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## MODUL 4

### Data Definition Language (DDL)

#### Kegiatan Modul (PERBANKAN)

```
Command Prompt - mysql -u root -p
C:\Users\ASUS>cd..
C:\Users>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 22
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)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| phpmyadmin |
| test |
+-----+
5 rows in set (0.003 sec)

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

```
Command Prompt - mysql -u root -p
MariaDB [(none)]> CREATE TABLE nasabah(
  -> id_nasabah INTEGER PRIMARY KEY,
  -> nama_nasabah VARCHAR(45) NOT NULL,
  -> alamat_nasabah VARCHAR(255) NOT NULL);
ERROR 1046 (3D000): No database selected
MariaDB [(none)]> use perbankan;
Database changed
MariaDB [perbankan]> CREATE TABLE nasabah(
  -> id_nasabah INTEGER PRIMARY KEY,
  -> nama_nasabah VARCHAR(45) 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 '-> id_nasabah INTEGER PRIMARY KEY,
  -> nama_nasabah VARCHAR(45) NOT NULL,' at line 2
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 (0.389 sec)

MariaDB [perbankan]> CREATE TABLE cabang_bank(
  -> kode_bank VARCHAR(20) PRIMARY KEY,
  -> nama_cabang VARCHAR(45) UNIQUE NOT NULL,
  -> alamat_cabang VARCHAR(255) NOT NULL
  -> );
Query OK, 0 rows affected (0.290 sec)
```

```
Command Prompt - mysql -u root -p
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
-> );
Query OK, 0 rows affected (0.280 sec)

MariaDB [perbankan]> CREATE TABLE transaksi(
-> no_transaksi SERIAL PRIMARY KEY,
-> id_nasabahFK INTEGER REFERENCES nasabah(id_nasabah)
-> 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>=20000)
-> );
Query OK, 0 rows affected (0.295 sec)
```

```
Command Prompt - mysql -u root -p
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 (0.285 sec)

MariaDB [perbankan]> show tables;
+-----+
| Tables_in_perbankan |
+-----+
| cabang_bank          |
| nasabah              |
| nasabah_has_rekening |
| rekening             |
| transaksi            |
+-----+
5 rows in set (0.003 sec)

MariaDB [perbankan]> 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 (0.044 sec)
```

```
Command Prompt - mysql -u root -p
MariaDB [perbankan]> describe cabang_bank;
+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+
| kode_bank      | varchar(20)   | NO   | PRI | NULL    |       |
| nama_cabang    | varchar(45)   | NO   | UNI | NULL    |       |
| alamat_cabang  | varchar(255)  | NO   |     | NULL    |       |
+-----+
3 rows in set (0.022 sec)

MariaDB [perbankan]> describe rekening;
+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+
| no_rekening    | int(11)       | NO   | PRI | NULL    |       |
| kode_cabangFK  | varchar(20)   | YES  |     | NULL    |       |
| pin            | varchar(20)   | NO   |     | 1234    |       |
| saldo          | int(11)       | NO   |     | 0        |       |
+-----+
4 rows in set (0.019 sec)
```

```
Command Prompt - mysql -u root -p
MariaDB [perbankan]> describe transaksi;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| no_transaksi | bigint(20) unsigned | NO | PRI | NULL | auto_increment |
| id_nasabahFK | int(11) | YES | | NULL | |
| no_rekeningFK | int(11) | YES | | NULL | |
| jenis_transaksi | varchar(20) | NO | | debit | |
| tanggal | datetime | NO | | current_timestamp() | |
| jumlah | int(11) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.021 sec)

MariaDB [perbankan]> describe nasabah_has_rekening;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_nasabahFK | int(11) | NO | PRI | NULL | |
| no_rekeningFK | int(11) | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.021 sec)

MariaDB [perbankan]>
```

## Tugas Modul (KULIAH)

```
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 45
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)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| perbankan |
| performance_schema |
| phpmyadmin |
| test |
+-----+
6 rows in set (0.283 sec)

MariaDB [(none)]> create database kuliah;
Query OK, 1 row affected (0.004 sec)

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

```

Command Prompt - mysql -u root -p
MariaDB [kuliah]> CREATE TABLE mahasiswa(
  -> nim INTEGER PRIMARY KEY,
  -> nama_mhs VARCHAR(45) NOT NULL,
  -> alamat_mhs VARCHAR(255) NOT NULL,
  -> notlp_mhs INTEGER DEFAULT 0 NOT NULL
  -> );
Query OK, 0 rows affected (0.424 sec)

MariaDB [kuliah]> CREATE TABLE dosen(
  -> nik INTEGER PRIMARY KEY,
  -> nama_dsn VARCHAR(45) NOT NULL,
  -> alamat_dsn VARCHAR(255) NOT NULL,
  -> jabatan_dsn VARCHAR(45) NOT NULL,
  -> notlp_dsn INTEGER DEFAULT 0 NOT NULL,
  -> gaji_dsn INTEGER DEFAULT 0 NOT NULL
  -> );
Query OK, 0 rows affected (0.348 sec)

MariaDB [kuliah]> CREATE TABLE matakuliah(
  -> kode_mk INTEGER PRIMARY KEY,
  -> nama_mk VARCHAR(45) NOT NULL,
  -> sks INTEGER DEFAULT 0 NOT NULL
  -> );
Query OK, 0 rows affected (0.342 sec)

```

```

Command Prompt - mysql -u root -p
MariaDB [kuliah]> CREATE TABLE ruangkelas(
  -> kode_rk VARCHAR(20) PRIMARY KEY,
  -> nama_rk VARCHAR(45) NOT NULL,
  -> letak_rk VARCHAR(45) NOT NULL
  -> );
Query OK, 0 rows affected (0.321 sec)

MariaDB [kuliah]> CREATE TABLE mahasiswa_diajar_dosen(
  -> nimFK INTEGER REFERENCES mahasiswa(nim)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> nikFK INTEGER REFERENCES dosen(nik)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(nimFK, nikFK)
  -> );
Query OK, 0 rows affected (0.642 sec)

MariaDB [kuliah]> CREATE TABLE mahasiswa_mengambil_matakuliah(
  -> nimFK INTEGER REFERENCES mahasiswa(nim)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> kode_mkFK INTEGER REFERENCES matakuliah(kode_mk)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(nimFK, kode_mkFK)
  -> );
Query OK, 0 rows affected (0.802 sec)

```

```

Command Prompt - mysql -u root -p
MariaDB [kuliah]> CREATE TABLE dosen_mengampu_matakuliah(
  -> nikFK INTEGER REFERENCES dosen(nik)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> kode_mkFK INTEGER REFERENCES matakuliah(kode_mk)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(nikFK, kode_mkFK)
  -> );
Query OK, 0 rows affected (0.499 sec)

MariaDB [kuliah]> show tables;
+-----+
| Tables_in_kuliah |
+-----+
| dosen              |
| dosen_mengampu_matakuliah |
| mahasiswa          |
| mahasiswa_diajar_dosen |
| mahasiswa_mengambil_matakuliah |
| matakuliah         |
| ruangkelas         |
+-----+
7 rows in set (0.003 sec)

```

```
Command Prompt - mysql -u root -p
MariaDB [kuliah]> describe mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim    | int(11) | NO | PRI | NULL |      |
| nama_mhs | varchar(45) | NO |      | NULL |      |
| alamat_mhs | varchar(255) | NO |      | NULL |      |
| notlp_mhs | int(11) | NO |      | 0 |      |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.021 sec)

MariaDB [kuliah]> describe dosen;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nik    | int(11) | NO | PRI | NULL |      |
| nama_dsn | varchar(45) | NO |      | NULL |      |
| alamat_dsn | varchar(255) | NO |      | NULL |      |
| jabatan_dsn | varchar(45) | NO |      | NULL |      |
| notlp_dsn | int(11) | NO |      | 0 |      |
| gaji_dsn | int(11) | NO |      | 0 |      |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.021 sec)
```

```
Command Prompt - mysql -u root -p
MariaDB [kuliah]> describe matakuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_mk | int(11) | NO | PRI | NULL |      |
| nama_mk | varchar(45) | NO |      | NULL |      |
| sks     | int(11) | NO |      | 0 |      |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.021 sec)

MariaDB [kuliah]> describe ruangkelas;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_rk | varchar(20) | NO | PRI | NULL |      |
| nama_rk | varchar(45) | NO |      | NULL |      |
| letak_rk | varchar(45) | NO |      | NULL |      |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.024 sec)

MariaDB [kuliah]> describe mahasiswa_diajar_dosen;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nimFK | int(11) | NO | PRI | NULL |      |
| nikFK | int(11) | NO | PRI | NULL |      |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.020 sec)
```

```
Command Prompt - mysql -u root -p
MariaDB [kuliah]> describe mahasiswa_mengambil_matakuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nimFK | int(11) | NO | PRI | NULL |      |
| kode_mkFK | int(11) | NO | PRI | NULL |      |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.296 sec)
```

```
Command Prompt - mysql -u root -p
MariaDB [kuliah]> describe dosen_mengampu_matakuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nikFK | int(11) | NO | PRI | NULL |      |
| kode_mkFK | int(11) | NO | PRI | NULL |      |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.032 sec)
```