

LAPORAN PRAKTIKUM
BASIS DATA
MODUL 4

REYLIAN PREALDREAM ANAREKA
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KELAS D

1. Langkah – Langkah Kegiatan Praktikum

a) Membuat database perbankan

```
Command Prompt - mysql -u root -p
Microsoft Windows [Version 10.0.17763.1098]
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C:\Users\hp>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 8
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)]> create database perbankan;
Query OK, 1 row affected (0.007 sec)
```

b) Membuat tabel nasabah dan tabel cabang_bank

```
Command Prompt - mysql -u root -p
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database perbankan;
Query OK, 1 row affected (0.007 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 (0.037 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 (0.031 sec)
```

c) Membuat tabel rekening dan tabel transaksi

```
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 (0.031 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 (0.035 sec)
```

d) Membuat tabel nasabah_has_rekening

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

  -> 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 (0.035 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 (0.031 sec)

MariaDB [perbankan]> show tables;
+-----+
| Tables_in_perbankan |
+-----+
| cabang_bank          |
| rekening             |
| transaksi             |
| nasabah_has_rekening |
| nasabah              |
+-----+
```

e) Show tables dan describe nasabah

```
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 (0.009 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 (0.018 sec)
```

2. Tugas Praktikum

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

a) Membuat database kuliah

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

MariaDB [(none)]> create database kuliah;
ERROR 1007 (HY000): Can't create database 'kuliah'; database exists
MariaDB [(none)]> use kuliah;
Database changed
MariaDB [kuliah]> create table mahasiswa (
  -> nim INTEGER PRIMARY KEY,
  -> nama VARCHAR(45) NOT NULL,
  -> alamat VARCHAR(255) NOT NULL
  -> );
Query OK, 0 rows affected (0.029 sec)

MariaDB [kuliah]> drop database kuliah
  -> ;
Query OK, 1 row affected (0.074 sec)

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

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

b) Membuat table mahasiswa,dosen,mata_kuliah,ruang_kelas

```
Command Prompt - mysql -u root -p
Database changed
MariaDB [kuliah]> create table mahasiswa (
  -> nim_mhs INTEGER PRIMARY KEY,
  -> nama_mhs VARCHAR(45) NOT NULL,
  -> alamat_mhs VARCHAR(255) NOT NULL
  -> );
Query OK, 0 rows affected (0.033 sec)

MariaDB [kuliah]> create table dosen (
  -> nip_dosen INTEGER PRIMARY KEY,
  -> nama_dosen VARCHAR(45) NOT NULL,
  -> alamat_dosen VARCHAR(255) NOT NULL
  -> );
Query OK, 0 rows affected (0.028 sec)

MariaDB [kuliah]> create table mata_kuliah (
  -> id_mk INTEGER PRIMARY KEY,
  -> nama_mk varchar(25) NOT NULL
  -> );
Query OK, 0 rows affected (0.027 sec)

MariaDB [kuliah]> create table ruang_kelas (
  -> id_ruangan INTEGER PRIMARY KEY,
  -> nama_ruangan VARCHAR(25) NOT NULL
  -> );
Query OK, 0 rows affected (0.027 sec)

MariaDB [kuliah]> create table mahasiswa_has_dosen (
  -> nim_mhsFK INTEGER REFERENCES mahasiswa(nim_mhs)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> nip_dosenFK INTEGER REFERENCES dosen(nip_dosen)
  -> ON DELETE CASCADE ON UPDATE CASCADE
  -> );
Query OK, 0 rows affected (0.038 sec)

MariaDB [kuliah]> create table mahasiswa_has_mata_kuliah (
  -> nim_mhsFK INTEGER REFERENCES mahasiswa(nim_mhs)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> id_mkFK INTEGER REFERENCES mata_kuliah(id_mk)
  -> ON DELETE CASCADE ON UPDATE CASCADE
  -> ,
  -> PRIMARY KEY(nim_mhsFK,id_mkFK)
```

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

MariaDB [kuliah]> drop table mahasiswa_has_dosen;
Query OK, 0 rows affected (0.020 sec)

MariaDB [kuliah]> create table mahasiswa_has_dosen (
  -> nim_mhsFK INTEGER REFERENCES mahasiswa(nim_mhs)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> nip_dosenFK INTEGER REFERENCES dosen(nip_dosen)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(nim_mhsFK,nip_dosenFK)
  -> );
Query OK, 0 rows affected (0.028 sec)

MariaDB [kuliah]> create table dosen_has_mata_kuliah (
  -> nip_dosenFK INTEGER REFERENCES dosen(nip_dosen)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> id_mkFK INTEGER REFERENCES mata_kuliah(id_mk)
  -> ON DELETE CASCADE ON UPDATE CASCADE,
  -> PRIMARY KEY(nip_dosenFK,id_mkFK)
  -> );
Query OK, 0 rows affected (0.028 sec)
```

c) Show semua table yang ada pada database kuliah

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

MariaDB [kuliah]> show tables;
+-----+
| Tables_in_kuliah |
+-----+
| dosen              |
| dosen_has_mata_kuliah |
| mahasiswa          |
| mahasiswa_has_dosen |
| mahasiswa_has_mata_kuliah |
| mata_kuliah        |
| ruang_kelas        |
+-----+
7 rows in set (0.001 sec)

MariaDB [kuliah]> describe mahasiswa;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nim_mhs    | int(11)   | NO   | PRI | NULL    |       |
| nama_mhs   | varchar(45) | NO   |     | NULL    |       |
| alamat_mhs | varchar(255) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
```

```

Command Prompt - mysql -u root -p
3 rows in set (0.026 sec)

MariaDB [kuliaah]> describe dosen;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nip_dosen      | int(11)       | NO   | PRI | NULL    |       |
| nama_dosen     | varchar(45)   | NO   |     | NULL    |       |
| alamat_dosen   | varchar(255)  | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.018 sec)

MariaDB [kuliaah]> describe mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_mk          | int(11)       | NO   | PRI | NULL    |       |
| nama_mk        | varchar(25)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.018 sec)

```

```

C:\Program Files\MySQL\MySQL Server 8.0\bin> Command Prompt - mysql -u root -p
ERROR 1146 (42S02): Table 'kuliah.ruang_kuliah' doesn't exist
MariaDB [kuliah]> describe ruang_kelas;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id_ruangan     | int(11)       | NO   | PRI | NULL    |       |
| nama_ruangan   | varchar(25)   | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.017 sec)

MariaDB [kuliah]> describe dosen_has_mata_kuliah;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| nip_dosenFK    | int(11)       | NO   | PRI | NULL    |       |
| id_mkFK        | int(11)       | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.015 sec)

MariaDB [kuliah]> describe mahasiswa_has_dosen;
+-----+-----+-----+-----+-----+-----+

```

Command Prompt - mysql -u root -p

MariaDB [kuliah]> describe mahasiswa_has_dosen;

Field	Type	Null	Key	Default	Extra
nim_mhsFK	int(11)	NO	PRI	NULL	
nip_dosenFK	int(11)	NO	PRI	NULL	

2 rows in set (0.012 sec)

MariaDB [kuliah]> describe mahasiswa_has_mata_kuliah;

Field	Type	Null	Key	Default	Extra
nim_mhsFK	int(11)	NO	PRI	NULL	
id_mkFK	int(11)	NO	PRI	NULL	

2 rows in set (0.016 sec)

MariaDB [kuliah]> _