

# SQL Data Analysis Project: Retail Sales

## Project Overview

This project focuses on performing sales data analysis for a fictional retail business using SQL. The goal is to extract actionable business insights by querying three key datasets: orders, customers, and products. The analysis supports strategic decisions in sales performance, customer engagement, and product trends.

## Dataset Description

1. Orders.csv: Contains order\_id, customer\_id, product\_id, order\_date, region, quantity, total\_price
2. Customers.csv: Contains customer\_id, customer\_name, segment
3. Products.csv: Contains product\_id, product\_name, category, price

These datasets simulate a retail environment with transactional sales, customer segmentation, and product categorization.

## Key Business Questions Answered with SQL

- What is the total revenue by region?
- Who are the top 3 customers by spending?
- Which products are selling the most (units sold)?
- What is the average order value by customer segment?
- How are daily sales trending over time?

## Sample SQL Queries and Logic

1. Total Revenue by Region:

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```
SELECT region, SUM(total_price) AS total_revenue FROM orders GROUP BY region ORDER BY total_revenue DESC;
```

### 2. Top 3 Customers by Spending:

```
SELECT c.customer_name, SUM(o.total_price) AS total_spent FROM orders o JOIN customers c ON o.customer_id = c.customer_id GROUP BY c.customer_name ORDER BY total_spent DESC LIMIT 3;
```

### 3. Product Performance (Units Sold):

```
SELECT p.product_name, SUM(o.quantity) AS units_sold FROM orders o JOIN products p ON o.product_id = p.product_id GROUP BY p.product_name ORDER BY units_sold DESC;
```

### 4. Average Order Value by Segment:

```
SELECT c.segment, AVG(o.total_price) AS avg_order_value FROM orders o JOIN customers c ON o.customer_id = c.customer_id GROUP BY c.segment;
```

### 5. Daily Sales Trend:

```
SELECT order_date, SUM(total_price) AS daily_sales FROM orders GROUP BY order_date ORDER BY order_date;
```

## How to Talk About This in an Interview

Explain that this project simulates real-world retail data and focuses on business-relevant insights. You used SQL to extract performance indicators like revenue trends, customer value, and sales performance by region. Emphasize your ability to join datasets, aggregate data, and derive conclusions. Be ready to explain each query, what it does, and what the result helps the business understand.