BrightLearn Data Analytics

SQL Exercise: UNION and UNION ALL

Instructions

1. Carefully study the two tables below: ***online_sales*** and ***store_sales***.
2. All questions must be answered **by hand** — do not use SQL software.
3. For each SQL query, **draw or write the expected output table** as it would appear after running the query.
4. Pay special attention to the difference between **UNION** and **UNION ALL**.

Table: online_sales

sale_id	customer_name	amount	sale_date
1	Alice	150	2025-01-12
2	Brian	250	2025-02-05
3	Carol	300	2025-03-10
4	Daniel	220	2025-04-15
5	Emma	180	2025-05-02

Table: store_sales

sale_id	customer_name	amount	sale_date
1	Fiona	200	2025-01-20
2	Brian	250	2025-02-08
3	George	310	2025-03-25
4	Alice	150	2025-04-18
5	Henry	270	2025-05-05

SQL Questions

1. **Unique Customers**
   Write a query to list all **unique customer names** from both online_sales and store_sales.
2. **All Customers (With Duplicates)**
   Write a query to list all customer names from both tables, **including duplicates**.
3. **Compare UNION vs UNION ALL**
   Explain the difference between the number of rows returned by UNION and UNION ALL.
4. **All Sale Dates (With Duplicates)**
   Write a query to show **all sale dates** from both tables using UNION ALL.

5. **Unique Sale Dates**
   Write a query to show **unique sale dates** from both tables using UNION.

6. **High-Value Sales**
   Write a query to list all **unique customer names** who made a sale **above 250**, combining data from both tables.

7. **Combine Sales Data**
   Combine all records (columns: customer_name, amount, sale_date) from both tables using UNION ALL.

8. **Sales Source Label**
   Combine both tables but include an extra column named **source** that shows 'Online' for online_sales and 'Store' for store_sales.

9. **Customers in Both Tables**
   Using UNION ALL, find and list customers who appear **more than once** across both tables.
   (Hint: use GROUP BY and HAVING)

10. **Total Combined Sales**
    Using UNION ALL, combine all sales amounts from both tables and calculate the **total amount of all sales**.