**📘 Day 61 – SQL Challenge**

**Dataset Theme:** Retail Sales & Marketing Campaigns

**Tables & Sample Data**

**Customers**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CustomerID | Name | Age | Gender | City | JoinDate |
| 1 | Alice | 28 | F | New York | 2021-01-15 |
| 2 | Bob | 35 | M | London | 2020-03-22 |
| 3 | Charlie | 42 | M | Delhi | 2019-07-19 |
| 4 | David | 31 | M | Toronto | 2022-11-11 |
| 5 | Eva | 26 | F | Berlin | 2020-05-01 |

**Products**

|  |  |  |  |
| --- | --- | --- | --- |
| ProductID | Name | Category | Price |
| 101 | Laptop | Electronics | 1200 |
| 102 | Shoes | Fashion | 80 |
| 103 | Phone | Electronics | 800 |
| 104 | Desk | Furniture | 250 |
| 105 | Book | Books | 20 |

**Orders**

|  |  |  |  |
| --- | --- | --- | --- |
| OrderID | CustomerID | OrderDate | Status |
| 201 | 1 | 2022-01-10 | Completed |
| 202 | 2 | 2022-01-15 | Completed |
| 203 | 3 | 2022-02-05 | Cancelled |
| 204 | 4 | 2022-02-10 | Completed |
| 205 | 5 | 2022-03-12 | Completed |
| 206 | 1 | 2022-04-01 | Completed |
| 207 | 3 | 2022-04-15 | Completed |
| 208 | 2 | 2022-05-01 | Completed |
| 209 | 4 | 2022-05-10 | Completed |
| 210 | 5 | 2022-06-01 | Completed |

**OrderDetails**

|  |  |  |  |
| --- | --- | --- | --- |
| OrderDetailID | OrderID | ProductID | Quantity |
| 301 | 201 | 101 | 1 |
| 302 | 202 | 102 | 2 |
| 303 | 203 | 103 | 1 |
| 304 | 204 | 104 | 1 |
| 305 | 205 | 105 | 3 |
| 306 | 206 | 101 | 1 |
| 307 | 207 | 103 | 1 |
| 308 | 208 | 102 | 1 |
| 309 | 209 | 104 | 2 |
| 310 | 210 | 105 | 4 |

**MarketingCampaigns**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CampaignID | CampaignName | StartDate | EndDate | TargetCategory |
| 401 | Electronics Sale | 2022-01-01 | 2022-01-31 | Electronics |
| 402 | Fashion Week | 2022-02-01 | 2022-02-28 | Fashion |
| 403 | Book Fest | 2022-03-01 | 2022-03-31 | Books |

**CampaignResponses**

|  |  |  |  |
| --- | --- | --- | --- |
| ResponseID | CampaignID | CustomerID | Response |
| 501 | 401 | 1 | Interested |
| 502 | 401 | 2 | Not Interested |
| 503 | 402 | 3 | Interested |
| 504 | 403 | 5 | Interested |
| 505 | 403 | 4 | Not Interested |

**Questions**

1. Find the total revenue per product category.
2. Identify customers who purchased from more than 2 different categories.
3. Calculate the average order value (AOV) for each customer.
4. Find the conversion rate for each marketing campaign (Interested ÷ Total Responses).
5. List the top 3 products by total revenue.
6. Identify customers who responded "Interested" but made no purchase during the campaign.
7. Show the revenue trend per month and calculate MoM % growth.
8. Using a window function, find the rank of customers by spending within their city.
9. Find products that were ordered but never targeted by any campaign.
10. Show customers whose spending is above the overall average.

**Bonus (Advanced):**  
11. Detect the most effective campaign:

* Highest conversion rate
* Highest revenue impact in its target category