SQL 100 Days Challenge – Day 72 Reflection

📅 **Dataset Theme:** Marketing Campaigns – Customers, Interactions & Sales

📘 Overview

Today's dataset revolved around **marketing analytics**, simulating real-world campaign tracking. It included four interconnected tables — Customers, Campaigns, Interactions, and Sales. This dataset was rich in business insights, combining customer behavior, campaign effectiveness, and ROI tracking.

🧠 Concepts Practiced

- **Joins** (INNER, LEFT) for merging campaign and customer data

- **CTEs** for layered analysis

- **Aggregations** with COUNT, SUM, and AVG

- **CASE statements** for classification of performance

- **Window functions (RANK, LAG)** for ranking and sequence analysis

- **Subqueries** and **correlated filtering**

- **Date functions (DATEDIFF)** for retargeting and engagement gap analysis

- **Business metrics:** ROI, CPA, conversion rates

💡 Key Learnings

1. Understood how to evaluate **campaign effectiveness** using SQL.

2. Gained confidence in building **multi-layered analytical queries** using nested CTEs.

3. Improved clarity on **date-based calculations** to track customer re-engagement.

4. Learnt the difference between **conversion rate** and **ROI** — both crucial in marketing analytics.

5. The **bonus challenge** pushed the boundaries of real-world data modeling — integrating both **channel performance** and **campaign profitability** logic.

🔥 Tough Questions

- **9th to 11th queries** were especially challenging — particularly when linking customer re-engagement (using LAG and DATEDIFF) and calculating **Net ROI across channels**.

- Creating multi-step **UNION ALL** queries combining two perspectives (channel + campaign) took significant debugging effort.

✅ Wins of the Day

- Confidently handled **window functions** (LAG, RANK).

- Successfully derived **conversion rates** and **CPA metrics**.

- Created a well-structured logical flow with **nested CTEs** that resembled real BI reporting logic.

🚀 Summary

Day 72 was a **true marketing analytics simulation**, bridging technical SQL expertise with real-world KPIs.
Understanding how SQL drives campaign insights like ROI, CPA, and conversion metrics gave a realistic feel of marketing data analysis.
Although the bonus question tested both patience and logic, completing it was highly rewarding.

✨ Reflection Quote:

"Complex datasets test your logic, but clarity comes from consistent curiosity."