Instructions

For each problem:

- You **must** use at least one of the following (as appropriate to the problem):

    o **Subqueries (correlated or uncorrelated)**

    o **HAVING clause**

    o **JOINs (INNER, LEFT, etc.)**

    o **GROUP BY**

- Avoid writing trivial or hardcoded queries.

- Use meaningful **aliasing** and good indentation.

- Bonus points for using **window functions** where relevant.

- Do **not use CTEs (WITH clause)** unless absolutely necessary.

1. Loyal Electronics Customers

Table: Customers

Column	Type
customer_id	INT
name	VARCHAR

Table: Products

Column	Type
product_id	INT
product_name	VARCHAR
category	VARCHAR

Table: Orders

Column	Type
order_id	INT
customer_id	INT
order_date	DATE

Table: Order_Items

Column	Type
order_item_id	INT
order_id	INT
product_id	INT
quantity	INT

Problem Statement: Find the names of customers who have purchased **all** the products in the `'Electronics'` category.

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2. Above Average Sellers

Table: Products

Column	Type
product_id	INT
product_name	VARCHAR
category	VARCHAR

Table: Order_Items

Column	Type
order_item_id	INT
order_id	INT
product_id	INT
quantity	INT

Problem Statement: For each product category, find the names of products that sold **more units than the average** units sold per product in that category.

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3. Big Spenders

Table: Customers

Column	Type
customer_id	INT
name	VARCHAR

Table: Orders

Column	Type
order_id	INT
customer_id	INT
order_date	DATE

Table: Order_Items

Column	Type
order_item_id	INT
order_id	INT
product_id	INT
quantity	INT
price	DECIMAL

Problem Statement: Find the top 3 customers who spent the most. Total spend is calculated as `quantity * price`.

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4. Product Diversity Champs

Table: Orders

Column	Type
order_id	INT
customer_id	INT
order_date	DATE

Table: Order_Items

Column	Type
order_item_id	INT
order_id	INT
product_id	INT

Problem Statement: Find customer IDs and month (format YYYY-MM) where a customer purchased more than **3 distinct products**.

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5. Unwanted Inventory

Table: Products

Column	Type
product_id	INT
product_name	VARCHAR

Table: Order_Items

Column	Type
order_item_id	INT
order_id	INT
product_id	INT

Problem Statement: Find the names of products that have **never been ordered**.

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6. Category Clashes in Orders

Table: Orders

Column	Type
order_id	INT

Table: Order_Items

Column	Type
order_item_id	INT
order_id	INT
product_id	INT

Table: Products

Column	Type
product_id	INT
category	VARCHAR

Problem Statement: Find order IDs where an order contains more than one product from the **same category**.

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7. Category Bestsellers

Table: Products

Column	Type
product_id	INT
product_name	VARCHAR
category	VARCHAR

Table: Order_Items

Column	Type
order_item_id	INT
order_id	INT
product_id	INT
quantity	INT

Problem Statement: For each category, find the product(s) with the highest total quantity sold.