SK Mart Case Study Assignment

🏬 About SK Mart

SK Mart is a growing retail chain in Dhaka, Bangladesh. It operates several outlets across major areas such as Gulshan, Dhanmondi, Banani, and Uttara. The company sells daily essentials, groceries, beverages, cleaning products, snacks, and more. Customers can place both **online and offline** orders using a variety of **payment methods** including mobile payments, cards, and cash.

SK Mart also runs regular **marketing campaigns** on platforms like Facebook, Google, SMS, Email, YouTube, TikTok, and offline banners. To optimize its operations and grow its business, SK Mart wants to analyze sales data, customer behavior, product performance, and the impact of marketing efforts.

🎯 Objective

The goal of this assignment is to:

- Understand and design a relational database system from a real-world business scenario.
- Practice **ER modeling**, **SQL analysis** (basic and advanced), and **ETL tasks**.
- Extract insights from data using **SQL**, and present them in **slide format**.
- Tell a clear **data-driven story** behind each analysis.

✅ What You Have to Submit

1. **ER Diagram**
    - Design a complete ER diagram showing all relevant tables and relationships.
    - Must be submitted as a **PDF file**.
    - Use any tool (draw.io, Lucidchart, dbdiagram.io, etc.).

2. **Presentation Slides (PDF or PPT)**
    - Prepare well-decorated slides that answer **all 26 analysis questions** (listed below).
    - Each slide should include:
        - A **question**
        - A **summary** or **story/insight**
        - A **query (if needed)** (simplified, not raw dump)
        - A **table/chart/visual result**
        - An **interpretation** (e.g., "Sales were highest in January due to campaign X.")

📊 Questions to Cover in Slides

Your presentation must address all of the following questions. Avoid just copying SQL and result tables. Instead, build a **story** from the data.

1. What are the top 5 best-selling products by quantity and revenue?
2. Which customers placed the most orders?
3. Who are the top customers based on total spending?
4. Compare online vs. offline sales for each store.
5. Which product categories generate the highest and lowest revenue?
6. Which marketing campaign brought in the most orders?
7. What is the revenue trend over days or months?
8. Which payment method is used most frequently?
9. What are the current inventory levels per store and product?
10. Add a column last_order_date to the customers table.
11. Update each customer's last_order_date based on their latest order.
12. Insert a new promotional campaign and assign it to new orders.
13. Delete products that haven't been sold in the last 6 months.

14. Rank customers by total amount spent.
15. Show the top 3 best-selling products per store.
16. Calculate a running total of daily revenue.
17. Compute a 7-day rolling average of total order amounts.
18. Show the time difference between each customer's consecutive orders.
19. Identify customers who placed two orders on back-to-back days.
20. Classify orders as ‘High’, ‘Medium’, or ‘Low’ value based on amount.
21. Show whether each day’s sales were higher or lower than the previous day.
22. Find customers who placed only one order ever.
23. Find products that were only ordered during marketing campaigns.
24. Find the most popular product among buyers of 'Soybean Oil'.
25. Create a trigger to update last_order_date after a new order.
26. Schedule an update to refresh all last_order_date fields once daily.

📌 **Submission Format**

- er_diagram.pdf — clearly showing all tables and relationships
- skmart_analysis_slides.pdf or .pptx — with visual analysis and insights

Make sure your **slide content is explained visually and verbally**, not just SQL output.