Theory Questions

Step 1: Problem Definition

Q: Define a specific, measurable business scenario.

A:

Business Context: A small online coffee shop sells coffee beans, drinks and accessories to customers across different society.

coffee shop chain that sells different beverages and snacks to customers across multiple regions.

Data Challenge: The business collects many daily transactions but struggles to identify top-selling products, customer purchase frequency, and seasonal sales trends.

Expected Outcome: Generate insights such as best-performing products per region, customer segments, and revenue trends to support marketing and inventory planning.

And inventory management.

Step 2: Success Criteria

The following measurable goals define the success of the project:

1. Identify the Top 5 products per region and quarter using RANK().

2. Track running monthly sales totals using SUM() OVER().

3. Calculate month-over-month growth with LAG() or LEAD().

4. Classify customers into quartiles using NTILE(4) for segmentation.

5. Compute 3-month moving averages using AVG() OVER() to smooth seasonal fluctuations.

step 6: Results Analysis

Write insights in 3 layers (Descriptive, Diagnostic, Prescriptive).

- ➢ Descriptive: Analysis showed that coffee beans and cappuccinos are consistently top sellers, with Kigali region generating the highest sales. A clear seasonal spike is visible in December.

- ➢ Diagnostic: The high sales in Kigali are likely due to larger customer base and promotional campaigns. Seasonal peaks in December are influenced by holiday demand. Slower months correlate with lower marketing activity.

- ➢ Prescriptive: The business should increase inventory of top products before holiday periods, expand targeted promotions in underperforming regions, and introduce loyalty programs to retain frequent buyers.