BELAJAR MYSQL

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XI RPL / 27

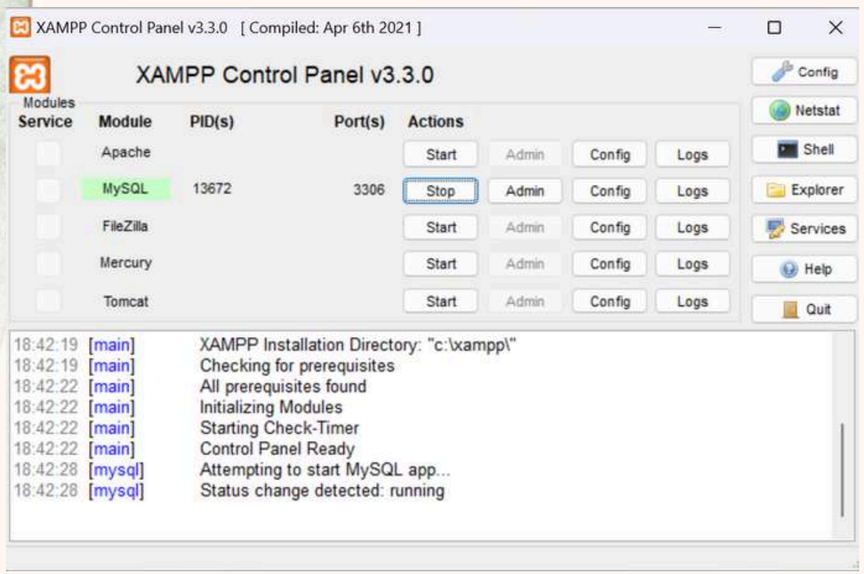
KENAPA HARUS MENGGUNAKAN DATABASE?

Kebanyakan aplikasi yang dibuat digunkanakan untuk menyimpan dan melihat data. Data adalah bagian terkecil yang digunakan sebagai penyusun informasi. Karena fungsi yang sangat penting dari data agar dapat digunakan sebagai sumber informasi yang benar. Maka perlu dibuat sebuah rumah data yang baik dan benar. Rumah data inilah yang disebut dengan DATABASE.

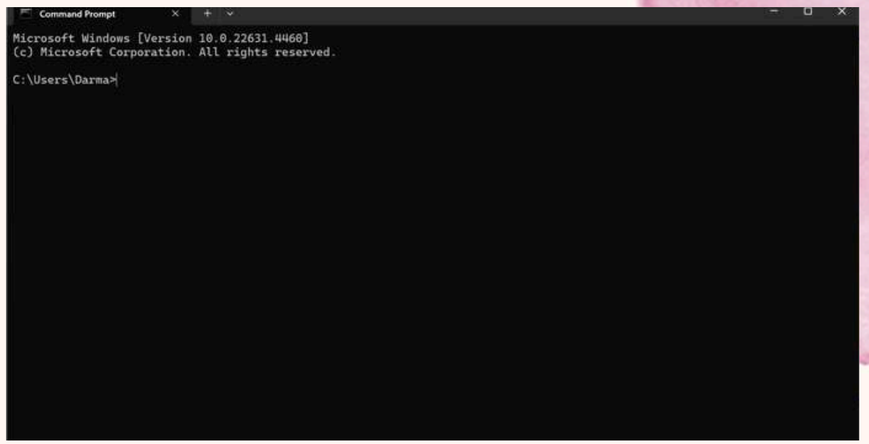
INSTALL XAMPP

https://www.apachefriends.org/download.html

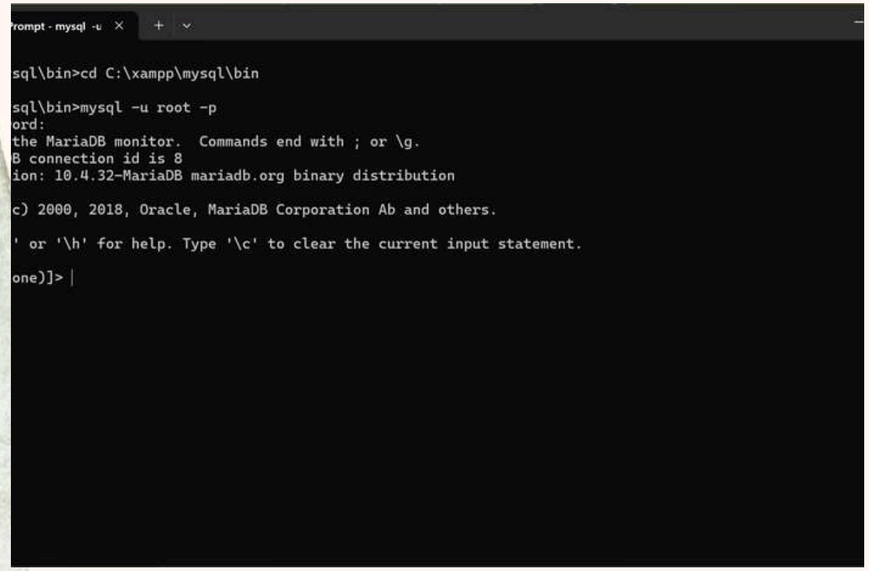
AKTIFKAN MYSQL



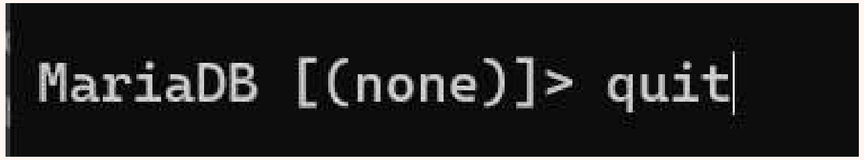
BUKA COMMAND PROMPT DI WINDOWS



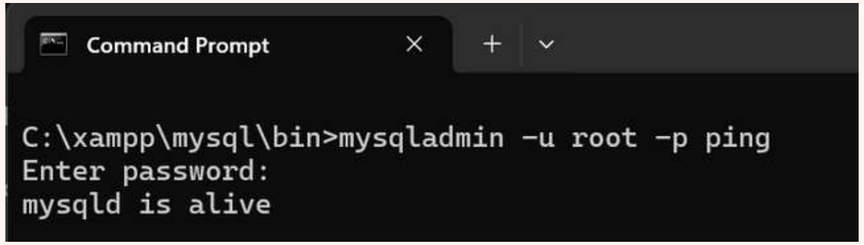
JALANKAN MYSQL

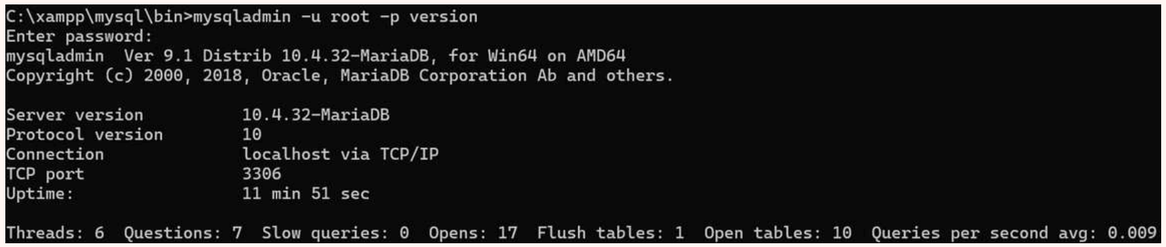


KELUAR MYSQL



MEMERIKSA MYSQL JALAN ATAU TIDAK & MEMERIKSA VERSI





MENAMPILKAN TANGGAL, WAKTU DAN JAM

```
MariaDB [(none)]> select curdate();
+------------+
| curdate()  |
+------------+
| 2024-11-30 |
+------------+
1 row in set (0.001 sec)
```

```
ariaDB [(none)]> select curtime();
+-----------+
| curtime() |
+-----------+
| 19:12:43  |
+-----------+
row in set (0.001 sec)
```

MENGGUNAKAN KALKULATOR

```
ariaDB [(none)]> select 4 + 3;
+-------+
| 4 + 3 |
+-------+
|     7 |
+-------+
1 row in set (0.000 sec)

ariaDB [(none)]> select 4 - 3;
+-------+
| 4 - 3 |
+-------+
|     1 |
+-------+
1 row in set (0.000 sec)

ariaDB [(none)]> select 4 * 3;
+-------+
| 4 * 3 |
+-------+
|    12 |
+-------+
1 row in set (0.000 sec)

ariaDB [(none)]> select 4 / 3;
+--------+
| 4 / 3  |
+--------+
| 1.3333 |
+--------+
1 row in set (0.000 sec)

ariaDB [(none)]> select 4 % 3;
+-------+
| 4 % 3 |
+-------+
|     1 |
+-------+
1 row in set (0.001 sec)
```

DDL

Data Definition Language
Pembuatan Database, tabel & index

MENAMPILKAN DATABASE

```
ariaDB [(none)]> show databases;
+--------------------------+
| Database                 |
+--------------------------+
| dbrestoran               |
| dbtoko                   |
| examplelaravel           |
| firstofficebwa           |
| information_schema       |
| laravel                  |
| laravel-resto            |
| laravel_sanctum_db       |
| mysql                    |
| noticeboard              |
| performance_schema       |
| phpmyadmin               |
| react-blog-app           |
| react_laravel_youtubecrud |
| sekolah                  |
| server_modul             |
| server_module            |
| shopee                   |
| test                     |
| tokoku                   |
| wordpress                |
+--------------------------+
 rows in set (0.093 sec)
```

MEMBUAT DATABASE

```
ariaDB [(none)]> create database toko;
uery OK, 1 row affected (0.004 sec)

ariaDB [(none)]> show databases;
+--------------------------+
| Database                 |
+--------------------------+
| dbrestoran               |
| dbtoko                   |
| examplelaravel           |
| firstofficebwa           |
| information_schema       |
| laravel                  |
| laravel-resto            |
| laravel_sanctum_db       |
| mysql                    |
| noticeboard              |
| performance_schema       |
| phpmyadmin               |
| react-blog-app           |
| react_laravel_youtubecrud |
| sekolah                  |
| server_modul             |
| server_module            |
| shopee                   |
| test                     |
| toko                     |
| tokoku                   |
| wordpress                |
+--------------------------+
2 rows in set (0.002 sec)
```

MENGHAPUS DATABASE

```
MariaDB [(none)]> drop database toko;
Query OK, 0 rows affected (0.033 sec)
```

MENGAKTIFKAN DATABASE

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

MEMBUAT TABEL

```
riaDB [toko]> create table tblkelompok
  -> (
  -> idkelompok INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
  -> kelompok VARCHAR(100)
  -> );
ery OK, 0 rows affected (0.026 sec)
```

MENAMPILKAN TABEL

```
MariaDB [dbtoko]> show tables;
+-----------------+
| Tables_in_dbtoko |
+-----------------+
| tblbarang       |
| tblkelompok     |
+-----------------+
2 rows in set (0.00 sec)
```

MENAMPILKAN STRUKTUR TABEL

```
MariaDB [toko]> describe tblkelompok;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| idkelompok | int(11)      | NO   | PRI | NULL    | auto_increment |
| kelompok   | varchar(100) | YES  |     | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
2 rows in set (0.036 sec)
```

MEMBUAT TABEL BARANG

```
MariaDB [dbtoko]> CREATE TABLE tblbarang
    -> (
    -> idbarang INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    -> idkelompok INT,
    -> barang VARCHAR(200),
    -> stok FLOAT,
    -> hargabeli FLOAT
    -> );
Query OK, 0 rows affected (0.12 sec)
```

MENAMBAH KOLOM

```
MariaDB [dbtoko]> alter table tblbarang add hargajual float;
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

MERUBAH TIPE DATA

```
MariaDB [dbtoko]> alter table tblbarang modify stok INT;
Query OK, 0 rows affected (0.11 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

MEMBERI NILAI DEFAULT PADA KOLOM

```
MariaDB [dbtoko]> ALTER TABLE tblbarang ALTER COLUMN stok SET DEFAULT 0;
Query OK, 0 rows affected (0.00 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

HASILNYA

```
MariaDB [dbtoko]> describe tblbarang;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| idbarang   | int(11)      | NO   | PRI | NULL    | auto_increment |
| idkelompok | int(11)      | YES  |     | NULL    |                |
| barang     | varchar(200) | YES  |     | NULL    |                |
| stok       | int(11)      | YES  |     | 0       |                |
| hargabeli  | float        | YES  |     | NULL    |                |
| hargajual  | float        | YES  |     | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
6 rows in set (0.00 sec)
```

MENGHAPUS KOLOM (SEBELUMNYA TAMBAHKAN KOLOM UNTUK DIHAPUS DULU)

```
MariaDB [dbtoko]> ALTER TABLE tblbarang DROP COLUMN stokminimal;
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

HASILNYA

```
riaDB [dbtoko]> DESCRIBE tblbarang;
+-----------+--------------+------+-----+---------+----------------+
ield       | Type         | Null | Key | Default | Extra          |
+-----------+--------------+------+-----+---------+----------------+
idbarang   | int(11)      | NO   | PRI | NULL    | auto_increment |
idkelompok | int(11)      | YES  |     | NULL    |                |
barang     | varchar(200) | YES  |     | NULL    |                |
stok       | int(11)      | YES  |     | 0       |                |
hargabeli  | float        | YES  |     | NULL    |                |
hargajual  | float        | YES  |     | NULL    |                |
+-----------+--------------+------+-----+---------+----------------+
rows in set (0.01 sec)
```

MENGUBAH NAMA KOLOM

```
MariaDB [dbtoko]> ALTER TABLE tblbarang CHANGE stok stokbarang INT;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

HASILNYA

```
riaDB [dbtoko]> DESCRIBE tblbarang;
+----------+--------------+------+-----+---------+----------------+
ield       | Type         | Null | Key | Default | Extra
+----------+--------------+------+-----+---------+----------------+
dbarang    | int(11)      | NO   | PRI | NULL    | auto_increment
dkelompok  | int(11)      | YES  |     | NULL    |
barang     | varchar(200) | YES  |     | NULL    |
tokbarang  | int(11)      | YES  |     | NULL    |
argabeli   | float        | YES  |     | NULL    |
argajual   | float        | YES  |     | NULL    |
+----------+--------------+------+-----+---------+----------------+
ows in set (0.01 sec)
```

MEMBUAT TABEL PELANGGAN

```
MariaDB [dbtoko]> CREATE TABLE tblpelanggan
    -> (
    -> idpelanggan INT,
    -> nama VARCHAR(200),
    -> alamat VARCHAR(255)
    -> );
Query OK, 0 rows affected (0.05 sec)
```

HASILNYA

```
MariaDB [dbtoko]> DESCRIBE tblpelanggan;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| idpelanggan | int(11)      | NO   | PRI | NULL    | auto_increment |
| nama        | varchar(200) | YES  |     | NULL    |                |
| alamat      | varchar(255) | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
3 rows in set (0.01 sec)
```

MENAMBAHKAN PRIMARY KEY

```
MariaDB [dbtoko]> ALTER TABLE tblpelanggan
    -> MODIFY idpelanggan INT NOT NULL AUTO_INCREMENT PRIMARY KEY;
Query OK, 0 rows affected (0.14 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

MENAMPILKAN ENGINE YANG DIGUNAKAN

```
MariaDB [dbtoko]> SHOW CREATE TABLE tblpelanggan;
```

HASILNYA

```
tblpelanggan | CREATE TABLE `tblpelanggan` (
`idpelanggan` int(11) NOT NULL AUTO_INCREMENT
`nama` varchar(200) DEFAULT NULL,
`alamat` varchar(255) DEFAULT NULL,
PRIMARY KEY (`idpelanggan`)
ENGINE=InnoDB DEFAULT CHARSET=latin1 |
```

MEMBUAT TABEL ORDER

```
MariaDB [dbtoko]> CREATE TABLE tblorder
    -> (
    -> idorder INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    -> idpelanggan INT,
    -> tanggalorder DATE,
    -> total FLOAT,
    -> bayar FLOAT,
    -> kembali FLOAT
    -> );
Query OK, 0 rows affected (0.04 sec)
```

HASILNYA

```
ariaDB [dbtoko]> DESCRIBE tblorder;
+--------------+-------------+------+-----+---------+----------------+
| Field        | Type        | Null | Key | Default | Extra          |
+--------------+-------------+------+-----+---------+----------------+
| idorder      | int(11)     | NO   | PRI | NULL    | auto_increment |
| idpelanggan  | int(11)     | YES  |     | NULL    |                |
| faktur       | varchar(50) | YES  |     | NULL    |                |
| tanggalorder | date        | YES  |     | NULL    |                |
| total        | float       | YES  |     | NULL    |                |
| bayar        | float       | YES  |     | NULL    |                |
| kembali      | float       | YES  |     | NULL    |                |
+--------------+-------------+------+-----+---------+----------------+
rows in set (0.01 sec)
```

MENAMBAHKAN KOLOM SETELAH KOLOM

```
MariaDB [dbtoko]> ALTER TABLE tblorder ADD faktur VARCHAR(50) AFTER idpelanggan;
Query OK, 0 rows affected (0.09 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

MEMBUAT TABEL ORDERDETAIL

```
aDB [dbtoko]> CREATE TABLE tblorderdetail
-> (
-> idorderdetail INT NOT NULL AUTO_INCREMENT PRIMARY KE
-> idorder INT,
-> idbarang INT,
-> jumlah INT,
-> hargajual FLOAT
-> );
y OK, 0 rows affected (0.04 sec)
```

HASILNYA

```
MariaDB [dbtoko]> DESCRIBE tblorderdetail;
+---------------+---------+------+-----+---------+----------------+
| Field         | Type    | Null | Key | Default | Extra          |
+---------------+---------+------+-----+---------+----------------+
| idorderdetail | int(11) | NO   | PRI | NULL    | auto_increment |
| idorder       | int(11) | YES  |     | NULL    |                |
| idbarang      | int(11) | YES  |     | NULL    |                |
| jumlah        | int(11) | YES  |     | NULL    |                |
| hargajual     | float   | YES  |     | NULL    |                |
+---------------+---------+------+-----+---------+----------------+
5 rows in set (0.01 sec)
```

MEMBUAT INDEX PADA TABEL PELANGGAN DAN BARANG

```
MariaDB [dbtoko]> CREATE INDEX barangindex ON tblbarang (barang);
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
MariaDB [dbtoko]> CREATE INDEX barangindex ON tblbarang (barang);
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

MENAMPILKAN INDEX

```
MariaDB [dbtoko]> SHOW INDEX FROM tblbarang;
```

Hasilnya adalah;

```
+-----------+------------+-------------+--------------+-------------
-+------------+---------+---------------+
| Table     | Non_unique | Key_name    | Seq_in_index | Column_name |
 | Index_type | Comment | Index_comment |
+-----------+------------+-------------+--------------+-------------
-+------------+---------+---------------+
| tblbarang |          0 | PRIMARY     |            1 | idbarang    |
 | BTREE      |         |               |
| tblbarang |          1 | barangindex |            1 | barang      |
 | BTREE      |         |               |
+-----------+------------+-------------+--------------+-------------
-+------------+---------+---------------+
2 rows in set (0.00 sec)
```

MENGAHAPUS INDEX

```
MariaDB [dbtoko]> DROP INDEX pelangganindex ON tblpelanggan;
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

DML

Data Manipulation Language
Insert, Delete, Update, Select, View, Trigger, Procedure, & Function

INSERT SEMUA KOLOM

```
MariaDB [dbtoko]> INSERT INTO tblkelompok VALUES('','Gula');
Query OK, 1 row affected, 1 warning (0.01 sec)
```

HASILNYA

```
ariaDB [dbtoko]> SELECT * FROM tblkelompok;
+------------+----------+
| idkelompok | kelompok |
+------------+----------+
|          1 | Gula     |
+------------+----------+
 row in set (0.00 sec)
```

INSERT SEBAGIAN KOLOM

```
MariaDB [dbtoko]> INSERT INTO tblkelompok (kelompok) VALUES('Beras');
Query OK, 1 row affected (0.01 sec)
```

SEBAGAI LATIHAN INSERT DATA HINGGA SEPERTI DI BAWAH INI

idkelompok	kelompok
1	Gula
2	Beras
3	Tepung
4	Minyak
5	Jajan

DELETE SEBAGAIN RECORD(BARIS DATA)

```
MariaDB [dbtoko]> DELETE FROM tblkelompok WHERE idkelompok=5;
Query OK, 1 row affected (0.01 sec)
```

HASILNYA

```
+------------+----------+
| idkelompok | kelompok |
+------------+----------+
|          1 | Gula     |
|          2 | Beras    |
|          3 | Tepung   |
|          4 | Minyak   |
+------------+----------+
```

DELETE SEMUA RECORD(BARIS DATA)

```
MariaDB [dbtoko]> DELETE FROM tblkelompok;
Query OK, 4 rows affected (0.01 sec)
```

HASILNYA CEK DENGAN

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok;
Empty set (0.00 sec)
```

UPDATE SEBAGAIN RECORD(BARIS DATA)

```
MariaDB [dbtoko]> UPDATE tblkelompok SET kelompok='Snek' WHERE idkelompok=6;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

HASILNYA CEK DENGAN

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok;
+------------+----------+
| idkelompok | kelompok |
+------------+----------+
|          6 | Snek     |
|          7 | Minyak   |
|          8 | Tepung   |
+------------+----------+
3 rows in set (0.00 sec)
```

UPDATE SEMUA RECORD(BARIS DATA)

```
MariaDB [dbtoko]> UPDATE tblkelompok SET kelompok='Makanan';
Query OK, 3 rows affected (0.01 sec)
Rows matched: 3  Changed: 3  Warnings: 0
```

HASILNYA CEK DENGAN

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok;
+------------+----------+
| idkelompok | kelompok |
+------------+----------+
|          6 | Makanan  |
|          7 | Makanan  |
|          8 | Makanan  |
+------------+----------+
3 rows in set (0.00 sec)
```

TABEL MASTER DAN TABEL TRANSAKSI

MEMBUAT RELASI ANTAR TABEL

```
MariaDB [dbtoko]> ALTER TABLE tblbarang
    -> ADD CONSTRAINT FK_idkelompok FOREIGN KEY (idkelompok)
    -> REFERENCES tblkelompok (idkelompok) ON UPDATE CASCADE
    -> ON DELETE RESTRICT;
Query OK, 0 rows affected (0.10 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

MELIHAT HASILNYA DENGAN

```
riaDB [dbtoko]> SHOW CREATE TABLE tblbarang
```

```
| tblbarang | CREATE TABLE `tblbarang` (
  `idbarang` int(11) NOT NULL AUTO_INCREMENT,
  `idkelompok` int(11) DEFAULT NULL,
  `barang` varchar(200) DEFAULT NULL,
  `stokbarang` int(11) DEFAULT NULL,
  `hargabeli` float DEFAULT NULL,
  `hargajual` float DEFAULT NULL,
  PRIMARY KEY (`idbarang`),
  KEY `barangindex` (`barang`),
  KEY `FK_idkelompok` (`idkelompok`),
  CONSTRAINT `FK_idkelompok` FOREIGN KEY (`idkelompok`) REFERENCES
`tblkelompok` (`idkelompok`) ON UPDATE CASCADE,
  CONSTRAINT `FK_tblbarang_tblkelompok` FOREIGN KEY (`idkelompok`)
REFERENCES `tblkelompok` (`idkelompok`) ON UPDATE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=latin1 |
```

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok;
+------------+----------+
| idkelompok | kelompok |
+------------+----------+
|          6 | Beras    |
|          7 | Gula     |
|          8 | Tepung   |
+------------+----------+
3 rows in set (0.00 sec)
```

LATIHAN INSERT DATA

INSERT DATA HINGGA TABEL MENJADI SEPERTI BERIKUT

```
MariaDB [dbtoko]> INSERT INTO tblbarang VALUES ('',6,'Beras Rojo Lele',100,10000,12000);
Query OK, 1 row affected, 1 warning (0.01 sec)
```

```
MariaDB [dbtoko]> SELECT * FROM tblbarang;
+----------+------------+-----------------+------------+-----------+-----------+
| idbarang | idkelompok | barang          | stokbarang | hargabeli | hargajual |
+----------+------------+-----------------+------------+-----------+-----------+
|        1 |          6 | Beras Rojo Lele |        100 |     10000 |     12000 |
|        2 |          6 | Beras Cianjur   |         50 |     11000 |     14000 |
|        3 |          6 | Beras Medium    |         70 |      8000 |     10000 |
|        4 |          6 | Beras Mahal     |         30 |     23000 |     30000 |
|        5 |          7 | Gula Putih      |         20 |     12000 |     14000 |
|        6 |          7 | Gula Merah      |         10 |      3000 |      5000 |
|        7 |          7 | Gula Batu       |         40 |      2000 |      3000 |
|        8 |          7 | Gula Aren       |         60 |      7000 |      9000 |
|       10 |          8 | Tepung Terigu   |         50 |      4000 |      6000 |
|       11 |          8 | Tepung Tapioka  |         15 |      2000 |      3500 |
|       12 |          8 | Tepung Kanji    |         25 |      3500 |      5000 |
+----------+------------+-----------------+------------+-----------+-----------+
11 rows in set (0.00 sec)
```

PENGUJIAN INSERT DAN UPDATE

PENGUJIAN INSERT

```
MariaDB [dbtoko]> INSERT INTO tblbarang VALUES ('',9,'Tepung Sagu',20,4500,7000);
ERROR 1452 (23000): Cannot add or update a child row: a foreign key constraint fails
(`dbtoko`.`tblbarang`, CONSTRAINT `FK_idkelompok` FOREIGN KEY (`idkelompok`) REFERENC
ES `tblkelompok` (`idkelompok`) ON UPDATE CASCADE)
MariaDB [dbtoko]>
```

PENGUJIAN UPDATE

```
MariaDB [dbtoko]> UPDATE tblkelompok SET idkelompok=9 WHERE kelompok='Tepung';
Query OK, 0 rows affected (0.00 sec)
Rows matched: 1  Changed: 0  Warnings: 0
```

PENGUJIAN DELETE

PENGUJIAN DELETE

Karena idkelompok 9 sudah digunakan untuk relasi pada tbl barang maka tidak bisa dihapus.

```
MariaDB [dbtoko]> DELETE FROM tblkelompok WHERE idkelompok=9;
ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails
 (`dbtoko`.`tblbarang`, CONSTRAINT `FK_tblbarang_tblkelompok` FOREIGN KEY (`idkelompok`)
 REFERENCES `tblkelompok` (`idkelompok`) ON UPDATE CASCADE)                      MariaD
B [dbtoko]>
```

TAMBAH DATA DAHULU

Setelah tambah data lalu coba lah hapus menggunakan syntax seperti di atas dan lihat hasilnya.

```
MariaDB [dbtoko]> INSERT INTO tblkelompok VALUES (10,'Minyak');
Query OK, 1 row affected (0.01 sec)
```

VIEW

VIEW DIGUNAKAN UNTUK MENGGABUNGKAN 2 TABEL MENJADI 1 AGAR LEBIH MUDAH DILIAT.

PEMBUATAN VIEW

```
MariaDB [dbtoko]> CREATE VIEW view_barang AS SELECT
    -> tblbarang.idbarang, tblbarang.barang,
    -> tblbarang.stokbarang, tblbarang.hargabeli,
    -> tblbarang.hargajual, tblbarang.idkelompok,
    -> tblkelompok.kelompok FROM tblbarang
    -> INNER JOIN tblkelompok ON tblbarang.idkelompok = tblkelompok.idkelompok;
Query OK, 0 rows affected (0.01 sec)
```

MELIHAT ISI VIEW

```
MariaDB [dbtoko]> SELECT * FROM view_barang;
+----------+-----------------+-----------+-----------+-----------+-----------+----------+
| idbarang | barang          | stokbarang | hargabeli | hargajual | idkelompok | kelompok |
+----------+-----------------+-----------+-----------+-----------+-----------+----------+
|        1 | Beras Rojo Lele |        100 |     10000 |     12000 |         6 | Beras    |
|        2 | Beras Cianjur   |         50 |     11000 |     14000 |         6 | Beras    |
|        3 | Beras Medium    |         70 |      8000 |     10000 |         6 | Beras    |
|        4 | Beras Mahal     |         30 |     23000 |     30000 |         6 | Beras    |
|        5 | Gula Putih      |         20 |     12000 |     14000 |         7 | Gula     |
|        6 | Gula Merah      |         10 |      3000 |      5000 |         7 | Gula     |
|        7 | Gula Batu       |         40 |      2000 |      3000 |         7 | Gula     |
|        8 | Gula Aren       |         60 |      7000 |      9000 |         7 | Gula     |
|       10 | Tepung Terigu   |         50 |      4000 |      6000 |         9 | Tepung   |
|       11 | Tepung Tapioka  |         15 |      2000 |      3500 |         9 | Tepung   |
|       12 | Tepung Kanji    |         25 |      3500 |      5000 |         9 | Tepung   |
+----------+-----------------+-----------+-----------+-----------+-----------+----------+
11 rows in set (0.00 sec)
```

MENAMPILKAN VIEW

```
MariaDB [dbtoko]> SHOW FULL TABLES IN dbtoko WHERE TABLE_TYPE LIKE 'VIEW';
+------------------+------------+
| Tables_in_dbtoko | Table_type |
+------------------+------------+
| view_barang      | VIEW       |
+------------------+------------+
1 row in set (0.00 sec)
```

MENGHAPUS VIEW

```
MariaDB [dbtoko]> DROP VIEW view_barang;
Query OK, 0 rows affected (0.00 sec)
```

SELECT SEMUA KOLOM

```
MariaDB [dbtoko]> SELECT * FROM view_barang;
+----------+-----------------+------------+-----------+-----------+------------+----------+
| idbarang | barang          | stokbarang | hargabeli | hargajual | idkelompok | kelompok |
+----------+-----------------+------------+-----------+-----------+------------+----------+
|        1 | Beras Rojo Lele |        100 |     10000 |     12000 |          6 | Beras    |
|        2 | Beras Cianjur   |         50 |     11000 |     14000 |          6 | Beras    |
|        3 | Beras Medium    |         70 |      8000 |     10000 |          6 | Beras    |
|        4 | Beras Mahal     |         30 |     23000 |     30000 |          6 | Beras    |
|        5 | Gula Putih      |         20 |     12000 |     14000 |          7 | Gula     |
|        6 | Gula Merah      |         10 |      3000 |      5000 |          7 | Gula     |
|        7 | Gula Batu       |         40 |      2000 |      3000 |          7 | Gula     |
|        8 | Gula Aren       |         60 |      7000 |      9000 |          7 | Gula     |
|       10 | Tepung Terigu   |         50 |      4000 |      6000 |          9 | Tepung   |
|       11 | Tepung Tapioka  |         15 |      2000 |      3500 |          9 | Tepung   |
|       12 | Tepung Kanji    |         25 |      3500 |      5000 |          9 | Tepung   |
+----------+-----------------+------------+-----------+-----------+------------+----------+
11 rows in set (0.00 sec)
```

SELECT SEBAGIAN KOLOM

```
MariaDB [dbtoko]> SELECT barang,stokbarang,kelompok FROM view_barang;
+-----------------+------------+----------+
| barang          | stokbarang | kelompok |
+-----------------+------------+----------+
| Beras Rojo Lele |        100 | Beras    |
| Beras Cianjur   |         50 | Beras    |
| Beras Medium    |         70 | Beras    |
| Beras Mahal     |         30 | Beras    |
| Gula Putih      |         20 | Gula     |
| Gula Merah      |         10 | Gula     |
| Gula Batu       |         40 | Gula     |
| Gula Aren       |         60 | Gula     |
| Tepung Terigu   |         50 | Tepung   |
| Tepung Tapioka  |         15 | Tepung   |
| Tepung Kanji    |         25 | Tepung   |
+-----------------+------------+----------+
11 rows in set (0.00 sec)
```

SELECT ORDER ASC

```
riaDB [dbtoko]> SELECT * FROM view_barang ORDER BY hargabeli ASC;
+---------+----------------+-----------+----------+----------+-----------+---------+
| idbarang | barang         | stokbarang | hargabeli | hargajual | idkelompok | kelompok |
+---------+----------------+-----------+----------+----------+-----------+---------+
|       11 | Tepung Tapioka |         15 |     2000 |     3500 |         9 | Tepung  |
|        7 | Gula Batu      |         40 |     2000 |     3000 |         7 | Gula    |
|        6 | Gula Merah     |         10 |     3000 |     5000 |         7 | Gula    |
|       12 | Tepung Kanji   |         25 |     3500 |     5000 |         9 | Tepung  |
|       10 | Tepung Terigu  |         50 |     4000 |     6000 |         9 | Tepung  |
|        8 | Gula Aren      |         60 |     7000 |     9000 |         7 | Gula    |
|        3 | Beras Medium   |         70 |     8000 |    10000 |         6 | Beras   |
|        1 | Beras Rojo Lele |        100 |    10000 |    12000 |         6 | Beras   |
|        2 | Beras Cianjur  |         50 |    11000 |    14000 |         6 | Beras   |
|        5 | Gula Putih     |         20 |    12000 |    14000 |         7 | Gula    |
|        4 | Beras Mahal    |         30 |    23000 |    30000 |         6 | Beras   |
+---------+----------------+-----------+----------+----------+-----------+---------+
rows in set (0.00 sec)
```

SELECT ORDER DESC

```
riaDB [dbtoko]> SELECT * FROM view_barang ORDER BY hargabeli DESC;
+---------+----------------+-----------+----------+----------+-----------+---------+
| idbarang | barang         | stokbarang | hargabeli | hargajual | idkelompok | kelompok |
+---------+----------------+-----------+----------+----------+-----------+---------+
|        4 | Beras Mahal    |         30 |    23000 |    30000 |         6 | Beras   |
|        5 | Gula Putih     |         20 |    12000 |    14000 |         7 | Gula    |
|        2 | Beras Cianjur  |         50 |    11000 |    14000 |         6 | Beras   |
|        1 | Beras Rojo Lele |        100 |    10000 |    12000 |         6 | Beras   |
|        3 | Beras Medium   |         70 |     8000 |    10000 |         6 | Beras   |
|        8 | Gula Aren      |         60 |     7000 |     9000 |         7 | Gula    |
|       10 | Tepung Terigu  |         50 |     4000 |     6000 |         9 | Tepung  |
|       12 | Tepung Kanji   |         25 |     3500 |     5000 |         9 | Tepung  |
|        6 | Gula Merah     |         10 |     3000 |     5000 |         7 | Gula    |
|       11 | Tepung Tapioka |         15 |     2000 |     3500 |         9 | Tepung  |
|        7 | Gula Batu      |         40 |     2000 |     3000 |         7 | Gula    |
+---------+----------------+-----------+----------+----------+-----------+---------+
rows in set (0.00 sec)
```

SELECT GROUP

```
ariaDB [dbtoko]> SELECT * FROM view_barang GROUP BY barang;
+----------+-----------------+------------+-----------+-----------+------------+---------+
| idbarang | barang          | stokbarang | hargabeli | hargajual | idkelompok | kelompok |
+----------+-----------------+------------+-----------+-----------+------------+---------+
|        2 | Beras Cianjur   |         50 |     11000 |     14000 |          6 | Beras   |
|        4 | Beras Mahal     |         30 |     23000 |     30000 |          6 | Beras   |
|        3 | Beras Medium    |         70 |      8000 |     10000 |          6 | Beras   |
|        1 | Beras Rojo Lele |        100 |     10000 |     12000 |          6 | Beras   |
|        8 | Gula Aren       |         60 |      7000 |      9000 |          7 | Gula    |
|        7 | Gula Batu       |         40 |      2000 |      3000 |          7 | Gula    |
|        6 | Gula Merah      |         10 |      3000 |      5000 |          7 | Gula    |
|        5 | Gula Putih      |         20 |     12000 |     14000 |          7 | Gula    |
|       12 | Tepung Kanji    |         25 |      3500 |      5000 |          9 | Tepung  |
|       11 | Tepung Tapioka  |         15 |      2000 |      3500 |          9 | Tepung  |
|       10 | Tepung Terigu   |         50 |      4000 |      6000 |          9 | Tepung  |
+----------+-----------------+------------+-----------+-----------+------------+---------+
1 rows in set (0.00 sec)
```

PENGUJIAN WHERE

```
MariaDB [dbtoko]> SELECT * FROM tblbarang WHERE hargajual > 5000 ORDER BY hargajual;
+----------+-------------+---------------+-------------+-----------+-----------+
| idbarang | idkelompok  | barang        | stokbarang  | hargabeli | hargajual |
+----------+-------------+---------------+-------------+-----------+-----------+
|       10 |           9 | Tepung Terigu |          50 |      4000 |      6000 |
|        8 |           7 | Gula Aren     |          60 |      7000 |      9000 |
|        3 |           6 | Beras Medium  |          70 |      8000 |     10000 |
|        1 |           6 | Beras Rojo Lele |        100 |     10000 |     12000 |
|        2 |           6 | Beras Cianjur |          50 |     11000 |     14000 |
|        5 |           7 | Gula Putih    |          20 |     12000 |     14000 |
|        4 |           6 | Beras Mahal   |          30 |     23000 |     30000 |
+----------+-------------+---------------+-------------+-----------+-----------+
7 rows in set (0.00 sec)

MariaDB [dbtoko]> SELECT * FROM tblbarang
    -> WHERE hargajual > 5000
    -> AND hargabeli > 7000
    -> ORDER BY hargabeli;
+----------+-------------+---------------+-------------+-----------+-----------+
| idbarang | idkelompok  | barang        | stokbarang  | hargabeli | hargajual |
+----------+-------------+---------------+-------------+-----------+-----------+
|        3 |           6 | Beras Medium  |          70 |      8000 |     10000 |
|        1 |           6 | Beras Rojo Lele |        100 |     10000 |     12000 |
|        2 |           6 | Beras Cianjur |          50 |     11000 |     14000 |
|        5 |           7 | Gula Putih    |          20 |     12000 |     14000 |
|        4 |           6 | Beras Mahal   |          30 |     23000 |     30000 |
+----------+-------------+---------------+-------------+-----------+-----------+
5 rows in set (0.00 sec)

MariaDB [dbtoko]> SELECT * FROM tblbarang
    -> WHERE hargajual > 5000
    -> OR hargabeli > 7000
    -> ORDER BY hargabeli;
+----------+-------------+---------------+-------------+-----------+-----------+
| idbarang | idkelompok  | barang        | stokbarang  | hargabeli | hargajual |
+----------+-------------+---------------+-------------+-----------+-----------+
|       10 |           9 | Tepung Terigu |          50 |      4000 |      6000 |
|        8 |           7 | Gula Aren     |          60 |      7000 |      9000 |
|        3 |           6 | Beras Medium  |          70 |      8000 |     10000 |
|        1 |           6 | Beras Rojo Lele |        100 |     10000 |     12000 |
|        2 |           6 | Beras Cianjur |          50 |     11000 |     14000 |
|        5 |           7 | Gula Putih    |          20 |     12000 |     14000 |
|        4 |           6 | Beras Mahal   |          30 |     23000 |     30000 |
+----------+-------------+---------------+-------------+-----------+-----------+
7 rows in set (0.00 sec)
```

%a AWALAN SEMBARANG YANG PENTING AKHIRANNYA a

```
MariaDB [dbtoko]> SELECT * FROM view_barang WHERE barang LIKE '%a';
+----------+----------------+------------+-----------+-----------+------------+----------+
| idbarang | barang         | stokbarang | hargabeli | hargajual | idkelompok | kelompok |
+----------+----------------+------------+-----------+-----------+------------+----------+
|       11 | Tepung Tapioka |         15 |      2000 |      3500 |          9 | Tepung   |
+----------+----------------+------------+-----------+-----------+------------+----------+
1 row in set (0.00 sec)
```

b% AWALAN b AKHIRANNYA SEMBARANG

```
MariaDB [dbtoko]> SELECT * FROM view_barang WHERE barang LIKE 'b%';
+----------+----------------+------------+-----------+-----------+------------+----------+
| idbarang | barang         | stokbarang | hargabeli | hargajual | idkelompok | kelompok |
+----------+----------------+------------+-----------+-----------+------------+----------+
|        1 | Beras Rojo Lele |        100 |     10000 |     12000 |          6 | Beras    |
|        2 | Beras Cianjur   |         50 |     11000 |     14000 |          6 | Beras    |
|        3 | Beras Medium    |         70 |      8000 |     10000 |          6 | Beras    |
|        4 | Beras Mahal     |         30 |     23000 |     30000 |          6 | Beras    |
+----------+----------------+------------+-----------+-----------+------------+----------+
```

%d% AWALAN DAN AKHIRANNYA SEMBARANG YANG TENGAHNYA ADA HURUF d

```
MariaDB [dbtoko]> SELECT * FROM view_barang WHERE barang LIKE '%d%';
+----------+--------------+------------+-----------+-----------+-------------+----------+
| idbarang | barang       | stokbarang | hargabeli | hargajual | idkelompok | kelompok |
+----------+--------------+------------+-----------+-----------+-------------+----------+
|        3 | Beras Medium |         70 |      8000 |     10000 |           6 | Beras    |
+----------+--------------+------------+-----------+-----------+-------------+----------+
1 row in set (0.00 sec)
```

SUBQUERY (SELECT IN SELECT)

TAMBAHKAN DATA PADA SEPERTI BERIKUT

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok;
+------------+------------+
| idkelompok | kelompok   |
+------------+------------+
|          6 | Beras      |
|          7 | Gula       |
|          9 | Tepung     |
|         10 | Minyak     |
|         11 | Jajan      |
|         12 | Roti Basah |
+------------+------------+
6 rows in set (0.00 sec)
```

SUBQUERY (IN)

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok
    -> WHERE idkelompok IN
    -> (SELECT idkelompok FROM view_barang);
+------------+----------+
| idkelompok | kelompok |
+------------+----------+
|          6 | Beras    |
|          7 | Gula     |
|          9 | Tepung   |
+------------+----------+
3 rows in set (0.00 sec)
```

SUBQUERY (NOT IN)

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok
    -> WHERE idkelompok NOT IN
    -> (SELECT idkelompok FROM view_barang);
+------------+------------+
| idkelompok | kelompok   |
+------------+------------+
|         10 | Minyak     |
|         11 | Jajan      |
|         12 | Roti Basah |
+------------+------------+
3 rows in set (0.00 sec)
```

MEMBUAT RELASI ANTAR TABEL

PEMBUATAN RELASI

```
MariaDB [dbtoko]> ALTER TABLE tblorder
    -> ADD CONSTRAINT FK_idpelanggan FOREIGN KEY (idpelanggan)
    -> REFERENCES tblpelanggan (idpelanggan)
    -> ON UPDATE CASCADE ON DELETE RESTRICT;
Query OK, 0 rows affected (0.12 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

PERIKSA HASIL

```
MariaDB [dbtoko]> SHOW CREATE TABLE tblorder;
```

Hasil pembuatan relasi

```
tblorder | CREATE TABLE `tblorder` (
`idorder` int(11) NOT NULL AUTO_INCREMENT,
`idpelanggan` int(11) DEFAULT NULL,
`faktur` varchar(50) DEFAULT NULL,
`tanggalorder` date DEFAULT NULL,
`total` float DEFAULT NULL,
`bayar` float DEFAULT NULL,
`kembali` float DEFAULT NULL,
PRIMARY KEY (`idorder`),
KEY `FK_idpelanggan` (`idpelanggan`),
CONSTRAINT `FK_idpelanggan` FOREIGN KEY (`idpelanggan`) REFERENCES `tblpelanggan` (`idpelanggan`) ON UPDATE CASCADE
```

RELASI ANTAR 2 TABEL MASTER KEPADA 1 TABEL TRANSAKSI

PEMBUATAN RELASI

```
MariaDB [dbtoko]> ALTER TABLE tblorderdetail
    -> ADD CONSTRAINT FK_idorder FOREIGN KEY (idorder)
    -> REFERENCES tblorder (idorder)
    -> ON UPDATE CASCADE ON DELETE RESTRICT;
Query OK, 0 rows affected (0.12 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

PEMBUATAN RELASI

```
MariaDB [dbtoko]> ALTER TABLE tblorderdetail
    -> ADD CONSTRAINT FK_idbarang FOREIGN KEY (idbarang)
    -> REFERENCES tblbarang (idbarang)
    -> ON UPDATE CASCADE ON DELETE RESTRICT;
Query OK, 0 rows affected (0.12 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

HASILNYA

```
MariaDB [dbtoko]> SHOW CREATE TABLE tblorderdetail;
```

Hasil pembuatan relasi

```
tblorderdetail | CREATE TABLE `tblorderdetail` (
`idorderdetail` int(11) NOT NULL AUTO_INCREMENT,
`idorder` int(11) DEFAULT NULL,
`idbarang` int(11) DEFAULT NULL,
`jumlah` int(11) DEFAULT NULL,
`hargajual` float DEFAULT NULL,
PRIMARY KEY (`idorderdetail`),
KEY `FK_idorder` (`idorder`),
KEY `FK_idbarang` (`idbarang`),
CONSTRAINT `FK_idbarang` FOREIGN KEY (`idbarang`) REFERENCES `tblbarang` (`idbarang`) ON UPDATE CASCADE,
CONSTRAINT `FK_idorder` FOREIGN KEY (`idorder`) REFERENCES `tblorder` (`idorder`) ON UPDATE CASCADE
ENGINE=InnoDB DEFAULT CHARSET=latin1 |
```

DUMMY DATA

ISI DATA DI TABEL PELANGGAN

```
MariaDB [dbtoko]> INSERT INTO tblpelanggan VALUES('','KOSONG','KOSONG'
Query OK, 1 row affected, 1 warning (0.00 sec)
```

KONSEP TIRGGER

TAMPILKAN SEMUA TABEL

```
MariaDB [dbtoko]> SHOW TABLES;
+------------------+
| Tables_in_dbtoko |
+------------------+
| tblbarang        |
| tblkelompok      |
| tblorder         |
| tblorderdetail   |
| tblpelanggan     |
| view_barang      |
+------------------+
6 rows in set (0.01 sec)
```

PERIKSA NAMA KOLOM YANG SAMA

```
MariaDB [dbtoko]> ALTER TABLE tblorderdetail CHANGE hargajual hargapenjualan FLOAT
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
MariaDB [dbtoko]> DESCRIBE tblorderdetail;
+-----------------+---------+------+-----+---------+----------------+
| Field           | Type    | Null | Key | Default | Extra          |
+-----------------+---------+------+-----+---------+----------------+
| idorderdetail   | int(11) | NO   | PRI | NULL    | auto_increment |
| idorder         | int(11) | YES  | MUL | NULL    |                |
| idbarang        | int(11) | YES  | MUL | NULL    |                |
| jumlah          | int(11) | YES  |     | NULL    |                |
| hargapenjualan  | float   | YES  |     | NULL    |                |
+-----------------+---------+------+-----+---------+----------------+
5 rows in set (0.01 sec)
```

SET DEFAULT PADA TABEL BARANG

```
MariaDB [dbtoko]> ALTER TABLE tblbarang ALTER COLUMN stokbarang SET DEFAULT 0
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
MariaDB [dbtoko]> DESCRIBE tblbarang;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| idbarang   | int(11)      | NO   | PRI | NULL    | auto_increment |
| idkelompok | int(11)      | YES  | MUL | NULL    |                |
| barang     | varchar(200) | YES  |     | NULL    |                |
| stokbarang | int(11)      | YES  |     | 0       |                |
| hargabeli  | float        | YES  |     | NULL    |                |
| hargajual  | float        | YES  |     | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
6 rows in set (0.00 sec)
```

SET DEFAULT PADA TABEL ORDER

```
MariaDB [dbtoko]> ALTER TABLE tblorder ALTER COLUMN total SET DEFAULT 0;
Query OK, 0 rows affected (0.00 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

PEMBUATAN TRIGGER kurang_stok, tambah_total, tambah_stok, kurang_total

```
MariaDB [dbtoko]> CREATE TRIGGER kurang_stok
    -> BEFORE INSERT ON tblorderdetail
    -> FOR EACH ROW
    -> UPDATE tblbarang SET stokbarang=stokbarang - NEW.jumlah
    -> WHERE idbarang = NEW.idbarang;
Query OK, 0 rows affected (0.04 sec)
```

```
MariaDB [dbtoko]> CREATE TRIGGER tambah_total
    -> AFTER INSERT ON tblorderdetail
    -> FOR EACH ROW
    -> UPDATE tblorder SET
    -> total = total + (NEW.hargapenjualan * NEW.jumlah)
    -> WHERE idorder = NEW.idorder;
Query OK, 0 rows affected (0.02 sec)
```

```
MariaDB [dbtoko]> CREATE TRIGGER tambah_stok
    -> BEFORE DELETE ON tblorderdetail
    -> FOR EACH ROW
    -> UPDATE tblbarang SET stokbarang=stokbarang + OLD.jumlah
    -> WHERE idbarang = OLD.idbarang;
Query OK, 0 rows affected (0.02 sec)
```

```
MariaDB [dbtoko]> CREATE TRIGGER kurang_total
    -> AFTER DELETE ON tblorderdetail
    -> FOR EACH ROW
    -> UPDATE tblorder SET
    -> total = total - (OLD.hargapenjualan * OLD.jumlah)
    -> WHERE idorder = OLD.idorder;
Query OK, 0 rows affected (0.02 sec)
```

MENAMPILKAN TRIGGER

```
MariaDB [dbtoko]> SHOW TRIGGERS;
| kurang_stok   | INSERT | tblorderdetail | UPDATE tblbarang SET
WHERE idbarang = NEW.idbarang | BEFORE | NULL     | NO_AUTO_CREAT
                | cp850_general_ci      | latin1_swedish_ci   |
| tambah_total | INSERT | tblorderdetail | UPDATE tblorder SET t
WHERE idorder = NEW.idorder     | AFTER  | NULL     | NO_AUTO_CREA
                | cp850_general_ci      | latin1_swedish_ci   |
| tambah_stok   | DELETE | tblorderdetail | UPDATE tblbarang SET
WHERE idbarang = OLD.idbarang | BEFORE | NULL     | NO_AUTO_CREAT
                | cp850_general_ci      | latin1_swedish_ci   |
| kurang_total | DELETE | tblorderdetail | UPDATE tblorder SET t
WHERE idorder = OLD.idorder     | AFTER  | NULL     | NO_AUTO_CREA
                | cp850_general_ci      | latin1_swedish_ci   |
```

PENGUJIAN TIRGGER

TAMBAHKAN 2 PELANGGAN PADA TABEL PELANGGAN

```
MariaDB [dbtoko]> INSERT INTO tblpelanggan VALUES ('','komputerkit','sidoarjo');
Query OK, 1 row affected, 1 warning (0.01 sec)

MariaDB [dbtoko]> INSERT INTO tblpelanggan VALUES ('','Isa','Lamongan');
Query OK, 1 row affected, 1 warning (0.01 sec)
```

PENGUJIAN INSERT PADA TABEL ORDERDETAIL

```
MariaDB [dbtoko]> INSERT INTO tblorder
    -> (idpelanggan, faktur, tanggalorder)
    -> VALUES (2, '001', NOW() );
Query OK, 1 row affected, 1 warning (0.01 sec)
```

PERIKSA DENGAN DENGAN PERINTAH BERIKUT

```
MariaDB [dbtoko]> SELECT * FROM tblorder;
+---------+-------------+--------+--------------+-------+-------+---------+
| idorder | idpelanggan | faktur | tanggalorder | total | bayar | kembali |
+---------+-------------+--------+--------------+-------+-------+---------+
|       1 |           2 | 001    | 2018-03-16   |     0 | NULL  |    NULL |
+---------+-------------+--------+--------------+-------+-------+---------+
```

TABEL SEBELUM PROSES INPUT

```
MariaDB [dbtoko]> SELECT * FROM tblbarang WHERE idbarang=1;
+----------+------------+-----------------+------------+-----------+-----------+
| idbarang | idkelompok | barang          | stokbarang | hargabeli | hargajual |
+----------+------------+-----------------+------------+-----------+-----------+
|        1 |          6 | Beras Rojo Lele |        100 |     10000 |     12000 |
+----------+------------+-----------------+------------+-----------+-----------+
1 row in set (0.00 sec)
```

INSERT DATA PADA TABEL ORDERDETAIL

```
MariaDB [dbtoko]> INSERT INTO tblorderdetail
    -> (idorder, idbarang, jumlah, hargapenjualan)
    -> VALUES (1, 1, 35, 12000);
Query OK, 1 row affected (0.01 sec)
```

HASIL TABEL ORDERDETAIL

```
MariaDB [dbtoko]> SELECT * FROM tblorderdetail;
+---------------+---------+----------+--------+----------------+
| idorderdetail | idorder | idbarang | jumlah | hargapenjualan |
+---------------+---------+----------+--------+----------------+
|             1 |       1 |        1 |     35 |          12000 |
+---------------+---------+----------+--------+----------------+
1 row in set (0.00 sec)
```

HASIL TABEL ORDER

```
MariaDB [dbtoko]> INSERT INTO tblorderdetail
    -> (idorder, idbarang, jumlah, hargapenjualan)
    -> VALUES (1, 1, 35, 12000);
Query OK, 1 row affected (0.01 sec)
```

HASIL PADA TABEL BARANG

```
[dbtoko]> SELECT * FROM tblbarang WHERE idbarang=1;
---+------------+-----------------+------------+-----------+-----
ng | idkelompok | barang          | stokbarang | hargabeli | harg
---+------------+-----------------+------------+-----------+-----
 1 |          6 | Beras Rojo Lele |         65 |     10000 |
---+------------+-----------------+------------+-----------+-----
 set (0.00 sec)
```

PENGUJIAN DELETE PADA TABEL ORDERDETAIL

```
MariaDB [dbtoko]> DELETE FROM tblorderdetail
    -> WHERE idorderdetail = 1;
Query OK, 1 row affected (0.00 sec)
```

HASIL PADA TABEL ORDER

```
MariaDB [dbtoko]> SELECT * FROM tblorder;
+---------+-------------+--------+--------------+-------+--------+----------+
| idorder | idpelanggan | faktur | tanggalorder | total | bayar  | kembali  |
+---------+-------------+--------+--------------+-------+--------+----------+
|       1 |           2 | 001    | 2018-03-16   |     0 |  NULL  |     NULL |
+---------+-------------+--------+--------------+-------+--------+----------+
1 row in set (0.00 sec)
```

HASIL PADA TABEL BARANG

```
MariaDB [dbtoko]> SELECT * FROM tblbarang WHERE idbarang=1;
+----------+------------+-----------------+------------+-----------+-----------+
| idbarang | idkelompok | barang          | stokbarang | hargabeli | hargajual |
+----------+------------+-----------------+------------+-----------+-----------+
|        1 |          6 | Beras Rojo Lele |        100 |     10000 |     12000 |
+----------+------------+-----------------+------------+-----------+-----------+
1 row in set (0.00 sec)
```

HAPUS TRIGGER

```
MariaDB [dbtoko]> DROP TRIGGER kurang_total
Query OK, 0 rows affected (0.01 sec)
```

PERIKSA TRIGGER SETELAH DIHAPUS

```
MariaDB [dbtoko]> SHOW TRIGGERS;
```

HASIL

```
| kurang_stok  | INSERT | tblorderdetail | UPDATE tblbarang SET
WHERE idbarang = NEW.idbarang                | BEFORE | NULL     | N
st | cp850                  | cp850_general_ci     | latin1_swedi
| tambah_total | INSERT | tblorderdetail | UPDATE tblorder SET
total = total + (NEW.hargapenjualan * NEW.jumlah)
WHERE idorder = NEW.idorder | AFTER  | NULL     | NO_AUTO_CREATE_
            | cp850_general_ci     | latin1_swedish_ci  |
| tambah_stok  | DELETE | tblorderdetail | UPDATE tblbarang SET
WHERE idbarang = OLD.idbarang                | BEFORE | NULL     | N
st | cp850                  | cp850_general_ci     | latin1_swedi
```

JOIN (GABUNGAN TABEL)

```
MariaDB [dbtoko]> CREATE TRIGGER kurang_total
    -> AFTER DELETE ON tblorderdetail
    -> FOR EACH ROW
    -> UPDATE tblorder SET
    -> total = total - (OLD.hargapenjualan * OLD.jumlah)
    -> WHERE idorder = OLD.idorder;
Query OK, 0 rows affected (0.02 sec)
```

LAKUKAN INSERT DATA

```
MariaDB [dbtoko]> INSERT INTO tblorderdetail
    -> (idorder, idbarang, jumlah, hargapenjualan)
    -> VALUES (1, 6, 5, 5000);
Query OK, 1 row affected (0.01 sec)

MariaDB [dbtoko]> INSERT INTO tblorderdetail
    -> (idorder, idbarang, jumlah, hargapenjualan)
    -> VALUES (1, 12, 5, 5000);
Query OK, 1 row affected (0.01 sec)
```

JOIN (GABUNGAN TABEL)

```
MariaDB [dbtoko]> CREATE TRIGGER kurang_total
    -> AFTER DELETE ON tblorderdetail
    -> FOR EACH ROW
    -> UPDATE tblorder SET
    -> total = total - (OLD.hargapenjualan * OLD.jumlah)
    -> WHERE idorder = OLD.idorder;
Query OK, 0 rows affected (0.02 sec)
```

LAKUKAN INSERT DATA

```
MariaDB [dbtoko]> INSERT INTO tblorderdetail
    -> (idorder, idbarang, jumlah, hargapenjualan)
    -> VALUES (1, 6, 5, 5000);
Query OK, 1 row affected (0.01 sec)

MariaDB [dbtoko]> INSERT INTO tblorderdetail
    -> (idorder, idbarang, jumlah, hargapenjualan)
    -> VALUES (1, 12, 5, 5000);
Query OK, 1 row affected (0.01 sec)
```

PERIKSA TABEL ORDER DETAIL

```
MariaDB [dbtoko]> SELECT * FROM tblorderdetail;
+---------------+---------+----------+--------+----------------+
| idorderdetail | idorder | idbarang | jumlah | hargapenjualan |
+---------------+---------+----------+--------+----------------+
|             1 |       1 |        1 |     35 |          12000 |
|             2 |       1 |        6 |      5 |           5000 |
|             3 |       1 |       12 |      5 |           5000 |
+---------------+---------+----------+--------+----------------+
```

INSERT DATA PADA TABEL ORDER

```
MariaDB [dbtoko]> INSERT INTO tblorder
    -> (idpelanggan, faktur, tanggalorder)
    -> VALUES (1, '002', NOW() );
Query OK, 1 row affected, 1 warning (0.00 sec)
```

PERIKSA TABEL ORDER

```
MariaDB [dbtoko]> SELECT * FROM tblorder;
+---------+-------------+--------+--------------+--------+--------+---------+
| idorder | idpelanggan | faktur | tanggalorder | total  | bayar  | kembali |
+---------+-------------+--------+--------------+--------+--------+---------+
|       1 |           2 | 001    | 2018-03-16   | 470000 |  NULL  |    NULL |
|       2 |           1 | 002    | 2018-03-16   |      0 |  NULL  |    NULL |
+---------+-------------+--------+--------------+--------+--------+---------+
2 rows in set (0.00 sec)
```

LAKUKAN INSERT PADA TABEL ORDERDETAIL

```
MariaDB [dbtoko]> INSERT INTO tblorderdetail
    -> (idorder, idbarang, jumlah, hargapenjualan)
    -> VALUES (2, 4, 5, 30000 );
Query OK, 1 row affected (0.01 sec)
```

```
MariaDB [dbtoko]> INSERT INTO tblorderdetail
    -> (idorder, idbarang, jumlah, hargapenjualan)
    -> VALUES (2, 10, 5, 6000 );
Query OK, 1 row affected (0.03 sec)
```

PERIKSA TABEL ORDER DETAIL

```
MariaDB [dbtoko]> SELECT * FROM tblorderdetail;
+---------------+---------+----------+--------+-----------------+
| idorderdetail | idorder | idbarang | jumlah | hargapenjualan |
+---------------+---------+----------+--------+-----------------+
|             1 |       1 |        1 |     35 |           12000 |
|             2 |       1 |        6 |      5 |            5000 |
|             3 |       1 |       12 |      5 |            5000 |
|             4 |       2 |        4 |      5 |           30000 |
|             5 |       2 |       10 |      5 |            6000 |
+---------------+---------+----------+--------+-----------------+
5 rows in set (0.00 sec)
```

INNER JOIN (MENGAMBIL BAGIAN YANG ADA DI TABEL MASTER DAN TABEL TRANSAKSI)

JOIN HARUS DIMULAI DARI TABEL MASTER

```
MariaDB [dbtoko]> SELECT tblbarang.barang, tblorderdetail.jumlah,
    -> tblorderdetail.hargapenjualan FROM tblbarang
    -> INNER JOIN tblorderdetail
    -> ON tblbarang.idbarang = tblorderdetail.idbarang;
```

HASIL

barang	jumlah	hargapenjualan
Beras Rojo Lele	35	12000
Gula Merah	5	5000
Tepung Kanji	5	5000
Beras Mahal	5	30000
Tepung Terigu	5	6000

5 rows in set (0.00 sec)

INNER JOIN UNTUK MENGETAHUI PELANGGAN YANG MELAKUKAN ORDER

```
MariaDB [dbtoko]> SELECT tblpelanggan.nama,
    -> tblorder.tanggalorder, tblorder.total
    -> FROM tblpelanggan
    -> INNER JOIN tblorder
    -> ON tblpelanggan.idpelanggan = tblorder.idpelanggan
```

NAMA PELANGGAN YANG MELAKUKAN ORDER

```
+-------------+--------------+--------+
| nama        | tanggalorder | total  |
+-------------+--------------+--------+
| KOSONG      | 2018-03-16   | 180000 |
| komputerkit | 2018-03-16   | 470000 |
+-------------+--------------+--------+
2 rows in set (0.00 sec)
```

INNER JOIN BANYAK TABEL

```
MariaDB [dbtoko]> SELECT tblorder.tanggalorder, tblpelanggan.nama,
    -> tblbarang.barang,tblorderdetail.jumlah,
    -> tblorderdetail.hargapenjualan, tblorder.total
    -> FROM tblpelanggan
    -> INNER JOIN tblorder
    -> ON tblpelanggan.idpelanggan = tblorder.idpelanggan
    -> INNER JOIN tblorderdetail
    -> ON tblorder.idorder = tblorderdetail.idorder
    -> INNER JOIN tblbarang
    -> ON tblorderdetail.idbarang = tblbarang.idbarang
    -> ORDER BY tblpelanggan.nama;
```

HASIL INNER JOIN

tanggalorder	nama	barang	jumlah	hargapenjualan	total
2018-03-16	komputerkit	Beras Rojo Lele	35	12000	470000
2018-03-16	komputerkit	Tepung Kanji	5	5000	470000
2018-03-16	komputerkit	Gula Merah	5	5000	470000
2018-03-16	KOSONG	Tepung Terigu	5	6000	180000
2018-03-16	KOSONG	Beras Mahal	5	30000	180000

5 rows in set (0.00 sec)

LEFT JOIN (MENAMPILKAN BANYAK TABEL MASTER)

```
MariaDB [dbtoko]> SELECT tblbarang.barang,
    -> tblorderdetail.jumlah, tblorderdetail.hargapenjualan
    -> FROM tblbarang
    -> LEFT JOIN tblorderdetail
    -> ON tblbarang.idbarang = tblorderdetail.idbarang
    -> ORDER BY tblorderdetail.jumlah DESC;
```

HASIL LEFT JOIN

barang	jumlah	hargapenjualan
Beras Rojo Lele	35	12000
Tepung Terigu	5	6000
Beras Mahal	5	30000
Tepung Kanji	5	5000
Gula Merah	5	5000
Beras Cianjur	NULL	NULL
Tepung Tapioka	NULL	NULL
Gula Aren	NULL	NULL
Gula Batu	NULL	NULL
Gula Putih	NULL	NULL
Beras Medium	NULL	NULL

RIGHT JOIN (MENAMPILKAN TABEL TRANSAKSI)

```
MariaDB [dbtoko]> SELECT tblbarang.barang,
    -> tblorderdetail.jumlah, tblorderdetail.hargapenjualan
    -> FROM tblbarang
    -> RIGHT JOIN tblorderdetail
    -> ON tblbarang.idbarang = tblorderdetail.idbarang
    -> ORDER BY tblorderdetail.jumlah DESC;
```

HASIL RIGHT JOIN

barang	jumlah	hargapenjualan
Beras Rojo Lele	35	12000
Gula Merah	5	5000
Tepung Kanji	5	5000
Beras Mahal	5	30000
Tepung Terigu	5	6000

5 rows in set (0.00 sec)

STORE PROCEDURE

```
MariaDB [dbtoko]> CREATE PROCEDURE namapelanggan()
    -> SELECT * FROM tblpelanggan;
Query OK, 0 rows affected (0.01 sec)
```

PEMANGGILAN PROCEDURE

```
MariaDB [dbtoko]> CALL namapelanggan();
+-------------+-------------+----------+
| idpelanggan | nama        | alamat   |
+-------------+-------------+----------+
|           1 | KOSONG      | KOSONG   |
|           2 | komputerkit | sidoarjo |
|           3 | Isa         | Lamongan |
+-------------+-------------+----------+
3 rows in set (0.00 sec)
```

PROCEDURE DENGAN PARAMETER

```
MariaDB [dbtoko]> CREATE PROCEDURE caribarang (barang VARCHAR(100))
    -> SELECT * FROM tblbarang
    -> WHERE tblbarang.barang LIKE barang;
Query OK, 0 rows affected (0.02 sec)
```

MENAMPILKAN SEMUA PROCEDURE

```
MariaDB [dbtoko]> SHOW PROCEDURE STATUS;
```

```
---+---------------------+---------------------+-
 Db     | Name              | Type       | Definer
ent | character_set_client | collation_connection | D
--------+---------------+-----------+--------------
---+---------------------+---------------------+-
 dbtoko | caribarang    | PROCEDURE | root@localhost
   | cp850                | cp850_general_ci     | 
 dbtoko | namapelanggan | PROCEDURE | root@localhost
   | cp850                | cp850_general_ci     | 
--------+---------------+-----------+--------------
```

MENGHAPUS STORE PROCEDURE

```
MariaDB [dbtoko]> DROP PROCEDURE caribarang;
Query OK, 0 rows affected (0.01 sec)
```

FUNCTION

```
MariaDB [dbtoko]> SELECT *, hargajual - hargabeli AS selisih FROM tblbarang;
+----------+------------+-----------------+------------+-----------+-----------+---------+
| idbarang | idkelompok | barang          | stokbarang | hargabeli | hargajual | selisih |
+----------+------------+-----------------+------------+-----------+-----------+---------+
|        1 |          6 | Beras Rojo Lele |         65 |     10000 |     12000 |    2000 |
|        2 |          6 | Beras Cianjur   |         50 |     11000 |     14000 |    3000 |
|        3 |          6 | Beras Medium    |         70 |      8000 |     10000 |    2000 |
|        4 |          6 | Beras Mahal     |         25 |     23000 |     30000 |    7000 |
|        5 |          7 | Gula Putih      |         20 |     12000 |     14000 |    2000 |
|        6 |          7 | Gula Merah      |          5 |      3000 |      5000 |    2000 |
|        7 |          7 | Gula Batu       |         40 |      2000 |      3000 |    1000 |
|        8 |          7 | Gula Aren       |         55 |      7000 |      9000 |    2000 |
|       10 |          9 | Tepung Terigu   |         45 |      4000 |      6000 |    2000 |
|       11 |          9 | Tepung Tapioka  |         15 |      2000 |      3500 |    1500 |
|       12 |          9 | Tepung Kanji    |         20 |      3500 |      5000 |    1500 |
+----------+------------+-----------------+------------+-----------+-----------+---------+
11 rows in set (0.00 sec)
```

```
MariaDB [dbtoko]> SELECT hargajual - hargabeli AS laba
    -> FROM tblbarang WHERE idbarang = 1;
+------+
| laba |
+------+
| 2000 |
+------+
1 row in set (0.00 sec)
```

PERIKSA TABEL ORDER DETAIL

```
MariaDB [dbtoko]> SELECT * FROM tblorderdetail;
+---------------+---------+----------+--------+----------------+
| idorderdetail | idorder | idbarang | jumlah | hargapenjualan |
+---------------+---------+----------+--------+----------------+
|             1 |       1 |        1 |     35 |          12000 |
|             2 |       1 |        6 |      5 |           5000 |
|             3 |       1 |       12 |      5 |           5000 |
+---------------+---------+----------+--------+----------------+
```

INSERT DATA PADA TABEL ORDER

```
MariaDB [dbtoko]> INSERT INTO tblorder
    -> (idpelanggan, faktur, tanggalorder)
    -> VALUES (1, '002', NOW() );
Query OK, 1 row affected, 1 warning (0.00 sec)
```

CREATE FUNCTION

```
MariaDB [dbtoko]> CREATE FUNCTION laba (id INT) RETURNS FLOAT
    -> RETURN
    -> (
    -> SELECT hargajual - hargabeli as laba
    -> FROM tblbarang
    -> WHERE idbarang = id
    -> );
Query OK, 0 rows affected (0.02 sec)
```

MEMANGGIL FUNCTION

```
MariaDB [dbtoko]> SELECT laba(1);
+---------+
| laba(1) |
+---------+
|    2000 |
+---------+
1 row in set (0.00 sec)
```

PENGGUNAAN FUNCTION

```
MariaDB [dbtoko]> ALTER TABLE tblorderdetail ADD laba FLOAT;
Query OK, 0 rows affected (0.08 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
MariaDB [dbtoko]> INSERT INTO tblorder
    -> (idpelanggan, faktur, tanggalorder)
    -> VALUES (3,'003', NOW() );
Query OK, 1 row affected, 1 warning (0.01 sec)
```

```
MariaDB [dbtoko]> INSERT INTO tblorderdetail
    -> (idorder, idbarang, jumlah, hargapenjualan,
    -> VALUES (3, 8, 5, 9000, (SELECT laba(8)));
Query OK, 1 row affected (0.01 sec)
```

```
MariaDB [dbtoko]> SELECT * FROM tblorder;
+---------+-------------+--------+--------------+--------+
| idorder | idpelanggan | faktur | tanggalorder | total  |
+---------+-------------+--------+--------------+--------+
|       1 |           2 | 001    | 2018-03-16   | 470000 |
|       2 |           1 | 002    | 2018-03-16   | 180000 |
|       3 |           3 | 003    | 2018-03-17   |      0 |
+---------+-------------+--------+--------------+--------+
3 rows in set (0.00 sec)
```

MENAMPILKAN SEMUA FUNCTION

```
MariaDB [dbtoko]> SHOW FUNCTION STATUS;
```

```
+--------+------+----------+----------------
| Db     | Name | Type     | Definer
acter_set_client | collation_connection | Da
+--------+------+----------+----------------
-----------------+----------------------+---
| dbtoko | laba | FUNCTION | root@localhost
0                | cp850_general_ci     | la
+--------+------+----------+----------------
```

MENGHAPUS FUNCTION

```
MariaDB [dbtoko]> DROP FUNCTION laba;
Query OK, 0 rows affected (0.02 sec)
```

SELECT AGGREGATE

MIN	Menampilkan nilai TERKECIL pada kolom yang dimaksud
MAX	Menampilkan nilai TERBESAR pada kolom yang dimaksud
SUM	Menampilkan nilai PENJUMLAHAN pada kolom yang dimaksud
AVG	Menampilkan nilai RATA - RATA pada kolom yang dimaksud
COUNT	Menampilkan JUMLAH BARIS pada kolom yang dimaksud
COUNT(*)	Menampilkan JUMLAH BARIS pada TABEL

SELECT MIN

```
MariaDB [dbtoko]> SELECT MIN(hargajual) FROM tblbarang;
+----------------+
| MIN(hargajual) |
+----------------+
|           3000 |
+----------------+
1 row in set (0.00 sec)
```

SELECT MAX

```
MariaDB [dbtoko]> SELECT MAX(hargajual) FROM tblbarang;
+----------------+
| MAX(hargajual) |
+----------------+
|          30000 |
+----------------+
1 row in set (0.00 sec)
```

SELECT SUM

```
MariaDB [dbtoko]> SELECT SUM(hargajual) FROM tblbarang;
+----------------+
| SUM(hargajual) |
+----------------+
|         111500 |
+----------------+
1 row in set (0.00 sec)
```

SELECT AVG

```
MariaDB [dbtoko]> SELECT AVG(hargajual) FROM tblbarang;
+--------------------+
| AVG(hargajual)     |
+--------------------+
| 10136.363636363636 |
+--------------------+
1 row in set (0.00 sec)
```

SELECT COUNT

```
MariaDB [dbtoko]> SELECT COUNT(hargajual) FROM tblbarang
+------------------+
| COUNT(hargajual) |
+------------------+
|               11 |
+------------------+
1 row in set (0.00 sec)
```

SELECT COUNT (*)

```
MariaDB [dbtoko]> SELECT COUNT(*) FROM tblbarang;
+----------+
| COUNT(*) |
+----------+
|       11 |
+----------+
1 row in set (0.00 sec)
```

SELECT DISTINCT

```
MariaDB [dbtoko]> SELECT DISTINCT kelompok FROM view_barang;
+----------+
| kelompok |
+----------+
| Beras    |
| Gula     |
| Tepung   |
+----------+
3 rows in set (0.00 sec)
```

PERIKSA TBLKELOMPOK

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok;
+------------+------------+
| idkelompok | kelompok   |
+------------+------------+
|          6 | Beras      |
|          7 | Gula       |
|          9 | Tepung     |
|         10 | Minyak     |
|         11 | Jajan      |
|         12 | Roti Basah |
+------------+------------+
6 rows in set (0.00 sec)
```

START TRANSACTION

```
MariaDB [dbtoko]> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)
```

BERIKAN PERINTAH INSERT

```
MariaDB [dbtoko]> INSERT INTO tblkelompok VALUES ('','Minuman');
Query OK, 1 row affected, 1 warning (0.00 sec)
```

BERI PERINTAH ROLLBACK

```
MariaDB [dbtoko]> ROLLBACK;
Query OK, 0 rows affected (0.01 sec)
```

PERIKSA TBLKELOMPOK

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok;
+------------+------------+
| idkelompok | kelompok   |
+------------+------------+
|          6 | Beras      |
|          7 | Gula       |
|          9 | Tepung     |
|         10 | Minyak     |
|         11 | Jajan      |
|         12 | Roti Basah |
|         14 | Minuman    |
+------------+------------+
7 rows in set (0.00 sec)
```

PERIKSA KEMBALI TBLKELOMPOK

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok;
+------------+------------+
| idkelompok | kelompok   |
+------------+------------+
|          6 | Beras      |
|          7 | Gula       |
|          9 | Tepung     |
|         10 | Minyak     |
|         11 | Jajan      |
|         12 | Roti Basah |
+------------+------------+
6 rows in set (0.00 sec)
```

ULANGI INSERT DAN IKUTI PERINTAH

```
MariaDB [dbtoko]> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

MariaDB [dbtoko]> INSERT INTO tblkelompok VALUES ('','Minuman');
Query OK, 1 row affected, 1 warning (0.00 sec)

MariaDB [dbtoko]> COMMIT;
Query OK, 0 rows affected (0.01 sec)
```

ROLLBACK DAN PERIKSA

```
MariaDB [dbtoko]> ROLLBACK;
Query OK, 0 rows affected (0.00 sec)

MariaDB [dbtoko]> SELECT * FROM tblkelompok;
+------------+------------+
| idkelompok | kelompok   |
+------------+------------+
|          6 | Beras      |
|          7 | Gula       |
|          9 | Tepung     |
|         10 | Minyak     |
|         11 | Jajan      |
|         12 | Roti Basah |
|         15 | Minuman    |
+------------+------------+
7 rows in set (0.00 sec)
```

PERIKSA TBLKELOMPOK

```
MariaDB [dbtoko]> SELECT * FROM tblkelompok;
+------------+------------+
| idkelompok | kelompok   |
+------------+------------+
|          6 | Beras      |
|          7 | Gula       |
|          9 | Tepung     |
|         10 | Minyak     |
|         11 | Jajan      |
|         12 | Roti Basah |
|         15 | Minuman    |
+------------+------------+
7 rows in set (0.00 sec)
```

DCL

DATA CONTROL LANGUAGE

Manajemen User Dan Hak Akses

LOGIN DAN TAMPILKAN SEMUA USER

```
C:\xampp\mysql\bin>mysql -u root -p
Enter password:
```

```
MariaDB [(none)]> SELECT user, host, password FROM mysql.user;
+------+-----------+----------+
| user | host      | password |
+------+-----------+----------+
| root | localhost |          |
| root | 127.0.0.1 |          |
| root | ::1       |          |
|      | localhost |          |
| pma  | localhost |          |
+------+-----------+----------+
5 rows in set (0.00 sec)
```

CREATE USER DAN PERIKSA

```
MariaDB [(none)]> CREATE USER 'komputerkit'@'localhost';
Query OK, 0 rows affected (0.01 sec)
```

```
MariaDB [(none)]> SELECT user, host, password FROM my
+-------------+-----------+----------+
| user        | host      | password |
+-------------+-----------+----------+
| root        | localhost |          |
| root        | 127.0.0.1 |          |
| root        | ::1       |          |
|             | localhost |          |
| pma         | localhost |          |
| komputerkit | localhost |          |
+-------------+-----------+----------+
```

BERI PASSWORD DAN REFRESH

```
MariaDB [(none)]> SET PASSWORD FOR 'komputerkit'@'localhost' = PASSWORD ('komputerkit');
Query OK, 0 rows affected (0.00 sec)
```

```
MariaDB [(none)]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)
```

UJI USER & PASSWORD

```
MariaDB [(none)]> quit;
Bye

C:\xampp\mysql\bin>mysql -u komputerkit -p
Enter password: ***********
```

PERIKSA DATABASE

```
MariaDB [(none)]> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| test               |
+--------------------+
2 rows in set (0.00 sec)
```

MEMBERI HAK AKSES (QUIT DULU)

```
MariaDB [(none)]> quit;
Bye
```

MASUK KEMBALI DAN BERI AKSES

```
C:\xampp\mysql\bin>mysql -u root -p
Enter password:
```

```
MariaDB [(none)]> GRANT ALL PRIVILEGES ON dbtoko.* TO 'komputerkit'@'localhost' IDENTIFIED BY 'komputerkit';
Query OK, 0 rows affected (0.00 sec)
```

REFRESH LALU LOG OUT

```
MariaDB [(none)]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)
```

```
MariaDB [(none)]> quit;
Bye
```

MASUK KEMBALI

```
C:\xampp\mysql\bin>mysql -u komputerkit -p
Enter password: ************
```

TAMPILKAN DATABASE

```
MariaDB [(none)]> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| dbtoko             |
| information_schema |
| test               |
+--------------------+
3 rows in set (0.00 sec)
```

TAMPILKAN USER YANG LOGIN

```
MariaDB [(none)]> SELECT USER(),CURRENT_USER();
+------------------------+------------------------+
| USER()                 | CURRENT_USER()         |
+------------------------+------------------------+
| komputerkit@localhost | komputerkit@localhost |
+------------------------+------------------------+
1 row in set (0.00 sec)
```

MENAMPILKAN HAK AKSES (QUIT DULU)

```
MariaDB [(none)]> quit;
Bye
```

```
C:\xampp\mysql\bin>mysql -u root -p
Enter password:
```

TAMPILKAN HAK AKSES

```
MariaDB [(none)]> SHOW GRANTS FOR 'komputerkit'@'localhost';
```

```
Grants for komputerkit@localhost
--------------------------------------------------------------------------------
GRANT USAGE ON *.* TO 'komputerkit'@'localhost' IDENTIFIED BY PASSWORD '*4B8A2F9E7
GRANT ALL PRIVILEGES ON `dbtoko`.* TO 'komputerkit'@'localhost'
```

MENGHAPUS AKSES (PERIKSA USER)

```
MariaDB [(none)]> SELECT USER(), CURRENT_USER();
+----------------+----------------+
| USER()         | CURRENT_USER() |
+----------------+----------------+
| root@localhost | root@localhost |
+----------------+----------------+
1 row in set (0.00 sec)
```

GUNAKAN PERINTAH

```
MariaDB [(none)]> REVOKE ALL PRIVILEGES ON dbtoko.* FROM 'komputerkit'@'localhost';
Query OK, 0 rows affected (0.00 sec)
```

REFRESH PERUBAHAN AKSES

```
MariaDB [(none)]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)
```

PERIKSA HAK AKSES SETELAH DIHAPUS

```
MariaDB [(none)]> SHOW GRANTS FOR 'komputerkit'@'localhost';
```

```
Grants for komputerkit@localhost
--------------------------------------------------------------------------------
GRANT USAGE ON *.* TO 'komputerkit'@'localhost' IDENTIFIED BY PASSWORD '*4B
```

MEMBERIKAN HAK AKSES PADA DATABASE DENGAN TABEL

```
MariaDB [(none)]> GRANT ALL ON dbtoko.tblkelompok TO 'komputerkit'@'localhost' IDENTIFIED BY 'komputerkit';
Query OK, 0 rows affected (0.00 sec)
```

PERIKSA HASIL

```
MariaDB [(none)]> SHOW GRANTS FOR 'komputerkit'@'localhost';
+-----------------------------------------------------------------------------
| Grants for komputerkit@localhost
+-----------------------------------------------------------------------------
| GRANT USAGE ON *.* TO 'komputerkit'@'localhost' IDENTIFIED BY PASSWORD '*4B8
| GRANT ALL PRIVILEGES ON `dbtoko`.`tblkelompok` TO 'komputerkit'@'localhost'
| GRANT ALL PRIVILEGES ON `dbtoko`.`tblbarang` TO 'komputerkit'@'localhost'
+-----------------------------------------------------------------------------
3 rows in set (0.00 sec)
```

MEMBERIKAN HAK AKSES PADA SELECT, INSERT, DELETE, UPDATE, PADA TABEL

```
MariaDB [(none)]> GRANT SELECT,INSERT ON
    -> dbtoko.tblpelanggan TO 'komputerkit'@'localhost';
Query OK, 0 rows affected (0.00 sec)
```

UBAH PASSWORD USER

```
MariaDB [(none)]> SET PASSWORD FOR 'komputerkit'@'localhost' = PASSWORD('123456');
Query OK, 0 rows affected (0.00 sec)
```

HAPUS USER

```
MariaDB [(none)]> DROP USER 'komputerkit'@'localhost';
Query OK, 0 rows affected (0.00 sec)
```

MERUBAH PASSWORD USER [root]

```
C:\xampp\mysql\bin>mysqladmin -u root password 123456
```

MERUBAH PASSWORD LAMA USER [root]

```
C:\xampp\mysql\bin>mysqladmin -u root -p123456 password
New password:
Confirm new password:
```

TERIMA KASIH