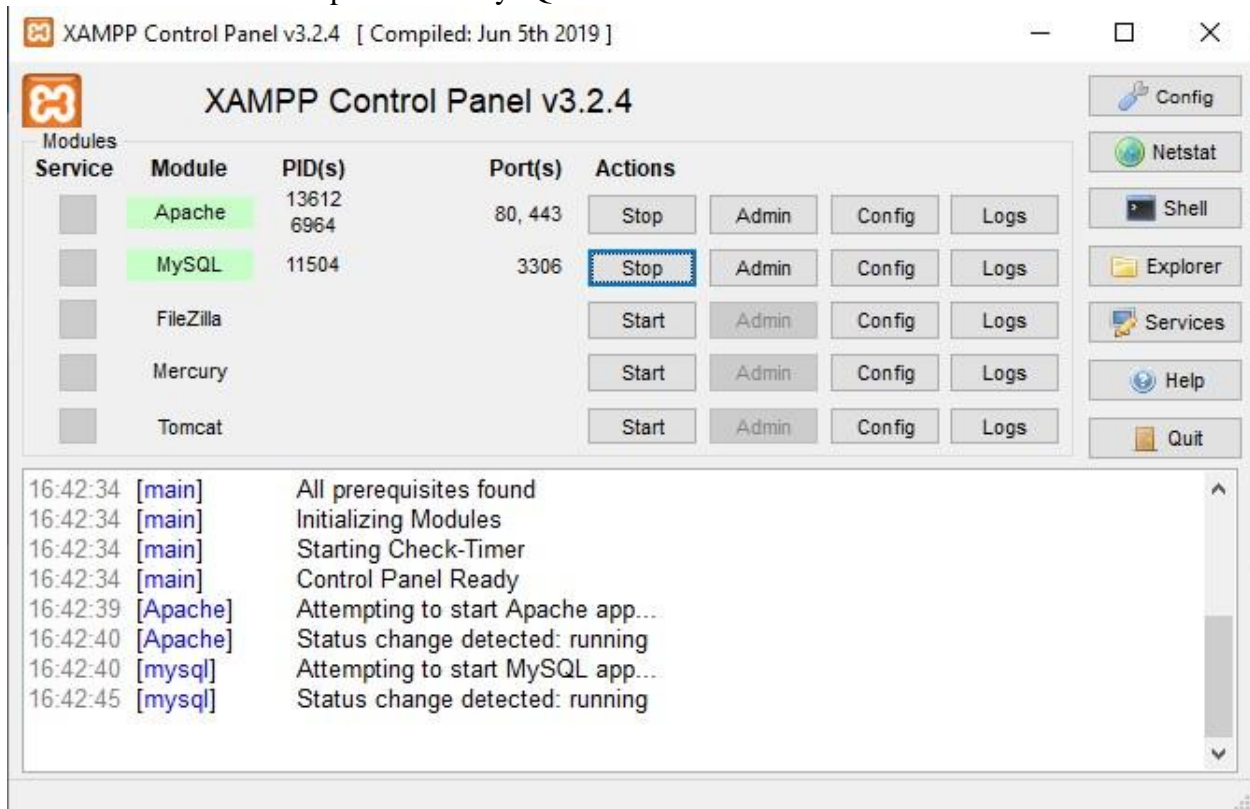


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## TUGAS MODUL 4

### Data Definition Language(DDL)

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



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

```

C:\Users\Lenovo>cd/

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 8
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)]>

```

4. Buat database baru dengan perintah berikut ini : create database tugasm4;

```

MariaDB [(none)]> create database tugasm4
-> ;
Query OK, 1 row affected (0.019 sec)

```

5. Hubungkan ke dalam database yang telah dibuat dengan perintah berikut. Sehingga akan muncul pemberitahuan “database changed”. use tugasm4;

```

MariaDB [(none)]> use tugasm4;
Database changed

```

6. Membuat tabel nasabah dengan script berikut. CREATE TABLE mahasiswa ( nim\_mhs VARCHAR(20) PRIMARY KEY, nip\_dosenFK INTEGER REFERENCES dosen (nip\_dosen) ON DELETE CASCADE ON UPDATE CASCADE, nama\_mhs VARCHAR(45) UNIQUE NOT NULL, alamat\_mhs VARCHAR(255) NOT NULL );

```

MariaDB [tugasm4]> CREATE TABLE mahasiswa (
-> nim_mhs VARCHAR(20) PRIMARY KEY,
-> nip_dosenFK INTEGER REFERENCES dosen (nip_dosen)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> nama_mhs VARCHAR(45) UNIQUE NOT NULL,
-> alamat_mhs VARCHAR(255) NOT NULL
-> );
Query OK, 0 rows affected (0.371 sec)

```

7. Membuat tabel dosen dengan script berikut. CREATE TABLE dosen ( nip\_dosen INTEGER PRIMARY KEY, nama\_dosen VARCHAR(45) UNIQUE NOT NULL, );

```
MariaDB [tugasm4]> CREATE TABLE dosen (  
-> nip_dosen INTEGER PRIMARY KEY,  
-> nama_dosen VARCHAR(45) UNIQUE NOT NULL  
-> );  
Query OK, 0 rows affected (0.429 sec)
```

8. Membuat tabel nasabah dengan script berikut. CREATE TABLE matakuliah( kode\_mk VARCHAR(20) PRIMARY KEY, kode\_ruangFK INTEGER REFERENCES ruangkelas (kode\_ruang) ON DELETE CASCADE ON UPDATE CASCADE, nip\_dosenFK INTEGER REFERENCES dosen (nip\_dosen) ON DELETE CASCADE ON UPDATE CASCADE, nama\_mk VARCHAR(45) UNIQUE NOT NULL, smt\_mk INTEGER NOT NULL );

```
MariaDB [tugasm4]> CREATE TABLE matakuliah (  
-> kode_mk VARCHAR(20) PRIMARY KEY,  
-> kode_ruangFK INTEGER REFERENCES ruangkelas (kode_ruang)  
-> ON DELETE CASCADE ON UPDATE CASCADE,  
-> nip_dosenFK INTEGER REFERENCES dosen (nip_dosen)  
-> ON DELETE CASCADE ON UPDATE CASCADE,  
-> nama_mk VARCHAR(45) UNIQUE NOT NULL,  
-> smt_mk INTEGER NOT NULL  
-> );  
Query OK, 0 rows affected (0.429 sec)
```

9. Membuat tabel nasabah dengan script berikut. CREATE TABLE ruangkelas ( kode\_ruang INTEGER PRIMARY KEY, nama\_ruang VARCHAR(20) UNIQUE NOT NULL );

```
MariaDB [tugasm4]> CREATE TABLE ruangkelas (  
-> kode_ruang INTEGER PRIMARY KEY,  
-> nama_ruang VARCHAR(20) UNIQUE NOT NULL  
-> );  
Query OK, 0 rows affected (0.365 sec)
```

10. Membuat tabel nasabah dengan script berikut. CREATE

```
TABLE mahasiswa_has_matakuliah(  
nim_mhsFK VARCHAR(20) REFERENCES mahasiswa (nim_mhs)  
ON DELETE CASCADE ON UPDATE CASCADE, kode_mk  
VARCHAR(20) REFERENCES matakuliah (kode_mk)  
ON DELETE CASCADE ON UPDATE CASCADE,  
PRIMARY KEY (nim_mhsFK, kode_mkFK)  
);
```

```
MariaDB [tugasm4]> CREATE TABLE mahasiswa_has_matakuliah (  
-> nim_mhsFK VARCHAR(20) REFERENCES mahasiswa (nim_mhs)  
-> ON DELETE CASCADE ON UPDATE CASCADE,  
-> kode_mkFK VARCHAR(20) REFERENCES matakuliah (kode_mk)  
-> ON DELETE CASCADE ON UPDATE CASCADE,  
-> PRIMARY KEY (nim_mhsFK, kode_mkFK)  
-> );  
Query OK, 0 rows affected (0.445 sec)
```

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

```
MariaDB [tugasm4]> show tables;  
+-----+  
| Tables_in_tugasm4 |  
+-----+  
| dosen              |  
| mahasiswa           |  
| mahasiswa_has_matakuliah |  
| matakuliah          |  
| ruangkelas         |  
+-----+  
5 rows in set (0.047 sec)
```

12. Kemudian untuk melihat struktur tiap tabel dapat dilakukan  
dengan perintah describe. □ Mahasiswa

```
MariaDB [tugasm4]> describe mahasiswa  
-> ;  
+-----+-----+-----+-----+-----+-----+  
| Field      | Type      | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| nim_mhs    | varchar(20) | NO   | PRI | NULL    |       |  
| nip_dosenFK | int(11)     | YES  |     | NULL    |       |  
| nama_mhs   | varchar(45) | NO   | UNI | NULL    |       |  
| alamat_mhs | varchar(255) | NO   |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
4 rows in set (0.082 sec)
```

- Dosen

```
MariaDB [tugasm4]> describe dosen;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nip_dosen  | int(11)   | NO   | PRI | NULL    |       |
| nama_dosen | varchar(45)| NO   | UNI | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.027 sec)
```

- Matakuliah

```
MariaDB [tugasm4]> describe matakuliah;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_mk    | varchar(20)| NO   | PRI | NULL    |       |
| kode_ruangFK | int(11)   | YES  |     | NULL    |       |
| nip_dosenFK | int(11)   | YES  |     | NULL    |       |
| nama_mk    | varchar(45)| NO   | UNI | NULL    |       |
| smt_mk     | int(11)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.014 sec)
```

- Ruangkelas

```
MariaDB [tugasm4]> describe ruangkelas;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_ruang | int(11)   | NO   | PRI | NULL    |       |
| nama_ruang | varchar(20)| NO   | UNI | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.024 sec)
```

- Mahasiswa\_has\_matakuliah

```
MariaDB [tugasm4]> describe mahasiswa_has_matakuliah;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim_mhsFK  | varchar(20)| NO   | PRI | NULL    |       |
| kode_mkFK  | varchar(20)| NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.049 sec)
```

Versi fullnya:



```
Command Prompt - mysql -u root -p
Microsoft Windows [Version 10.0.17763.1098]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\Lenovo>cd\

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 0
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 tugasm4
-> ;
Query OK, 1 row affected (0.019 sec)

MariaDB [(none)]> use tugasm4;
Database changed
MariaDB [tugasm4]>
MariaDB [tugasm4]> CREATE TABLE mahasiswa (
->   nim_mhs VARCHAR(20) PRIMARY KEY,
->   nip_dosenFK INTEGER REFERENCES dosen (nip_dosen)
->   ON DELETE CASCADE ON UPDATE CASCADE,
->   nama_mhs VARCHAR(45) UNIQUE NOT NULL,
->   alamat_mhs VARCHAR(255) NOT NULL
-> );
Query OK, 0 rows affected (0.371 sec)

MariaDB [tugasm4]> CREATE TABLE dosen (
->   nip_dosen INTEGER PRIMARY KEY,
->   nama_dosen VARCHAR(45) UNIQUE NOT NULL
-> );
Query OK, 0 rows affected (0.429 sec)

MariaDB [tugasm4]> CREATE TABLE matakuliah (
->   kode_mk VARCHAR(20) PRIMARY KEY,
->   kode_ruangFK INTEGER REFERENCES ruangkelas (kode_ruang)
->   ON DELETE CASCADE ON UPDATE CASCADE,
->   nip_dosenFK INTEGER REFERENCES dosen (nip_dosen)
```

```
Command Prompt - mysql -u root -p
MariaDB [tugasm4]> CREATE TABLE matakuliah (
->   kode_mk VARCHAR(20) PRIMARY KEY,
->   kode_ruangFK INTEGER REFERENCES ruangkelas (kode_ruang)
->   ON DELETE CASCADE ON UPDATE CASCADE,
->   nip_dosenFK INTEGER REFERENCES dosen (nip_dosen)
->   ON DELETE CASCADE ON UPDATE CASCADE,
->   nama_mk VARCHAR(45) UNIQUE NOT NULL,
->   smt_mk INTEGER NOT NULL
-> );
Query OK, 0 rows affected (0.429 sec)

MariaDB [tugasm4]> CREATE TABLE ruang kelas (
->   kode_ruang INTEGER PRIMARY KEY,
->   nama_ruang VARCHAR(20) UNIQUE NOT NULL
-> );
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 '({
kode_ruang INTEGER PRIMARY KEY,
nama_ruang VARCHAR(20) UNIQUE NOT NULL
})' at line 2
MariaDB [tugasm4]> CREATE TABLE ruangkelas (
->   kode_ruang INTEGER PRIMARY KEY,
->   nama_ruang VARCHAR(20) UNIQUE NOT NULL
-> );
Query OK, 0 rows affected (0.365 sec)

MariaDB [tugasm4]> CREATE TABLE mahasiswa_has_matakuliah (
->   nim_mhsFK VARCHAR(20) REFERENCES mahasiswa (nim_mhs)
->   ON DELETE CASCADE ON UPDATE CASCADE,
->   kode_mkFK VARCHAR(20) REFERENCES matakuliah (kode_mk)
->   ON DELETE CASCADE ON UPDATE CASCADE,
->   PRIMARY KEY (nim_mhsFK, kode_mkFK)
-> );
Query OK, 0 rows affected (0.445 sec)

MariaDB [tugasm4]> show tables;
+-----+
| Tables_in_tugasm4 |
+-----+
| dosen              |
| mahasiswa          |
| mahasiswa_has_matakuliah |
| matakuliah         |
| ruangkelas         |
+-----+
```

```
Command Prompt - mysql -u root -p
5 rows in set (0.047 sec)

MariaDB [tugasm4]> describe mahasiswa
-> ;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim_mhs | varchar(20) | NO | PRI | NULL | |
| nip_dosenFK | int(11) | YES | | NULL | |
| nama_mhs | varchar(45) | NO | UNI | NULL | |
| alamat_mhs | varchar(255) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.082 sec)

MariaDB [tugasm4]> describe dosen;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nip_dosen | int(11) | NO | PRI | NULL | |
| nama_dosen | varchar(45) | NO | UNI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.027 sec)

MariaDB [tugasm4]> describe matakuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_mk | varchar(20) | NO | PRI | NULL | |
| kode_ruangFK | int(11) | YES | | NULL | |
| nip_dosenFK | int(11) | YES | | NULL | |
| nama_mk | varchar(45) | NO | UNI | NULL | |
| smt_mk | int(11) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.014 sec)

MariaDB [tugasm4]> describe ruangkelas;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_ruang | int(11) | NO | PRI | NULL | |
| nama_ruang | varchar(20) | NO | UNI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.024 sec)
```

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

MariaDB [tugasm4]> describe mahasiswa_has_matakuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim_mhsFK | varchar(20) | NO | PRI | NULL | |
| kode_mkFK | varchar(20) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.049 sec)

MariaDB [tugasm4]>
```