kredit | 2009-11-28 00:00:00 | 100000 |
| 22 | 3 | 105 | kredit | 2009-11-28 00:00:00 | 100000 |
| 23 | 1 | 104 | debit | 2009-12-01 00:00:00 | 50000 |
| 24 | 2 | 103 | debit | 2009-12-02 00:00:00 | 40000 |
| 25 | 2 | 103 | debit | 2009-12-02 00:00:00 | 50000 |
| 26 | 4 | 103 | kredit | 2009-12-05 00:00:00 | 100000 |
| 27 | 2 | 109 | debit | 2009-12-05 00:00:00 | 100000 |
| 28 | 7 | 110 | debit | 2009-12-06 00:00:00 | 70000 |
| 29 | 12 | 114 | kredit | 2009-12-07 00:00:00 | 20000 |
| 30 | 11 | 122 | kredit | 2009-12-07 00:00:00 | 25000 |
| 31 | 11 | 117 | debit | 2009-12-08 00:00:00 | 50000 |
| 32 | 15 | 116 | debit | 2009-12-08 00:00:00 | 100000 |
| 33 | 11 | 123 | debit | 2009-12-08 00:00:00 | 200000 |
| 34 | 11 | 123 | kredit | 2009-12-10 00:00:00 | 50000 |
| 35 | 16 | 118 | debit | 2009-12-11 00:00:00 | 100000 |
| 36 | 14 | 120 | kredit | 2009-12-11 00:00:00 | 50000 |
| 37 | 17 | 115 | kredit | 2009-12-12 00:00:00 | 50000 |
| 38 | 16 | 118 | debit | 2009-12-13 00:00:00 | 150000 |
| 39 | 10 | 119 | debit | 2009-12-14 00:00:00 | 100000 |
| 40 | 12 | 114 | kredit | 2009-12-14 00:00:00 | 125000 |
| 41 | 12 | 121 | kredit | 2009-12-14 00:00:00 | 125000 |
| 42 | 16 | 118 | debit | 2009-12-15 00:00:00 | 200000 |
| 43 | 17 | 117 | debit | 2009-12-15 00:00:00 | 50000 |
| 44 | 14 | 120 | kredit | 2009-12-16 00:00:00 | 175000 |
| 45 | 17 | 115 | kredit | 2009-12-17 00:00:00 | 80000 |
| 46 | 10 | 113 | kredit | 2009-12-18 00:00:00 | 130000 |
| 47 | 11 | 122 | debit | 2009-12-19 00:00:00 | 200000 |
| 48 | 12 | 114 | kredit | 2009-12-20 00:00:00 | 150000 |
| 49 | 9 | 110 | kredit | 2019-05-23 00:00:00 | 70000 |
| 50 | 9 | 110 | kredit | 2019-05-27 00:00:00 | 70000 |
| 51 | 34 | 139 | debit | 2019-05-27 00:00:00 | 150000 |
| 52 | 9 | 110 | kredit | 2019-05-27 00:00:00 | 70000 |
| 53 | 9 | 110 | kredit | 2019-05-29 00:00:00 | 50000 |
| 54 | 9 | 110 | kredit | 2019-05-29 00:00:00 | 50000 |
| 55 | 9 | 110 | kredit | 2019-05-29 00:00:00 | 50000 |

50 rows in set (0.00 sec)

MariaDB [perbankan]>
```

Sesudah

```
*SBD-11.py - G:/SBD
File Edit Format
from datetime import datetime
import mysql.connector

cnx = mysql.connector
cursor = cnx.cursor()
tanggal = datetime
update_transaksi
cursor.execute(
cnx.commit()
cursor.close()
cnx.close()

##from datetime i
##import mysql.co
##
##cnx = mysql.con
##cursor = cnx.cu
##tanggal = datet
##delete_transaksi
##cursor.execute(
##
##cnx.commit()
##cursor.close()
##cnx.close()

MariaDB [perbankan]> select * from transaksi;

+-----+-----+-----+-----+-----+-----+
| no_transaksi | id_nasabahFK | no_rekeningFK | jenis_transaksi | tanggal | jumlah |
+-----+-----+-----+-----+-----+-----+
| 1 | 3 | 105 | debit | 2009-11-10 00:00:00 | 200000 |
| 2 | 3 | 103 | debit | 2009-11-10 00:00:00 | 40000 |
| 3 | 4 | 101 | kredit | 2009-11-12 00:00:00 | 20000 |
| 4 | 3 | 106 | debit | 2009-11-13 00:00:00 | 50000 |
| 5 | 1 | 104 | kredit | 2009-11-15 00:00:00 | 200000 |
| 6 | 1 | 110 | kredit | 2009-11-15 00:00:00 | 70000 |
| 7 | 9 | 105 | kredit | 2009-11-15 00:00:00 | 50000 |
| 8 | 3 | 107 | debit | 2009-11-19 00:00:00 | 100000 |
| 9 | 4 | 103 | kredit | 2009-11-19 00:00:00 | 50000 |
| 10 | 2 | 103 | debit | 2009-11-19 00:00:00 | 100000 |
| 11 | 2 | 104 | debit | 2009-11-19 00:00:00 | 50000 |
| 12 | 4 | 107 | kredit | 2009-11-20 00:00:00 | 200000 |
| 13 | 4 | 105 | debit | 2009-11-20 00:00:00 | 200000 |
| 14 | 3 | 105 | debit | 2009-11-21 00:00:00 | 40000 |
| 15 | 4 | 104 | kredit | 2009-11-22 00:00:00 | 100000 |
| 16 | 4 | 101 | kredit | 2009-11-22 00:00:00 | 20000 |
| 17 | 2 | 103 | debit | 2009-11-22 00:00:00 | 50000 |
| 18 | 10 | 106 | kredit | 2009-11-26 00:00:00 | 100000 |
| 19 | 2 | 106 | kredit | 2009-11-27 00:00:00 | 50000 |
| 20 | 3 | 103 | kredit | 2009-11-28 00:00:00 | 200000 |
| 21 | 2 | 105 | kredit | 2009-11-28 00:00:00 | 100000 |
| 22 | 3 | 105 | kredit | 2009-11-28 00:00:00 | 100000 |
| 23 | 1 | 104 | debit | 2009-12-01 00:00:00 | 50000 |
| 24 | 2 | 103 | debit | 2009-12-02 00:00:00 | 40000 |
| 25 | 2 | 103 | debit | 2009-12-02 00:00:00 | 50000 |
| 26 | 4 | 103 | kredit | 2009-12-05 00:00:00 | 100000 |
| 27 | 2 | 109 | debit | 2009-12-05 00:00:00 | 100000 |
| 28 | 7 | 110 | debit | 2009-12-06 00:00:00 | 70000 |
| 29 | 12 | 114 | kredit | 2009-12-07 00:00:00 | 20000 |
| 30 | 11 | 122 | kredit | 2009-12-07 00:00:00 | 25000 |
| 31 | 11 | 117 | debit | 2009-12-08 00:00:00 | 50000 |
| 32 | 15 | 116 | debit | 2009-12-08 00:00:00 | 100000 |
| 33 | 11 | 123 | debit | 2009-12-08 00:00:00 | 200000 |
| 34 | 16 | 118 | debit | 2009-12-11 00:00:00 | 100000 |
| 35 | 14 | 120 | kredit | 2009-12-11 00:00:00 | 50000 |
| 36 | 17 | 115 | kredit | 2009-12-12 00:00:00 | 50000 |
| 37 | 16 | 118 | debit | 2009-12-13 00:00:00 | 150000 |
| 38 | 10 | 119 | debit | 2009-12-14 00:00:00 | 100000 |
| 39 | 12 | 114 | kredit | 2009-12-14 00:00:00 | 125000 |
| 40 | 12 | 121 | kredit | 2009-12-14 00:00:00 | 125000 |
| 41 | 16 | 118 | debit | 2009-12-15 00:00:00 | 200000 |
| 42 | 17 | 117 | debit | 2009-12-15 00:00:00 | 50000 |
| 43 | 14 | 120 | kredit | 2009-12-16 00:00:00 | 175000 |
| 44 | 17 | 115 | kredit | 2009-12-17 00:00:00 | 80000 |
| 45 | 10 | 113 | kredit | 2009-12-18 00:00:00 | 130000 |
| 46 | 11 | 122 | debit | 2009-12-19 00:00:00 | 200000 |
| 47 | 12 | 114 | kredit | 2009-12-20 00:00:00 | 150000 |
| 48 | 9 | 110 | kredit | 2019-05-23 00:00:00 | 70000 |
| 49 | 9 | 110 | kredit | 2019-05-27 00:00:00 | 70000 |
| 50 | 34 | 139 | debit | 2019-05-27 00:00:00 | 150000 |
| 51 | 9 | 110 | kredit | 2019-05-27 00:00:00 | 70000 |
| 52 | 9 | 110 | kredit | 2019-05-29 00:00:00 | 50000 |
| 53 | 9 | 110 | kredit | 2019-05-29 00:00:00 | 50000 |
| 54 | 9 | 110 | kredit | 2019-05-29 00:00:00 | 50000 |
| 55 | 9 | 110 | kredit | 2019-05-29 00:00:00 | 50000 |

50 rows in set (0.00 sec)

MariaDB [perbankan]>
```

Delete data transaksi

Sebelum


```
*SBD-11.py - G:/SBD
File Edit Format
##from datetime import datetime
##import mysql.connector as mysql
##
##cnx = mysql.connector.connect(
##    host='localhost',
##    user='root',
##    password='root',
##    database='bank')
##cursor = cnx.cursor()
##tanggal = datetime.now().strftime('%Y-%m-%d %H:%M:%S')
##update_transaksi(cursor, tanggal)
##cursor.close()
##cnx.close()
from datetime import datetime
import mysql.connector as mysql
cnx = mysql.connector.connect(
    host='localhost',
    user='root',
    password='root',
    database='bank')
cursor = cnx.cursor()
tanggal = datetime.now().strftime('%Y-%m-%d %H:%M:%S')
delete_transaksi(cursor, tanggal)
cursor.execute('select * from transaksi;')
cnx.commit()
cursor.close()
cnx.close()

MariaDB [perbankan]> select * from transaksi;
+-----+-----+-----+-----+-----+-----+
| no_transaksi | id_nasabahFK | no_rekeningFK | jenis_transaksi | tanggal                | jumlah |
+-----+-----+-----+-----+-----+-----+
| 1            | 3            | 105           | debit           | 2009-11-10 00:00:00    | 200000 |
| 2            | 3            | 103           | debit           | 2009-11-10 00:00:00    | 400000 |
| 3            | 4            | 101           | kredit          | 2009-11-12 00:00:00    | 200000 |
| 4            | 3            | 106           | debit           | 2009-11-13 00:00:00    | 500000 |
| 5            | 7            | 104           | kredit          | 2009-11-15 00:00:00    | 200000 |
| 6            | 9            | 110           | kredit          | 2009-11-15 00:00:00    | 700000 |
| 7            | 3            | 105           | kredit          | 2009-11-18 00:00:00    | 500000 |
| 8            | 3            | 107           | debit           | 2009-11-19 00:00:00    | 1000000 |
| 9            | 2            | 103           | debit           | 2009-11-19 00:00:00    | 1000000 |
| 10           | 11           | 104           | debit           | 2009-11-19 00:00:00    | 500000 |
| 11           | 2            | 107           | kredit          | 2009-11-20 00:00:00    | 2000000 |
| 12           | 1            | 105           | debit           | 2009-11-21 00:00:00    | 400000 |
| 13           | 3            | 104           | kredit          | 2009-11-22 00:00:00    | 1000000 |
| 14           | 4            | 101           | kredit          | 2009-11-22 00:00:00    | 200000 |
| 15           | 1            | 104           | kredit          | 2009-11-22 00:00:00    | 500000 |
| 16           | 2            | 103           | debit           | 2009-11-22 00:00:00    | 1000000 |
| 17           | 10           | 108           | debit           | 2009-11-26 00:00:00    | 1000000 |
| 18           | 3            | 106           | kredit          | 2009-11-27 00:00:00    | 500000 |
| 19           | 2            | 103           | kredit          | 2009-11-28 00:00:00    | 2000000 |
| 20           | 2            | 105           | kredit          | 2009-11-28 00:00:00    | 1000000 |
| 21           | 3            | 105           | kredit          | 2009-11-28 00:00:00    | 1000000 |
| 22           | 1            | 104           | kredit          | 2009-12-01 00:00:00    | 500000 |
| 23           | 2            | 103           | debit           | 2009-12-02 00:00:00    | 400000 |
| 24           | 2            | 103           | kredit          | 2009-12-05 00:00:00    | 1000000 |
| 25           | 7            | 109           | debit           | 2009-12-05 00:00:00    | 1000000 |
| 26           | 11           | 110           | debit           | 2009-12-06 00:00:00    | 700000 |
| 27           | 12           | 114           | kredit          | 2009-12-07 00:00:00    | 200000 |
| 28           | 11           | 122           | kredit          | 2009-12-07 00:00:00    | 250000 |
| 29           | 13           | 117           | debit           | 2009-12-08 00:00:00    | 500000 |
| 30           | 15           | 116           | debit           | 2009-12-08 00:00:00    | 1000000 |
| 31           | 11           | 123           | debit           | 2009-12-08 00:00:00    | 2000000 |
| 32           | 11           | 123           | kredit          | 2009-12-10 00:00:00    | 500000 |
| 33           | 16           | 118           | debit           | 2009-12-11 00:00:00    | 1000000 |
| 34           | 14           | 120           | kredit          | 2009-12-11 00:00:00    | 500000 |
| 35           | 17           | 115           | kredit          | 2009-12-12 00:00:00    | 500000 |
| 36           | 16           | 118           | debit           | 2009-12-13 00:00:00    | 1500000 |
| 37           | 10           | 119           | debit           | 2009-12-14 00:00:00    | 1000000 |
| 38           | 12           | 114           | kredit          | 2009-12-14 00:00:00    | 1250000 |
| 39           | 12           | 121           | kredit          | 2009-12-14 00:00:00    | 1250000 |
| 40           | 16           | 118           | debit           | 2009-12-15 00:00:00    | 2000000 |
| 41           | 17           | 117           | debit           | 2009-12-15 00:00:00    | 500000 |
| 42           | 14           | 120           | kredit          | 2009-12-16 00:00:00    | 1750000 |
| 43           | 17           | 115           | kredit          | 2009-12-17 00:00:00    | 800000 |
| 44           | 13           | 113           | kredit          | 2009-12-18 00:00:00    | 1300000 |
| 45           | 11           | 122           | debit           | 2009-12-19 00:00:00    | 2000000 |
| 46           | 12           | 114           | kredit          | 2009-12-20 00:00:00    | 1500000 |
| 47           | 9            | 110           | kredit          | 2019-05-27 00:00:00    | 700000 |
| 48           | 34           | 139           | debit           | 2019-05-27 00:00:00    | 1500000 |
| 49           | 9            | 110           | kredit          | 2019-05-27 00:00:00    | 700000 |
| 50           | 9            | 110           | kredit          | 2019-05-27 00:00:00    | 500000 |
+-----+-----+-----+-----+-----+-----+
50 rows in set (0.00 sec)

MariaDB [perbankan]>
```

Sesudah

```
C:\Windows\system32\cmd.exe - mysql -u root -p
50 rows in set (0.00 sec)
MariaDB [perbankan]> select * from transaksi;
+-----+-----+-----+-----+-----+-----+
| no_transaksi | id_nasabahFK | no_rekeningFK | jenis_transaksi | tanggal                | jumlah |
+-----+-----+-----+-----+-----+-----+
| 1            | 3            | 105           | debit           | 2009-11-10 00:00:00    | 200000 |
| 2            | 3            | 103           | debit           | 2009-11-10 00:00:00    | 400000 |
| 3            | 4            | 101           | kredit          | 2009-11-12 00:00:00    | 200000 |
| 4            | 3            | 106           | debit           | 2009-11-13 00:00:00    | 500000 |
| 5            | 7            | 104           | kredit          | 2009-11-15 00:00:00    | 200000 |
| 6            | 9            | 110           | kredit          | 2009-11-15 00:00:00    | 700000 |
| 7            | 3            | 105           | kredit          | 2009-11-18 00:00:00    | 500000 |
| 8            | 3            | 107           | debit           | 2009-11-19 00:00:00    | 1000000 |
| 9            | 2            | 103           | debit           | 2009-11-19 00:00:00    | 1000000 |
| 10           | 11           | 104           | debit           | 2009-11-19 00:00:00    | 500000 |
| 11           | 2            | 107           | kredit          | 2009-11-20 00:00:00    | 2000000 |
| 12           | 1            | 105           | debit           | 2009-11-21 00:00:00    | 400000 |
| 13           | 3            | 104           | kredit          | 2009-11-22 00:00:00    | 1000000 |
| 14           | 4            | 101           | kredit          | 2009-11-22 00:00:00    | 200000 |
| 15           | 1            | 104           | kredit          | 2009-11-22 00:00:00    | 500000 |
| 16           | 2            | 103           | debit           | 2009-11-22 00:00:00    | 1000000 |
| 17           | 10           | 108           | debit           | 2009-11-26 00:00:00    | 1000000 |
| 18           | 3            | 106           | kredit          | 2009-11-27 00:00:00    | 500000 |
| 19           | 2            | 103           | kredit          | 2009-11-28 00:00:00    | 2000000 |
| 20           | 2            | 105           | kredit          | 2009-11-28 00:00:00    | 1000000 |
| 21           | 3            | 105           | kredit          | 2009-11-28 00:00:00    | 1000000 |
| 22           | 1            | 104           | kredit          | 2009-12-01 00:00:00    | 500000 |
| 23           | 2            | 103           | debit           | 2009-12-02 00:00:00    | 400000 |
| 24           | 2            | 103           | kredit          | 2009-12-05 00:00:00    | 1000000 |
| 25           | 7            | 109           | debit           | 2009-12-05 00:00:00    | 1000000 |
| 26           | 11           | 110           | debit           | 2009-12-06 00:00:00    | 700000 |
| 27           | 12           | 114           | kredit          | 2009-12-07 00:00:00    | 200000 |
| 28           | 11           | 122           | kredit          | 2009-12-07 00:00:00    | 250000 |
| 29           | 13           | 117           | debit           | 2009-12-08 00:00:00    | 500000 |
| 30           | 15           | 116           | debit           | 2009-12-08 00:00:00    | 1000000 |
| 31           | 11           | 123           | debit           | 2009-12-08 00:00:00    | 2000000 |
| 32           | 11           | 123           | kredit          | 2009-12-10 00:00:00    | 500000 |
| 33           | 16           | 118           | debit           | 2009-12-11 00:00:00    | 1000000 |
| 34           | 14           | 120           | kredit          | 2009-12-11 00:00:00    | 500000 |
| 35           | 17           | 115           | kredit          | 2009-12-12 00:00:00    | 500000 |
| 36           | 16           | 118           | debit           | 2009-12-13 00:00:00    | 1500000 |
| 37           | 10           | 119           | debit           | 2009-12-14 00:00:00    | 1000000 |
| 38           | 12           | 114           | kredit          | 2009-12-14 00:00:00    | 1250000 |
| 39           | 12           | 121           | kredit          | 2009-12-14 00:00:00    | 1250000 |
| 40           | 16           | 118           | debit           | 2009-12-15 00:00:00    | 2000000 |
| 41           | 17           | 117           | debit           | 2009-12-15 00:00:00    | 500000 |
| 42           | 14           | 120           | kredit          | 2009-12-16 00:00:00    | 1750000 |
| 43           | 17           | 115           | kredit          | 2009-12-17 00:00:00    | 800000 |
| 44           | 13           | 113           | kredit          | 2009-12-18 00:00:00    | 1300000 |
| 45           | 11           | 122           | debit           | 2009-12-19 00:00:00    | 2000000 |
| 46           | 12           | 114           | kredit          | 2009-12-20 00:00:00    | 1500000 |
| 47           | 9            | 110           | kredit          | 2019-05-27 00:00:00    | 700000 |
| 48           | 34           | 139           | debit           | 2019-05-27 00:00:00    | 1500000 |
| 49           | 9            | 110           | kredit          | 2019-05-27 00:00:00    | 700000 |
| 50           | 9            | 110           | kredit          | 2019-05-27 00:00:00    | 500000 |
+-----+-----+-----+-----+-----+-----+
49 rows in set (0.00 sec)

MariaDB [perbankan]>
```

Insert data transaksi

Sebelum


```
C:\Windows\system32\cmd.exe - mysql -u root -p

MariaDB [perbankan]> select * from transaksi;
+----+-----+-----+-----+-----+-----+
| no_transaksi | id_nasabahFK | no_rekeningFK | jenis_transaksi | tanggal                | jumlah |
+----+-----+-----+-----+-----+-----+
| 1            | 3            | 105           | debit           | 2007-11-10 00:00:00    | 200000 |
| 2            | 2            | 103           | debit           | 2007-11-10 00:00:00    | 40000  |
| 3            | 4            | 101           | kredit          | 2007-11-12 00:00:00    | 20000  |
| 4            | 3            | 106           | debit           | 2007-11-13 00:00:00    | 500000 |
| 5            | 1            | 104           | kredit          | 2007-11-15 00:00:00    | 200000 |
| 6            | 9            | 110           | kredit          | 2007-11-15 00:00:00    | 70000  |
| 7            | 3            | 105           | kredit          | 2007-11-18 00:00:00    | 50000  |
| 8            | 4            | 107           | debit           | 2007-11-19 00:00:00    | 100000 |
| 9            | 2            | 103           | debit           | 2007-11-19 00:00:00    | 100000 |
| 10           | 1            | 104           | kredit          | 2007-11-19 00:00:00    | 50000  |
| 11           | 4            | 107           | kredit          | 2007-11-20 00:00:00    | 200000 |
| 12           | 3            | 105           | debit           | 2007-11-21 00:00:00    | 40000  |
| 13           | 1            | 104           | kredit          | 2007-11-22 00:00:00    | 100000 |
| 14           | 4            | 101           | kredit          | 2007-11-22 00:00:00    | 20000  |
| 15           | 2            | 103           | debit           | 2007-11-23 00:00:00    | 50000  |
| 16           | 10           | 100           | debit           | 2007-11-25 00:00:00    | 100000 |
| 17           | 3            | 106           | kredit          | 2007-11-27 00:00:00    | 50000  |
| 18           | 2            | 103           | kredit          | 2007-11-28 00:00:00    | 100000 |
| 19           | 3            | 105           | kredit          | 2007-11-28 00:00:00    | 100000 |
| 20           | 1            | 104           | debit           | 2007-12-01 00:00:00    | 50000  |
| 21           | 2            | 103           | debit           | 2007-12-02 00:00:00    | 40000  |
| 22           | 4            | 101           | debit           | 2007-12-04 00:00:00    | 50000  |
| 23           | 2            | 103           | kredit          | 2007-12-05 00:00:00    | 100000 |
| 24           | 9            | 110           | debit           | 2007-12-05 00:00:00    | 100000 |
| 25           | 12           | 114           | kredit          | 2007-12-07 00:00:00    | 20000  |
| 26           | 11           | 122           | kredit          | 2007-12-07 00:00:00    | 25000  |
| 27           | 13           | 117           | debit           | 2007-12-08 00:00:00    | 50000  |
| 28           | 15           | 116           | debit           | 2007-12-08 00:00:00    | 100000 |
| 29           | 12           | 123           | debit           | 2007-12-08 00:00:00    | 200000 |
| 30           | 11           | 123           | kredit          | 2007-12-10 00:00:00    | 50000  |
| 31           | 16           | 118           | debit           | 2007-12-11 00:00:00    | 100000 |
| 32           | 14           | 120           | kredit          | 2007-12-11 00:00:00    | 50000  |
| 33           | 17           | 115           | kredit          | 2007-12-12 00:00:00    | 50000  |
| 34           | 16           | 118           | debit           | 2007-12-13 00:00:00    | 150000 |
| 35           | 16           | 119           | debit           | 2007-12-14 00:00:00    | 100000 |
| 36           | 12           | 114           | kredit          | 2007-12-14 00:00:00    | 125000 |
| 37           | 12           | 121           | kredit          | 2007-12-14 00:00:00    | 125000 |
| 38           | 15           | 119           | debit           | 2007-12-15 00:00:00    | 200000 |
| 39           | 13           | 117           | debit           | 2007-12-15 00:00:00    | 50000  |
| 40           | 14           | 120           | kredit          | 2007-12-16 00:00:00    | 175000 |
| 41           | 15           | 115           | kredit          | 2007-12-17 00:00:00    | 00000  |
| 42           | 10           | 113           | kredit          | 2007-12-18 00:00:00    | 130000 |
| 43           | 11           | 122           | debit           | 2007-12-19 00:00:00    | 200000 |
| 44           | 12           | 114           | kredit          | 2007-12-20 00:00:00    | 150000 |
| 45           | 9            | 110           | kredit          | 2019-05-23 00:00:00    | 70000  |
| 46           | 34           | 139           | debit           | 2019-05-27 00:00:00    | 150000 |
| 47           | 9            | 110           | kredit          | 2019-05-27 00:00:00    | 70000  |
| 48           | 9            | 110           | kredit          | 2019-05-29 00:00:00    | 50000  |
+----+-----+-----+-----+-----+-----+

49 rows in set (0.00 sec)

MariaDB [perbankan]>
```

```
SBD-11.py - G:/SBD-11.py (3.4.4)
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##from datetime import date, datetime, timedelta
##import mysql.connector
##
##cnx = mysql.connector.connect(user='root', database='perbankan')
##cursor = cnx.cursor()
##tanggal = datetime.now().date()
##update_transaksi = ("update transaksi set jumlah = '500000' where no_transaksi = 4")
##cursor.execute(update_transaksi)
##
##cnx.commit()
##cursor.close()
##cnx.close()

##from datetime import date, datetime, timedelta
##import mysql.connector
##
##cnx = mysql.connector.connect(user='root', database='perbankan')
##cursor = cnx.cursor()
##tanggal = datetime.now().date()
##delete_transaksi = ("delete from transaksi where no_transaksi = 52")
##cursor.execute(delete_transaksi)
##
##cnx.commit()
##cursor.close()
##cnx.close()

from datetime import date, datetime, timedelta
import mysql.connector

cnx = mysql.connector.connect(user='root', database='perbankan')
cursor = cnx.cursor()
tanggal = datetime.now().date()
insert_transaksi = ("INSERT INTO transaksi"
                    " (no_transaksi, id_nasabahFK, no_rekeningFK, jenis_transaksi, tanggal, jumlah)"
                    "VALUES (%s, %s, %s, %s, %s, %s)")
data_transaksi = ('56', '115', '105', 'kredit', '2019-06-21', '50000')
cursor.execute(insert_transaksi, data_transaksi)

cnx.commit()
cursor.close()
cnx.close()
```