Subqueries and APPLY Operator - SQL Practice on E-Commerce Sales

Project Title:

Subqueries and APPLY Operator - SQL Practice on E-Commerce Sales

Overview:

This project showcases your deep understanding of subqueries, CROSS APPLY/OUTER APPLY, and analytic window functions through a practical and comprehensive e-commerce dataset.

You explore various product categories and sales patterns across multiple countries and regions using structured SQL challenges.

Skills Demonstrated:

- Correlated and non-correlated subqueries (in SELECT, FROM, and WHERE clauses)

- CROSS APPLY and OUTER APPLY for row-wise dynamic subquery execution

- Window functions like RANK, ROW_NUMBER, and SUM with and without partitions

- Conditional logic using CASE, filtering with IN, EXISTS, and aggregations

- Joining master and transactional data to derive insights

Key Highlights:

1. Compare subqueries vs joins to evaluate performance and logic clarity.

2. Use APPLY operator to fetch latest/highest sale for each product or region.

3. Track contribution of each product to total global sales.

4. Identify top-selling products per category or region.

5. Dynamic filtering based on aggregate metrics like average sales or sales count.

6. Extend schema design by adding product_master and product_categories tables.

Files Included:

- SQL Script: Subqueries_and_APPLY_SQL_Exercises_Vijay.sql

- Business scenarios using sales analytics

Ideal For:

Clients needing strong SQL professionals for advanced reporting, performance-driven subquery logic, or custom analytics over sales data.