LAPORAN PRAKTIKUM BASIS DATA

XAMPP

Oleh:

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A. Praktikum

No	Praktikum
1	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: 10.1.37-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	MariaDB [(none)]> create database db_polinema
	    -> ;
	Query OK, 1 row affected (0.01 sec)
	
	MariaDB [(none)]> show databases
	    -> ;
	+------------------------+
	| Database |
	+------------------------+
	| db_polinema |
	| information_schema |
	| mysql |
	| performance_schema |
	| phpdasar |
	| phpmyadmin |
	| sistem_akademik_kampus |
	| test |
	+------------------------+
	8 rows in set (0.04 sec)

3	MariaDB [db_polinema]> create table prodi (kode_prodi char(6) primary key, mana_prodi char(30)); Query OK, 0 rows affected (0.08 sec)
4	MariaDB [db_polinema]> create table mahasiswa (nim int(8) primary key, nama_mhs char(50), jenis_kelamin enum('L','P') default 'L', alamat varchar(50), kota varchar(20) default 'malang', asal_sma char(30), no_hp varchar(12), umur integer, kode_prodi char(6), foreign key fk0 (kode_prodi) references prodi(kode_prodi)); Query OK, 0 rows affected (0.06 sec)
5	MariaDB [db_polinema]> create table mata_kuliah (mkid char(10) primary key, nama_mk char(50), jumlah_jam float(4,2), sks integer); Query OK, 0 rows affected (0.09 sec)
6	MariaDB [db_polinema]> create table ruang (ruang_id char(3) primary key, nama_ruang char(20), kapasitas integer); Query OK, 0 rows affected (0.08 sec)
7	MariaDB [db_polinema]> create table dosen (nidn integer(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 (0.29 sec)

B. Soal

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```
MariaDB [db_polinema]> ALTER TABLE mahasiswa ADD agama char(10);
Query OK, 0 rows affected (0.09 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

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```
MariaDB [db_polinema]> ALTER TABLE dosen ADD alamat varchar(50);
Query OK, 0 rows affected (0.12 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

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```
MariaDB [db_polinema]> INSERT INTO dosen (nidn, nama_dosen, status, jenis_kelamin, no_hp) values (001, "
ilham", "PNS", "L", 0818);
Query OK, 1 row affected (0.32 sec)

MariaDB [db_polinema]> INSERT INTO dosen (nidn, nama_dosen, status, jenis_kelamin, no_hp) values (002, "
supardi", "KONTRAK", "L", 0813);
Query OK, 1 row affected (0.04 sec)

MariaDB [db_polinema]> select * from dosen;
+------+------------+---------+---------------+-------+--------+
| nidn | nama_dosen | status  | jenis_kelamin | no_hp | alamat |
+------+------------+---------+---------------+-------+--------+
|    1 | ilham      | PNS     | L             | 818   | NULL   |
|    2 | supardi    | KONTRAK | L             | 813   | NULL   |
+------+------------+---------+---------------+-------+--------+
2 rows in set (0.00 sec)
```

```
MariaDB [db_polinema]> INSERT INTO mahasiswa (nim, nama_mhs, jenis_kelamin, alamat, kota, no_hp, umur, kode_prod
i) values (002, "Fiersa", "L", "jl. arum manis 10b", "madiun", 08222, 18, "1B");
Query OK, 1 row affected (0.10 sec)

MariaDB [db_polinema]> select * from mahasiswa;
+-----+----------+---------------+--------------------+---------+-------+------+------------+-------+
| nim | nama_mhs | jenis_kelamin | alamat             | kota    | no_hp | umur | kode_prodi | agama |
+-----+----------+---------------+--------------------+---------+-------+------+------------+-------+
|   1 | besta    | L             | ds. kiringan       | magetan | 8111  |   18 | 1A         | NULL  |
|   2 | Fiersa   | L             | jl. arum manis 10b | madiun  | 8222  |   18 | 1B         | NULL  |
+-----+----------+---------------+--------------------+---------+-------+------+------------+-------+
2 rows in set (0.00 sec)
```

```
MariaDB [db_polinema]> INSERT INTO mata_kuliah (mkid, nama_mk, jumlah_jam, sks) values (1002, "Algoritma
", 3.0, 3);
Query OK, 1 row affected (0.00 sec)

MariaDB [db_polinema]> select * from mata_kuliah;
+------+------------+------------+------+
| mkid | nama_mk    | jumlah_jam | sks  |
+------+------------+------------+------+
| 1001 | Basis data |       6.00 |    3 |
| 1002 | Algoritma  |       3.00 |    3 |
+------+------------+------------+------+
2 rows in set (0.00 sec)
```

```
MariaDB [db_polinema]> INSERT INTO prodi (kode_prodi, mana_prodi) values ("1B", "MANAGEMENT INFORMATIKA"
);
Query OK, 1 row affected (0.01 sec)

MariaDB [db_polinema]> select * from prodi;
+------------+-----------------------+
| kode_prodi | mana_prodi            |
+------------+-----------------------+
| 1A         | TEKNIK INFORMATIKA    |
| 1B         | MANAGEMENT INFORMATIKA |
+------------+-----------------------+
2 rows in set (0.00 sec)
```

```
MariaDB [db_polinema]> INSERT INTO ruang (ruang_id, nama_ruang, kapasitas) values (123, "praktikum", 30)
;
Query OK, 1 row affected (0.01 sec)

MariaDB [db_polinema]> INSERT INTO ruang (ruang_id, nama_ruang, kapasitas) values (223, "teori", 30);
Query OK, 1 row affected (0.02 sec)
MariaDB [db_polinema]> select * from ruang;
+----------+------------+-----------+
| ruang_id | nama_ruang | kapasitas |
+----------+------------+-----------+
| 123      | praktikum  |        30 |
| 223      | teori      |        30 |
+----------+------------+-----------+
2 rows in set (0.00 sec)
```

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```
MariaDB [db_polinema]> show tables;
+------------------------+
| Tables_in_db_polinema  |
+------------------------+
| dosen                  |
| mahasiswa              |
| mata_kuliah            |
| prodi                  |
| ruang                  |
+------------------------+
5 rows in set (0.00 sec)
```

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```
MariaDB [db_polinema]> select * from mahasiswa;
+-----+----------+---------------+---------+---------+----------+-------+------+------------+-------+
| nim | nama_mhs | jenis_kelamin | alamat  | kota    | asal_sma | no_hp | umur | kode_prodi | agama |
+-----+----------+---------------+---------+---------+----------+-------+------+------------+-------+
|   1 | Farid    | L             | Jl.Dewa | Jakarta | NULL     | 2187  |   18 | 1A         | NULL  |
+-----+----------+---------------+---------+---------+----------+-------+------+------------+-------+
1 row in set (0.00 sec)
```

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```
MariaDB [db_polinema]> desc mahasiswa;
+---------------+---------------+------+-----+---------+-------+
| Field         | Type          | Null | Key | Default | Extra |
+---------------+---------------+------+-----+---------+-------+
| nim           | int(8)        | NO   | PRI | NULL    |       |
| nama_mhs      | char(50)      | YES  |     | NULL    |       |
| jenis_kelamin | enum('L','P') | YES  |     | L       |       |
| alamat        | varchar(50)   | YES  |     | NULL    |       |
| kota          | varchar(20)   | YES  |     | malang  |       |
| asal_sma      | char(30)      | YES  |     | NULL    |       |
| no_hp         | varchar(12)   | YES  |     | NULL    |       |
| umur          | int(11)       | YES  |     | NULL    |       |
| kode_prodi    | char(6)       | YES  | MUL | NULL    |       |
| agama         | char(10)      | YES  |     | NULL    |       |
+---------------+---------------+------+-----+---------+-------+
10 rows in set (0.03 sec)
```

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```
MariaDB [db_polinema]> ALTER TABLE mahasiswa DROP COLUMN asal_sma;
Query OK, 0 rows affected (0.34 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      | char(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    | char(6)       | YES  | MUL | NULL    |       |
| agama         | varchar(10)   | YES  |     | NULL    |       |
+---------------+---------------+------+-----+---------+-------+
9 rows in set (0.01 sec)
```

C. Tugas

NO	KETERANGAN

1

Hari	Jam Ke	Kode MK	Nama MK	Kode Dosen	Nama Dosen	Kls	Ruang
Senin	1-3	EL230	Fisika 1	105	Prof. Bajuri	A, B, C	AMP1
Senin	4-5	EL230	Fisika 2	105	Prof. Bajuri	C, D	AMP1
Selasa	1-3	EL440	Pemrograman	102	Susilowati	A, B	R1
Selasa	4-6	EL440	Pemrograman	105	Prof. Bajuri	C, D	R2
Selasa	1-3	EL450	Pancasila	109	Timbul, PhD.	E, F	R1

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

Tabel mata_kuliah {kode_mk, nama_mk}

Tabel dosen {kd_dosen,nama_dosen}

Tabel jadual {kode_mk,hari,jam_ke,kelas,ruang}

```
MariaDB [db_polinema]> create database akademik;
Query OK, 1 row affected (0.00 sec)

MariaDB [db_polinema]> show databases;
+--------------------+
| Database           |
+--------------------+
| akademik           |
| db_polinema        |
| information_schema |
| mysql              |
| performance_schema |
| perpustakaan       |
| phpmyadmin         |
| test               |
+--------------------+
8 rows in set (0.00 sec)

MariaDB [db_polinema]> use akademik;
Database changed
MariaDB [akademik]> create table mata_kuliah ( k
```

```
MariaDB [akademik]> create table mata_kuliah (kode_mk char(5) primary key, nama_mk varchar(20));
Query OK, 0 rows affected (0.18 sec)

MariaDB [akademik]> create table dosen (kd_dosen integer(3) primary key, nama_dosen varchar(20));
Query OK, 0 rows affected (0.18 sec)
```

```
MariaDB [akademik]> create table jadual (kode_mk char(5), foreign key fk0 (kode_mk) references mata_kuli
ah(kode_mk), hari varchar(10), jam_ke integer(2), kelas varchar(5), ruang varchar(5));
Query OK, 0 rows affected (0.18 sec)
```

```
MariaDB [akademik]> show tables;
+--------------------+
| Tables_in_akademik |
+--------------------+
| dosen              |
| jadual             |
| mata_kuliah        |
+--------------------+
3 rows in set (0.00 sec)
```

b. tambahkan kolom alamat_dosen pada tabel dosen di kolom terakhir

```
MariaDB [akademik]> alter table dosen ADD COLUMN alamat_dosen varchar(50) AFTER nama_dosen;
Query OK, 0 rows affected (0.39 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [akademik]> desc dosen;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| kd_dosen     | int(3)      | NO   | PRI | NULL    |       |
| nama_dosen   | varchar(20) | YES  |     | NULL    |       |
| alamat_dosen | varchar(50) | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
3 rows in set (0.01 sec)
```

c. tambahkan kolom sks pada tabel mata_kuliah

```
MariaDB [akademik]> ALTER TABLE mata_kuliah ADD COLUMN sks char(1);
Query OK, 0 rows affected (0.56 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [akademik]> desc mata_kuliah;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| kode_mk | char(5)     | NO   | PRI | NULL    |       |
| nama_mk | varchar(20) | YES  |     | NULL    |       |
| sks     | char(1)     | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
3 rows in set (0.01 sec)
```

d. tambahkan kolom kd_dosen dari tabel dosen kedalam tabel_mata_kuliah serta berikanlah kunci foreign key

```
MariaDB [akademik]> alter table mata_kuliah ADD COLUMN kd_dosen integer(3) AFTER sks;
Query OK, 0 rows affected (0.41 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [akademik]> desc mata_kuliah;
+----------+-------------+------+-----+---------+-------+
| Field    | Type        | Null | Key | Default | Extra |
+----------+-------------+------+-----+---------+-------+
| kode_mk  | char(5)     | NO   | PRI | NULL    |       |
| nama_mk  | varchar(20) | YES  |     | NULL    |       |
| sks      | char(1)     | YES  |     | NULL    |       |
| kd_dosen | int(3)      | YES  |     | NULL    |       |
+----------+-------------+------+-----+---------+-------+
4 rows in set (0.07 sec)
```

```
MariaDB [akademik]> ALTER TABLE `mata_kuliah` ADD FOREIGN KEY (`kd_dosen`) REFERENCES `dosen`(`kd_dosen`
) ON DELETE RESTRICT ON UPDATE RESTRICT;
Query OK, 0 rows affected (0.59 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [akademik]> desc mata_kuliah;
+----------+------------+------+-----+---------+-------+
| Field    | Type       | Null | Key | Default | Extra |
+----------+------------+------+-----+---------+-------+
| kode_mk  | char(5)    | NO   | PRI | NULL    |       |
| nama_mk  | varchar(20)| YES  |     | NULL    |       |
| sks      | char(1)    | YES  |     | NULL    |       |
| kd_dosen | int(3)     | YES  | MUL | NULL    |       |
+----------+------------+------+-----+---------+-------+
4 rows in set (0.01 sec)
```

e. tampilkan semua data yang ada pada tiap table

```
MariaDB [akademik]> select * from mata_kuliah;
+---------+----------------------+------+----------+
| kode_mk | nama_mk              | sks  | kd_dosen |
+---------+----------------------+------+----------+
| 1       | pemograman           | 7    |        1 |
| 2       | database             | 7    |        2 |
| 3       | algoritma struktur d | 7    |        3 |
| 4       | aljabar linier       | 4    |        4 |
| 5       | matematika diskrit   | 4    |        5 |
+---------+----------------------+------+----------+
5 rows in set (0.00 sec)

MariaDB [akademik]> select * from jadual;
+---------+-------+--------+-------+-------+
| kode_mk | hari  | jam_ke | kelas | ruang |
+---------+-------+--------+-------+-------+
| 1       | jumat |      1 | KBTL  | 1     |
| 2       | rabu  |      4 | KR    | 2     |
| 3       | kamis |      7 | KR    | 2     |
| 4       | kamis |      2 | KB    | 3     |
| 5       | senin |      2 | KB    | 3     |
+---------+-------+--------+-------+-------+
5 rows in set (0.00 sec)

MariaDB [akademik]> select * from dosen;
+----------+------------+------------------------+
| kd_dosen | nama_dosen | alamat_dosen           |
+----------+------------+------------------------+
|        1 | anwar      | jl. karang dowo 1b     |
|        2 | saiful     | jl. kedung manding 19a |
|        3 | muhlisin   | jl. kesumba 3a         |
|        4 | dodi       | jl. mawar 34d          |
|        5 | gilang     | jl.kenari putih 22b    |
+----------+------------+------------------------+
5 rows in set (0.03 sec)
```

2

Nama Mobil	Tipe Mobil	Harga Mobil	Jumlah Penjualan	Jenis Mobil
Toyota Alphard	2.4 G	Rp906.000.000	2	Mobil Keluarga
Toyota Alphard	3.5 G	Rp1.112.000.000	78	Mobil Keluarga
Toyota Avanza	1.3 G A/T	Rp158.050.000	22	Mobil Keluarga
Toyota Camry	2.4 G A/T LUX	Rp462.200.000	21	Sedan
Toyota Camry	3.5 Q A/T	Rp647.000.000	43	Sedan
Toyota Corolla Altis	1.8 G A/T	Rp346.700.000	10	Sedan
Toyota Corolla Altis	2.0 V A/T	Rp375.500.000	14	Sedan
Toyota Dyna	130 HT	Rp220.000.000	31	Mini Truk
Toyota Fortuner	2.5 G M/T	Rp363.700.000	11	SUV
Toyota Fortuner	2.7 G Lux A/T	Rp421.300.000	54	SUV
Toyota Fortuner	2.7 V A/T	Rp470.300.000	5	SUV
Toyota Hilux	D Cab E	Rp302.500.000	4	Pick Up
Toyota Kijang Innova	E M/T Gasoline	Rp210.000.000	21	Mobil Keluarga
Toyota Kijang Innova	G M/T Luxury Gasoline	Rp230.600.000	11	Mobil Keluarga
Toyota Kijang Innova	J M/T Gasoline	Rp181.400.000	21	Mobil Keluarga

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

```
MariaDB [data_penjualan]> create table transaksi (notransaksi integer primary key, kode_mobil integer, jml_jual integer);
Query OK, 0 rows affected (0.51 sec)
```

```
MariaDB [data_penjualan]> create table mobil (kode_mobil integer primary key, nama
_mobil varchar (20), tipe_mobil varchar (20), harga varchar (100), jenis_mobil var
char (20));
Query OK, 0 rows affected (0.15 sec)
```

b. Tambahkan kolom tgl_transaksi pada tabel transaksi di kolom terakhir

```
MariaDB [data_penjualan]> ALTER TABLE transaksi ADD COLUMN tgl_transaksi date after jml_jual;
Query OK, 0 rows affected (0.29 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

c. Tambahkan kolom warna_mobil pada tabel mobil di kolom terakhir

```
MariaDB [data_penjualan]> ALTER TABLE mobil ADD COLUMN warna_mobil varchar (20) after jenis_mobil;
Query OK, 0 rows affected (0.40 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

d. Tampilkan semua data yang ada pada tiap table

```
MariaDB [data_penjualan]> SELECT * FROM mobil;
+------------+-------------------+-----------------------+---------------+---------------+-------------+
| kode_mobil | nama_mobil        | tipe_mobil            | harga         | jenis_mobil   | warna_mobil |
+------------+-------------------+-----------------------+---------------+---------------+-------------+
|          1 | Toyota Alpahard   | 2.4 G                 | Rp.906.000.000 | Mobil Keluarga | Hitam       |
|          2 | Toyota Avanza     | 1.3 G A/T             | Rp.158.050.000 | Mobil Keluarga | Silver      |
|          3 | Toyota Camry      | 3.5 Q A/T             | Rp.647.000.000 | Sedan          | Silver      |
|          4 | Toyota Fortuner   | 2.5 G M/T             | Rp.363.700.000 | SUV            | Hitam       |
|          5 | Toyota Kijang Inova | G M/T Luxury Gasolin | Rp.230.600.000 | Mobil Keluarga | Hitam       |
+------------+-------------------+-----------------------+---------------+---------------+-------------+
5 rows in set (0.00 sec)

MariaDB [data_penjualan]> SELECT * FROM transaksi;
+-------------+------------+---------+----------------+
| notransaksi | kode_mobil | jml_jual | tgl_transaksi |
+-------------+------------+---------+----------------+
|         100 |          1 | 2       | 2019-02-26     |
|         200 |          2 | 22      | 2019-02-26     |
|         300 |          3 | 43      | 2019-02-26     |
|         400 |          4 | 11      | 2019-02-26     |
|         500 |          5 | 11      | 2019-02-26     |
+-------------+------------+---------+----------------+
```