**📘 Day 44 – SQL Challenge**

**Dataset**

**Customers Table**

|  |  |  |
| --- | --- | --- |
| **CustomerID** | **Name** | **Country** |
| 1 | Alice | USA |
| 2 | Bob | UK |
| 3 | Charlie | India |
| 4 | David | USA |
| 5 | Emma | Canada |

**Orders Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **OrderID** | **CustomerID** | **OrderDate** | **TotalAmount** | **Status** |
| 101 | 1 | 2024-01-10 | 250.00 | Completed |
| 102 | 1 | 2024-01-11 | 180.00 | Returned |
| 103 | 2 | 2024-02-05 | 600.00 | Completed |
| 104 | 3 | 2024-02-06 | 300.00 | Completed |
| 105 | 3 | 2024-02-07 | 100.00 | Cancelled |
| 106 | 4 | 2024-03-01 | 1200.00 | Completed |
| 107 | 4 | 2024-03-02 | 500.00 | Completed |
| 108 | 5 | 2024-04-01 | 800.00 | Returned |
| 109 | 1 | 2024-04-05 | 900.00 | Completed |
| 110 | 2 | 2024-04-10 | 100.00 | Completed |

**OrderDetails Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| OrderDetailID | OrderID | ProductName | Quantity | Price |
| 1 | 101 | Laptop | 1 | 250.00 |
| 2 | 102 | Headphones | 2 | 90.00 |
| 3 | 103 | Smartphone | 2 | 300.00 |
| 4 | 104 | Tablet | 1 | 300.00 |
| 5 | 105 | Keyboard | 2 | 50.00 |
| 6 | 106 | Laptop | 2 | 600.00 |
| 7 | 107 | Smartwatch | 1 | 500.00 |
| 8 | 108 | Laptop | 1 | 800.00 |
| 9 | 109 | Camera | 1 | 900.00 |
| 10 | 110 | Mouse | 2 | 50.00 |

**Questions**

1. Top Customers by Spend  
   Write a query to list the top 5 customers who spent the most overall (only include orders with Status='Completed').
2. Monthly Revenue Trend  
   Calculate the total monthly revenue (from Completed orders only). Display Month-Year and total revenue.
3. Average Order Value  
   Find the average order value (AOV) for each customer, rounded to 2 decimals.
4. Country-Wise Revenue Contribution  
   Show the total revenue per Country and rank them using RANK() based on revenue contribution.
5. Products with Highest Returns  
   Identify the top 3 products most frequently found in orders with Status='Returned'.
6. Customers with Consecutive Orders  
   Using a window function (LAG), find customers who placed back-to-back orders on consecutive days.
7. Repeat Purchase Customers  
   List all customers who placed more than 3 orders in a single month.
8. Cancelled vs Completed Orders %  
   Calculate the percentage of cancelled orders compared to completed orders, month-wise.
9. High-Value Orders  
   Find all orders where the order value is more than double the average order value of that customer.
10. Inactive Customers  
    List customers who have not placed any orders in the last 6 months (from the max order date in table).

**Bonus Challenge (Advanced)**

1. Customer Lifetime Value (CLV)  
   Write a query to calculate Customer Lifetime Value = (Total Revenue from Completed Orders ÷ Number of Years as Customer).

* Assume first\_order\_date = min(OrderDate) per customer.
* Round CLV to 2 decimals.