

RESTAURANT DATABASE MANAGEMENT SYSTEM

Kelompok 6

MEMBER

- 01
- 02
- 03
- 04
- 05

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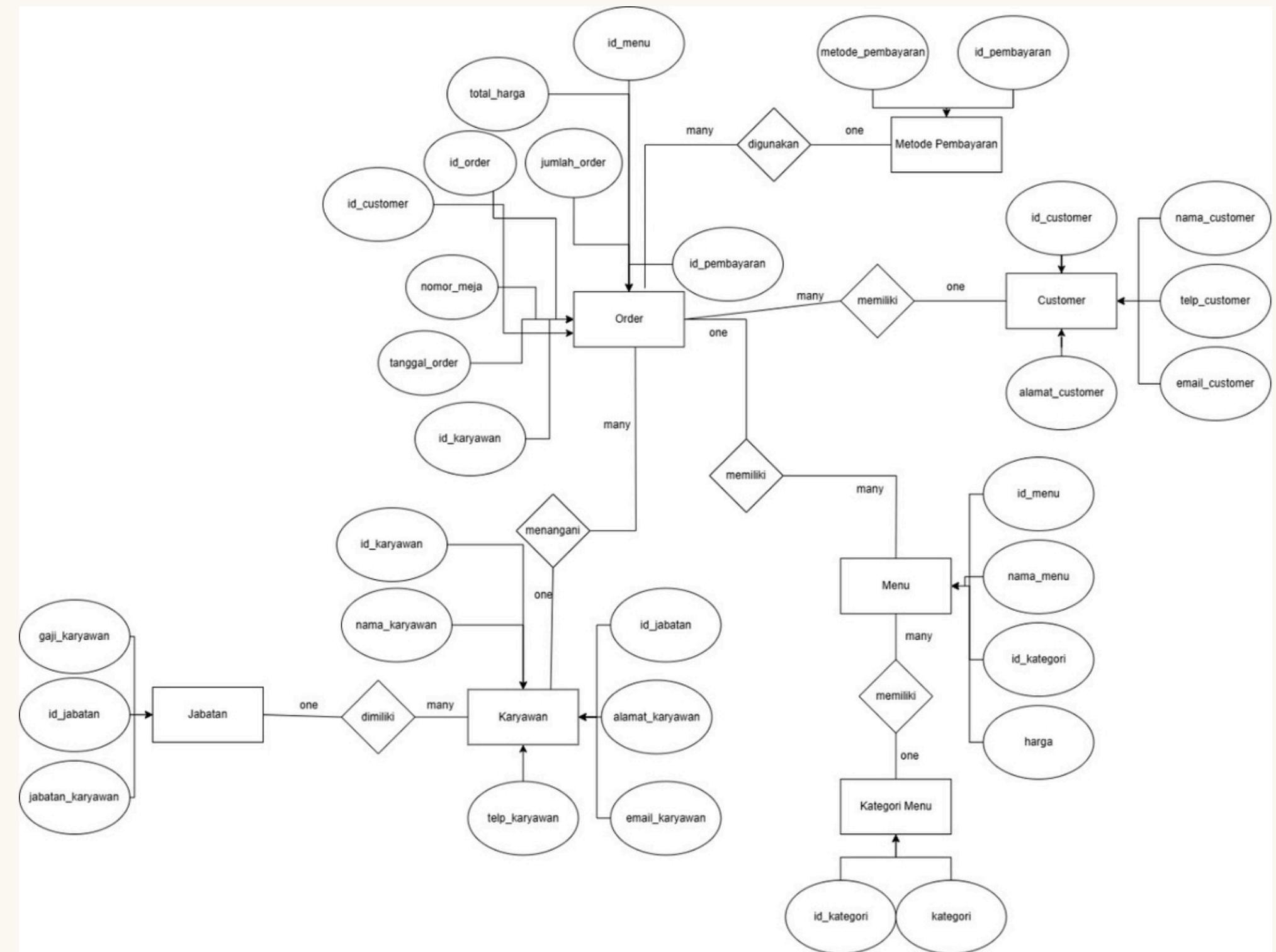
BENEDICT ZIVENT

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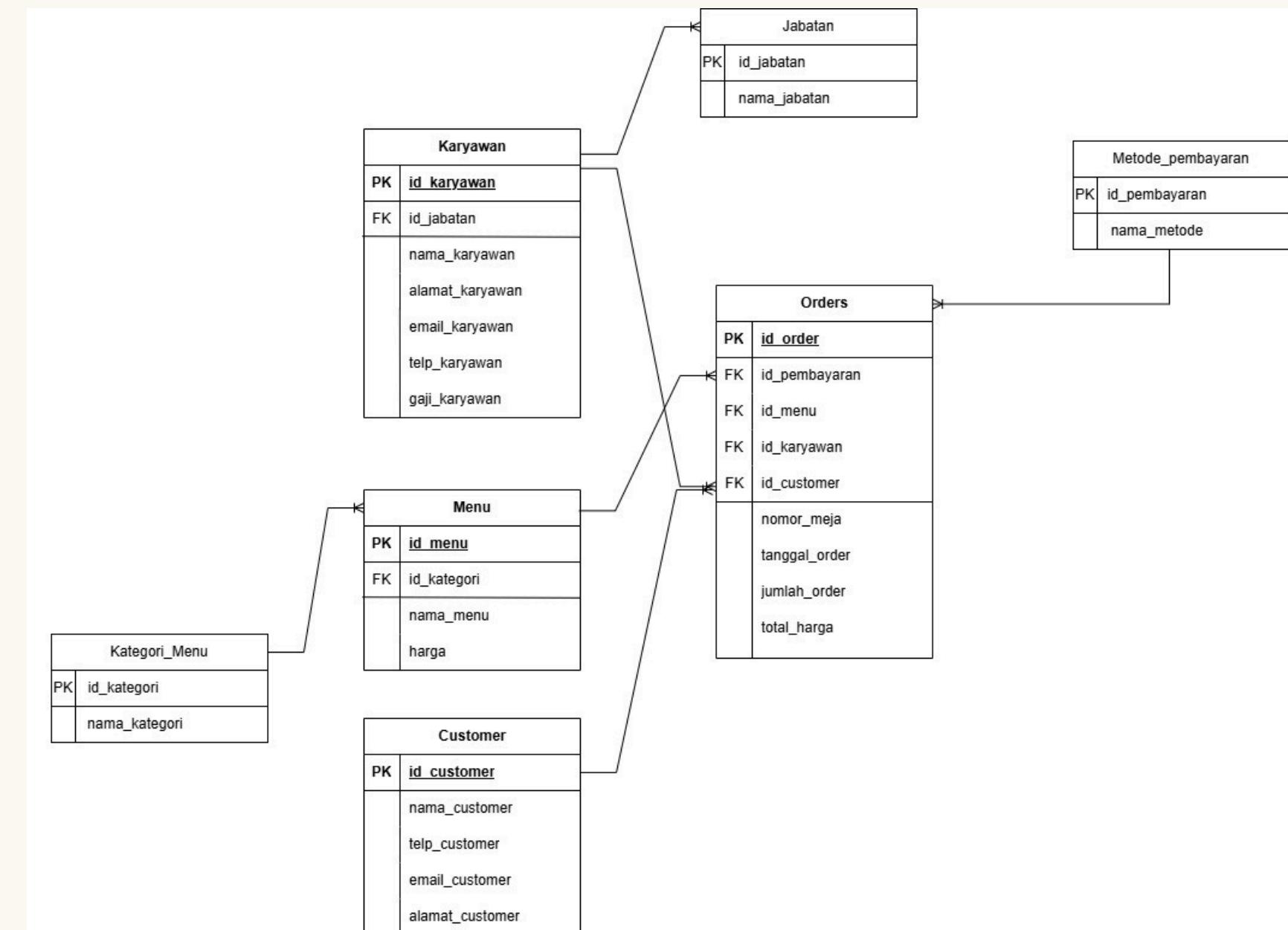
TABEL NORMALISASI

https://docs.google.com/spreadsheets/d/1Rb5olwVi3SnK0Vum-_dkbKkzsJvIcrxQt5-wE1R2Ok/edit?gid=0#gid=0

ENTITY RELATION DIAGRAM



DATABASE SCHEMA



DATABASE INITIALIZATION QUERIES

CREATE DATABASE

```
MariaDB [(none)]> create database uaskelompok6;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> use uaskelompok6;
Database changed
MariaDB [uaskelompok6]> CREATE TABLE Metode_pembayaran (
    ->     id_pembayaran VARCHAR(10),
    ->     nama_metode VARCHAR(20),
    ->     PRIMARY KEY (id_pembayaran)
    -> );
Query OK, 0 rows affected (0.009 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE TABLE Kategori_menu (
    ->     id_kategori VARCHAR(10),
    ->     nama_kategori VARCHAR(30),
    ->     PRIMARY KEY (id_kategori)
    -> );
Query OK, 0 rows affected (0.008 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE TABLE Jabatan (
    ->     id_jabatan VARCHAR(10),
    ->     nama_jabatan VARCHAR(30),
    ->     PRIMARY KEY (id_jabatan)
    -> );
Query OK, 0 rows affected (0.006 sec)
```

```
MariaDB [uaskelompok6]> CREATE TABLE Customer (
    ->     id_customer VARCHAR(10),
    ->     nama_customer VARCHAR(50),
    ->     telp_customer VARCHAR(15),
    ->     email_customer VARCHAR(50),
    ->     alamat_customer VARCHAR(100),
    ->     PRIMARY KEY (id_customer)
    -> );
Query OK, 0 rows affected (0.006 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE TABLE Menu (
    ->     id_menu VARCHAR(10),
    ->     nama_menu VARCHAR(50),
    ->     id_kategori VARCHAR(10),
    ->     harga DECIMAL(10,2),
    ->     PRIMARY KEY (id_menu),
    ->     FOREIGN KEY (id_kategori) REFERENCES Kategori_menu(id_kategori)
    -> );
Query OK, 0 rows affected (0.032 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE TABLE Karyawan (
    ->     id_karyawan VARCHAR(10),
    ->     nama_karyawan VARCHAR(50),
    ->     id_jabatan VARCHAR(10),
    ->     alamat_karyawan VARCHAR(100),
    ->     email_karyawan VARCHAR(50),
    ->     telp_karyawan VARCHAR(15),
    ->     gaji_karyawan DECIMAL(10,2),
    ->     PRIMARY KEY (id_karyawan),
    ->     FOREIGN KEY (id_jabatan) REFERENCES Jabatan(id_jabatan)
    -> );
Query OK, 0 rows affected (0.031 sec)
```

CREATE DATABASE

```
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE TABLE Orders (
->     id_order VARCHAR(10),
->     nomor_meja VARCHAR(5),
->     tanggal_order DATE,
->     jumlah_order INT,
->     total_harga DECIMAL(10,2),
->     id_pembayaran VARCHAR(10),
->     id_menu VARCHAR(10),
->     id_karyawan VARCHAR(10),
->     id_customer VARCHAR(10),
->     PRIMARY KEY (id_order),
->     FOREIGN KEY (id_pembayaran) REFERENCES Metode_pembayaran(id_pembayaran),
->     FOREIGN KEY (id_menu) REFERENCES Menu(id_menu),
->     FOREIGN KEY (id_karyawan) REFERENCES Karyawan(id_karyawan),
->     FOREIGN KEY (id_customer) REFERENCES Customer(id_customer)
-> );
Query OK, 0 rows affected (0.020 sec)
```

INSERT DATA INTO DATABASE

```
MariaDB [uaskelompok6]> INSERT INTO Metode_pembayaran VALUES
-> ('PAY001', 'Cash'),
-> ('PAY002', 'Credit Card'),
-> ('PAY003', 'Debit Card'),
-> ('PAY004', 'QRIS');
Query OK, 4 rows affected (0.048 sec)
Records: 4  Duplicates: 0  Warnings: 0

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> INSERT INTO Kategori_menu VALUES
-> ('CAT001', 'Makanan Utama'),
-> ('CAT002', 'Minuman');
Query OK, 2 rows affected (0.005 sec)
Records: 2  Duplicates: 0  Warnings: 0

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> INSERT INTO Jabatan VALUES
-> ('JBT001', 'Waiter'),
-> ('JBT002', 'Cashier'),
-> ('JBT003', 'Chef');
Query OK, 3 rows affected (0.004 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

INSERT DATA INTO DATABASE

```
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> INSERT INTO Customer VALUES
-> ('CUS001', 'Ahmad Rizki', '087812345678', 'ahmad.r@email.com', 'JL. Melati No. 5, Jakarta'),
-> ('CUS002', 'Linda Wati', '087812345679', 'linda.w@email.com', 'Jl. Dahlia No. 8, Jakarta'),
-> ('CUS003', 'Deni Prakoso', '087812345680', 'deni.p@email.com', 'Jl. Cempaka No. 12, Jakarta'),
-> ('CUS004', 'Maya Sari', '087812345681', 'maya.s@email.com', 'Jl. Kamboja No. 7, Jakarta'),
-> ('CUS005', 'Budi Prasetyo', '087812345682', 'budi.p@email.com', 'Jl. Anggrek No. 15, Jakarta'),
-> ('CUS006', 'Rina Dewi', '087812345683', 'rina.d@email.com', 'Jl. Bougenville No. 9, Jakarta'),
-> ('CUS007', 'Toni Wijaya', '087812345684', 'toni.w@email.com', 'Jl. Flamboyan No. 11, Jakarta'),
-> ('CUS008', 'Sandra Dewi', '087812345685', 'sandra.d@email.com', 'Jl. Teratai No. 14, Jakarta'),
-> ('CUS009', 'Hadi Santoso', '087812345686', 'hadi.s@email.com', 'Jl. Lotus No. 16, Jakarta'),
-> ('CUS010', 'Indah Permata', '087812345687', 'indah.p@email.com', 'Jl. Jasmine No. 18, Jakarta');
Query OK, 10 rows affected (0.003 sec)
Records: 10  Duplicates: 0  Warnings: 0

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> INSERT INTO Menu VALUES
-> ('M001', 'Nasi Goreng Spesial', 'CAT001', 45000),
-> ('M002', 'Mie Goreng Seafood', 'CAT001', 55000),
-> ('M003', 'Ayam Bakar Madu', 'CAT001', 65000),
-> ('M004', 'Soto Ayam', 'CAT001', 35000),
-> ('M005', 'Udang Goreng Mentega', 'CAT001', 75000),
-> ('M006', 'Es Teh Manis', 'CAT002', 15000),
-> ('M007', 'Juice Alpukat', 'CAT002', 25000),
-> ('M008', 'Sate Ayam', 'CAT001', 45000),
-> ('M009', 'Ikan Bakar', 'CAT001', 85000),
-> ('M010', 'Nasi Goreng Seafood', 'CAT001', 65000);
Query OK, 10 rows affected (0.002 sec)
Records: 10  Duplicates: 0  Warnings: 0

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> INSERT INTO Karyawan VALUES
-> ('EMP001', 'Budi Santoso', 'JBT001', 'Jl. Mawar No. 10, Jakarta', 'budi.s@resto.com', '081234567890', 4500000),
-> ('EMP002', 'Siti Rahma', 'JBT002', 'Jl. Anggrek No. 15, Jakarta', 'siti.r@resto.com', '081234567891', 4800000),
-> ('EMP003', 'Rudi Hartono', 'JBT003', 'Jl. Kenanga No. 20, Jakarta', 'rudi.h@resto.com', '081234567892', 8000000),
-> ('EMP004', 'Nina Putri', 'JBT001', 'Jl. Tulip No. 25, Jakarta', 'nina.p@resto.com', '081234567893', 4500000),
-> ('EMP005', 'Dedi Kurniawan', 'JBT001', 'Jl. Sakura No. 30, Jakarta', 'dedi.k@resto.com', '081234567894', 4500000),
-> ('EMP006', 'Lia Susanti', 'JBT003', 'Jl. Lily No. 35, Jakarta', 'lia.s@resto.com', '081234567895', 8000000);
Query OK, 6 rows affected (0.002 sec)
Records: 6  Duplicates: 0  Warnings: 0
```

INSERT DATA INTO DATABASE

```
MariaDB [uaskelompok6]> INSERT INTO Orders VALUES
-> ('ORD001', 'T01', '2024-01-05', 2, 150000, 'PAY001', 'M001', 'EMP001', 'CUS001'),
-> ('ORD002', 'T03', '2024-01-05', 4, 280000, 'PAY002', 'M002', 'EMP002', 'CUS002'),
-> ('ORD003', 'T05', '2024-01-06', 3, 225000, 'PAY004', 'M003', 'EMP003', 'CUS003'),
-> ('ORD004', 'T02', '2024-01-06', 2, 130000, 'PAY001', 'M004', 'EMP001', 'CUS004'),
-> ('ORD005', 'T07', '2024-01-07', 5, 375000, 'PAY003', 'M005', 'EMP004', 'CUS005'),
-> ('ORD006', 'T04', '2024-01-07', 2, 90000, 'PAY004', 'M006', 'EMP002', 'CUS006'),
-> ('ORD007', 'T06', '2024-01-08', 3, 195000, 'PAY001', 'M007', 'EMP005', 'CUS007'),
-> ('ORD008', 'T08', '2024-01-08', 4, 260000, 'PAY002', 'M008', 'EMP006', 'CUS008'),
-> ('ORD009', 'T09', '2024-01-09', 2, 170000, 'PAY003', 'M009', 'EMP004', 'CUS009'),
-> ('ORD010', 'T10', '2024-01-09', 3, 240000, 'PAY004', 'M010', 'EMP005', 'CUS010');
Query OK, 10 rows affected (0.011 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

RESULTS

```
MariaDB [uaskelompok6]> SHOW TABLES;
+-----+
| Tables_in_uaskelompok6 |
+-----+
| customer
| jabatan
| karyawan
| kategori_menu
| menu
| metode_pembayaran
| orders
+-----+
7 rows in set (0.005 sec)
```

```
MariaDB [uaskelompok6]> SELECT * FROM Metode_pembayaran;
+-----+-----+
| id_pembayaran | nama_metode |
+-----+-----+
| PAY001        | Cash          |
| PAY002        | Credit Card   |
| PAY003        | Debit Card    |
| PAY004        | QRIS           |
+-----+-----+
4 rows in set (0.001 sec)
```

RESULTS

```
MariaDB [uaskelompok6]> SELECT * FROM Kategori_menu;
+-----+-----+
| id_kategori | nama_kategori |
+-----+-----+
| CAT001      | Makanan Utama |
| CAT002      | Minuman          |
+-----+-----+
2 rows in set (0.000 sec)
```

```
MariaDB [uaskelompok6]> SELECT * FROM Jabatan;
+-----+-----+
| id_jabatan | nama_jabatan |
+-----+-----+
| JBT001     | Waiter        |
| JBT002     | Cashier       |
| JBT003     | Chef          |
+-----+-----+
3 rows in set (0.000 sec)
```

RESULTS

```
MariaDB [uaskelompok6]> SELECT * FROM Customer;
+-----+-----+-----+-----+-----+
| id_customer | nama_customer | telp_customer | email_customer | alamat_customer |
+-----+-----+-----+-----+
| CUS001      | Ahmad Rizki    | 087812345678 | ahmad.r@email.com | Jl. Melati No. 5, Jakarta
| CUS002      | Linda Wati     | 087812345679 | linda.w@email.com | Jl. Dahlia No. 8, Jakarta
| CUS003      | Deni Prakoso   | 087812345680 | deni.p@email.com | Jl. Cempaka No. 12, Jakarta
| CUS004      | Maya Sari      | 087812345681 | maya.s@email.com | Jl. Kamboja No. 7, Jakarta
| CUS005      | Budi Prasetyo  | 087812345682 | budi.p@email.com | Jl. Anggrek No. 15, Jakarta
| CUS006      | Rina Dewi      | 087812345683 | rina.d@email.com | Jl. Bougenville No. 9, Jakarta
| CUS007      | Toni Wijaya    | 087812345684 | toni.w@email.com | Jl. Flamboyan No. 11, Jakarta
| CUS008      | Sandra Dewi    | 087812345685 | sandra.d@email.com | Jl. Teratai No. 14, Jakarta
| CUS009      | Hadi Santoso   | 087812345686 | hadi.s@email.com | Jl. Lotus No. 16, Jakarta
| CUS010      | Indah Permata  | 087812345687 | indah.p@email.com | Jl. Jasmine No. 18, Jakarta
+-----+-----+-----+-----+
10 rows in set (0.000 sec)
```

```
MariaDB [uaskelompok6]> SELECT * FROM Menu;
+-----+-----+-----+-----+
| id_menu | nama_menu           | id_kategori | harga |
+-----+-----+-----+-----+
| M001    | Nasi Goreng Spesial  | CAT001     | 45000.00
| M002    | Mie Goreng Seafood   | CAT001     | 55000.00
| M003    | Ayam Bakar Madu     | CAT001     | 65000.00
| M004    | Soto Ayam            | CAT001     | 35000.00
| M005    | Udang Goreng Mentega | CAT001     | 75000.00
| M006    | Es Teh Manis         | CAT002     | 15000.00
| M007    | Juice Alpukat        | CAT002     | 25000.00
| M008    | Sate Ayam             | CAT001     | 45000.00
| M009    | Ikan Bakar            | CAT001     | 85000.00
| M010    | Nasi Goreng Seafood  | CAT001     | 65000.00
+-----+-----+-----+-----+
10 rows in set (0.000 sec)
```

RESULTS

```
MariaDB [uaskelompok6]> SELECT * FROM Karyawan;
+-----+-----+-----+-----+-----+-----+-----+
| id_karyawan | nama_karyawan | id_jabatan | alamat_karyawan | email_karyawan | telp_karyawan | gaji_karyawan |
+-----+-----+-----+-----+-----+-----+-----+
| EMP001      | Budi Santoso   | JBT001     | Jl. Mawar No. 10, Jakarta | budi.s@resto.com | 081234567890 | 4500000.00 |
| EMP002      | Siti Rahma    | JBT002     | Jl. Anggrek No. 15, Jakarta | siti.r@resto.com | 081234567891 | 4800000.00 |
| EMP003      | Rudi Hartono  | JBT003     | Jl. Kenanga No. 20, Jakarta | rudi.h@resto.com | 081234567892 | 8000000.00 |
| EMP004      | Nina Putri    | JBT001     | Jl. Tulip No. 25, Jakarta | nina.p@resto.com | 081234567893 | 4500000.00 |
| EMP005      | Dedi Kurniawan | JBT001     | Jl. Sakura No. 30, Jakarta | dedi.k@resto.com | 081234567894 | 4500000.00 |
| EMP006      | Lia Susanti   | JBT003     | Jl. Lily No. 35, Jakarta | lia.s@resto.com | 081234567895 | 8000000.00 |
+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.000 sec)
```

Restaurant Order Management System									
Order Details		Customer Information		Payment Method		Employee Details		Customer Type	
ID	Description	Name	Address	Type	Amount	ID	Name	ID	Type
ORD001	Food	John Doe	123 Main St	Residential	150000.00	PAY001	M001	EMP001	CUS001
ORD002	Food	Jane Smith	456 Elm St	Residential	280000.00	PAY002	M002	EMP002	CUS002
ORD003	Food	Bob Johnson	789 Oak St	Residential	225000.00	PAY004	M003	EMP003	CUS003
ORD004	Food	Sarah Davis	123 Main St	Residential	130000.00	PAY001	M004	EMP001	CUS004
ORD005	Food	David Wilson	456 Elm St	Residential	375000.00	PAY003	M005	EMP004	CUS005
ORD006	Food	Emily Davis	789 Oak St	Residential	90000.00	PAY004	M006	EMP002	CUS006
ORD007	Food	Michael Wilson	123 Main St	Residential	195000.00	PAY001	M007	EMP005	CUS007
ORD008	Food	Amy Davis	456 Elm St	Residential	260000.00	PAY002	M008	EMP006	CUS008
ORD009	Food	James Wilson	789 Oak St	Residential	170000.00	PAY003	M009	EMP004	CUS009
ORD010	Food	Olivia Davis	123 Main St	Residential	240000.00	PAY004	M010	EMP005	CUS010

DCL ACCESS CONTROL

CREATE, RENAME USER AND GRANT ACCESS

```
MariaDB [uaskelompok6]> CREATE USER 'resto_manager'@'localhost' IDENTIFIED BY 'manager123';
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]> GRANT ALL PRIVILEGES ON uaskelompok6.* TO 'resto_manager'@'localhost';
Query OK, 0 rows affected (0.002 sec)

MariaDB [uaskelompok6]> CREATE USER 'resto_cashier'@'localhost' IDENTIFIED BY 'cashier123';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> GRANT SELECT, INSERT, UPDATE ON uaskelompok6.Orders TO 'resto_cashier'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> GRANT SELECT ON uaskelompok6.Menu TO 'resto_cashier'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> GRANT SELECT ON uaskelompok6.Customer TO 'resto_cashier'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> GRANT SELECT ON uaskelompok6.Metode_pembayaran TO 'resto_cashier'@'localhost';
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]> CREATE USER 'resto_waiter'@'localhost' IDENTIFIED BY 'waiter123';
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]> GRANT SELECT, INSERT ON uaskelompok6.Orders TO 'resto_waiter'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> GRANT SELECT ON uaskelompok6.Menu TO 'resto_waiter'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> GRANT SELECT ON uaskelompok6.Customer TO 'resto_waiter'@'localhost';
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]> CREATE USER 'resto_hr'@'localhost' IDENTIFIED BY 'hr123';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> GRANT SELECT, INSERT, UPDATE ON uaskelompok6.Karyawan TO 'resto_hr'@'localhost';
Query OK, 0 rows affected (0.001 sec)
```

```
MariaDB [uaskelompok6]> GRANT SELECT ON uaskelompok6.Jabatan TO 'resto_hr'@'localhost';
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]> CREATE USER 'resto_kitchen'@'localhost' IDENTIFIED BY 'kitchen123';
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]> GRANT SELECT ON uaskelompok6.Orders TO 'resto_kitchen'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> GRANT SELECT ON uaskelompok6.Menu TO 'resto_kitchen'@'localhost';
Query OK, 0 rows affected (0.004 sec)
```

```
MariaDB [uaskelompok6]> SELECT User, Host FROM mysql.user;
+-----+-----+
| User   | Host    |
+-----+-----+
| root   | 127.0.0.1
| root   | ::1
| pma    | localhost
| resto_cashier | localhost
| resto_hr   | localhost
| resto_kitchen | localhost
| resto_manager | localhost
| resto_waiter  | localhost
| root   | localhost
+-----+-----+
9 rows in set (0.001 sec)
```

CREATE, RENAME USER AND GRANT ACCESS

```
MariaDB [uaskelompok6]> RENAME USER 'resto_manager'@'localhost' TO 'restaurant_admin'@'localhost';
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Rename cashier
MariaDB [uaskelompok6]> RENAME USER 'resto_cashier'@'localhost' TO 'pos_operator'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Rename waiter
MariaDB [uaskelompok6]> RENAME USER 'resto_waiter'@'localhost' TO 'service_staff'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Rename HR
MariaDB [uaskelompok6]> RENAME USER 'resto_hr'@'localhost' TO 'personnel_admin'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Rename kitchen
MariaDB [uaskelompok6]> RENAME USER 'resto_kitchen'@'localhost' TO 'kitchen_staff'@'localhost';
Query OK, 0 rows affected (0.001 sec)
```

```
MariaDB [uaskelompok6]> SELECT User, Host FROM mysql.user;
+-----+-----+
| User      | Host   |
+-----+-----+
| root      | 127.0.0.1
| root      | ::1
| kitchen_staff | localhost
| personnel_admin | localhost
| pma       | localhost
| pos_operator | localhost
| restaurant_admin | localhost
| root      | localhost
| service_staff | localhost
+-----+-----+
9 rows in set (0.001 sec)
```

CREATE, RENAME USER AND GRANT ACCESS

```
MariaDB [uaskelompok6]> ALTER USER 'pos_operator'@'localhost' IDENTIFIED BY 'newpos123';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Untuk user yang sudah direname dari resto_waiter menjadi service_staff
MariaDB [uaskelompok6]> ALTER USER 'service_staff'@'localhost' IDENTIFIED BY 'newservice123';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Untuk user yang sudah direname dari resto_hr menjadi personnel_admin
MariaDB [uaskelompok6]> ALTER USER 'personnel_admin'@'localhost' IDENTIFIED BY 'newpersonnel123';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Untuk user yang sudah direname dari resto_kitchen menjadi kitchen_staff
MariaDB [uaskelompok6]> ALTER USER 'kitchen_staff'@'localhost' IDENTIFIED BY 'newkitchen123';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Setelah mengganti password, selalu jalankan:
MariaDB [uaskelompok6]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.000 sec)
```

```
MariaDB [uaskelompok6]> -- Menggunakan SET PASSWORD
MariaDB [uaskelompok6]> SET PASSWORD FOR 'restaurant_admin'@'localhost' = PASSWORD('newadmin123');
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]> SET PASSWORD FOR 'pos_operator'@'localhost' = PASSWORD('newpos123');
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> SET PASSWORD FOR 'service_staff'@'localhost' = PASSWORD('newservice123');
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> SET PASSWORD FOR 'personnel_admin'@'localhost' = PASSWORD('newpersonnel123');
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> SET PASSWORD FOR 'kitchen_staff'@'localhost' = PASSWORD('newkitchen123');
Query OK, 0 rows affected (0.001 sec)
```

PASSING PRIVILEGE, REVOKE ACCESS, AND DELETE USER

```
MariaDB [uaskelompok6]> -- 1. Memberikan privilege dari restaurant_admin ke pos_operator
MariaDB [uaskelompok6]> GRANT SELECT, INSERT, UPDATE ON uaskelompok6.Orders TO 'pos_operator'@'localhost';
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 2. Memberikan privilege dengan opsi memberikan ke user lain
MariaDB [uaskelompok6]> GRANT SELECT ON uaskelompok6.Menu TO 'service_staff'@'localhost' WITH GRANT OPTION;
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 3. Memberikan multiple privileges
MariaDB [uaskelompok6]> GRANT SELECT, INSERT, UPDATE, DELETE ON uaskelompok6.Karyawan TO 'personnel_admin'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 4. Memberikan semua privilege pada database
MariaDB [uaskelompok6]> GRANT ALL PRIVILEGES ON uaskelompok6.* TO 'restaurant_admin'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 5. Memberikan privilege spesifik kolom
MariaDB [uaskelompok6]> GRANT SELECT (nama_menu, harga) ON uaskelompok6.Menu TO 'kitchen_staff'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Setelah memberikan privileges, selalu:
MariaDB [uaskelompok6]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.001 sec)
```

passing

PASSING PRIVILEGE, REVOKE ACCESS, AND DELETE USER

```
MariaDB [uaskelompok6]> -- 1. Mencabut privilege spesifik
MariaDB [uaskelompok6]> REVOKE INSERT, UPDATE ON uaskelompok6.Orders FROM 'pos_operator'@'localhost';
Query OK, 0 rows affected (0.002 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 2. Mencabut GRANT OPTION
MariaDB [uaskelompok6]> REVOKE GRANT OPTION ON uaskelompok6.Menu FROM 'service_staff'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 3. Mencabut semua privilege pada tabel spesifik
MariaDB [uaskelompok6]> REVOKE ALL PRIVILEGES ON uaskelompok6.Karyawan FROM 'personnel_admin'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 4. Mencabut semua privilege pada database
MariaDB [uaskelompok6]> REVOKE ALL PRIVILEGES ON uaskelompok6.* FROM 'kitchen_staff'@'localhost';
ERROR 1141 (42000): There is no such grant defined for user 'kitchen_staff' on host 'localhost'
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 5. Mencabut privilege pada kolom spesifik
MariaDB [uaskelompok6]> REVOKE SELECT (harga) ON uaskelompok6.Menu FROM 'kitchen_staff'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Setelah mencabut privileges, selalu:
MariaDB [uaskelompok6]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.001 sec)
```

revoke

PASSING PRIVILEGE, REVOKE ACCESS, AND DELETE USER

```
MariaDB [uaskelompok6]> -- 1. Mencabut semua privilege sebelum menghapus
MariaDB [uaskelompok6]> REVOKE ALL PRIVILEGES, GRANT OPTION FROM 'restaurant_admin'@'localhost';
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]> REVOKE ALL PRIVILEGES, GRANT OPTION FROM 'pos_operator'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> REVOKE ALL PRIVILEGES, GRANT OPTION FROM 'service_staff'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> REVOKE ALL PRIVILEGES, GRANT OPTION FROM 'personnel_admin'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> REVOKE ALL PRIVILEGES, GRANT OPTION FROM 'kitchen_staff'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 2. Menghapus user
MariaDB [uaskelompok6]> DROP USER 'restaurant_admin'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> DROP USER 'pos_operator'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> DROP USER 'service_staff'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> DROP USER 'personnel_admin'@'localhost';
Query OK, 0 rows affected (0.001 sec)

MariaDB [uaskelompok6]> DROP USER 'kitchen_staff'@'localhost';
Query OK, 0 rows affected (0.001 sec)
```

```
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 3. Verifikasi user telah terhapus
MariaDB [uaskelompok6]> SELECT user, host FROM mysql.user;
+-----+-----+
| User | Host   |
+-----+-----+
| root | 127.0.0.1 |
| root | ::1      |
| pma  | localhost |
| root | localhost |
+-----+-----+
4 rows in set (0.001 sec)
```

revoke and delete all

CHECKING PRIVILEGE

```
MSI@DESKTOP-UTR9RNP c:\xampp
# mysql -u restaurant_admin -p
Enter password: *****
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 14
Server version: 10.4.32-MariaDB mariadb.org binary distribution

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

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

MariaDB [(none)]> USE uaskelompok6;
Database changed
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Admin bisa melakukan semua operasi
MariaDB [uaskelompok6]> -- 1. Select data
MariaDB [uaskelompok6]> SELECT * FROM Menu;
+-----+-----+-----+
| id_menu | nama_menu | id_kategori | harga |
+-----+-----+-----+
| M001   | Nasi Goreng Spesial | CAT001 | 45000.00 |
| M002   | Mie Goreng Seafood | CAT001 | 55000.00 |
| M003   | Ayam Bakar Madu | CAT001 | 65000.00 |
| M004   | Soto Ayam | CAT001 | 35000.00 |
| M005   | Udang Goreng Mentega | CAT001 | 75000.00 |
| M006   | Es Teh Manis | CAT002 | 15000.00 |
| M007   | Juice Alpukat | CAT002 | 25000.00 |
| M008   | Sate Ayam | CAT001 | 45000.00 |
| M009   | Ikan Bakar | CAT001 | 85000.00 |
| M010   | Nasi Goreng Seafood | CAT001 | 65000.00 |
+-----+-----+-----+
10 rows in set (0.000 sec)
```

```
MariaDB [uaskelompok6]> SELECT * FROM Orders;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| id_order | nomor_meja | tanggal_order | jumlah_order | total_harga | id_pembayaran | id_menu | id_karyawan | id_customer |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| ORD001 | T01 | 2024-01-05 | 2 | 150000.00 | PAY001 | M001 | EMP001 | CUS001 |
| ORD002 | T03 | 2024-01-05 | 4 | 280000.00 | PAY002 | M002 | EMP002 | CUS002 |
| ORD003 | T05 | 2024-01-06 | 3 | 225000.00 | PAY004 | M003 | EMP003 | CUS003 |
| ORD004 | T02 | 2024-01-06 | 2 | 130000.00 | PAY001 | M004 | EMP001 | CUS004 |
| ORD005 | T07 | 2024-01-07 | 5 | 375000.00 | PAY003 | M005 | EMP004 | CUS005 |
| ORD006 | T04 | 2024-01-07 | 2 | 90000.00 | PAY004 | M006 | EMP002 | CUS006 |
| ORD007 | T06 | 2024-01-08 | 3 | 195000.00 | PAY001 | M007 | EMP005 | CUS007 |
| ORD008 | T08 | 2024-01-08 | 4 | 260000.00 | PAY002 | M008 | EMP006 | CUS008 |
| ORD009 | T09 | 2024-01-09 | 2 | 170000.00 | PAY003 | M009 | EMP004 | CUS009 |
| ORD010 | T10 | 2024-01-09 | 3 | 240000.00 | PAY004 | M010 | EMP005 | CUS010 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.000 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 2. Insert data
MariaDB [uaskelompok6]> INSERT INTO Menu VALUES ('M011', 'Wagyu Steak', 'CAT001', 350000);
Query OK, 1 row affected (0.005 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 3. Update data
MariaDB [uaskelompok6]> UPDATE Karyawan SET gaji_karyawan = 5000000 WHERE id_karyawan = 'EMP001';
Query OK, 1 row affected (0.001 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- 4. Delete data
MariaDB [uaskelompok6]> DELETE FROM Menu WHERE id_menu = 'M011';
Query OK, 1 row affected (0.004 sec)
```

OTHER QUERIES

COMPLEX QUERIES

```
MariaDB [uaskelompok6]> WITH total_sales AS (
->     SELECT SUM(o.total_harga) as total_all_sales
->     FROM Orders o
-> )
-> SELECT
->     km.nama_kategori,
->     COUNT(o.id_order) as jumlah_pesanan,
->     SUM(o.total_harga) as total_penjualan,
->     ROUND((SUM(o.total_harga) / (SELECT total_all_sales FROM total_sales) * 100), 2) as persentase_penjualan
->     FROM Orders o
->     JOIN Menu m ON o.id_menu = m.id_menu
->     JOIN Kategori_menu km ON m.id_kategori = km.id_kategori
->     GROUP BY km.nama_kategori
->     ORDER BY total_penjualan DESC;
+-----+-----+-----+
| nama_kategori | jumlah_pesanan | total_penjualan | persentase_penjualan |
+-----+-----+-----+
| Makanan Utama | 8 | 1830000.00 | 86.52 |
| Minuman | 2 | 285000.00 | 13.48 |
+-----+-----+-----+
2 rows in set (0.001 sec)
```

Menampilkan total penjualan per kategori menu beserta persentase dari total keseluruhan

Analisis kinerja karyawan berdasarkan penjualan

```
MariaDB [uaskelompok6]> SELECT
->     k.nama_karyawan,
->     j.nama_jabatan,
->     COUNT(o.id_order) as total_orders,
->     SUM(o.jumlah_order) as total_items_sold,
->     SUM(o.total_harga) as total_revenue,
->     ROUND(AVG(o.total_harga), 2) as avg_order_value,
->     k.gaji_karyawan,
->     ROUND(SUM(o.total_harga) / k.gaji_karyawan, 2) as revenue_to_salary_ratio
->     FROM Karyawan k
->     LEFT JOIN Orders o ON k.id_karyawan = o.id_karyawan
->     JOIN Jabatan j ON k.id_jabatan = j.id_jabatan
->     GROUP BY k.id_karyawan, k.nama_karyawan, j.nama_jabatan, k.gaji_karyawan
->     ORDER BY total_revenue DESC;
+-----+-----+-----+-----+-----+-----+-----+-----+
| nama_karyawan | nama_jabatan | total_orders | total_items_sold | total_revenue | avg_order_value | gaji_karyawan | revenue_to_salary_ratio |
+-----+-----+-----+-----+-----+-----+-----+-----+
| Nina Putri | Waiter | 2 | 7 | 545000.00 | 272500.00 | 4500000.00 | 0.12 |
| Dedi Kurniawan | Waiter | 2 | 6 | 435000.00 | 217500.00 | 4500000.00 | 0.10 |
| Siti Rahma | Cashier | 2 | 6 | 370000.00 | 185000.00 | 4800000.00 | 0.08 |
| Budi Santoso | Waiter | 2 | 4 | 280000.00 | 140000.00 | 4500000.00 | 0.06 |
| Lia Susanti | Chef | 1 | 4 | 260000.00 | 260000.00 | 8000000.00 | 0.03 |
| Rudi Hartono | Chef | 1 | 3 | 225000.00 | 225000.00 | 8000000.00 | 0.03 |
+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.001 sec)
```

COMPLEX QUERIES

```
MariaDB [uaskelompok6]> SELECT
->     o.tanggal_order,
->     COUNT(o.id_order) as total_orders,
->     SUM(o.total_harga) as total_revenue,
->     SUM(CASE WHEN mp.nama_metode = 'Cash' THEN o.total_harga ELSE 0 END) as cash_revenue,
->     SUM(CASE WHEN mp.nama_metode = 'Credit Card' THEN o.total_harga ELSE 0 END) as credit_revenue,
->     SUM(CASE WHEN mp.nama_metode = 'Debit Card' THEN o.total_harga ELSE 0 END) as debit_revenue,
->     SUM(CASE WHEN mp.nama_metode = 'QRIS' THEN o.total_harga ELSE 0 END) as qrис_revenue
-> FROM Orders o
-> JOIN Metode_pembayaran mp ON o.id_pembayaran = mp.id_pembayaran
-> GROUP BY o.tanggal_order
-> ORDER BY o.tanggal_order;
+-----+-----+-----+-----+-----+-----+
| tanggal_order | total_orders | total_revenue | cash_revenue | credit_revenue | debit_revenue | qrис_revenue |
+-----+-----+-----+-----+-----+-----+
| 2024-01-05    | 2           | 430000.00   | 150000.00   | 280000.00   | 0.00        | 0.00        |
| 2024-01-06    | 2           | 355000.00   | 130000.00   | 0.00        | 0.00        | 225000.00  |
| 2024-01-07    | 2           | 465000.00   | 0.00        | 0.00        | 375000.00  | 90000.00   |
| 2024-01-08    | 2           | 455000.00   | 195000.00   | 260000.00   | 0.00        | 0.00        |
| 2024-01-09    | 2           | 410000.00   | 0.00        | 0.00        | 170000.00  | 240000.00  |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.001 sec)
```

Trend penjualan harian dengan perbandingan metode pembayaran

Menu populer berdasarkan frekuensi pemesanan dan revenue

```
MariaDB [uaskelompok6]> SELECT
->     m.nama_menu,
->     km.nama_kategori,
->     COUNT(o.id_order) as frequency_ordered,
->     SUM(o.jumlah_order) as total_quantity,
->     m.harga as unit_price,
->     SUM(o.total_harga) as total_revenue,
->     ROUND(AVG(o.jumlah_order), 2) as avg_quantity_per_order
-> FROM Menu m
-> JOIN Orders o ON m.id_menu = o.id_menu
-> JOIN Kategori_menu km ON m.id_kategori = km.id_kategori
-> GROUP BY m.id_menu, m.nama_menu, km.nama_kategori, m.harga
-> ORDER BY frequency_ordered DESC, total_revenue DESC;
+-----+-----+-----+-----+-----+-----+-----+
| nama_menu      | nama_kategori | frequency_ordered | total_quantity | unit_price | total_revenue | avg_quantity_per_order |
+-----+-----+-----+-----+-----+-----+
| Udang Goreng Mentega | Makanan Utama | 1 | 5 | 75000.00 | 375000.00 | 5.00 |
| Mie Goreng Seafood | Makanan Utama | 1 | 4 | 55000.00 | 280000.00 | 4.00 |
| Sate Ayam | Makanan Utama | 1 | 4 | 45000.00 | 260000.00 | 4.00 |
| Nasi Goreng Seafood | Makanan Utama | 1 | 3 | 65000.00 | 240000.00 | 3.00 |
| Ayam Bakar Madu | Makanan Utama | 1 | 3 | 65000.00 | 225000.00 | 3.00 |
| Juice Alpukat | Minuman | 1 | 3 | 25000.00 | 195000.00 | 3.00 |
| Ikan Bakar | Makanan Utama | 1 | 2 | 85000.00 | 170000.00 | 2.00 |
| Nasi Goreng Spesial | Makanan Utama | 1 | 2 | 45000.00 | 150000.00 | 2.00 |
| Soto Ayam | Makanan Utama | 1 | 2 | 35000.00 | 130000.00 | 2.00 |
| Es Teh Manis | Minuman | 1 | 2 | 15000.00 | 90000.00 | 2.00 |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.001 sec)
```

MULTIPLE TABLES SPECIFICATION, JOINS, AND UNION



JOIN

```
MariaDB [uaskelompok6]> -- Menampilkan pesanan dengan detail menu dan customer
MariaDB [uaskelompok6]> SELECT
->     o.id_order,
->     m.nama_menu,
->     c.nama_customer
-> FROM Orders o
-> INNER JOIN Menu m ON o.id_menu = m.id_menu
-> INNER JOIN Customer c ON o.id_customer = c.id_customer;
+-----+-----+-----+
| id_order | nama_menu | nama_customer |
+-----+-----+-----+
| ORD001   | Nasi Goreng Spesial | Ahmad Rizki
| ORD002   | Mie Goreng Seafood  | Linda Wati
| ORD003   | Ayam Bakar Madu    | Deni Prakoso
| ORD004   | Soto Ayam          | Maya Sari
| ORD005   | Udang Goreng Mentega | Budi Prasetyo
| ORD006   | Es Teh Manis        | Rina Dewi
| ORD007   | Juice Alpukat       | Toni Wijaya
| ORD008   | Sate Ayam           | Sandra Dewi
| ORD009   | Ikan Bakar           | Hadi Santoso
| ORD010   | Nasi Goreng Seafood  | Indah Permata
+-----+-----+-----+
10 rows in set (0.000 sec)
```

inner join

```
MariaDB [uaskelompok6]> -- 2. LEFT JOIN
MariaDB [uaskelompok6]> -- Menampilkan semua menu dan pesanannya (termasuk yang belum pernah dipesan)
MariaDB [uaskelompok6]> SELECT
->     m.nama_menu,
->     COUNT(o.id_order) as times_ordered
-> FROM Menu m
-> LEFT JOIN Orders o ON m.id_menu = m.id_menu
-> GROUP BY m.nama_menu;
+-----+-----+
| nama_menu | times_ordered |
+-----+-----+
| Ayam Bakar Madu | 10
| Es Teh Manis | 10
| Ikan Bakar | 10
| Juice Alpukat | 10
| Mie Goreng Seafood | 10
| Nasi Goreng Seafood | 10
| Nasi Goreng Spesial | 10
| Sate Ayam | 10
| Soto Ayam | 10
| Udang Goreng Mentega | 10
+-----+-----+
10 rows in set (0.000 sec)
```

left join

```
MariaDB [uaskelompok6]> -- Menampilkan semua customer dan pesanannya (termasuk yang belum pernah memesan)
MariaDB [uaskelompok6]> SELECT
->     c.nama_customer,
->     o.id_order,
->     o.tanggal_order
-> FROM Orders o
-> RIGHT JOIN Customer c ON o.id_customer = c.id_customer;
+-----+-----+-----+
| nama_customer | id_order | tanggal_order |
+-----+-----+-----+
| Ahmad Rizki   | ORD001   | 2024-01-05
| Linda Wati    | ORD002   | 2024-01-05
| Deni Prakoso  | ORD003   | 2024-01-06
| Maya Sari     | ORD004   | 2024-01-06
| Budi Prasetyo | ORD005   | 2024-01-07
| Rina Dewi     | ORD006   | 2024-01-07
| Toni Wijaya   | ORD007   | 2024-01-08
| Sandra Dewi   | ORD008   | 2024-01-08
| Hadi Santoso  | ORD009   | 2024-01-09
| Indah Permata | ORD010   | 2024-01-09
+-----+-----+-----+
10 rows in set (0.001 sec)
```

right join

JOIN

```
MariaDB [uaskelompok6]> -- Menampilkan semua kombinasi yang mungkin antara metode pembayaran dan kategori menu
MariaDB [uaskelompok6]> SELECT
->     mp.nama_metode,
->     km.nama_kategori
-> FROM Metode_pembayaran mp
-> CROSS JOIN Kategori_menu km;
+-----+-----+
| nama_metode | nama_kategori |
+-----+-----+
| Cash         | Makanan Utama |
| Cash         | Minuman          |
| Credit Card | Makanan Utama |
| Credit Card | Minuman          |
| Debit Card   | Makanan Utama |
| Debit Card   | Minuman          |
| QRIS         | Makanan Utama |
| QRIS         | Minuman          |
+-----+-----+
8 rows in set (0.000 sec)
```

CROSS join

```
MariaDB [uaskelompok6]> -- 6. SELF JOIN
MariaDB [uaskelompok6]> -- Membandingkan harga menu dengan menu lainnya dalam kategori yang sama
MariaDB [uaskelompok6]> SELECT
->     m1.nama_menu as menu1,
->     m2.nama_menu as menu2,
->     m1.harga as harga1,
->     m2.harga as harga2,
->     m1.harga - m2.harga as price_difference
-> FROM Menu m1
-> JOIN Menu m2 ON m1.id_kategori = m2.id_kategori AND m1.id_menu < m2.id_menu;
+-----+-----+-----+-----+-----+
| menu1    | menu2      | harga1 | harga2 | price_difference |
+-----+-----+-----+-----+-----+
| Nasi Goreng Spesial | Mie Goreng Seafood | 45000.00 | 55000.00 | -10000.00 |
| Nasi Goreng Spesial | Ayam Bakar Madu   | 45000.00 | 65000.00 | -20000.00 |
| Nasi Goreng Spesial | Soto Ayam        | 45000.00 | 35000.00 | 10000.00  |
| Nasi Goreng Spesial | Udang Goreng Mentega | 45000.00 | 75000.00 | -30000.00 |
| Nasi Goreng Spesial | Sate Ayam        | 45000.00 | 45000.00 | 0.00       |
| Nasi Goreng Spesial | Ikan Bakar        | 45000.00 | 85000.00 | -40000.00 |
| Nasi Goreng Spesial | Nasi Goreng Seafood | 45000.00 | 65000.00 | -20000.00 |
| Mie Goreng Seafood  | Ayam Bakar Madu   | 55000.00 | 65000.00 | -10000.00 |
| Mie Goreng Seafood  | Soto Ayam        | 55000.00 | 35000.00 | 20000.00  |
| Mie Goreng Seafood  | Udang Goreng Mentega | 55000.00 | 75000.00 | -20000.00 |
| Mie Goreng Seafood  | Sate Ayam        | 55000.00 | 45000.00 | 10000.00  |
| Mie Goreng Seafood  | Ikan Bakar        | 55000.00 | 85000.00 | -30000.00 |
| Mie Goreng Seafood  | Nasi Goreng Seafood | 55000.00 | 65000.00 | -10000.00 |
| Ayam Bakar Madu   | Soto Ayam        | 65000.00 | 35000.00 | 30000.00  |
| Ayam Bakar Madu   | Udang Goreng Mentega | 65000.00 | 75000.00 | -10000.00 |
| Ayam Bakar Madu   | Sate Ayam        | 65000.00 | 45000.00 | 20000.00  |
| Ayam Bakar Madu   | Ikan Bakar        | 65000.00 | 85000.00 | -20000.00 |
| Ayam Bakar Madu   | Nasi Goreng Seafood | 65000.00 | 65000.00 | 0.00       |
| Soto Ayam         | Udang Goreng Mentega | 35000.00 | 75000.00 | -40000.00 |
| Soto Ayam         | Sate Ayam        | 35000.00 | 45000.00 | -10000.00 |
| Soto Ayam         | Ikan Bakar        | 35000.00 | 85000.00 | -50000.00 |
| Soto Ayam         | Nasi Goreng Seafood | 35000.00 | 65000.00 | -30000.00 |
| Udang Goreng Mentega | Sate Ayam        | 75000.00 | 45000.00 | 30000.00  |
| Udang Goreng Mentega | Ikan Bakar        | 75000.00 | 85000.00 | -10000.00 |
| Udang Goreng Mentega | Nasi Goreng Seafood | 75000.00 | 65000.00 | 10000.00  |
| Es Teh Manis     | Juice Alpukat    | 15000.00 | 25000.00 | -10000.00 |
| Sate Ayam         | Ikan Bakar        | 45000.00 | 85000.00 | -40000.00 |
+-----+-----+-----+-----+-----+
```

CROSS join

```
MariaDB [uaskelompok6]> -- Menampilkan detail lengkap pesanan
MariaDB [uaskelompok6]> SELECT
->     o.id_order,
->     o.tanggal_order,
->     c.nama_customer,
->     m.nama_menu,
->     km.nama_kategori,
->     k.nama_karyawan,
->     j.nama_jabatan,
->     mp.nama_metode,
->     o.total_harga
-> FROM Orders o
-> JOIN Customer c ON o.id_customer = c.id_customer
-> JOIN Menu m ON o.id_menu = m.id_menu
-> JOIN Kategori_menu km ON m.id_kategori = km.id_kategori
-> JOIN Karyawan k ON o.id_karyawan = k.id_karyawan
-> JOIN Jabatan j ON k.id_jabatan = j.id_jabatan
-> JOIN Metode_pembayaran mp ON o.id_pembayaran = mp.id_pembayaran;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| id_order | tanggal_order | nama_customer | nama_menu      | nama_kategori | nama_karyawan | nama_jabatan | nama_metode | total_harga |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| ORD001  | 2024-01-05  | Ahmad Rizki    | Nasi Goreng Spesial | Makanan Utama | Budi Santoso  | Waiter      | Cash        | 150000.00 |
| ORD004  | 2024-01-06  | Maya Sari     | Soto Ayam        | Makanan Utama | Budi Santoso  | Waiter      | Cash        | 130000.00 |
| ORD002  | 2024-01-05  | Linda Wati    | Mie Goreng Seafood | Makanan Utama | Siti Rahma   | Cashier     | Credit Card | 280000.00 |
| ORD008  | 2024-01-08  | Sandra Dewi   | Sate Ayam        | Makanan Utama | Lia Susanti  | Chef        | Credit Card | 260000.00 |
| ORD005  | 2024-01-07  | Budi Prasetyo | Udang Goreng Mentega | Makanan Utama | Nina Putri   | Waiter      | Debit Card  | 375000.00 |
| ORD009  | 2024-01-09  | Hadi Santoso  | Ikan Bakar        | Makanan Utama | Nina Putri   | Waiter      | Debit Card  | 170000.00 |
| ORD003  | 2024-01-06  | Deni Prakoso  | Ayam Bakar Madu   | Makanan Utama | Rudi Hartono | Chef        | QRIS        | 225000.00 |
| ORD010  | 2024-01-09  | Indah Permata | Nasi Goreng Seafood | Makanan Utama | Dedi Kurniawan | Waiter      | QRIS        | 240000.00 |
| ORD007  | 2024-01-08  | Toni Wijaya   | Juice Alpukat    | Minuman       | Dedi Kurniawan | Waiter      | Cash        | 195000.00 |
| ORD006  | 2024-01-07  | Rina Dewi     | Es Teh Manis    | Minuman       | Siti Rahma   | Cashier     | QRIS        | 90000.00 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.001 sec)
```

multiple join

UNION

```
MariaDB [uaskelompok6]> -- Menggabungkan daftar email customer dan karyawan
MariaDB [uaskelompok6]> SELECT nama_customer as nama, email_customer as email, 'Customer' as tipe
-> FROM Customer
-> UNION
-> SELECT nama_karyawan, email_karyawan, 'Karyawan'
-> FROM Karyawan
-> ORDER BY email;
+-----+-----+-----+
| nama | email | tipe |
+-----+-----+-----+
| Ahmad Rizki | ahmad.r@email.com | Customer |
| Budi Prasetyo | budi.p@email.com | Customer |
| Budi Santoso | budi.s@resto.com | Karyawan |
| Dedi Kurniawan | dedi.k@resto.com | Karyawan |
| Deni Prakoso | deni.p@email.com | Customer |
| Hadi Santoso | hadi.s@email.com | Customer |
| Indah Permatas | indah.p@email.com | Customer |
| Lia Susanti | lia.s@resto.com | Karyawan |
| Linda Wati | linda.w@email.com | Customer |
| Maya Sari | maya.s@email.com | Customer |
| Nina Putri | nina.p@resto.com | Karyawan |
| Rina Dewi | rina.d@email.com | Customer |
| Rudi Hartono | rudi.h@resto.com | Karyawan |
| Sandra Dewi | sandra.d@email.com | Customer |
| Siti Rahma | siti.r@resto.com | Karyawan |
| Toni Wijaya | toni.w@email.com | Customer |
+-----+-----+-----+
16 rows in set (0.000 sec)
```

```
MariaDB [uaskelompok6]> -- Menggabungkan semua transaksi berdasarkan total
MariaDB [uaskelompok6]> SELECT id_order, total_harga, 'High Value' as category
-> FROM Orders
-> WHERE total_harga >= 200000
-> UNION ALL
-> SELECT id_order, total_harga, 'Low Value'
-> FROM Orders
-> WHERE total_harga < 200000
-> ORDER BY total_harga DESC;
+-----+-----+-----+
| id_order | total_harga | category |
+-----+-----+-----+
| ORD005 | 375000.00 | High Value |
| ORD002 | 280000.00 | High Value |
| ORD008 | 260000.00 | High Value |
| ORD010 | 240000.00 | High Value |
| ORD003 | 225000.00 | High Value |
| ORD007 | 195000.00 | Low Value |
| ORD009 | 170000.00 | Low Value |
| ORD001 | 150000.00 | Low Value |
| ORD004 | 130000.00 | Low Value |
| ORD006 | 90000.00 | Low Value |
+-----+-----+-----+
10 rows in set (0.000 sec)
```

union

```
MariaDB [uaskelompok6]> -- Menggabungkan informasi kontak dari customer dan karyawan
MariaDB [uaskelompok6]> SELECT
-> 'Customer' as type,
-> nama_customer as nama,
-> telp_customer as telepon,
-> email_customer as email,
-> alamat_customer as alamat
-> FROM Customer
-> UNION
-> SELECT
-> 'Karyawan',
-> nama_karyawan,
-> telp_karyawan,
-> email_karyawan,
-> alamat_karyawan
-> FROM Karyawan
-> ORDER BY type, nama;
+-----+-----+-----+-----+-----+
| type | nama | telepon | email | alamat |
+-----+-----+-----+-----+-----+
| Customer | Ahmad Rizki | 087812345678 | ahmad.r@email.com | Jl. Melati No. 5, Jakarta |
| Customer | Budi Prasetyo | 087812345682 | budi.p@email.com | Jl. Anggrek No. 15, Jakarta |
| Customer | Deni Prakoso | 087812345680 | deni.p@email.com | Jl. Cempaka No. 12, Jakarta |
| Customer | Hadi Santoso | 087812345686 | hadi.s@email.com | Jl. Lotus No. 16, Jakarta |
| Customer | Indah Permatas | 087812345687 | indah.p@email.com | Jl. Jasmine No. 18, Jakarta |
| Customer | Linda Wati | 087812345679 | linda.w@email.com | Jl. Dahlia No. 8, Jakarta |
| Customer | Maya Sari | 087812345681 | maya.s@email.com | Jl. Kamboja No. 7, Jakarta |
| Customer | Rina Dewi | 087812345683 | rina.d@email.com | Jl. Bougenville No. 9, Jakarta |
| Customer | Sandra Dewi | 087812345685 | sandra.d@email.com | Jl. Teratai No. 14, Jakarta |
| Customer | Toni Wijaya | 087812345684 | toni.w@email.com | Jl. Flamboyan No. 11, Jakarta |
| Karyawan | Budi Santoso | 081234567890 | budi.s@resto.com | Jl. Mawar No. 10, Jakarta |
| Karyawan | Dedi Kurniawan | 081234567894 | dedi.k@resto.com | Jl. Sakura No. 30, Jakarta |
| Karyawan | Lia Susanti | 081234567895 | lia.s@resto.com | Jl. Lily No. 35, Jakarta |
| Karyawan | Nina Putri | 081234567893 | nina.p@resto.com | Jl. Tulip No. 25, Jakarta |
| Karyawan | Rudi Hartono | 081234567892 | rudi.h@resto.com | Jl. Kenanga No. 20, Jakarta |
| Karyawan | Siti Rahma | 081234567891 | siti.r@resto.com | Jl. Anggrek No. 15, Jakarta |
+-----+-----+-----+-----+-----+
16 rows in set (0.000 sec)
```

union multiple tables

```
MariaDB [uaskelompok6]> -- Menampilkan penjualan tertinggi per kategori dan metode pembayaran
MariaDB [uaskelompok6]> SELECT kategori, metode_pembayaran, MAX(total) as highest_sale
-> FROM (
->   SELECT
->     km.nama_kategori as kategori,
->     mp.nama_metode as metode_pembayaran,
->     o.total_harga as total
->   FROM Orders o
->   JOIN Menu m ON o.id_menu = m.id_menu
->   JOIN Kategori_menu km ON m.id_kategori = km.id_kategori
->   JOIN Metode_pembayaran mp ON o.id_pembayaran = mp.id_pembayaran
-> ) UNION ALL
->   SELECT
->     'Total' as kategori,
->     mp.nama_metode,
->     o.total_harga
->   FROM Orders o
->   JOIN Metode_pembayaran mp ON o.id_pembayaran = mp.id_pembayaran
-> ) combined_sales
-> GROUP BY kategori, metode_pembayaran
-> ORDER BY kategori, highest_sale DESC;
+-----+-----+-----+
| kategori | metode_pembayaran | highest_sale |
+-----+-----+-----+
| Makanan Utama | Debit Card | 375000.00 |
| Makanan Utama | Credit Card | 280000.00 |
| Makanan Utama | QRIS | 240000.00 |
| Makanan Utama | Cash | 150000.00 |
| Minuman | Cash | 150000.00 |
| Minuman | QRIS | 90000.00 |
| Total | Debit Card | 375000.00 |
| Total | Credit Card | 280000.00 |
| Total | QRIS | 240000.00 |
| Total | Cash | 150000.00 |
+-----+-----+-----+
10 rows in set (0.001 sec)
```

nested join union

UNION

```
MariaDB [uaskelompok6]> -- Menampilkan karyawan yang menangani pesanan dengan nilai di atas rata-rata
MariaDB [uaskelompok6]> SELECT DISTINCT
    ->      k.nama_karyawan,
    ->      j.nama_jabatan,
    ->      o.total_harga
    -> FROM Karyawan k
    -> JOIN Orders o ON k.id_karyawan = o.id_karyawan
    -> JOIN Jabatan j ON k.id_jabatan = j.id_jabatan
    -> WHERE o.total_harga > (
    ->     SELECT AVG(total_harga) FROM Orders
    -> )
    -> ORDER BY o.total_harga DESC;
+-----+-----+-----+
| nama_karyawan | nama_jabatan | total_harga |
+-----+-----+-----+
| Nina Putri    | Waiter       | 375000.00   |
| Siti Rahma    | Cashier      | 280000.00   |
| Lia Susanti   | Chef         | 260000.00   |
| Dedi Kurniawan| Waiter       | 240000.00   |
| Rudi Hartono  | Chef         | 225000.00   |
+-----+-----+-----+
5 rows in set (0.001 sec)
```

subquery join union

MULTIPLE TABLES SPECIFICATION

```
MariaDB [uaskelompok6]> -- Query melibatkan beberapa tabel untuk informasi lengkap pesanan
MariaDB [uaskelompok6]> SELECT
    ->     o.id_order,
    ->     c.nama_customer,
    ->     m.nama_menu,
    ->     k.nama_karyawan,
    ->     mp.nama_metode
    -> FROM Orders o, Customer c, Menu m, Karyawan k, Metode_pembayaran mp
    -> WHERE o.id_customer = c.id_customer
    ->     AND o.id_menu = m.id_menu
    ->     AND o.id_karyawan = k.id_karyawan
    ->     AND o.id_pembayaran = mp.id_pembayaran;
+-----+-----+-----+-----+-----+
| id_order | nama_customer | nama_menu | nama_karyawan | nama_metode |
+-----+-----+-----+-----+-----+
| ORD001 | Ahmad Rizki | Nasi Goreng Spesial | Budi Santoso | Cash
| ORD004 | Maya Sari | Soto Ayam | Budi Santoso | Cash
| ORD007 | Toni Wijaya | Juice Alpukat | Dedi Kurniawan | Cash
| ORD002 | Linda Wati | Mie Goreng Seafood | Siti Rahma | Credit Card
| ORD008 | Sandra Dewi | Sate Ayam | Lia Susanti | Credit Card
| ORD005 | Budi Prasetyo | Udang Goreng Mentega | Nina Putri | Debit Card
| ORD009 | Hadi Santoso | Ikan Bakar | Nina Putri | Debit Card
| ORD003 | Deni Prakoso | Ayam Bakar Madu | Rudi Hartono | QRIS
| ORD006 | Rina Dewi | Es Teh Manis | Siti Rahma | QRIS
| ORD010 | Indah Permata | Nasi Goreng Seafood | Dedi Kurniawan | QRIS
+-----+-----+-----+-----+
10 rows in set (0.001 sec)
```

Cross Table Queries (Queries Antar Tabel)

MULTIPLE TABLES SPECIFICATION

```
MariaDB [uaskelompok6]> -- Menggunakan derived table untuk analisis penjualan
MariaDB [uaskelompok6]> SELECT
    ->     sales_summary.kategori,
    ->     sales_summary.total_penjualan,
    ->     sales_summary.rata_rata_order
    -> FROM (
    ->     SELECT
    ->         km.nama_kategori as kategori,
    ->         SUM(o.total_harga) as total_penjualan,
    ->         AVG(o.total_harga) as rata_rata_order
    ->     FROM Orders o
    ->     JOIN Menu m ON o.id_menu = m.id_menu
    ->     JOIN Kategori_menu km ON m.id_kategori = km.id_kategori
    ->     GROUP BY km.nama_kategori
    -> ) as sales_summary;
+-----+-----+-----+
| kategori | total_penjualan | rata_rata_order |
+-----+-----+-----+
| Makanan Utama | 1830000.00 | 228750.000000 |
| Minuman | 285000.00 | 142500.000000 |
+-----+-----+-----+
2 rows in set (0.001 sec)
```

Derived Tables (Subqueries dalam FROM)

MULTIPLE TABLES SPECIFICATION

```
MariaDB [uaskelompok6]> -- Menggunakan CTE untuk analisis bertingkat
MariaDB [uaskelompok6]> WITH CustomerOrders AS (
->     SELECT
->         c.id_customer,
->         c.nama_customer,
->         COUNT(o.id_order) as jumlah_order,
->         SUM(o.total_harga) as total_belanja
->     FROM Customer c
->     LEFT JOIN Orders o ON c.id_customer = o.id_customer
->     GROUP BY c.id_customer, c.nama_customer
-> ),
-> CustomerCategories AS (
->     SELECT
->         id_customer,
->         nama_customer,
->         CASE
->             WHEN total_belanja > 500000 THEN 'Premium'
->             WHEN total_belanja > 200000 THEN 'Regular'
->             ELSE 'Basic'
->         END as kategori_customer
->     FROM CustomerOrders
-> )
->     SELECT * FROM CustomerCategories;
+-----+
| id_customer | nama_customer | kategori_customer |
+-----+
| CUS001      | Ahmad Rizki    | Basic            |
| CUS002      | Linda Wati     | Regular          |
| CUS003      | Deni Prakoso   | Regular          |
| CUS004      | Maya Sari      | Basic            |
| CUS005      | Budi Prasetyo  | Regular          |
| CUS006      | Rina Dewi      | Basic            |
| CUS007      | Toni Wijaya    | Basic            |
| CUS008      | Sandra Dewi    | Regular          |
| CUS009      | Hadi Santoso   | Basic            |
| CUS010      | Indah Permata  | Regular          |
+-----+
10 rows in set (0.001 sec)
```

```
MariaDB [uaskelompok6]> CREATE VIEW DailySalesReport AS
->     SELECT
->         o.tanggal_order,
->         COUNT(DISTINCT o.id_order) as jumlah_transaksi,
->         SUM(o.total_harga) as total_penjualan,
->         AVG(o.total_harga) as rata_rata_transaksi
->     FROM Orders o
->     GROUP BY o.tanggal_order;
Query OK, 0 rows affected (0.005 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Menggunakan view
MariaDB [uaskelompok6]> SELECT * FROM DailySalesReport;
+-----+-----+-----+-----+
| tanggal_order | jumlah_transaksi | total_penjualan | rata_rata_transaksi |
+-----+-----+-----+-----+
| 2024-01-05    | 2              | 430000.00       | 215000.000000      |
| 2024-01-06    | 2              | 355000.00       | 177500.000000      |
| 2024-01-07    | 2              | 465000.00       | 232500.000000      |
| 2024-01-08    | 2              | 455000.00       | 227500.000000      |
| 2024-01-09    | 2              | 410000.00       | 205000.000000      |
+-----+-----+-----+-----+
5 rows in set (0.001 sec)
```

views

Common Table Expressions (CTE)

MULTIPLE TABLES SPECIFICATION

```
MariaDB [uaskelompok6]> -- Membuat temporary table untuk analisis sementara
MariaDB [uaskelompok6]> CREATE TEMPORARY TABLE temp_sales_analysis
-> SELECT
->     k.nama_karyawan,
->     COUNT(o.id_order) as total_orders,
->     SUM(o.total_harga) as total_sales
-> FROM Karyawan k
-> LEFT JOIN Orders o ON k.id_karyawan = o.id_karyawan
-> GROUP BY k.nama_karyawan;
Query OK, 6 rows affected (0.003 sec)
Records: 6  Duplicates: 0  Warnings: 0

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Menggunakan temporary table
MariaDB [uaskelompok6]> SELECT * FROM temp_sales_analysis;
+-----+-----+-----+
| nama_karyawan | total_orders | total_sales |
+-----+-----+-----+
| Budi Santoso   |      2 | 280000.00 |
| Dedi Kurniawan |      2 | 435000.00 |
| Lia Susanti    |      1 | 260000.00 |
| Nina Putri     |      2 | 545000.00 |
| Rudi Hartono   |      1 | 225000.00 |
| Siti Rahma     |      2 | 370000.00 |
+-----+-----+-----+
6 rows in set (0.000 sec)
```

temporary tables

```
MariaDB [uaskelompok6]> -- Query dengan subquery dalam WHERE
MariaDB [uaskelompok6]> SELECT
->     m.nama_menu,
->     m.harga
-> FROM Menu m
-> WHERE m.harga > (
->     SELECT AVG(harga)
->     FROM Menu
->     WHERE id_kategori = m.id_kategori
-> );
+-----+-----+
| nama_menu      | harga   |
+-----+-----+
| Ayam Bakar Madu | 65000.00 |
| Udang Goreng Mentega | 75000.00 |
| Juice Alpukat | 25000.00 |
| Ikan Bakar    | 85000.00 |
| Nasi Goreng Seafood | 65000.00 |
+-----+-----+
5 rows in set (0.001 sec)
```

Nested Queries dalam WHERE

MULTIPLE TABLES SPECIFICATION

```
MariaDB [uaskelompok6]> -- Query yang menggunakan correlated subquery
MariaDB [uaskelompok6]> SELECT
->     k.nama_karyawan,
->     k.gaji_karyawan,
->     (SELECT COUNT(*)
->      FROM Orders o
->      WHERE o.id_karyawan = k.id_karyawan) as total_orders
->  FROM Karyawan k;
+-----+-----+-----+
| nama_karyawan | gaji_karyawan | total_orders |
+-----+-----+-----+
| Budi Santoso   | 4500000.00  | 2           |
| Siti Rahma    | 4800000.00  | 2           |
| Rudi Hartono  | 8000000.00  | 1           |
| Nina Putri    | 4500000.00  | 2           |
| Dedi Kurniawan| 4500000.00  | 2           |
| Lia Susanti   | 8000000.00  | 1           |
+-----+-----+-----+
6 rows in set (0.001 sec)
```

Correlated Subqueries

```
MariaDB [uaskelompok6]> -- Query dengan multiple level subqueries
MariaDB [uaskelompok6]> SELECT
->     m.nama_menu,
->     m.harga
->  FROM Menu m
-> WHERE m.id_menu IN (
->   SELECT o.id_menu
->   FROM Orders o
->   WHERE o.id_karyawan IN (
->     SELECT k.id_karyawan
->     FROM Karyawan k
->     WHERE k.id_jabatan = 'JBT001'
->   )
-> );
+-----+-----+
| nama_menu      | harga   |
+-----+-----+
| Nasi Goreng Spesial | 45000.00 |
| Soto Ayam       | 35000.00 |
| Udang Goreng Mentega | 75000.00 |
| Juice Alpukat    | 25000.00 |
| Ikan Bakar       | 85000.00 |
| Nasi Goreng Seafood | 65000.00 |
+-----+-----+
6 rows in set (0.001 sec)
```

Multiple Level Subqueries

ROLLBACK, SAVEPOINT, COMMIT

```
MariaDB [uaskelompok6]> -- 1. Basic Transaction with Rollback
MariaDB [uaskelompok6]> START TRANSACTION;
Query OK, 0 rows affected (0.000 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Mencoba menambah menu baru
MariaDB [uaskelompok6]> INSERT INTO Menu VALUES ('M011', 'Sushi Deluxe', 'CAT001', 125000);
Query OK, 1 row affected (0.000 sec)

MariaDB [uaskelompok6]> INSERT INTO Menu VALUES ('M012', 'Ramen Special', 'CAT001', 85000);
Query OK, 1 row affected (0.000 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Cek data baru
MariaDB [uaskelompok6]> SELECT * FROM Menu WHERE id_menu IN ('M011', 'M012');
+-----+-----+-----+
| id_menu | nama_menu | id_kategori | harga |
+-----+-----+-----+
| M011   | Sushi Deluxe | CAT001    | 125000.00 |
| M012   | Ramen Special | CAT001    | 85000.00  |
+-----+-----+-----+
2 rows in set (0.000 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Anggap ada kesalahan, rollback transaksi
MariaDB [uaskelompok6]> ROLLBACK;
Query OK, 0 rows affected (0.004 sec)

MariaDB [uaskelompok6]> -- Verifikasi data kembali ke kondisi awal
MariaDB [uaskelompok6]> SELECT * FROM Menu WHERE id_menu IN ('M011', 'M012');
Empty set (0.001 sec)
```

```
MariaDB [uaskelompok6]> START TRANSACTION;
Query OK, 0 rows affected (0.000 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Insert data customer baru
MariaDB [uaskelompok6]> INSERT INTO Customer VALUES ('CUS011', 'John Doe', '08123456789', 'john@email.com', 'Jl. ABC No. 123');
Query OK, 1 row affected (0.000 sec)

MariaDB [uaskelompok6]> SAVEPOINT customer_added;
Query OK, 0 rows affected (0.000 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Update gaji karyawan
MariaDB [uaskelompok6]> UPDATE Karyawan SET gaji_karyawan = gaji_karyawan * 1.1 WHERE id_jabatan = 'JBT001';
Query OK, 3 rows affected (0.004 sec)
Rows matched: 3  Changed: 3  Warnings: 0

MariaDB [uaskelompok6]> SAVEPOINT salary_updated;
Query OK, 0 rows affected (0.000 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Insert order baru
MariaDB [uaskelompok6]> INSERT INTO Orders VALUES ('ORD011', 'T01', '2024-01-10', 2, 170000, 'PAY001', 'M001', 'EMP001', 'CUS011');
ERROR 1644 (45000): Total harga tidak sesuai dengan harga menu dan jumlah order
MariaDB [uaskelompok6]> SAVEPOINT order_added;
Query OK, 0 rows affected (0.000 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Anggap update gaji error, rollback ke savepoint setelah add customer
MariaDB [uaskelompok6]> ROLLBACK TO customer_added;
Query OK, 0 rows affected (0.000 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Lanjutkan dengan transaksi berbeda
MariaDB [uaskelompok6]> INSERT INTO Orders VALUES ('ORD011', 'T01', '2024-01-10', 2, 170000, 'PAY001', 'M001', 'EMP001', 'CUS011');
ERROR 1644 (45000): Total harga tidak sesuai dengan harga menu dan jumlah order
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Commit perubahan final
MariaDB [uaskelompok6]> COMMIT;
```

STORED PROCEDURE WITH CURSOR

```
MariaDB [uaskelompok6]> DELIMITER //
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE PROCEDURE AnalyzeCustomerOrders()
-> BEGIN
->     -- Declare variables
->     DECLARE done INT DEFAULT FALSE;
->     DECLARE cust_id VARCHAR(10);
->     DECLARE cust_name VARCHAR(50);
->     DECLARE total_spent DECIMAL(10,2);
->     DECLARE order_count INT;

->     -- Declare cursor
->     DECLARE cust_cursor CURSOR FOR
->         SELECT
->             c.id_customer,
->             c.nama_customer,
->             COUNT(o.id_order) as order_count,
->             COALESCE(SUM(o.total_harga), 0) as total_spent
->         FROM Customer c
->         LEFT JOIN Orders o ON c.id_customer = o.id_customer
->         GROUP BY c.id_customer, c.nama_customer;
->

->     -- Declare handler for NOT FOUND
->     DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = TRUE;
->

->     -- Create temporary table for results
->     DROP TEMPORARY TABLE IF EXISTS CustomerAnalysis;
->     CREATE TEMPORARY TABLE CustomerAnalysis (
->         customer_id VARCHAR(10),
->         customer_name VARCHAR(50),
->         total_orders INT,
->         total_spending DECIMAL(10,2),
->         customer_category VARCHAR(20)
->     );
->

->     -- Open cursor
->     OPEN cust_cursor;
->

->     -- Start loop
```

```
>     -- Start loop
->     read_loop: LOOP
->         FETCH cust_cursor INTO cust_id, cust_name, order_count, total_spent;
->
->         IF done THEN
->             LEAVE read_loop;
->         END IF;

->         -- Insert data into analysis table
->         INSERT INTO CustomerAnalysis
->             VALUES (
->                 cust_id,
->                 cust_name,
->                 order_count,
->                 total_spent,
->                 CASE
->                     WHEN total_spent >= 300000 THEN 'Premium'
->                     WHEN total_spent >= 150000 THEN 'Regular'
->                     ELSE 'Basic'
->                 END
->             );
->
->         END LOOP;

->         -- Close cursor
->         CLOSE cust_cursor;
->

->         -- Show results
->         SELECT
->             customer_id as 'ID Customer',
->             customer_name as 'Nama Customer',
->             total_orders as 'Total Pesanan',
->             total_spending as 'Total Pembelanjaan',
->             customer_category as 'Kategori Customer'
->         FROM CustomerAnalysis
->         ORDER BY total_spending DESC;
->

->     END //
Query OK, 0 rows affected (0.007 sec)
```

Stored Procedure untuk menganalisis penjualan per customer

```
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> DELIMITER ;
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Untuk menjalankan stored procedure:
MariaDB [uaskelompok6]> CALL AnalyzeCustomerOrders();
+-----+-----+-----+-----+
| ID Customer | Nama Customer | Total Pesanan | Total Pembelanjaan | Kategori Customer |
+-----+-----+-----+-----+
| CUS005      | Budi Prasetyo  | 1            | 375000.00          | Premium           |
| CUS002      | Linda Wati    | 1            | 280000.00          | Regular          |
| CUS008      | Sandra Dewi   | 1            | 260000.00          | Regular          |
| CUS010      | Indah Permata | 1            | 240000.00          | Regular          |
| CUS003      | Deni Prakoso  | 1            | 225000.00          | Regular          |
| CUS007      | Toni Wijaya   | 1            | 195000.00          | Regular          |
| CUS009      | Hadi Santoso  | 1            | 170000.00          | Regular          |
| CUS001      | Ahmad Rizki   | 1            | 150000.00          | Regular          |
| CUS004      | Maya Sari    | 1            | 130000.00          | Basic            |
| CUS006      | Rina Dewi    | 1            | 90000.00           | Basic            |
+-----+-----+-----+-----+
10 rows in set (0.007 sec)

Query OK, 10 rows affected (0.035 sec)
```

STORED PROCEDURE WITH CURSOR

```
MariaDB [uaskelompok6]> CREATE PROCEDURE AnalyzeEmployeePerformance(IN target_month INT, IN target_year INT)
-> BEGIN
->     -- Deklarasi variabel
->     DECLARE done INT DEFAULT FALSE;
->     DECLARE emp_id VARCHAR(10);
->     DECLARE emp_name VARCHAR(50);
->     DECLARE emp_position VARCHAR(30);
->     DECLARE order_count INT;
->     DECLARE total_sales DECIMAL(10,2);
->
->     -- Deklarasi cursor
->     DECLARE emp_cursor CURSOR FOR
->         SELECT
->             k.id_karyawan,
->             k.nama_karyawan,
->             j.nama_jabatan,
->             COUNT(o.id_order) as orders,
->             SUM(o.total_harga) as sales
->         FROM Karyawan k
->         LEFT JOIN Orders o ON k.id_karyawan = o.id_karyawan
->         LEFT JOIN Jabatan j ON k.id_jabatan = j.id_jabatan
->         WHERE MONTH(o.tanggal_order) = target_month
->         AND YEAR(o.tanggal_order) = target_year
->         GROUP BY k.id_karyawan, k.nama_karyawan, j.nama_jabatan;
->
->     -- Deklarasi handler
->     DECLARE CONTINUE HANDLER FOR NOT FOUND SET done = TRUE;
->
->     -- Membuat temporary table
->     DROP TABLE IF EXISTS EmployeePerformance;
->     CREATE TEMPORARY TABLE EmployeePerformance (
->         employee_id VARCHAR(10),
->         employee_name VARCHAR(50),
->         position VARCHAR(30),
->         total_orders INT,
->         total_sales DECIMAL(10,2),
->         performance_rating VARCHAR(20)
->     );
->
```

```
-- Buka cursor
-> OPEN emp_cursor;
->
-> -- Loop through karyawan
-> performance_loop: LOOP
->     FETCH emp_cursor INTO emp_id, emp_name, emp_position, order_count, total_sales;
->
->     IF done THEN
->         LEAVE performance_loop;
->     END IF;
->
->     -- Insert hasil analisis
->     INSERT INTO EmployeePerformance
->     VALUES (
->         emp_id,
->         emp_name,
->         emp_position,
->         order_count,
->         total_sales,
->         CASE
->             WHEN total_sales > 1000000 THEN 'Outstanding'
->             WHEN total_sales > 500000 THEN 'Good'
->             WHEN total_sales > 200000 THEN 'Average'
->             ELSE 'Needs Improvement'
->         END
->     );
->
->     END LOOP;
->
->     -- Tutup cursor
->     CLOSE emp_cursor;
->
->     -- Tampilkan hasil
->     SELECT * FROM EmployeePerformance
->     ORDER BY total_sales DESC;
->
-> END //
Query OK, 0 rows affected (0.007 sec)
```

```
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> DELIMITER ;
MariaDB [uaskelompok6]> CALL AnalyzeEmployeePerformance(1, 2024);
+-----+-----+-----+-----+-----+
| employee_id | employee_name | position | total_orders | total_sales | performance_rating |
+-----+-----+-----+-----+-----+
| EMP001      | Budi Santoso   | Waiter    | 2           | 280000.00  | Average          |
| EMP002      | Siti Rahma    | Cashier   | 2           | 370000.00  | Average          |
| EMP003      | Rudi Hartono  | Chef      | 1           | 225000.00  | Average          |
| EMP004      | Nina Putri    | Waiter    | 2           | 545000.00  | Good             |
| EMP005      | Dedi Kurniawan | Waiter    | 2           | 435000.00  | Average          |
| EMP006      | Lia Susanti   | Chef      | 1           | 260000.00  | Average          |
+-----+-----+-----+-----+-----+
6 rows in set (0.006 sec)

Query OK, 6 rows affected (0.023 sec)
```

Stored Procedure untuk menganalisis kinerja karyawan

DYNAMIC STORED PROCEDURE

```
MariaDB [uaskelompok6]> DELIMITER //
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE OR REPLACE PROCEDURE SalesReport(
->     IN report_type VARCHAR(20),
->     IN start_date DATE,
->     IN end_date DATE,
->     IN grouping_type VARCHAR(20)
-> )
-> BEGIN
->     -- Set initial SELECT clause
->     SET @sql_query = 'SELECT ';
->
->     -- Add grouping column based on grouping_type
->     IF grouping_type = 'daily' THEN
->         SET @sql_query = CONCAT(@sql_query, 'DATE(o.tanggal_order) as tanggal, ');
->     ELSEIF grouping_type = 'monthly' THEN
->         SET @sql_query = CONCAT(@sql_query, 'CONCAT(MONTH(o.tanggal_order), "/", YEAR(o.tanggal_order)) as periode, ');
->     ELSEIF grouping_type = 'yearly' THEN
->         SET @sql_query = CONCAT(@sql_query, 'YEAR(o.tanggal_order) as tahun, ');
->     END IF;
->
->     -- Add columns based on report_type
->     IF report_type = 'summary' THEN
->         SET @sql_query = CONCAT(@sql_query,
->             'COUNT(o.id_order) as jumlah_pesanan,
->             SUM(o.total_harga) as total_penjualan,
->             AVG(o.total_harga) as rata_rata_pesanan');
->     ELSEIF report_type = 'payment_method' THEN
->         SET @sql_query = CONCAT(@sql_query,
->             'mp.nama_metode,
->             COUNT(o.id_order) as jumlah_pesanan,
->             SUM(o.total_harga) as total_penjualan');
->     ELSEIF report_type = 'menu_category' THEN
->         SET @sql_query = CONCAT(@sql_query,
->             'km.nama_kategori,
->             COUNT(o.id_order) as jumlah_pesanan,
->             SUM(o.total_harga) as total_penjualan');
->     END IF;
->
```

```
-- Add FROM clause
->     SET @sql_query = CONCAT(@sql_query, ' FROM Orders o');
->
->     -- Add JOINs based on report_type
->     IF report_type = 'payment_method' THEN
->         SET @sql_query = CONCAT(@sql_query,
->             ' JOIN Metode_pembayaran mp ON o.id_pembayaran = mp.id_pembayaran');
->     ELSEIF report_type = 'menu_category' THEN
->         SET @sql_query = CONCAT(@sql_query,
->             ' JOIN Menu m ON o.id_menu = m.id_menu
->             JOIN Kategori_menu km ON m.id_kategori = km.id_kategori');
->     END IF;
->
->     -- Add WHERE clause
->     SET @sql_query = CONCAT(@sql_query,
->         ' WHERE o.tanggal_order BETWEEN ''', start_date, ''' AND ''', end_date, '''');
->
->     -- Add GROUP BY clause
->     IF grouping_type = 'daily' THEN
->         SET @sql_query = CONCAT(@sql_query, ' GROUP BY DATE(o.tanggal_order)');
->     ELSEIF grouping_type = 'monthly' THEN
->         SET @sql_query = CONCAT(@sql_query,
->             ' GROUP BY YEAR(o.tanggal_order), MONTH(o.tanggal_order)');
->     ELSEIF grouping_type = 'yearly' THEN
->         SET @sql_query = CONCAT(@sql_query, ' GROUP BY YEAR(o.tanggal_order)');
->     END IF;
->
->     -- Add additional GROUP BY columns based on report_type
->     IF report_type = 'payment_method' THEN
->         SET @sql_query = CONCAT(@sql_query, ', mp.nama_metode');
->     ELSEIF report_type = 'menu_category' THEN
->         SET @sql_query = CONCAT(@sql_query, ', km.nama_kategori');
->     END IF;
->
->     -- Prepare and execute the query
->     PREPARE stmt FROM @sql_query;
->     EXECUTE stmt;
->     DEALLOCATE PREPARE stmt;
-> END //
```

```
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> DELIMITER ;
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Contoh penggunaan:
MariaDB [uaskelompok6]> CALL SalesReport('summary', '2024-01-01', '2024-01-31', 'daily');
+-----+-----+-----+-----+
| tanggal | jumlah_pesanan | total_penjualan | rata_rata_pesanan |
+-----+-----+-----+-----+
| 2024-01-05 | 2 | 430000.00 | 215000.000000 |
| 2024-01-06 | 2 | 355000.00 | 177500.000000 |
| 2024-01-07 | 2 | 465000.00 | 232500.000000 |
| 2024-01-08 | 2 | 455000.00 | 227500.000000 |
| 2024-01-09 | 2 | 410000.00 | 205000.000000 |
+-----+-----+-----+-----+
5 rows in set (0.001 sec)

Query OK, 0 rows affected (0.014 sec)
```

Dynamic Stored Procedure untuk laporan penjualan dengan berbagai parameter

STORED FUNCTION QUERY

```
MariaDB [uaskelompok6]> DELIMITER //
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE FUNCTION GetCustomerTotalSpending(
->     customer_id VARCHAR(10)
-> )
-> RETURNS DECIMAL(10,2)
-> DETERMINISTIC
-> BEGIN
->     DECLARE total DECIMAL(10,2);
->
->     SELECT COALESCE(SUM(total_harga), 0) INTO total
->     FROM Orders
->     WHERE id_customer = customer_id;
->
->     RETURN total;
-> END //
Query OK, 0 rows affected (0.007 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> DELIMITER ;
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Penggunaan:
MariaDB [uaskelompok6]> SELECT id_customer, nama_customer, GetCustomerTotalSpending(id_customer) as total_pembelian
->     FROM Customer;
+-----+-----+-----+
| id_customer | nama_customer | total_pembelian |
+-----+-----+-----+
| CUS001      | Ahmad Rizki    | 150000.00 |
| CUS002      | Linda Wati     | 280000.00 |
| CUS003      | Deni Prakoso   | 225000.00 |
| CUS004      | Maya Sari      | 130000.00 |
| CUS005      | Budi Prasetyo  | 375000.00 |
| CUS006      | Rina Dewi      | 90000.00  |
| CUS007      | Toni Wijaya    | 195000.00 |
| CUS008      | Sandra Dewi    | 260000.00 |
| CUS009      | Hadi Santoso   | 170000.00 |
| CUS010      | Indah Permata  | 240000.00 |
+-----+-----+-----+
10 rows in set (0.001 sec)
```

Function untuk menghitung total penjualan per pelanggan

```
MariaDB [uaskelompok6]> DELIMITER //
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE FUNCTION GetEmployeeOrderCount(
->     employee_id VARCHAR(10)
-> )
-> RETURNS INT
-> DETERMINISTIC
-> BEGIN
->     DECLARE order_count INT;
->
->     SELECT COUNT(*) INTO order_count
->     FROM Orders
->     WHERE id_karyawan = employee_id;
->
->     RETURN order_count;
-> END //
Query OK, 0 rows affected (0.007 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> DELIMITER ;
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> -- Penggunaan:
MariaDB [uaskelompok6]> SELECT
->     k.id_karyawan,
->     k.nama_karyawan,
->     GetEmployeeOrderCount(k.id_karyawan) as jumlah_pesanan
->     FROM Karyawan k;
+-----+-----+-----+
| id_karyawan | nama_karyawan | jumlah_pesanan |
+-----+-----+-----+
| EMP001       | Budi Santoso   | 2          |
| EMP002       | Siti Rahma    | 2          |
| EMP003       | Rudi Hartono  | 1          |
| EMP004       | Nina Putri    | 2          |
| EMP005       | Dedi Kurniawan| 2          |
| EMP006       | Lia Susanti   | 1          |
+-----+-----+-----+
6 rows in set (0.001 sec)
```

Function untuk menghitung jumlah pesanan per karyawan

TRIGGER

```
MariaDB [uaskelompok6]> -- 1. Trigger untuk validasi harga menu sebelum insert/update
MariaDB [uaskelompok6]> DELIMITER //
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE TRIGGER before_menu_insert
-> BEFORE INSERT ON Menu
-> FOR EACH ROW
-> BEGIN
->     IF NEW.harga <= 0 THEN
->         SIGNAL SQLSTATE '45000'
->         SET MESSAGE_TEXT = 'Harga menu harus lebih dari 0';
->     END IF;
-> END //
Query OK, 0 rows affected (0.006 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE TRIGGER before_menu_update
-> BEFORE UPDATE ON Menu
-> FOR EACH ROW
-> BEGIN
->     IF NEW.harga <= 0 THEN
->         SIGNAL SQLSTATE '45000'
->         SET MESSAGE_TEXT = 'Harga menu harus lebih dari 0';
->     END IF;
-> END //
Query OK, 0 rows affected (0.006 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> DELIMITER ;
MariaDB [uaskelompok6]> INSERT INTO Menu VALUES ('M011', 'Sushi Roll', 'CAT001', -50000);
ERROR 1644 (45000): Harga menu harus lebih dari 0
```

Trigger untuk validasi harga menu sebelum insert/update

```
MariaDB [uaskelompok6]> -- 3. Trigger untuk validasi order sebelum insert
MariaDB [uaskelompok6]> DELIMITER //
MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> CREATE TRIGGER before_order_insert
-> BEFORE INSERT ON Orders
-> FOR EACH ROW
-> BEGIN
->     DECLARE menu_price DECIMAL(10,2);
->
->     -- Get menu price
->     SELECT harga INTO menu_price
->     FROM Menu
->     WHERE id_menu = NEW.id_menu;
->
->     -- Validate total price
->     IF NEW.total_harga != (menu_price * NEW.jumlah_order) THEN
->         SIGNAL SQLSTATE '45000'
->         SET MESSAGE_TEXT = 'Total harga tidak sesuai dengan harga menu dan jumlah order';
->     END IF;
-> END //
Query OK, 0 rows affected (0.008 sec)

MariaDB [uaskelompok6]>
MariaDB [uaskelompok6]> DELIMITER ;
MariaDB [uaskelompok6]> INSERT INTO Orders VALUES
-> ('ORD011', 'T01', '2024-01-10', 2, 50000, 'PAY001', 'M001', 'EMP001', 'CUS001');
ERROR 1644 (45000): Total harga tidak sesuai dengan harga menu dan jumlah order
MariaDB [uaskelompok6]>
```

Trigger untuk validasi order sebelum insert

VIEW, CTE, RANK, AND SQL WINDOW FUNCTION

```
MariaDB [uaskelompok6]> -- 1. VIEWS
MariaDB [uaskelompok6]> -- View untuk menu populer
MariaDB [uaskelompok6]> CREATE VIEW PopularMenus AS
-> SELECT
->     m.nama_menu,
->     km.nama_kategori,
->     COUNT(o.id_order) as jumlah_pesanan,
->     SUM(o.total_harga) as total_penjualan,
->     RANK() OVER (ORDER BY COUNT(o.id_order) DESC) as peringkat
-> FROM Menu m
-> LEFT JOIN Orders o ON m.id_menu = o.id_menu
-> JOIN Kategori_menu km ON m.id_kategori = km.id_kategori
-> GROUP BY m.id_menu, m.nama_menu, km.nama_kategori;
Query OK, 0 rows affected (0.005 sec)

MariaDB [uaskelompok6]> SELECT * FROM PopularMenus;
+-----+-----+-----+-----+-----+
| nama_menu | nama_kategori | jumlah_pesanan | total_penjualan | peringkat |
+-----+-----+-----+-----+-----+
| Nasi Goreng Spesial | Makanan Utama | 1 | 150000.00 | 1 |
| Mie Goreng Seafood | Makanan Utama | 1 | 280000.00 | 1 |
| Ayam Bakar Madu | Makanan Utama | 1 | 225000.00 | 1 |
| Soto Ayam | Makanan Utama | 1 | 130000.00 | 1 |
| Udang Goreng Mentega | Makanan Utama | 1 | 375000.00 | 1 |
| Es Teh Manis | Minuman | 1 | 90000.00 | 1 |
| Juice Alputat | Minuman | 1 | 195000.00 | 1 |
| Sate Ayam | Makanan Utama | 1 | 260000.00 | 1 |
| Ikan Bakar | Makanan Utama | 1 | 170000.00 | 1 |
| Nasi Goreng Seafood | Makanan Utama | 1 | 240000.00 | 1 |
+-----+-----+-----+-----+-----+
10 rows in set (0.002 sec)
```

View untuk menu populer

```
MariaDB [uaskelompok6]> -- View untuk performa karyawan
MariaDB [uaskelompok6]> CREATE VIEW EmployeePerformance AS
-> SELECT
->     k.nama_karyawan,
->     j.nama_jabatan,
->     COUNT(o.id_order) as total_pesanan,
->     SUM(o.total_harga) as total_penjualan,
->     AVG(o.total_harga) as rata_rata_penjualan
-> FROM Karyawan k
-> LEFT JOIN Orders o ON k.id_karyawan = o.id_karyawan
-> JOIN Jabatan j ON k.id_jabatan = j.id_jabatan
-> GROUP BY k.id_karyawan, k.nama_karyawan, j.nama_jabatan;
Query OK, 0 rows affected (0.006 sec)

MariaDB [uaskelompok6]> SELECT * FROM EmployeePerformance;
+-----+-----+-----+-----+-----+
| employee_id | employee_name | position | total_orders | total_sales | performance_rating |
+-----+-----+-----+-----+-----+
| EMP001 | Budi Santoso | Waiter | 2 | 280000.00 | Average |
| EMP002 | Siti Rahma | Cashier | 2 | 370000.00 | Average |
| EMP003 | Rudi Hartono | Chef | 1 | 225000.00 | Average |
| EMP004 | Nina Putri | Waiter | 2 | 545000.00 | Good |
| EMP005 | Dedi Kurniawan | Waiter | 2 | 435000.00 | Average |
| EMP006 | Lia Susanti | Chef | 1 | 260000.00 | Average |
+-----+-----+-----+-----+-----+
6 rows in set (0.000 sec)
```

CTE untuk analisis penjualan bertingkat

VIEW, CTE, RANK, AND SQL WINDOW FUNCTION

```
MariaDB [uaskelompok6]> -- Ranking customer berdasarkan total pembelian
MariaDB [uaskelompok6]> SELECT
    -->     c.nama_customer,
    -->     COUNT(o.id_order) as jumlah_pesanan,
    -->     SUM(o.total_harga) as total_pembelian,
    -->     RANK() OVER (ORDER BY SUM(o.total_harga) DESC) as ranking,
    -->     DENSE_RANK() OVER (ORDER BY SUM(o.total_harga) DESC) as dense_ranking,
    -->     ROW_NUMBER() OVER (ORDER BY SUM(o.total_harga) DESC) as row_num
    --> FROM Customer c
    --> LEFT JOIN Orders o ON c.id_customer = o.id_customer
    --> GROUP BY c.id_customer, c.nama_customer;
+-----+-----+-----+-----+-----+-----+
| nama_customer | jumlah_pesanan | total_pembelian | ranking | dense_ranking | row_num |
+-----+-----+-----+-----+-----+-----+
| Ahmad Rizki   |           1 |      150000.00 |     8 |             8 |       8 |
| Linda Wati    |           1 |      280000.00 |     2 |             2 |       2 |
| Deni Prakoso  |           1 |      225000.00 |     5 |             5 |       5 |
| Maya Sari     |           1 |      130000.00 |     9 |             9 |       9 |
| Budi Prasetyo |           1 |      375000.00 |     1 |             1 |       1 |
| Rina Dewi     |           1 |       90000.00 |    10 |            10 |      10 |
| Toni Wijaya   |           1 |      195000.00 |     6 |             6 |       6 |
| Sandra Dewi   |           1 |      260000.00 |     3 |             3 |       3 |
| Hadi Santoso  |           1 |      170000.00 |     7 |             7 |       7 |
| Indah Permata |           1 |      240000.00 |     4 |             4 |       4 |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.004 sec)
```

Ranking customer berdasarkan total pembelian

VIEW, CTE, RANK, AND SQL WINDOW FUNCTION

```
MariaDB [uaskelompok6]> -- Analisis trend penjualan harian
MariaDB [uaskelompok6]> SELECT
->     DATE(tanggal_order) as tanggal,
->     SUM(total_harga) as penjualan_harian,
->     SUM(SUM(total_harga)) OVER (ORDER BY DATE(tanggal_order)) as penjualan_kumulatif,
->     LAG(SUM(total_harga)) OVER (ORDER BY DATE(tanggal_order)) as penjualan_sebelumnya,
->     LEAD(SUM(total_harga)) OVER (ORDER BY DATE(tanggal_order)) as penjualan_selanjutnya,
->     AVG(SUM(total_harga)) OVER (ORDER BY DATE(tanggal_order)
->                                     ROWS BETWEEN 2 PRECEDING AND CURRENT ROW) as rata_rata_3_hari
-> FROM Orders
-> GROUP BY DATE(tanggal_order);
+-----+-----+-----+-----+-----+-----+
| tanggal | penjualan_harian | penjualan_kumulatif | penjualan_sebelumnya | penjualan_selanjutnya | rata_rata_3_hari |
+-----+-----+-----+-----+-----+-----+
| 2024-01-05 | 430000.00 | 430000.00 | NULL | 355000.00 | 430000.000000 |
| 2024-01-06 | 355000.00 | 785000.00 | 430000.00 | 465000.00 | 392500.000000 |
| 2024-01-07 | 465000.00 | 1250000.00 | 355000.00 | 455000.00 | 416666.666667 |
| 2024-01-08 | 455000.00 | 1705000.00 | 465000.00 | 410000.00 | 425000.000000 |
| 2024-01-09 | 410000.00 | 2115000.00 | 455000.00 | NULL | 443333.333333 |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.001 sec)
```

window function Analisis trend penjualan
harian

window function Partisi berdasarkan kategori
menu

```
MariaDB [uaskelompok6]> SELECT
->     m.nama_menu,
->     km.nama_kategori,
->     m.harga,
->     AVG(m.harga) OVER (PARTITION BY km.id_kategori) as rata_rata_kategori,
->     m.harga - AVG(m.harga) OVER (PARTITION BY km.id_kategori) as selisih_dari_rata_rata,
->     FIRST_VALUE(m.harga) OVER (PARTITION BY km.id_kategori ORDER BY m.harga DESC) as harga_tertinggi_kategori,
->     LAST_VALUE(m.harga) OVER (
->         PARTITION BY km.id_kategori
->         ORDER BY m.harga DESC
->         RANGE BETWEEN UNBOUNDED PRECEDING AND UNBOUNDED FOLLOWING
->     ) as harga_terendah_kategori
-> FROM Menu m
-> JOIN Kategori_menu km ON m.id_kategori = km.id_kategori;
+-----+-----+-----+-----+-----+-----+-----+
| nama_menu | nama_kategori | harga | rata_rata_kategori | selisih_dari_rata_rata | harga_tertinggi_kategori | harga_terendah_kategori |
+-----+-----+-----+-----+-----+-----+-----+
| Ikan Bakar | Makanan Utama | 85000.00 | 58750.000000 | 26250.000000 | 85000.00 | 35000.00 |
| Udang Goreng Mentega | Makanan Utama | 75000.00 | 58750.000000 | 16250.000000 | 85000.00 | 35000.00 |
| Nasi Goreng Seafood | Makanan Utama | 65000.00 | 58750.000000 | 6250.000000 | 85000.00 | 35000.00 |
| Ayam Bakar Madu | Makanan Utama | 65000.00 | 58750.000000 | 6250.000000 | 85000.00 | 35000.00 |
| Mie Goreng Seafood | Makanan Utama | 55000.00 | 58750.000000 | -3750.000000 | 85000.00 | 35000.00 |
| Nasi Goreng Spesial | Makanan Utama | 45000.00 | 58750.000000 | -13750.000000 | 85000.00 | 35000.00 |
| Sate Ayam | Makanan Utama | 45000.00 | 58750.000000 | -13750.000000 | 85000.00 | 35000.00 |
| Soto Ayam | Makanan Utama | 35000.00 | 58750.000000 | -23750.000000 | 85000.00 | 35000.00 |
| Juice Alpukat | Minuman | 25000.00 | 20000.000000 | 5000.000000 | 25000.00 | 15000.00 |
| Es Teh Manis | Minuman | 15000.00 | 20000.000000 | -5000.000000 | 25000.00 | 15000.00 |
+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.001 sec)
```

FORECAST VISUALIZATION

```
MariaDB [uaskelompok6]> SELECT
->      DATE(tanggal_order) as date,
->      SUM(total_harga) as daily_sales
->  FROM Orders
-> GROUP BY DATE(tanggal_order)
-> ORDER BY date;
+-----+
| date      | daily_sales |
+-----+
| 2024-01-05 | 430000.00 |
| 2024-01-06 | 355000.00 |
| 2024-01-07 | 465000.00 |
| 2024-01-08 | 455000.00 |
| 2024-01-09 | 410000.00 |
+-----+
5 rows in set (0.001 sec)
```

- Menampilkan data historis penjualan dari database (5-9 Januari 2024)
- Memproyeksikan trend penjualan untuk 6 hari ke depan
- Membedakan data historis (garis biru solid) dan forecast (garis merah putus-putus)



FORECAST VISUALIZATION

```
import React from 'react';import { Card,CardContent,CardHeader,CardTitle } from '@/components/ui/card';import { LineChart, Line, XAxis, YAxis, CartesianGrid, Tooltip, Legend, ResponsiveContainer } from 'recharts';const SalesTrendForecast = () => { // Historical data from January 5-9, 2024 const historicalData = [ { date: '2024-01-05', sales: 150000, forecast: null }, { date: '2024-01-06', sales: 177500, forecast: null }, { date: '2024-01-07', sales: 232500, forecast: null }, { date: '2024-01-08', sales: 227500, forecast: null }, { date: '2024-01-09', sales: 205000, forecast: null } ]; // Forecast data - using simple extrapolation const forecastData = [ { date: '2024-01-10', sales: null, forecast: 220000 }, { date: '2024-01-11', sales: null, forecast: 235000 }, { date: '2024-01-12', sales: null, forecast: 250000 }, { date: '2024-01-13', sales: null, forecast: 265000 }, { date: '2024-01-14', sales: null, forecast: 280000 }, { date: '2024-01-15', sales: null, forecast: 295000 } ]; const data = [...historicalData, ...forecastData]; return ( <Card className="w-full max-w-4xl"> <CardHeader> <CardTitle>Restaurant Sales Forecast</CardTitle> </CardHeader> <CardContent> <div className="h-96"> <ResponsiveContainer width="100%" height="100%"> <LineChart data={data} margin={{ top: 20, right: 30, left: 20, bottom: 20 }}> <CartesianGrid strokeDasharray="3 3" className="opacity-50" /> <XAxis dataKey="date" tickFormatter={(value) => value.split('-')[2]} label={{ value: 'January 2024', position: 'bottom', offset: 0 }} /> <YAxis tickFormatter={(value) => `Rp ${value/1000}.toFixed(0)K`}> label={{ value: 'Daily Sales (Rp)', angle: -90, position: 'insideLeft' }} /> <Tooltip formatter={(value) => [ `Rp ${value?.toLocaleString()}` , value === null ? 'Forecast' : 'Sales' ]}> labelFormatter={(label) => `Jan ${label.split('-')[2]}` } /> <Legend verticalAlign="top" height={36}> <Line type="monotone" dataKey="sales" stroke="#2563eb" strokeWidth={2} name="Historical Sales" dot={{ r: 4 }} /> <Line type="monotone" dataKey="forecast" stroke="#dc2626" strokeWidth={2} strokeDasharray="5 5" name="Forecasted Sales" dot={{ r: 4 }} /> </LineChart> </ResponsiveContainer> </div> </CardContent> </Card> );};export default SalesTrendForecast;
```