Day 9 SQL Practice – Products, Categories & Inventory Dataset

Today's practice session was all about inventory insights — and while the queries weren't the most difficult I've encountered, they required a solid understanding of joins, grouping logic, and how to apply ranking and filtering techniques correctly. It was a balanced day with some easy wins and a few tricky logic checks.

☑ What I Practiced Today:

- Using JOINs to link products with categories and inventory records.
- Calculating derived values like total stock value using multiplication and SUM.
- Exploring NULL-safe logic using LEFT JOINs and COALESCE to include missing records.
- Applying window functions like RANK() and DENSE_RANK() to get top-N insights.
- Identifying gaps like missing products or unused categories using anti-joins (e.g., NOT EXISTS).
- Combining aggregate functions with filtering conditions in HAVING clauses.

🛠 Fixes and Improvements:

- For Q2 and Q7, carefully used SUM over joins and ensured I used GROUP BY properly.
- In Q4 and Q5, explored both LEFT JOIN + IS NULL and NOT EXISTS for missing data detection.
- Understood how to use ranking to isolate the most expensive or top-valued products within each category.
- The bonus challenge helped me master DENSE_RANK inside a CTE to find top 2 products per category — a real-world reporting use case.

💡 Key Takeaway from Day 9:

SQL isn't just about writing queries — it's about asking the right questions and adjusting the logic to fit edge cases. Today I worked more on data completeness, smart filters, and analytical queries like ranking, which helped me understand the depth SQL offers in inventory scenarios.