Airline Database – JOIN Queries
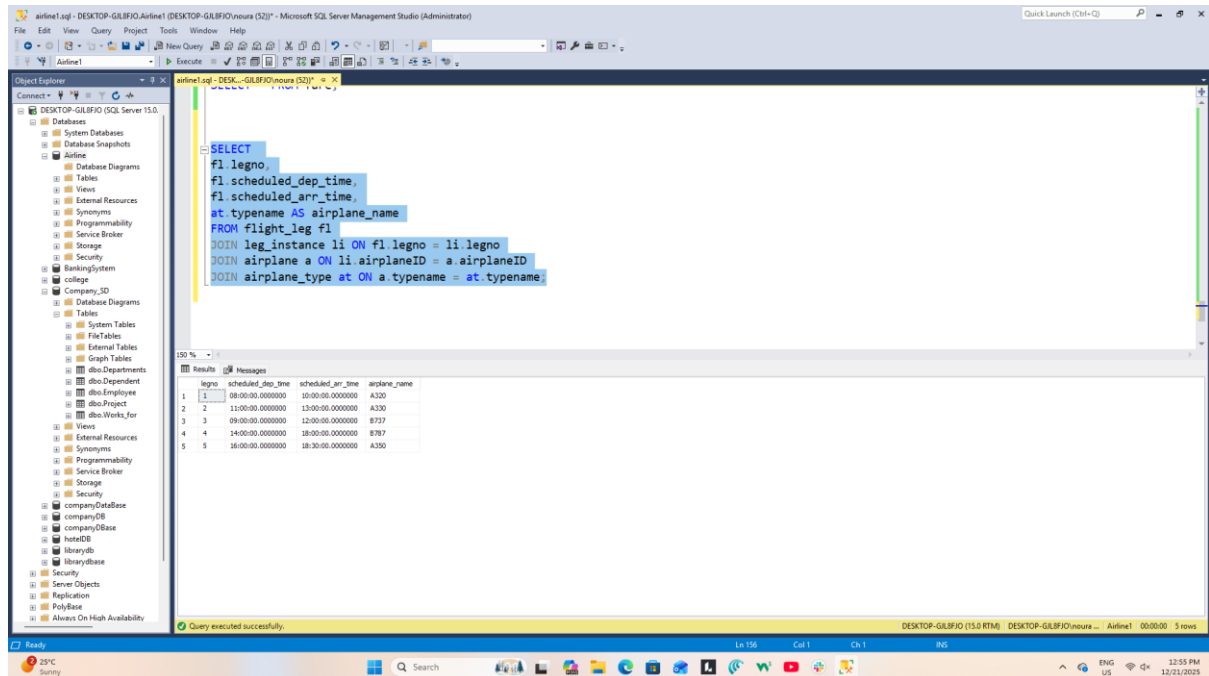
1. Display each flight leg's ID, schedule, and the name of the airplane assigned to it.
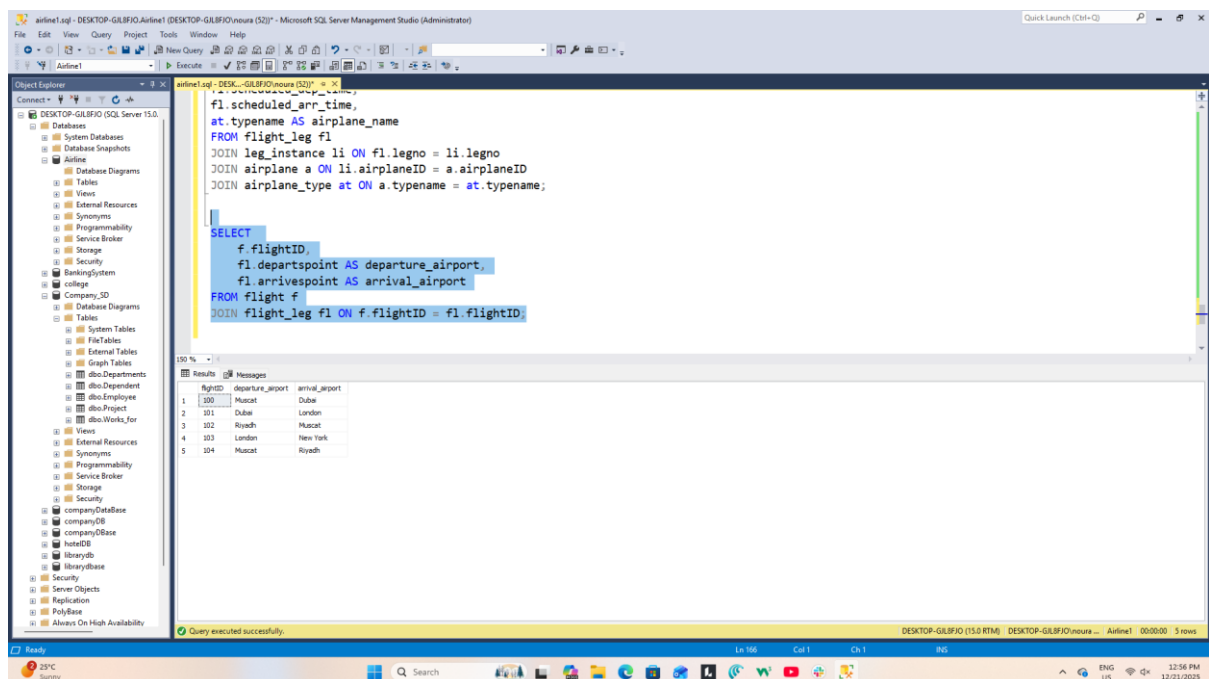


```sql
SELECT
    fl.legno,
    fl.scheduled_dep_time,
    fl.scheduled_arr_time,
    at.typename AS airplane_name
FROM flight_leg fl
JOIN leg_instance li ON fl.legno = li.legno
JOIN airplane a ON li.airplaneID = a.airplaneID
JOIN airplane_type at ON a.typename = at.typename;
```

	legno	scheduled_dep_time	scheduled_arr_time	airplane_name
1	1	08:00:00.0000000	10:00:00.0000000	A320
2	2	11:00:00.0000000	13:00:00.0000000	A330
3	3	09:00:00.0000000	12:00:00.0000000	B737
4	4	14:00:00.0000000	18:00:00.0000000	B787
5	5	16:00:00.0000000	18:30:00.0000000	A350

2. Display all flight numbers and the names of the departure and arrival airports.


```sql
    fl.scheduled_arr_time,
    at.typename AS airplane_name
FROM flight_leg fl
JOIN leg_instance li ON fl.legno = li.legno
JOIN airplane a ON li.airplaneID = a.airplaneID
JOIN airplane_type at ON a.typename = at.typename;


SELECT
    f.flightID,
    fl.departspoint AS departure_airport,
    fl.arrivespoint AS arrival_airport
FROM flight f
JOIN flight_leg fl ON f.flightID = fl.flightID;
```

	flightID	departure_airport	arrival_airport
1	100	Muscat	Dubai
2	101	Dubai	London
3	102	Riyadh	Muscat
4	103	London	New York
5	104	Muscat	Riyadh

3. Display all reservation data with the name and phone of the customer who made each booking.

4. Display IDs and locations of flights departing from ' ('Dubai', 'Muscat')

5. Display full data of flights whose names start with 'A'.

```sql
SELECT DISTINCT
    f.flightID,
    fl.departspoint
FROM flight f
JOIN flight_leg fl ON f.flightID = fl.flightID
WHERE fl.departspoint IN ('Dubai', 'Muscat');


SELECT *
FROM flight
WHERE airline LIKE 'A%';
```

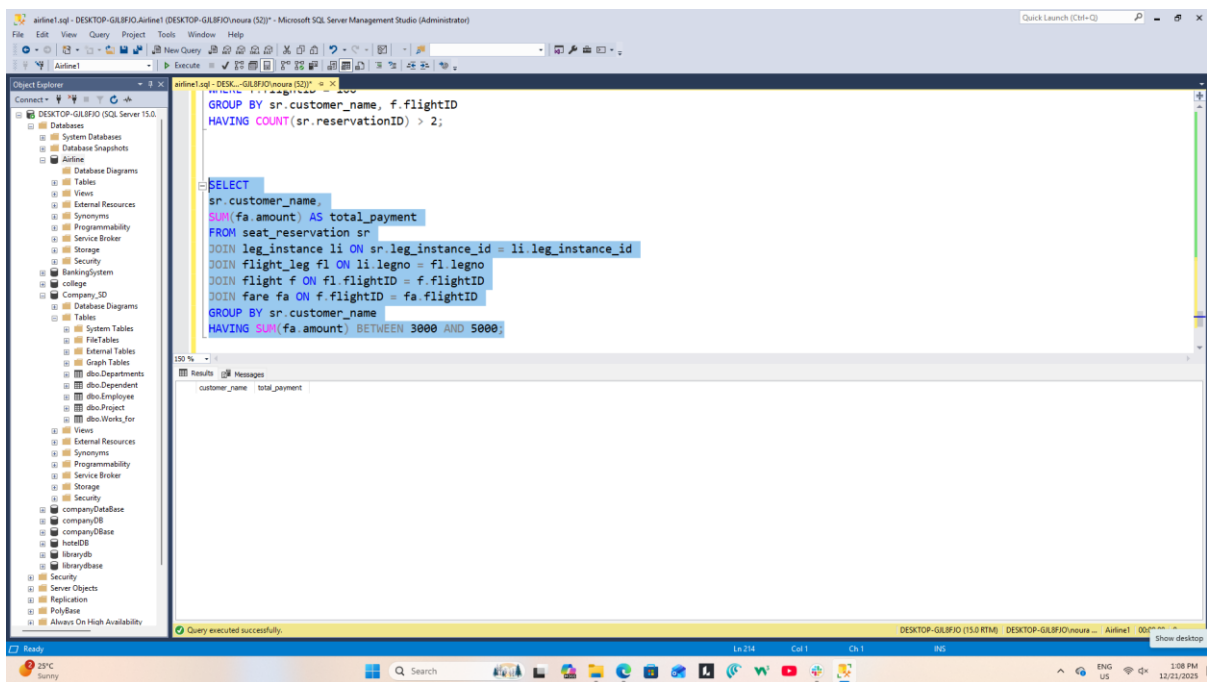| flightID	airline	weekdays	restrictions
104	American Airlines	Daily	Visa required
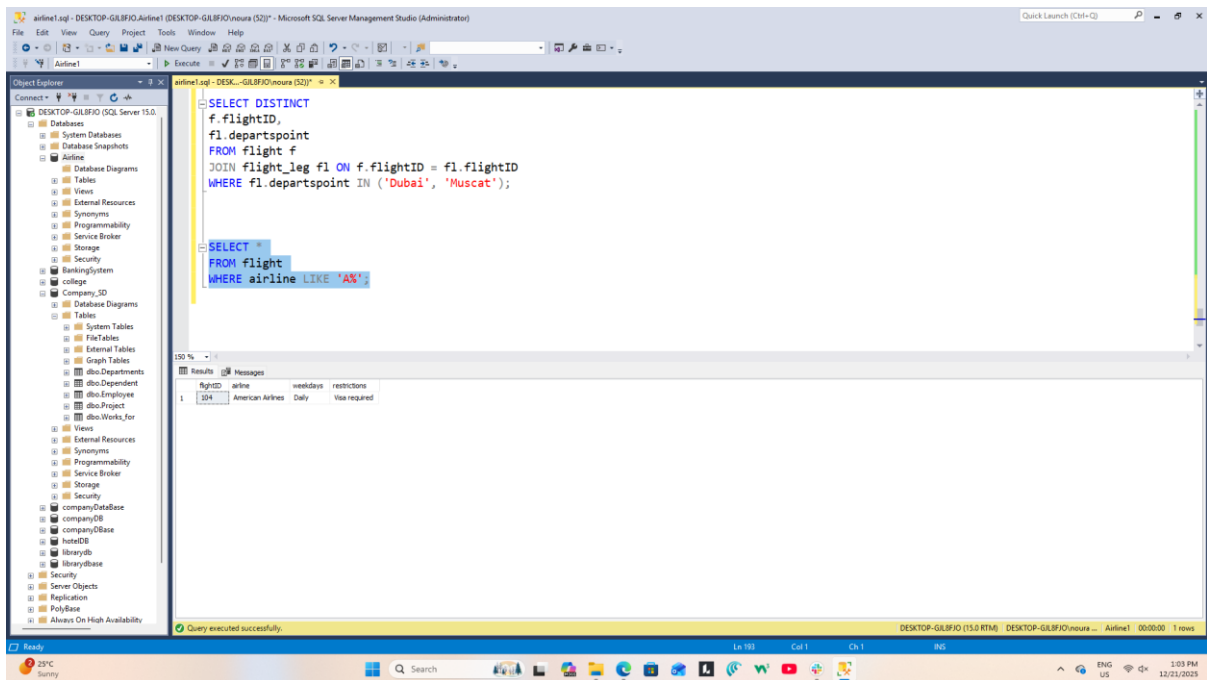
6. List customers who have bookings with total payment between 3000 and 5000


```sql
    GROUP BY sr.customer_name, f.flightID
    HAVING COUNT(sr.reservationID) > 2;


SELECT
    sr.customer_name,
    SUM(fa.amount) AS total_payment
FROM seat_reservation sr
JOIN leg_instance li ON sr.leg_instance_id = li.leg_instance_id
JOIN flight_leg fl ON li.legno = fl.legno
JOIN flight f ON fl.flightID = f.flightID
JOIN fare fa ON f.flightID = fa.flightID
GROUP BY sr.customer_name
HAVING SUM(fa.amount) BETWEEN 3000 AND 5000;
```

customer_name	total_payment

7. Retrieve all passengers on 'Flight 110' who booked more than 2 seats.

```sql
SELECT
sr.customer_name,
COUNT(sr.reservationID) AS seats_booked,
f.flightID
FROM seat_reservation sr
JOIN leg_instance li ON sr.leg_instance_id = li.leg_instance_id
JOIN flight_leg fl ON li.legno = fl.legno
JOIN flight f ON fl.flightID = f.flightID
WHERE f.flightID = 100
GROUP BY sr.customer_name, f.flightID
HAVING COUNT(sr.reservationID) > 2;
```
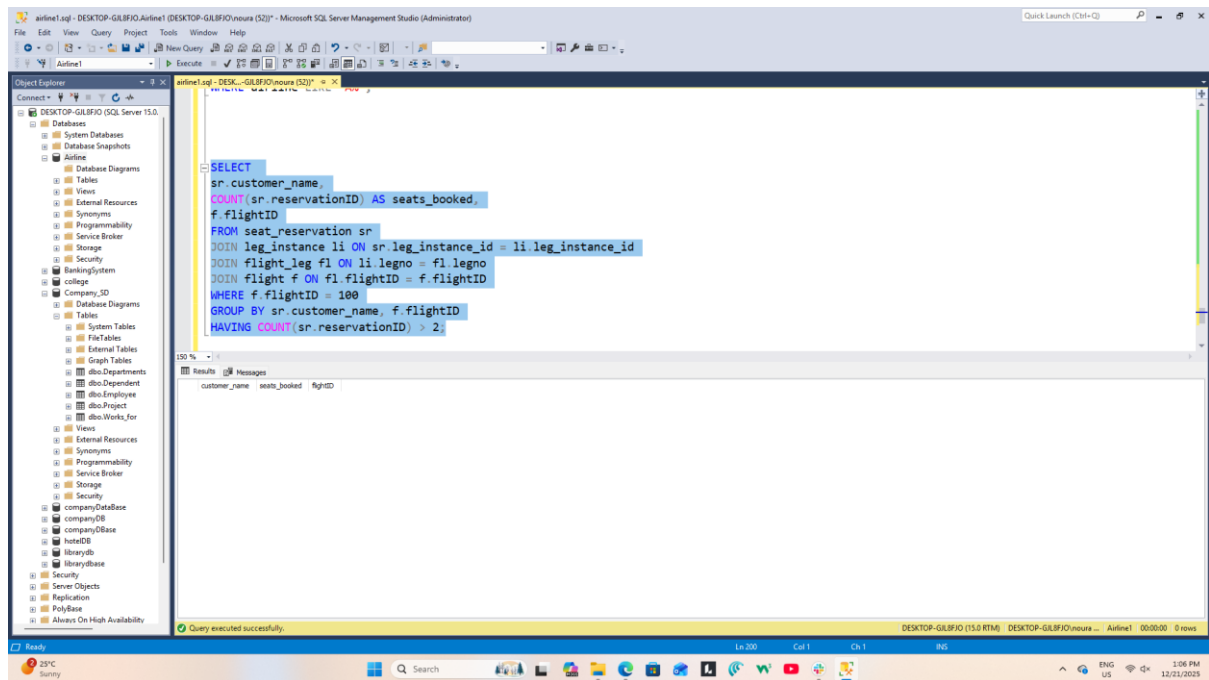
8. Find names of passengers whose booking was handled by agent "Youssef Hamed".

This query cannot be implemented using the current database schema,

because there is no table or column containing agent information.

9. Display each passenger's name and the flights they booked, ordered by flight date.


```sql
JOIN flight f ON f.flightID = f.flightID
JOIN fare fa ON f.flightID = fa.flightID
GROUP BY sr.customer_name
HAVING SUM(fa.amount) BETWEEN 3000 AND 5000;


SELECT
    sr.customer_name,
    f.flightID,
    li.flight_leg_date
FROM seat_reservation sr
JOIN leg_instance li ON sr.leg_instance_id = li.leg_instance_id
JOIN flight_leg fl ON li.legno = fl.legno
JOIN flight f ON fl.flightID = f.flightID
ORDER BY li.flight_leg_date;
```
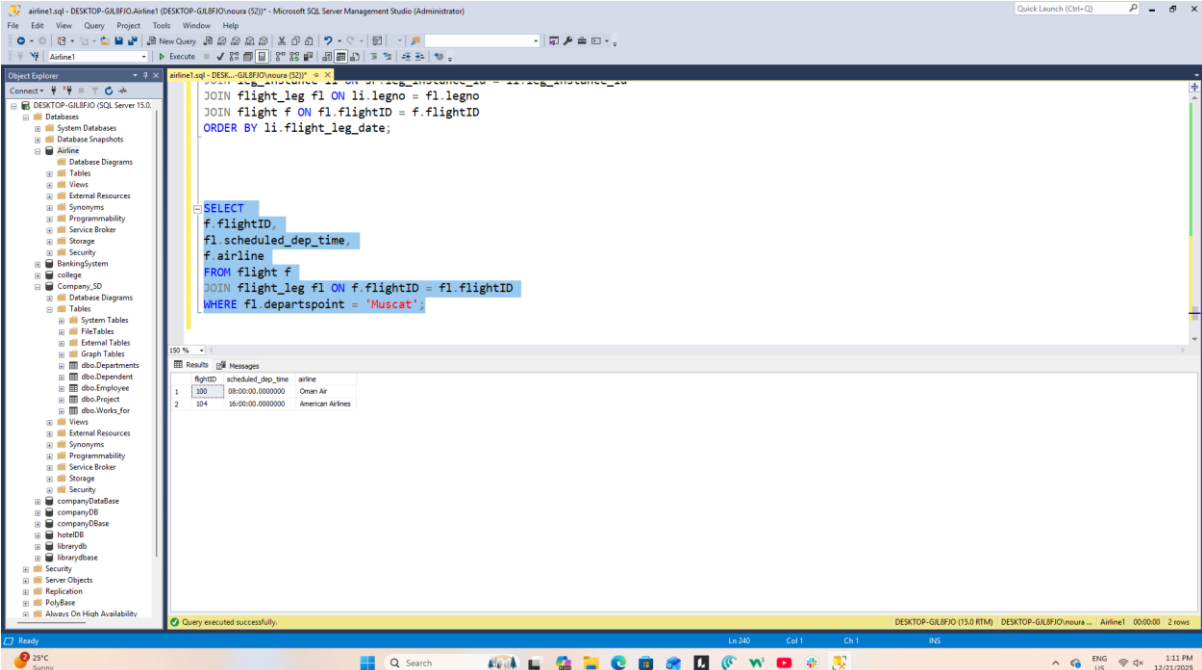
	customer_name	flightID	flight_leg_date
1	Ahmed Ali	100	2025-01-10
2	Fatma Said	101	2025-01-11
3	Salim Khan	102	2025-01-12
4	Aisha Noor	103	2025-01-13
5	John Smith	104	2025-01-14

10. For each flight departing from ' Muscat ', display the flight number, departure time, and airline name.


```sql
JOIN flight_leg fl ON li.legno = fl.legno
JOIN flight f ON fl.flightID = f.flightID
ORDER BY li.flight_leg_date;


SELECT
    f.flightID,
    fl.scheduled_dep_time,
    f.airline
FROM flight f
JOIN flight_leg fl ON f.flightID = fl.flightID
WHERE fl.departspoint = 'Muscat';
```
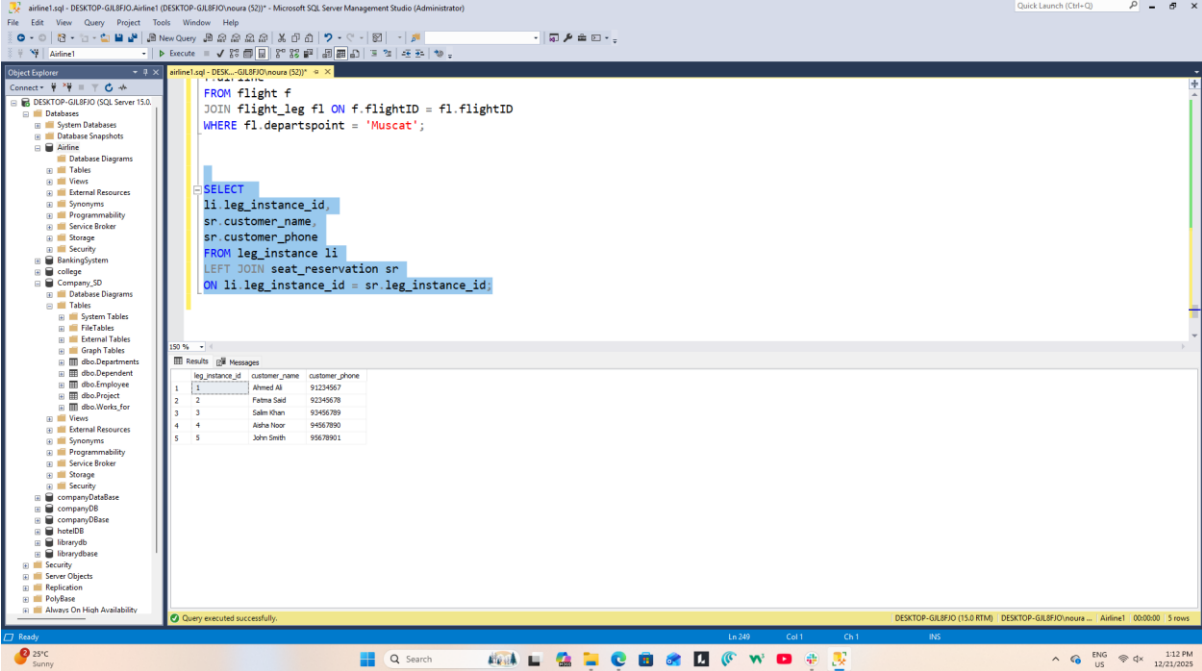
	flightID	scheduled_dep_time	airline
1	100	08:00:00.0000000	Oman Air
2	104	16:00:00.0000000	American Airlines

11. Display all staff members who are assigned as supervisors for flights.

This query cannot be implemented using the current database schema,

because there is no table or column containing staff or supervisor information.

12. Display all bookings and their related passengers, even if some bookings are unpaid.