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Modul 5

Data Manipulation Language (DML)

1. Menjalankan XAMPP dan menjalankan server Apache serta MySQL.
2. Membuka CMD memilih database 'perbankan'.

```
Command Prompt - mysql -u root -p
Microsoft Windows [Version 10.0.15063]
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C:\Users\Asus>color 1f
C:\Users\Asus>:
D:\>cd xampp\mysql\bin
D:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 29
Server version: 10.1.38-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> use perbankan;
Database changed
MariaDB [perbankan]> show tables;
+-----+
Tables in 'perbankan'
+-----+
cabang_bank
nasabah
nasabah_has_rekening
rekening
transaksi
+-----+
5 rows in set (0.00 sec)

MariaDB [perbankan]>
```

3. Memasukkan data-data kedalam table 'nasabah'.

```
Command Prompt - mysql -u root -p
5 rows in set (0.00 sec)

MariaDB [perbankan]> desc 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 (0.00 sec)

MariaDB [perbankan]> INSERT INTO nasabah(id_nasabah, nama_nasabah, alamat_nasabah)
VALUES
-> (1,'Sutopo','Jl. Jendral Sudirman 12'),
-> (2,'Maryati','Jl. MT. Haryono 31'),
-> (3,'Suparman','Jl. Hasanudin 81'),
-> (4,'Kartika Padmasari','Jl. Manggis 15'),
-> (5,'Budi Eko Prayogo','Jl. Kantil 30'),
-> (6,'Satria Eka Jaya','Jl. Slamet Riyadi 45'),
-> (7,'Indri Hapsari','Jl. Sutoyo 5'),
-> (8,'Sari Murti','Jl. Pangandaran 11'),
-> (9,'Canka Lokananta','Jl. Tidar 86'),
-> (10,'Budi Murtono','Jl. Merak 22');
Query OK, 10 rows affected (0.00 sec)
Records: 10 Duplicates: 0 Warnings: 0

MariaDB [perbankan]>
```

localhost / 127.0.0.1 / perbankan

phpMyAdmin

Server: 127.0.0.1 » Basis data: perbankan » Tabel: nasabah

Menampilkan baris 0 - 9 (total 10. Pencarian dilakukan dalam 0.0000 detik.)

SELECT * FROM 'nasabah'

Profil [Edit dikotak] [Ubah] [Jelaskan SQL] [Buat kode PHP] [Segarkan]

Tampilkan semua | Jumlah baris: 25

	id_nasabah	nama_nasabah	alamat_nasabah
Salin Hapus	1	Sutopo	Jl. Jendral Sudirman 12
Salin Hapus	2	Maryati	Jl. MT. Haryono 31
Salin Hapus	3	Suparman	Jl. Hasanudin 81
Salin Hapus	4	Kartika Padmasari	Jl. Manggis 15
Salin Hapus	5	Budi Eko Prayogo	Jl. Kantil 30
Salin Hapus	6	Satria Eka Jaya	Jl. Slamet Riyadi 45
Salin Hapus	7	Indri Hapsari	Jl. Sutoyo 5
Salin Hapus	8	Sari Murti	Jl. Pangandaran 11
Salin Hapus	9	Canka Lokananta	Jl. Tidar 86
Salin Hapus	10	Budi Murtono	Jl. Merak 22

Pilih Semua Dengan pilihan: Ubah Salin

Konsol Ekspor

4. Memasukkan data-data kedalam table 'cabang bank'.

Command Prompt - mysql -u root -p

```
MariaDB [perbankan]> desc cabang_bank;
```

Field	Type	Null	Key	Default	Extra
kode_cabang	varchar(20)	NO	PRI	NULL	
nama_cabang	varchar(45)	NO	UNI	NULL	
alamat_cabang	varchar(255)	NO		NULL	

3 rows in set (0.01 sec)

```
MariaDB [perbankan]> INSERT INTO cabang_bank(kode_cabang, nama_cabang, alamat_cabang) VALUES
```

- > ('BRUS', 'Bank Rut Unit Surakarta', 'Jl. Slamet Riyadi 18'),
- > ('BRUM', 'Bank Rut Unit Magelang', 'Jl. P. Tendea 63'),
- > ('BRUB', 'Bank Rut Unit Boyolali', 'Jl. Ahmad Yani 45'),
- > ('BRUK', 'Bank Rut Unit Klaten', 'Jl. Superman 23'),
- > ('BRUY', 'Bank Rut Unit Yogyakarta', 'Jl. Anggrek 21'),
- > ('BRUW', 'Bank Rut Unit Wonogiri', 'Jl. Untung Suropati 12');

Query OK, 6 rows affected (0.07 sec)
Records: 6 Duplicates: 0 Warnings: 0

MariaDB [perbankan]>

localhost / 127.0.0.1 / perbankan

phpMyAdmin

Server: 127.0.0.1 » Basis data: perbankan » Tabel: cabang_bank

Menampilkan baris 0 - 5 (total 6, Pencarian dilakukan dalam 0,0000 detik.)

SELECT * FROM `cabang_bank`

Profil [Edit dikotak] [Ubah] [Jelaskan SQL] [Buat kode PHP] [Segarkan]

Tampilkan semua | Jumlah baris: 25

	kode_cabang	nama_cabang	alamat_cabang
Salin Hapus	BRUB	Bank Rut Unit Boyolali	Jl. Ahmad Yani 45
Salin Hapus	BRUK	Bank Rut Unit Klaten	Jl. Superman 23
Salin Hapus	BRUM	Bank Rut Unit Magelang	Jl. P. Tendea 63
Salin Hapus	BRUS	Bank Rut Unit Surakarta	Jl. Slamet Riyadi 18
Salin Hapus	BRUY	Bank Rut Unit Yogyakarta	Jl. Anggrek 21
Salin Hapus	BRUW	Bank Rut Unit Wonogiri	Jl. Untung Suropati 12

Pilih Semua Dengan pilihan: Ubah Salin
Hapus Ekspor

Tampilkan semua | Jumlah baris: 25

Konsol hasil kueri

5. Memasukkan data-data kedalam table 'rekening'.

Command Prompt - mysql -u root -p

```
MariaDB [perbankan]> INSERT INTO cabang_bank(kode_cabang, nama_cabang, alamat_cabang) VALUES
```

- > ('BRUS', 'Bank Rut Unit Surakarta', 'Jl. Slamet Riyadi 18'),
- > ('BRUM', 'Bank Rut Unit Magelang', 'Jl. P. Tendea 63'),
- > ('BRUB', 'Bank Rut Unit Boyolali', 'Jl. Ahmad Yani 45'),
- > ('BRUK', 'Bank Rut Unit Klaten', 'Jl. Superman 23'),
- > ('BRUY', 'Bank Rut Unit Yogyakarta', 'Jl. Anggrek 21'),
- > ('BRUW', 'Bank Rut Unit Wonogiri', 'Jl. Untung Suropati 12');

Query OK, 6 rows affected (0.07 sec)
Records: 6 Duplicates: 0 Warnings: 0

```
MariaDB [perbankan]> desc rekening;
```

Field	Type	Null	Key	Default	Extra
no_rekening	int(11)	NO	PRI	NULL	
kode_cabangFK	varchar(20)	YES		NULL	1234
pin	varchar(20)	NO		1234	
saldo	int(11)	NO		0	

4 rows in set (0.05 sec)

```
MariaDB [perbankan]> INSERT INTO rekening(no_rekening, kode_cabangFK, pin, saldo) VALUES
```

- > (101, 'BRUS', '1111', 500000),
- > (102, 'BRUS', '2222', 350000),
- > (103, 'BRUS', '3333', 750000),
- > (104, 'BRUM', '4444', 900000),
- > (105, 'BRUM', '5555', 2000000),
- > (106, 'BRUS', '6666', 3000000),
- > (107, 'BRUS', '7777', 1000000),
- > (108, 'BRUB', '0000', 5000000),
- > (109, 'BRUB', '9999', 0),
- > (110, 'BRUY', '1234', 550000),
- > (111, 'BRUK', '4321', 150000),
- > (112, 'BRUK', '0123', 300000),
- > (113, 'BRUY', '8888', 255000);

Query OK, 13 rows affected (0.08 sec)
Records: 13 Duplicates: 0 Warnings: 0

MariaDB [perbankan]>

localhost / 127.0.0.1 / perbankan

phpMyAdmin

Server: 127.0.0.1 » Basis data: perbankan » Tabel: rekening

Menampilkan baris 0 - 5 (total 13, Pencarian dilakukan dalam 0,0000 detik.)

SELECT * FROM `rekening`

Profil [Edit dikotak] [Ubah] [Jelaskan SQL] [Buat kode PHP] [Segarkan]

Tampilkan semua | Jumlah baris: 25

	no_rekening	kode_cabangFK	pin	saldo
Salin Hapus	101	BRUS	1111	500000
Salin Hapus	102	BRUS	2222	350000
Salin Hapus	103	BRUS	3333	750000
Salin Hapus	104	BRUM	4444	900000
Salin Hapus	105	BRUM	5555	2000000
Salin Hapus	106	BRUS	6666	3000000
Salin Hapus	107	BRUS	7777	1000000
Salin Hapus	108	BRUB	0000	5000000
Salin Hapus	109	BRUB	9999	0
Salin Hapus	110	BRUY	1234	550000
Salin Hapus	111	BRUK	4321	150000
Salin Hapus	112	BRUK	0123	300000
Salin Hapus	113	BRUY	8888	255000

Pilih Semua Dengan pilihan: Ubah Salin
Hapus Ekspor

Konsol

6. Memasukkan data-data kedalam table 'nasabah has rekening'.

The screenshot shows a MySQL command prompt on the left and the phpMyAdmin interface on the right. In the command prompt, the user has connected to the 'perbankan' database and executed an INSERT statement to populate the 'nasabah_has_rekening' table with 15 rows of data. The phpMyAdmin interface shows the 'nasabah_has_rekening' table with columns 'id_nasabahFK' and 'no_rekeningFK'.

```
Command Prompt - mysql -u root -p
D:\xampp\mysql\bin>mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 176
Server version: 10.1.38-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> use perbankan;
Database changed
MariaDB [perbankan]>
MariaDB [perbankan]> INSERT INTO nasabah_has_rekening(id_nasabahFK, no_rekeningFK)
VALUES
-> (1,104),
-> (2,103),
-> (3,105),
-> (3,106),
-> (4,101),
-> (4,107),
-> (5,102),
-> (5,107),
-> (6,109),
-> (7,109),
-> (8,111),
-> (9,110),
-> (10,113),
-> (8,112),
-> (10,108);
Query OK, 15 rows affected (0.08 sec)
Records: 15 Duplicates: 0 Warnings: 0
MariaDB [perbankan]>
```

phpMyAdmin interface showing the 'nasabah_has_rekening' table with columns 'id_nasabahFK' and 'no_rekeningFK'. The table contains 15 rows of data.

7. Memasukkan data-data kedalam table 'transaksi'.

The screenshot shows a MySQL command prompt on the left and the phpMyAdmin interface on the right. In the command prompt, the user has executed an INSERT statement to populate the 'transaksi' table with 30 rows of data. The phpMyAdmin interface shows the 'transaksi' table with columns 'no_transaksi', 'id_nasabahFK', and 'no_rekeningFK'.

```
Command Prompt - mysql -u root -p
| jumlah | int(11) | NO | | NULL |
+-----+
6 rows in set (0.01 sec)

MariaDB [perbankan]> INSERT INTO transaksi(no_transaksi, id_nasabahFK, no_rekeningFK, jenis_transaksi, tanggal, jumlah) VALUES
-> (1,105,3,'debit',2009-11-10,50000),
-> (2,103,2,'debit',2009-11-10,40000),
-> (3,101,4,'kredit',2009-11-12,20000),
-> (4,106,3,'debit',2009-11-13,50000),
-> (5,107,5,'kredit',2009-11-13,30000),
-> (6,104,1,'kredit',2009-11-15,200000),
-> (7,110,9,'kredit',2009-11-15,150000),
-> (8,102,5,'debit',2009-11-16,20000),
-> (9,105,3,'kredit',2009-11-18,50000),
-> (10,107,4,'debit',2009-11-19,100000),
-> (11,103,2,'debit',2009-11-19,100000),
-> (12,104,1,'debit',2009-11-19,50000),
-> (13,107,4,'kredit',2009-11-20,200000),
-> (14,105,3,'debit',2009-11-21,40000),
-> (15,104,1,'kredit',2009-11-22,100000),
-> (16,101,4,'kredit',2009-11-22,20000),
-> (17,103,2,'debit',2009-11-22,50000),
-> (18,102,5,'debit',2009-11-25,50000),
-> (19,108,10,'debit',2009-11-26,100000),
-> (20,106,3,'kredit',2009-11-27,50000),
-> (21,103,2,'kredit',2009-11-28,200000),
-> (22,105,3,'kredit',2009-11-28,100000),
-> (23,102,5,'debit',2009-11-30,100000),
-> (24,104,1,'debit',2009-12-1,50000),
-> (25,103,2,'debit',2009-12-2,40000),
-> (26,101,4,'debit',2009-12-4,50000),
-> (27,103,2,'kredit',2009-12-5,100000),
-> (28,102,5,'kredit',2009-12-5,200000),
-> (29,109,7,'debit',2009-12-5,100000),
-> (30,110,9,'debit',2009-12-6,20000);
Query OK, 30 rows affected, 30 warnings (0.08 sec)
Records: 30 Duplicates: 0 Warnings: 30
MariaDB [perbankan]>
```

phpMyAdmin interface showing the 'transaksi' table with columns 'no_transaksi', 'id_nasabahFK', and 'no_rekeningFK'. The table contains 30 rows of data.

8. Melakukan UPDATE terhadap alamat seorang nasabah.

```

Command Prompt - mysql -u root -p
-> (20,106,3,'kredit',2009-11-27,50000),
-> (21,103,2,'kredit',2009-11-28,200000),
-> (22,105,3,'kredit',2009-11-28,100000),
-> (23,102,5,'debit',2009-11-30,100000),
-> (24,104,1,'debit',2009-12-1,50000),
-> (25,103,2,'debit',2009-12-2,40000),
-> (26,101,4,'debit',2009-12-4,50000),
-> (27,103,2,'kredit',2009-12-5,100000),
-> (28,102,5,'kredit',2009-12-5,200000),
-> (29,109,7,'debit',2009-12-5,100000),
-> (30,110,9,'debit',2009-12-6,20000);
Query OK, 30 rows affected, 30 warnings (0.08 sec)
Records: 30 Duplicates: 0 Warnings: 30

MariaDB [perbankan]> UPDATE nasabah SET alamat_nasabah = 'Jl. Slamet Riyadi No. 34'
WHERE nama_nasabah = 'Indri Hapsari';
Query OK, 1 row affected (0.06 sec)
Rows matched: 1 Changed: 1 Warnings: 0

MariaDB [perbankan]>

```

9. Melakukan UPDATE alamat pada salah satu cabang bank.

```

Command Prompt - mysql -u root -p
-> (20,106,3,'kredit',2009-11-27,50000),
-> (21,103,2,'kredit',2009-11-28,200000),
-> (22,105,3,'kredit',2009-11-28,100000),
-> (23,102,5,'debit',2009-11-30,100000),
-> (24,104,1,'debit',2009-12-1,50000),
-> (25,103,2,'debit',2009-12-2,40000),
-> (26,101,4,'debit',2009-12-4,50000),
-> (27,103,2,'kredit',2009-12-5,100000),
-> (28,102,5,'kredit',2009-12-5,200000),
-> (29,109,7,'debit',2009-12-5,100000),
-> (30,110,9,'debit',2009-12-6,20000);
Query OK, 30 rows affected, 30 warnings (0.08 sec)
Records: 30 Duplicates: 0 Warnings: 30

MariaDB [perbankan]> UPDATE nasabah SET alamat_nasabah = 'Jl. Slamet Riyadi No. 34'
WHERE nama_nasabah = 'Indri Hapsari';
Query OK, 1 row affected (0.06 sec)
Rows matched: 1 Changed: 1 Warnings: 0

MariaDB [perbankan]> UPDATE cabang_bank SET alamat_cabang = 'Jl. A. Yani No. 23'
WHERE kode_cabang = 'BRUW';
Query OK, 1 row affected (0.07 sec)
Rows matched: 1 Changed: 1 Warnings: 0

MariaDB [perbankan]>

```

10. Menghapus salah satu data pada salah satu table.

Command Prompt - mysql -u root -p

```
-> (20,106,3,'kredit',2009-11-27,50000),
-> (21,103,2,'kredit',2009-11-28,200000),
-> (22,105,3,'kredit',2009-11-28,100000),
-> (23,102,5,'debit',2009-11-30,100000),
-> (24,104,1,'debit',2009-12-1,50000),
-> (25,103,2,'debit',2009-12-2,40000),
-> (26,101,4,'debit',2009-12-4,50000),
-> (27,103,2,'kredit',2009-12-5,100000),
-> (28,102,5,'kredit',2009-12-5,200000),
-> (29,109,7,'debit',2009-12-5,100000),
-> (30,110,9,'debit',2009-12-6,20000);
Query OK, 30 rows affected, 30 warnings (0.08 sec)
Records: 30 Duplicates: 0 Warnings: 30

MariaDB [perbankan]> UPDATE nasabah SET alamat_nasabah = 'Jl. Slamet Riyadi No. 34'
WHERE nama_nasabah = 'Indri Hapsari';
Query OK, 1 row affected (0.06 sec)
Rows matched: 1 Changed: 1 Warnings: 0

MariaDB [perbankan]> UPDATE cabang_bank SET alamat_cabang = 'Jl. A. Yani No. 23'
WHERE kode_cabang = 'BRUW';
Query OK, 1 row affected (0.07 sec)
Rows matched: 1 Changed: 1 Warnings: 0

MariaDB [perbankan]> DELETE FROM nasabah WHERE id_nasabah = 7;
Query OK, 1 row affected (0.07 sec)

MariaDB [perbankan]>
```

localhost / 127.0.0.1 / perbankan

localhost/phpmyadmin/sql

Server: 127.0.0.1 » Basis data: perbankan » Tabel: nasabah

Menampilkan baris 0 - 8 (total 9, Pencarian dilakukan dalam 0,0000 detik.)

SELECT * FROM `nasabah`

Tampilkan semua | Jumlah baris: 25

	id_nasabah	nama_nasabah	alamat_nasabah
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	1	Sutopo	Jl. Jendral Sudirman 12
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	2	Maryati	Jl. MT. Haryono 31
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	3	Suparman	Jl. Hasanudin 81
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	4	Kartika Padmasari	Jl. Manggis 15
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	5	Budi Eko Prayogo	Jl. Kantil 30
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	6	Satria Eka Jaya	Jl. Slamet Riyadi 45
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	8	Sari Murti	Jl. Pangandaran 11
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	9	Canka Lokananta	Jl. Tidar 86
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	10	Budi Murtono	Jl. Merak 22

Pilih Semua Dengan pilihan: Ubah Salin Hapus Ekspor

Tampilkan semua | Jumlah baris: 25

Operasi hasil kueri

Konsol

11. Menghapus salah satu data pada table cabang bank.

Command Prompt - mysql -u root -p

```
-> (20,106,3,'kredit',2009-11-27,50000),
-> (21,103,2,'kredit',2009-11-28,200000),
-> (22,105,3,'kredit',2009-11-28,100000),
-> (23,102,5,'debit',2009-11-30,100000),
-> (24,104,1,'debit',2009-12-1,50000),
-> (25,103,2,'debit',2009-12-2,40000),
-> (26,101,4,'debit',2009-12-4,50000),
-> (27,103,2,'kredit',2009-12-5,100000),
-> (28,102,5,'kredit',2009-12-5,200000),
-> (29,109,7,'debit',2009-12-5,100000),
-> (30,110,9,'debit',2009-12-6,20000);
Query OK, 30 rows affected, 30 warnings (0.08 sec)
Records: 30 Duplicates: 0 Warnings: 30

MariaDB [perbankan]> UPDATE nasabah SET alamat_nasabah = 'Jl. Slamet Riyadi No. 34'
WHERE nama_nasabah = 'Indri Hapsari';
Query OK, 1 row affected (0.06 sec)
Rows matched: 1 Changed: 1 Warnings: 0

MariaDB [perbankan]> UPDATE cabang_bank SET alamat_cabang = 'Jl. A. Yani No. 23'
WHERE kode_cabang = 'BRUW';
Query OK, 1 row affected (0.07 sec)
Rows matched: 1 Changed: 1 Warnings: 0

MariaDB [perbankan]> DELETE FROM nasabah WHERE id_nasabah = 7;
Query OK, 1 row affected (0.07 sec)

MariaDB [perbankan]> DELETE FROM cabang_bank WHERE nama_cabang = 'Bank Rut Unit Magelang';
Query OK, 1 row affected (0.12 sec)

MariaDB [perbankan]>
```

localhost / 127.0.0.1 / perbankan

localhost/phpmyadmin/sql

Server: 127.0.0.1 » Basis data: perbankan » Tabel: cabang_bank

Menampilkan baris 0 - 4 (total 5, Pencarian dilakukan dalam 0,0000 detik.)

SELECT * FROM `cabang_bank`

Tampilkan semua | Jumlah baris: 25

	kode_cabang	nama_cabang	alamat_cabang
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUB	Bank Rut Unit Boyolali	Jl. Ahmad Yani 45
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUK	Bank Rut Unit Klaten	Jl. Suparman 23
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUS	Bank Rut Unit Surakarta	Jl. Slamet Riyadi 18
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUW	Bank Rut Unit Wonogiri	Jl. A. Yani No. 23
<input type="checkbox"/> Ubah <input type="checkbox"/> Salin <input type="checkbox"/> Hapus	BRUY	Bank Rut Unit Yogyakarta	Jl. Angrek 21

Pilih Semua Dengan pilihan: Ubah Salin Hapus Ekspor

Tampilkan semua | Jumlah baris: 25

Operasi hasil kueri

Cetak Salin ke clipboard Ekspor Tampilkan bagan Buat tampilan

Markahi kueri SQL ini

Konsol