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## PRAKTIKUM SISTEM BASIS DATA

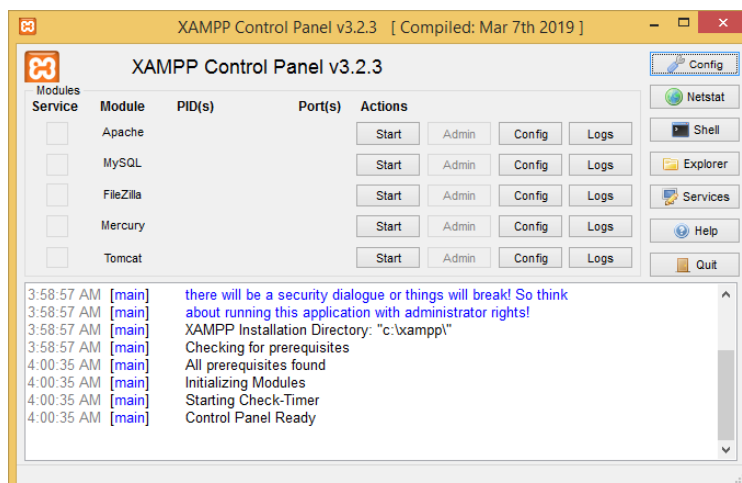
### MODUL 4

### DATA DEFINITION LANGUAGE (DDL)

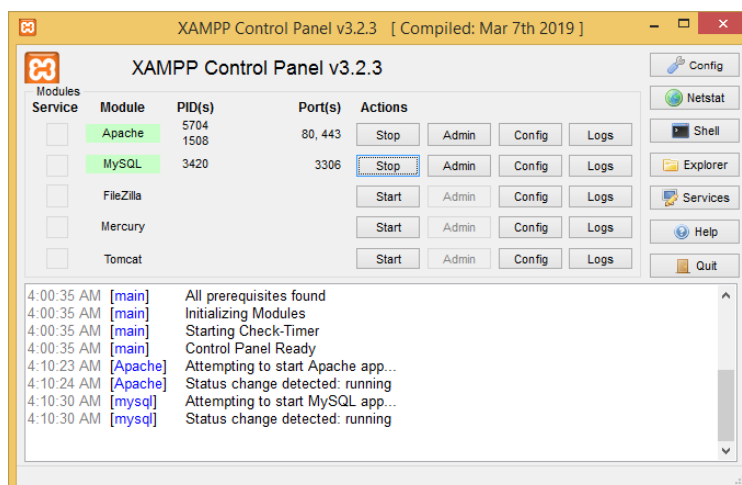
#### Tugas

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

#### 1. Menjalankan XAMPP Control Panel



#### 2. Menjalankan server Apache dan MySQL



3. Membuka command prompt dan login sebagai root ke MySQL seperti di langkah pada Modul 1

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

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 2
Server version: 10.1.38-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)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| perbankan |
| performance_schema |
| phpmyadmin |
| test |
+-----+
6 rows in set (0.16 sec)

MariaDB [(none)]>
```

4. Membuat database baru

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

+-----+
6 rows in set (0.16 sec)

MariaDB [(none)]> create database kuliah;
Query OK, 1 row affected (0.05 sec)

MariaDB [(none)]>
```

5. Menghubungkan ke dalam database yang telah dibuat

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

+-----+
6 rows in set (0.16 sec)

MariaDB [(none)]> create database kuliah;
Query OK, 1 row affected (0.05 sec)

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

6. Membuat tabel mahasiswa

```
MariaDB [(none)]> use kuliah;
Database changed
MariaDB [kuliah]> create table mahasiswa(
-> id_mhs INTEGER PRIMARY KEY,
-> nama_mhs VARCHAR(45) NOT NULL,
-> alamat_mhs VARCHAR(255) NOT NULL,
-> ttl_mhs VARCHAR(50) NOT NULL
-> );
Query OK, 0 rows affected (0.28 sec)
```

7. Membuat tabel dosen

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

-> >;
Query OK, 0 rows affected (0.28 sec)

MariaDB [kuliah]> create table dosen<
-> id_dosen INTEGER PRIMARY KEY,
-> nama_dosen VARCHAR(45) NOT NULL,
-> alamat_dosen VARCHAR(255) NOT NULL,
-> ttl_dosen VARCHAR(50) NOT NULL,
-> jenis_kelamin_dosen VARCHAR(30) NOT NULL
-> >;
Query OK, 0 rows affected (0.74 sec)
```

8. Membuat tabel mata\_kuliah

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

-> >;
Query OK, 0 rows affected (0.74 sec)

MariaDB [kuliah]> create table mata_kuliah<
-> kode_mataKuliah INTEGER PRIMARY KEY,
-> nama_mataKuliah VARCHAR(100) NOT NULL
-> >;
Query OK, 0 rows affected (0.28 sec)
```

9. Membuat tabel ruang\_kelas

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

-> >;
Query OK, 0 rows affected (0.28 sec)

MariaDB [kuliah]> create table ruang_kelas<
-> kode_ruangKelas INTEGER PRIMARY KEY,
-> kapasitas_ruangKelas INTEGER NOT NULL
-> >;
Query OK, 0 rows affected (0.30 sec)

MariaDB [kuliah]>
```

10. Membuat tabel mahasiswa\_has\_dosen

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

MariaDB [kuliah]> create table mahasiswa_has_dosen<
-> id_mhsFK INTEGER REFERENCES mahasiswa(id_mhs)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> id_dosenFK INTEGER REFERENCES dosen(id_dosen)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> PRIMARY KEY(id_mhsFK, id_dosenFK)
-> >;
Query OK, 0 rows affected (0.29 sec)
```

11. Membuat tabel mahasiswa\_has\_mata\_kuliah

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

-> >;
Query OK, 0 rows affected (0.45 sec)

MariaDB [kuliah]> create table mahasiswa_has_mata_kuliah<
-> id_mhsFK INTEGER REFERENCES mahasiswa(id_mhs)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> kode_mataKuliahFK INTEGER REFERENCES mata_kuliah(kode_mataKuliah)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> PRIMARY KEY(id_mhsFK, kode_mataKuliahFK)
-> >;
Query OK, 0 rows affected (0.35 sec)
```

12. Membuat tabel dosen\_has\_mata\_kuliah

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

-> >;
Query OK, 0 rows affected (0.29 sec)

MariaDB [kuliahl]> create table dosen_has_mata_kuliah(
-> id_dosenFK INTEGER REFERENCES dosen(id_dosen)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> kode_mataKuliahFK INTEGER REFERENCES mata_kuliah(kode_mataKuliah)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> PRIMARY KEY(id_dosenFK, kode_mataKuliahFK)
-> >;
Query OK, 0 rows affected (0.26 sec)
```

13. Membuat tabel mata\_kuliah\_has\_ruang\_kelas

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

7 rows in set (0.34 sec)

MariaDB [kuliahl]> create table mata_kuliah_has_ruang_kelas(
-> kode_mataKuliahFK INTEGER REFERENCES mata_kuliah(kode_mataKuliah)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> kode_ruangKelasFK INTEGER REFERENCES ruang_kelas(kode_ruangKelas)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> PRIMARY KEY(kode_mataKuliahFK, kode_ruangKelasFK)
-> >;
Query OK, 0 rows affected (0.35 sec)
```

14. Membuat tabel dosen\_has\_ruang\_kelas

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

Query OK, 0 rows affected (0.35 sec)

MariaDB [kuliahl]> create table dosen_has_ruang_kelas(
-> id_dosenFK INTEGER REFERENCES dosen(id_dosen)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> kode_ruangKelasFK INTEGER REFERENCES ruang_kelas(kode_ruangKelas)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> PRIMARY KEY(id_dosenFK, kode_ruangKelasFK)
-> >;
Query OK, 0 rows affected (0.54 sec)
```

15. Mengecek hasil pembuatan database

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

Query OK, 0 rows affected (0.54 sec)

MariaDB [kuliahl]> show tables;
+-----+
| Tables_in_kuliahl |
+-----+
| dosen              |
| dosen_has_mata_kuliah |
| dosen_has_ruang_kelas |
| mahasiswa          |
| mahasiswa_has_dosen |
| mahasiswa_has_mata_kuliah |
| mata_kuliah        |
| mata_kuliah_has_ruang_kelas |
| ruang_kelas        |
+-----+
9 rows in set (0.00 sec)

MariaDB [kuliahl]>
```

## 16. Melihat struktur tiap tabel

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

MariaDB [kuliah]> describe dosen;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_dosen | int(11) | NO | PRI | NULL | |
| nama_dosen | varchar(45) | NO | | NULL | |
| alamat_dosen | varchar(255) | NO | | NULL | |
| ttl_dosen | varchar(50) | NO | | NULL | |
| jenis_kelamin_dosen | varchar(30) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.35 sec)

MariaDB [kuliah]> describe mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_mhs | int(11) | NO | PRI | NULL | |
| nama_mhs | varchar(45) | NO | | NULL | |
| alamat_mhs | varchar(255) | NO | | NULL | |
| ttl_mhs | varchar(50) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.02 sec)

MariaDB [kuliah]> describe mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_mataKuliah | int(11) | NO | PRI | NULL | |
| nama_mataKuliah | varchar(100) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.03 sec)

MariaDB [kuliah]> describe ruang_kelas;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_ruangKelas | int(11) | NO | PRI | NULL | |
| kapasitas_ruangKelas | int(11) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.07 sec)

MariaDB [kuliah]> _

MariaDB [kuliah]> describe dosen_has_mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_dosenFK | int(11) | NO | PRI | NULL | |
| kode_mataKuliahFK | int(11) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.39 sec)

MariaDB [kuliah]> describe dosen_has_ruang_kelas;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_dosenFK | int(11) | NO | PRI | NULL | |
| kode_ruangKelasFK | int(11) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [kuliah]> describe mahasiswa_has_dosen;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_mhsFK | int(11) | NO | PRI | NULL | |
| id_dosenFK | int(11) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.03 sec)

MariaDB [kuliah]> describe mahasiswa_mata_kuliah;
ERROR 1146 (42S02): Table 'kuliah.mahasiswa_mata_kuliah' doesn't exist
MariaDB [kuliah]> describe mahasiswa_has_mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_mhsFK | int(11) | NO | PRI | NULL | |
| kode_mataKuliahFK | int(11) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.06 sec)

MariaDB [kuliah]> describe mata_kuliah_has_ruang_kelas;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_mataKuliahFK | int(11) | NO | PRI | NULL | |
| kode_ruangKelasFK | int(11) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [kuliah]> _
```