

# Lab-8

1

The screenshot shows the pgAdmin 4 interface with a query editor window open. The query is a CREATE VIEW statement for 'flight\_details'. The view selects various columns from the 'flights' table and joins them with 'airline' and 'airport' tables. The status bar at the bottom indicates the query was successful and returned 0 rows.

```
1 CREATE VIEW flight_details AS
2 SELECT
3     f.flight_id,
4     f.flight_no,
5     f.scheduled_departure,
6     f.scheduled_arrival,
7     f.actual_departure,
8     f.actual_arrival,
9     f.status,
10    f.departing_gate,
11    f.arriving_gate,
12    al.airline_code,
13    al.airline_name,
14    al.airline_country,
15    dep_airport.airport_name AS departure_airport_name,
16    dep_airport.city AS departure_city,
17    dep_airport.country AS departure_country,
18    arr_airport.airport_name AS arrival_airport_name,
19    arr_airport.city AS arrival_city,
20    arr_airport.country AS arrival_country,
21    DATE(f.scheduled_departure) AS departure_date
22 FROM flights f
23 JOIN airline al ON f.airline_id = al.airline_id
24 JOIN airport dep_airport ON f.departure_airport_id = dep_airport.airport_id
25 JOIN airport arr_airport ON f.arrival_airport_id = arr_airport.airport_id;
```

Query returned successfully in 65 msec.

Total rows: 0 Query complete 00:00:00.065

The screenshot shows the pgAdmin 4 interface with a query editor window open. The query is a SELECT statement that filters the 'flight\_details' view for flights scheduled on '2024-01-15'. The status bar at the bottom indicates the query was successful and returned 0 rows. A Snipping Tool window is visible in the foreground, indicating a screenshot was taken.

```
1 SELECT * FROM flight_details WHERE departure_date = '2024-01-15';
```

Query returned successfully in 65 msec.

Total rows: 0 Query complete 00:00:00.131

CREATE VIEW flight\_details AS

**SELECT**

**f.flight\_id,**

**f.flight\_no,**

**f.scheduled\_departure,**

**f.scheduled\_arrival,**

**f.actual\_departure,**

**f.actual\_arrival,**

**f.status,**

**f.departing\_gate,**

**f.arriving\_gate,**

**al.airline\_code,**

**al.airline\_name,**

**al.airline\_country,**

**dep\_airport.airport\_name AS  
departure\_airport\_name,**

**dep\_airport.city AS departure\_city,**

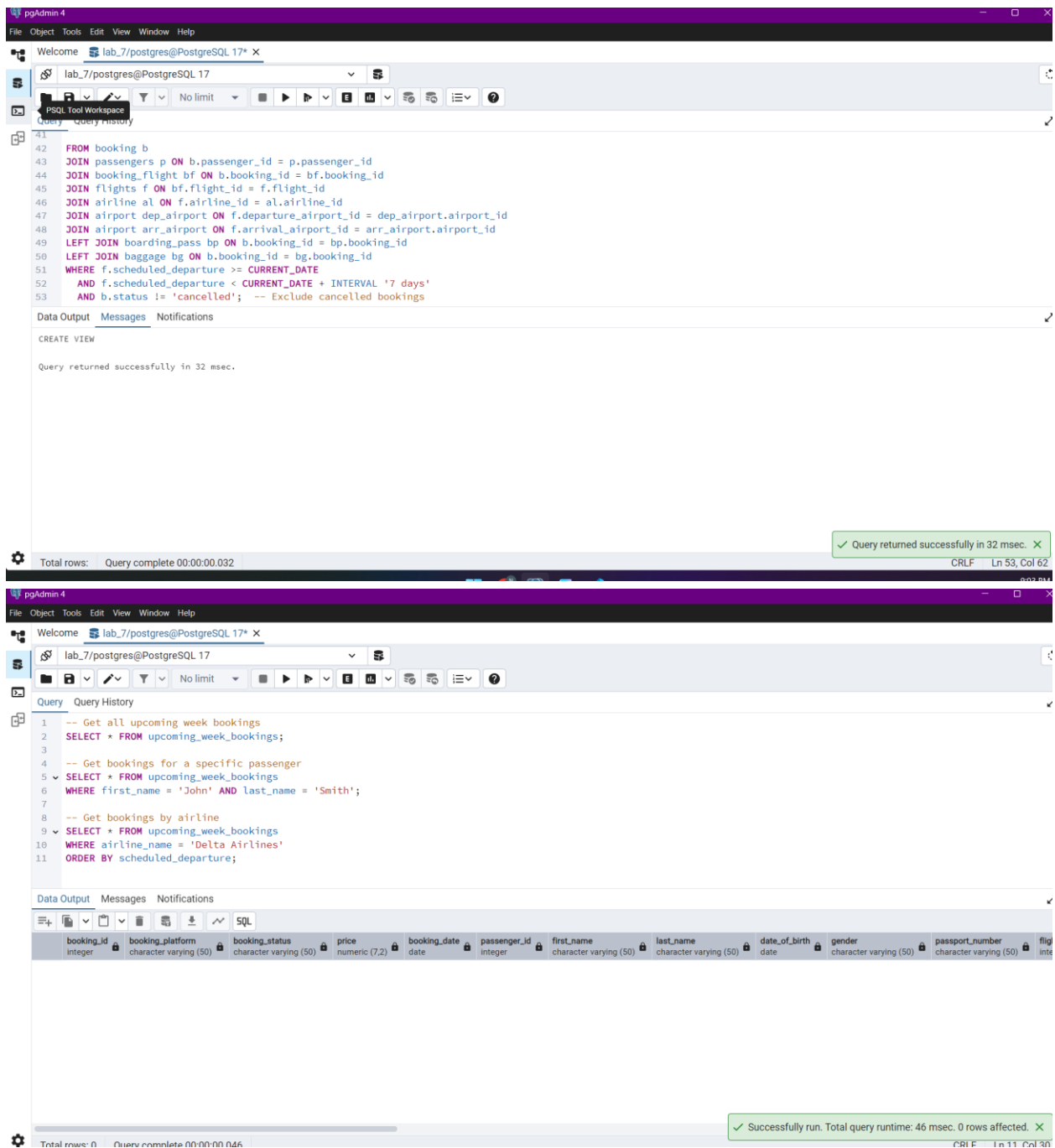
**dep\_airport.country AS departure\_country,**

**arr\_airport.airport\_name AS  
arrival\_airport\_name,**

```
arr_airport.city AS arrival_city,  
arr_airport.country AS arrival_country,  
DATE(f.scheduled_departure) AS  
departure_date  
FROM flights f  
JOIN airline al ON f.airline_id = al.airline_id  
JOIN airport dep_airport ON  
f.departure_airport_id = dep_airport.airport_id  
JOIN airport arr_airport ON f.arrival_airport_id =  
arr_airport.airport_id;
```

```
SELECT * FROM flight_details WHERE  
departure_date = '2024-01-15';
```

2



**CREATE VIEW upcoming\_week\_bookings AS  
SELECT**

**b.booking\_id,**

**b.booking\_platform,**

**b.status AS booking\_status,**  
**b.price,**  
**b.created\_at AS booking\_date,**

**p.passenger\_id,**  
**p.first\_name,**  
**p.last\_name,**  
**p.date\_of\_birth,**  
**p.gender,**  
**p.passport\_number,**

**f.flight\_id,**  
**f.flight\_no,**  
**f.scheduled\_departure,**  
**f.scheduled\_arrival,**  
**f.actual\_departure,**  
**f.actual\_arrival,**  
**f.status AS flight\_status,**  
**f.departing\_gate,**

**f.arriving\_gate,**

**al.airline\_code,**

**al.airline\_name,**

**dep\_airport.airport\_name AS  
departure\_airport\_name,**

**dep\_airport.city AS departure\_city,**

**dep\_airport.country AS departure\_country,**

**arr\_airport.airport\_name AS  
arrival\_airport\_name,**

**arr\_airport.city AS arrival\_city,**

**arr\_airport.country AS arrival\_country,**

**bp.seat,**

**bp.boarding\_time,**

**bg.weight\_in\_kg AS baggage\_weight**

**FROM booking b**  
**JOIN passengers p ON b.passenger\_id =**  
**p.passenger\_id**  
**JOIN booking\_flight bf ON b.booking\_id =**  
**bf.booking\_id**  
**JOIN flights f ON bf.flight\_id = f.flight\_id**  
**JOIN airline al ON f.airline\_id = al.airline\_id**  
**JOIN airport dep\_airport ON**  
**f.departure\_airport\_id = dep\_airport.airport\_id**  
**JOIN airport arr\_airport ON f.arrival\_airport\_id =**  
**arr\_airport.airport\_id**  
**LEFT JOIN boarding\_pass bp ON b.booking\_id =**  
**bp.booking\_id**  
**LEFT JOIN baggage bg ON b.booking\_id =**  
**bg.booking\_id**  
**WHERE f.scheduled\_departure >=**  
**CURRENT\_DATE**  
**AND f.scheduled\_departure < CURRENT\_DATE**  
**+ INTERVAL '7 days'**

**AND b.status != 'cancelled'; -- Exclude  
cancelled bookings**

**SELECT \* FROM upcoming\_week\_bookings;**

**SELECT \* FROM upcoming\_week\_bookings  
WHERE first\_name = 'John' AND last\_name =  
'Smith';**

**SELECT \* FROM upcoming\_week\_bookings  
WHERE airline\_name = 'Delta Airlines'  
ORDER BY scheduled\_departure;**



3

The first screenshot shows a SQL query in pgAdmin 4. The query is:

```
1 SELECT * FROM top_5_popular_routes;
2
3
4
5 SELECT
6   rank,
7   departure_city || ' to ' || arrival_city AS route,
8   total_bookings,
9   average_booking_price
10  FROM top_5_popular_routes;
11
12 SELECT * FROM top_5_popular_routes
13 WHERE departure_city = 'New York' AND arrival_city = 'Los Angeles';
```

The results are displayed in a table with the following columns: rank (bigint), total\_bookings (bigint), departure\_city (character varying (50)), departure\_airport (character varying (50)), arrival\_city (character varying (50)), arrival\_airport (character varying (50)), departure\_country (character varying (50)), arrival\_country (character varying (50)), airline\_name (character varying (50)), number\_of\_flights (bigint), and average\_booking\_price (numeric). The status bar indicates: Total rows: 0, Query complete 00:00:00.105, Successfully run. Total query runtime: 105 msec. 0 rows affected.

The second screenshot shows the same pgAdmin 4 interface with a different SQL query:

```
1 CREATE VIEW top_5_popular_routes AS
2 SELECT
3   ROW_NUMBER() OVER (ORDER BY COUNT(b.booking_id) DESC) AS rank,
4   COUNT(b.booking_id) AS total_bookings,
5   dep_airport.city AS departure_city,
6   dep_airport.airport_name AS departure_airport,
7   arr_airport.city AS arrival_city,
8   arr_airport.airport_name AS arrival_airport,
9   dep_airport.country AS departure_country,
10  arr_airport.country AS arrival_country,
11  al.airline_name,
12  COUNT(DISTINCT f.flight_id) AS number_of_flights,
13  AVG(b.price) AS average_booking_price
```

The status bar indicates: Total rows: 0, Query complete 00:00:00.060, Query returned successfully in 60 msec.

**CREATE VIEW top\_5\_popular\_routes AS**  
**SELECT**

**ROW\_NUMBER() OVER (ORDER BY  
COUNT(b.booking\_id) DESC) AS rank,  
COUNT(b.booking\_id) AS total\_bookings,  
dep\_airport.city AS departure\_city,  
dep\_airport.airport\_name AS  
departure\_airport,  
arr\_airport.city AS arrival\_city,  
arr\_airport.airport\_name AS arrival\_airport,  
dep\_airport.country AS departure\_country,  
arr\_airport.country AS arrival\_country,  
al.airline\_name,  
COUNT(DISTINCT f.flight\_id) AS  
number\_of\_flights,  
AVG(b.price) AS average\_booking\_price  
FROM booking b  
JOIN booking\_flight bf ON b.booking\_id =  
bf.booking\_id  
JOIN flights f ON bf.flight\_id = f.flight\_id  
JOIN airline al ON f.airline\_id = al.airline\_id**

```
JOIN airport dep_airport ON
f.departure_airport_id = dep_airport.airport_id
JOIN airport arr_airport ON f.arrival_airport_id =
arr_airport.airport_id
WHERE b.status != 'cancelled' -- Exclude
cancelled bookings
GROUP BY
    dep_airport.city,
    dep_airport.airport_name,
    arr_airport.city,
    arr_airport.airport_name,
    dep_airport.country,
    arr_airport.country,
    al.airline_name
ORDER BY total_bookings DESC
LIMIT 5;

SELECT * FROM top_5_popular_routes;
```

**SELECT**

**rank,**

**departure\_city || ' to ' || arrival\_city AS route,**

**total\_bookings,**

**average\_booking\_price**

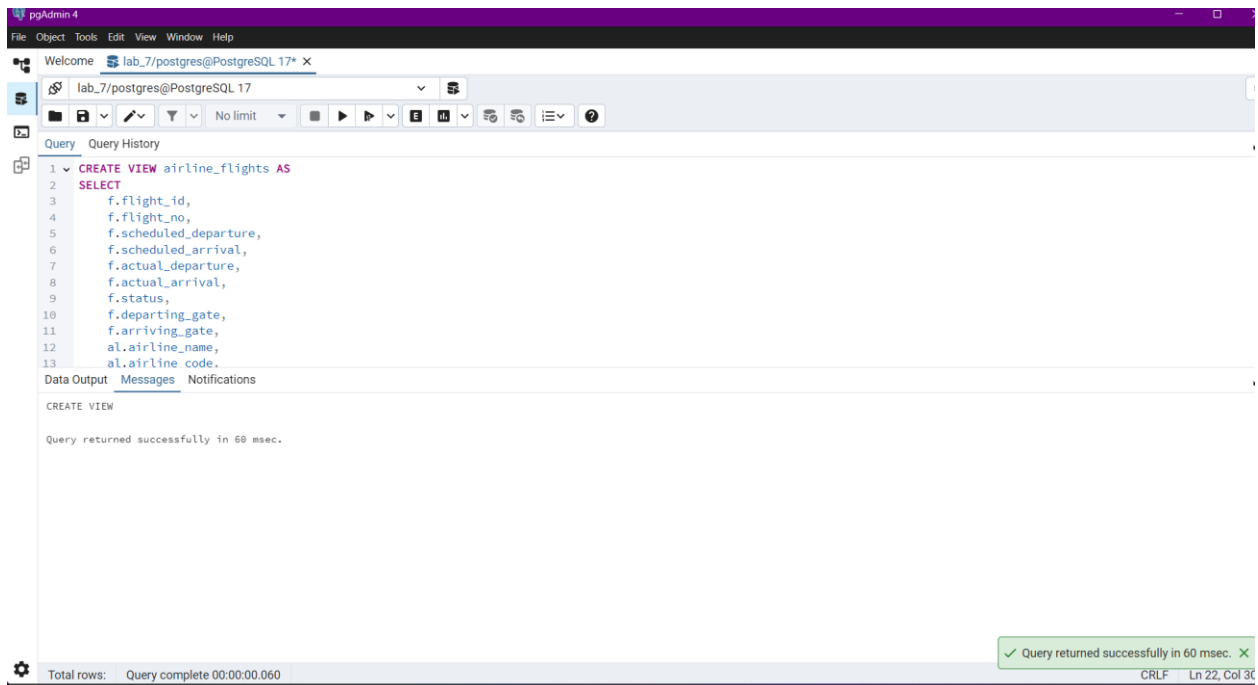
**FROM top\_5\_popular\_routes;**

**SELECT \* FROM top\_5\_popular\_routes**

**WHERE departure\_city = 'New York' AND**

**arrival\_city = 'Los Angeles';**

**4**



**CREATE VIEW airline\_flights AS**

**SELECT**

**f.flight\_id,**

**f.flight\_no,**

**f.scheduled\_departure,**

**f.scheduled\_arrival,**

**f.actual\_departure,**

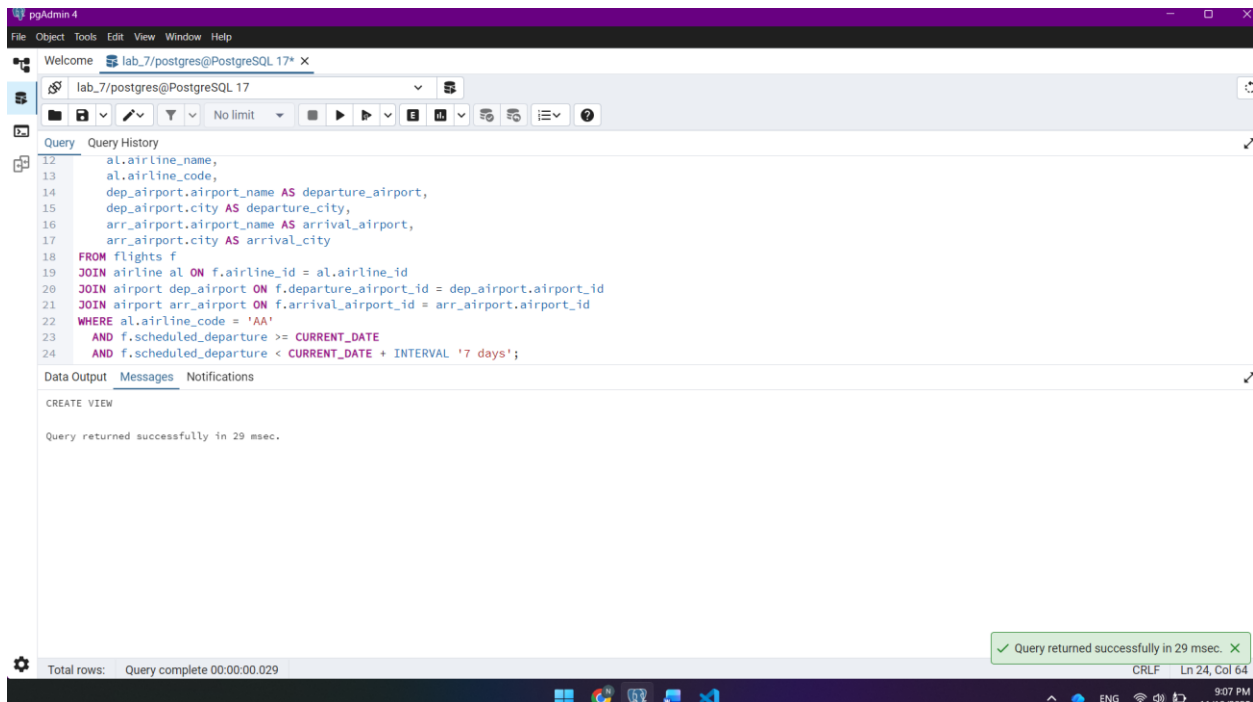
**f.actual\_arrival,**

**f.status,**

**f.departing\_gate,**

**f.arriving\_gate,**

```
    al.airline_name,  
    al.airline_code,  
    dep_airport.airport_name AS  
departure_airport,  
    dep_airport.city AS departure_city,  
    arr_airport.airport_name AS arrival_airport,  
    arr_airport.city AS arrival_city  
FROM flights f  
JOIN airline al ON f.airline_id = al.airline_id  
JOIN airport dep_airport ON  
f.departure_airport_id = dep_airport.airport_id  
JOIN airport arr_airport ON f.arrival_airport_id =  
arr_airport.airport_id  
WHERE al.airline_code = 'AA';
```

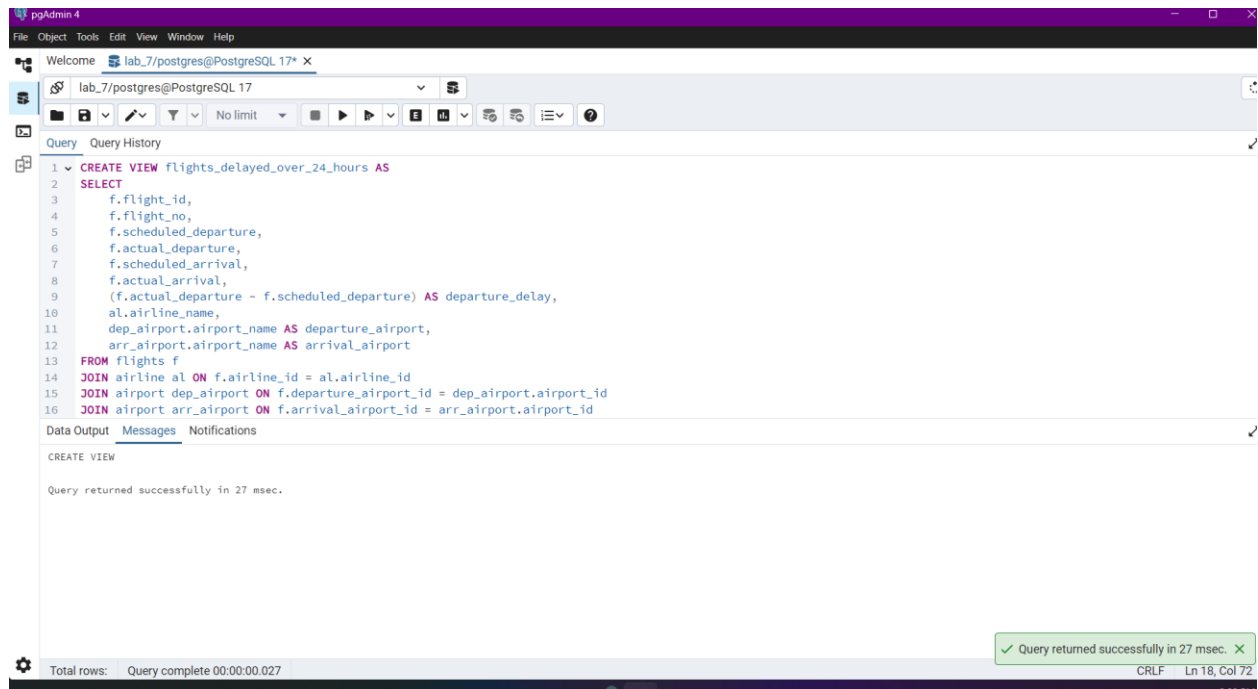


**CREATE OR REPLACE VIEW airline\_flights AS  
SELECT**

**f.flight\_id,  
f.flight\_no,  
f.scheduled\_departure,  
f.scheduled\_arrival,  
f.actual\_departure,  
f.actual\_arrival,  
f.status,  
f.departing\_gate,  
f.arriving\_gate,**

```
    al.airline_name,  
    al.airline_code,  
    dep_airport.airport_name AS  
departure_airport,  
    dep_airport.city AS departure_city,  
    arr_airport.airport_name AS arrival_airport,  
    arr_airport.city AS arrival_city  
FROM flights f  
JOIN airline al ON f.airline_id = al.airline_id  
JOIN airport dep_airport ON  
f.departure_airport_id = dep_airport.airport_id  
JOIN airport arr_airport ON f.arrival_airport_id =  
arr_airport.airport_id  
WHERE al.airline_code = 'AA'  
    AND f.scheduled_departure >=  
CURRENT_DATE  
    AND f.scheduled_departure < CURRENT_DATE  
+ INTERVAL '7 days';
```





```
CREATE VIEW flights_delayed_over_24_hours  
AS
```

```
SELECT
```

```
    f.flight_id,
```

```
    f.flight_no,
```

```
    f.scheduled_departure,
```

```
    f.actual_departure,
```

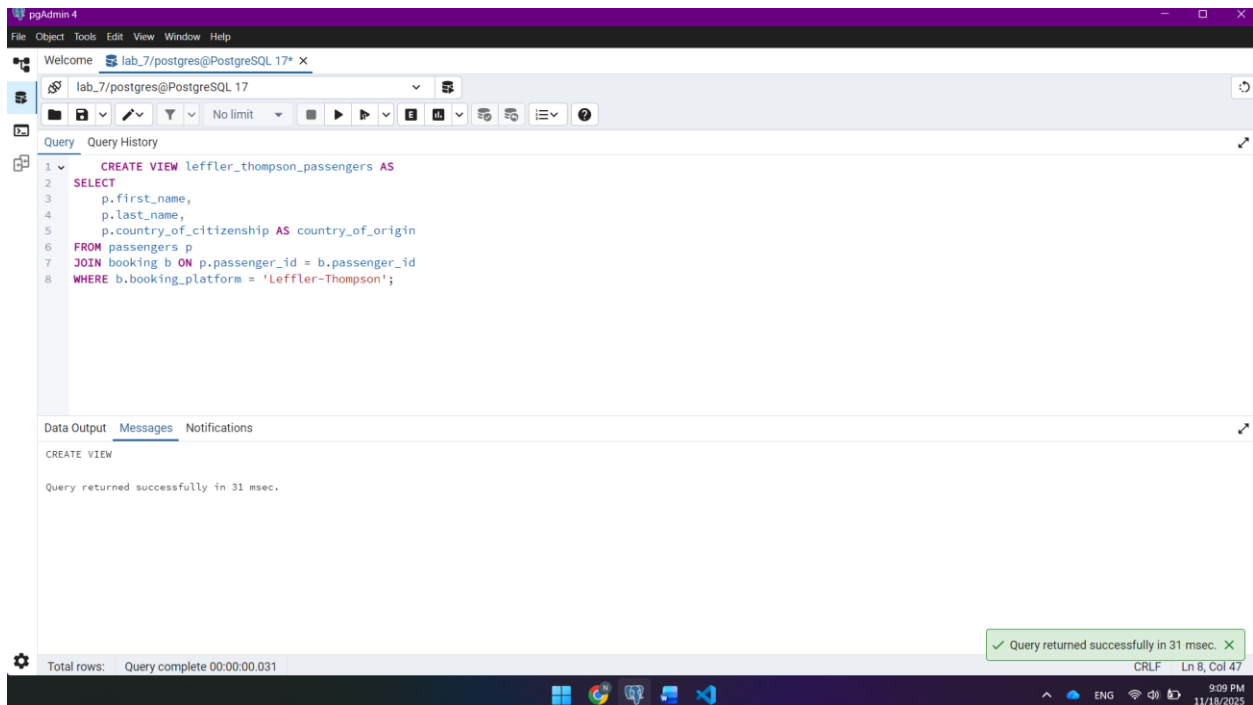
```
    f.scheduled_arrival,
```

```
    f.actual_arrival,
```

```
    (f.actual_departure - f.scheduled_departure)
```

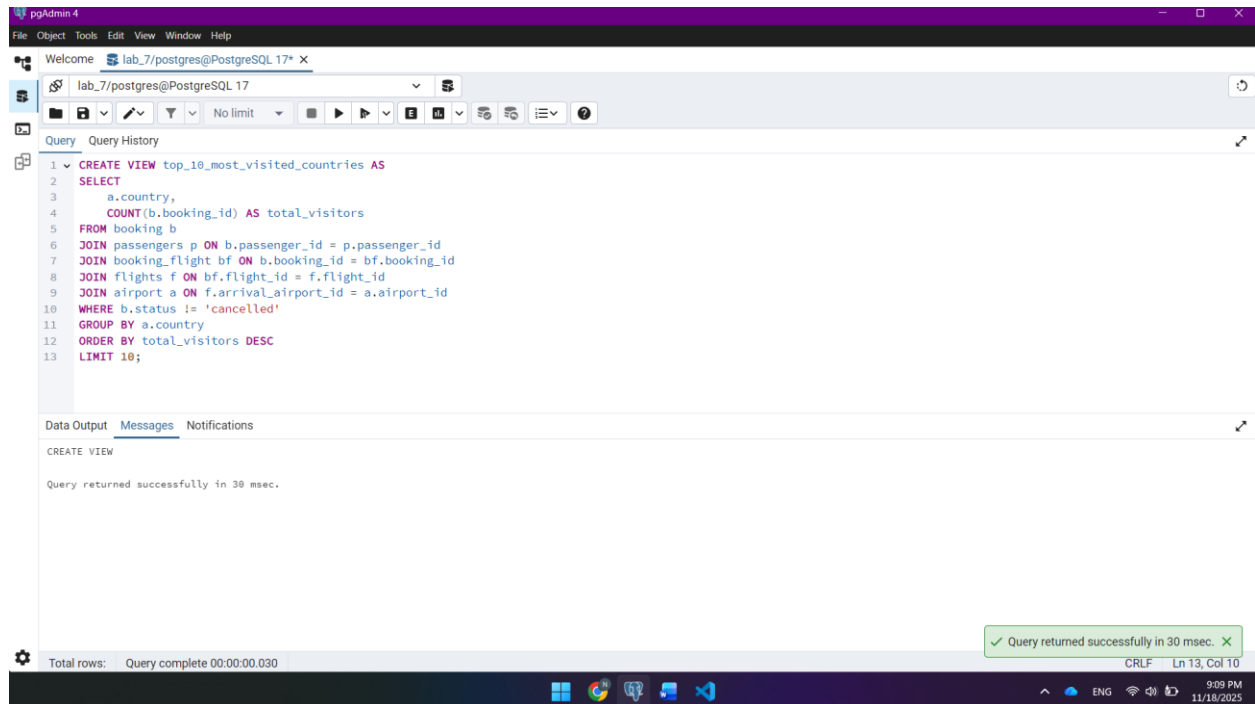
```
AS departure_delay,
```

```
    al.airline_name,  
    dep_airport.airport_name AS  
departure_airport,  
    arr_airport.airport_name AS arrival_airport  
FROM flights f  
JOIN airline al ON f.airline_id = al.airline_id  
JOIN airport dep_airport ON  
f.departure_airport_id = dep_airport.airport_id  
JOIN airport arr_airport ON f.arrival_airport_id =  
arr_airport.airport_id  
WHERE f.actual_departure IS NOT NULL  
      AND f.actual_departure >  
f.scheduled_departure + INTERVAL '24 hours';
```



```
CREATE VIEW leffler_thompson_passengers  
AS  
SELECT  
    p.first_name,  
    p.last_name,  
    p.country_of_citizenship AS country_of_origin  
FROM passengers p  
JOIN booking b ON p.passenger_id =  
b.passenger_id  
WHERE b.booking_platform = 'Leffler-  
Thompson';
```

8



The screenshot shows the pgAdmin 4 web interface. The top bar indicates the connection is to 'lab\_7/postgres@PostgreSQL 17'. The main query editor contains the following SQL code:

```
1 CREATE VIEW top_10_most_visited_countries AS
2 SELECT
3     a.country,
4     COUNT(b.booking_id) AS total_visitors
5 FROM booking b
6 JOIN passengers p ON b.passenger_id = p.passenger_id
7 JOIN booking_flight bf ON b.booking_id = bf.booking_id
8 JOIN flights f ON bf.flight_id = f.flight_id
9 JOIN airport a ON f.arrival_airport_id = a.airport_id
10 WHERE b.status != 'cancelled'
11 GROUP BY a.country
12 ORDER BY total_visitors DESC
13 LIMIT 10;
```

Below the query editor, the 'Messages' tab shows the output: 'CREATE VIEW' and 'Query returned successfully in 30 msec.' A green notification box at the bottom right also states 'Query returned successfully in 30 msec.' The status bar at the bottom shows 'Total rows: Query complete 00:00:00.030' and the system clock is 9:09 PM on 11/18/2025.

**CREATE VIEW top\_10\_most\_visited\_countries  
AS**

**SELECT**

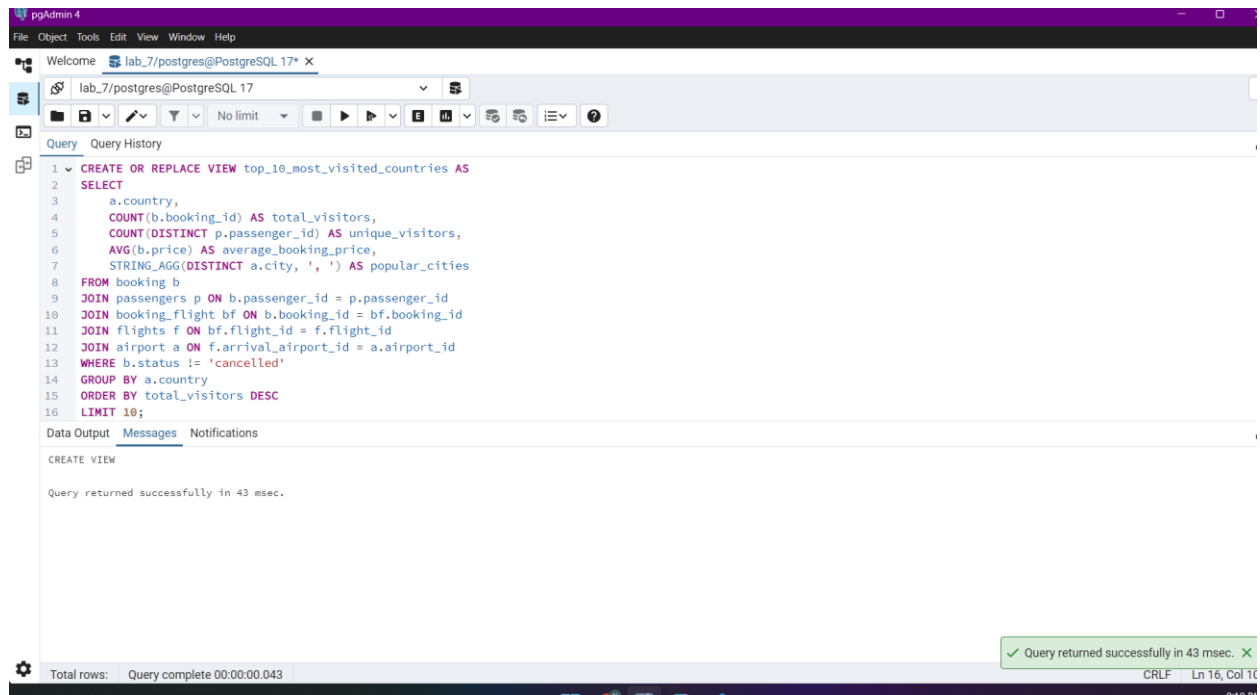
**a.country,**

**COUNT(b.booking\_id) AS total\_visitors**

**FROM booking b**

**JOIN passengers p ON b.passenger\_id =  
p.passenger\_id**

```
JOIN booking_flight bf ON b.booking_id =  
bf.booking_id  
JOIN flights f ON bf.flight_id = f.flight_id  
JOIN airport a ON f.arrival_airport_id =  
a.airport_id  
WHERE b.status != 'cancelled'  
GROUP BY a.country  
ORDER BY total_visitors DESC  
LIMIT 10;
```



```
CREATE OR REPLACE VIEW  
top_10_most_visited_countries AS  
SELECT  
  
    a.country,  
  
    COUNT(b.booking_id) AS total_visitors,  
  
    COUNT(DISTINCT p.passenger_id) AS  
unique_visitors,  
  
    AVG(b.price) AS average_booking_price,  
  
    STRING_AGG(DISTINCT a.city, ', ') AS  
popular_cities  
  
FROM booking b
```

```
JOIN passengers p ON b.passenger_id =  
p.passenger_id  
JOIN booking_flight bf ON b.booking_id =  
bf.booking_id  
JOIN flights f ON bf.flight_id = f.flight_id  
JOIN airport a ON f.arrival_airport_id =  
a.airport_id  
WHERE b.status != 'cancelled'  
GROUP BY a.country  
ORDER BY total_visitors DESC  
LIMIT 10;
```

The screenshot shows the pgAdmin 4 web interface. The query editor contains the following SQL script:

```
1 DROP VIEW IF EXISTS flights_departing_on_date;
2 DROP VIEW IF EXISTS upcoming_week_bookings;
3 DROP VIEW IF EXISTS top_5_popular_routes;
4 DROP VIEW IF EXISTS airline_flights;
5 DROP VIEW IF EXISTS flights_delayed_over_24_hours;
6 DROP VIEW IF EXISTS leffler_thompson_passengers;
7 DROP VIEW IF EXISTS top_10_most_visited_countries;
```

The Messages tab at the bottom shows the following output:

```
NOTICE: view "flights_departing_on_date" does not exist, skipping
NOTICE: view "upcoming_week_bookings" does not exist, skipping
NOTICE: view "top_5_popular_routes" does not exist, skipping
NOTICE: view "airline_flights" does not exist, skipping
NOTICE: view "flights_delayed_over_24_hours" does not exist, skipping
NOTICE: view "leffler_thompson_passengers" does not exist, skipping
NOTICE: view "top_10_most_visited_countries" does not exist, skipping
DROP VIEW

Query returned successfully in 29 msec.
```

A green status bar at the bottom right indicates: "Query returned successfully in 29 msec. CRLF Ln 7, Col 51".

**DROP VIEW IF EXISTS**

**flights\_departing\_on\_date;**

**DROP VIEW IF EXISTS**

**upcoming\_week\_bookings;**

**DROP VIEW IF EXISTS top\_5\_popular\_routes;**

**DROP VIEW IF EXISTS airline\_flights;**

**DROP VIEW IF EXISTS**

**flights\_delayed\_over\_24\_hours;**

**DROP VIEW IF EXISTS**

**leffler\_thompson\_passengers;**

**DROP VIEW IF EXISTS**

**top\_10\_most\_visited\_countries;**



