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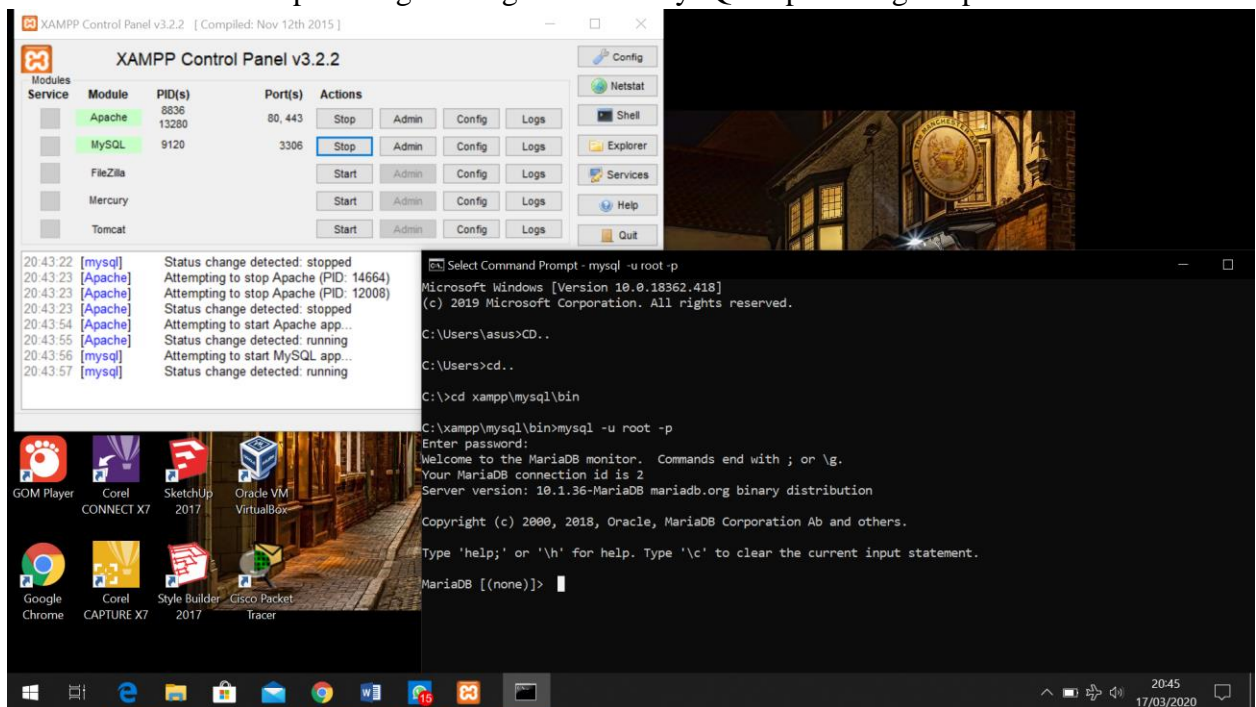
Kelas : B

Modul 4

Data Definition Language (DDL)

Langkah-langkah Praktikum

1. Jalankan XAMPP Control Panel
2. Jalankan server Apache dan MySQL
3. Buka Command Promp dan login sebagai root ke MySQL seperti langkah pada Modul 1



Create database perbankan dan tampilan perbankan

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

MariaDB [(none)]> use perbankan1;
ERROR 1049 (42000): Unknown database 'perbankan1'
MariaDB [(none)]> create database perbankan1;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use perbankan1;
Database changed
MariaDB [perbankan1]> 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 (0.02 sec)

MariaDB [perbankan1]> 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 (0.03 sec)

MariaDB [perbankan1]> 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
  -> );
Query OK, 0 rows affected (0.03 sec)

MariaDB [perbankan1]> CREATE TABLE transaksi(
  -> no_transaksi SERIAL PRIMARY KEY,
  -> id_nasabahFK INTEGER REFERENCES rekening(no_rekening) 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 DATETIME NOT NULL DEFAULT CURRENT_TIMESTAMP,
  -> jumlah INTEGER NOT NULL CHECK (jumlah>2000)
  -> );
Query OK, 0 rows affected (0.03 sec)

MariaDB [perbankan1]> CREATE TABLE nasabah_has_rekening(
```

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

MariaDB [perbankan1]> 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 (0.03 sec)

MariaDB [perbankan1]> show tables;
+-----+
| Tables_in_perbankan1 |
+-----+
| cabang_bank           |
| nasabah               |
| nasabah_has_rekening |
| rekening              |
| transaksi             |
+-----+
5 rows in set (0.00 sec)

MariaDB [perbankan1]> 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 (0.01 sec)

MariaDB [perbankan1]> 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 (0.01 sec)

MariaDB [perbankan1]>
```

Localhost/phpmyadmin/db_structure.php?db=perbankan1

Server: 127.0.0.1 » Database: perbankan1

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Filters

Containing the word:

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> cabang_bank		0	InnoDB	latin1_swedish_ci	32 KiB	-
<input type="checkbox"/> nasabah		0	InnoDB	latin1_swedish_ci	16 KiB	-
<input type="checkbox"/> nasabah_has_rekening		0	InnoDB	latin1_swedish_ci	16 KiB	-
<input type="checkbox"/> rekening		0	InnoDB	latin1_swedish_ci	16 KiB	-
<input type="checkbox"/> transaksi		0	InnoDB	latin1_swedish_ci	16 KiB	-
5 tables	Sum	0	InnoDB	latin1_swedish_ci	96 KiB	0.8

☐ Check all With selected:

Print Data dictionary

Create table

Name: Number of columns: 4

Go

Console

22:10 17/03/2020

Tugas

```
Command Prompt - mysql -u root -p
Microsoft Windows [Version 10.0.18362.418]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\asus>cd..

C:\Users>cd..

C:\>cd 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 18
Server version: 10.1.36-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 kuliah;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use kuliah;
Database changed
MariaDB [kuliah]> CREATE TABLE mahasiswa(
  -> nama_mahasiswa VARCHAR(45) NOT NULL,
  -> NIM VARCHAR(20) PRIMARY KEY,
  -> NIM VARCHAR(20) PRIMARY KEY,
  -> alamat_mahasiswa VARCHAR(255) NOT NULL
  -> );
ERROR 1060 (42S21): Duplicate column name 'NIM'
MariaDB [kuliah]> CREATE TABLE mahasiswa(
  -> nama_mahasiswa VARCHAR(45) NOT NULL,
  -> NIM VARCHAR(20) PRIMARY KEY,
  -> alamat_mahasiswa VARCHAR(255) NOT NULL
  -> );
Query OK, 0 rows affected (0.02 sec)

MariaDB [kuliah]> CREATE TABLE dosen(
  -> nama_dosen VARCHAR(45) NOT NULL,
  -> nip VARCHAR(20) NOT NULL,
  -> nip VARCHAR(20) PRIMARY KEY,
  -> );
Query OK, 0 rows affected (0.02 sec)

MariaDB [kuliah]> CREATE TABLE dosen(
  -> nama_dosen VARCHAR(45) NOT NULL,
  -> nip VARCHAR(20) NOT NULL,
  -> nip VARCHAR(20) PRIMARY KEY,
  -> );
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 '' at line 5
MariaDB [kuliah]> CREATE TABLE dosen(
  -> nama_dosen VARCHAR(45) NOT NULL,
  -> nip VARCHAR(20) PRIMARY KEY,
  -> alamat_dosen VARCHAR(255) NOT NULL
  -> );
Query OK, 0 rows affected (0.02 sec)

MariaDB [kuliah]> CREATE TABLE mata_kuliah(
  -> kode_matkul VARCHAR(20) PRIMARY KEY,
  -> nama_matkul VARCHAR
  -> );
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 '' at line 4
MariaDB [kuliah]> CREATE TABLE mata_kuliah(
  -> kode_matkul VARCHAR(20) PRIMARY KEY,
  -> nama_matkul VARCHAR(45) NOT NULL
  -> );
Query OK, 0 rows affected (0.02 sec)

MariaDB [kuliah]> CREATE TABLE ruang_kelas(
  -> nama_ruang VARCHAR(45) NOT NULL,
  -> kode_ruang VARCHAR(20) PRIMARY KEY
  -> );
Query OK, 0 rows affected (0.02 sec)

MariaDB [kuliah]> CREATE TABLE dosen_use_ruang_kelas(
  -> nimFK VARCHAR(20) REFERENCES mahasiswa(NIM) ON DELETE CASCADE ON UPDATE CASCADE,
  -> nipFK VARCHAR(20) REFERENCES dosen(nip) ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(nimFK, nipFK)
  -> );
Query OK, 0 rows affected (0.02 sec)

MariaDB [kuliah]> CREATE TABLE dosen_teach_mata_kuliah(
  -> nipFK VARCHAR(20) REFERENCES dosen(nip) ON DELETE CASCADE ON UPDATE CASCADE,
  -> kode_matkulFK VARCHAR(20) REFERENCES mahasiswa(NIM) ON DELETE CASCADE ON UPDATE CASCADE,
```

```

Command Prompt - mysql -u root -p

MariaDB [kuliah]> CREATE TABLE dosen_teach_mata_kuliah(
  -> nipFK VARCHAR(20) REFERENCES dosen(nip) ON DELETE CASCADE ON UPDATE CASCADE,
  -> kode_matkulFK VARCHAR(20) REFERENCES mahasiswa(NIM) ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(nipFK, kode_matkulFK)
  -> );
Query OK, 0 rows affected (0.02 sec)

MariaDB [kuliah]> CREATE TABLE dosen_teach_mahasiswa(
  -> nipFK VARCHAR(20) REFERENCES dosen(nip) ON DELETE CASCADE ON UPDATE CASCADE,
  -> nimFK VARCHAR(20) REFERENCES mahasiswa(NIM) ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(nipFK, nimFK)
  -> );
Query OK, 0 rows affected (0.02 sec)

MariaDB [kuliah]> CREATE TABLE mahasiswa_take_mata_kuliah(
  -> nimFK VARCHAR(20) REFERENCES mahasiswa(NIM) ON DELETE CASCADE ON UPDATE CASCADE,
  -> kode_matkulFK VARCHAR(20) REFERENCES mata_kuliah(kode_matkul) ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(nimFK, kode_matkulFK)
  -> );
Query OK, 0 rows affected (0.02 sec)

MariaDB [kuliah]> CREATE TABLE mata_kuliah_fill_ruang_kelas(
  -> kode_matkulFK VARCHAR(20) REFERENCES mata_kuliah(kode_matkul) ON DELETE CASCADE ON UPDATE CASCADE,
  -> kode_ruangFK VARCHAR(20) REFERENCES ruang_kelas(kode_ruang) ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(kode_matkulFK, kode_ruangFK)
  -> );
Query OK, 0 rows affected (0.02 sec)

MariaDB [kuliah]> show tables;
+-----+
| Tables_in_kuliah |
+-----+
| dosen             |
| dosen_teach_mahasiswa |
| dosen_teach_mata_kuliah |
| dosen_use_ruang_kelas |
| mahasiswa         |
| mahasiswa_take_mata_kuliah |
| mata_kuliah       |
| mata_kuliah_fill_ruang_kelas |
+-----+

```

```

Command Prompt - mysql -u root -p

MariaDB [kuliah]> show tables;
+-----+
| Tables_in_kuliah |
+-----+
| dosen             |
| dosen_teach_mahasiswa |
| dosen_teach_mata_kuliah |
| dosen_use_ruang_kelas |
| mahasiswa         |
| mahasiswa_take_mata_kuliah |
| mata_kuliah       |
| mata_kuliah_fill_ruang_kelas |
| ruang_kelas       |
+-----+
9 rows in set (0.00 sec)

MariaDB [kuliah]> desc dosen;
+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+
| nama_dosen | varchar(45) | NO   |     | NULL    |       |
| nip        | varchar(20) | NO   | PRI | NULL    |       |
| alamat_dosen | varchar(255) | NO   |     | NULL    |       |
+-----+
3 rows in set (0.01 sec)

MariaDB [kuliah]> desc mahasiswa;
+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+
| nama_mahasiswa | varchar(45) | NO   |     | NULL    |       |
| NIM          | varchar(20) | NO   | PRI | NULL    |       |
| alamat_mahasiswa | varchar(255) | NO   |     | NULL    |       |
+-----+
3 rows in set (0.01 sec)

MariaDB [kuliah]> desc ruang_kelas;
+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+
| nama_ruang | varchar(45) | NO   |     | NULL    |       |
+-----+

```

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

MariaDB [kuliah]> desc ruang_kelas;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nama_ruang | varchar(45) | NO | | NULL | |
| kode_ruang | varchar(20) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [kuliah]> desc mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_matkul | varchar(20) | NO | PRI | NULL | |
| nama_matkul | varchar(45) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [kuliah]> desc mahasiswa_take_mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nimFK | varchar(20) | NO | PRI | NULL | |
| kode_matkulFK | varchar(20) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [kuliah]> desc dosen_teach_mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nipFK | varchar(20) | NO | PRI | NULL | |
| nimFK | varchar(20) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [kuliah]> desc mata_kuliah_fill_ruang_kelas;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)
```

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

+-----+-----+-----+-----+-----+-----+
| kode_matkul | varchar(20) | NO | PRI | NULL | |
| nama_matkul | varchar(45) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [kuliah]> desc mahasiswa_take_mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nimFK | varchar(20) | NO | PRI | NULL | |
| kode_matkulFK | varchar(20) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [kuliah]> desc dosen_teach_mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nipFK | varchar(20) | NO | PRI | NULL | |
| nimFK | varchar(20) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [kuliah]> desc mata_kuliah_fill_ruang_kelas;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_matkulFK | varchar(20) | NO | PRI | NULL | |
| kode_ruangFK | varchar(20) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [kuliah]>
```

Localhost/phpmyadmin/db_structure.php?db=kuliah

phpMyAdmin

Recent Favorites

- New
- information_schema
- mysql
- performance_schema
- phpmyadmin
- test

Server: 127.0.0.1 Database: kuliah

Structure SQL Search Query Export Import Operations Privileges Routines More

Filters

Containing the word:

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> dosen			InnoDB	latin1_swedish_ci	16 Kib	-
<input type="checkbox"/> dosen_teach_mahasiswa			InnoDB	latin1_swedish_ci	16 Kib	-
<input type="checkbox"/> dosen_teach_mata_kuliah			InnoDB	latin1_swedish_ci	16 Kib	-
<input type="checkbox"/> dosen_use_ruang_kelas			InnoDB	latin1_swedish_ci	16 Kib	-
<input type="checkbox"/> mahasiswa			InnoDB	latin1_swedish_ci	16 Kib	-
<input type="checkbox"/> mahasiswa_take_mata_kuliah			InnoDB	latin1_swedish_ci	16 Kib	-
<input type="checkbox"/> mata_kuliah			InnoDB	latin1_swedish_ci	16 Kib	-
<input type="checkbox"/> mata_kuliah_fill_ruang_kelas			InnoDB	latin1_swedish_ci	16 Kib	-
<input type="checkbox"/> ruang_kelas			InnoDB	latin1_swedish_ci	16 Kib	-
9 tables	Sum		InnoDB	latin1_swedish_ci	144 Kib	0 B

☐ Check all With selected:

Print Data dictionary

Create table

Name: Number of columns: 4

Console

22:49 17/03/2020