

MODUL 12

JURNAL

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Buatkan contoh penerapan tabel menggunakan Columnar Database.

-- Tabel Dimensi

```
CREATE TABLE produk (  
    id INT PRIMARY KEY,  
    nama VARCHAR(100)  
);
```

```
CREATE TABLE region (  
    id INT PRIMARY KEY,  
    nama VARCHAR(100)  
);
```

```
CREATE TABLE waktu (  
    tgl DATE PRIMARY KEY  
);
```

-- Tabel Fakta

```
CREATE TABLE jual (  
    id INT PRIMARY KEY,  
    produk_id INT,
```

```
    region_id INT,  
    tgl DATE,  
    total DECIMAL(10,2),  
    FOREIGN KEY (produk_id) REFERENCES produk(id),  
    FOREIGN KEY (region_id) REFERENCES region(id),  
    FOREIGN KEY (tgl) REFERENCES waktu(tgl)  
);
```

-- Isi Data Baru

```
INSERT INTO produk VALUES
```

```
(1, 'Smartphone'),
```

```
(2, 'Monitor'),
```

```
(3, 'Keyboard');
```

```
INSERT INTO region VALUES
```

```
(1, 'DKI Jakarta'),
```

```
(2, 'Bali'),
```

```
(3, 'Kalimantan');
```

```
INSERT INTO waktu VALUES
```

```
(TO_DATE('2025-06-01', 'YYYY-MM-DD')),
```

```
(TO_DATE('2025-06-02', 'YYYY-MM-DD')),
```

```
(TO_DATE('2025-06-03', 'YYYY-MM-DD'));
```

```
INSERT INTO jual VALUES
```

```
(1, 1, 1, TO_DATE('2025-06-01', 'YYYY-MM-DD'), 12000000.00),
```

```
(2, 2, 1, TO_DATE('2025-06-01', 'YYYY-MM-DD'), 4500000.00),
```

```
(3, 1, 2, TO_DATE('2025-06-02', 'YYYY-MM-DD'), 13500000.00),
```

```
(4, 3, 3, TO_DATE('2025-06-02', 'YYYY-MM-DD'), 1500000.00),
```

```
(5, 2, 2, TO_DATE('2025-06-03', 'YYYY-MM-DD'), 4700000.00);
```

```
-- Query OLAP
```

```
SELECT
```

```
    w.tgl,
```

```
    p.nama AS produk,
```

```
    r.nama AS region,
```

```
    SUM(j.total) AS total_jual
```

```
FROM jual j
```

```
JOIN produk p ON j.produk_id = p.id
```

```
JOIN region r ON j.region_id = r.id
```

```
JOIN waktu w ON j.tgl = w.tgl
```

```
GROUP BY w.tgl, p.nama, r.nama
```

```
ORDER BY w.tgl;
```

The screenshot shows a SQL query editor with a query window and a results window. The query is as follows:

```
SELECT
  w.tgl,
  p.nama AS produk,
  r.nama AS region,
  SUM(j.total) AS total_jual
FROM jual j
JOIN produk p ON j.produk_id = p.id
JOIN region r ON j.region_id = r.id
JOIN waktu w ON j.tgl = w.tgl
GROUP BY w.tgl, p.nama, r.nama
ORDER BY w.tgl;
```

The results window shows the following data:

TGL	PRODUK	REGION	TOTAL_JUAL
1 01-06-2025	Monitor	DKI Jakarta	4500000
2 01-06-2025	Smartphone	DKI Jakarta	12000000
3 02-06-2025	Keyboard	Kalimantan	1500000
4 02-06-2025	Smartphone	Bali	13500000
5 03-06-2025	Monitor	Bali	4700000

Penjelasan Query:

1. SELECT Clause:

- w.tgl → Menampilkan tanggal penjualan.
- p.nama AS produk → Menampilkan nama produk.
- r.nama AS region → Menampilkan nama region.
- SUM(j.total) AS total_jual → Menghitung total penjualan untuk kombinasi produk dan region.

2. FROM dan JOIN Clauses:

- jual j → Tabel penjualan.
- produk p → Tabel produk, dihubungkan melalui j.produk_id = p.id.
- region r → Tabel region, dihubungkan melalui j.region_id = r.id.
- waktu w → Tabel waktu, dihubungkan melalui w.tgl = j.tgl.

3. GROUP BY Clause:

- Mengelompokkan data berdasarkan tanggal (w.tgl), produk (p.nama), dan region (r.nama).

4. ORDER BY Clause:

- Mengurutkan hasil berdasarkan w.tgl.

Hasil Query:

- Menampilkan daftar total penjualan produk di setiap region untuk setiap tanggal, disusun berdasarkan tanggal.