NAME: KARIZA PATIENCE

ID: 28795

Step 1: Problem Definition

- Business Background

The organization functions as a supermarket within the consumer goods sector, providing products to customers in several regions. Each day, the sales unit records numerous transactions that include customer details, purchased products, and transaction dates. As a result, the business accumulates a substantial amount of transactional data over time.

- Data-Related Challenge

Despite collecting detailed sales information, management is unable to easily obtain meaningful insights about product performance or customer purchasing patterns. Simple database queries are not sufficient to determine which products sell best in specific regions, how sales change over time, or how customers differ in terms of purchasing value.

- Intended Outcome

This analysis seeks to apply SQL joins together with window functions to reveal patterns in sales performance, rank products and customers according to their contribution, and classify customers based on spending levels. The insights generated will support better decision-making in areas such as stock control, marketing planning, and customer engagement.

Step 2: Success Criteria

- Determining the Top Five Products by Region or Month

Products will be ordered according to total revenue within each region or monthly period using the RANK() window function.
This will enable management to recognize the strongest-performing products in different locations or timeframes.

- Calculating Cumulative Monthly Sales

A running total of revenue across months will be produced using SUM() OVER() with results arranged chronologically.
This measure will help the business observe overall sales growth and long-term performance trends.

- Evaluating Month-to-Month Revenue Change

The LAG() function will compare each month's revenue with that of the preceding month.
This comparison will make it easier to detect increases or declines in sales and respond with appropriate strategies.

- Grouping Customers by Spending Level

Customers will be divided into four spending categories through the NTILE(4) function based on their total purchase value.
Such segmentation will allow the business to identify high-value customers and design targeted promotions or loyalty initiatives.

- Computing a Three-Month Moving Average of Sales

A rolling three-month average will be calculated using AVG() OVER() with a defined window frame.
This approach will reduce short-term fluctuations and provide a clearer view of underlying sales trends for forecasting purposes.