# Lab 8B

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**LAB SESSION: 303**

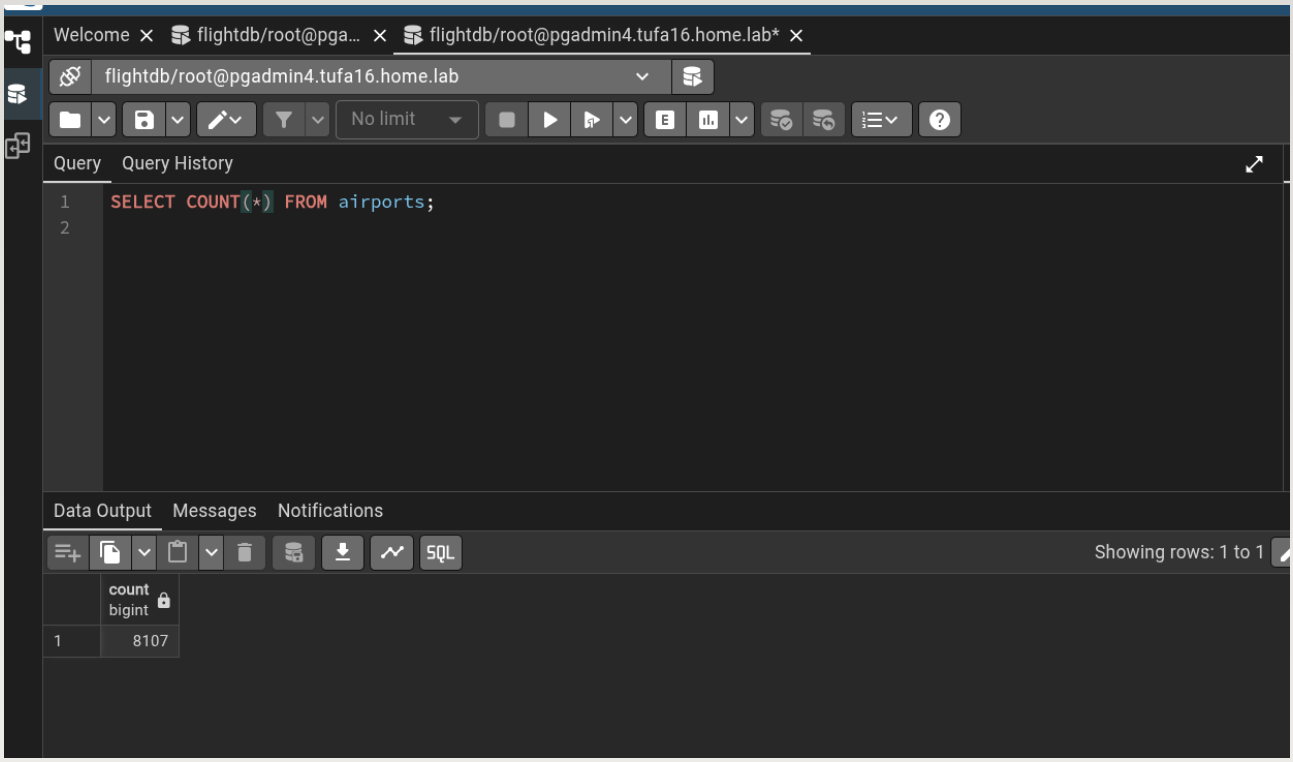
## Contents

# I Lab 8A - Aggregates, GROUP BY and HAVING

## I Question 1

Count how many rows exist in the airports table.

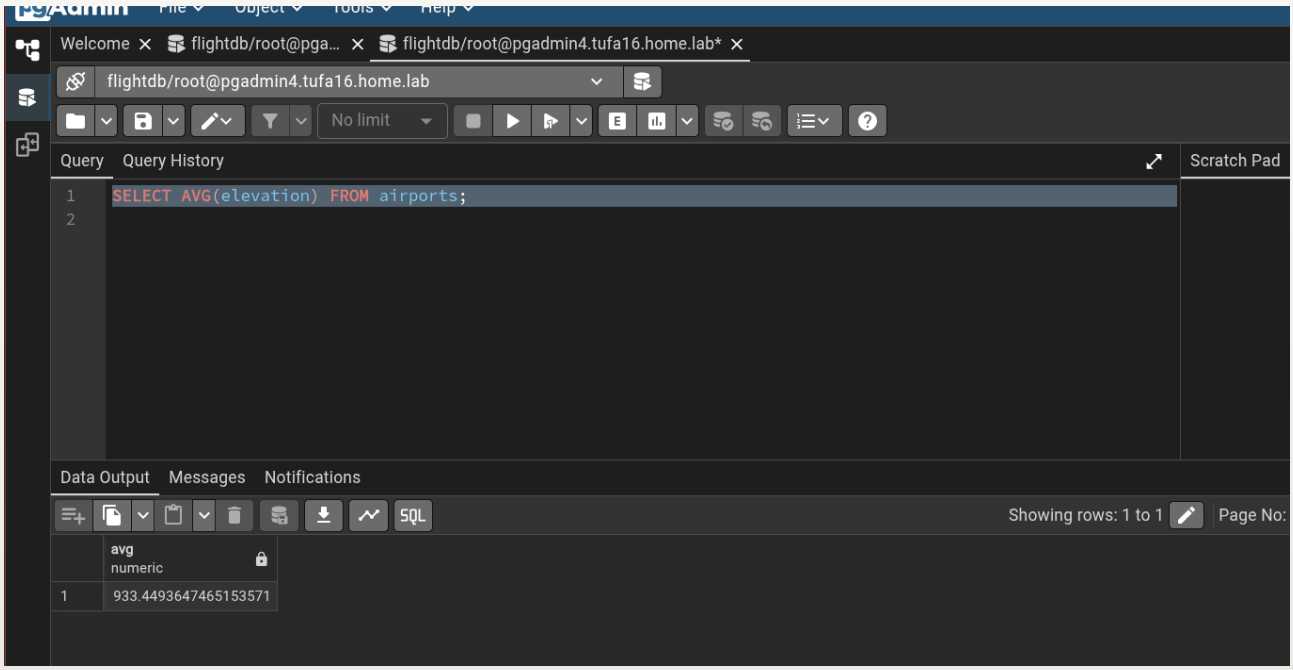
```sql
SELECT COUNT(*) FROM airports;
```




## I Question 2

Calculate the average elevation in the airports table.

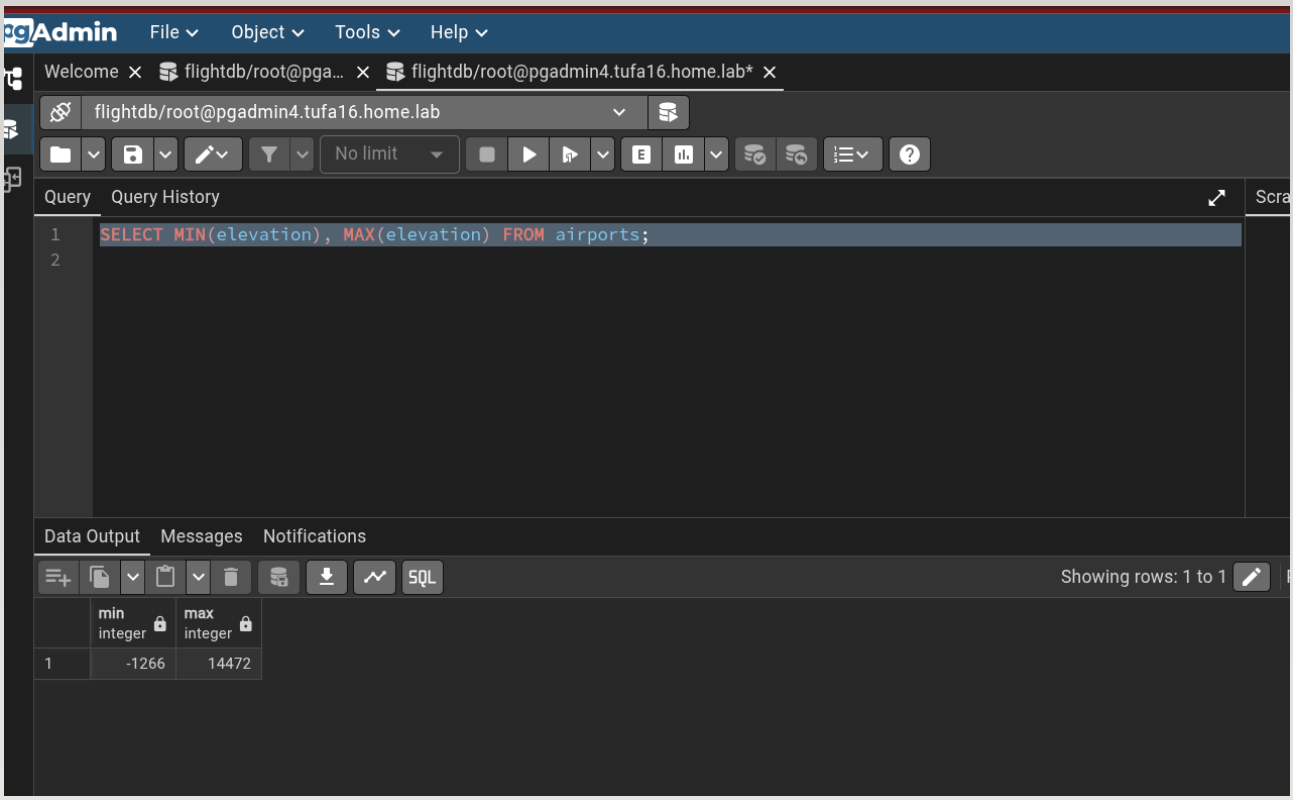
```sql
SELECT AVG(elevation) FROM airports;
```




# I Question 3

Calculate the maximum and minimum elevations in the airports table.

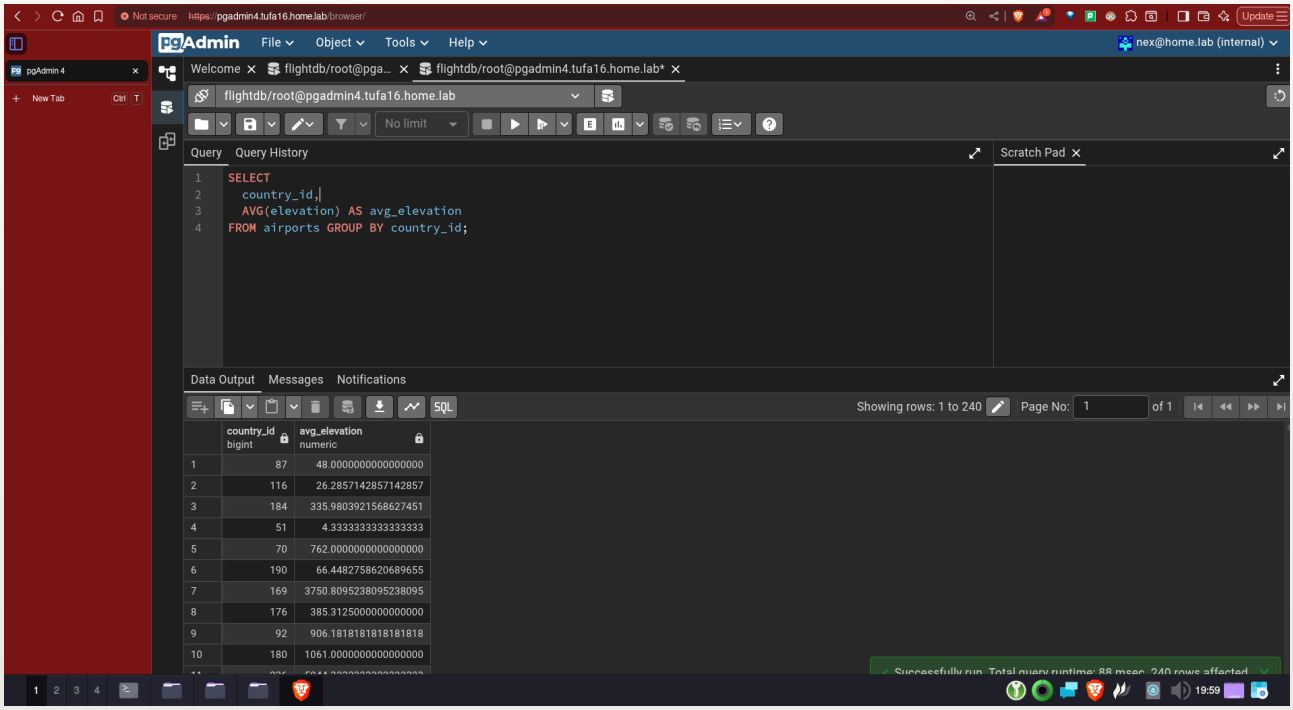
```sql
SELECT MIN(elevation), MAX(elevation) FROM airports;
```




# I Question 4

Calculate the average elevation, grouped by country id, in the airports table.

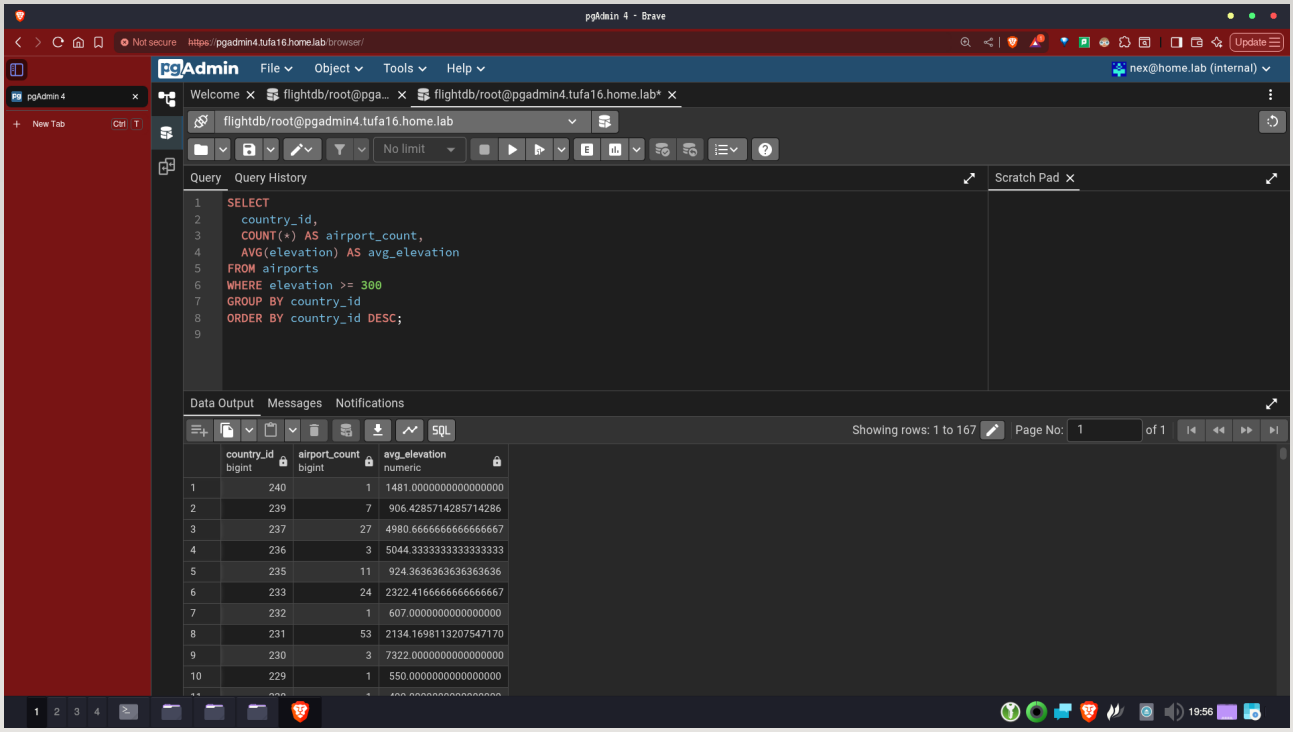
```sql
SELECT
  country_id,
  AVG(elevation) AS avg_elevation
FROM airports GROUP BY country_id;
```




# I Question 5

Calculate the average elevation, grouped by country id, in the airports table ordered by the average elevation in descending order for any country that has an average elevation of at least 300.

```sql
SELECT
  country_id,
  COUNT(*) AS airport_count,
  AVG(elevation) AS avg_elevation
FROM airports
WHERE elevation >= 300
GROUP BY country_id
ORDER BY country_id DESC;
```

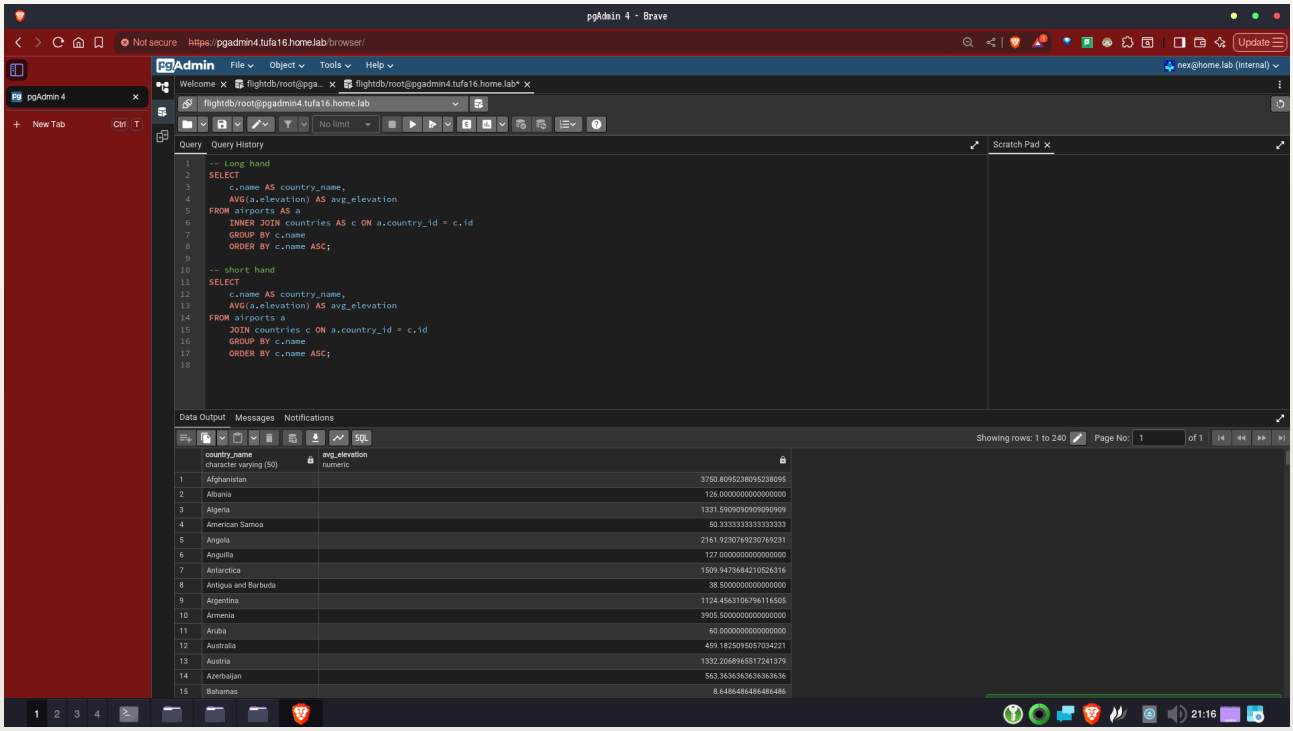



# II Lab 8B - Aggregates, GROUP BY and HAVING

## II Question 6

Calculate the number of airports in each country (i.e., grouped by country id), arrange the output in descending order of number of airports.

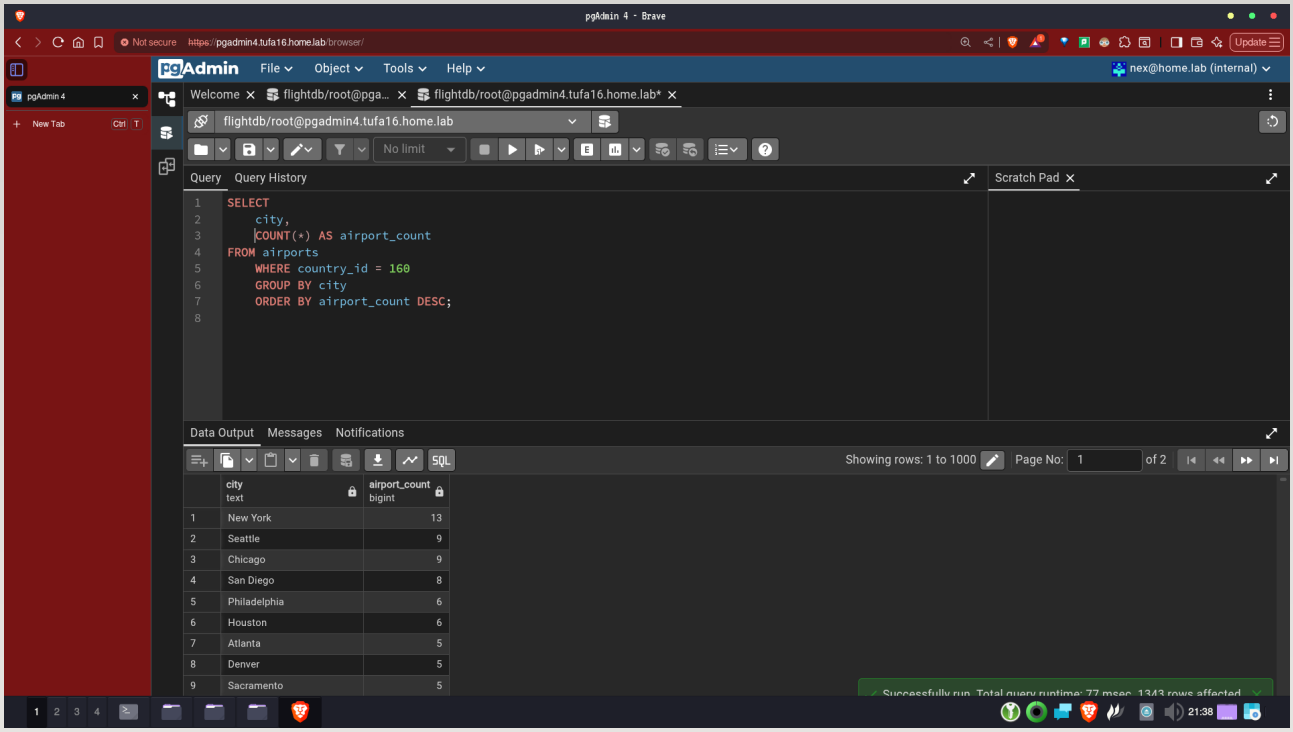
```sql
-- Long hand
SELECT
    c.name AS country_name,
    AVG(a.elevation) AS avg_elevation
FROM airports AS a
    INNER JOIN countries AS c ON a.country_id = c.id
    GROUP BY c.name
    ORDER BY c.name ASC;

-- short hand
SELECT
    c.name AS country_name,
    AVG(a.elevation) AS avg_elevation
FROM airports a
    JOIN countries c ON a.country_id = c.id
    GROUP BY c.name
    ORDER BY c.name ASC;
```




# II Question 7

Calculate the number of airports in each city of country id 160 and arrange the output in descending order.

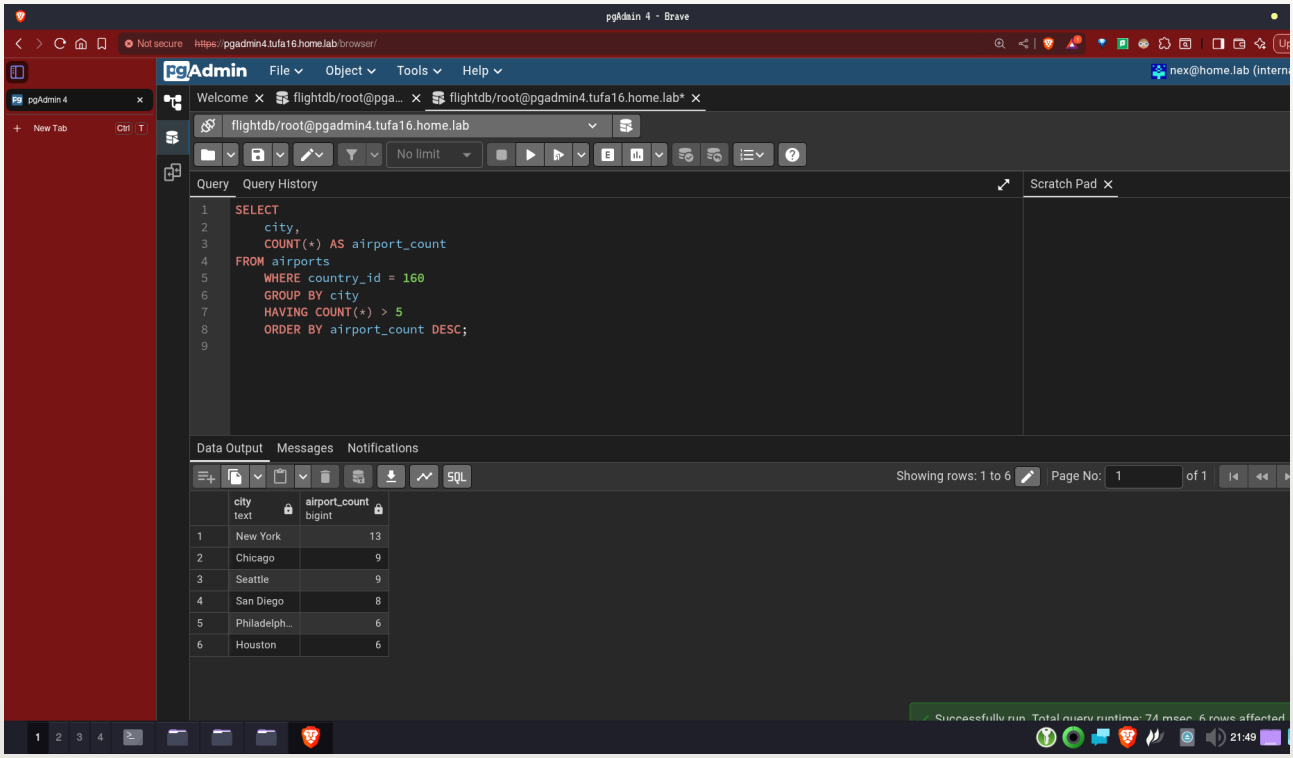
```sql
SELECT
    city,
    COUNT(*) AS airport_count
FROM airports
    WHERE country_id = 160
    GROUP BY city
    ORDER BY airport_count DESC;
```




# II Question 8

Edit Query #7 to show only those cities where the number of airports is more then 5. Hint: When using all SQL predicates in one statement, follow the sequence:

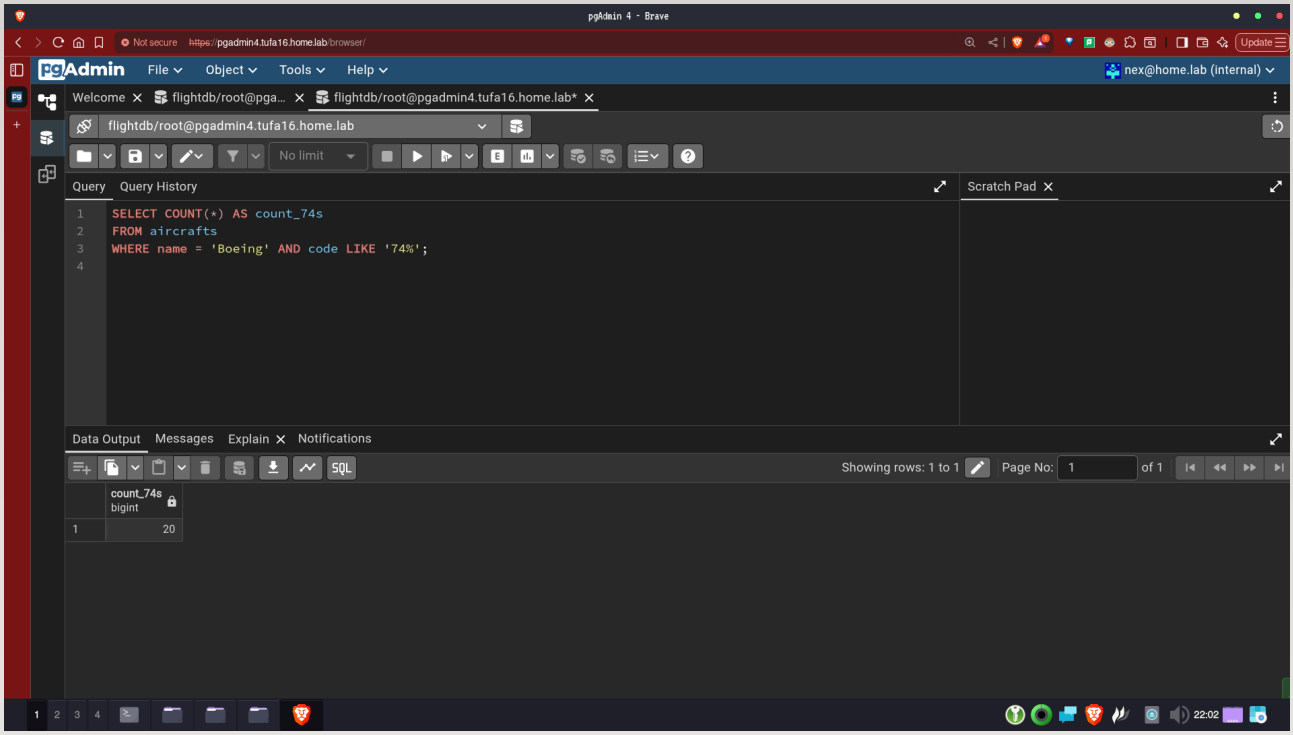
```sql
SELECT
    city,
    COUNT(*) AS airport_count
FROM airports
    WHERE country_id = 160 AND airport_count > 5
    GROUP BY city
    ORDER BY airport_count DESC;
```




# II Question 9

Provide the query to determine how many aircrafts ”Boeing” has that start with ”74”.

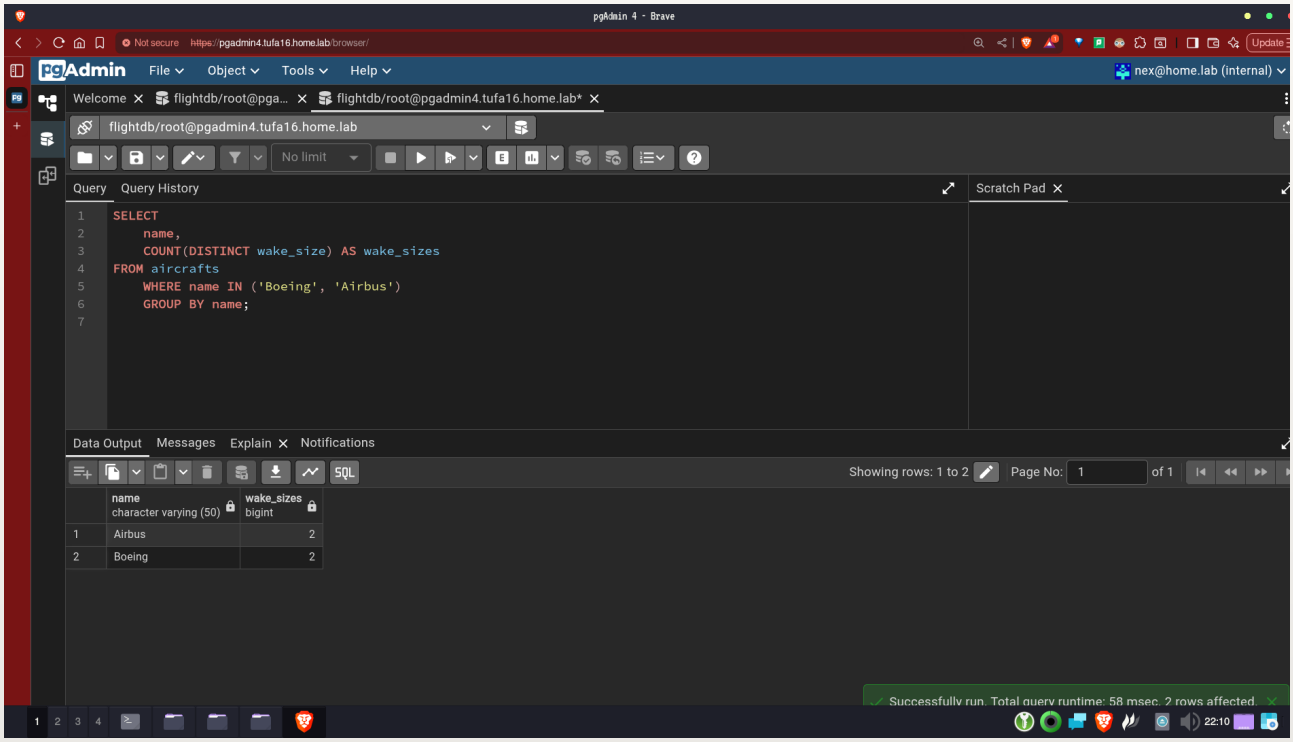
```sql
SELECT COUNT(*) AS count_74s
FROM aircrafts
WHERE name = 'Boeing' AND code LIKE '74%';
```




# II Question 10

Provide the query to determine how many different wake sizes “Boeing” and “Airbus” have.

```sql
SELECT
    name,
    COUNT(DISTINCT wake_size) AS wake_sizes
FROM aircrafts
    WHERE name IN ('Boeing', 'Airbus')
    GROUP BY name;
```


pgAdmin 4 - Brave
pgAdmin
File
Object
Tools
Help
Welcome
flightdb/root@pgadmin4.tufa16.home.lab
Query
Query History
Scratch Pad
SELECT
name,
COUNT(DISTINCT wake_size) AS wake_sizes
FROM aircrafts
WHERE name IN ('Boeing', 'Airbus')
GROUP BY name;
Data Output
Messages
Explain
Notifications
Showing rows: 1 to 2
Page No: 1
of 1
name
character varying (50)
wake_sizes
bigint
1 Airbus 2
2 Boeing 2
Successfully run. Total query runtime: 58 msec. 2 rows affected.