

Sales Analysis

1. What is the monthly revenue trend over the past year?

I grouped orders by month and summed the total revenue (price × quantity) to observe revenue patterns. This helps identify seasonal trends, peaks, and dips in performance.

2. Which product categories generate the most revenue?

By joining order items and product data, I calculated total revenue per category. This shows which product lines are pushing up sales and should be prioritized for stock and marketing investment.

Customer Insights

3. Who are the top 10 customers by lifetime value?

Summed each customer's total purchases and sorted the results in descending order. This highlights the most valuable clients, useful for loyalty cards or rewards, upselling, or tailored engagement.

4. What percentage of customers made more than one order?

We counted how many customers appear more than once in the orders table. This helps gauge repeat business and customer retention health.

Product Performance

5. What are the top 5 best-selling products per category?

Using RANK() partitioned by category, I ranked products by quantity sold and filtered the top 5. This gives a per-category breakdown of the most popular items.

6. Which products have high stock but poor sales?

I identified products with high stock levels that appear rarely or not at all in the order items table. These are potential slow moving or overstocked items, requiring markdowns or marketing focus to perhaps get rid of them.

Operational & Data Quality

7. Are there any orders where total_amount doesn't match the sum of items?

I compared the recorded total amount in the orders table against the calculated total from items. This showed potential data entry affecting accuracy.

8. Identify duplicate emails in the customer table.

Grouped customers by email and counted occurrences greater than one. Duplicate emails could indicate data integrity issues or system duplication.