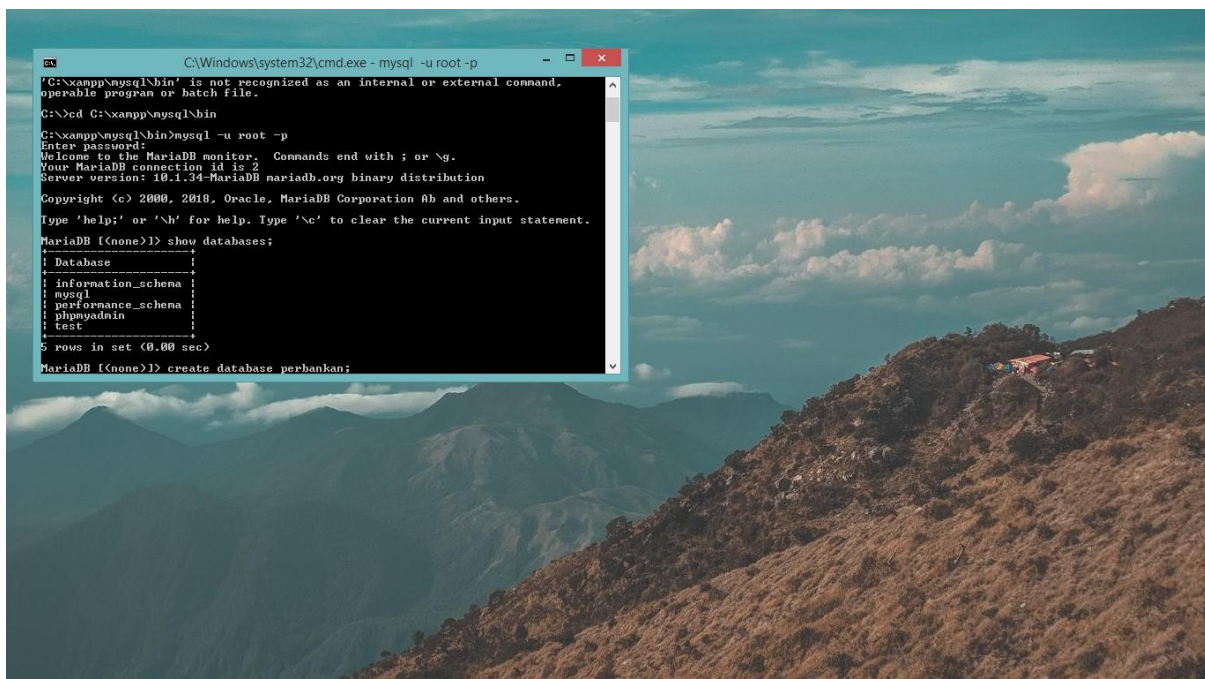
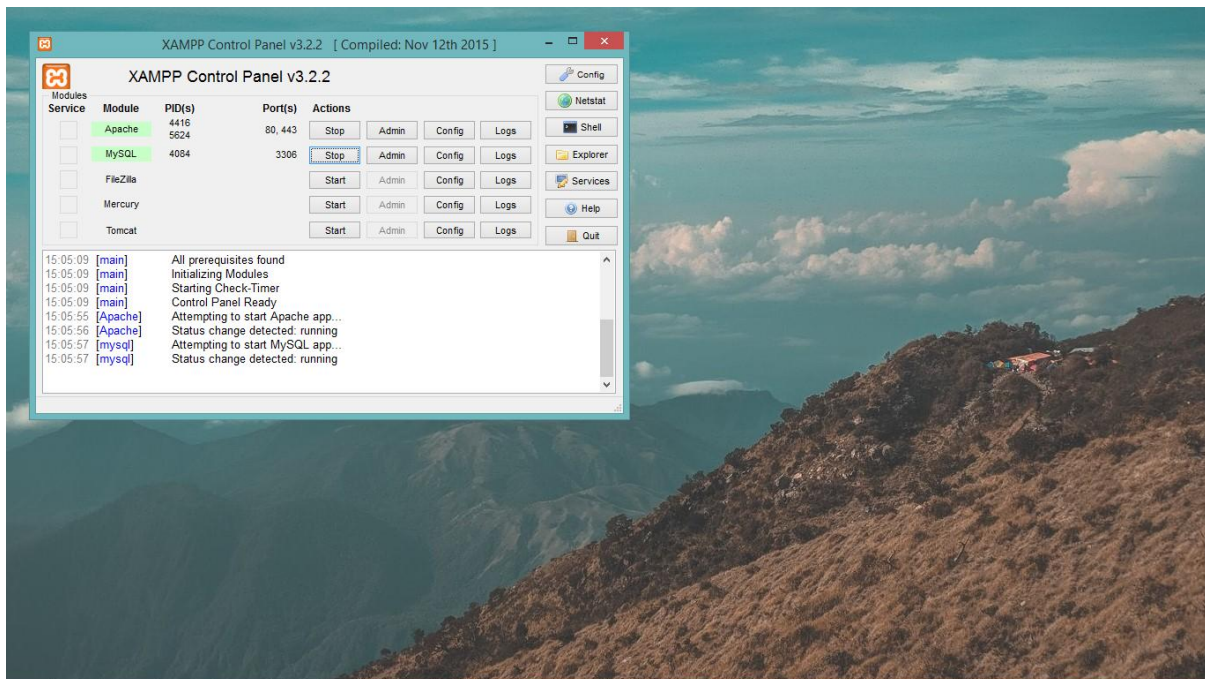


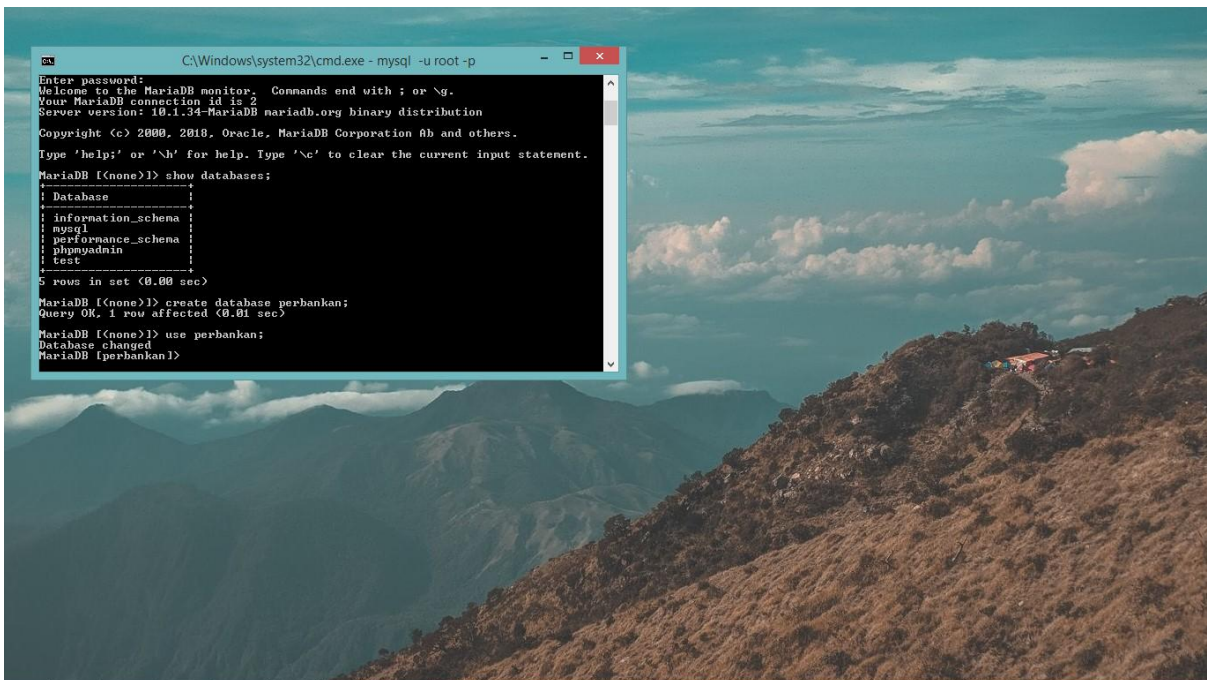
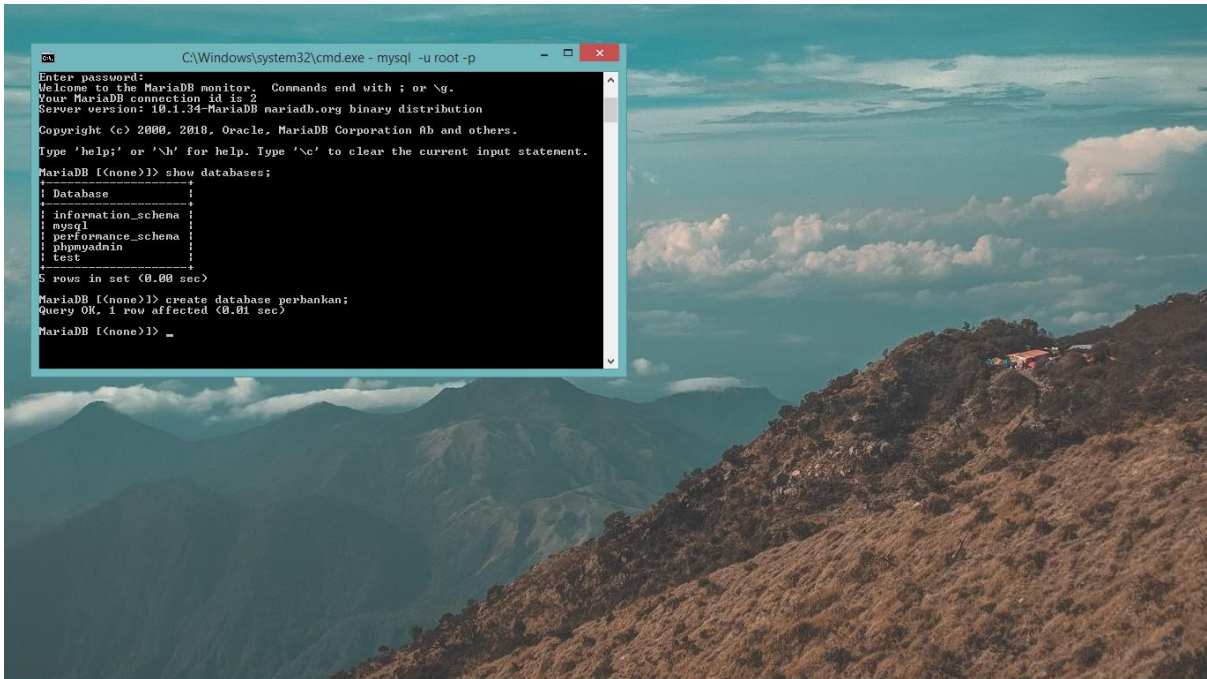
Aji Mustaqim

L200180141/F

## BASIS DATA

### LATIHAN





```
C:\Windows\system32\cmd.exe - mysql -u root -p

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 (0.00 sec)

MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.01 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 (0.25 sec)

MariaDB [perbankan]>
```

```
C:\Windows\system32\cmd.exe - mysql -u root -p

Query OK, 0 rows affected (0.25 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 (0.27 sec)

MariaDB [perbankan]>
```

```
C:\Windows\system32\cmd.exe - mysql -u root -p

-> >;
Query OK, 0 rows affected (0.27 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 (0.40 sec)

MariaDB [perbankan]>
```

```
C:\Windows\system32\cmd.exe - mysql -u root -p

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 (0.40 sec)

MariaDB [perbankan]>
```



```
C:\Windows\system32\cmd.exe - mysql -u root -p

-> >;
Query OK, 0 rows affected (0.40 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 (0.30 sec)

MariaDB [perbankan]>
```

```
C:\Windows\system32\cmd.exe - mysql -u root -p

-> 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 (0.40 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 (0.30 sec)

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

MariaDB [perbankan]>
```

```

C:\Windows\system32\cmd.exe - mysql -u root -p

5 rows in set (0.00 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 (0.17 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 (0.01 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 (0.06 sec)

```

```

C:\Windows\system32\cmd.exe - mysql -u root -p

4 rows in set (0.06 sec)

MariaDB [perbankan]> describe transaksi;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| no_transaksi | bigint(20) unsigned | NO | PRI | NULL | auto_incremen |
| 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 (0.07 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 | |
+-----+-----+-----+-----+-----+-----+

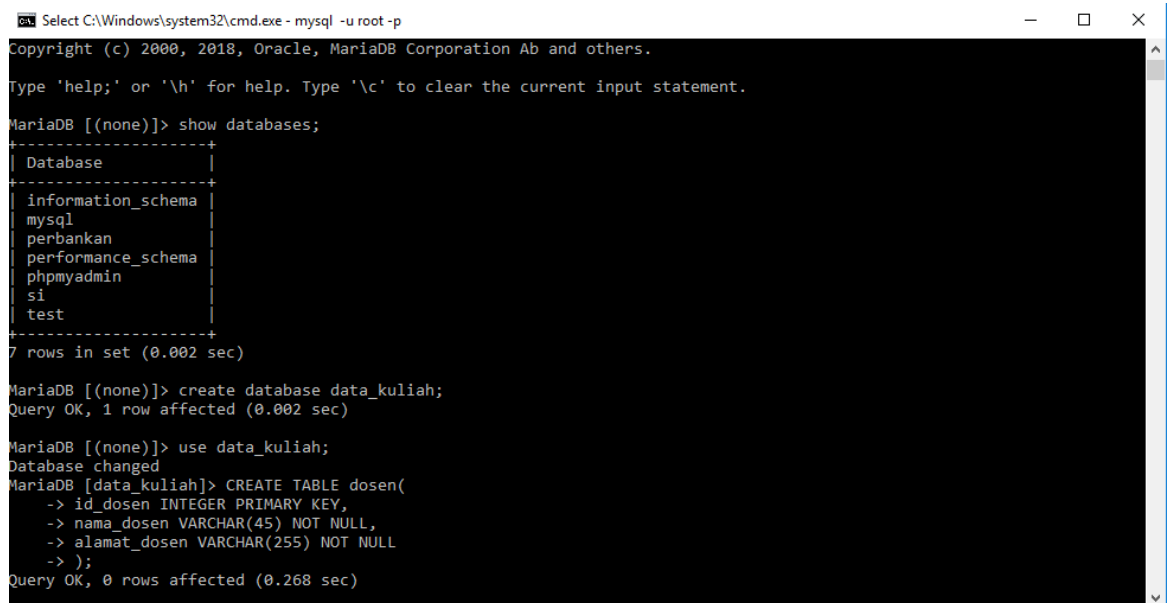
```

## TUGAS

Implementasikan hasil rancangan database yang menangani data kuliah pada tugas modul 2 kedalam program mysql.

1. Membuat table dosen dengan script berikut.  
 CREATE TABLE dosen(  
 id\_dosen INTEGER PRIMARY KEY,

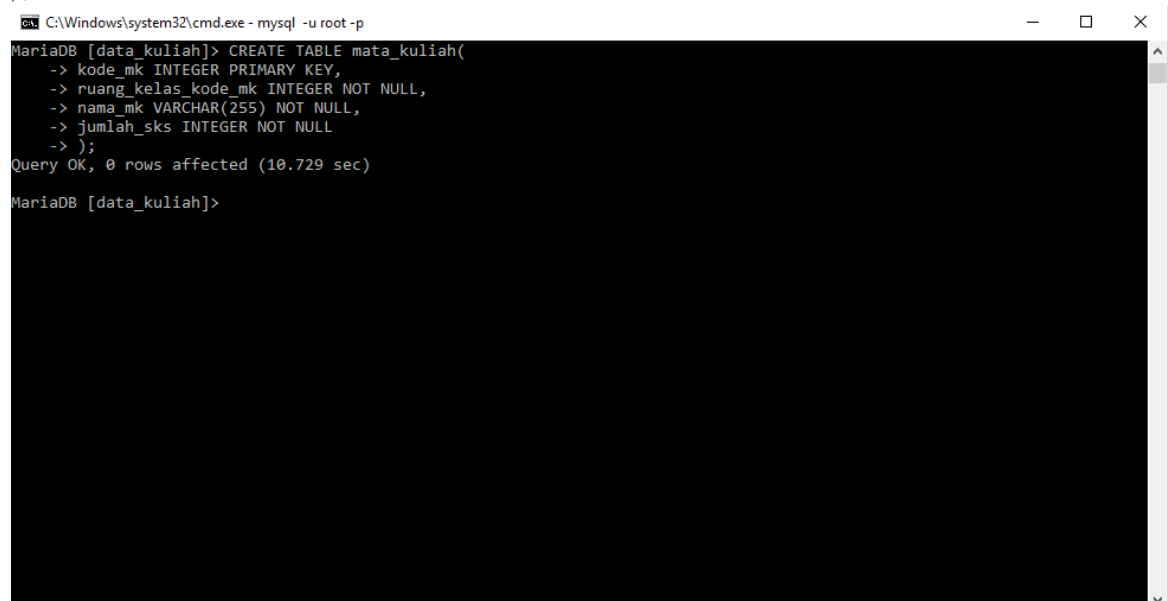
```
nama_dosen VARCHAR(45) NOT NULL,  
alamat_dosen VARCHAR(255) NOT NULL  
);
```



```
Select C:\Windows\system32\cmd.exe - mysql -u root -p  
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 |  
| si |  
| test |  
+-----+  
7 rows in set (0.002 sec)  
  
MariaDB [(none)]> create database data_kuliah;  
Query OK, 1 row affected (0.002 sec)  
  
MariaDB [(none)]> use data_kuliah;  
Database changed  
MariaDB [data_kuliah]> CREATE TABLE dosen(  
-> id_dosen INTEGER PRIMARY KEY,  
-> nama_dosen VARCHAR(45) NOT NULL,  
-> alamat_dosen VARCHAR(255) NOT NULL  
-> );  
Query OK, 0 rows affected (0.268 sec)
```

2. Membuat table mata\_kuliah dengan scrip berikut.

```
CREATE TABLE mata_kuliah(  
kode_mk INTEGER PRIMARY KEY,  
ruang_kelas_kode_mk INTEGER NOT NULL,  
nama_mk VARCHAR(255) NOT NULL,  
jumlah_sks INTEGER NOT NULL  
);
```



```
C:\Windows\system32\cmd.exe - mysql -u root -p  
MariaDB [data_kuliah]> CREATE TABLE mata_kuliah(  
-> kode_mk INTEGER PRIMARY KEY,  
-> ruang_kelas_kode_mk INTEGER NOT NULL,  
-> nama_mk VARCHAR(255) NOT NULL,  
-> jumlah_sks INTEGER NOT NULL  
-> );  
Query OK, 0 rows affected (10.729 sec)  
  
MariaDB [data_kuliah]>
```

3. Membuat table mahasiswa dengan script berikut.

```
CREATE TABLE mahasiswa(  
nim_mahasiswa INTEGER PRIMARY KEY,
```

```
id_dosenFK INTEGER REFERENCES dosen(id_dosen),
ON DELETE SET NULL ON UPDATE CASCADE,
nama_mahasiswa VARCHAR(45) NOT NULL,
alamat_mahasiswa VARCHAR(255) NOT NULL
);
```

C:\Windows\system32\cmd.exe - mysql -u root -p

```
MariaDB [data_kuliah]> CREATE TABLE mahasiswa(
-> nim_mahasiswa INTEGER PRIMARY KEY,
-> id_dosenFK INTEGER REFERENCES dosen(id_dosen)
-> ON DELETE SET NULL ON UPDATE CASCADE,
-> nama_mahasiswa VARCHAR(45) NOT NULL,
-> alamat_mahasiswa VARCHAR(255) NOT NULL
-> );
```

Query OK, 0 rows affected (0.267 sec)

MariaDB [data\_kuliah]>

4. Membuat table ruang\_kelas dengan scrip berikut.

```
CREATE TABLE ruang_kelas(
kode_rk INTEGER PRIMARY KEY,
kode_mkFK INTEGER REFERENCES mata_kuliah(kode_mk)
kapasitas INTEGER NOT NULL
);
```

C:\Windows\system32\cmd.exe - mysql -u root -p

```
MariaDB [data_kuliah]> CREATE TABLE ruang_kelas(
-> kode_rk INTEGER PRIMARY KEY,
-> kode_mkFK INTEGER REFERENCES mata_kuliah(kode_mk)
-> ON DELETE CASCADE ON UPDATE CASCADE,
-> kapasitas INTEGER NOT NULL
-> );
```

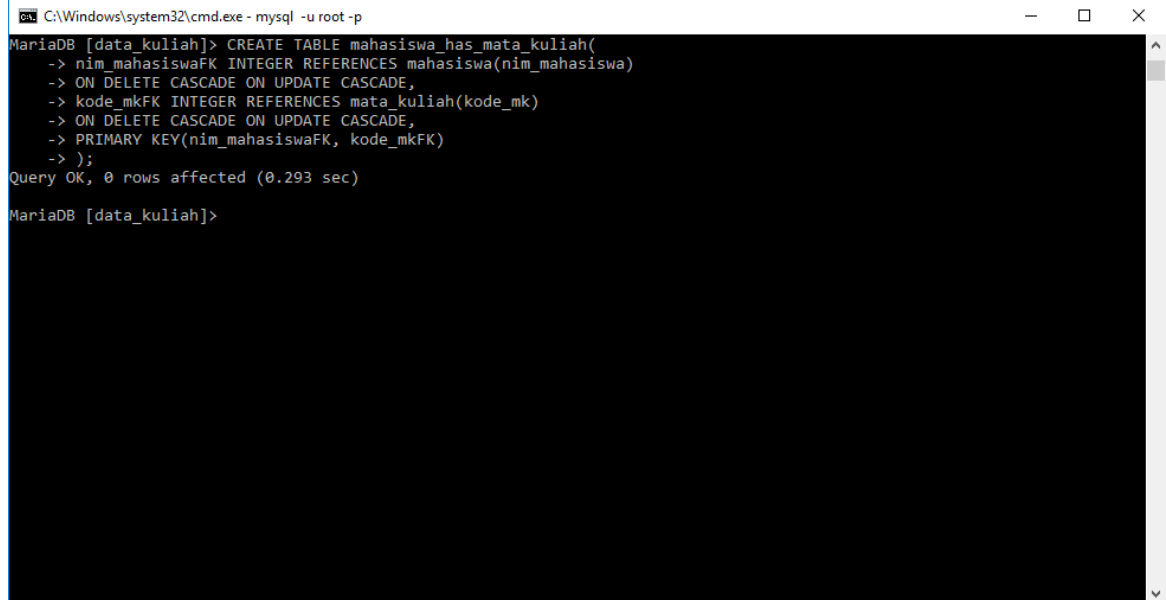
Query OK, 0 rows affected (0.279 sec)

MariaDB [data\_kuliah]>



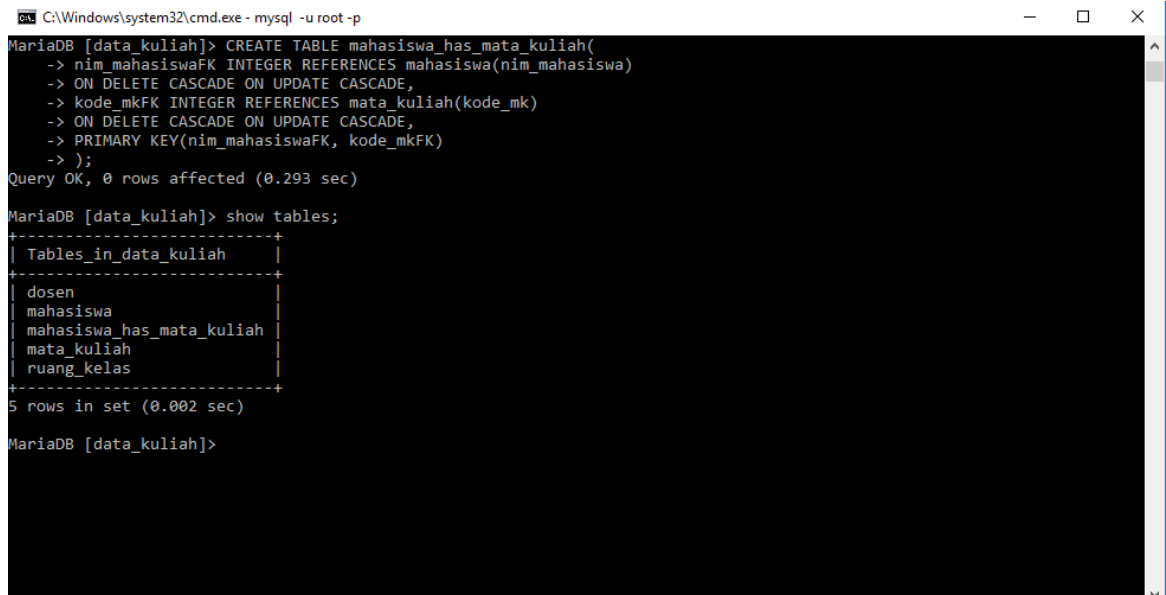
5. Membuat table mahasiswa\_has\_mata\_kuliah dengan script berikut.

```
CREATE TABLE mahasiswa_has_mata_kuliah(  
  nim_mahasiswaFK INTEGER REFERENCES mahasiswa(nim_mahasiswa)  
  ON DELETE CASCADE ON UPDATE CASCADE,  
  kode_mkFK INTEGER REFERENCES mata_kuliah(kode_mk)  
  ON DELETE CASCADE ON UPDATE CASCADE,  
  PRIMARY KEY(nim_mahasiswaFK, kode_mkFK)  
);
```



```
C:\Windows\system32\cmd.exe - mysql -u root -p  
MariaDB [data_kuliah]> CREATE TABLE mahasiswa_has_mata_kuliah(  
  -> nim_mahasiswaFK INTEGER REFERENCES mahasiswa(nim_mahasiswa)  
  -> ON DELETE CASCADE ON UPDATE CASCADE,  
  -> kode_mkFK INTEGER REFERENCES mata_kuliah(kode_mk)  
  -> ON DELETE CASCADE ON UPDATE CASCADE,  
  -> PRIMARY KEY(nim_mahasiswaFK, kode_mkFK)  
  -> );  
Query OK, 0 rows affected (0.293 sec)  
MariaDB [data_kuliah]>
```

6. Mengecek hasil pembuatan database.



```
C:\Windows\system32\cmd.exe - mysql -u root -p  
MariaDB [data_kuliah]> CREATE TABLE mahasiswa_has_mata_kuliah(  
  -> nim_mahasiswaFK INTEGER REFERENCES mahasiswa(nim_mahasiswa)  
  -> ON DELETE CASCADE ON UPDATE CASCADE,  
  -> kode_mkFK INTEGER REFERENCES mata_kuliah(kode_mk)  
  -> ON DELETE CASCADE ON UPDATE CASCADE,  
  -> PRIMARY KEY(nim_mahasiswaFK, kode_mkFK)  
  -> );  
Query OK, 0 rows affected (0.293 sec)  
MariaDB [data_kuliah]> show tables;  
+-----+  
| Tables_in_data_kuliah |  
+-----+  
| dosen                 |  
| mahasiswa             |  
| mahasiswa_has_mata_kuliah |  
| mata_kuliah           |  
| ruang_kelas           |  
+-----+  
5 rows in set (0.002 sec)  
MariaDB [data_kuliah]>
```

## 7. Melihat struktur tiap tabel.

```
C:\Windows\system32\cmd.exe - mysql -u root -p
MariaDB [data_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 | |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.049 sec)

MariaDB [data_kuliah]> describe mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_mk | int(11) | NO | PRI | NULL | |
| ruang_kelas_kode_mk | int(11) | NO | | NULL | |
| nama_mk | varchar(255) | NO | | NULL | |
| jumlah_sks | int(11) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.018 sec)

MariaDB [data_kuliah]> describe mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim_mahasiswa | int(11) | NO | PRI | NULL | |
| id_dosenFK | int(11) | YES | | NULL | |
| nama_mahasiswa | varchar(45) | NO | | NULL | |
| alamat_mahasiswa | varchar(255) | NO | | NULL | |
+-----+-----+-----+-----+-----+-----+
```