Case Study Discussion – Supply Chain Management

a) Find the Shape of the FMCG Table.
   Question: How would you determine the total number of rows and columns in the FMCG dataset?
b) Evaluate the Impact of Warehouse Age on Performance.
   Question: How does the age of a warehouse impact its operational performance, specifically in terms of storage issues reported in the last 3 months?
c) Analyze the Relationship Between Flood-Proof Status and Transport Issues.
   Question: Is there a significant relationship between flood-proof status and the number of transport issues reported in the last year?
d) Evaluate the Impact of Government Certification on Warehouse Performance.
   Question: How does having a government certification impact the performance of warehouses, particularly in terms of breakdowns and storage issues?
e) Determine the Optimal Distance from Hub for Warehouses:
   Question: What is the optimal distance from the hub for warehouses to minimize transport issues, based on the data provided?
f) Identify the Zones with the Most Operational Challenges.
   Question: Which zones face the most operational challenges, considering factors like transport issues, storage problems, and breakdowns?
g) Identify High-Risk Warehouses Based on Breakdown Incidents and Age.
   Question: Which warehouses are at high risk of breakdowns, especially considering their age and the number of breakdown incidents reported in the last 3 months?
h) Examine the Effectiveness of Warehouse Distribution Strategy.
   Question: How effective is the current distribution strategy in each zone, based on the number of distributors connected to warehouses and their respective product weights?
i) Correlation Between Worker Numbers and Warehouse Issues.
   Question: Is there a correlation between the number of workers in a warehouse and the number of storage or breakdown issues reported?
j) Assess the Zone-wise Distribution of Flood Impacted Warehouses.
   Question: Which zones are most affected by flood impacts, and how does this affect their overall operational stability?
k) Calculate the Cumulative Sum of Total Working Years for Each Zone.
   Question: How can you calculate the cumulative sum of total working years for each zone?
l) Rank Warehouses Based on Distance from the Hub.
   Question: How would you rank warehouses based on their distance from the hub?
m) Calculate the Running Total of Product Weight in Tons for Each Zone:
   Question: How can you calculate the running total of product weight in tons for each zone?
n) Rank Warehouses Based on Total Number of Breakdown Incidents.
   Question: How can you rank warehouses based on the total number of breakdown incidents in the last 3 months?
o) Determine the Relation Between Transport Issues and Flood Impact.
   Question: Is there any significant relationship between the number of transport issues and flood impact status of warehouses?
p) Calculate the Running Total of Product Weight in Tons for Each Zone.
   Question: How can you calculate the running total of product weight in tons for each zone?

Window Functions: RANK, DENSE_RANK, LAG, LEAD

q) Rank Warehouses by Product Weight within Each Zone:
Question: How do you rank warehouses based on the product weight they handle within each zone, allowing ties?
r) Determine the Most Efficient Warehouses Using DENSE_RANK.
Question: How can you use DENSE_RANK to find the most efficient warehouses in terms of breakdown incidents within each zone?
s) Calculate the Difference in Storage Issues Using LAG.
Question: How can you use LAG to calculate the difference in storage issues reported between consecutive warehouses within each zone?
t) Compare Current and Next Warehouse's Distance Using LEAD:
Question: How can you compare the distance from the hub of the current warehouse to the next one using LEAD?
u) Calculate Cumulative Total of Product Weight by Zone
Question: How can you calculate the cumulative total of product weight handled by warehouses within each zone?
v) Categorize Warehouses by Product Weight.
Question: How can you categorize warehouses as 'Low', 'Medium', or 'High' based on the amount of product weight they handle?
w) Determine Risk Levels Based on Storage Issues.
Question: How can you determine the risk level of each warehouse based on the number of storage issues reported in the last 3 months?
x) Create a Stored Procedure to Fetch High-Risk Warehouses:
Question: How would you create a stored procedure that returns all warehouses classified as 'High Risk' based on the number of breakdowns and storage issues?
y) Create a Stored Procedure to Calculate Warehouse Efficiency:
Question: How would you create a stored procedure to calculate and return the efficiency of each warehouse based on its product weight and number of distributors?
z) Create a View for Warehouse Overview:
Question: How can you create a view that shows an overview of warehouses, including their location, product weight, and flood-proof status?
aa) Create a View for High-Capacity Warehouses. Question: How would you create a view to display only those warehouses with a product weight greater than 100 tons?