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Modul 4

Langkah – langkah praktikum :

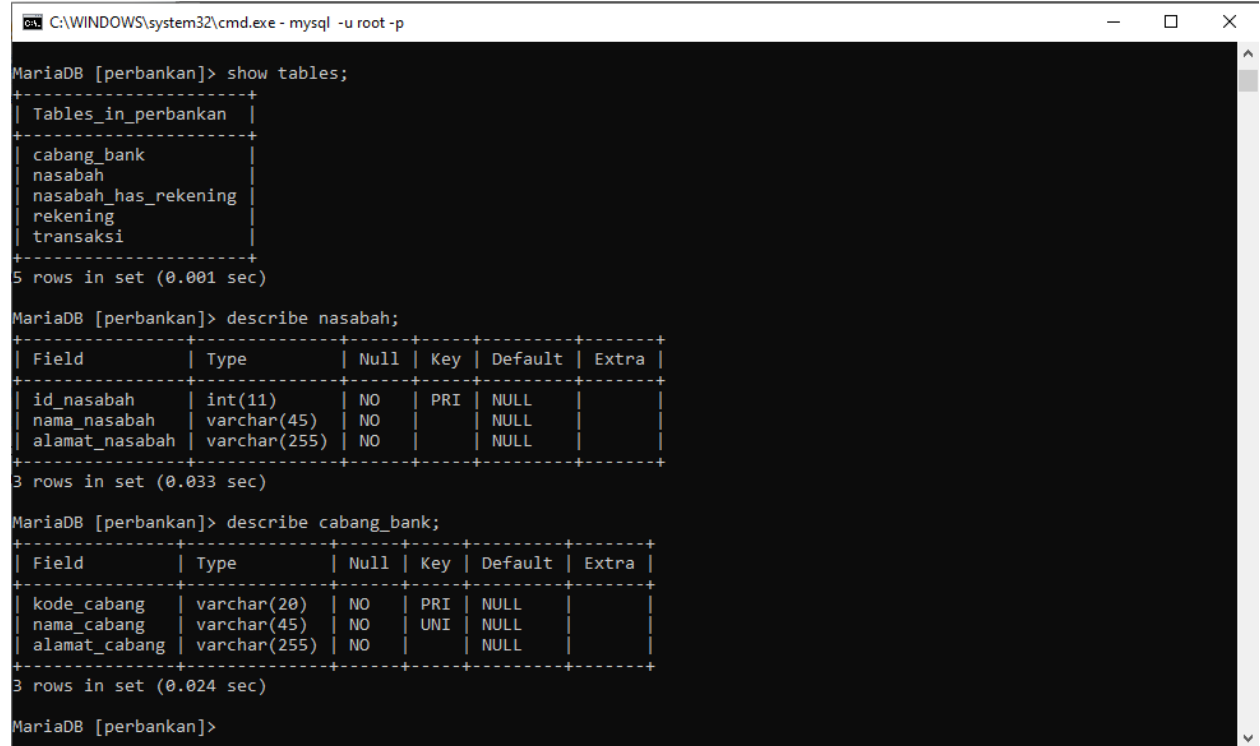
1. Jalankan XAMPP control panel
2. Jalankan server Apache dan MySQL
3. Buka Command Prompt dan login sebagai root ke MySQL
4. Buat database baru dengan perintah berikut ini
create database perbankan;
5. Hubungkan ke dalam database yang telah dibuat dengan perintah berikut. Sehingga akan muncul pemberitahuan “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 cabang_bank (
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 transaksi (
no_transaksi SERIAL PRIMARY KEY,
id_nasabahFK INTEGER REFERENCE 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 DATE TIME NOT NULL DEFAULT CURRENT_TIMESTAMP,
jumlah INTEGER NOT NULL CHECK (jumlah>=20000)
);

10. Membuat table nasabah_has_rekening dengan script berikut :

```
CREATE TABLE nasabah_has_rekening (
id_nasabahFK INTEGER REFERENCE nasabah(id_nasabah)
ON DELETE CASCADE ON UPDATE CASCADE,
no_rekeningFK INTEGER REFERENCE rekening(no_rekening)
ON DELETE CASCADE ON UPDATE CASCADE,
PRIMARY KEY(id_nasabahFK, no_rekeningFK)
);
```

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



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

MariaDB [perbankan]> show tables;
+-----+
| Tables_in_perbankan |
+-----+
| cabang_bank          |
| nasabah              |
| nasabah_has_rekening |
| rekening             |
| transaksi            |
+-----+
5 rows in set (0.001 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 (0.033 sec)

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 (0.024 sec)

MariaDB [perbankan]>
```

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

```
Command Prompt - mysql -u root -p
mysql> 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 (0.025 sec)

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 (0.012 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 (0.054 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 (0.055 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 (0.015 sec)

MariaDB [perbankan]>
```

TUGAS

Implementasikan hasil rancangan database yang menangani data kuliah pada tugas modul 2 ke dalam program mysql!

Langkah :

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

Use perkuliahan;

6. Membuat table mahasiswa dengan script berikut :

```
MariaDB [perkuliahan]> CREATE TABLE mahasiswa(  
-> nim_mhs INTEGER PRIMARY KEY,  
-> nama_mhs VARCHAR(255) NOT NULL,  
-> alamat_mhs VARCHAR(255) NOT NULL,  
-> gender_mhs VARCHAR(255) NOT NULL  
-> );  
Query OK, 0 rows affected (0.112 sec)
```

7. Membuat table dosen dengan script berikut :

```
MariaDB [perkuliahan]> CREATE TABLE dosen(  
-> nip_dosen INTEGER PRIMARY KEY,  
-> nama_dosen VARCHAR(255) NOT NULL,  
-> alamat_dosen VARCHAR(255) NOT NULL  
-> );  
Query OK, 0 rows affected (0.096 sec)
```

8. Membuat table ruang_kelas dengan script berikut :

```
MariaDB [perkuliahan]> CREATE TABLE ruang_kelas(  
-> kode_rk INTEGER PRIMARY KEY,  
-> kapasitas INTEGER NOT NULL  
-> );  
Query OK, 0 rows affected (0.106 sec)
```

9. Membuat table mata_kuliah dengan script berikut :

```
MariaDB [perkuliahan]> CREATE TABLE mata_kuliah(  
  -> kode_mk INTEGER PRIMARY KEY,  
  -> kode_rk INTEGER REFERENCES ruang_kelas(kode_rk)  
  -> ON DELETE SET NULL ON UPDATE CASCADE,  
  -> nama_mk VARCHAR(25) NOT NULL,  
  -> jml_sks INTEGER NOT NULL  
  -> );  
Query OK, 0 rows affected (0.102 sec)
```

10. Membuat table dengan script berikut :

```
MariaDB [perkuliahan]> CREATE TABLE mahasiswa_has_mata_kuliah(  
  -> nim_mhs INTEGER REFERENCES mahasiswa(nim_mhs)  
  -> ON DELETE CASCADE ON UPDATE CASCADE,  
  -> kode_mk INTEGER REFERENCES mata_kuliah(kode_mk)  
  -> ON DELETE CASCADE ON UPDATE CASCADE,  
  -> PRIMARY KEY(nim_mhs, kode_mk)  
  -> );  
Query OK, 0 rows affected (0.103 sec)
```

11. M

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

Tables_in_perkuliahan
dosen
mahasiswa
mahasiswa_has_mata_kuliah
mata_kuliah
ruang_kelas

5 rows in set (0.001 sec)

```
MariaDB [perkuliahan]> describe dosen;
```

Field	Type	Null	Key	Default	Extra
nip_dosen	int(11)	NO	PRI	NULL	
nama_dosen	varchar(255)	NO		NULL	
alamat_dosen	varchar(255)	NO		NULL	

3 rows in set (0.097 sec)

```
MariaDB [perkuliahan]> describe mahasiswa;
```

Field	Type	Null	Key	Default	Extra
nim_mhs	int(11)	NO	PRI	NULL	
nama_mhs	varchar(255)	NO		NULL	
alamat_mhs	varchar(255)	NO		NULL	
gender_mhs	varchar(255)	NO		NULL	

4 rows in set (0.105 sec)

```

MariaDB [perkuliahan]> describe mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_mk | int(11)   | NO   | PRI | NULL    |       |
| kode_rk | int(11)   | YES  |     | NULL    |       |
| nama_mk | varchar(25) | NO   |     | NULL    |       |
| jml_sks | int(11)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.099 sec)

MariaDB [perkuliahan]> describe ruang_kelas;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_rk | int(11)   | NO   | PRI | NULL    |       |
| kapasitas | int(11)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.096 sec)

MariaDB [perkuliahan]> describe mahasiswa_has_mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim_mhs | int(11)   | NO   | PRI | NULL    |       |
| kode_mk | int(11)   | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.100 sec)

MariaDB [perkuliahan]>

```

```

MariaDB [perkuliahan]> describe mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_mk | int(11)   | NO   | PRI | NULL    |       |
| kode_rk | int(11)   | YES  |     | NULL    |       |
| nama_mk | varchar(25) | NO   |     | NULL    |       |
| jml_sks | int(11)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.099 sec)

MariaDB [perkuliahan]> describe ruang_kelas;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_rk | int(11)   | NO   | PRI | NULL    |       |
| kapasitas | int(11)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.096 sec)

MariaDB [perkuliahan]> describe mahasiswa_has_mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim_mhs | int(11)   | NO   | PRI | NULL    |       |
| kode_mk | int(11)   | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.100 sec)

MariaDB [perkuliahan]>

```

12.