TUGAS PRAKTIKUM BASIS DATA

Jobsheet 10: Dasar MySQL

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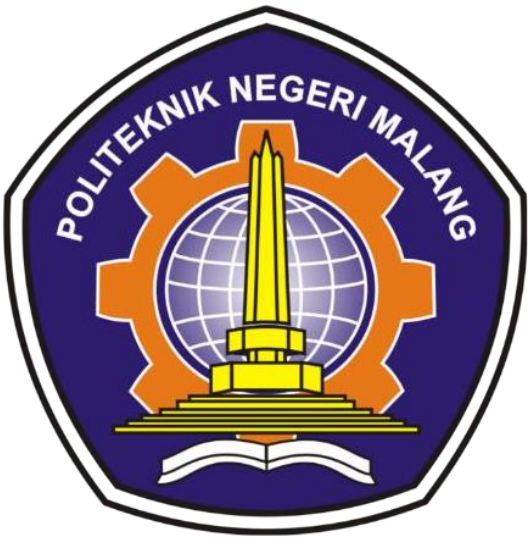

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JURUSAN TEKNOLOGI

INFORMASI POLITEKNIK

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PRAKTIKUM

1. Buka prompt jalankan perintah berikut ini :

   C:\>Program Files\xampp\mysql\bin>mysql –u root –p (enter)

```
Setting environment for using XAMPP for Windows.
ASUS PC@DESKTOP-VDHPPPR c:\xampp
# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 8
Server version: 10.4.32-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)]>
```

2. Buatlah sebuah database dengan nama db_polinema

```
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

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

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| data_pegawai       |
| data_pegawaii      |
| db_polinema        |
| information_schema |
| mysql              |
| pegawai            |
| performance_schema |
| phpmyadmin         |
| test               |
+--------------------+
9 rows in set (0.032 sec)

MariaDB [(none)]>
```

   Sebelum menlanjutkan langkah No. 3, jalankan perintah

   “use db_polinema”

```
MariaDB [(none)]> use db_polinema
Database changed
```

3. a. Tabel prodi

Field	Type Data
kode_prodi	VARCHAR (6) PRIMARY KEY
nama_prodi	VARCHAR (30)

```
MariaDB [db_polinema]> create table prodi (kode_prodi char(6) primary key, nama_prodi char(30));
Query OK, 0 rows affected (0.011 sec)

MariaDB [db_polinema]>
```

Buatlah beberapa tabel dalam database tersebut sesuai dengan

kriteria berikut :

b. Tabel *mahasiswa*

Field	Type Data
nim	INT (8) PRIMARY KEY
nama_mhs	VARCHAR (50)
jenis_kelamin	ENUM (‘L’,’P’) DEFAULT ‘L’
alamat	VARCHAR (50)
kota	VARCHAR (20) DEFAULT ‘MALANG’
asal_sma	VARCHAR (30)
no_hp	VARCHAR (12)
umur	INT
kode_prodi	VARCHAR (6) *FOREIGN KEY* fk0 (kode_prodi) REFERENSCES prodi (kode_prodi)

```
MariaDB [db_polinema]> create table mahasiswa (nim int(8) primary key, nama_mhs varchar(50), jenis_kel
amin enum('L','P') default 'L', alamat varchar(50), kota varchar(20) default 'Malang', asal_sma varcha
r(30), no_hp varchar(12), umur int, kode_prodi varchar(6), foreign key fk0 (kode_prodi) references pro
di(kode_prodi));
Query OK, 0 rows affected (0.030 sec)

MariaDB [db_polinema]>
```

c. Tabel *mata_kuliah*

Field	Type Data
mk_id	VARCHAR (10) PRIMARY KEY
nama_mk	VARCHAR (50)
jumlah_jam	FLOAT (4,2)
sks	INTEGER

```
MariaDB [db_polinema]> create table mata_kuliah (mk_id char(10) primary key, nama_mk char(50), jumlah_
jam float(4,2), sks int);
Query OK, 0 rows affected (0.010 sec)
```

d. Tabel *Ruang*

Field	**Type Data**
ruang_id	VARCHAR (3) PRIMARY KEY
nama_ruang	VARCHAR (20)
Kapasitas	INTEGER

```
MariaDB [db_polinema]> create table ruang (ruang_id char(3) primary key, nama_ruang char (20), kapasit
as int);
Query OK, 0 rows affected (0.010 sec)
```

e. Tabel *dosen*

Field	**Type Data**
nidn	INTEGER (20) PRIMARY KEY
nama_dosen	VARCHAR (50)
status	ENUM (‘PNS’,’KONTRAK’) DEFAULT ‘PNS’
jenis_kelamin	ENUM (‘L’,’P’) DEFAULT ‘L’
no_hp	VARCHAR (15)

```
MariaDB [db_polinema]> create table dosen (nidn int(20) primary key, nama_dosen char(50), status enum
('PNS','KONTRAK') default 'PNS', jenis_kelamin enum ('L','P') default 'L', no_hp varchar(15));
Query OK, 0 rows affected (0.015 sec)
```

SOAL!

1. Tambahkan sebuah kolom ***agama (varchar(10))*** pada tabel mahasiswa sebagai kolom terakhir
   Catat : Buat Screenshot dari perintah yang anda ketikkan

```
MariaDB [db_polinema]> alter table mahasiswa ADD COLUMN agama varchar(10);
Query OK, 0 rows affected (0.009 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
MariaDB [db_polinema]> show columns from mahasiswa;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| nim          | int(8)       | NO   | PRI | NULL    |       |
| nama_mhs     | varchar(50)  | YES  |     | NULL    |       |
| jenis_kelamin| enum('L','P')| YES  |     | L       |       |
| alamat       | varchar(50)  | YES  |     | NULL    |       |
| kota         | varchar(20)  | YES  |     | Malang  |       |
| asal_sma     | varchar(30)  | YES  |     | NULL    |       |
| no_hp        | varchar(12)  | YES  |     | NULL    |       |
| umur         | int(11)      | YES  |     | NULL    |       |
| kode_prodi   | varchar(6)   | YES  | MUL | NULL    |       |
| agama        | varchar(10)  | YES  |     | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
10 rows in set (0.013 sec)
```

2. Tambahkan kolom ***alamat(varchar(50))*** pada tabel dosen sebagai kolom terakhir
   Catat : Buat Screenshot dari perintah yang anda ketikkan

```
MariaDB [db_polinema]> alter table dosen ADD COLUMN alamat varchar(50);
Query OK, 0 rows affected (0.009 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [db_polinema]> show columns from dosen;
+--------------+----------------------+------+-----+---------+-------+
| Field        | Type                 | Null | Key | Default | Extra |
+--------------+----------------------+------+-----+---------+-------+
| nidn         | int(20)              | NO   | PRI | NULL    |       |
| nama_dosen   | char(50)             | YES  |     | NULL    |       |
| status       | enum('PNS','KONTRAK')| YES  |     | PNS     |       |
| jenis_kelamin| enum('L','P')        | YES  |     | L       |       |
| no_hp        | varchar(15)          | YES  |     | NULL    |       |
| alamat       | varchar(50)          | YES  |     | NULL    |       |
+--------------+----------------------+------+-----+---------+-------+
6 rows in set (0.012 sec)
```

3. Lakukan insert data ke dalam tabel-tabel yang ada pada pada database ***db_polinema*** sesuai dengan *field*, tipe data dan panjang datanya
   Catat : Buat Screenshot dari perintah yang anda ketikkan

```
MariaDB [db_polinema]> insert into prodi (kode_prodi, nama_prodi)
    -> values
    -> ('111000','AKUNTANSI'),
    -> ('112000', 'INFORMATIKA'),
    -> ('113000', 'KEDOKTERAN'),
    -> ('114000', 'ARSITEKTUR'),
    -> ('115000', 'MANAJEMEN');
Query OK, 5 rows affected (0.006 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

```
MariaDB [db_polinema]> insert into mahasiswa
    -> (nim, nama_mhs, jenis_kelamin, alamat, kota, asal_sma, no_hp, umur, kode_prodi, agama)
    -> values
    -> (23417601, 'Agus', 'L', 'Jl. Mawar', 'Malang', 'SMAN 1 Malang', '085638219742', 19, '111000', '
Islam'),
    -> (23417602, 'Fitri', 'P', 'Jl. Kembang Turi', 'Malang', 'SMAN 2 Malang', '085638219842', 20, '11
2000', 'Hindu'),
    -> (23417603, 'Surya', 'L', 'Jl. Kembang Turi', 'Malang', 'SMAN 3 Malang', '085638219622', 19, '11
3000', 'Katholik'),
    -> (23417604, 'Siti', 'P', 'Jl. Mangga', 'Malang', 'SMAN 1 Malang', '085631219622', 19, '114000',
'Islam');
Query OK, 4 rows affected (0.006 sec)
Records: 4  Duplicates: 0  Warnings: 0

MariaDB [db_polinema]> select* from mahasiswa;
+----------+----------+--------------+-----------------+--------+--------------+-------------+------+------------+----------+
| nim      | nama_mhs | jenis_kelamin | alamat          | kota   | asal_sma     | no_hp       | umur | kode_prodi | agama    |
+----------+----------+--------------+-----------------+--------+--------------+-------------+------+------------+----------+
| 23417601 | Agus     | L            | Jl. Mawar       | Malang | SMAN 1 Malang | 085638219742 |   19 | 111000     | Islam    |
| 23417602 | Fitri    | P            | Jl. Kembang Turi | Malang | SMAN 2 Malang | 085638219842 |   20 | 112000     | Hindu    |
| 23417603 | Surya    | L            | Jl. Kembang Turi | Malang | SMAN 3 Malang | 085638219622 |   19 | 113000     | Katholik |
| 23417604 | Siti     | P            | Jl. Mangga      | Malang | SMAN 1 Malang | 085631219622 |   19 | 114000     | Islam    |
+----------+----------+--------------+-----------------+--------+--------------+-------------+------+------------+----------+
4 rows in set (0.000 sec)

MariaDB [db_polinema]>
```

```
MariaDB [db_polinema]> insert into mata_kuliah
    -> (mk_id, nama_mk, jumlah_jam, sks)
    -> values
    -> ('MK01', 'Basis Data', 5 , 3);
Query OK, 1 row affected (0.005 sec)

MariaDB [db_polinema]> select* from mata_kuliah;
+-------+------------+------------+------+
| mk_id | nama_mk    | jumlah_jam | sks  |
+-------+------------+------------+------+
| MK01  | Basis Data |       5.00 |    3 |
+-------+------------+------------+------+
1 row in set (0.000 sec)

MariaDB [db_polinema]> insert into mata_kuliah
    -> (mk_id, nama_mk, jumlah_jam, sks)
    -> values
    -> ('MK02', 'Algoritma Struktur Data', 6 , 4),
    -> ('MK03', 'Matematika Lanjut', 5 , 3),
    -> ('MK04', 'Sistem Operasi', 6 , 4),
    -> ('MK05', 'Pengenalan Sistem Informasi', 5 , 3);
Query OK, 4 rows affected (0.004 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

```
MariaDB [db_polinema]> insert into ruang
    -> (ruang_id, nama_ruang, kapasitas)
    -> values
    -> ('R01', 'LKJ 3', 40),
    -> ('R02', 'LKJ 1', 30),
    -> ('R03', 'LKJ 2', 35),
    -> ('R04', 'LPR 2', 25),
    -> ('R05', 'LPR 1', 35);
Query OK, 5 rows affected (0.013 sec)
Records: 5  Duplicates: 0  Warnings: 0

MariaDB [db_polinema]>
```

```
MariaDB [db_polinema]> insert into dosen
    -> (nidn, nama_dosen, status, jenis_kelamin, no_hp, alamat)
    -> values
    -> (100101, 'Bayu' , 'PNS' , 'L', '085850630010', 'JL.Kembang Turi'),
    -> (100102, 'Putri' , 'KONTRAK' , 'P', '085850630020', 'JL.Kemarau'),
    -> (100103, 'Wahyu' , 'PNS' , 'L', '085850630030', 'JL.Mawar'),
    -> (100104, 'Silma' , 'PNS' , 'P', '085850630040', 'JL.Mawar'),
    -> (100105, 'Joko' , 'KONTRAK' , 'L', '085850630050', 'JL.Matahari');
Query OK, 5 rows affected (0.004 sec)
Records: 5  Duplicates: 0  Warnings: 0

MariaDB [db_polinema]>
```

4. Tampilkan semua tabel yang ada didalam database db_polinema
   Catat : Buat Screenshot dari perintah yang anda ketikkan

```
MariaDB [db_polinema]> show tables;
+-----------------------+
| Tables_in_db_polinema |
+-----------------------+
| dosen                 |
| mahasiswa             |
| mata_kuliah           |
| prodi                 |
| ruang                 |
+-----------------------+
5 rows in set (0.001 sec)

MariaDB [db_polinema]>
```

5. Tampilkan semua isi tabel yang ada didalam tabel mahasiswa
   Catat : Buat Screenshot dari perintah yang anda ketikkan

```
MariaDB [db_polinema]> select* from mahasiswa;
+----------+----------+---------------+------------------+--------+---------------+--------------+------+------------+----------+
| nim      | nama_mhs | jenis_kelamin | alamat           | kota   | asal_sma      | no_hp        | umur | kode_prodi | agama    |
+----------+----------+---------------+------------------+--------+---------------+--------------+------+------------+----------+
| 23417601 | Agus     | L             | Jl. Mawar        | Malang | SMAN 1 Malang | 085638219742 |   19 | 111000     | Islam    |
| 23417602 | Fitri    | P             | Jl. Kembang Turi | Malang | SMAN 2 Malang | 085638219842 |   20 | 112000     | Hindu    |
| 23417603 | Surya    | L             | Jl. Kembang Turi | Malang | SMAN 3 Malang | 085638219622 |   19 | 113000     | Katholik |
| 23417604 | Siti     | P             | Jl. Mangga       | Malang | SMAN 1 Malang | 085631219622 |   19 | 114000     | Islam    |
+----------+----------+---------------+------------------+--------+---------------+--------------+------+------------+----------+
4 rows in set (0.000 sec)

MariaDB [db_polinema]>
```

6. Tampilkan struktur(metadata) tabel mahasiswa

```
MariaDB [db_polinema]> desc mahasiswa;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| nim          | int(8)       | NO   | PRI | NULL    |       |
| nama_mhs     | varchar(50)  | YES  |     | NULL    |       |
| jenis_kelamin| enum('L','P')| YES  |     | L       |       |
| alamat       | varchar(50)  | YES  |     | NULL    |       |
| kota         | varchar(20)  | YES  |     | Malang  |       |
| asal_sma     | varchar(30)  | YES  |     | NULL    |       |
| no_hp        | varchar(12)  | YES  |     | NULL    |       |
| umur         | int(11)      | YES  |     | NULL    |       |
| kode_prodi   | varchar(6)   | YES  | MUL | NULL    |       |
| agama        | varchar(10)  | YES  |     | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
10 rows in set (0.013 sec)

MariaDB [db_polinema]>
```

7. hilangkan kolom asal_sma yang terdapat didalam tabel mahasiswa
   Catat : Buat Screenshot dari perintah yang anda ketikkan

```
MariaDB [db_polinema]> alter table mahasiswa drop column asal_sma;
Query OK, 0 rows affected (0.012 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [db_polinema]> desc mahasiswa;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| nim          | int(8)       | NO   | PRI | NULL    |       |
| nama_mhs     | varchar(50)  | YES  |     | NULL    |       |
| jenis_kelamin| enum('L','P')| YES  |     | L       |       |
| alamat       | varchar(50)  | YES  |     | NULL    |       |
| kota         | varchar(20)  | YES  |     | Malang  |       |
| no_hp        | varchar(12)  | YES  |     | NULL    |       |
| umur         | int(11)      | YES  |     | NULL    |       |
| kode_prodi   | varchar(6)   | YES  | MUL | NULL    |       |
| agama        | varchar(10)  | YES  |     | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
9 rows in set (0.011 sec)
```

TUGAS

1. Buatlah basis data Akademik dengan data sebagai berikut :

No_Mhs	Nama_mhs	Jurusan	Kd_MK	Nama_mk	Kd_Dosen	Nm_Dosen	nilai
1921001	Aminah	MI	MI350	Basis Data	B104	Ati	85
1921001	Budiman	MI	MI465	Pemrograman	B105	Dita	87
1921002	Carina	MI	MI465	Pemrograman	B105	Dita	85
1921003	Della	TI	TI201	Mobile	C102	Leo	78
1921004	Firda	TI	TI201	Mobile	C102	Leo	80

a. deskripsikan struktur data dari table-tabel berikut serta isikan datanya:
Tabel Mahasiswa {No_Mhs, Nama_mhs}
Tabel Mata_Kuliah {Kd_MK, Nama_MK}
Tabel nilai {No_Mhs, Kode_MK}
tambahkan kolom Jurusan pada tabel Mahasiswa di kolom terakhir
b. tambahkan kolom Kode Dosen pada tabel Mata_Kuliah
c. tambahkan kolom nilai pada tabel nilai serta berikanlah kunci *foreign key*
d. tambahkan Tabel Dosen dengan atributnya Kd_Dosen dan Nama Dosen
e. tampilkan semua data yang ada pada tiap tabel

2. Buatlah basis data Pegawai yang terdiri dari tabel sebagai berikut :

Noproyek	NamaProyek	Nopegawai	NamaPegawai	Golongan	BesarGaji
NP001	BRR	Peg01	Anton	A	1.000.000
NP001	BRR	Peg02	Paula	B	900.000
NP001	BRR	Peg06	Koko	C	750.000
NP002	PEMDA	Peg01	Anton	A	1.000.000
NP002	PEMDA	Peg12	Sita	B	900.000
NP002	PEMDA	Peg14	Yusni	B	900.000
NP003	CBR	Peg02	Paula	B	900.000
NP003	CBR	Peg03	Daniar	C	750.000
NP003	CBR	Peg04	Lubis	C	750.000
NP004	ASK	Peg07	Keni	B	900.000
NP004	ASK	Peg08	Sofi	B	900.000
NP004	ASK	Peg06	Yuni	C	750.000
NP005	OB	Peg15	Udin	D	500.000
NP005	OB	Peg16	Didit	D	500.000
NP005	OB	Peg17	Dani	D	500.000

a. Deskripsikan struktur data dari table-tabel berikut serta isikan datanya:
Table Pegawai {Nopegawai, NamaPegawai}
Tabel Golongan {Golongan}
Tabel Proyek {Noproyek]
Tabel Proyekpegawai {Noproyek}
b. Tambahkan kolom Golongan pada tabel Pegawai di kolom terakhir

c. Tambahkan kolom BesarGaji pada tabel Golongan di kolom terakhir
d. Tambahkan kolom NamaProyek pada table Proyek
e. Tambahkan kolom NoPegawai pada table Proyekpegawai serta berikanlah kunci *foreign key*
f. Tampilkan semua data yang ada pada tiap tabel

Jawaban!

1. A. deskripsikan struktur data dari table-tabel berikut serta isikan datanya:
   Tabel Mahasiswa {No_Mhs, Nama_mhs}

Berikut untuk struktur meta datanya:

```
MariaDB [akademik]> desc mahasiswa;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| no_mhs   | int(7)      | NO   | PRI | NULL    |       |
| nama_mhs | varchar(12) | NO   |     | NULL    |       |
| jurusan  | varchar(20) | NO   |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.012 sec)

MariaDB [akademik]>
```

   Tabel Mata_Kuliah {Kd_MK, Nama_MK}

Berikut untuk struktur meta datanya:

```
MariaDB [akademik]> desc mata_kuliah;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| kd_mk   | varchar(5)  | NO   | PRI | NULL    |       |
| nama_mk | varchar(15) | NO   |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
2 rows in set (0.012 sec)

MariaDB [akademik]>
```

   Tabel nilai {No_Mhs, Kode_MK}

Berikut untuk struktur meta datanya:

```
MariaDB [akademik]> desc nilai;
+--------+-----------+------+-----+---------+-------+
| Field  | Type      | Null | Key | Default | Extra |
+--------+-----------+------+-----+---------+-------+
| no_mhs | int(7)    | NO   | MUL | NULL    |       |
| kd_mk  | varchar(5)| NO   | MUL | NULL    |       |
+--------+-----------+------+-----+---------+-------+
2 rows in set (0.012 sec)
```

tambahkan kolom Jurusan pada tabel Mahasiswa di kolom terakhir

```
MariaDB [akademik]> alter table mahasiswa add column jurusan varchar(20);
Query OK, 0 rows affected (0.012 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
MariaDB [akademik]> desc mahasiswa;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| no_mhs   | int(7)      | NO   | PRI | NULL    |       |
| nama_mhs | varchar(12) | YES  |     | NULL    |       |
| jurusan  | varchar(20) | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
3 rows in set (0.012 sec)
```

B. Tambahkan kolom Kode Dosen pada tabel Mata_Kuliah

```
MariaDB [akademik]> alter table mata_kuliah add kd_dosen char(5);
Query OK, 0 rows affected (0.009 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

C. Tambahkan kolom nilai pada tabel nilai serta berikanlah kunci *foreign key*

```
MariaDB [akademik]> create table nilai (
    -> no_mhs varchar(8),
    -> kd_mk varchar(5),
    -> nilai varchar(3),
    ->  foreign key (no_mhs) references mahasiswa(no_mhs),
    -> foreign key (kd_mk) references mata_kuliah(kd_mk),
    -> foreign key (nilai) references detail_nilai(nilai_angka));
Query OK, 0 rows affected (0.028 sec)
```

```
MariaDB [akademik]> create table detail_nilai (
    -> nilai_angka char(3) not null primary key,
    -> nilai_huruf char(1) not null);
Query OK, 0 rows affected (0.010 sec)
```

D. Tambahkan Tabel Dosen dengan atributnya Kd_Dosen dan Nama Dosen

```
MariaDB [akademik]> create table dosen (kd_dosen char(4) not null primary key, nama_dosen varchar(20)
not null);
Query OK, 0 rows affected (0.010 sec)
```

```
MariaDB [akademik]> desc dosen;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| kd_dosen   | char(4)     | NO   | PRI | NULL    |       |
| nama_dosen | varchar(20) | NO   |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
2 rows in set (0.013 sec)
```

E. Tampilkan semua data yang ada pada tiap table:

Mahasiswa:

```
MariaDB [akademik]> select* from mahasiswa;
+---------+----------+---------+
| no_mhs  | nama_mhs | jurusan |
+---------+----------+---------+
| 1921001 | Aminah   | MI      |
| 1921002 | Budiman  | MI      |
| 1921003 | Carina   | MI      |
| 1921004 | Della    | TI      |
| 1921005 | Firda    | TI      |
+---------+----------+---------+
5 rows in set (0.000 sec)

MariaDB [akademik]>
```

Dosen:

```
MariaDB [akademik]> select* from dosen;
+----------+------------+
| kd_dosen | nama_dosen |
+----------+------------+
| B104     | Ati        |
| B105     | Dita       |
| C102     | Leo        |
+----------+------------+
3 rows in set (0.000 sec)
```

Mata Kuliah:

```
MariaDB [akademik]> select* from mata_kuliah;
+-------+------------+----------+
| kd_mk | nama_mk    | kd_dosen |
+-------+------------+----------+
| MI350 | Basis Data | B104     |
| MI465 | Pemrograman| B105     |
| TI201 | Mobile     | C102     |
+-------+------------+----------+
3 rows in set (0.000 sec)
```

Nilai:

```
MariaDB [akademik]> select* from nilai;
+---------+-------+-------+
| no_mhs  | kd_mk | nilai |
+---------+-------+-------+
| 1921001 | MI350 | 85    |
| 1921002 | MI465 | 87    |
| 1921003 | MI465 | 85    |
| 1921004 | TI201 | 78    |
| 1921005 | TI201 | 80    |
+---------+-------+-------+
5 rows in set (0.000 sec)

MariaDB [akademik]>
```

Detail Nilai:

```
MariaDB [akademik]> select* from detail_nilai;
+-------------+-------------+
| nilai_angka | nilai_huruf |
+-------------+-------------+
| 78          | B           |
| 80          | A           |
| 85          | A           |
| 87          | A           |
+-------------+-------------+
4 rows in set (0.000 sec)

MariaDB [akademik]>
```

2. a. Deskripsikan struktur data dari table-tabel berikut serta isikan datanya:

Table Pegawai {Nopegawai, NamaPegawai}

```
MariaDB [pegawaii]> desc pegawai;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| no_pegawai   | char(5)     | NO   | PRI | NULL    |       |
| nama_pegawai | varchar(15) | NO   |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
2 rows in set (0.013 sec)

MariaDB [pegawaii]>
```

Tabel Golongan {Golongan}

```
MariaDB [pegawaii]> create table golongan (golongan char(1) primary key not null);
Query OK, 0 rows affected (0.011 sec)

MariaDB [pegawaii]> desc golongan
    -> ;
+----------+---------+------+-----+---------+-------+
| Field    | Type    | Null | Key | Default | Extra |
+----------+---------+------+-----+---------+-------+
| golongan | char(1) | NO   | PRI | NULL    |       |
+----------+---------+------+-----+---------+-------+
1 row in set (0.013 sec)

MariaDB [pegawaii]>
```

Tabel Proyek {Noproyek]

```
MariaDB [pegawaii]> create table proyek(no_proyek char(5) primary key not null);
Query OK, 0 rows affected (0.011 sec)

MariaDB [pegawaii]> desc proyek;
+-----------+---------+------+-----+---------+-------+
| Field     | Type    | Null | Key | Default | Extra |
+-----------+---------+------+-----+---------+-------+
| no_proyek | char(5) | NO   | PRI | NULL    |       |
+-----------+---------+------+-----+---------+-------+
1 row in set (0.013 sec)
```

Tabel Proyekpegawai {Noproyek}

```
MariaDB [pegawaii]> desc proyek_pegawai;
+-----------+---------+------+-----+---------+-------+
| Field     | Type    | Null | Key | Default | Extra |
+-----------+---------+------+-----+---------+-------+
| no_proyek | char(5) | YES  | MUL | NULL    |       |
+-----------+---------+------+-----+---------+-------+
1 row in set (0.012 sec)

MariaDB [pegawaii]>
```

b. Tambahkan kolom Golongan pada tabel Pegawai di kolom terakhir

```
MariaDB [pegawaii]> desc pegawai;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| no_pegawai   | char(5)     | NO   | PRI | NULL    |       |
| nama_pegawai | varchar(15) | NO   |     | NULL    |       |
| golongan     | char(1)     | NO   | MUL | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
3 rows in set (0.013 sec)

MariaDB [pegawaii]>
```

c. Tambahkan kolom BesarGaji pada tabel Golongan di kolom terakhir

```
MariaDB [pegawaii]> alter table golongan add column besar_gaji varchar(20) not null;
Query OK, 0 rows affected (0.008 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
MariaDB [pegawaii]> desc golongan;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| golongan   | char(1)     | NO   | PRI | NULL    |       |
| besar_gaji | varchar(20) | NO   |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
2 rows in set (0.052 sec)

MariaDB [pegawaii]>
```

d. Tambahkan kolom NamaProyek pada table Proyek

```
MariaDB [pegawaii]> alter table proyek add column NamaProyek varchar(10) not null;
Query OK, 0 rows affected (0.009 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [pegawaii]> desc proyek;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| no_proyek  | char(5)     | NO   | PRI | NULL    |       |
| NamaProyek | varchar(10) | NO   |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
2 rows in set (0.012 sec)

MariaDB [pegawaii]>
```

e. Tambahkan kolom NoPegawai pada table Proyekpegawai serta berikanlah kunci foreign key

```
MariaDB [pegawaii]> alter table proyek add column NamaProyek varchar(10) not null;
Query OK, 0 rows affected (0.009 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [pegawaii]> desc proyek;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| no_proyek  | char(5)     | NO   | PRI | NULL    |       |
| NamaProyek | varchar(10) | NO   |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
2 rows in set (0.012 sec)

MariaDB [pegawaii]> alter table proyek_pegawai
    -> add column no_pegawai char(5) not null;
Query OK, 0 rows affected (0.008 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [pegawaii]> alter table proyek_pegawai
    -> add constraint foreign key (no_pegawai) references pegawai(no_pegawai);
Query OK, 0 rows affected (0.048 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [pegawaii]> desc proyek_pegawai;
+------------+---------+------+-----+---------+-------+
| Field      | Type    | Null | Key | Default | Extra |
+------------+---------+------+-----+---------+-------+
| no_proyek  | char(5) | YES  | MUL | NULL    |       |
| no_pegawai | char(5) | NO   | MUL | NULL    |       |
+------------+---------+------+-----+---------+-------+
2 rows in set (0.012 sec)

MariaDB [pegawaii]>
```

f. Tampilkan semua data yang ada pada tiap table

Tabel Pegawai

```
MariaDB [pegawaii]> select* from pegawai;
+------------+--------------+----------+
| no_pegawai | nama_pegawai | golongan |
+------------+--------------+----------+
| Peg01      | Anton        | A        |
| Peg02      | Paula        | B        |
| Peg03      | Daniar       | C        |
| Peg04      | Lubis        | C        |
| Peg06      | Koko         | C        |
| Peg07      | Keni         | B        |
| Peg08      | Sofi         | B        |
| Peg12      | Sita         | B        |
| Peg14      | Yusni        | B        |
| Peg15      | Udin         | D        |
| Peg16      | Didit        | D        |
| Peg17      | Dani         | D        |
+------------+--------------+----------+
12 rows in set (0.000 sec)

MariaDB [pegawaii]>
```

Tabel Golongan:

```
MariaDB [pegawaii]> select* from golongan;
+----------+------------+
| golongan | besar_gaji |
+----------+------------+
| A        | 1.000.000  |
| B        | 900.000    |
| C        | 750.000    |
| D        | 500.000    |
+----------+------------+
4 rows in set (0.000 sec)

MariaDB [pegawaii]>
```

Tabel Proyek:

```
MariaDB [pegawaii]> select* from proyek;
+-----------+------------+
| no_proyek | NamaProyek |
+-----------+------------+
| NP001     | BRR        |
| NP002     | PEMDA      |
| NP003     | CBR        |
| NP004     | ASK        |
| NP005     | OB         |
+-----------+------------+
5 rows in set (0.000 sec)

MariaDB [pegawaii]>
```

Tabel Proyek_Pegawai:

```
MariaDB [pegawaii]> select* from proyek_pegawai;
+-----------+------------+
| no_proyek | no_pegawai |
+-----------+------------+
| NP001     | Peg01      |
| NP001     | Peg02      |
| NP001     | Peg06      |
| NP002     | Peg01      |
| NP002     | Peg12      |
| NP002     | Peg14      |
| NP003     | Peg02      |
| NP003     | Peg03      |
| NP003     | Peg04      |
| NP004     | Peg07      |
| NP004     | Peg08      |
| NP004     | Peg06      |
| NP005     | Peg15      |
| NP005     | Peg16      |
| NP005     | Peg17      |
+-----------+------------+
15 rows in set (0.000 sec)

MariaDB [pegawaii]>
```