

ANDILE DUBE

Practical 2: SQL Joins Practice

Question 1:

The screenshot shows the SQLBolt interface. On the left, there's a sidebar with 'Work with data' sections like Projects, Ingestion, Transformation, AI & ML, and Monitoring. It also shows '\$391 credits left' and a 'Trial ends in 8 days' message with an 'Upgrade' button. The main area has 'My Workspace' and 'Worksheets' sections. A file named 'Untitled 3.sql' is selected in the worksheets list. The results pane shows the following SQL query and its execution details:

```
--1. INNER JOIN: Orders with Customer and Product Names
---Question:
---List all orders along with the customer name and product name.
---Expected Output Columns:
---- OrderID, OrderDate, CustomerName, ProductName, Quantity
SELECT
    o.OrderID,
    o.OrderDate,
    c.CustomerName,
    p.ProductName,
    o.Quantity
FROM
    Orders o
INNER JOIN
    Customers c ON o.CustomerID = c.CustomerID
INNER JOIN
    Products p ON o.ProductID = p.ProductID;
```

Results (just now) table view shows 4,000 rows processed in 269ms.

This screenshot shows the same SQLBolt interface as above, but with a different result set for the same query. The results pane now displays 4,000 rows from 2 minutes ago, with the following table structure:

#	ORDERID	ORDERDATE	CUSTOMERNAME	PRODUCTNAME	QUANTITY
1	1	2023-06-10	Customer_1251	Product_2014	10
2	2	2023-12-07	Customer_1236	Product_2004	5
3	3	2024-10-26	Customer_1170	Product_2171	9
4	4	2023-02-17	Customer_1344	Product_2007	2

Question 2:

The screenshot shows the Snowflake SQL Bolt interface. On the left, there's a sidebar with 'Work with data' sections for Projects, Ingestion, Transformation, AI & ML, and Monitoring. A trial credit alert says '\$391 credits left' and 'Trial ends in 8 days'. Below it, user information shows 'Andile Dube ACCOUNTADMIN'. The main area has a 'My Workspace' file browser with files like Untitled 1.sql, Untitled 2.sql, Untitled 3.sql, and Untitled.sql. To the right is the 'Results' tab for 'Untitled 3.sql', showing the following SQL query:

```
17   products p ON o.productID = p.productID;
18   --2. INNER JOIN: Customers Who Placed Orders
19   ---Question:
20   ---Which customers have placed at least one order?
21   ---Expected Output Columns:
22   ---- CustomerID, CustomerName, Country, OrderID, OrderDate
23
24   SELECT
25     c.CustomerID,
26     c.CustomerName,
27     c.Country,
28     o.OrderID,
29     o.OrderDate
30   FROM
31   Orders o
32   INNER JOIN
33   Customers c ON o.CustomerID = c.CustomerID;
34
```

The screenshot shows the same interface after the query has been run. The 'Results' tab now displays the output of the query. The results table has columns: CUSTOMERID, CUSTOMERNAME, COUNTRY, ORDERID, and ORDERDATE. There are 4,000 rows returned in 67ms. The data is as follows:

CustomerID	CustomerName	Country	OrderID	OrderDate
1251	Customer_1251	Germany	1	2023-06-10
1236	Customer_1236	Australia	2	2023-12-07
1170	Customer_1170	Germany	3	2024-10-26
1344	Customer_1344	Canada	4	2023-02-17

Question 3:

The screenshot shows the Snowflake SQLBolt interface. On the left, there's a sidebar with 'Work with data' sections for Projects, Ingestion, Transformation, AI & ML, and Monitoring. A message indicates '\$391 credits left' and 'Trial ends in 8 days'. Below this is an 'Upgrade' button. On the right, the main area has a 'My Workspace' sidebar with files like Untitled 1.sql, Untitled 2.sql, Untitled 3.sql (which is selected), and Untitled.sql. The 'Results' tab is active, showing the query:

```
34 ---Question:  
35 ---List all customers and any orders they might have placed. Include customers  
---who have  
36 ---not placed any orders.  
37 ---Expected Output Columns:  
38 ---- CustomerID, CustomerName, Country, OrderID, OrderDate, ProductID, Quantity  
39  
40 SELECT  
41 c.CustomerID,  
42 c.CustomerName,  
43 c.Country,  
44 o.OrderID,  
45 o.OrderDate,  
46 o.ProductID,  
47 o.Quantity  
48 FROM  
49 Customers c  
50 LEFT JOIN  
51 Orders o ON c.CustomerID = o.CustomerID;  
Ctrl+I to generate
```

The screenshot shows the same interface as above, but the results are now displayed in a table format. The table has columns: #, CUSTOMERID, CUSTOMERNAME, COUNTRY, ORDERID, ORDERDATE, and PRODUCTID. The data is as follows:

#	CUSTOMERID	CUSTOMERNAME	COUNTRY	ORDERID	ORDERDATE	PRODUCTID
1	1251	Customer_1251	Germany	1	2023-06-10	
2	1236	Customer_1236	Australia	2	2023-12-07	
3	1170	Customer_1170	Germany	3	2024-10-26	
4	1344	Customer_1344	Canada	4	2023-02-17	

Question 4:

The screenshot shows the Snowflake SQL Bolt interface. On the left, there's a sidebar with 'Work with data' sections for Projects, Ingestion, Transformation, AI & ML, and Monitoring. It also displays credit information (\$391 credits left, trial ends in 8 days) and an 'Upgrade' button. The main area has a 'My Workspace' file browser with files like Untitled 1.sql, Untitled 2.sql, Untitled 3.sql, and Untitled.sql. To the right is the 'Results' tab for the query 'Untitled 3.sql' run at 2025-10-20 6:14pm. The query code is:

```

4/   FROM
48     Customers c
49     LEFT JOIN
50       Orders o ON c.CustomerID = o.CustomerID;
51     ---4. LEFT JOIN: Product Order Count
52     ---Question:
53     ---List all products and how many times each was ordered (if any).
54     ---Expected Output Columns:
55     ---- ProductID, ProductName, TotalOrders
56     ---(TotalOrders is the count of how many times the product appears in orders)
57     SELECT
58       p.ProductID,
59       p.ProductName,
60       COUNT(o.OrderID) AS TotalOrders
61     FROM
62       Products p
63     LEFT JOIN
64       Orders o ON p.ProductID = o.ProductID
65     GROUP BY
66       p.ProductID, p.ProductName;

```

The screenshot shows the same Snowflake SQL Bolt interface as above, but the 'Results' tab now displays the output of the query. The results table has columns: PRODUCTID, PRODUCTNAME, and TOTALORDERS. The data is:

PRODUCTID	PRODUCTNAME	TOTALORDERS
2171	Product_2171	15
2177	Product_2177	20
2073	Product_2073	19
2089	Product_2089	20

Question 5:

The screenshot shows the Snowflake SQL Bolt interface. On the left, there's a sidebar with 'Work with data' sections like Projects, Ingestion, Transformation, AI & ML, and Monitoring. A message says '\$391 credits left' and 'Trial ends in 8 days'. Below that is an 'Upgrade' button. The main area has tabs for 'My Workspace', 'Results', and 'Database Explorer'. The 'Results' tab shows the query:

```

65 GROUP BY
66   p.ProductID, p.ProductName;
67   -- 5. RIGHT JOIN: Orders with Product Info (Include Products Not Ordered)
68   ---Question:
69   ---Find all orders along with product details, including any products that
70   might not have
71   ---been ordered.
72   ---Expected Output Columns:
73   ---- OrderID, OrderDate, ProductID, ProductName, Price, Quantity
74
75   SELECT
76     o.OrderID,
77     o.OrderDate,
78     p.ProductID,
79     p.ProductName,
80     p.Price,
81     p.Quantity
82   FROM
83     Orders o
84     RIGHT JOIN
85       Products p ON o.ProductID = p.ProductID;

```

The screenshot shows the same interface as above, but the results table is now populated with data. The table has columns: ORDERID, ORDERDATE, PRODUCTID, PRODUCTNAME, PRICE, and QUANTITY. The data is as follows:

ORDERID	ORDERDATE	PRODUCTID	PRODUCTNAME	PRICE	QUANTITY
1	2023-06-10	2014	Product_2014	522	10
2	2023-12-07	2004	Product_2004	1996	5
3	2024-10-26	2171	Product_2171	76	9
4	2023-02-17	2007	Product_2007	156	2

Question 6:

The screenshot shows the Snowflake SQLBolt interface. On the left, there's a sidebar with 'Work with data' sections like Projects, Ingestion, Transformation, AI & ML, and Monitoring. A message says '\$391 credits left' and 'Trial ends in 8 days'. Below that is an 'Upgrade' button and user info for 'Andile Dube ACCOUNTADMIN'. The main area has tabs for 'My Workspace', 'Results', and 'Database Explorer'. The 'Results' tab shows a query titled 'Untitled 3.sql' from 'My Workspace' at '2025-10-20 6:14pm'. The code is:

```
84 ---6. RIGHT JOIN: Customer Info with Orders (Include ALL Customers)
85 ---Question:
86 ---Which customers have made orders, and include customers even if they have
87 never
88 ---placed an order.
89 ---Expected Output Columns:
90 ---- CustomerID, CustomerName, Country, OrderID, OrderDate, ProductID,
91 Quantity
92 SELECT
93   Customers.CustomerID,
94   Customers.CustomerName,
95   Customers.Country,
96   Orders.OrderID,
97   Orders.OrderDate,
98   Orders.ProductID,
99   Orders.Quantity
100 FROM
101   Customers
102 LEFT JOIN
103   Orders ON Customers.CustomerID = Orders.CustomerID;
```

This screenshot is identical to the one above, but the 'Results' tab is expanded to show the query results. It says 'Results (1 minute ago)' and displays a table with 4,000 rows. The table has columns: ERID, CUSTOMERNAME, COUNTRY, ORDERID, ORDERDATE, and PRODUCTID. The data is as follows:

ERID	CUSTOMERNAME	COUNTRY	ORDERID	ORDERDATE	PRODUCTID
1	Customer_1251	Germany	1	2023-06-10	2014
2	Customer_1236	Australia	2	2023-12-07	2004
3	Customer_1170	Germany	3	2024-10-26	2171
4	Customer_1344	Canada	4	2023-02-17	2007

Question 7:

The screenshot shows the Snowflake SQLBolt interface. On the left, there's a sidebar with 'Work with data' sections like Projects, Ingestion, Transformation, AI & ML, and Monitoring. A message says '\$391 credits left' and 'Trial ends in 8 days'. Below that is an 'Upgrade' button. The main area has tabs for 'My Workspace', 'Results', and 'Database Explorer'. The 'Results' tab shows a query titled 'Untitled 3.sql' from 'My Workspace' at '2025-10-20 6:14pm'. The code is:

```
102 --- 7. FULL OUTER JOIN: ALL Customers and ALL Orders
103 ---Question:
104 ---List all customers and orders, showing NULLs where customers have not
105 ordered or
106 ---where orders have no customer info.
107 ---Expected Output Columns:
108 ---- CustomerID, CustomerName, Country, OrderID, OrderDate, ProductID,
109 Quantity
110 SELECT
111 COALESCE(Customers.CustomerID, Orders.CustomerID) AS CustomerID,
112 Customers.CustomerName,
113 Customers.Country,
114 Orders.OrderID,
115 Orders.OrderDate,
116 Orders.ProductID,
117 Orders.Quantity
118 FROM
119 Customers
120 FULL OUTER JOIN
121 Orders ON Customers.CustomerID = Orders.CustomerID;
```

This screenshot is identical to the one above, but the results table is now visible. It shows the output of the query:

#	CUSTOMERID	CUSTOMERNAME	COUNTRY	ORDERID	ORDERDATE	PRODUCTID
1	1251	Customer_1251	Germany	1	2023-06-10	
2	1236	Customer_1236	Australia	2	2023-12-07	
3	1170	Customer_1170	Germany	3	2024-10-26	
4	1344	Customer_1344	Canada	4	2023-02-17	

Question 8:

The screenshot shows the SQLBolt interface. On the left, there's a sidebar with 'Work with data' sections like Projects, Ingestion, Transformation, AI & ML, and Monitoring. A message says '\$391 credits left' and 'Trial ends in 8 days'. Below that is an 'Upgrade' button. On the right, there are three main panels: 'My Workspace' (containing files like Untitled 1.sql, Untitled 2.sql, Untitled 3.sql, and Untitled.sql), 'Results' (showing the execution history for Untitled 3.sql on 2025-10-20 at 6:14pm), and a code editor pane where the following SQL query is written:

```
120 ---8. FULL OUTER JOIN: All Products and Orders
121 ---Question:
122 ---List all products and orders, showing NULLs where products were never
123 ordered or
124 ---orders are missing product info.
125 ---Expected Output Columns:
126 ---- ProductID, ProductName, Price, OrderID, OrderDate, CustomerID, Quantity
127
128     SELECT
129         COALESCE(Products.ProductID, Orders.ProductID) AS ProductID,
130         Products.ProductName,
131         Products.Price,
132         Orders.OrderID,
133         Orders.OrderDate,
134         Orders.CustomerID,
135         Orders.Quantity
136
137     FROM
138         Products
139             FULL OUTER JOIN
140                 Orders ON Products.ProductID = Orders.ProductID;
```

The screenshot shows the SQLBolt interface with the same layout as the first one. The code editor pane now displays the results of the executed query. The results table has the following structure and data:

ID	ProductID	ProductName	Price	OrderID	OrderDate	CustomerID
1	014	Product_2014	522	1	2023-06-10	1251
2	004	Product_2004	1996	2	2023-12-07	1236
3	171	Product_2171	76	3	2024-10-26	1170
4	007	Product_2007	156	4	2023-02-17	1344