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Modul 4
Data Definition Language(DDL)

E. Tugas

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

Langkah – langkah Praktikum

1. Jalankan XAMPP Control Panel
2. Jalankan server Apache dan MySQL
3. Buka Command Prompt dan login sebagai root ke MySQL
4. Buat database baru dengan perintah create database mahasiswa;
5. Hubungkan ke dalam database yang telah dibuat dengan perintah berikut. Sehingga akan muncul pemberitahuan “database changed”. Use mahasiswa;
6. Membuat tabel dosen,mahasiswa,mata kuliah, ruang kuliah dengan script berikut :

```

C:\Windows\system32\cmd.exe - mysql -u root -p
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\PakJ>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 2
Server version: 10.1.38-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 mahasiswa;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use mahasiswa
Database changed
MariaDB [mahasiswa]> create table dosen(
-> nama_dosen varchar(45) not null,
-> nidn_dosen integer primary key,
-> alamat_dosen varchar(225)
-> );
Query OK, 0 rows affected (1.71 sec)

MariaDB [mahasiswa]> create table mahasiswa(
-> nama_mhs varchar(45) not null,
-> nim_mhs varchar(20) primary key,
-> alamat_mhs varchar(225),
-> nidn_dosenfk integer references dosen(nidn_dosen) on delete cascade on up
date cascade
-> );
Query OK, 0 rows affected (0.41 sec)

MariaDB [mahasiswa]> create table mata_kuliah(
-> nama_matkul varchar(45) not null,
-> kode_matkul integer primary key,
-> nidn_dosenfk integer references dosen(nidn_dosen) on delete cascade on up
date cascade
-> );
Query OK, 0 rows affected (0.51 sec)

MariaDB [mahasiswa]> create table ruang_kuliah(
-> kode_ruang varchar(20) primary key,
-> kapasitas_ruang integer,
-> lokasi_ruang varchar(40),
-> kode_matkulfk integer references mata_kuliah(kode_matkul) on delete casca
de on update cascade
-> );
Query OK, 0 rows affected (0.38 sec)

MariaDB [mahasiswa]> create table mahasiswa_has_mata_kuliah(
-> nim_mhsfk varchar(20) references mahasiswa(nim_mhs) on delete cascade on

```

7. Untuk melihat struktur tiap tabel dapat dilakukan dengan perintah describe. Misalkan untuk melihat struktur tabel mahasiswa dapat dilakukan dengan perintah describe mahasiswa;

```
C:\Windows\system32\cmd.exe - mysql -u root -p
MariaDB [mahasiswa]> create table mahasiswa_has_mata_kuliah(
  -> nim_mhsfk varchar(20) references mahasiswa(nim_mhs) on delete cascade on
update cascade,
  -> kode_matkulfk varchar(20) references mata_kuliah(kode_matkul) on delete c
ascade on update cascade,
  -> primary key(nim_mhsfk,kode_matkulfk)
  -> );
Query OK, 0 rows affected (0.38 sec)

MariaDB [mahasiswa]> describe mahasiswa
-> ;
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 2
MariaDB [mahasiswa]> describe mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nama_mhs | varchar(45) | NO |  | NULL |  |
| nim_mhs | varchar(20) | NO | PRI | NULL |  |
| alamat_mhs | varchar(225) | YES |  | NULL |  |
| nidn_dosenfk | int(11) | YES |  | NULL |  |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.41 sec)

MariaDB [mahasiswa]> describe dosen;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nama_dosen | varchar(45) | NO |  | NULL |  |
| nidn_dosen | int(11) | NO | PRI | NULL |  |
| alamat_dosen | varchar(225) | YES |  | NULL |  |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

MariaDB [mahasiswa]> describe mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nama_matkul | varchar(45) | NO |  | NULL |  |
| kode_matkul | int(11) | NO | PRI | NULL |  |
| nidn_dosenfk | int(11) | YES |  | NULL |  |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

MariaDB [mahasiswa]> describe ruang_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_ruang | varchar(20) | NO | PRI | NULL |  |
| kapasitas_ruang | int(11) | YES |  | NULL |  |
| lokasi_ruang | varchar(40) | YES |  | NULL |  |
| kode_matkulfk | int(11) | YES |  | NULL |  |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)

MariaDB [mahasiswa]> describe mahasiswa_has_mata_kuliah;
```

```
C:\Windows\system32\cmd.exe - mysql -u root -p
MariaDB [mahasiswa]> describe mahasiswa_has_mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim_mhsfk | varchar(20) | NO | PRI | NULL |  |
| kode_matkulfk | varchar(20) | NO | PRI | NULL |  |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [mahasiswa]> _
```

```

C:\Windows\system32\cmd.exe - mysql -u root -p
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\PakJ>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 5
Server version: 10.1.38-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 perpustakaan;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> use perpustakaan;
Database changed
MariaDB [perpustakaan]> create table anggota(
  -> nama_anggota varchar(45) not null,
  -> id_anggota integer primary key,
  -> alamat_dosen varchar(225),
  -> kontak_anggota integer not null,
  -> tgllahir_anggota datetime not null default current_timestamp
  -> );
Query OK, 0 rows affected (1.42 sec)

MariaDB [perpustakaan]> create table pegawai(
  -> nama_pegawai varchar(45) not null,
  -> id_pegawai varchar(20) primary key,
  -> alamat_pegawai varchar(225),
  -> kontak_pegawai integer not null,
  -> kode_bukufk varchar(20) references buku(kode_buku) on delete cascade on u
pdate cascade
  -> );
Query OK, 0 rows affected (0.42 sec)

MariaDB [perpustakaan]> create table buku(
  -> jdl_buku varchar(20) not null,
  -> kode_buku varchar(20) primary key,
  -> pnrbt_buku varchar(45) not null,
  -> pngrng_buku varchar(45) not null,
  -> kode_pinjamfk varchar(20) references peminjaman(kode_pinjam) on delete ca
scade on update cascade
  -> );
Query OK, 0 rows affected (0.37 sec)

MariaDB [perpustakaan]> create table peminjaman(
  -> kode_pinjam varchar(20) primary key,
  -> tgl_pinjam datetime not null default current_timestamp,
  -> tgl_kembali datetime not null default current_timestamp,
  -> id_pegawaifk varchar(20) references pegawai(id_pegawai) on delete cascade
on update cascade
  -> );
Query OK, 0 rows affected (0.30 sec)

MariaDB [perpustakaan]> create table pengembalian(

```

```

C:\Windows\system32\cmd.exe - mysql -u root -p
MariaDB [perpustakaan] > create table pengembalian(
  -> kode_kembali varchar(20) primary key,
  -> tgl_kembali datetime not null default current_timestamp,
  -> id_anggotafk integer references anggota(id_anggota) on delete cascade on
update cascade
  -> );
Query OK, 0 rows affected (0.33 sec)

MariaDB [perpustakaan] > create table anggota_has_buku(
  -> id_anggotafk integer references anggota(id_anggota) on delete cascade on
update cascade,
  -> kode_bukufk varchar(20) references buku(kode_buku) on delete cascade on u
pdate cascade,
  -> primary key(id_anggotafk,kode_bukufk)
  -> );
Query OK, 0 rows affected (0.78 sec)

MariaDB [perpustakaan] > describe anggota;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nama_anggota | varchar(45) | NO | PRI | NULL |  |
| id_anggota | int(11) | NO | PRI | NULL |  |
| alamat_dosen | varchar(225) | YES |  | NULL |  |
| kontak_anggota | int(11) | NO |  | NULL |  |
| tgl_lahir_anggota | datetime | NO |  | CURRENT_TIMESTAMP |  |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

MariaDB [perpustakaan] > describe pegawai;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nama_pegawai | varchar(45) | NO | PRI | NULL |  |
| id_pegawai | varchar(20) | NO | PRI | NULL |  |
| alamat_pegawai | varchar(225) | YES |  | NULL |  |
| kontak_pegawai | int(11) | NO |  | NULL |  |
| kode_bukufk | varchar(20) | YES |  | NULL |  |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

MariaDB [perpustakaan] > describe pengembalian;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_kembali | varchar(20) | NO | PRI | NULL |  |
| tgl_kembali | datetime | NO |  | CURRENT_TIMESTAMP |  |
| id_anggotafk | int(11) | YES |  | NULL |  |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

MariaDB [perpustakaan] > describe peminjaman;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| kode_pinjam | varchar(20) | NO | PRI | NULL |  |
| tgl_pinjam | datetime | NO |  | CURRENT_TIMESTAMP |  |
| tgl_kembali | datetime | NO |  | CURRENT_TIMESTAMP |  |
| id_pegawaifk | varchar(20) | YES |  | NULL |  |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)

```

```

C:\Windows\system32\cmd.exe - mysql -u root -p
MariaDB [perpustakaan] > describe buku;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| jdl_buku | varchar(20) | NO | PRI | NULL |  |
| kode_buku | varchar(20) | NO | PRI | NULL |  |
| pnrht_buku | varchar(45) | NO |  | NULL |  |
| pngrng_buku | varchar(45) | NO |  | NULL |  |
| kode_pinjamfk | varchar(20) | YES |  | NULL |  |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

MariaDB [perpustakaan] > describe anggota_has_buku;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_anggotafk | int(11) | NO | PRI | NULL |  |
| kode_bukufk | varchar(20) | NO | PRI | NULL |  |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

MariaDB [perpustakaan] > _

```