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Practical exercise (Google BigQuery)

Dataset: **Retail Sales Dataset**

QUESTIONS

1. WHERE Clause

Q1. Filter all transactions that occurred in the year 2023.
Expected output: All columns

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2. Filtering + Conditions

Q2. Display all transactions where the Total Amount is more than the average Total Amount of the entire dataset.
Expected output: All columns

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3. Aggregate Functions

Q3. Calculate the total revenue (sum of Total Amount).
Expected output: Total_Revenue

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4. DISTINCT

Q4. Display all distinct Product Categories in the dataset.
Expected output: Product_Category

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5. GROUP BY

Q5. For each Product Category, calculate the total quantity sold.
Expected output: Product_Category, Total_Quantity

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6. CASE Statement

Q6. Create a column called Age_Group that classifies customers as 'Youth' (<30), 'Adult' (30–59), and 'Senior' (60+).
Expected output: Customer_ID, Age, Age_Group

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7. Conditional Aggregation

Q7. For each Gender, count how many high-value transactions occurred (where Total Amount > 500).
Expected output: Gender, High_Value_Transactions

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8. HAVING Clause

Q8. For each Product Category, show only those categories where the total revenue exceeds 5,000.
Expected output: Product_Category, Total_Revenue

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9. Calculated Fields

Q9. Display a new column called Unit_Cost_Category that labels a transaction as:
– 'Cheap' if Price per Unit < 50
– 'Moderate' if Price per Unit between 50 and 200
– 'Expensive' if Price per Unit > 200
Expected output: Transaction_ID, Price_per_Unit, Unit_Cost_Category

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10. Combining WHERE + CASE

Q10. Display all transactions from customers aged 40 or older and add a column Spending_Level showing 'High' if Total Amount > 1000, otherwise 'Low'.
Expected output: Customer_ID, Age, Total_Amount, Spending_Level