Day 18 – SQL Practice Reflection

📅 Date: July 29, 2025

📒 Dataset: Online Bookstore – Customers, Books, Orders, Reviews

📑 Summary

Today's practice involved a simulated online bookstore system with four interconnected tables. The questions revolved around identifying trends in book sales, analyzing review patterns, and calculating customer spending. The challenges encouraged deeper exploration of joins, filtering, subqueries, aggregate logic, and NOT EXISTS filtering.

💡 Key Learnings

1. Gained hands-on experience with the NOT EXISTS clause in the bonus challenge to ensure a book only had ratings ≥ 4.

2. Understood when to use HAVING vs WHERE by revising logic in Q5 from WHERE to HAVING.

3. Reinforced how to calculate distinct genre counts for customers with multi-genre purchases using GROUP BY + HAVING.

4. Learnt to find customers who never reviewed books using LEFT JOIN with NULL filters.

🔍 Additional Observations

✔ 4th question was logically challenging and took longer to implement correctly.

✔ Bonus question was conceptually simple, but practically difficult due to the NOT EXISTS logic.

✔ 6th and 7th queries helped practice `RANK()` window function and multi-level grouping.

✔ Overall, I solved the questions in lesser time than previous days — a clear sign of growing confidence and fluency.

🗃 Table Design Summary

- Used CHECK constraints to prevent invalid data (e.g., Rating between 1–5, Price > 0).
- Defaulted dates using GETDATE() to simplify insertions.
- ON DELETE CASCADE used to maintain referential integrity during deletions.
- Unique constraints ensured no duplicate orders/reviews per customer-book pair.
- Indexes were added for better performance on JOIN and filtering queries.