Detailed Notes – Hour 4 (Reflection & Documentation)

After finishing my practice with SSMS, I used the last hour to write down what I learned, what was useful, and what I noticed from looking at other projects.

1. Main Things I Practiced

- I made my own small database called SalesDB. This showed me how tables connect to each other using keys (like linking Customers with Orders).

- I wrote different queries with INNER, LEFT, and RIGHT JOIN to see how tables can be combined. I noticed how missing values show up with outer joins.

- I used GROUP BY with SUM, COUNT, and AVG to get simple reports, like total or average sales.

- I wrote a stored procedure to get the Top 5 Customers by purchase. This made me understand how to save queries so they can be used again.

- I tested transactions using BEGIN TRANSACTION, ROLLBACK, and COMMIT. This helped me learn how to undo changes if something goes wrong.

2. Learning from Data Import and Cleaning

- I imported a CSV file into SQL Server with the Import Wizard. I saw how data from outside can be added into a database.

- I cleaned the data with UPDATE and DELETE commands. This showed me how to fix and prepare data for later use.

- Using rollbacks gave me confidence that I can protect the data when something unexpected happens.

3. Good Practices I Learned

- Always check data after importing to make sure columns and values look correct.

- Write queries neatly using aliases and proper spacing so they are easy to read.

- Add keys and rules early so the data stays correct in the future.

- Keep versions of scripts (like table design or procedures) so I can reuse them later.

4. Looking at Open-Source Projects

- I looked at some free projects on GitHub that use SQL Server and Power BI. I saw that they often use something called star schema to set up tables for reports.

- I learned that when data updates over time, people use special methods like incremental loads and Slowly Changing Dimensions to handle history.

- I also noticed that many projects include clear notes and diagrams in README files, which makes it easier to understand their work.

5. Reflection

Writing these notes helped me to review everything I practiced. I now see that SQL is not only about writing queries, but also about planning how the data is stored, keeping it safe, and writing clear notes. These are important skills that make projects easier to manage and more useful in real situations.