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Modul 4

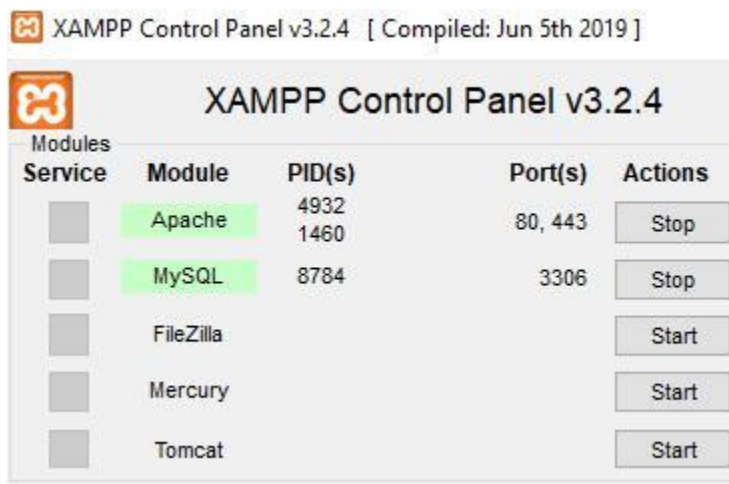
Data Definition Language (DDL)

C. Alat dan Bahan :

1. Komputer dengan system operasi Windows XP.
2. Program aplikasi XAMPP dengan PhpMyAdmin.
3. Modul praktikum system berkas dan basis data.

D. Langkah Praktikum :

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



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

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

C:\Users>cd..

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

C:\xampp\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 9
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)]> 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 (0.425 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 (0.294 sec)

MariaDB [perbankan]>
```

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

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 (0.294 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 (0.244 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 (0.374 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 (0.278 sec)
```

4. Buat database baru dengan perintah berikut. Create database perbankan;
5. hubungkan kedalam database yang telah dibuat dengan perintah berikut. Sehingga akan muncul pemberitahuan “database changed”.

Use perbankan;

6. Membuat table nasabah dengan script berikut. CREATE TABLE nasabah (

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

7. Membuat table cabang_bank dengan script berikut.

```
CREATE TABLE(  
  
Kode_cabang VARCHAR(20) PRIMARY KEY,  
Nama_cabang VARCHAR(45) UNIQUE NOT NULL,  
Alamat_cabang VARCHAR(255) NOT NULL,
```

8. Membuat table 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
```

```
);
```

9. Membuat table transaksi dengan script berikut

ini. CREATE TABLE rekening(

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));

10. Membuat table nasabah_has_rekening dengan script berikut

ini. CREATE TABLE nasabah_has_rekening(

Id_nasabahFK INTEGER REFERENCES nasabah(id_nasabah)

ON DELETE CASHCADE ON UPDATE CASCADE,

No_rekeningFK INTEGER REFERENCES rekening(no_rekening)

ON DELETE CASHCADE ON UPDATE CASCADE, PRIMARY

KEY(id_nasabahFK, no_rekeningFK));

Select 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 (0.374 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 (0.278 sec)
```

```
MariaDB [perbankan]> show tables;
```

```
+-----+
| Tables_in_perbankan |
+-----+
| cabang_bank         |
| nasabah             |
| nasabah_has_rekening |
| rekening            |
| transaksi           |
+-----+
5 rows in set (0.196 sec)
```

```
MariaDB [perbankan]>
```

Command Prompt - mysql -u root -p

```
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 (0.278 sec)
```

```
MariaDB [perbankan]> show tables;
```

```
+-----+
| Tables_in_perbankan |
+-----+
| cabang_bank         |
| nasabah             |
| nasabah_has_rekening |
| rekening            |
| transaksi           |
+-----+
5 rows in set (0.196 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(255) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.118 sec)
```

```
MariaDB [perbankan]>
```

TUGAS 1

```
Command Prompt - mysql -u root -p
Microsoft Windows [Version 10.0.18362.720]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\ASUS>cd..

C:\Users>cd..

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

C:\xampp\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 24
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)]> CREATE DATABASE kuliah;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> use kuliah;
Database changed
MariaDB [kuliah]> CREATE TABLE dosen(
  -> nip_dosen INTEGER PRIMARY KEY,
  -> nama_dosen VARCHAR(45) NOT NULL,
  -> alamat_dosen VARCHAR(45) NOT NULL);
Query OK, 0 rows affected (0.203 sec)
```

```
Command Prompt - mysql -u root -p
  -> alamat_dosen VARCHAR(45) NOT NULL);
Query OK, 0 rows affected (0.203 sec)

MariaDB [kuliah]> CREATE TABLE matkul(
  -> kode_matkul INTEGER PRIMARY KEY,
  -> nama_matkul VARCHAR(45) NOT NULL,
  -> jumlah_matkul INTEGER DEFAULT 0 NOT NULL);
Query OK, 0 rows affected (0.293 sec)

MariaDB [kuliah]> CREATE TABLE mahasiswa(
  -> NIM_mahasiswa VARCHAR(20) PRIMARY KEY,
  -> nama_mahasiswa VARCHAR(45) NOT NULL,
  -> alamat_mahasiswa VARCHAR(45) NOT NULL,
  -> kode_ruangFK INTEGER REFERENCES ruang(kode_ruang) ON DELETE SET NULL ON UPDATE CASCADE);
Query OK, 0 rows affected (0.444 sec)

MariaDB [kuliah]> CREATE TABLE ruang(
  -> kode_ruang INTEGER PRIMARY KEY,
  -> nama_ruang VARCHAR(45) NOT NULL,
  -> kapasitas_ruang INTEGER DEFAULT 0 NOT NULL);
Query OK, 0 rows affected (0.252 sec)

MariaDB [kuliah]> CREATE TABLE dosen_has_mahasiswa(
  -> nip_dosenFK INTEGER REFERENCES dosen(nip_dosen) ON DELETE SET NULL ON UPDATE CASCADE,
  -> NIM_mahasiswaFK VARCHAR(20) REFERENCES mahasiswa(NIM_mahasiswa) ON DELETE SET NULL ON UPDATE CASCADE);
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 'NUL ON UPDATE CASCADE)' at line 3
MariaDB [kuliah]> CREATE TABLE dosen_has_mahasiswa(
  -> nip_dosenFK INTEGER REFERENCES dosen(nip_dosen) ON DELETE SET NULL ON UPDATE CASCADE,
  -> NIM_mahasiswaFK VARCHAR(20) REFERENCES mahasiswa(NIM_mahasiswa) ON DELETE SET NULL ON UPDATE CASCADE);
```

```

Command Prompt - mysql -u root -p

MariaDB [kuliah]> CREATE TABLE dosen_has_mahasiswa(
  -> nip_dosenFK INTEGER REFERENCES dosen(nip_dosen) ON DELETE SET NULL ON UPDATE CASCADE,
  -> NIM_mahasiswaFK VARCHAR(20) REFERENCES mahasiswa(NIM_mahasiswa) ON DELETE SET NULL ON UPDATE CASCADE);
Query OK, 0 rows affected (0.441 sec)

MariaDB [kuliah]> CREATE TABLE mahasiswa_has_matkul(
  -> NIM_mahasiswaFK VARCHAR(20) REFERENCES mahasiswa(NIM_mahasiswa) ON DELETE SET NULL ON UPDATE CASCADE,
  -> kode_matkulFK INTEGER REFERENCES matkul(kode_matkul) ON DELETE SET NULL ON UPDATE CASCADE);
Query OK, 0 rows affected (0.400 sec)

MariaDB [kuliah]> CREATE TABLE dosen_has_matkul(
  -> nip_dosenFK INTEGER REFERENCES dosen(nip_dosen) ON DELETE SET NULL ON UPDATE CASCADE;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server versi
on for the right syntax to use near '' at line 2
MariaDB [kuliah]> CREATE TABLE dosen_has_mahasiswa(
  -> nip_dosenFK INTEGER REFERENCES dosen(nip_dosen) ON DELETE SET NULL ON UPDATE CASCADE)
  -> );
  -> ;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server versi
on for the right syntax to use near '):' at line 3
MariaDB [kuliah]> CREATE TABLE dosen_has_matkul(
  -> nip_dosenFK INTEGER REFERENCES dosen(nip_dosen) ON DELETE SET NULL ON UPDATE CASCADE,
  -> kode_matkulFK INTEGER REFERENCES matkul(kode_matkul) ON DELETE SET NULL ON UPDATE);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server versi
on for the right syntax to use near '):' at line 3
MariaDB [kuliah]> CREATE TABLE dosen_has_matkul(
  -> nip_dosenFK INTEGER REFERENCES dosen(nip_dosen) ON DELETE SET NULL ON UPDATE CASCADE,
  -> kode_matkulFK INTEGER REFERENCES matkul(kode_matkul) ON DELETE SET NULL ON UPDATE CASCADE);
Query OK, 0 rows affected (0.293 sec)

```

```

Command Prompt - mysql -u root -p

  -> kode_matkulFK INTEGER REFERENCES matkul(kode_matkul) ON DELETE SET NULL ON UPDATE CASCADE);
Query OK, 0 rows affected (0.293 sec)

MariaDB [kuliah]> show tables;
+-----+
| Tables_in_kuliah |
+-----+
| dosen             |
| dosen_has_mahasiswa |
| dosen_has_matkul  |
| mahasiswa         |
| mahasiswa_has_matkul |
| matkul            |
| ruang            |
+-----+
7 rows in set (0.001 sec)

MariaDB [kuliah]> describe mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| NIM_mahasiswa | varchar(20) | NO   | PRI | NULL    |       |
| nama_mahasiswa | varchar(45) | NO   |     | NULL    |       |
| alamat_mahasiswa | varchar(45) | NO   |     | NULL    |       |
| kode_ruangFK  | int(11)    | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.004 sec)

MariaDB [kuliah]>

```


Command Prompt - mysql -u root -p

MariaDB [kuliah]> describe mahasiswa;

Field	Type	Null	Key	Default	Extra
NIM_mahasiswa	varchar(20)	NO	PRI	NULL	
nama_mahasiswa	varchar(45)	NO		NULL	
alamat_mahasiswa	varchar(45)	NO		NULL	
kode_ruangFK	int(11)	YES		NULL	

4 rows in set (0.004 sec)

MariaDB [kuliah]> describe dosen;

Field	Type	Null	Key	Default	Extra
nip_dosen	int(11)	NO	PRI	NULL	
nama_dosen	varchar(45)	NO		NULL	
alamat_dosen	varchar(45)	NO		NULL	

3 rows in set (0.003 sec)

MariaDB [kuliah]> describe ruang;

Field	Type	Null	Key	Default	Extra
kode_ruang	int(11)	NO	PRI	NULL	
nama_ruang	varchar(45)	NO		NULL	
kapasitas_ruang	int(11)	NO		0	

3 rows in set (0.018 sec)

Command Prompt - mysql -u root -p

3 rows in set (0.003 sec)

MariaDB [kuliah]> describe ruang;

Field	Type	Null	Key	Default	Extra
kode_ruang	int(11)	NO	PRI	NULL	
nama_ruang	varchar(45)	NO		NULL	
kapasitas_ruang	int(11)	NO		0	

3 rows in set (0.018 sec)

MariaDB [kuliah]> describe matkul;

Field	Type	Null	Key	Default	Extra
kode_matkul	int(11)	NO	PRI	NULL	
nama_matkul	varchar(45)	NO		NULL	
jumlah_matkul	int(11)	NO		0	

3 rows in set (0.018 sec)

MariaDB [kuliah]>

TUGAS 2

```
Command Prompt - mysql -u root -p
Microsoft Windows [Version 10.0.18362.720]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\ASUS>cd..

C:\Users>cd.

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

C:\xampp\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 27
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)]> CREATE DATABASE apotek;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> use apotek;
Database changed
MariaDB [apotek]> CREATE TABLE pegawai(
  -> id_pegawai INTEGER PRIMARY KEY,
  -> nama_pegawai VARCHAR(45) NOT NULL,
  -> alamat_pegawai VARCHAR(45) NOT NULL);
Query OK, 0 rows affected (0.319 sec)

MariaDB [apotek]> CREATE TABLE pelanggan(
  -> id_pelanggan INTEGER PRIMARY KEY,
  -> nama_pelanggan VARCHAR(45) NOT NULL,
  -> alamat_pelanggan VARCHAR(45) NOT NULL);
Query OK, 0 rows affected (0.368 sec)

MariaDB [apotek]> CREATE TABLE obat(
  -> kode_obat INTEGER PRIMARY KEY,
  -> nama_obat VARCHAR(45) NOT NULL,
  -> harga_obat INTEGER DEFAULT 0 NOT NULL);
Query OK, 0 rows affected (0.407 sec)

MariaDB [apotek]> CREATE TABLE pegawai_has_pelanggan(
```

Command Prompt - mysql -u root -p

```
MariaDB [apotek]> CREATE TABLE pegawai_has_pelanggan(  
  -> id_pegawaiFK INTEGER REFERENCES pegawai(id_pegawai) ON DELETE CASCADE ON UPDATE CASCADE,  
  -> id_pelangganFK INTEGER REFERENCES pelanggan(id_pelanggan) ON DELETE CASCADE ON UPDATE CASCADE);  
Query OK, 0 rows affected (0.276 sec)
```

```
MariaDB [apotek]> CREATE TABLE pelanggan_has_obat(  
  -> id_pelangganFK INTEGER REFERENCES pelanggan(id_pelanggan) ON DELETE CASCADE ON UPDATE CASCADE,  
  -> kode_obatFK INTEGER REFERENCES obat(kode_obat) ON DELETE CASCADE ON UPDATE CASCADE);  
Query OK, 0 rows affected (0.307 sec)
```

```
MariaDB [apotek]> show tables;
```

```
+-----+  
| Tables_in_apotek |  
+-----+  
| obat             |  
| pegawai           |  
| pegawai_has_pelanggan |  
| pelanggan         |  
| pelanggan_has_obat |  
+-----+  
5 rows in set (0.001 sec)
```

```
MariaDB [apotek]> describe pegawai;
```

```
+-----+-----+-----+-----+-----+-----+  
| Field      | Type      | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| id_pegawai | int(11)   | NO   | PRI | NULL    |       |  
| nama_pegawai | varchar(45) | NO   |     | NULL    |       |  
| alamat_pegawai | varchar(45) | NO   |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
3 rows in set (0.004 sec)
```

```
MariaDB [apotek]> describe pelanggan;
```

```
+-----+-----+-----+-----+-----+-----+  
| Field      | Type      | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| id_pelanggan | int(11)   | NO   | PRI | NULL    |       |  
| nama_pelanggan | varchar(45) | NO   |     | NULL    |       |  
| alamat_pelanggan | varchar(45) | NO   |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
3 rows in set (0.004 sec)
```

Command Prompt - mysql -u root -p

```
| pelanggan_has_obat |
```

```
+-----+
```

```
5 rows in set (0.001 sec)
```

MariaDB [apotek]> describe pegawai;

```
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_pegawai | int(11)    | NO   | PRI | NULL    |       |
| nama_pegawai | varchar(45) | NO   |     | NULL    |       |
| alamat_pegawai | varchar(45) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
```

```
3 rows in set (0.004 sec)
```

MariaDB [apotek]> describe pelanggan;

```
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_pelanggan | int(11)    | NO   | PRI | NULL    |       |
| nama_pelanggan | varchar(45) | NO   |     | NULL    |       |
| alamat_pelanggan | varchar(45) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
```

```
3 rows in set (0.004 sec)
```

MariaDB [apotek]> describe obat;

```
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_obat   | int(11)    | NO   | PRI | NULL    |       |
| nama_obat   | varchar(45) | NO   |     | NULL    |       |
| harga_obat  | int(11)    | NO   |     | 0        |       |
+-----+-----+-----+-----+-----+-----+
```

```
3 rows in set (0.004 sec)
```

MariaDB [apotek]>