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Modul 4

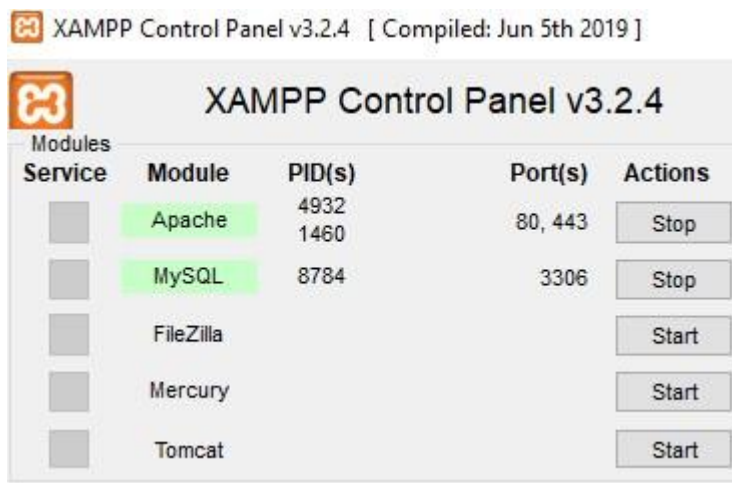
Data Definition Language (DDL)

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.

```

C:\Windows\system32\cmd.exe - mysql -u root
Microsoft Windows [Version 10.0.18362.720]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\HP-DESKTOP>cd\

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

C:\xampp\mysql\bin>mysql -u root
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 26
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.

```

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;

```

MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.003 sec)

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

```

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));
```

```
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 (0.438 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 (0.320 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  
  -> );  
  
MariaDB [perbankan]> create table transaksi (  
  -> no_transaksi SERIAL PRIMARY KEY,  
  -> 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,  
  -> 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 (0.560 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 (0.432 sec)
```

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

```
MariaDB [perbangkan]> show tables;
+-----+
| Tables_in_perbangkan |
+-----+
| cabang_bank           |
| nasabah               |
| nasabah_has_rekening  |
| rekening              |
| transaksi              |
+-----+
5 rows in set (0.137 sec)
```

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

```
MariaDB [perbangkan]> 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 (0.257 sec)
```

E. Tugas

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

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

MariaDB [(none)]> use mahasiswa
Database changed
MariaDB [mahasiswa]> create table mahasiswa;
ERROR 1113 (42000): A table must have at least 1 column
MariaDB [mahasiswa]> create table mahasiswa(
-> nim varchar(15) primary key,
-> nama_mhs varchar(75) not null,
-> alamat_mhs varchar(200) not null,
-> tgllahir_mhs varchar(30) not null
-> );
Query OK, 0 rows affected (0.11 sec)

MariaDB [mahasiswa]> describe mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim    | varchar(15)   | NO   | PRI | NULL    |       |
| nama_mhs | varchar(75)   | NO   |     | NULL    |       |
| alamat_mhs | varchar(200) | NO   |     | NULL    |       |
| tgllahir_mhs | varchar(30) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)

MariaDB [mahasiswa]> create table dosen(
-> nip_dosen varchar(15) primary key,
-> nama_dosen varchar(75) not null,
-> alamat_dosen varchar(200) not null,
-> kontak_dosen varchar(12) not null
-> );
Query OK, 0 rows affected (0.12 sec)

MariaDB [mahasiswa]> describe dosen;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nip_dosen | varchar(15) | NO   | PRI | NULL    |       |
| nama_dosen | varchar(75) | NO   |     | NULL    |       |
| alamat_dosen | varchar(200) | NO   |     | NULL    |       |
| kontak_dosen | varchar(12) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
```