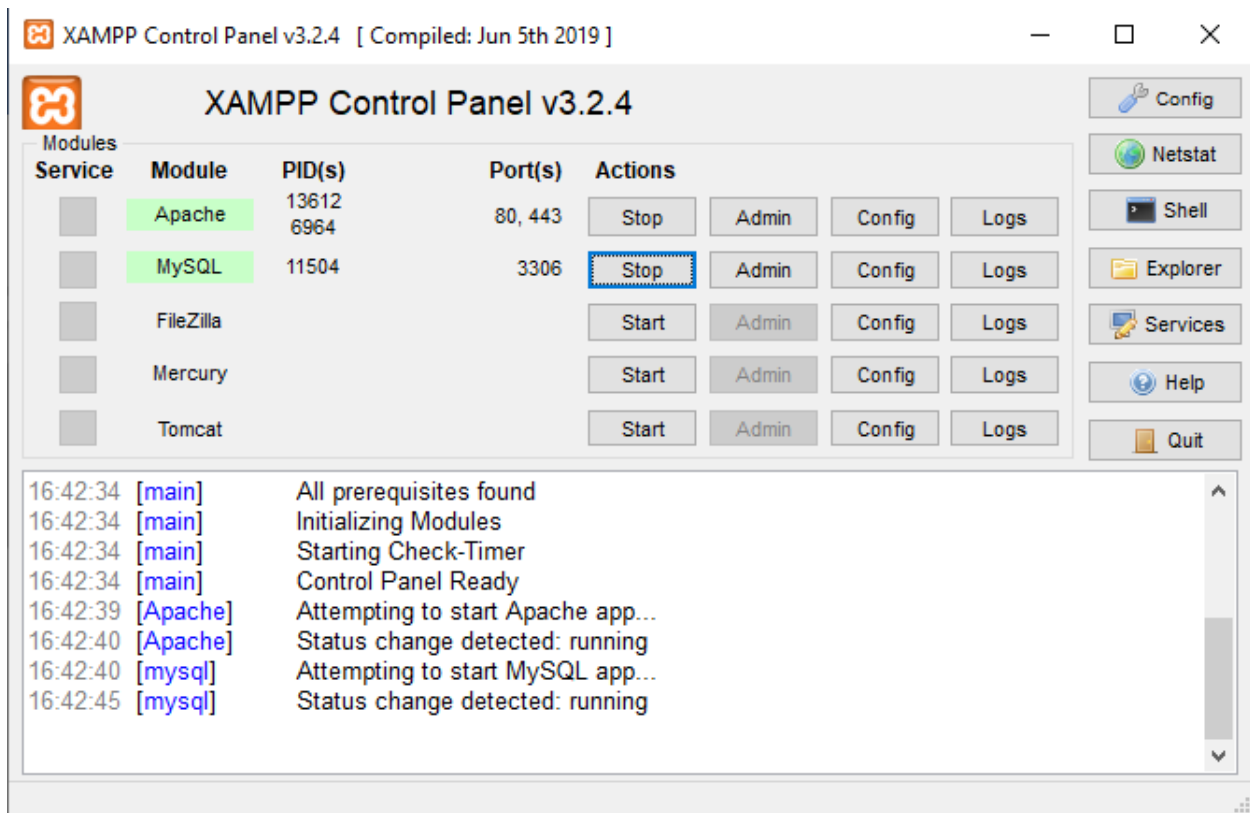


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KEGIATAN MODUL 4

Data Definition Language(DDL)

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



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

```
C:\Users\Lenovo>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 8
Server version: 10.4.11-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. Buat database baru dengan perintah berikut ini :
create database perbankan;

```
MariaDB [(none)]>
MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.112 sec)
```

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

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

6. Membuat tabel nasabah dengan script berikut.

```
CREATE TABLE nasabah(
id_nasabah INTEGER PRIMARY KEY,
nama_nasabah VARCHAR(45) NOT NULL,
alamat_nasabah VARCHAR(255) NOT NULL
);
```

```
MariaDB [perbankan]> CREATE TABLE nasabah(id_nasabah INTEGER PRIMARY KEY, nama_nasabah VARCHAR(45) NOT NULL,
alamat_nasabah VARCHAR(45) NOT NULL);
Query OK, 0 rows affected (0.499 sec)
```

7. Membuat tabel cabang dengan script berikut.

```
CREATE TABLE cabang_bank(
kode_cabang VARCHAR(20) PRIMARY KEY,
nama_cabang VARCHAR(45) UNIQUE NOT NULL,
alamat_cabang VARCHAR(255) NOT NULL
);
```

```

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 (0.568 sec)

```

8. Membuat tabel nasabah 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
);

```

```

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 (0.288 sec)

```

9. Membuat tabel transaksi dengan script berikut.

```

CREATE TABLE transaksi(
no_transaksi SERIAL PRIMARY KEY,
id_nasabahFK INTEGER REFERENCES nasabah(id_nasabah),
ON DELETE SET NULL ON UPDATE CASCADE,
no_rekening 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)
);

```

```

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 (0.430 sec)

```

10. Membuat tabel nasabah dengan script berikut.

```
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,  
);
```

```
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 (0.309 sec)
```

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

```
MariaDB [perbankan]> show tables;  
+-----+  
| Tables_in_perbankan |  
+-----+  
| cabang_bank         |  
| nasabah             |  
| nasabah_has_rekening |  
| rekening            |  
| transaksi           |  
+-----+  
5 rows in set (0.144 sec)
```

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

- Nasabah

```
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(45)   | NO   |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
3 rows in set (0.065 sec)
```

- Cabang_bank

```
MariaDB [perbankan]> describe cabang_bank;
```

Field	Type	Null	Key	Default	Extra
kode_cabang	varchar(20)	NO	PRI	NULL	
nama_cabang	varchar(45)	NO	UNI	NULL	
alamat_cabang	varchar(255)	NO		NULL	

```
3 rows in set (0.027 sec)
```

- Rekening

```
MariaDB [perbankan]> describe rekening;
```

Field	Type	Null	Key	Default	Extra
no_rekening	int(11)	NO	PRI	NULL	
kode_cabangFK	varchar(20)	YES		NULL	
pin	varchar(20)	NO		1234	
saldo	int(11)	NO		0	

```
4 rows in set (0.014 sec)
```

- Transaksi

```
MariaDB [perbankan]> describe transaksi;
```

Field	Type	Null	Key	Default	Extra
no_transaksi	bigint(20) unsigned	NO	PRI	NULL	auto_increment
id_nasabahFK	int(11)	YES		NULL	
no_rekeningFK	int(11)	YES		NULL	
jenis_transaksi	varchar(20)	NO		debit	
tanggal	datetime	NO		current_timestamp()	
jumlah	int(11)	NO		NULL	

```
6 rows in set (0.049 sec)
```

- Nasabah_has_rekening

```
MariaDB [perbankan]> describe nasabah_has_rekening;
```

Field	Type	Null	Key	Default	Extra
id_nasabahFK	int(11)	NO	PRI	NULL	
no_rekeningFK	int(11)	NO	PRI	NULL	

```
2 rows in set (0.018 sec)
```

Versi fullnya:

```
Command Prompt - mysql -u root -p
Microsoft Windows [Version 10.0.17763.1098]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\Lenovo>cd C:
C:\Users\Lenovo>

C:\Users\Lenovo>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 8
Server version: 10.4.11-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)]>
MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.112 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(45) NOT NULL);
Query OK, 0 rows affected (0.499 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 (0.568 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 (0.288 sec)
```

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

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 (0.430 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 (0.309 sec)

MariaDB [perbankan]> show tables;
+-----+
| Tables_in_perbankan |
+-----+
| cabang_bank         |
| nasabah             |
| nasabah_has_rekening |
| rekening            |
| transaksi           |
+-----+
5 rows in set (0.144 sec)

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(45) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.065 sec)
```

Command Prompt - mysql -u root -p

MariaDB [perbankan]> describe cabang_bank;

Field	Type	Null	Key	Default	Extra
kode_cabang	varchar(20)	NO	PRI	NULL	
nama_cabang	varchar(45)	NO	UNI	NULL	
alamat_cabang	varchar(255)	NO		NULL	

3 rows in set (0.043 sec)

MariaDB [perbankan]> describe rekening;

Field	Type	Null	Key	Default	Extra
no_rekening	int(11)	NO	PRI	NULL	
kode_cabangFK	varchar(20)	YES		NULL	
pin	varchar(20)	NO		1234	
saldo	int(11)	NO		0	

4 rows in set (0.014 sec)

MariaDB [perbankan]> describe transaksi;

Field	Type	Null	Key	Default	Extra
no_transaksi	bigint(20) unsigned	NO	PRI	NULL	auto_increment
id_nasabahFK	int(11)	YES		NULL	
no_rekeningFK	int(11)	YES		NULL	
jenis_transaksi	varchar(20)	NO		debit	
tanggal	datetime	NO		current_timestamp()	
jumlah	int(11)	NO		NULL	

6 rows in set (0.049 sec)

MariaDB [perbankan]> describe nasabah_has_rekening;

Field	Type	Null	Key	Default	Extra
id_nasabahFK	int(11)	NO	PRI	NULL	
no_rekeningFK	int(11)	NO	PRI	NULL	

2 rows in set (0.018 sec)

MariaDB [perbankan]>

Activate Windows
Go to Settings to activate Windows.