

## 🌱 SQL 100 Days Challenge — Day 73 Reflection

**Theme:** Logistics & Delivery Analytics

### 📊 Dataset Overview

Today's challenge revolved around four interconnected tables — **Drivers, Orders, Deliveries, and Feedback**. This dataset simulated a **real-world delivery logistics environment**, testing advanced SQL capabilities across multiple areas such as joins, window functions, date-time operations, and analytical calculations.

### 🧠 Concepts Practiced

- Multi-table **Joins** across Orders, Deliveries, and Drivers
- **Date & Time** calculations using DATEDIFF()
- **CTE-based Aggregation** for performance tracking
- **Ranking functions (RANK, ROW\_NUMBER)**
- **CASE expressions** for performance classification
- **Correlated Subqueries** for driver performance comparisons
- **Nested CTEs** for city-wise performance insights
- **Window Functions (LAG)** for delivery sequence analysis
- **Analytical KPI computations** (e.g., Delivery Efficiency, Speed, Quality)

### 💡 Key Learnings

- Understood how **real-world KPIs** like *Delivery Efficiency* and *Performance Score* can be derived using SQL alone.
- Gained clarity on **ranking logic** for multi-factor performance evaluations.
- Learned to use **nested CTEs** efficiently for multi-level aggregation.
- Strengthened grasp over **window functions** (LAG, RANK, and partitioning logic).

### ⚙️ Challenges Faced

- Only the **Bonus Question** was particularly tough — calculating the *best-performing driver* required multiple layers of CTEs and combining **efficiency, quality, and speed** metrics into one composite score.
- Ensured the formula handled **division by zero** and **ranking ties** correctly.

### 📈 Summary

A powerful and practical dataset that brought together almost everything learned over the 70+ days — **CTEs, subqueries, ranking, conditional logic, and KPIs** — into one cohesive real-world simulation.

This day marked a deeper understanding of how **SQL analytics can drive operational insights** in delivery businesses like Swiggy, Dunzo, or Amazon Logistics.