**E-Commerce Company Case Study**

**Overview**

As a data analyst at our dynamic e-commerce company, you're tasked with leveraging extensive databases to extract insights that drive our business strategies forward. Your analysis informs departments like marketing and supply chain, providing actionable data to optimize operations, enhance customer satisfaction, and boost sales performance. This case study simulates real-world tasks requiring SQL proficiency to solve practical business problems.

**Business Context**

Your work will directly impact the following verticals:

Customer Insights: Understand customer base to tailor marketing strategies.

Product Analysis: Evaluate product performance to inform stock and sales strategies.

Sales Optimization: Analyze sales data for trends and improvement opportunities.

Inventory Management: Ensure product availability while minimizing excess inventory.

**Datasets Description**

Customers Dataset

customer\_id

name

location

Products Dataset

product\_id

name

category

price

Orders Dataset

order\_id

order\_date

customer\_id

total\_amount

OrderDetails Dataset

order\_id

product\_id

quantity

price\_per\_unit

**Problem Statements**

Problem statement  
You can analyze all the tables by describing their contents.

Problem statement  
Identify the top 3 cities with the highest number of customers to determine key markets for targeted marketing and logistic optimization.

Problem statement  
Determine the distribution of customers by the number of orders placed. This insight will help in segmenting customers into one-time buyers, occasional shoppers, and regular customers for tailored marketing strategies.

Problem statement  
Identify products where the average purchase quantity per order is 2 but with a high total revenue, suggesting premium product trends.

Problem statement  
Among products with an average purchase quantity of two, which ones exhibit the highest total revenue?

Problem statement  
For each product category, calculate the unique number of customers purchasing from it. This will help understand which categories have wider appeal across the customer base.

Problem statement  
As per the last question, Which product category needs more focus as it is in high demand among the customers?

Problem statement  
Analyze the month-on-month percentage change in total sales to identify growth trends.

Problem statement  
Examine how the average order value changes month-on-month. Insights can guide pricing and promotional strategies to enhance order value.

Problem statement  
Based on sales data, identify products with the fastest turnover rates, suggesting high demand and the need for frequent restocking.

Problem statement  
As per last question, Which product\_id has the highest turnover rates and needs to be restocked frequently?

Problem statement  
List products purchased by less than 40% of the customer base, indicating potential mismatches between inventory and customer interest.

Problem statement  
Why might certain products have purchase rates below 40% of the total customer base?

Problem statement  
Evaluate the month-on-month growth rate in the customer base to understand the effectiveness of marketing campaigns and market expansion efforts.

Problem statement  
Identify the months with the highest sales volume, aiding in planning for stock levels, marketing efforts, and staffing in anticipation of peak demand periods.

Problem statement  
As per last question, Which months will require major restocking of product and increased staffs?