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DMW - Experiment 2

Aim :- To design a data warehouse for a given scenario.

Requirements :- The CEO and the advisor to the board of directors have listed out the following requirements and queries that they need answered:-

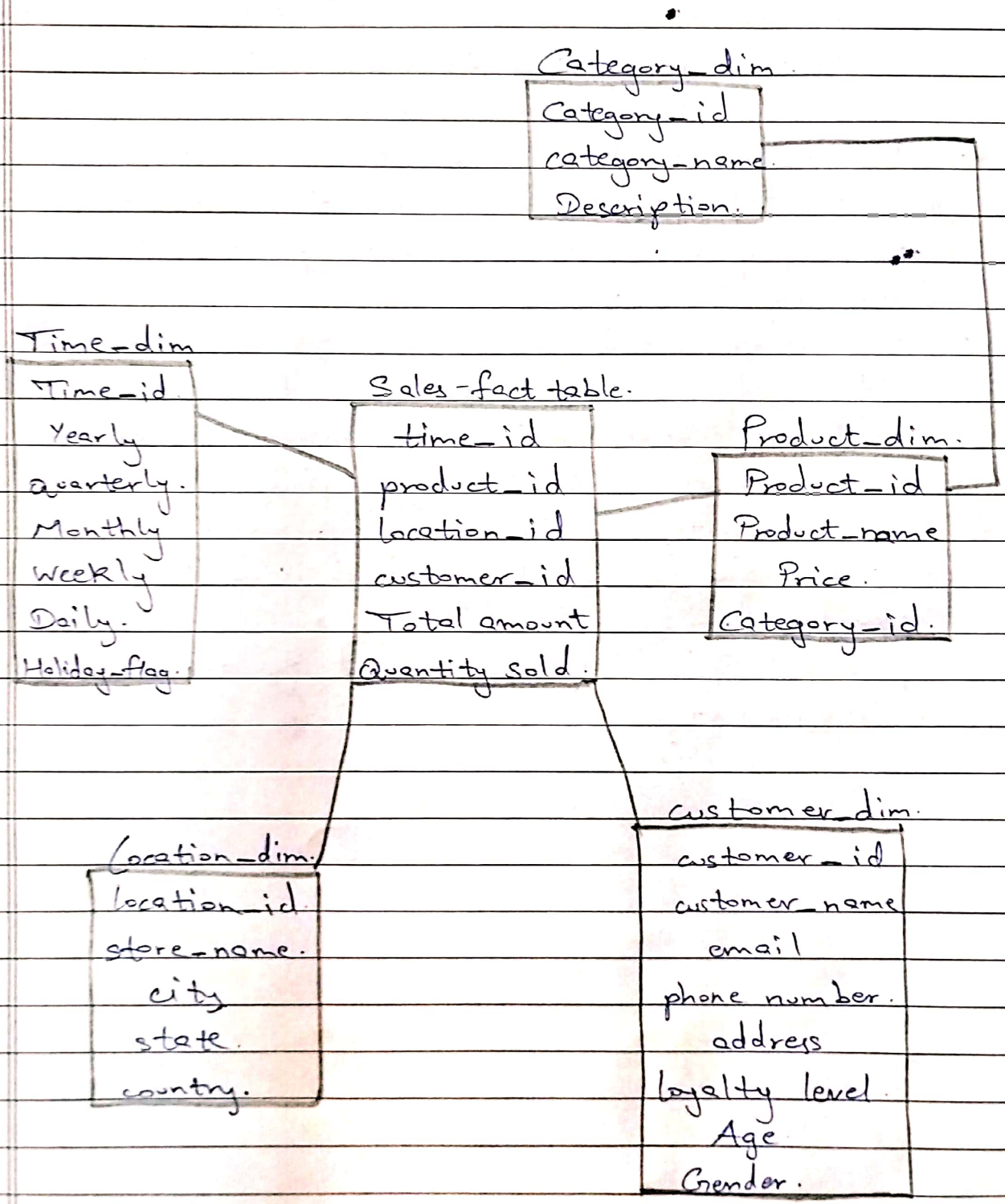
i) What is the total sales revenue for our smartphones in the last quarter?
ii) What is average monthly production volume of our top selling products?
iii) Which region has accounted for the least profit in the third quarter of last year?
iv) What are the most common reasons for product returns? Can we identify any patterns?
v) How have our sales for wearable technology evolved over the last 5 years?
vi) Which store locations have the highest foot traffic on weekends?
vii) Find any anomalies or outliers in our inventory data.
viii) Give a breakdown of warranty claims by product category.
ix) Provide a forecast for the demand of our new product line for the next quarter.
x) What is the lead time for our key components in the supply chain?

Information Package Diagram

Time	Product	Customer	Category.
Time-id	Product_id	Customer_id	Category-id
Yearly	Product_name	Customer_name	Category_name
Quarterly	Price	email	Description.
Monthly	Category-id	phone number	
Weekly		address	
Daily		loyalty level	
HolidayFlag		Age	
		Gender	

Facts: Net profit, quantity sold, cutomer review, product quantity in stock.

Hence, the snowflake schema for sales department is:



Using a snowflake schema in the sales department of an electronics store is justified for the following reasons:

i) Hierarchical Product Categories: Electronics stores often have a complex hierarchy of products, making it essential to efficiently manage the data structure in dimension tables.

ii) Flexible Product attributes: Electronic products come with various attributes that may change overtime. A snowflake schema allows for easy updates and additions to product attributes without disrupting the entire schema.

iii) Store Locations and Regions: Electronics stores usually have multiple locations and operate in different regions. A snowflake schema simplifies the management and analysis of sales data across various geographic areas.

iv) Data integrity and Consistency: A normalized schema ensures data accuracy and consistency, which is crucial in the sales department.

v) Optimized Query Performance and Scalability and maintainability.