

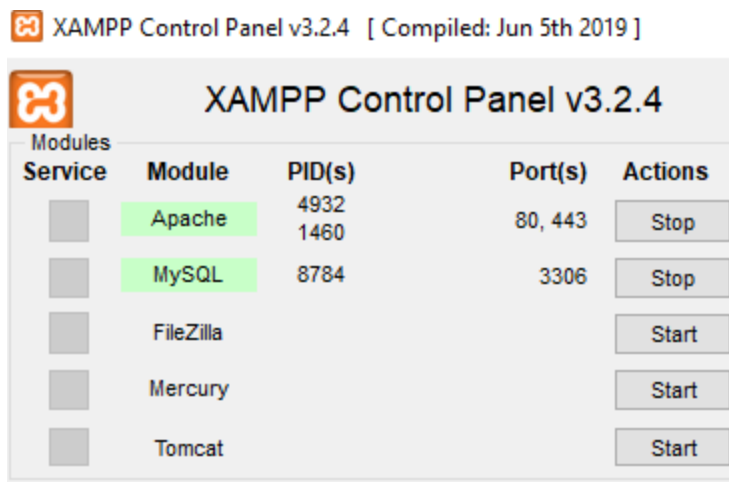
## Modul 4

### 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 mmuncul 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 CASCADE ON UPDATE CASCADE,  
No_rekeningFK INTEGER REFERENCES rekening(no_rekening)  
ON DELETE CASCADE ON UPDATE CASCADE,  
PRIMARY KEY(id_nasabahFK, no_rekeningFK));
```

```

r'aniaDB [penbang<an'> nea:e :able nasabah <
-> i d_nas abah EU" E G E R PR EI! R+ K E+,
-> nana_nas abah V RC HER < 43 , UC" IJULL,
-> a1 ana z_nas abah V RC HER < 233 , UC" IJU LL

naniaDB [penbang<an'> :nea-e -able :abang_ban< <
-> <ode_c abang V RC HER < 20 , PR EI! R+ K E+,
-> naua_c abang V RC HER < 43 , UIJ EQU UC" IJU LL,
-> a1 ana z_<abang V RC HER < 233 , UC" IJULL

nariaDB [perbang<an'> area:e :able re<ening i
-> no_re<ening IM EGER PRIMER* KE*,
-> <ode_c abang F K V RC HER < 20 , RE F ERE UC E S c abang_ban < < <ode_c abang ,
-> CU D E L E "E C TSC ID E CU UPD "E C TSC ID E ,
-> pin V RCHER<20, DEFEUL" ' 1234 ' UC" IJU LL ,
-> sa1do EU"EGER DEFEUL" 0 UC" IJU LL

nariaDB [perbang<an'> crea:e :able :ransa<si <
-> no_z ransa <st S ER EN L PR EI!* R^ KE^,
-> id_nasabahFK IM EGER REFEREMCES nasabah<id_naaabah}
-> CM DELE E CASCADE OM UPDA E CASCADE,
-> no_re<eningFK IM EGER REFEREMCES re<ening< no_re<ening,
-> CM DELE E CASCADE OM UPDA E CASCADE,
-> jenis_znansa<si VARCHAR< 20, . DEFAULT 'debit' MO MULL,
-> tanggal D% E 11 E EIC MULL DEFAULT CURREM _ 11°EZ %1°P,
-> jumlah IM EGER MO NULL CHECK <jumlah>20000,

Quer;• CK, 0 nons affe::ed <0.So0 se:,

nariaDB [perbang<an'> crea:e :able nasabah_haa re<ening<
-> 1d_nasabahFK EU"EGER REFEUEUCES nasabah<1 d_nasabah/*
-> CU D E L E" E C 3C ID E CU UPD "E C TSC ID E,
-> no_re<eningFK EU"EGER RE F ERE UC E 3 re<ening<"no_re<ening/*
-> CU D E L E" E C 3C ID E CU UPD "E C TSC ID E,
-> PRE[-U RL KE^< 1 d_nasabahFK, no_re<eningFK/*

Quer;• CK, 0 nons affe :ed < 0.432 se

```

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 | |
+-----+-----+-----+-----+-----+-----+
```