

Nama : Muhammad Hilmy Raihan

NIM : L200180029

Modul 4

Latihan

```
C:\Users>cd..
C:\>cd..
C:\>E:\
'E:\' is not recognized as an internal or external command,
operable program or batch file.

C:\>E:
E:\>cd software free
E:\software free>cd xampp\mysql\bin

E:\software free\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 11
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 (0.001 sec)
```

```

Command Prompt - mysql -u root -p
MariaDB [(none)]> drop databases perbankan;
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 'databases p
erbankan' at line 1
MariaDB [(none)]> drop database perbankan;
Query OK, 3 rows affected (0.234 sec)

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| phpmyadmin |
| test |
+-----+
5 rows in set (0.001 sec)

MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> use perbankan;
Database changed
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 (0.124 sec)

MariaDB [perbankan]> 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 (0.090 sec)

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 (0.139 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_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>=2000) );
Query OK, 0 rows affected (0.168 sec)

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 (0.138 sec)

```

```

Command Prompt - mysql -u root -p

MariaDB [perbankan]> show tables;
+-----+
| Tables_in_perbankan |
+-----+
| cabang_bank |
| nasabah |
| nasabah_has_rekening |
| rekening |
| transaksi |
+-----+
5 rows in set (0.001 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 (0.009 sec)

MariaDB [perbankan]> 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 (0.008 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 (0.031 sec)

```

TUGAS

DATABASE UNIVERSITAS

1. Membuat database universitas dan menghubungkannya

```
mysql> Select Command Prompt - mysql -u root -p
mysql> create database universitas;
Query OK, 1 row affected (0.00 sec)

mysql> use universitas;
Database changed

mysql> create table mahasiswa(
-> NIM integer primary key,
-> nama varchar(45) not null,
-> alamat varchar(255) not null
-> );
Query OK, 0 rows affected (0.20 sec)

mysql> create table dosen(
-> NIP integer primary key,
-> nama varchar(45) not null,
-> alamat varchar(255) not null
-> );
Query OK, 0 rows affected (0.21 sec)

mysql> create table mata_kuliah(
-> kode_mk varchar(10) primary key,
-> nama_mk varchar(30) not null
-> );
Query OK, 0 rows affected (0.30 sec)

mysql> create table ruang_kelas(
-> kode_ruang varchar(10) primary key,
-> nama_ruang varchar(30) not null
-> );
Query OK, 0 rows affected (0.20 sec)
```

2. Membuat tabel

```
mysql> Select Command Prompt - mysql -u root -p
mysql> create database universitas;
Query OK, 1 row affected (0.00 sec)

mysql> use universitas;
Database changed

mysql> create table mahasiswa(
-> NIM integer primary key,
-> nama varchar(45) not null,
-> alamat varchar(255) not null
-> );
Query OK, 0 rows affected (0.20 sec)

mysql> create table dosen(
-> NIP integer primary key,
-> nama varchar(45) not null,
-> alamat varchar(255) not null
-> );
Query OK, 0 rows affected (0.21 sec)

mysql> create table mata_kuliah(
-> kode_mk varchar(10) primary key,
-> nama_mk varchar(30) not null
-> );
Query OK, 0 rows affected (0.30 sec)

mysql> create table ruang_kelas(
-> kode_ruang varchar(10) primary key,
-> nama_ruang varchar(30) not null
-> );
Query OK, 0 rows affected (0.20 sec)
```

```
mysql> Select Command Prompt - mysql -u root -p
mysql>
mysql> create table mahasiswa_has_dosen(
-> NIMFK integer references mahasiswa(NIM) on delete cascade on update cascade,
-> NIPFK integer references dosen(NIP) on delete cascade on update cascade,
-> primary key(NIMFK, NIPFK)
-> );
Query OK, 0 rows affected (0.25 sec)

mysql> create table mahasiswa_has_mata_kuliah(
-> NIMFK integer references mahasiswa(NIM) on delete cascade on update cascade,
-> kode_mkFK varchar(10) references mata_kuliah(kode_mk) on delete cascade on update cascade,
-> primary key(NIMFK, kode_mkFK)
-> );
Query OK, 0 rows affected (0.19 sec)

mysql> create table dosen_has_mata_kuliah(
-> NIPFK integer references dosen(NIP) on delete cascade on update cascade,
-> kode_mkFK varchar(10) references mata_kuliah(kode_mk) on delete cascade on update cascade,
-> primary key(NIPFK, kode_mkFK)
-> );
Query OK, 0 rows affected (0.27 sec)

mysql> create table dosen_has_ruang_kelas(
-> NIPFK integer references dosen(NIP) on delete cascade on update cascade,
-> kode_ruangFK varchar(10) references ruang_kelas(kode_ruang) on delete cascade on update cascade,
-> primary key(NIPFK, kode_ruangFK)
-> );
Query OK, 0 rows affected (0.20 sec)

mysql> create table mata_kuliah_has_ruang_kelas(
```

```

Command Prompt - mysql -u root -p
Query OK, 0 rows affected (0.20 sec)

mysql> create table mata_kuliah_has_ruang_kelas(
    -> kode_mkFK varchar(10) references mata_kuliah(kode_mk) on delete cascade on update cascade,
    -> kode_ruangFK varchar(10) references ruang_kelas(kode_ruang) on delete cascade on update cascade,
    -> primary key(kode_mkFK, kode_ruangFK)
    -> );
Query OK, 0 rows affected (0.22 sec)

mysql> show tables;
+-----+
| Tables_in_universitas |
+-----+
| 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 (0.02 sec)

mysql> describe dosen;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| NIP   | int(11)| NO  | PRI | NULL   |       |
+-----+-----+-----+-----+-----+

```

3. Menampilkan tabel pada database universitas

```

Command Prompt - mysql -u root -p
Query OK, 0 rows affected (0.20 sec)

mysql> create table mata_kuliah_has_ruang_kelas(
    -> kode_mkFK varchar(10) references mata_kuliah(kode_mk) on delete cascade on update cascade,
    -> kode_ruangFK varchar(10) references ruang_kelas(kode_ruang) on delete cascade on update cascade,
    -> primary key(kode_mkFK, kode_ruangFK)
    -> );
Query OK, 0 rows affected (0.22 sec)

mysql> show tables;
+-----+
| Tables_in_universitas |
+-----+
| 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 (0.02 sec)

mysql> describe dosen;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| NIP   | int(11)| NO  | PRI | NULL   |       |
+-----+-----+-----+-----+-----+

```

4. Melihat struktur tiap tabel pada database universitas

```

Command Prompt - mysql -u root -p
mysql> describe dosen;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| NIP   | int(11)| NO  | PRI | NULL   |       |
| nama  | varchar(45)| NO  |     | NULL   |       |
| alamat | varchar(255)| NO  |     | NULL   |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> describe mahasiswa;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| NIM   | int(11)| NO  | PRI | NULL   |       |
| nama  | varchar(45)| NO  |     | NULL   |       |
| alamat | varchar(255)| NO  |     | NULL   |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

mysql> describe mata_kuliah;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| kode_mk | varchar(10)| NO  | PRI | NULL   |       |
| nama_mk | varchar(30)| NO  |     | NULL   |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

```

```
mysql> create table mata_kuliah_has_ruang_kelas(
    -> kode_mkFK varchar(10) references mata_kuliah(kode_mk) on delete cascade on update cascade,
    -> kode_ruangFK varchar(10) references ruang_kelas(kode_ruang) on delete cascade on update cascade,
    -> primary key(kode_mkFK, kode_ruangFK)
    -> );
Query OK, 0 rows affected (0.22 sec)

mysql> show tables;
+ Tables_in_universitas +
| 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 (0.02 sec)

mysql> describe dosen;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| NIP   | int(11) | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+
```

```
mysql> describe mahasiswa_has_dosen;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| NIMFK | int(11) | NO   | PRI | NULL    |       |
| NIPFK | int(11) | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> describe mahasiswa_has_mata_kuliah;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| NIMFK | int(11) | NO   | PRI | NULL    |       |
| kode_mkFK | varchar(10) | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql> describe mata_kuliah_has_ruang_kelas;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| kode_mkFK | varchar(10) | NO   | PRI | NULL    |       |
| kode_ruangFK | varchar(10) | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.03 sec)

mysql>
```

DATABASE PERPUSTAKAAN

1. Membuat database perpustakaan dan menghubungkannya

```
mysql> create database perpustakaan;
Query OK, 1 row affected (0.00 sec)

mysql> use perpustakaan;
Database changed

mysql> create table buku(
    -> no_buku integer primary key,
    -> judul varchar(45) not null,
    -> pengarang varchar(45) not null,
    -> thn_terbit integer not null,
    -> penerbit varchar(45) not null
    -> );
Query OK, 0 rows affected (0.35 sec)

mysql> create table pegawai(
    -> no_pegawai integer primary key,
    -> nama varchar(45) not null,
    -> alamat varchar(255) not null,
    -> no_tlp integer not null,
    -> jnsstgnan varchar(45) unique not null
    -> );
Query OK, 0 rows affected (0.23 sec)

mysql> create table denda(
    -> kode_denda integer primary key,
    -> no_anggotaFK integer references anggota(no_anggota) on delete cascade on update cascade,
    -> tarif_denda varchar(45) not null,
    -> jenis_denda varchar(45) not null,
    -> tgl_pinjam varchar(45) not null
```

2. Membuat tabel

```
mysql> create database perpustakaan;
Query OK, 1 row affected (0.00 sec)

mysql> use perpustakaan;
Database changed

mysql> create table buku(
    -> no_buku integer primary key,
    -> judul varchar(45) not null,
    -> pengarang varchar(45) not null,
    -> thn_terbit integer not null,
    -> penerbit varchar(45) not null
    -> );
Query OK, 0 rows affected (0.35 sec)

mysql> create table pegawai(
    -> no_pegawai integer primary key,
    -> nama varchar(45) not null,
    -> alamat varchar(255) not null,
    -> no_tlp integer not null,
    -> jnsstgnan varchar(45) unique not null
    -> );
Query OK, 0 rows affected (0.23 sec)

mysql> create table denda(
    -> kode_denda integer primary key,
    -> no_anggotaFK integer references anggota(no_anggota) on delete cascade on update cascade,
    -> tarif_denda varchar(45) not null,
    -> jenis_denda varchar(45) not null,
    -> tgl_pinjam varchar(45) not null
```

```
mysql> -> jenis_denda varchar(45) not null,
-> tgl_pinjam varchar(45) not null
-> );
Query OK, 0 rows affected (0.33 sec)

mysql> create table anggota(
    -> no_anggota integer primary key,
    -> no_pegawaiFK integer references pegawai(no_pegawai) on delete cascade on update cascade,
    -> nama varchar(45) not null,
    -> alamat varchar(255) not null,
    -> tgl_lahir varchar(45) not null,
    -> jurusan varchar(45) not null
    -> );
Query OK, 0 rows affected (0.36 sec)

mysql> create table anggota_has_buku(
    -> no_anggotaFK integer references anggota(no_anggota) on delete cascade on update cascade,
    -> no_bukuFK integer references buku(no_buku) on delete cascade on update cascade,
    -> primary key(no_anggotaFK, no_bukuFK)
    -> );
Query OK, 0 rows affected (0.62 sec)

mysql> create table buku_has_pegawai(
    -> no_bukuFK integer references buku(no_buku) on delete cascade on update cascade,
    -> no_pegawaiFK integer references pegawai(no_pegawai) on delete cascade on update cascade,
    -> primary key(no_bukuFK, no_pegawaiFK)
    -> );
Query OK, 0 rows affected (0.23 sec)
```

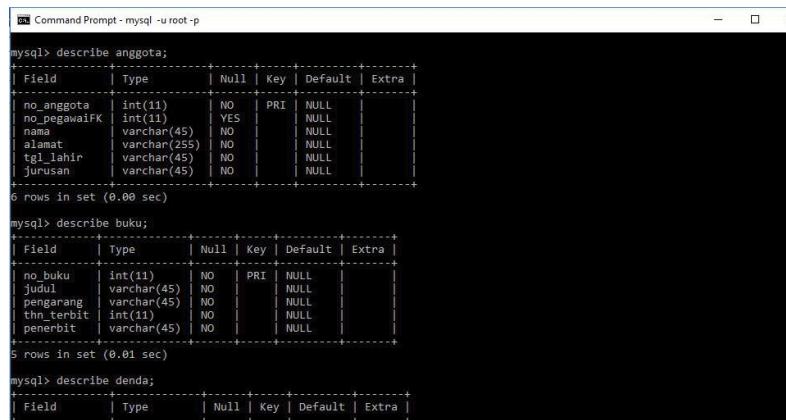
3. Menampilkan tabel pada database perpustakaan



```
mysql> show tables;
+-----+
| Tables_in_perpustakaan |
+-----+
| anggota |
| anggota_has_buku |
| buku |
| buku_has_pegawai |
| denda |
| pegawai |
+-----+
6 rows in set (0.00 sec)

mysql>
```

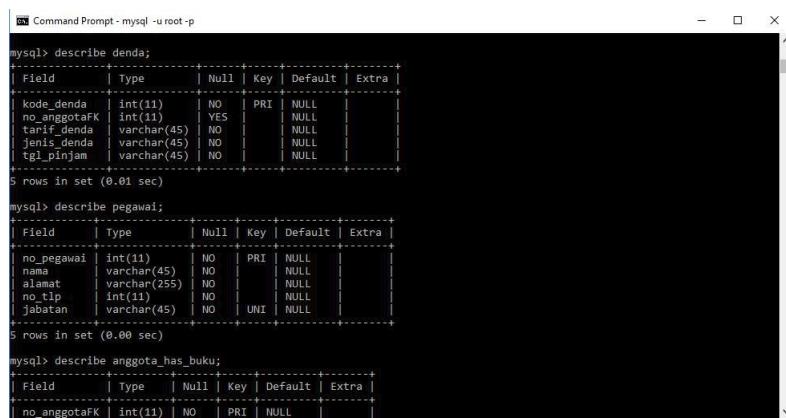
4. Melihat struktur tiap tabel pada database perpustakaan



```
mysql> describe anggota;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| no_anggota | int(11) | NO | PRI | NULL |
| no_pegawaiFK | int(11) | YES | NULL |
| nama | varchar(45) | NO | NULL |
| alamat | varchar(255) | NO | NULL |
| tgl_lahir | varchar(45) | NO | NULL |
| jurusan | varchar(45) | NO | NULL |
+-----+
6 rows in set (0.00 sec)

mysql> describe buku;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| no_buku | int(11) | NO | PRI | NULL |
| judul | varchar(45) | NO | NULL |
| pengarang | varchar(45) | NO | NULL |
| thn_terbit | int(11) | NO | NULL |
| penerbit | varchar(45) | NO | NULL |
+-----+
5 rows in set (0.01 sec)

mysql> describe denda;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
```



```
mysql> describe denda;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| kode_denda | int(11) | NO | PRI | NULL |
| no_anggotaFK | int(11) | YES | NULL |
| tarif_denda | varchar(45) | NO | NULL |
| jenis_denda | varchar(45) | NO | NULL |
| tgl_pinjam | varchar(45) | NO | NULL |
+-----+
5 rows in set (0.01 sec)

mysql> describe pegawai;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| no_pegawai | int(11) | NO | PRI | NULL |
| nama | varchar(45) | NO | NULL |
| alamat | varchar(255) | NO | NULL |
| no_tlp | int(11) | NO | NULL |
| jabatan | varchar(45) | NO | UNI | NULL |
+-----+
5 rows in set (0.00 sec)

mysql> describe anggota_has_buku;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| no_anggotaFK | int(11) | NO | PRI | NULL |
+-----+
```

```
Command Prompt - mysql -u root -p
mysql> describe anggota_has_buku;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| no_anggotaFK | int(11) | NO | PRI | NULL |          |
| no_bukuFK | int(11) | NO | PRI | NULL |          |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> describe buku_has_pegawai;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| no_bukuFK | int(11) | NO | PRI | NULL |          |
| no_pegawaiFK | int(11) | NO | PRI | NULL |          |
+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql>
```