TUGAS MODUL Hal (52-81)

PRAKTIKUM PERTEMUAN 14

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PRAKTIKUM 14

1. Masuk kedalam MariaDB melalui command prompt.
2. Buat sebuah database dengan nama “db_latihan_dml”, kemudian tampilkan seluruh daftar database yang ada.

```
MariaDB [(none)]> create database db_latihan_dml;
Query OK, 1 row affected (0.021 sec)

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| db_jualan          |
| db_jualan2         |
| db_latihan1        |
| db_latihan_dml     |
| db_les_private     |
| information_schema |
| komik_coba1        |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
10 rows in set (0.026 sec)
```

3. Aktifkan database db_latihan_dml.

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

4. Buat tabel bernama “buku”

```
MariaDB [db_latihan_dml]> create table buku (id_buku char(4) primary key not
 null, judul_buku varchar(45) not null, penulis varchar(25) not null, thn_te
rbit year(15) not null, penerbit varchar(45) not null);
Query OK, 0 rows affected, 1 warning (0.023 sec)
```

5. Lihat struktur tabel buku

```
MariaDB [db_latihan_dml]> desc buku;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| id_buku    | char(4)     | NO   | PRI | NULL    |       |
| judul_buku | varchar(45) | NO   |     | NULL    |       |
| penulis    | varchar(25) | NO   |     | NULL    |       |
| thn_terbit | year(4)     | NO   |     | NULL    |       |
| penerbit   | varchar(45) | NO   |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
5 rows in set (0.044 sec)
```

6. Isikan data untuk tabel buku, dengan data sebagai berikut:

```
MariaDB [db_latihan_dml]> insert into buku (id_buku, judul_buku, penulis, th
n_terbit, penerbit) values ('BK01', 'Perahu Kertas', 'Dewi Lestari', '2007',
'Abadi Jaya'), ('BK02', 'Laskar Pelangi', 'Andrea Hirata', '2004', 'Abadi Ja
ya'), ('BK03', 'Sang Pemimpi', 'Andrea Hirata', '2005', 'Abadi Jaya'), ('BK0
4', 'Harry Potter 4', 'J.K. Rowling', '2003', 'Indo Karya'), ('BK05', 'Warne
t SQL', 'Dr. Nena', '2009', 'Wahana Ria');
Query OK, 5 rows affected (0.018 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

7. Tampilkan isi seluruh record pada tabel buku.(gunakan tanda * bila seluruh field ditampilkan)

```
MariaDB [db_latihan_dml]> select * from buku;
+---------+----------------+---------------+------------+------------+
| id_buku | judul_buku     | penulis       | thn_terbit | penerbit   |
+---------+----------------+---------------+------------+------------+
| BK01    | Perahu Kertas  | Dewi Lestari  |       2007 | Abadi Jaya |
| BK02    | Laskar Pelangi | Andrea Hirata |       2004 | Abadi Jaya |
| BK03    | Sang Pemimpi   | Andrea Hirata |       2005 | Abadi Jaya |
| BK04    | Harry Potter 4 | J.K. Rowling  |       2003 | Indo Karya |
| BK05    | Warnet SQL     | Dr. Nena      |       2009 | Wahana Ria |
+---------+----------------+---------------+------------+------------+
5 rows in set (0.015 sec)
```

8. Tampilkan isi record tabel buku, hanya buku dengan penerbit = “Abadi Jaya”.

```
MariaDB [db_latihan_dml]> select * from buku where penerbit = 'Abadi Jaya';
+---------+----------------+---------------+------------+------------+
| id_buku | judul_buku     | penulis       | thn_terbit | penerbit   |
+---------+----------------+---------------+------------+------------+
| BK01    | Perahu Kertas  | Dewi Lestari  |       2007 | Abadi Jaya |
| BK02    | Laskar Pelangi | Andrea Hirata |       2004 | Abadi Jaya |
| BK03    | Sang Pemimpi   | Andrea Hirata |       2005 | Abadi Jaya |
+---------+----------------+---------------+------------+------------+
3 rows in set (0.016 sec)
```

9. Tampilkan isi record dengan pengelompokan data berdasarkan penerbit. (data yang sama pada penerbit tidak akan dipanggil kembali, disebut juga Ascending)

```
MariaDB [db_latihan_dml]> select * from buku group by penerbit;
+---------+----------------+-------------+------------+------------+
| id_buku | judul_buku     | penulis     | thn_terbit | penerbit   |
+---------+----------------+-------------+------------+------------+
| BK01    | Perahu Kertas  | Dewi Lestari |       2007 | Abadi Jaya |
| BK04    | Harry Potter 4 | J.K. Rowling |       2003 | Indo Karya |
| BK05    | Warnet SQL     | Dr. Nena     |       2009 | Wahana Ria |
+---------+----------------+-------------+------------+------------+
3 rows in set (0.014 sec)
```

10. Tampilkan isi record dengan pengurutan data berdasarkan penerbit. (secara default pengurutan secara ascending dari A ke Z).

```
MariaDB [db_latihan_dml]> select * from buku order by penerbit;
+---------+----------------+--------------+------------+------------+
| id_buku | judul_buku     | penulis      | thn_terbit | penerbit   |
+---------+----------------+--------------+------------+------------+
| BK01    | Perahu Kertas  | Dewi Lestari |       2007 | Abadi Jaya |
| BK02    | Laskar Pelangi | Andrea Hirata |       2004 | Abadi Jaya |
| BK03    | Sang Pemimpi   | Andrea Hirata |       2005 | Abadi Jaya |
| BK04    | Harry Potter 4 | J.K. Rowling |       2003 | Indo Karya |
| BK05    | Warnet SQL     | Dr. Nena     |       2009 | Wahana Ria |
+---------+----------------+--------------+------------+------------+
5 rows in set (0.001 sec)
```

11. Tampilkan isi record hanya field “judul_buku”, “penulis”, “thn_terbit”.

```
MariaDB [db_latihan_dml]> select judul_buku, penulis, thn_terbit from buku;
+----------------+--------------+------------+
| judul_buku     | penulis      | thn_terbit |
+----------------+--------------+------------+
| Perahu Kertas  | Dewi Lestari |       2007 |
| Laskar Pelangi | Andrea Hirata |       2004 |
| Sang Pemimpi   | Andrea Hirata |       2005 |
| Harry Potter 4 | J.K. Rowling |       2003 |
| Warnet SQL     | Dr. Nena     |       2009 |
+----------------+--------------+------------+
5 rows in set (0.001 sec)
```

12. Tampilkan isi record dengan Penulis bernama depan huruf= “A”. (pencarian data menggunakan like.

```
MariaDB [db_latihan_dml]> select * from buku where penulis like 'A%';
+---------+----------------+--------------+------------+------------+
| id_buku | judul_buku     | penulis      | thn_terbit | penerbit   |
+---------+----------------+--------------+------------+------------+
| BK02    | Laskar Pelangi | Andrea Hirata |       2004 | Abadi Jaya |
| BK03    | Sang Pemimpi   | Andrea Hirata |       2005 | Abadi Jaya |
+---------+----------------+--------------+------------+------------+
2 rows in set (0.013 sec)
```

13. Tampilkan isi record dengan Tahun terbit dibawah tahun 2005.

```
MariaDB [db_latihan_dml]> select * from buku where thn_terbit < 2005;
+---------+----------------+--------------+------------+------------+
| id_buku | judul_buku     | penulis      | thn_terbit | penerbit   |
+---------+----------------+--------------+------------+------------+
| BK02    | Laskar Pelangi | Andrea Hirata |       2004 | Abadi Jaya |
| BK04    | Harry Potter 4 | J.K. Rowling  |       2003 | Indo Karya |
+---------+----------------+--------------+------------+------------+
2 rows in set (0.014 sec)
```

14. Tampilkan isi record dengan Judul buku mengandung kata “SQL”.

```
MariaDB [db_latihan_dml]> select * from buku where judul_buku like '%SQL%';
+---------+------------+----------+------------+------------+
| id_buku | judul_buku | penulis  | thn_terbit | penerbit   |
+---------+------------+----------+------------+------------+
| BK05    | Warnet SQL | Dr. Nena |       2009 | Wahana Ria |
+---------+------------+----------+------------+------------+
1 row in set (0.001 sec)
```

15. Tampilkan isi record, dengan penulis = “Dewi Lestari”.

```
 ariaDB [db_latihan_dml]> select * from buku where penulis = 'Dewi Lestari';
+---------+--------------+-------------+------------+------------+
| id_buku | judul_buku   | penulis     | thn_terbit | penerbit   |
+---------+--------------+-------------+------------+------------+
| BK01    | Perahu Kertas | Dewi Lestari |       2007 | Abadi Jaya |
+---------+--------------+-------------+------------+------------+
1 row in set (0.001 sec)
```

16. Tampilkan isi record hanya field “judul_buku”, “penulis”, kemudian urutkan data berdasarkan penulis.

```
MariaDB [db_latihan_dml]> select judul_buku, penulis from buku order by penu
lis;
+----------------+--------------+
| judul_buku     | penulis      |
+----------------+--------------+
| Laskar Pelangi | Andrea Hirata |
| Sang Pemimpi   | Andrea Hirata |
| Perahu Kertas  | Dewi Lestari  |
| Warnet SQL     | Dr. Nena      |
| Harry Potter 4 | J.K. Rowling  |
+----------------+--------------+
5 rows in set (0.001 sec)
```

17. Tampilkan isi record hanya field “judul_buku”, “penulis”, kemudian urutkan data berdasarkan penulis secara descending.

```
MariaDB [db_latihan_dml]> select judul_buku, penulis from buku order by penu
lis desc;
+---------------+--------------+
| judul_buku    | penulis      |
+---------------+--------------+
| Harry Potter 4 | J.K. Rowling  |
| Warnet SQL    | Dr. Nena     |
| Perahu Kertas  | Dewi Lestari  |
| Laskar Pelangi | Andrea Hirata |
| Sang Pemimpi   | Andrea Hirata |
+---------------+--------------+
5 rows in set (0.001 sec)
```

18. Tampilkan isi record hanya field “judul_buku”, “penulis”, “thn_terbit”, dengan tahun terbit dibawah tahun 2005.

```
MariaDB [db_latihan_dml]> select judul_buku, penulis, thn_terbit from buku w
here thn_terbit < 2005;
+---------------+--------------+------------+
| judul_buku    | penulis      | thn_terbit |
+---------------+--------------+------------+
| Laskar Pelangi | Andrea Hirata |       2004 |
| Harry Potter 4 | J.K. Rowling  |       2003 |
+---------------+--------------+------------+
2 rows in set (0.001 sec)
```

19. Tampilkan isi record hanya field “judul_buku”, “penulis”, “thn_terbit”, “penerbit”, dengan tahun terbit dibawah tahun 2005, lalu urutkan berdasarkan “thn_terbit” secara descending.

```
MariaDB [db_latihan_dml]> select judul_buku, penulis, thn_terbit, penerbit f
rom buku where thn_terbit < 2005 order by thn_terbit desc;
+---------------+--------------+------------+------------+
| judul_buku    | penulis      | thn_terbit | penerbit   |
+---------------+--------------+------------+------------+
| Laskar Pelangi | Andrea Hirata |       2004 | Abadi Jaya |
| Harry Potter 4 | J.K. Rowling  |       2003 | Indo Karya |
+---------------+--------------+------------+------------+
2 rows in set (0.001 sec)
```

20. Tampilkan isi record hanya field “judul_buku”, “penulis”, “penerbit”, dengan penulis = “Andrea Hirata”, lalu urutkan secara descending berdasarkan “judul_buku”.

```
MariaDB [db_latihan_dml]> select judul_buku, penulis, penerbit from buku whe
re penulis = 'Andrea Hirata' order by judul_buku desc;
+---------------+--------------+------------+
| judul_buku    | penulis      | penerbit   |
+---------------+--------------+------------+
| Sang Pemimpi   | Andrea Hirata | Abadi Jaya |
| Laskar Pelangi | Andrea Hirata | Abadi Jaya |
+---------------+--------------+------------+
2 rows in set (0.001 sec)
```

PRAKTIKUM 15

1. **Buat sebuah database dengan nama "db_toko", kemudian tampilkan seluruh daftar database yang ada.**

```
MariaDB [(none)]> create database db_toko;
Query OK, 1 row affected (0.003 sec)

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| db_jualan          |
| db_jualan2         |
| db_latihan1        |
| db_latihan_dml     |
| db_les_private     |
| db_toko            |
| information_schema |
| komik_coba1        |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
11 rows in set (0.002 sec)
```

2. **Aktifkan database db_toko.**

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

3. **Buat tabel bernama "brg", dengan ketentuan sebagai berikut:**

```
MariaDB [db_toko]> create table brg (kode_brg char(4) primary key, nama_brg
varchar(40) not null, harga_brg int(10) not null, thn_pembuatan year not nul
l, stok int(3) not null);
Query OK, 0 rows affected (0.026 sec)
```

4. **Lihat struktur tabel**

```
MariaDB [db_toko]> desc brg;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| kode_brg     | char(4)     | NO   | PRI | NULL    |       |
| nama_brg     | varchar(40) | NO   |     | NULL    |       |
| harga_brg    | int(10)     | NO   |     | NULL    |       |
| thn_pembuatan | year(4)    | NO   |     | NULL    |       |
| stok         | int(3)      | NO   |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
5 rows in set (0.052 sec)
```

5. **Isikan data untuk tabel brg, dengan data sebagai berikut:**

```
MariaDB [db_toko]> INSERT INTO brg (Kode_brg, Nama_brg, Harga_brg, Thn_pembu
atan, Stok) VALUES
    -> ('BR01','Clame Plate', 40000, 2005, 100),
    -> ('BR02','CF Diafram', 35000, 2001, 250),
    -> ('BR03','Press Cover', 65000, 2002, 300),
    -> ('BR04','Terminal', 15000, 2000, 57),
    -> ('BR05','Aluminum Solt', 27000, 2006, 410);
Query OK, 5 rows affected (0.015 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

6. **Tampilkan isi seluruh record pada tabel brg**

```
MariaDB [db_toko]> select * from brg;
+----------+---------------+-----------+---------------+------+
| kode_brg | nama_brg      | harga_brg | thn_pembuatan | stok |
+----------+---------------+-----------+---------------+------+
| BR01     | Clame Plate   |     40000 |          2005 |  100 |
| BR02     | CF Diafram    |     35000 |          2001 |  250 |
| BR03     | Press Cover   |     65000 |          2002 |  300 |
| BR04     | Terminal      |     15000 |          2000 |   57 |
| BR05     | Aluminum Solt |     27000 |          2006 |  410 |
+----------+---------------+-----------+---------------+------+
5 rows in set (0.013 sec)
```

7. **Tampilkan isi record hanya field “kode_brg”, “nama_brg”, “stok”, kemudian urutkan data secara ascending berdasarkan nama_brg.**

```
MariaDB [db_toko]> select kode_brg, nama_brg, stok from brg order by nama_br
g;
+----------+---------------+------+
| kode_brg | nama_brg      | stok |
+----------+---------------+------+
| BR05     | Aluminum Solt |  410 |
| BR02     | CF Diafram    |  250 |
| BR01     | Clame Plate   |  100 |
| BR03     | Press Cover   |  300 |
| BR04     | Terminal      |   57 |
+----------+---------------+------+
5 rows in set (0.001 sec)
```

8. **Tampilkan isi record tabel brg, hanya Nama Barang = “Terminal”.**

```
MariaDB [db_toko]> select * from brg where nama_brg = 'Terminal';
+----------+----------+-----------+---------------+------+
| kode_brg | nama_brg | harga_brg | thn_pembuatan | stok |
+----------+----------+-----------+---------------+------+
| BR04     | Terminal |     15000 |          2000 |   57 |
+----------+----------+-----------+---------------+------+
1 row in set (0.001 sec)
```

9. **Tampilkan isi record dengan Nama Barang depan huruf berawalan= “C”.**

```
MariaDB [db_toko]> select * from brg where nama_brg like 'c%';
+----------+-------------+-----------+---------------+------+
| kode_brg | nama_brg    | harga_brg | thn_pembuatan | stok |
+----------+-------------+-----------+---------------+------+
| BR01     | Clame Plate |     40000 |          2005 |  100 |
| BR02     | CF Diafram  |     35000 |          2001 |  250 |
+----------+-------------+-----------+---------------+------+
2 rows in set (0.001 sec)
```

10. **Tampilkan isi record hanya field kode_brg, nama_brg, harga_brg, stok dimana stok berada dibawah dari 200.**

```
MariaDB [db_toko]> select kode_brg, nama_brg, harga_brg, stok from brg where
 stok < 200;
+----------+-------------+-----------+------+
| kode_brg | nama_brg    | harga_brg | stok |
+----------+-------------+-----------+------+
| BR01     | Clame Plate |     40000 |  100 |
| BR04     | Terminal    |     15000 |   57 |
+----------+-------------+-----------+------+
2 rows in set (0.001 sec)
```

11. **Tampilkan isi record barang dimana tahun pembuatan berada diantara tahun 2002- 2006.**

```
MariaDB [db_toko]> select * from brg where thn_pembuatan between 2002 and 20
06;
+----------+--------------+-----------+---------------+------+
| kode_brg | nama_brg     | harga_brg | thn_pembuatan | stok |
+----------+--------------+-----------+---------------+------+
| BR01     | Clame Plate  |     40000 |          2005 |  100 |
| BR03     | Press Cover  |     65000 |          2002 |  300 |
| BR05     | Aluminum Solt |     27000 |          2006 |  410 |
+----------+--------------+-----------+---------------+------+
```

12. **Tampilkan 3 isi record teratas dari tabel barang.**

```
MariaDB [db_toko]> select * from brg limit 3;
+----------+-------------+-----------+---------------+------+
| kode_brg | nama_brg    | harga_brg | thn_pembuatan | stok |
+----------+-------------+-----------+---------------+------+
| BR01     | Clame Plate |     40000 |          2005 |  100 |
| BR02     | CF Diafram  |     35000 |          2001 |  250 |
| BR03     | Press Cover |     65000 |          2002 |  300 |
+----------+-------------+-----------+---------------+------+
3 rows in set (0.001 sec)
```

13. **Tampilkan isi record barang dimana stok berada dibawah dari 200 dan tahun pembuatan tahun 2000.**

```
MariaDB [db_toko]> select * from brg where stok < 200 and thn_pembuatan = '2
000';
+----------+----------+-----------+---------------+------+
| kode_brg | nama_brg | harga_brg | thn_pembuatan | stok |
+----------+----------+-----------+---------------+------+
| BR04     | Terminal |     15000 |          2000 |   57 |
+----------+----------+-----------+---------------+------+
1 row in set (0.003 sec)
```

14. **Tampilkan isi record, hanya dari record ke-1 hingga record ke-3, kemudian urutkan berdasarkan kode_brg**

```
MariaDB [db_toko]> select * from brg order by kode_brg limit 3;
+----------+-------------+-----------+---------------+------+
| kode_brg | nama_brg    | harga_brg | thn_pembuatan | stok |
+----------+-------------+-----------+---------------+------+
| BR01     | Clame Plate |     40000 |          2005 |  100 |
| BR02     | CF Diafram  |     35000 |          2001 |  250 |
| BR03     | Press Cover |     65000 |          2002 |  300 |
+----------+-------------+-----------+---------------+------+
3 rows in set (0.014 sec)
```

15. **Tampilkan isi record dengan Kode Barang kecuali BR05**

```
MariaDB [db_toko]> select * from brg where kode_brg != 'BR05';
+----------+-------------+-----------+---------------+------+
| kode_brg | nama_brg    | harga_brg | thn_pembuatan | stok |
+----------+-------------+-----------+---------------+------+
| BR01     | Clame Plate |     40000 |          2005 |  100 |
| BR02     | CF Diafram  |     35000 |          2001 |  250 |
| BR03     | Press Cover |     65000 |          2002 |  300 |
| BR04     | Terminal    |     15000 |          2000 |   57 |
+----------+-------------+-----------+---------------+------+
4 rows in set (0.021 sec)
```

PRAKTIKUM 16

A. Latihan Praktikum 1

1. **Masuk kedalam MariaDB melalui command prompt.**
2. **Buat sebuah database dengan nama “db_dml_operator”, kemudian tampilkan seluruh daftar database yang ada.**

```
MariaDB [(none)]> create database db_dml_operator;
Query OK, 1 row affected (0.019 sec)
```

```
MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| db_dml_operator    |
| db_jualan          |
| db_jualan2         |
| db_latihan1        |
| db_latihan_dml     |
| db_les_private     |
| db_toko            |
| information_schema |
| komik_coba1        |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
12 rows in set (0.023 sec)
```

3. **Aktifkan database db_dml_lanjutan**

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

4. **Buat tabel bernama “pengajar”, dengan ketentuan sebagai berikut: Tabel “pengajar”:**

```
MariaDB [db_dml_operator]> create table pengajar ( nip char(4) primary key n
ot null, nama varchar(40) not null, kota_asal varchar(50) not null, sks int(
2) not null, gaji double not null);
Query OK, 0 rows affected (0.033 sec)
```

5. **Lihat struktur tabel pengajar.**

```
MariaDB [db_dml_operator]> desc pengajar;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| nip       | char(4)     | NO   | PRI | NULL    |       |
| nama      | varchar(40) | NO   |     | NULL    |       |
| kota_asal | varchar(50) | NO   |     | NULL    |       |
| sks       | int(2)      | NO   |     | NULL    |       |
| gaji      | double      | NO   |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
5 rows in set (0.049 sec)
```

6. **Isikan data untuk tabel pengajar, dengan data sebagai berikut:**

```
MariaDB [db_dml_operator]> insert into pengajar (nip, nama, kota_asal, sks,
gaji)
    -> values
    -> ('0101', 'Ahmad Rio', 'Tangerang', 4, 3000000),
    -> ('0102', 'Iwan Kurniawan', 'Serang', 2, 2000000),
    -> ('0103', 'Asep Kusnandar', 'Tangerang', 4, 3000000),
    -> ('0104', 'Wati Irnawati', 'Bandung', 2, 2000000),
    -> ('0105', 'Neng Sukasih', 'Bandung', 2, 2000000),
    -> ('0106', 'Maya Putriah', 'Jakarta', 2, 2000000);
Query OK, 6 rows affected (0.003 sec)
Records: 6  Duplicates: 0  Warnings: 0
```

7. **Tampilkan isi seluruh record pada tabel pengajar, kemudian urutkan secara descending berdasarkan field gaji.**

```
MariaDB [db_dml_operator]> select * from pengajar order by gaji desc;
+------+---------------+-----------+-----+---------+
| nip  | nama          | kota_asal | sks | gaji    |
+------+---------------+-----------+-----+---------+
| 0101 | Ahmad Rio     | Tangerang |   4 | 3000000 |
| 0103 | Asep Kusnandar | Tangerang |   4 | 3000000 |
| 0104 | Wati Irnawati  | Bandung   |   3 | 2500000 |
| 0102 | Iwan Kurniawan | Serang    |   2 | 2000000 |
| 0105 | Neng Sukasih   | Bandung   |   2 | 2000000 |
| 0106 | Maya Putriah   | Jakarta   |   2 | 2000000 |
+------+---------------+-----------+-----+---------+
6 rows in set (0.001 sec)
```

8. **Tampilkan rata-rata gaji pada tabel pengajar.**

```
MariaDB [db_dml_operator]> select avg (gaji) from pengajar;
+--------------------+
| avg (gaji)         |
+--------------------+
| 2416666.6666666665 |
+--------------------+
1 row in set (0.014 sec)
```

9. **Tampilkan gaji terendah pada tabel pengajar.**

```
MariaDB [db_dml_operator]> select MIN(gaji) from pengajar;
+-----------+
| MIN(gaji) |
+-----------+
|   2000000 |
+-----------+
1 row in set (0.013 sec)
```

10. Tampilkan jumlah total keseluruhan gaji pada tabel pengajar.

```
MariaDB [db_dml_operator]> select SUM(gaji) from  pengajar;
+-----------+
| SUM(gaji) |
+-----------+
|  14500000 |
+-----------+
1 row in set (0.001 sec)

MariaDB [db_dml_operator]>
```

11. Tampilkan jumlah gaji dengan pengajar yang memiliki sks “lebih dari 3sks”.

```
MariaDB [db_dml_operator]> select SUM(gaji) from pengajar
    -> where sks > 3;
+-----------+
| SUM(gaji) |
+-----------+
|   6000000 |
+-----------+
1 row in set (0.015 sec)
```

12. Tampilkan isi record hanya field “kota_asal” tanpa perulangan isi record yang sama, kemudian urutkan secara ascending berdasarkan kota_asal

```
MariaDB [db_dml_operator]> select DISTINCT kota_asal from pengajar
    -> order by kota_asal;
+-----------+
| kota_asal |
+-----------+
| Bandung   |
| Jakarta   |
| Serang    |
| Tangerang |
+-----------+
4 rows in set (0.001 sec)
```

13. . Buat alias dengan nama “rata_gaji” untuk mencari nilai rata-rata gaji pengajar.

```
MariaDB [db_dml_operator]> select avg (gaji) as rata_gaji from pengajar;
+--------------------+
| rata_gaji          |
+--------------------+
| 2416666.6666666665 |
+--------------------+
1 row in set (0.014 sec)
```

14. Buat alias untuk tabel dengan nama “tp”, kemudian tampilkan record hanya field “nama”, “sks”, “gaji”.

```
MariaDB [db_dml_operator]> select tp.nama, tp.sks, tp.gaji from pengajar as
tp;
+----------------+-----+---------+
| nama           | sks | gaji    |
+----------------+-----+---------+
| Ahmad Rio      |   4 | 3000000 |
| Iwan Kurniawan |   2 | 2000000 |
| Asep Kusnandar |   4 | 3000000 |
| Wati Irnawati  |   3 | 2500000 |
| Neng Sukasih   |   2 | 2000000 |
| Maya Putriah   |   2 | 2000000 |
+----------------+-----+---------+
6 rows in set (0.013 sec)
```

15. Buat alias untuk field “nama” dengan nama “nama_pengajar”, kemudian tampilkan isi record hanya berdasarkan alias “nama_pengajar”.

```
MariaDB [db_dml_operator]> select nama as nama_pengajar from pengajar;
+----------------+
| nama_pengajar  |
+----------------+
| Ahmad Rio      |
| Iwan Kurniawan |
| Asep Kusnandar |
| Wati Irnawati  |
| Neng Sukasih   |
| Maya Putriah   |
+----------------+
6 rows in set (0.001 sec)
```

16. Buat alias untuk field “sks” dengan nama “jumlah_sks”, kemudian tampilkan isi record hanya field “nama”, “gaji” dan alias “jumlah_sks”.

```
MariaDB [db_dml_operator]> select nama, gaji, sks as jumlah_sks from pengaja
r;
+----------------+---------+------------+
| nama           | gaji    | jumlah_sks |
+----------------+---------+------------+
| Ahmad Rio      | 3000000 |          4 |
| Iwan Kurniawan | 2000000 |          2 |
| Asep Kusnandar | 3000000 |          4 |
| Wati Irnawati  | 2500000 |          3 |
| Neng Sukasih   | 2000000 |          2 |
| Maya Putriah   | 2000000 |          2 |
+----------------+---------+------------+
6 rows in set (0.001 sec)
```

17. Buat alias dengan nama “hasil”, dan merupakan hasil perkalian antara field sks dengan field gaji, kemudian tampilkan isi record.

```
MariaDB [db_dml_operator]> select nip, nama, kota_asal, sks, gaji, (sks*gaji
) as hasil from pengajar;
+------+----------------+-----------+-----+---------+----------+
| nip  | nama           | kota_asal | sks | gaji    | hasil    |
+------+----------------+-----------+-----+---------+----------+
| 0101 | Ahmad Rio      | Tangerang |   4 | 3000000 | 12000000 |
| 0102 | Iwan Kurniawan | Serang    |   2 | 2000000 |  4000000 |
| 0103 | Asep Kusnandar | Tangerang |   4 | 3000000 | 12000000 |
| 0104 | Wati Irnawati  | Bandung   |   3 | 2500000 |  7500000 |
| 0105 | Neng Sukasih   | Bandung   |   2 | 2000000 |  4000000 |
| 0106 | Maya Putriah   | Jakarta   |   2 | 2000000 |  4000000 |
+------+----------------+-----------+-----+---------+----------+
6 rows in set (0.001 sec)
```

18. Buat alias dengan nama “bonus” dan merupakan hasil perkalian antara field sks dengan “100000”, kemudian tampilkan isi record hanya field “nama”, “sks”, “bonus”.

```
MariaDB [db_dml_operator]> select nama, sks,
    -> (sks * 100000) as bonus
    -> from pengajar;
+----------------+-----+--------+
| nama           | sks | bonus  |
+----------------+-----+--------+
| Ahmad Rio      |   4 | 400000 |
| Iwan Kurniawan |   2 | 200000 |
| Asep Kusnandar |   4 | 400000 |
| Wati Irnawati  |   3 | 300000 |
| Neng Sukasih   |   2 | 200000 |
| Maya Putriah   |   2 | 200000 |
+----------------+-----+--------+
6 rows in set (0.001 sec)
```

19. Buat alias dengan nama “gaji_terbesar” untuk mencari nilai gaji terbesar pengajar.

```
MariaDB [db_dml_operator]> select MAX(gaji) as gaji_terbesar from pengajar;
+---------------+
| gaji_terbesar |
+---------------+
|       3000000 |
+---------------+
1 row in set (0.001 sec)
```

20. Buat alias dengan nama “tunjangan” dan merupakan hasil perkalian antara field sks dengan “250000”, kemudian tampilkan isi record dan urutkan secara descending berdasarkan tunjangan.

```
MariaDB [db_dml_operator]> select nip, nama, kota_asal, sks, gaji, (sks * 25
0000) as tunjangan from pengajar;
+------+----------------+-----------+-----+---------+-----------+
| nip  | nama           | kota_asal | sks | gaji    | tunjangan |
+------+----------------+-----------+-----+---------+-----------+
| 0101 | Ahmad Rio      | Tangerang |   4 | 3000000 |   1000000 |
| 0102 | Iwan Kurniawan | Serang    |   2 | 2000000 |    500000 |
| 0103 | Asep Kusnandar | Tangerang |   4 | 3000000 |   1000000 |
| 0104 | Wati Irnawati  | Bandung   |   3 | 2500000 |    750000 |
| 0105 | Neng Sukasih   | Bandung   |   2 | 2000000 |    500000 |
| 0106 | Maya Putriah   | Jakarta   |   2 | 2000000 |    500000 |
+------+----------------+-----------+-----+---------+-----------+
6 rows in set (0.001 sec)
```

LATIHAN SOAL

1. **Buat sebuah database dengan nama "NIMMasingmasing_bab5", kemudian tampilkan seluruh daftar database yang ada.**

```
MariaDB [(none)]> create database NIMMasingmasing_bab5;
Query OK, 1 row affected (0.003 sec)

MariaDB [(none)]> show databases;
+----------------------+
| Database             |
+----------------------+
| db_dml_operator      |
| db_jualan            |
| db_jualan2           |
| db_latihan1          |
| db_latihan_dml       |
| db_les_private       |
| db_toko              |
| information_schema   |
| komik_coba1          |
| mysql                |
| nimmasingmasing_bab5 |
| performance_schema   |
| sys                  |
+----------------------+
13 rows in set (0.002 sec)
```

2. **Aktifkan database NIMMasingmasing_bab5.**

```
MariaDB [(none)]> use NIMMasingmasing_bab5;
Database changed
```

3. **Buat tabel bernama "buku", dengan ketentuan sebagai berikut:**

```
MariaDB [NIMMasingmasing_bab5]> create table buku (
    -> kode_buku char(4) primary key,
    -> judul varchar(55),
    -> pengarang varchar(50),
    -> penerbit varchar(35),
    -> harga int (10) );
Query OK, 0 rows affected (0.027 sec)
```

4. **Lihat struktur tabel buku.**

```
MariaDB [NIMMasingmasing_bab5]> desc buku;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| kode_buku | char(4)     | NO   | PRI | NULL    |       |
| judul     | varchar(55) | YES  |     | NULL    |       |
| pengarang | varchar(50) | YES  |     | NULL    |       |
| penerbit  | varchar(35) | YES  |     | NULL    |       |
| harga     | int(10)     | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
5 rows in set (0.038 sec)
```

5. **Isikan data untuk tabel buku, dengan data sebagai berikut:**

```
MariaDB [NIMMasingmasing_bab5]> insert into buku (kode_buku, judul, pengaran
g, penerbit, harga) values
    -> ('BK01','Rancangan ERD','Joko Susilo','Graha Pustaka',65000),
    -> ('BK02','Diagram UML','Ahmad Sandi','Komunikatika',40000),
    -> ('BK03','Web Programming','Rio Budiman','Graha Pustaka',35000),
    -> ('BK04','Dasar Pemrogramman','Artifa Ningrum','Tekno Press',35000),
    -> ('BK05','Testing Program','Ria Kusumah','Ilmu Pustaka',45000);
Query OK, 5 rows affected (0.006 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

6. **Tampilkan isi seluruh record pada tabel buku, kemudian urutkan secara descending berdasarkan field harga.**

```
MariaDB [NIMMasingmasing_bab5]> select * from buku order by harga desc;
+-----------+--------------------+---------------+--------------+-------+
| kode_buku | judul              | pengarang     | penerbit     | harga |
+-----------+--------------------+---------------+--------------+-------+
| BK01      | Rancangan ERD      | Joko Susilo   | Graha Pustaka | 65000 |
| BK05      | Testing Program    | Ria Kusumah   | Ilmu Pustaka  | 45000 |
| BK02      | Diagram UML        | Ahmad Sandi   | Komunikatika  | 40000 |
| BK03      | Web Programming    | Rio Budiman   | Graha Pustaka | 35000 |
| BK04      | Dasar Pemrogramman | Artifa Ningrum | Tekno Press  | 35000 |
+-----------+--------------------+---------------+--------------+-------+
5 rows in set (0.001 sec)
```

7. **Tampilkan jumlah total keseluruhan harga pada tabel buku.**

```
MariaDB [NIMMasingmasing_bab5]> select SUM(harga) from buku;
+------------+
| SUM(harga) |
+------------+
|     220000 |
+------------+
1 row in set (0.001 sec)
```

8. **Tampilkan data buku dengan harga paling murah.**

```
MariaDB [NIMMasingmasing_bab5]> select * from buku order by harga;
+-----------+--------------------+----------------+---------------+-------+
| kode_buku | judul              | pengarang      | penerbit      | harga |
+-----------+--------------------+----------------+---------------+-------+
| BK03      | Web Programming    | Rio Budiman    | Graha Pustaka | 35000 |
| BK04      | Dasar Pemrogramman | Artifa Ningrum | Tekno Press   | 35000 |
| BK02      | Diagram UML        | Ahmad Sandi    | Komunikatika  | 40000 |
| BK05      | Testing Program    | Ria Kusumah    | Ilmu Pustaka  | 45000 |
| BK01      | Rancangan ERD      | Joko Susilo    | Graha Pustaka | 65000 |
+-----------+--------------------+----------------+---------------+-------+
5 rows in set (0.000 sec)
```

9. **Buat alias dengan nama “rata_harga” untuk mencari nilai rata-rata dari harga buku.**

```
MariaDB [NIMMasingmasing_bab5]> select AVG(harga) as rata_harga from buku;
+------------+
| rata_harga |
+------------+
| 44000.0000 |
+------------+
1 row in set (0.000 sec)
```

10. **Buat alias untuk tabel dengan nama “bk”, kemudian tampilkan record hanya field “judul”, “penerbit”, “harga”.**

```
MariaDB [NIMMasingmasing_bab5]> select bk.judul, bk.penerbit, bk.harga from
buku bk;
+--------------------+---------------+-------+
| judul              | penerbit      | harga |
+--------------------+---------------+-------+
| Rancangan ERD      | Graha Pustaka | 65000 |
| Diagram UML        | Komunikatika  | 40000 |
| Web Programming    | Graha Pustaka | 35000 |
| Dasar Pemrogramman | Tekno Press   | 35000 |
| Testing Program    | Ilmu Pustaka  | 45000 |
+--------------------+---------------+-------+
5 rows in set (0.000 sec)
```

11. **Tampilkan jumlah data dari tabel buku.**

```
MariaDB [NIMMasingmasing_bab5]> select count(*) as jumlah_data from buku;
+-------------+
| jumlah_data |
+-------------+
|           5 |
+-------------+
1 row in set (0.001 sec)
```

12. **Ubah isi record untuk buku “Diagram UML”, menjadi “UML Dasar”.**

```
MariaDB [NIMMasingmasing_bab5]> update buku set judul = 'UML Dasar' where ju
dul = 'Diagram UML';
Query OK, 1 row affected (0.007 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [NIMMasingmasing_bab5]> select * from buku;
+-----------+--------------------+---------------+--------------+-------+
| kode_buku | judul              | pengarang     | penerbit     | harga |
+-----------+--------------------+---------------+--------------+-------+
| BK01      | Rancangan ERD      | Joko Susilo   | Graha Pustaka | 65000 |
| BK02      | UML Dasar          | Ahmad Sandi   | Komunikatika  | 40000 |
| BK03      | Web Programming    | Rio Budiman   | Graha Pustaka | 35000 |
| BK04      | Dasar Pemrogramman | Artifa Ningrum | Tekno Press  | 35000 |
| BK05      | Testing Program    | Ria Kusumah   | Ilmu Pustaka  | 45000 |
+-----------+--------------------+---------------+--------------+-------+
5 rows in set (0.001 sec)
```

13. **Tambahkan isi record baru, yaitu kode_buku=”BK06”, judul=”Algoritma Lanjut”, pengarang=”Raden Kraton”, penerbit=“Graha Pustaka“, harga=“40.000“.**

```
MariaDB [NIMMasingmasing_bab5]> insert into buku values ('BK06', 'Algoritma
Lanjut', 'Raden Kraton', 'Graha Pustaka', '40000');
Query OK, 1 row affected (0.003 sec)
```

```
MariaDB [NIMMasingmasing_bab5]> select * from buku;
+-----------+--------------------+---------------+--------------+-------+
| kode_buku | judul              | pengarang     | penerbit     | harga |
+-----------+--------------------+---------------+--------------+-------+
| BK01      | Rancangan ERD      | Joko Susilo   | Graha Pustaka | 65000 |
| BK02      | UML Dasar          | Ahmad Sandi   | Komunikatika  | 40000 |
| BK03      | Web Programming    | Rio Budiman   | Graha Pustaka | 35000 |
| BK04      | Dasar Pemrogramman | Artifa Ningrum | Tekno Press  | 35000 |
| BK05      | Testing Program    | Ria Kusumah   | Ilmu Pustaka  | 45000 |
| BK06      | Algoritma Lanjut   | Raden Kraton  | Graha Pustaka | 40000 |
+-----------+--------------------+---------------+--------------+-------+
6 rows in set (0.000 sec)
```

14. **Hapus isi record dengan kode_buku=BK05, lalu tampilkan isi record dari tabel buku**

```
MariaDB [NIMMasingmasing_bab5]> delete from buku where kode_buku = 'BK05';
Query OK, 1 row affected (0.003 sec)

MariaDB [NIMMasingmasing_bab5]> select * from buku;
+-----------+--------------------+---------------+--------------+-------+
| kode_buku | judul              | pengarang     | penerbit     | harga |
+-----------+--------------------+---------------+--------------+-------+
| BK01      | Rancangan ERD      | Joko Susilo   | Graha Pustaka | 65000 |
| BK02      | UML Dasar          | Ahmad Sandi   | Komunikatika  | 40000 |
| BK03      | Web Programming    | Rio Budiman   | Graha Pustaka | 35000 |
| BK04      | Dasar Pemrogramman | Artifa Ningrum | Tekno Press  | 35000 |
| BK06      | Algoritma Lanjut   | Raden Kraton  | Graha Pustaka | 40000 |
+-----------+--------------------+---------------+--------------+-------+
5 rows in set (0.000 sec)
```