

## TP12 - PostgreSQL Simple and Materialized Views

The views that were created are all for invoices table, once it is the only one we have in PGSQL.

```
CREATE TABLE invoices (  
    id_invoice SERIAL PRIMARY KEY,  
    invoice_status VARCHAR(20),  
    invoice_type VARCHAR(50),  
    quantity INT,  
    invoice_datetime TIMESTAMP DEFAULT CURRENT_TIMESTAMP,  
    cost NUMERIC(10, 2),  
    paid BOOLEAN DEFAULT FALSE,  
    payment_method VARCHAR(50),  
    name VARCHAR(100),  
    address VARCHAR(200),  
    contact VARCHAR(50)  
);
```

### SIMPLE VIEWS

**vw\_all\_invoices** - Invoice listing (all-time) - Rodrigo

```
CREATE OR REPLACE VIEW vw_all_invoices AS  
SELECT  
    id_invoice,  
    name AS customer_name,  
    invoice_type,  
    invoice_status,  
    quantity,  
    cost,  
    paid,  
    payment_method,  
    invoice_datetime  
FROM invoices;
```

**vw\_unpaid\_invoices** - All unpaid invoices (all-time) - Pedro

```
CREATE OR REPLACE VIEW vw_unpaid_invoices AS  
SELECT *  
FROM invoices  
WHERE paid = FALSE;
```

**vw\_invoices\_totals\_by\_status** - All-time number of invoices and total revenue grouped by invoice status (Pending, Completed, Cancelled or Refunded) - Diego

```
CREATE OR REPLACE VIEW vw_invoices_totals_by_status AS
SELECT
    invoice_status,
    COUNT(*) AS total_invoices,
    SUM(cost) AS total_value
FROM invoices
GROUP BY invoice_status
ORDER BY total_invoices DESC;
```

**vw\_recent\_invoices** - Invoices from the last 7 days (rolling weekly window) - David

```
CREATE OR REPLACE VIEW vw_recent_invoices AS
SELECT *
FROM invoices
WHERE invoice_datetime >= NOW() - INTERVAL '7 days';
```

## MATERIALIZED VIEWS

**mv\_daily\_sales** - Number of invoices and total revenue grouped by day - Rodrigo

```
CREATE MATERIALIZED VIEW mv_daily_sales AS
SELECT
    DATE(invoice_datetime) AS day,
    COUNT(*) AS total_invoices,
    SUM(cost) AS total_revenue
FROM invoices
GROUP BY day
ORDER BY day;
```

**mv\_payment\_methods\_stats** - All-time number of invoices and total revenue grouped by payment method - Pedro

```
CREATE MATERIALIZED VIEW mv_payment_methods_stats AS
SELECT
    payment_method,
    COUNT(*) AS total_invoices,
    SUM(cost) AS total_value
FROM invoices
GROUP BY payment_method;
```

**mv\_top\_customers** - Top 10 customers by spending (all-time) - Diego

```
CREATE MATERIALIZED VIEW mv_top_customers AS
SELECT
    name AS customer_name,
    COUNT(*) AS total_invoices,
    SUM(cost) AS total_spent
FROM invoices
GROUP BY name
ORDER BY total_spent DESC
LIMIT 10;
```

**mv\_monthly\_sales** - Number of invoices and total revenue grouped by month - David

```
CREATE MATERIALIZED VIEW mv_monthly_sales AS
SELECT
    DATE_TRUNC('month', invoice_datetime) AS month,
    COUNT(*) AS total_invoices,
    SUM(cost) AS total_revenue
FROM invoices
GROUP BY month
ORDER BY month;
```

**mv\_yearly\_sales** - Number of invoices and total revenue grouped by year - Rodrigo

```
CREATE MATERIALIZED VIEW mv_yearly_sales AS
SELECT
    DATE_TRUNC('year', invoice_datetime) AS year,
    COUNT(*) AS total_invoices,
    SUM(cost) AS total_revenue
FROM invoices
GROUP BY year
ORDER BY year;
```

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