# Day 32 – Advanced SQL Business Case Challenge

This challenge simulates an end-to-end SQL task in a retail company environment, covering sales, customers, products, and inventory management.

## Dataset Creation

Customers

|  |  |  |  |
| --- | --- | --- | --- |
| CustomerID | CustomerName | City | JoinDate |
| 1 | Amit Sharma | Delhi | 2021-01-15 |
| 2 | Priya Kapoor | Mumbai | 2021-03-10 |
| 3 | Rahul Mehta | Bangalore | 2022-02-25 |
| 4 | Sara Khan | Delhi | 2022-07-05 |

Products

|  |  |  |  |
| --- | --- | --- | --- |
| ProductID | ProductName | Category | Price |
| 101 | Laptop | Electronics | 60000 |
| 102 | Smartphone | Electronics | 30000 |
| 103 | Washing Machine | Home Appliances | 25000 |
| 104 | Microwave Oven | Home Appliances | 12000 |
| 105 | Headphones | Electronics | 3000 |

Orders

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| OrderID | CustomerID | OrderDate | TotalAmount | Status |
| 1001 | 1 | 2023-01-15 | 90000 | Delivered |
| 1002 | 2 | 2023-01-20 | 30000 | Cancelled |
| 1003 | 3 | 2023-02-05 | 25000 | Delivered |
| 1004 | 4 | 2023-02-15 | 12000 | Delivered |
| 1005 | 1 | 2023-03-10 | 6000 | Delivered |

OrderDetails

|  |  |  |  |
| --- | --- | --- | --- |
| OrderDetailID | OrderID | ProductID | Quantity |
| 1 | 1001 | 101 | 1 |
| 2 | 1001 | 102 | 1 |
| 3 | 1002 | 102 | 1 |
| 4 | 1003 | 103 | 1 |
| 5 | 1004 | 104 | 1 |
| 6 | 1005 | 105 | 2 |

Inventory

|  |  |  |
| --- | --- | --- |
| ProductID | Stock | ReorderLevel |
| 101 | 5 | 2 |
| 102 | 10 | 5 |
| 103 | 2 | 1 |
| 104 | 3 | 1 |
| 105 | 15 | 5 |

## 🧠 Advanced SQL & Analytics Questions

1) Calculate total delivered revenue per city.

2) Find the top 2 customers by total delivered spending.

3) List products that have never been ordered.

4) Show each product's total quantity sold in 2023.

5) Identify months where revenue exceeded the previous month’s revenue (use window functions).

6) List categories where all products have stock above their reorder level.

7) Retrieve each customer's first and last purchase date.

8) Find products contributing more than 30% of revenue in their category.

9) Calculate running total revenue by month.

10) Identify customers who have ordered from more than 1 product category.

🎯 Bonus:

Determine each city’s contribution percentage to total company revenue.