AIRLINE DATABASE QUERY USING SQL

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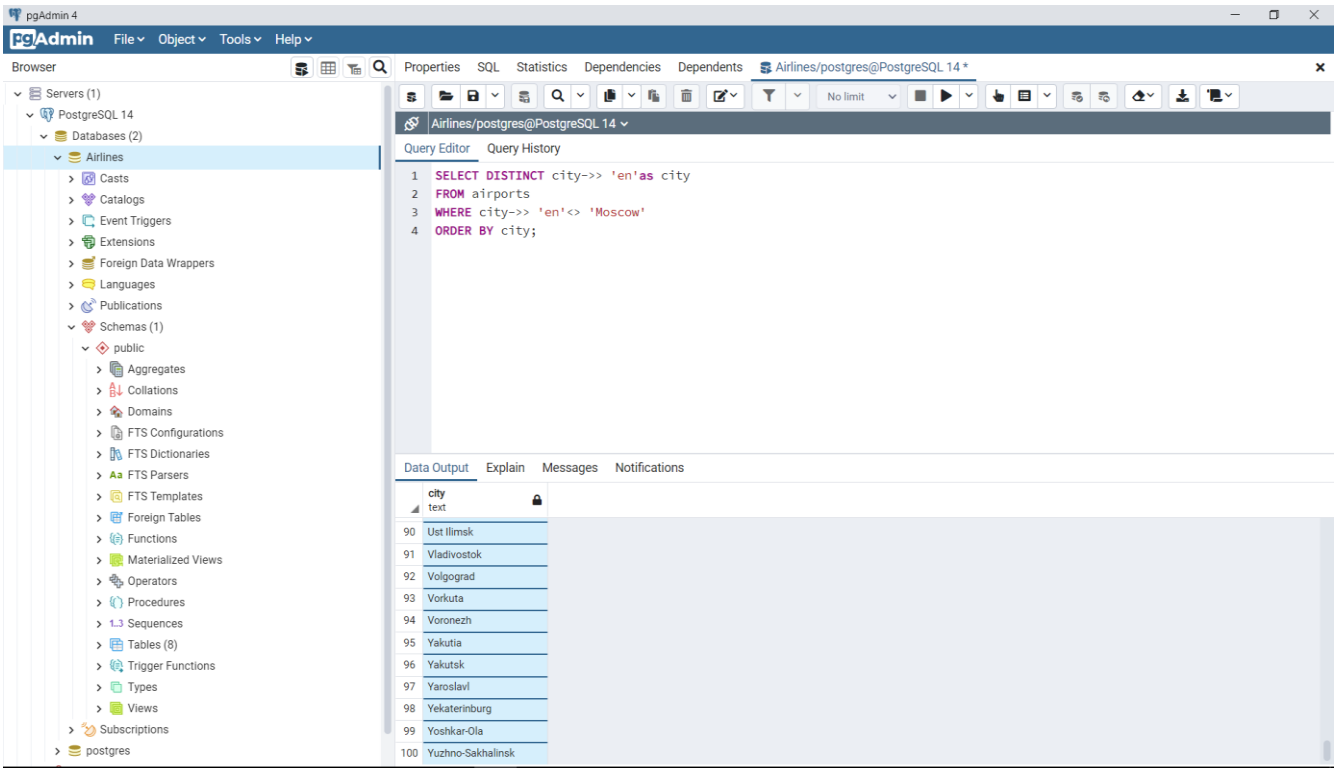
Database management tool: PostgreeSQL 14

This project covers the entire process of learning SQL and also aims at the retrieval of relevant information from the database in the best and efficient manner.

The database is made up of eight (8) tables namely: airports, aircrafts, boarding_passes, bookings, flights, seats, tickets and ticket_flights. The following cases were acknowledged in facilitating the query;

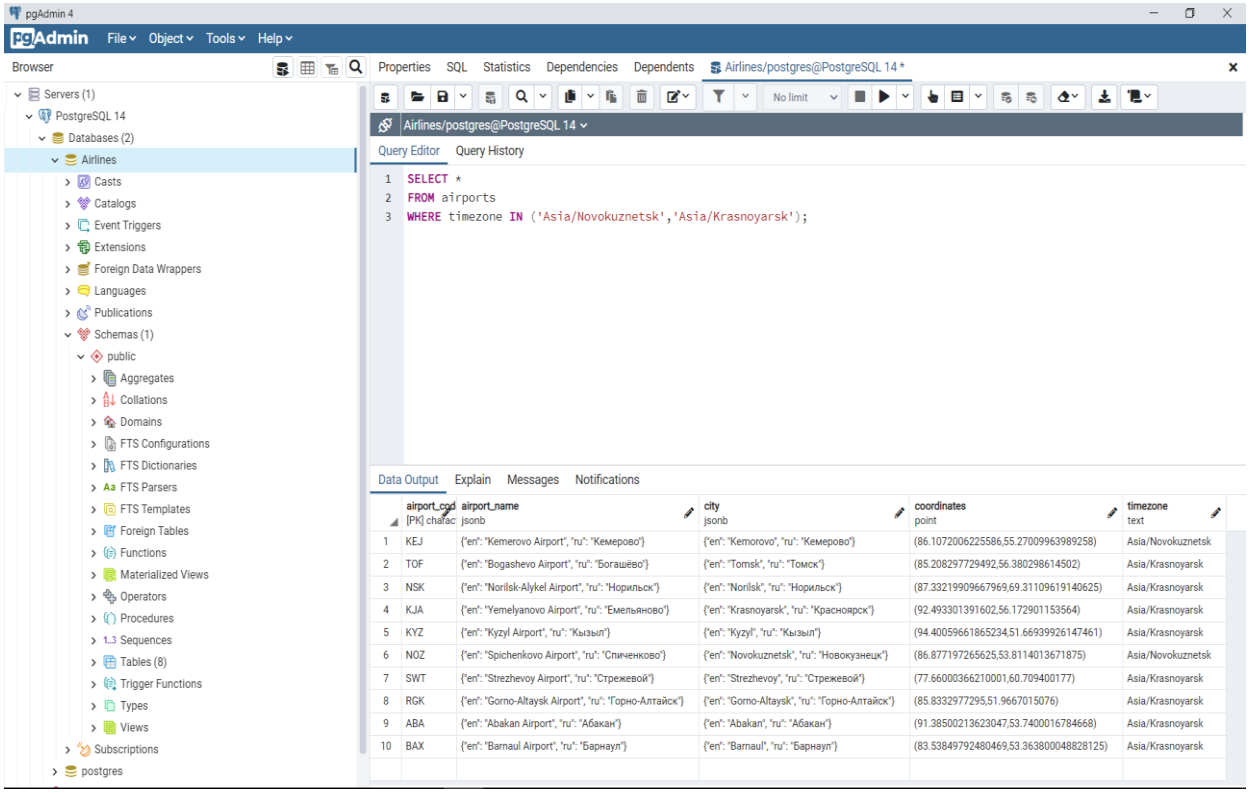
CASE I:

List the cities in which there is no flights from Moscow.



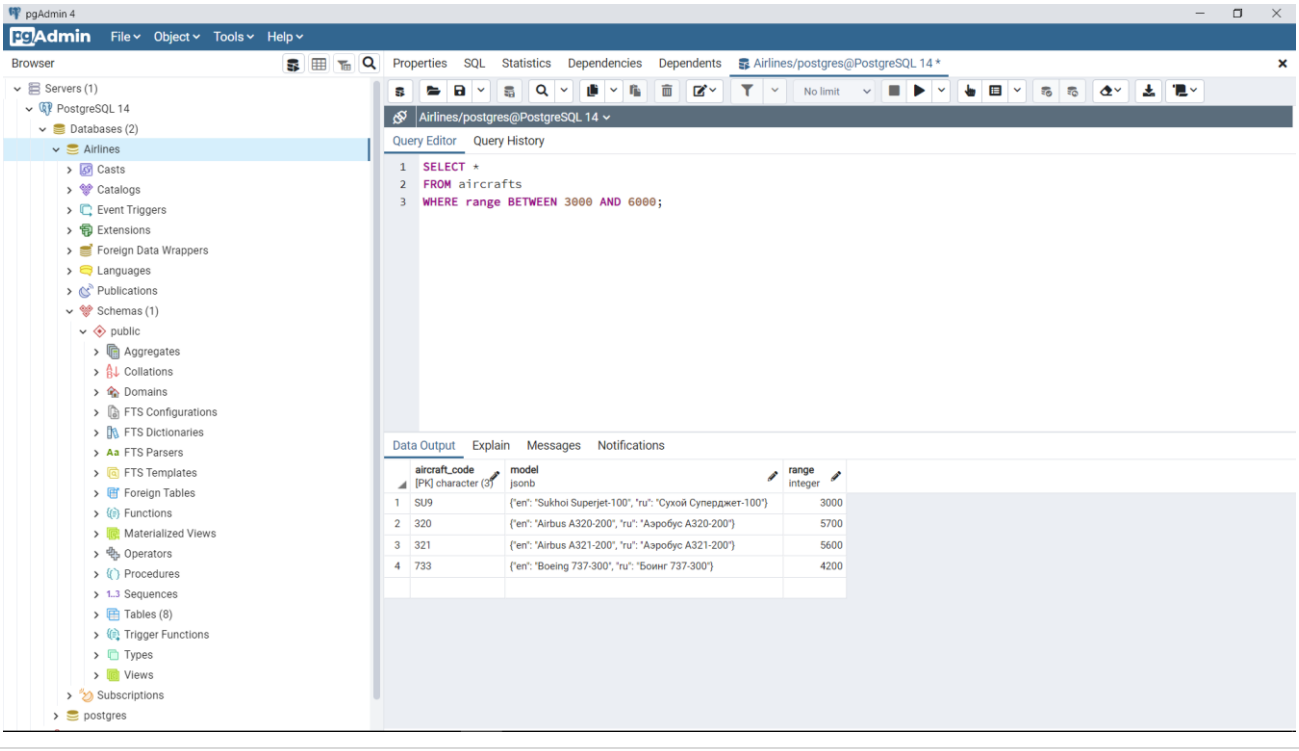
CASE II:

Select airports with time zone in Asia / Novokuznetsk and Asia / Krasnoyarsk.



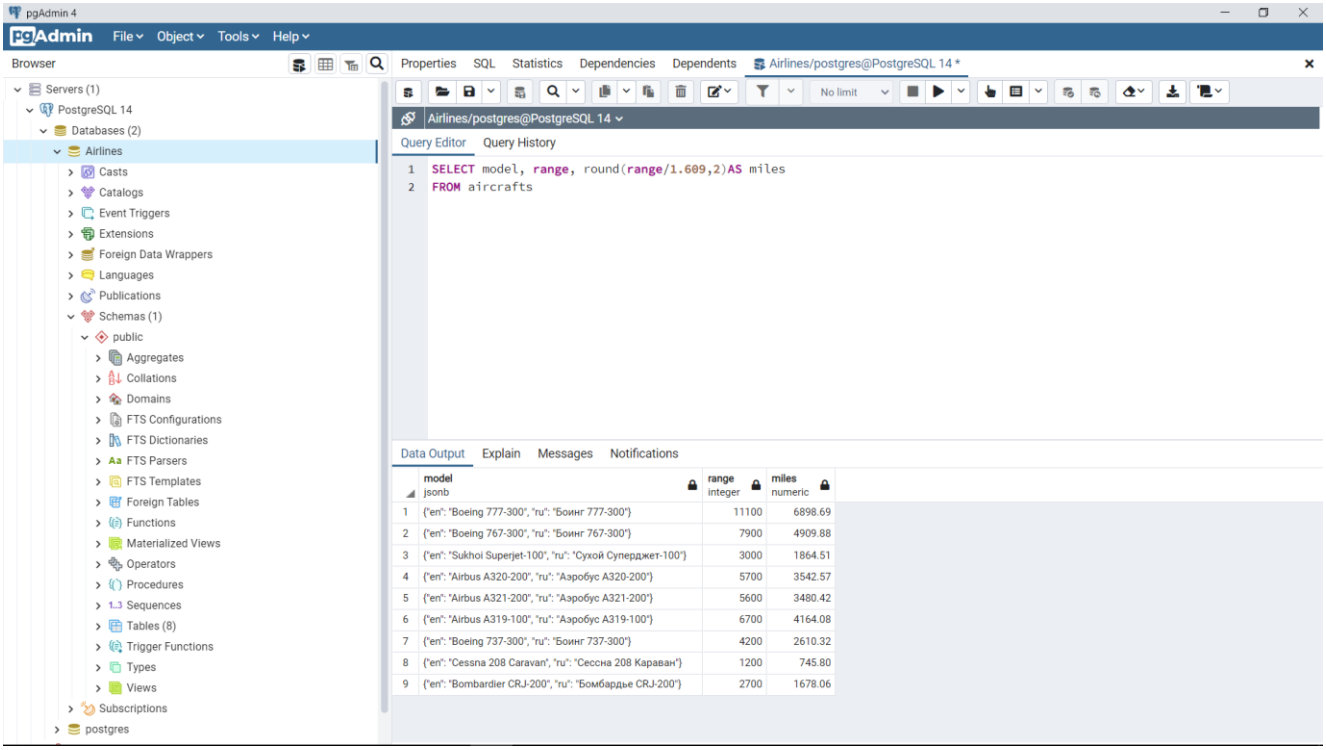
CASE III:

Which planes have a flight range from 3000 km to 6000 km?



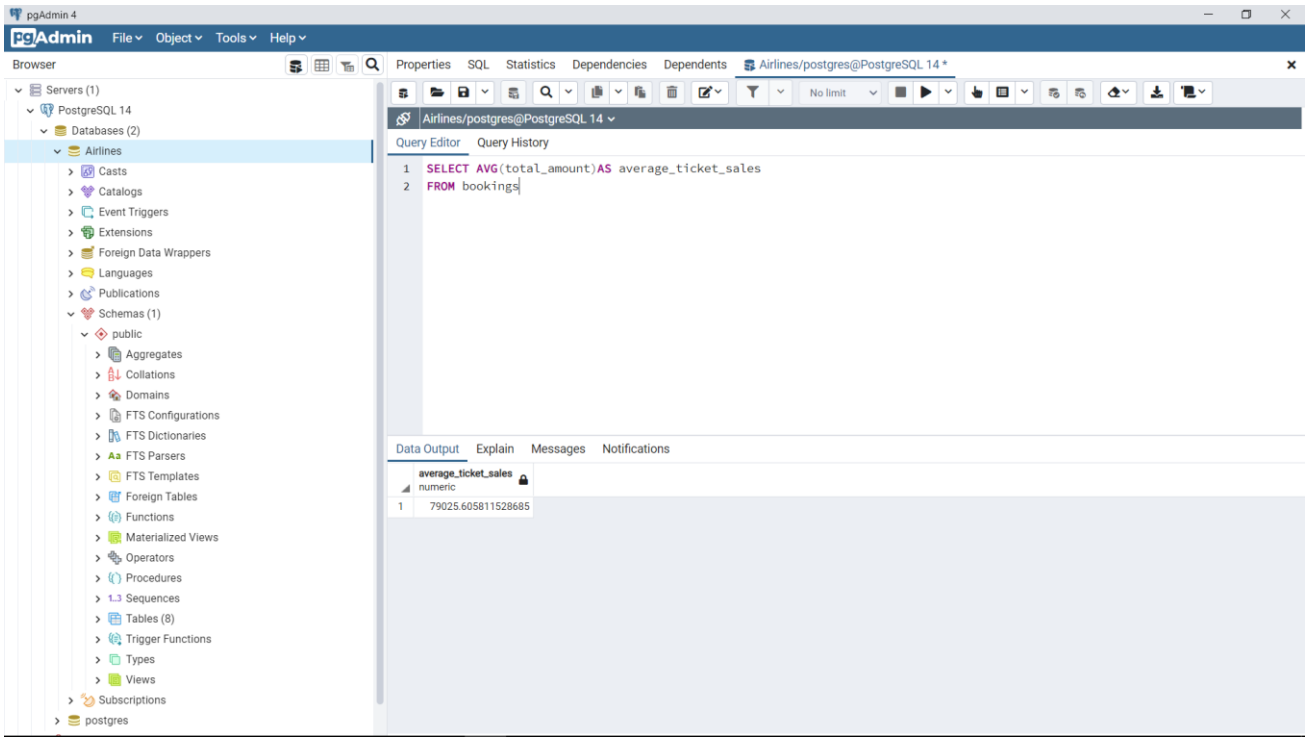
CASE IV:

Get the model, range and miles of every aircraft exist in the airlines database. Notice that miles = range/1.609 and round the result to 2 numbers after the float point.



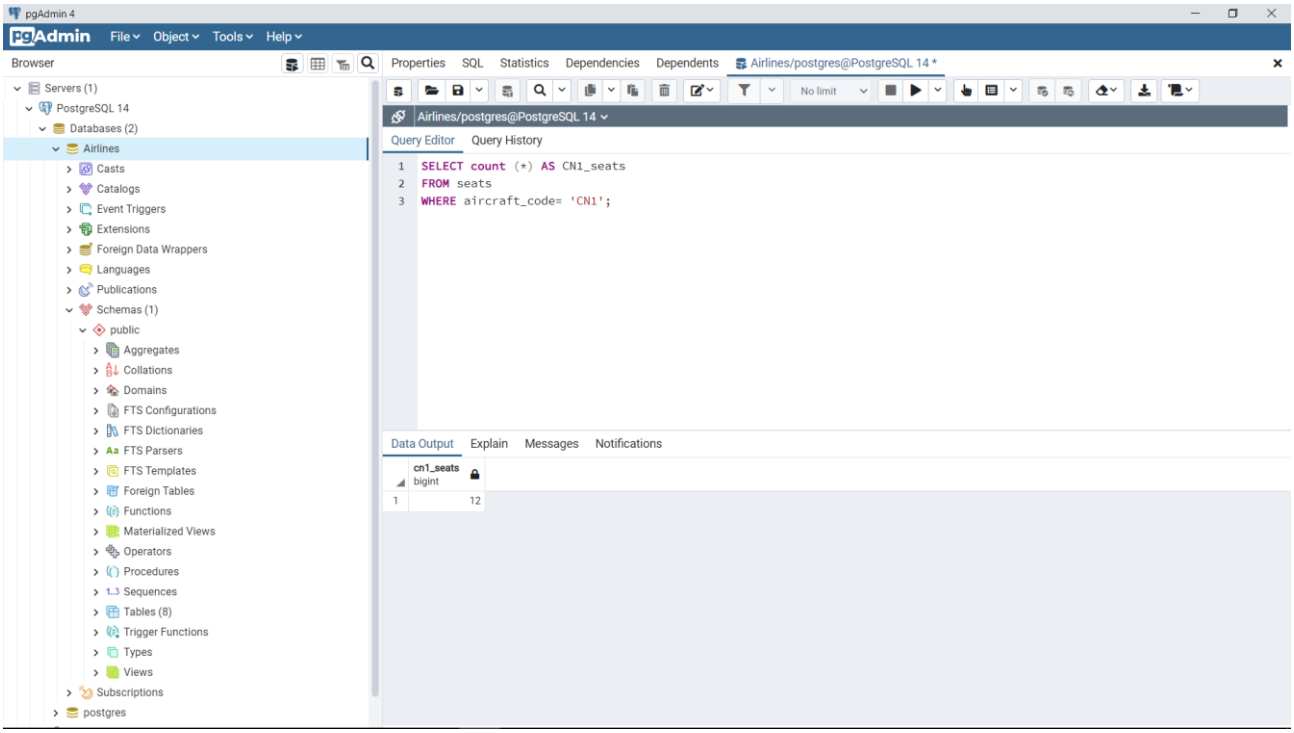
CASE V:

Calculate the Average ticket sales.



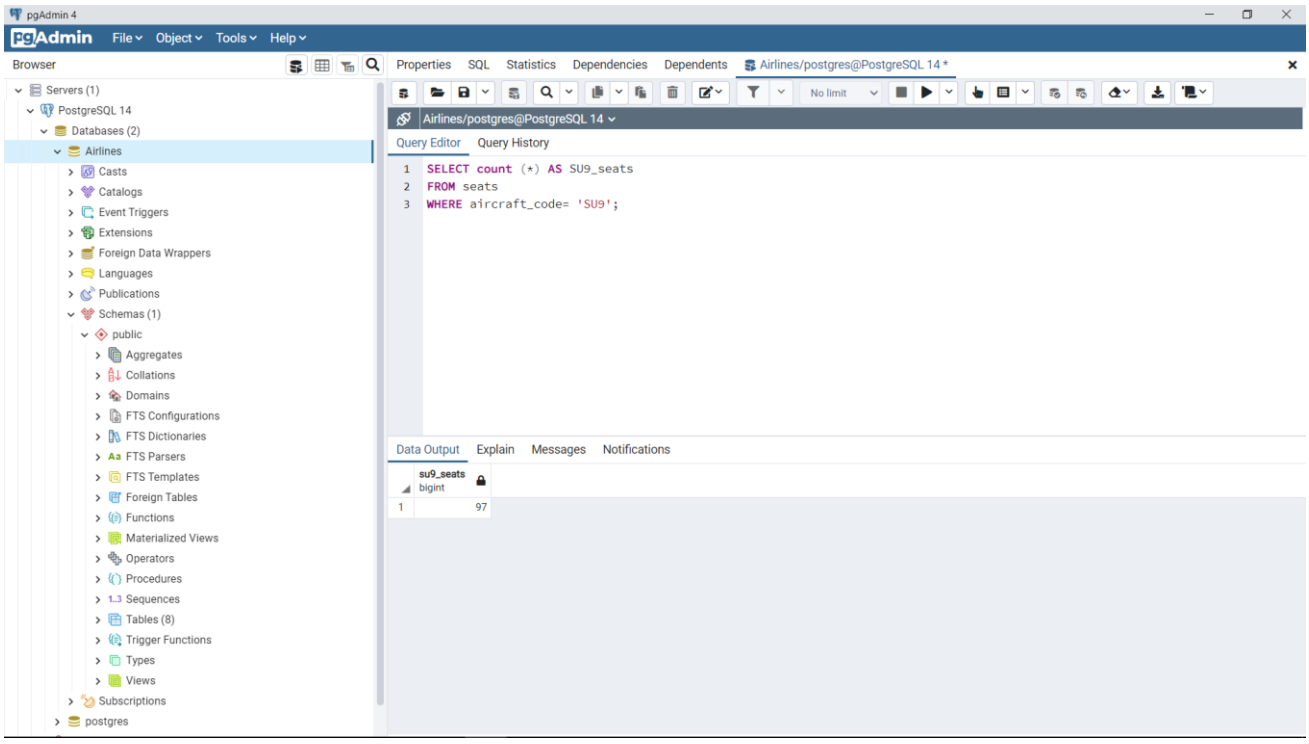
CASE VI:

Return the number of seats in the aircraft that has aircraft code ‘CN1’.



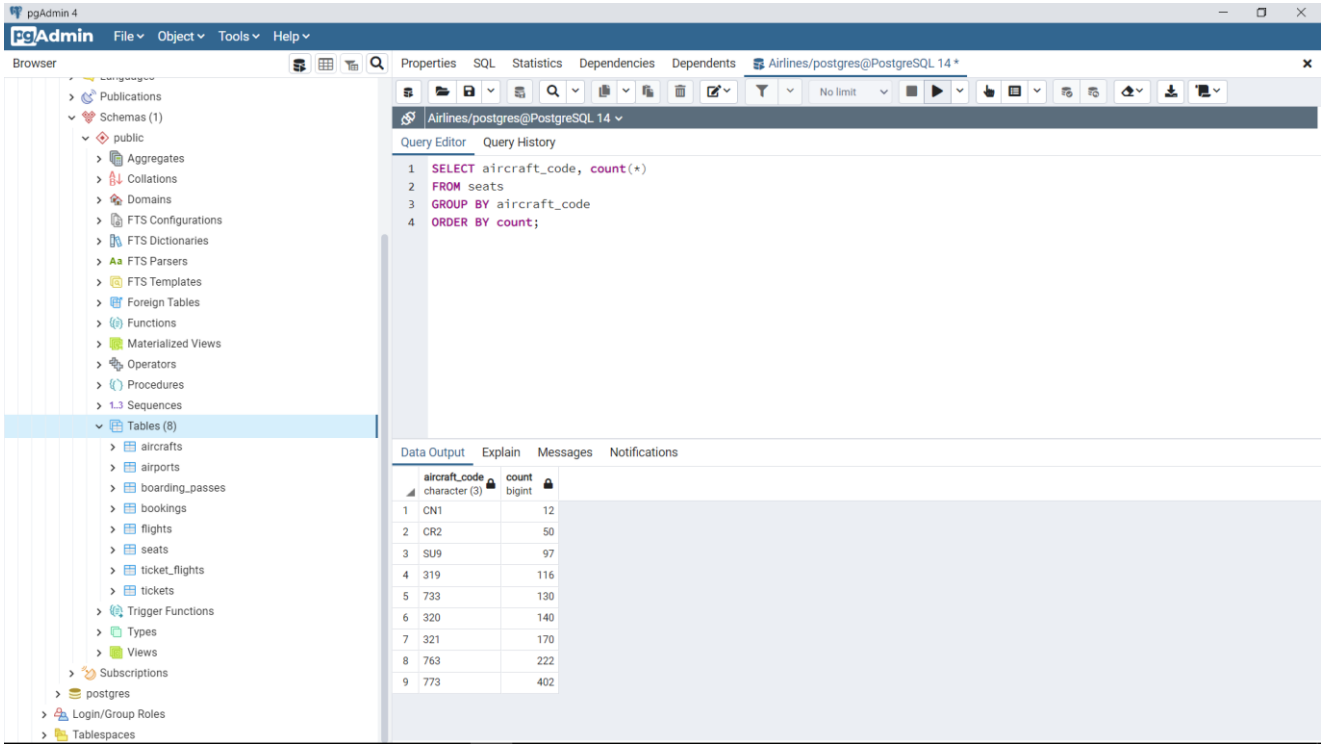
CASE VII:

Return the number of seats in the aircraft that has aircraft code ‘SU9’



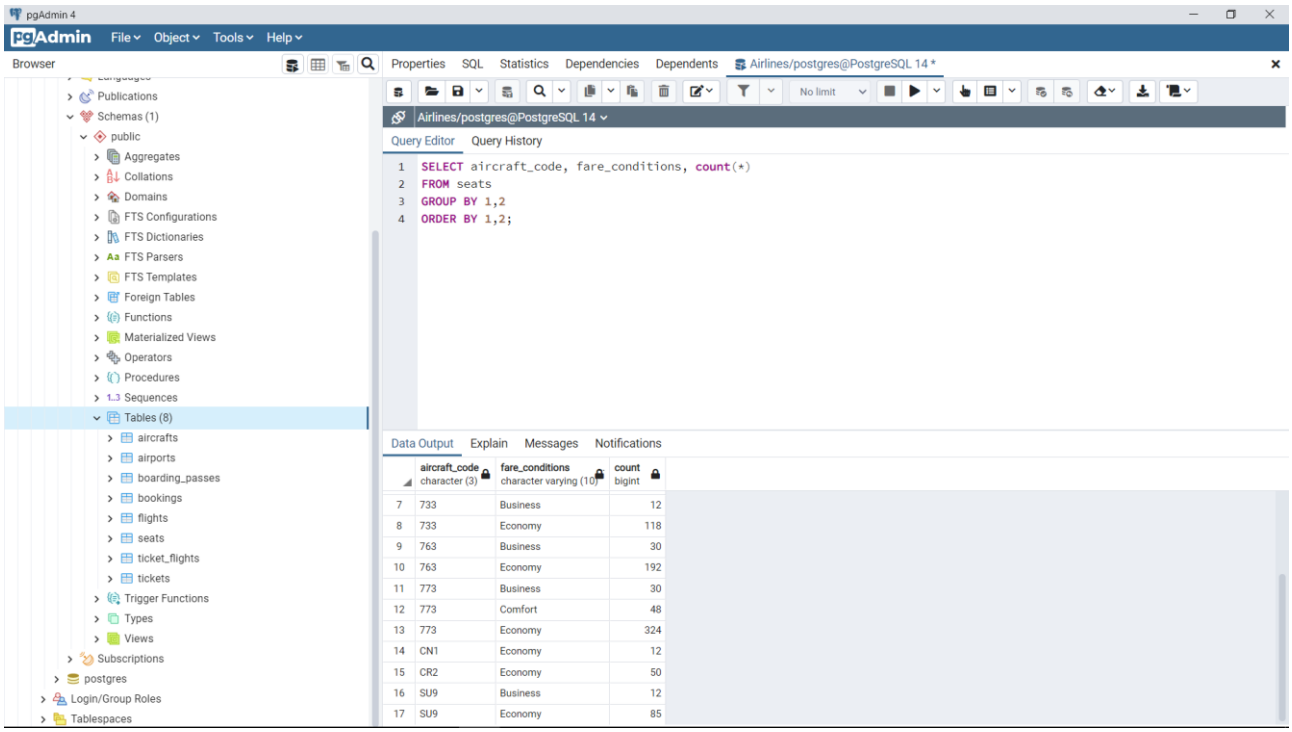
CASE VIII:

Write a query to return the aircraft code and the number of seats of each aircraft in ascending order.



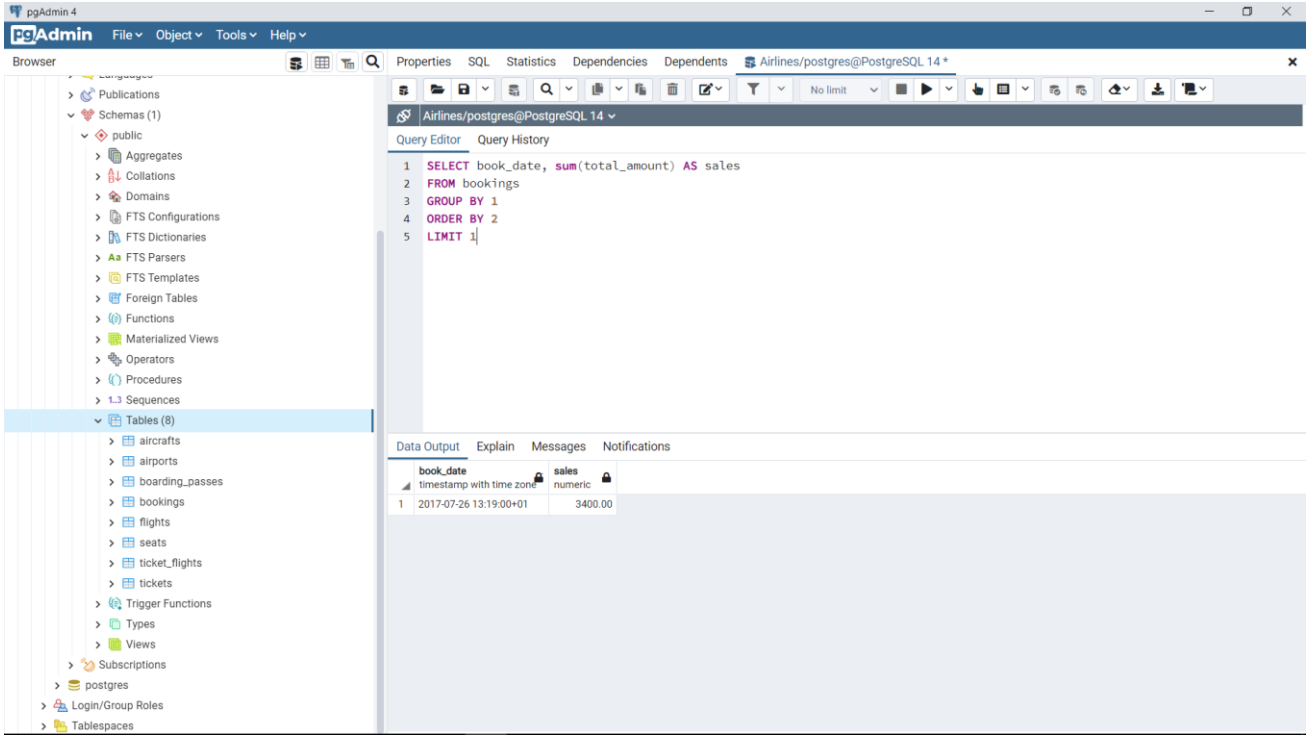
CASE IX:

Calculate the number of seats for all aircraft models, but now taking into account the class of service; Business class and Economic class.



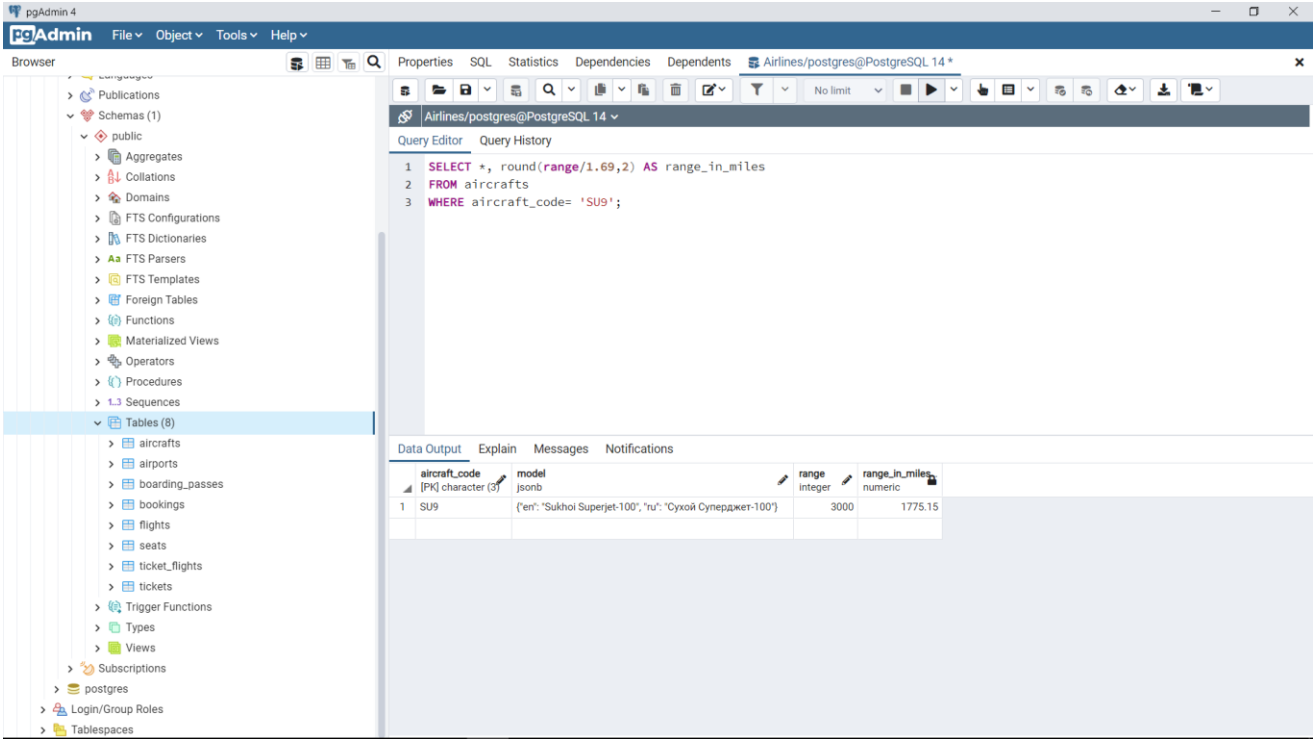
CASE X:

What was the least day in tickets sales?



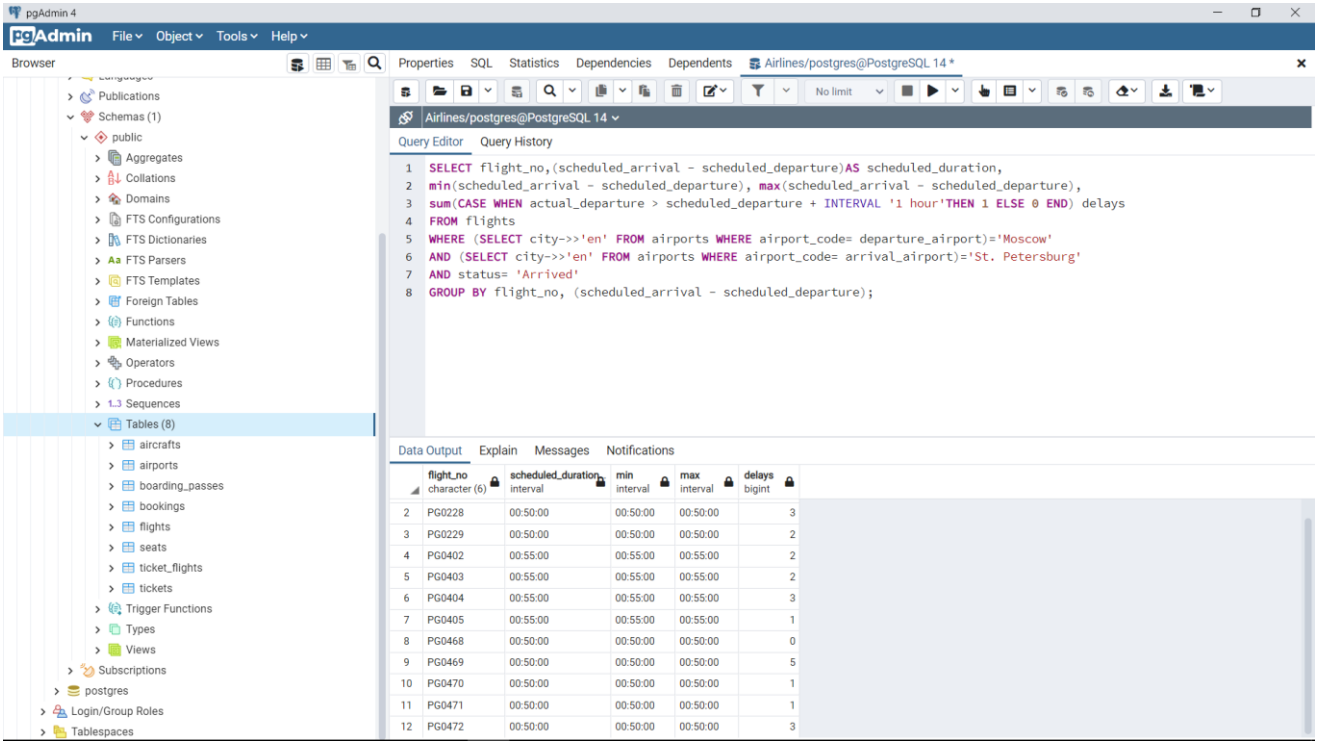
CASE XI:

Return all information about aircraft that has aircraft code ‘SU9’ and its range in miles.



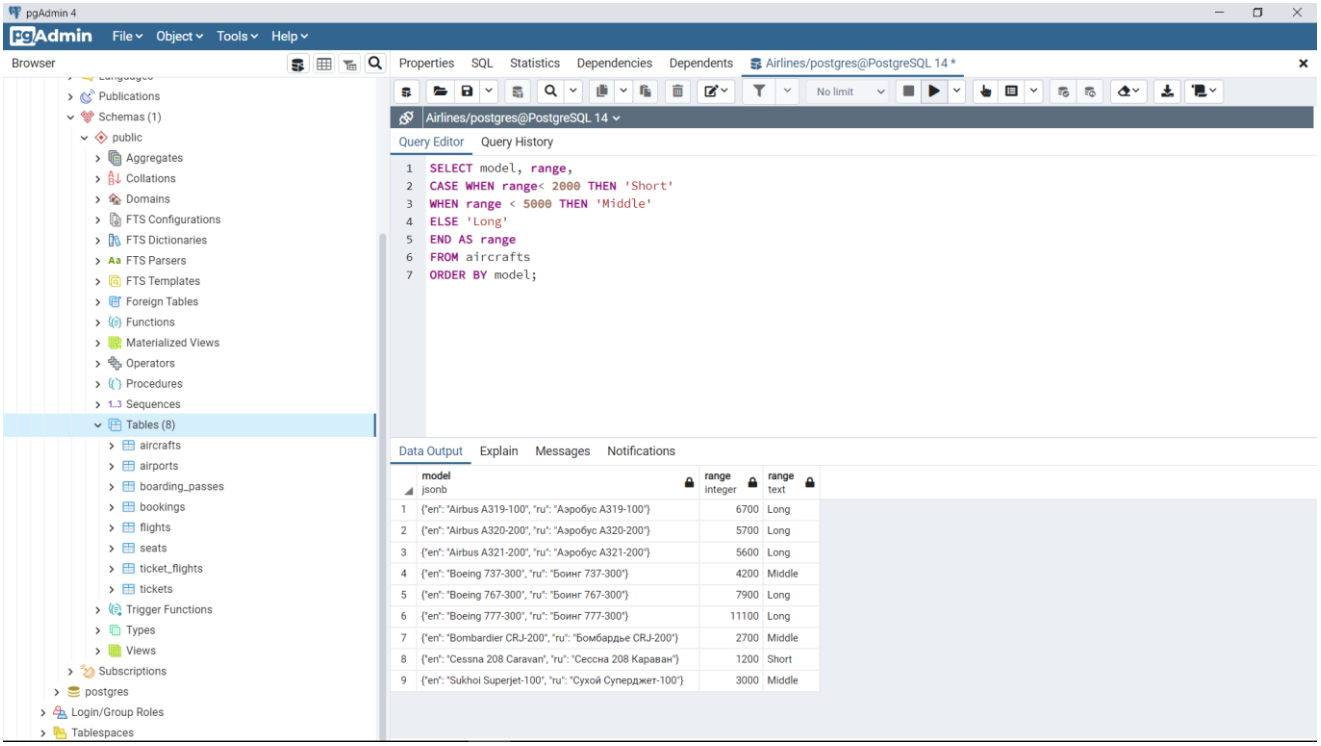
CASE XII:

What is the shortest flight duration for each possible flight from Moscow to St. Petersburg, and how many times was the flight delayed for more than an hour?



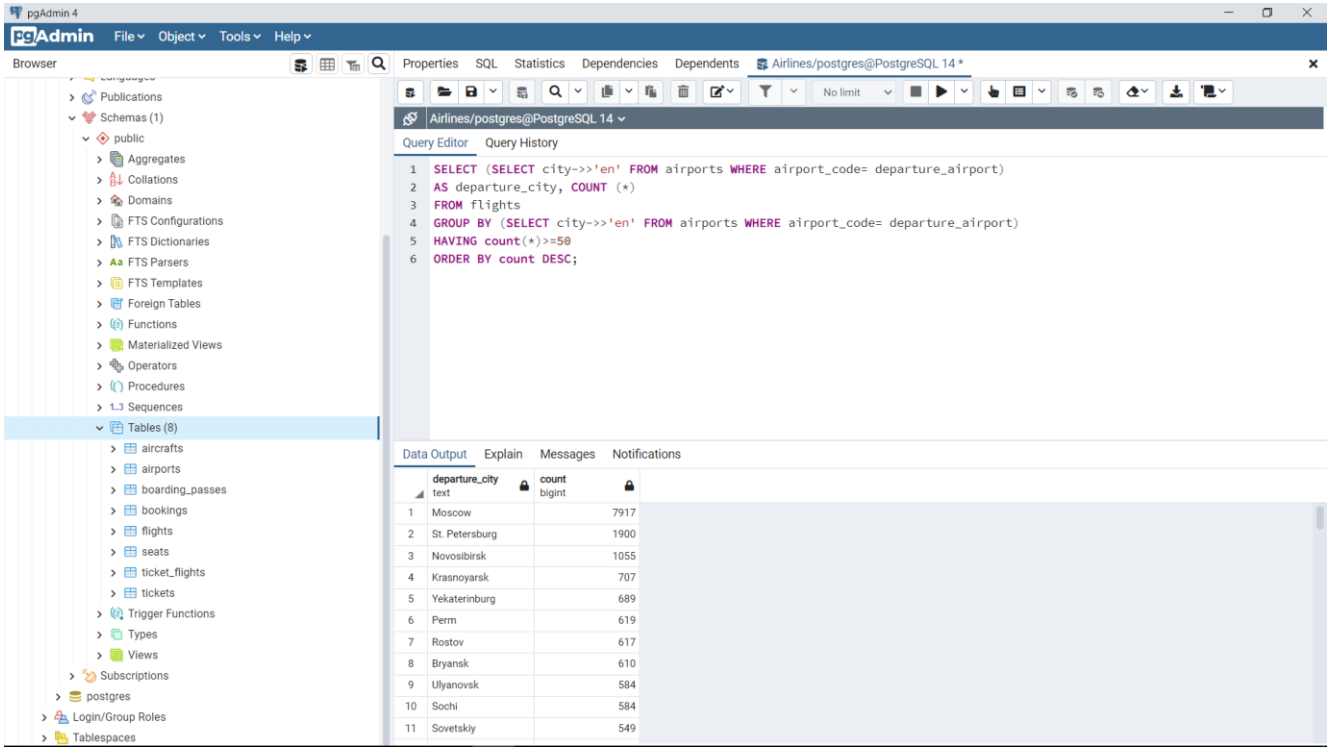
CASE XIII:

Write a query to arrange the range of model of aircrafts so short range is less than 2000, middle range is more than 2000 and less than 5000 and any range above 5000 is long range.



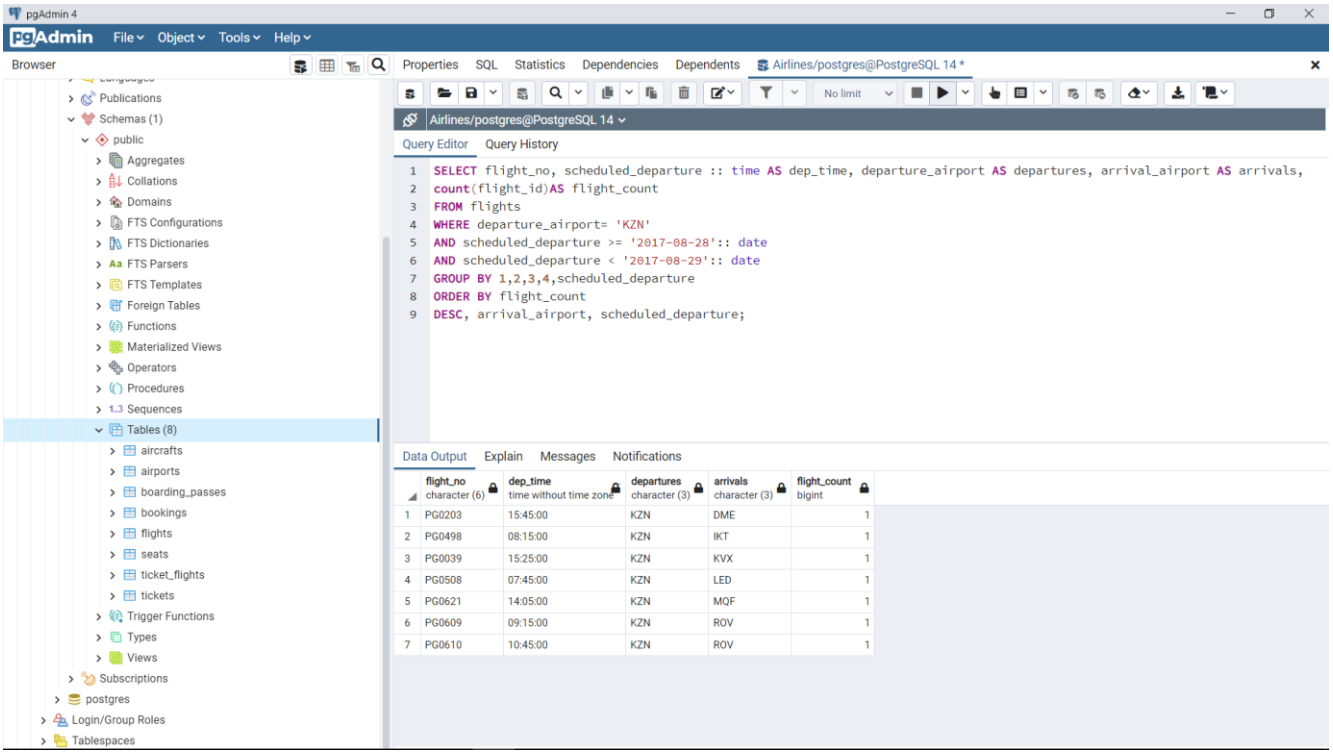
CASE XIV:

Determine how many flights from each city to other cities, return the name of the city and count of flights more than 50. Order the data from the largest number of flights to the least.



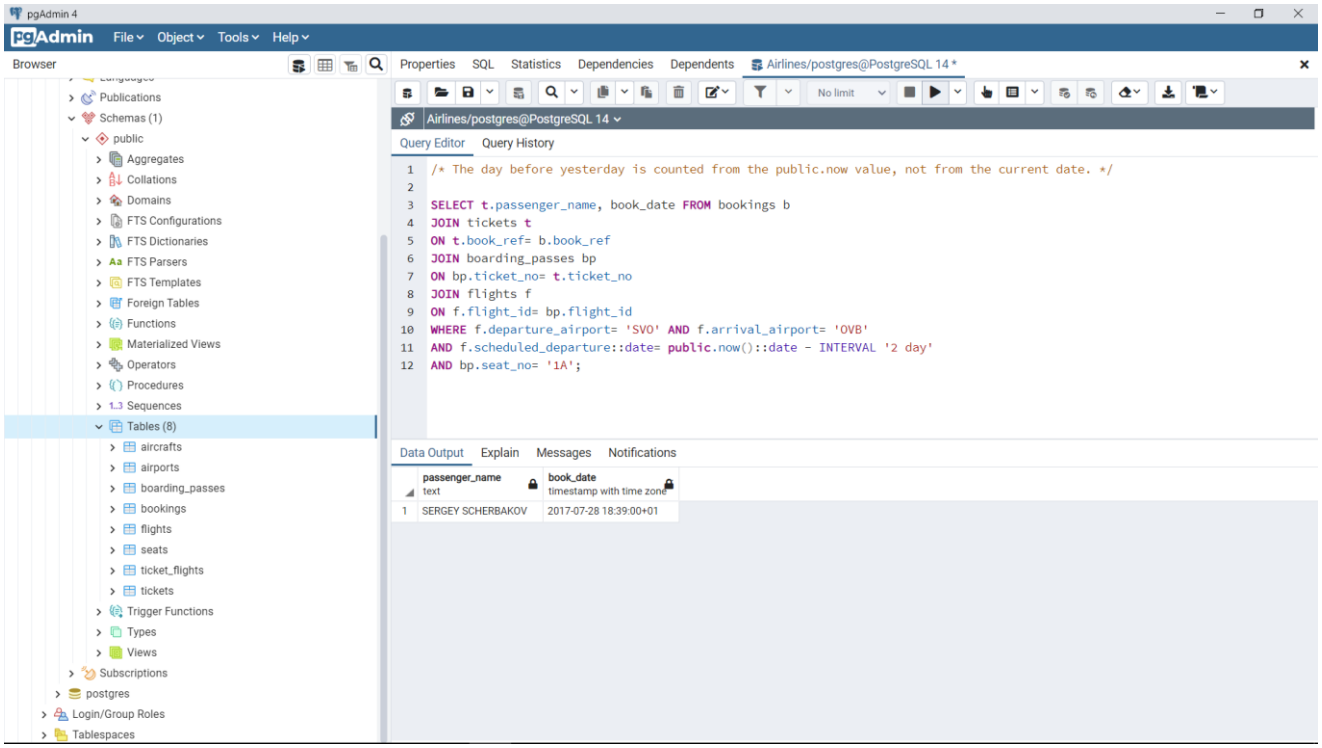
CASE XV:

Return all flight details in the indicated day (2017-08-28) from airport whose code is 'KZN'. Include flight count in ascending order, departures count and when departures happens and arrivals count and when arrivals happen.



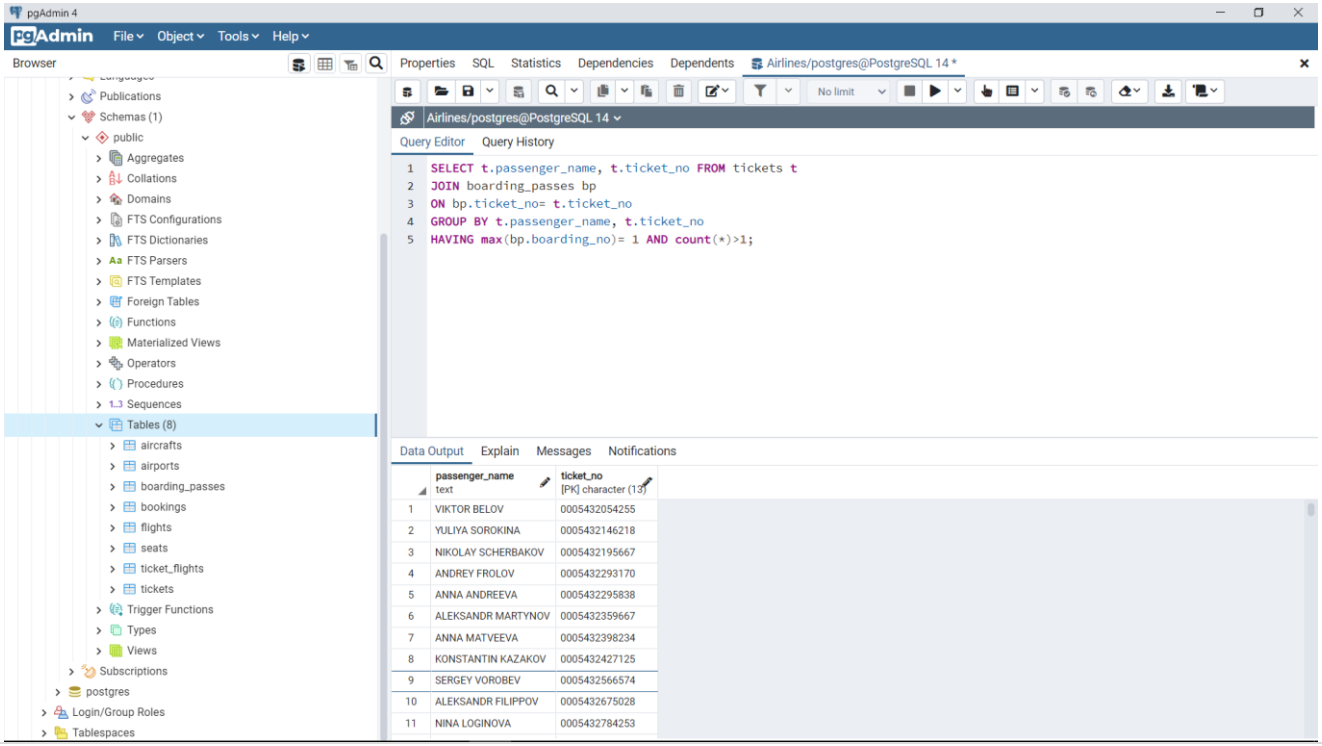
CASE XVI:

Who travelled from Moscow (SVO) to Novosibirsk (OVB) on seat 1A the day before yesterday, and when was the ticket booked?



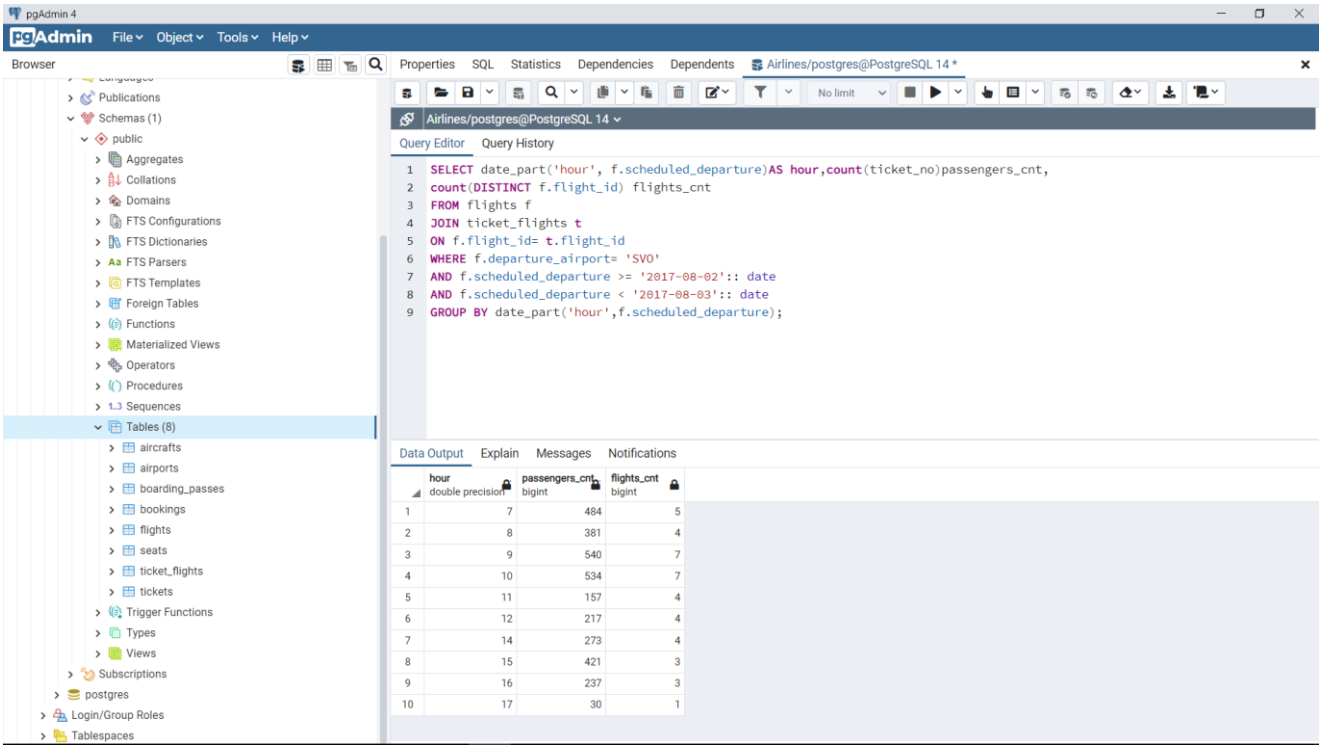
CASE XVII:

Find the most disciplined passengers who checked in first for all their flights. Take into account only those passengers who took at least two flights.



CASE XVIII:

Calculate the number of passengers and number of flights departing from one airport (SVO) during each hour on the indicated day 2017-08-02.

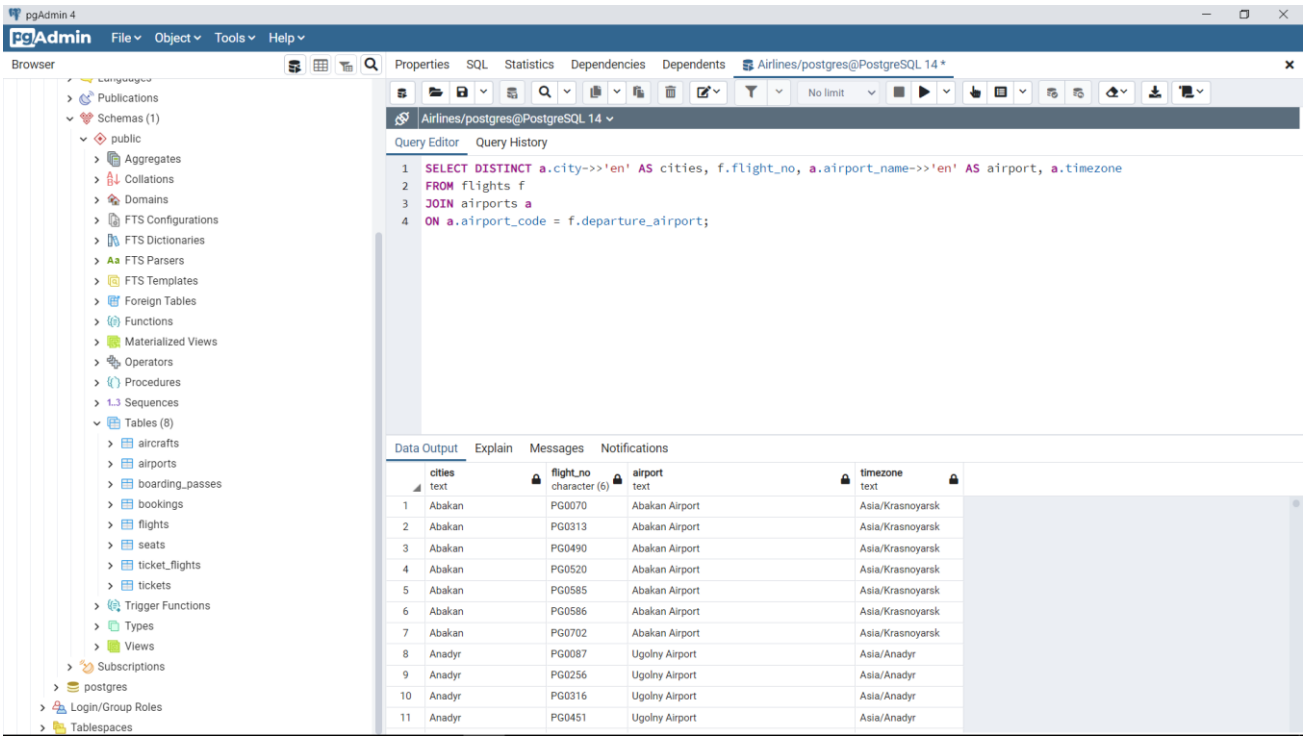


```
SELECT date_part('hour', f.scheduled_departure)AS hour,count(ticket_no)passengers_cnt,
count(DISTINCT f.flight_id) flights_cnt
FROM flights f
JOIN ticket_flights t
ON f.flight_id= t.flight_id
WHERE f.departure_airport= 'SVO'
AND f.scheduled_departure >= '2017-08-02':: date
AND f.scheduled_departure < '2017-08-03':: date
GROUP BY date_part('hour',f.scheduled_departure);
```

	hour double precision	passengers_cnt bigint	flights_cnt bigint
1	7	484	5
2	8	381	4
3	9	540	7
4	10	534	7
5	11	157	4
6	12	217	4
7	14	273	4
8	15	421	3
9	16	237	3
10	17	30	1

CASE XIX:

Return unique city name, flight number, airport and time zone.

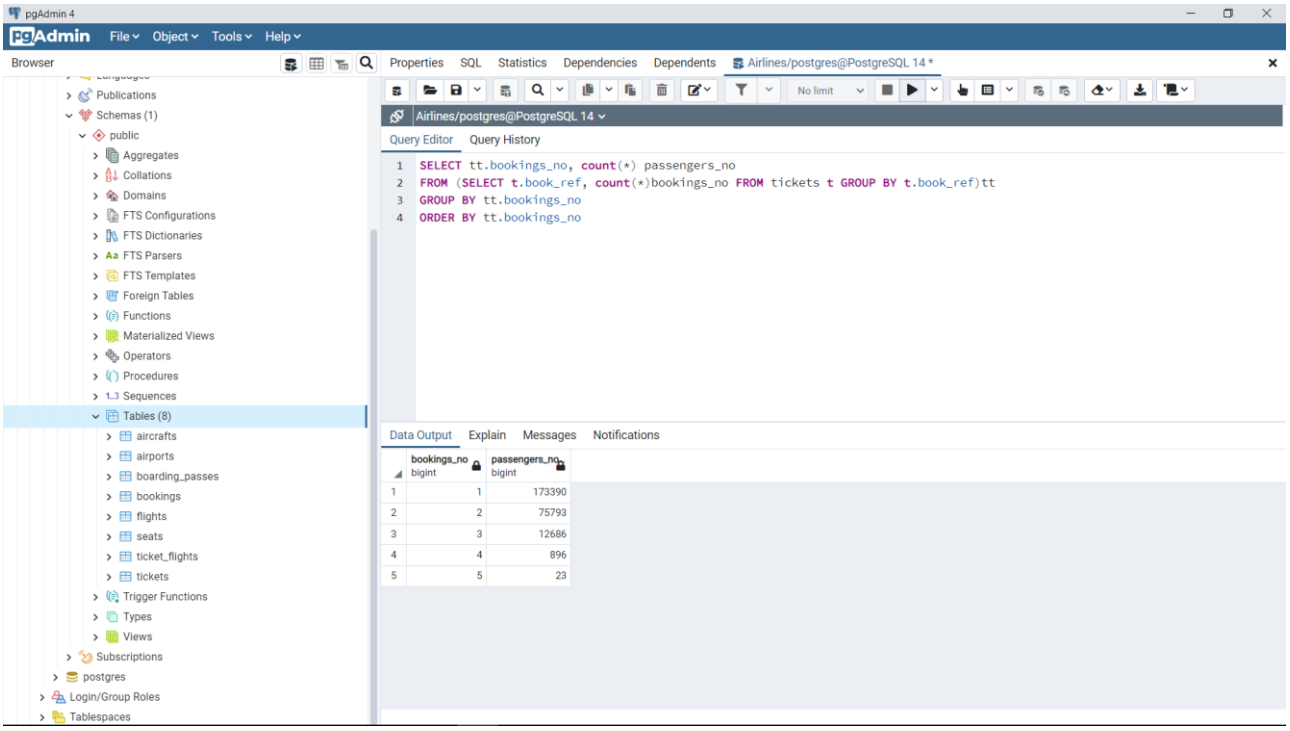


```
SELECT DISTINCT a.city->>'en' AS cities, f.flight_no, a.airport_name->>'en' AS airport, a.timezone
FROM flights f
JOIN airports a
ON a.airport_code = f.departure_airport;
```

	cities text	flight_no character (6)	airport text	timezone text
1	Abakan	PG0070	Abakan Airport	Asia/Krasnoyarsk
2	Abakan	PG0313	Abakan Airport	Asia/Krasnoyarsk
3	Abakan	PG0490	Abakan Airport	Asia/Krasnoyarsk
4	Abakan	PG0520	Abakan Airport	Asia/Krasnoyarsk
5	Abakan	PG0585	Abakan Airport	Asia/Krasnoyarsk
6	Abakan	PG0586	Abakan Airport	Asia/Krasnoyarsk
7	Abakan	PG0702	Abakan Airport	Asia/Krasnoyarsk
8	Anadyr	PG0087	Ugolny Airport	Asia/Anadyr
9	Anadyr	PG0256	Ugolny Airport	Asia/Anadyr
10	Anadyr	PG0316	Ugolny Airport	Asia/Anadyr
11	Anadyr	PG0451	Ugolny Airport	Asia/Anadyr

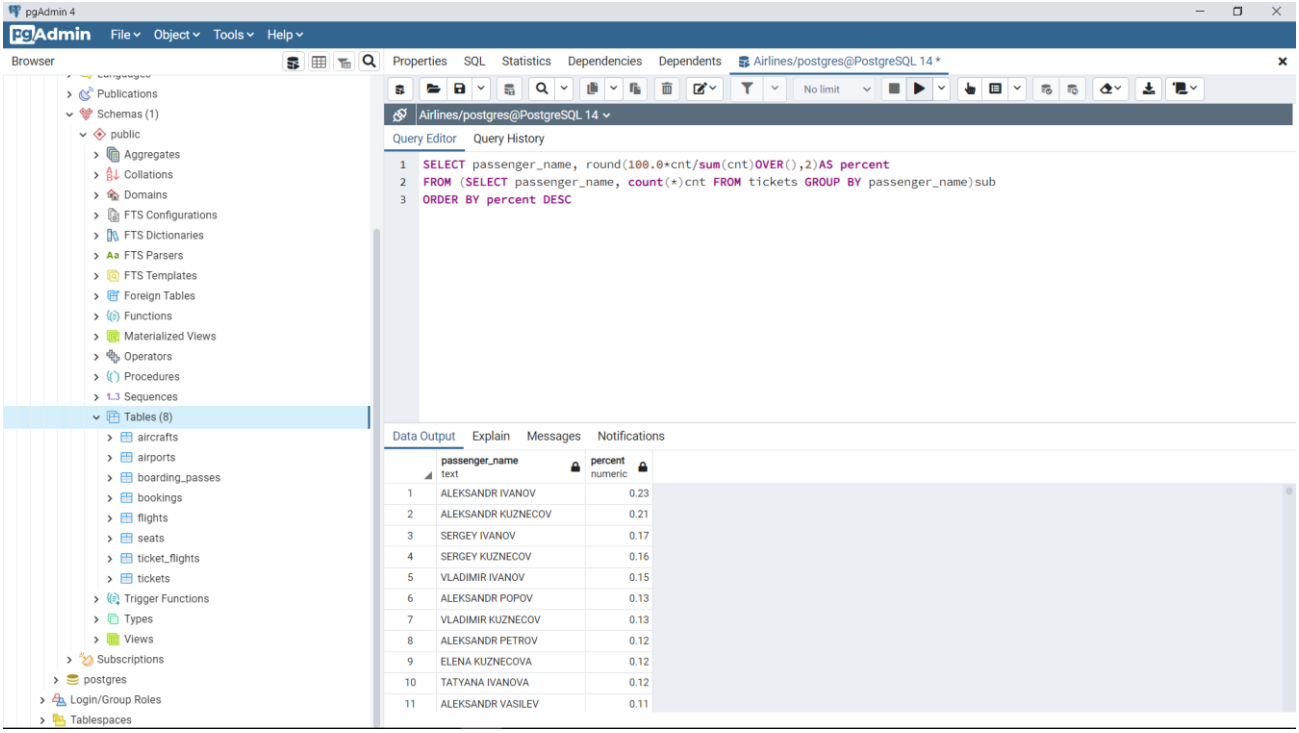
CASE XX:

How many people can be included into a single booking according to the available data?



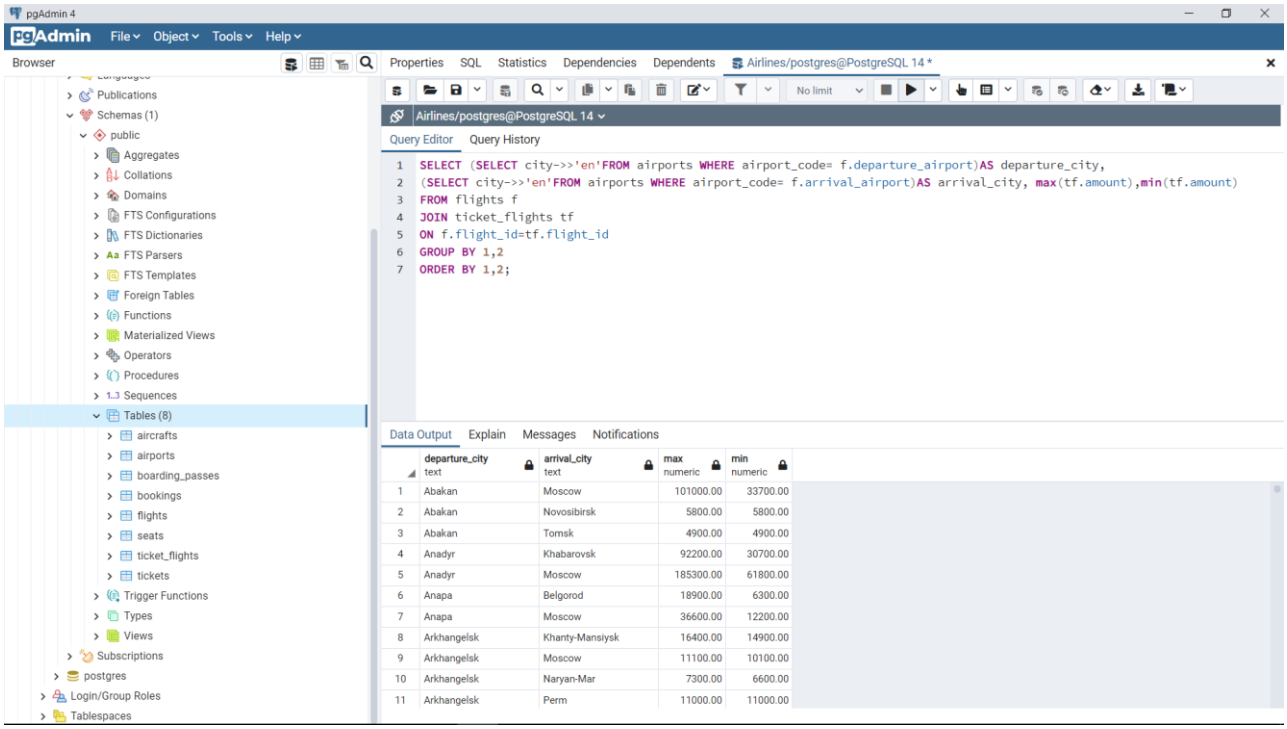
CASE XXI:

Which combination of first and last names occur most often? What is the ratio of the passengers with such names to the total number of passengers?



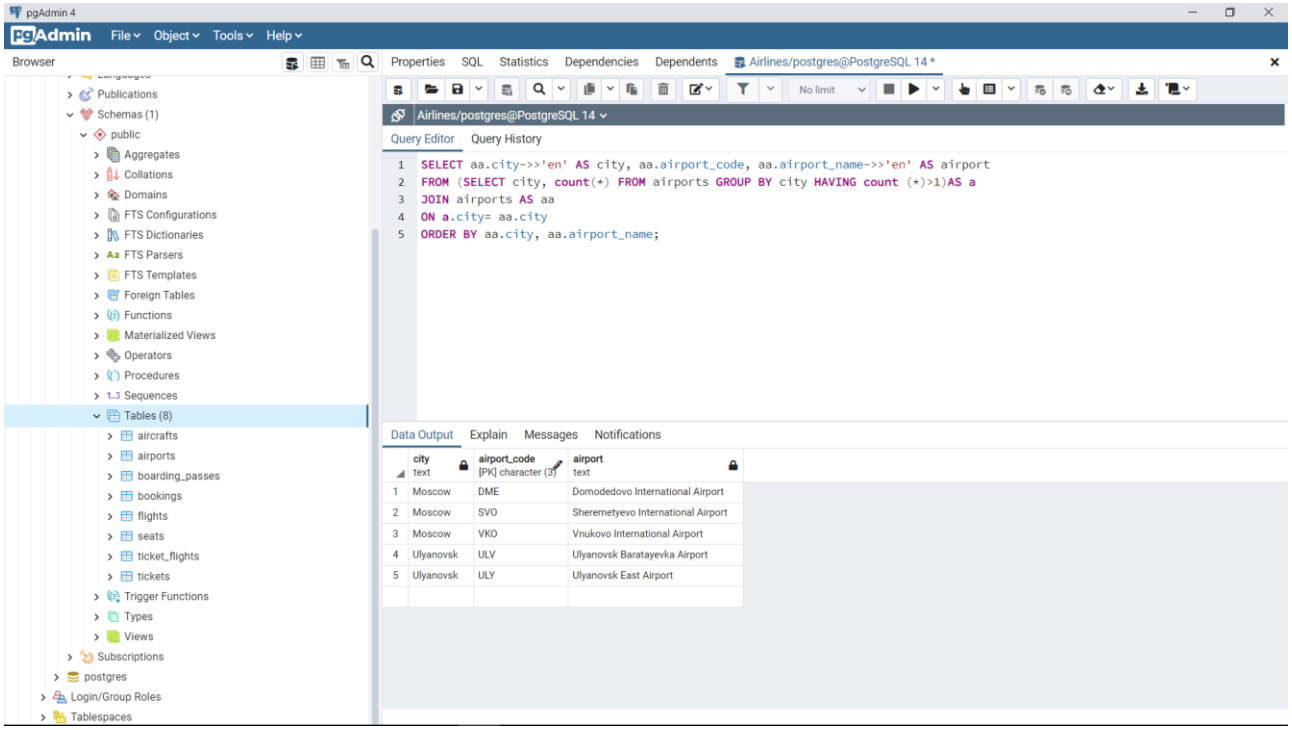
CASE XXII:

What are the maximum and minimum ticket prices in all directions?



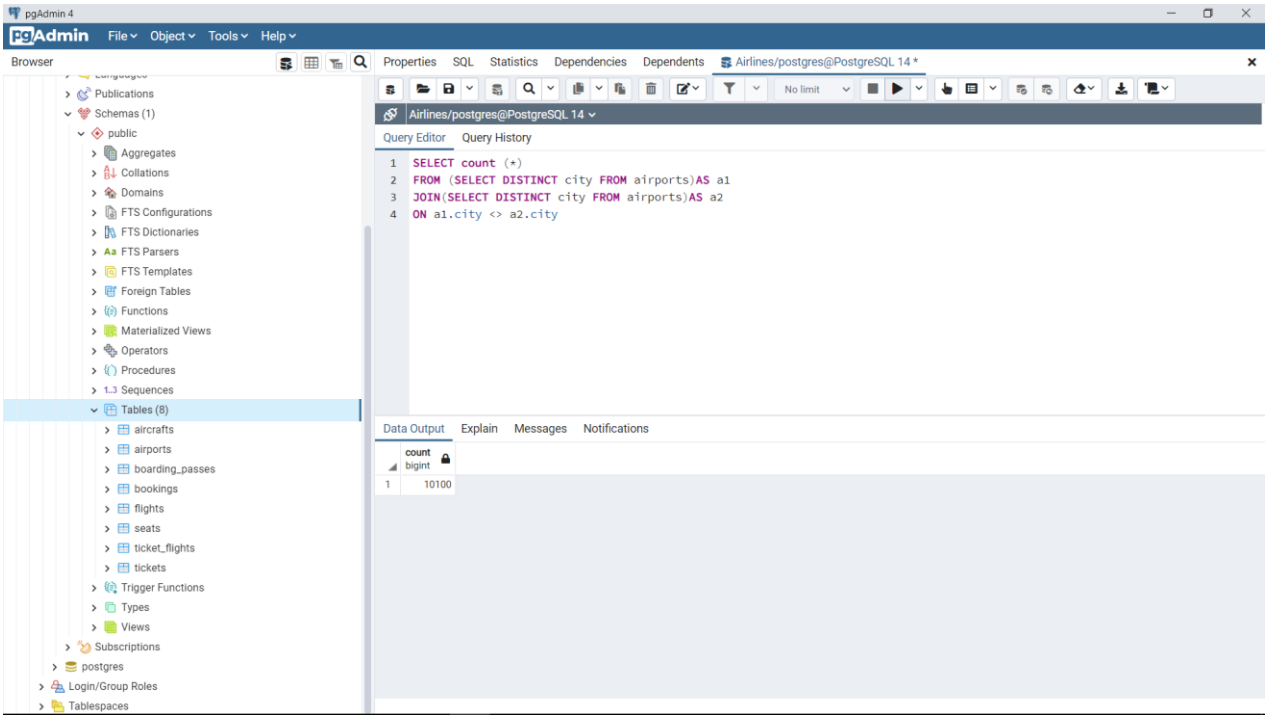
CASE XXIII:

Get a list of airports in cities with more than one airports.



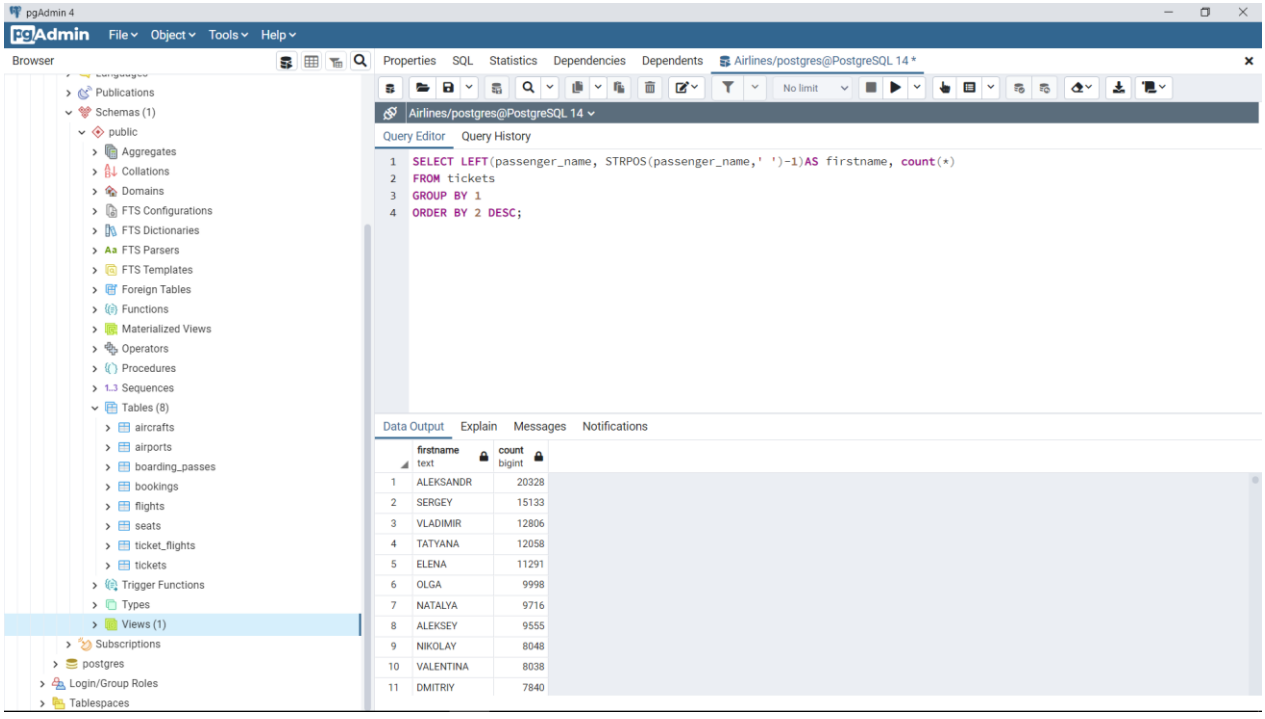
CASE XXIV:

What will be the total number of different routes that are theoretically laid between all cities?



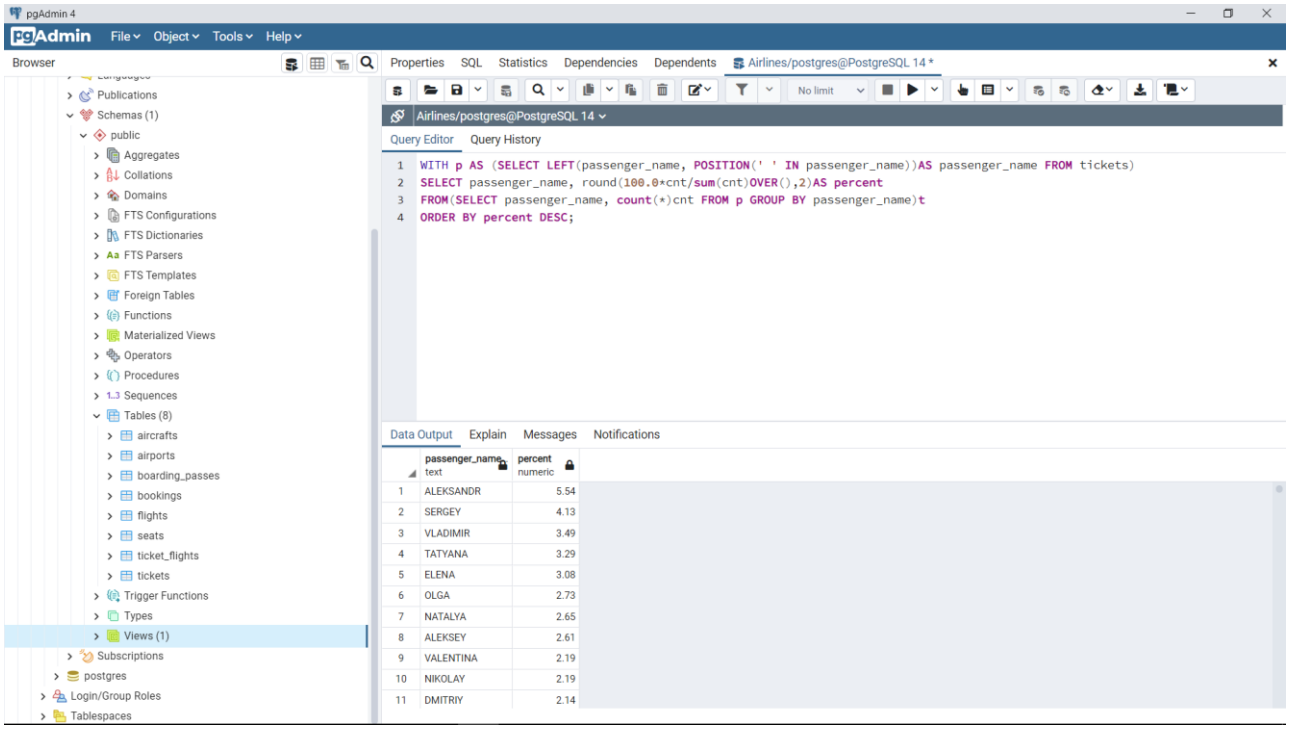
CASE XXV:

Suppose our airline marketers want to know how often there are different names among the passengers?



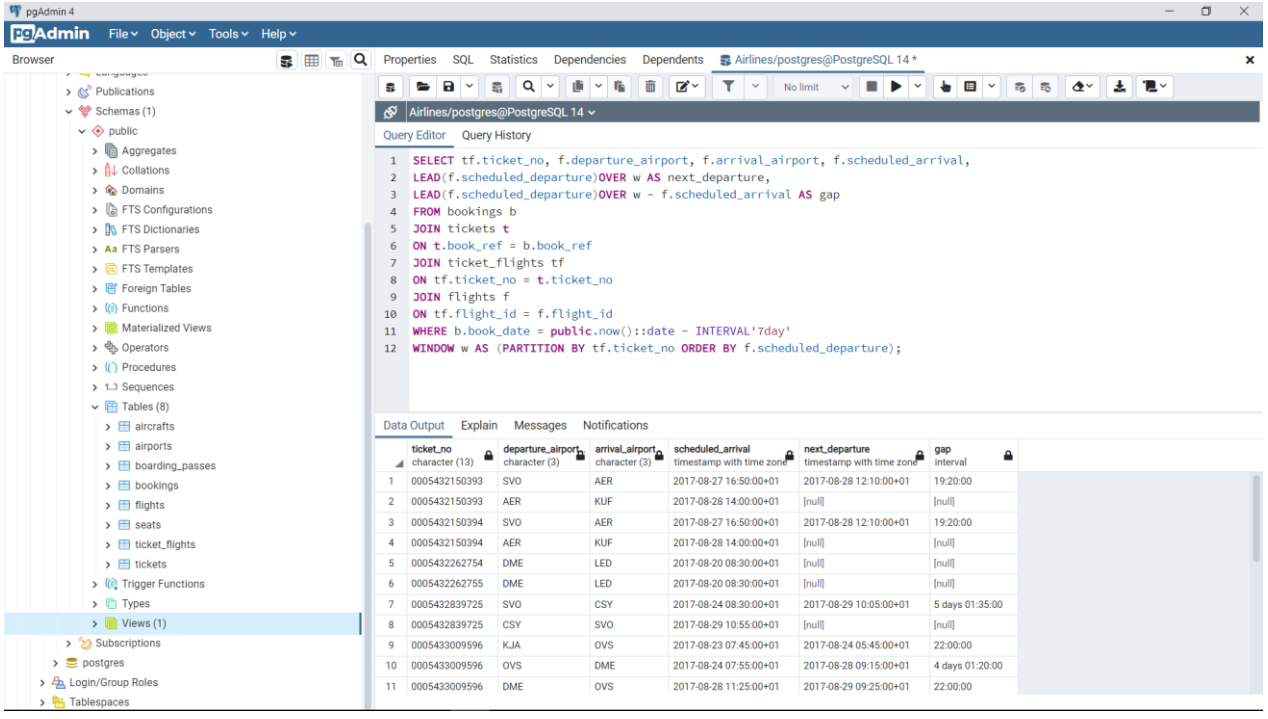
CASE XXVI:

What combination of first names and last names separately occur most often? What is the ratio of the passengers with such names to the total number of passengers?



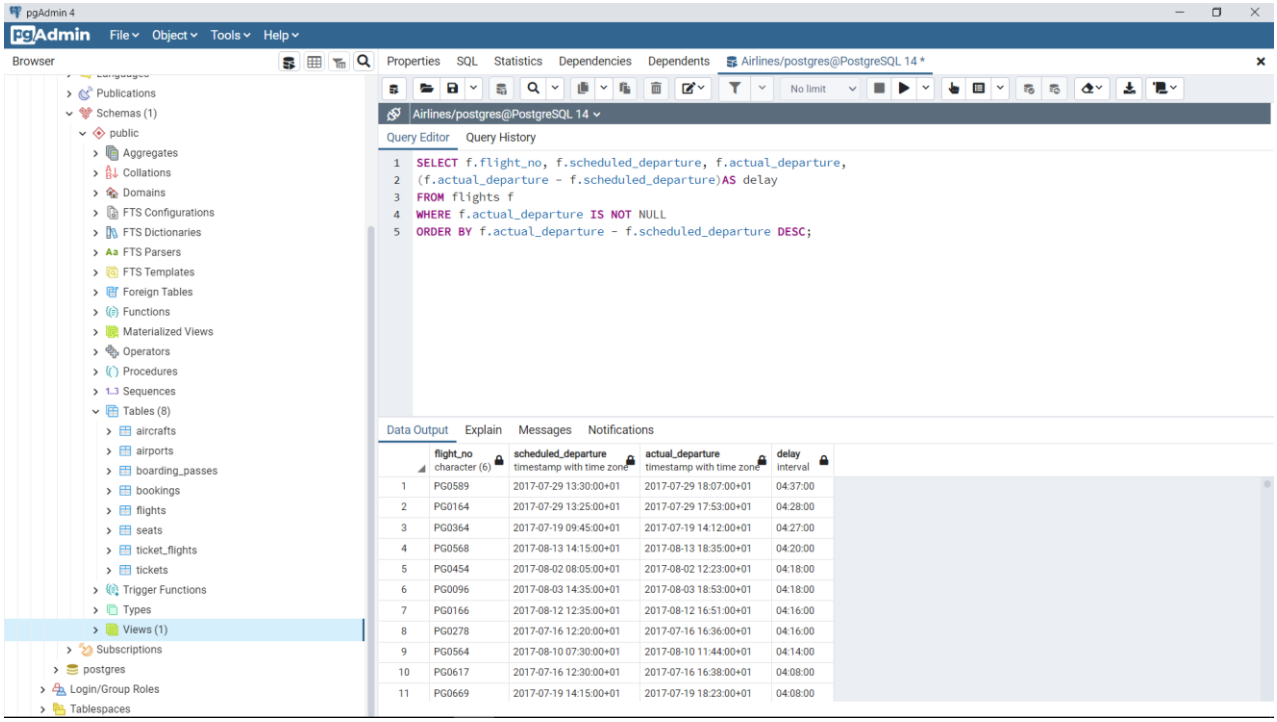
CASE XXVII:

For each ticket, display all the included flight segments, together with connection time. Limit the result to the tickets booked a week ago.



CASE XXVIII:

Which flights had the longest delays?



CASE XXIX:

How many seats remained free on the flight PG0404 in the day before the last in the airlines database?