

Laboratory work №3

The screenshot shows the pgAdmin 4 interface. The left sidebar displays the 'Object Explorer' with the 'passengers' table selected under the 'airline' database. The main query editor contains the following SQL query:

```
1 SELECT *
2 FROM passengers
3 WHERE first_name = last_name;
```

The 'Data Output' tab shows the results of the query. The table has 10 columns: passenger_id, first_name, last_name, date_of_birth, gender, country_of_residence, country_of_citizenship, passport_number, and created_at. The results show two rows where the first name matches the last name.

passenger_id	first_name	last_name	date_of_birth	gender	country_of_residence	country_of_citizenship	passport_number	created_at
1	1012	Samat	1981-08-23	Male	Kazakhstan	Kazakhstan	KZ200012	2025-10
2	1128	Samat	1997-07-10	Male	Kazakhstan	Kazakhstan	KZ200128	2025-10

1.This query selects all passengers whose first name is the same as their last name.

The screenshot shows the pgAdmin 4 interface. The left sidebar displays the 'Object Explorer' with the 'airline' database selected. The main query editor contains the following SQL query:

```
1 SELECT DISTINCT last_name
2 FROM passengers;
```

The 'Data Output' tab shows the results of the query. The table has 1 column: last_name. The results show 6 distinct last names.

last_name
Smallov
Muratov
Ospanov
Asanova
Tulegenov
Ayan

2. This query returns all unique last names of passengers without duplicates.

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer displays the database structure for 'airport/postgres@PostgreSQL 17'. The main pane shows a SQL query in the 'Query' tab:

```
1 SELECT *
2 FROM passengers
3 WHERE gender = 'Male'
4 AND date_of_birth BETWEEN '1990-01-01' AND '2000-12-31';
5
```

Below the query, the 'Data Output' tab shows the results of the query. The table has 10 columns: passenger_id, first_name, last_name, date_of_birth, gender, country_of_citizenship, country_of_residence, passport_number, and create_time. The results show 6 rows of data, all with the last name 'Smailov'.

passenger_id	first_name	last_name	date_of_birth	gender	country_of_citizenship	country_of_residence	passport_number	create_time
1074	Algerim	Smailov	1990-02-17	Male	Kazakhstan	Kazakhstan	KZ200074	2025
1076	Zarina	Smailov	1990-05-28	Male	Kazakhstan	Kazakhstan	KZ200076	2025
1078	Algerim	Smailov	1990-09-05	Male	Kazakhstan	Kazakhstan	KZ200078	2025
1080	Nurlan	Smailov	1990-12-14	Male	Kazakhstan	Kazakhstan	KZ200080	2025
1082	Karim	Tulegenov	1991-03-24	Male	Kazakhstan	Kazakhstan	KZ200082	2025
1084	Mira	Muratov	1991-07-02	Male	Kazakhstan	Kazakhstan	KZ200084	2025

Total rows: 40 Query complete 00:00:00.170 CRLF Ln 5, Col 1

3. This query finds all male passengers born between 1990 and 2000

pgAdmin 4

Object Explorer

airline

airport

baggage

baggage_check

boarding_pass

booking

booking_flight

flights

passengers

security_check

Trigger Functions

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airportdb

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Event Triggers

Extensions

Foreign Data Wrappers

Languages

Publications

Schemas (1)

public

Aggregates

airline/postgres@PostgreSQL 17*

Query

```
1 SELECT DATE_TRUNC('month', created_at) AS month, SUM(ticket_price) AS total_price
2 FROM booking
3 GROUP BY month
4 ORDER BY month;
5
```

Data Output

month	total_price
2024-03-01 00:00:00	400.00
2024-04-01 00:00:00	500.00

Total rows: 2 Query complete 00:00:00.088

4. This query calculates the total ticket price for each month

pgAdmin 4

Object Explorer

airline

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baggage_check

boarding_pass

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booking_flight

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Trigger Functions

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Query

```
1 SELECT a.airline_name, COUNT(f.flight_id) AS total_flights
2 FROM airline a
3 JOIN flights f ON a.airline_id = f.airline_id
4 GROUP BY a.airline_name;
5
```

Data Output

airline_name	total_flights
Qatar Airways	1
Emirates	1

Total rows: 2 Query complete 00:00:00.175

5. This query counts how many flights each airline has

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer displays a database structure with tables like 'airline', 'airport', 'baggage', 'boarding_pass', 'booking', 'booking_flight', 'flights', 'passengers', 'security_check', 'airportdb', 'phonebook', and 'phonebook2'. The 'passengers' table is selected. The main query editor shows the following SQL query:

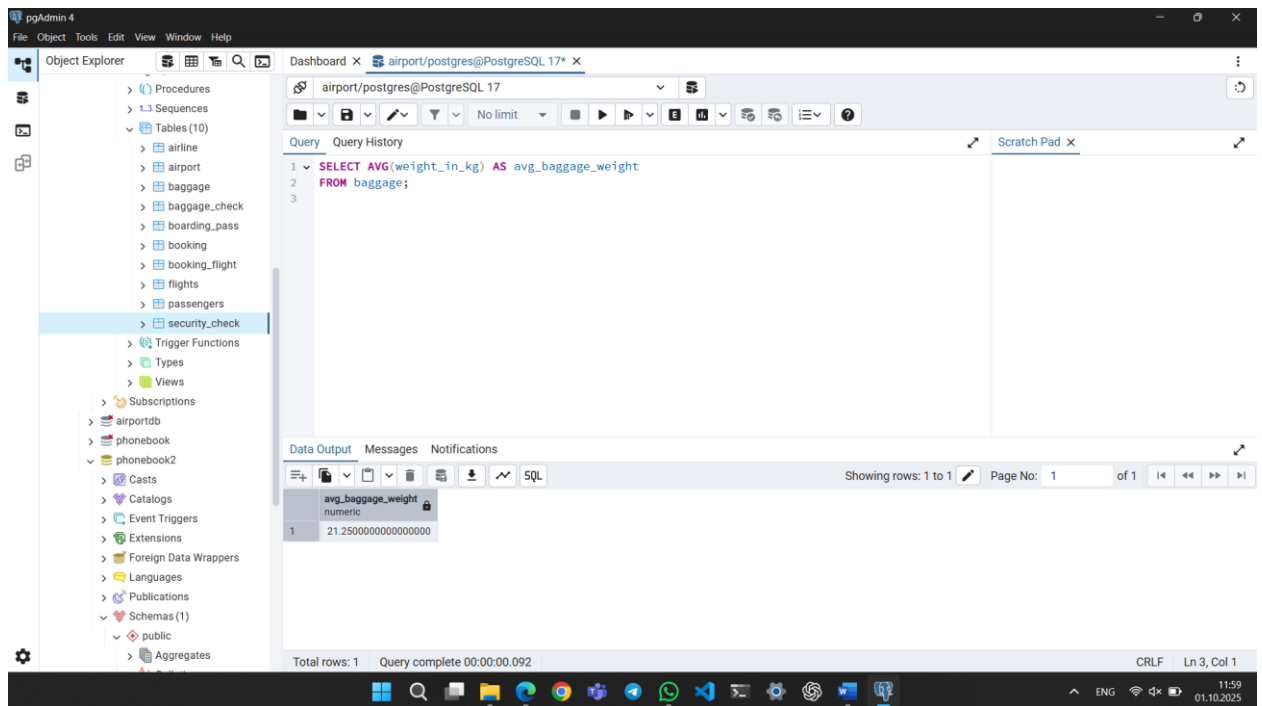
```
1 SELECT p.first_name, p.last_name, COUNT(b.booking_id) AS total_bookings
2 FROM passengers p
3 JOIN booking b ON p.passenger_id = b.passenger_id
4 GROUP BY p.first_name, p.last_name
5 ORDER BY total_bookings DESC
6 LIMIT 1;
```

Below the query editor, the Data Output tab shows the results of the query. It displays a table with three columns: 'first_name', 'last_name', and 'total_bookings'. The first row shows the results for the passenger with the most bookings.

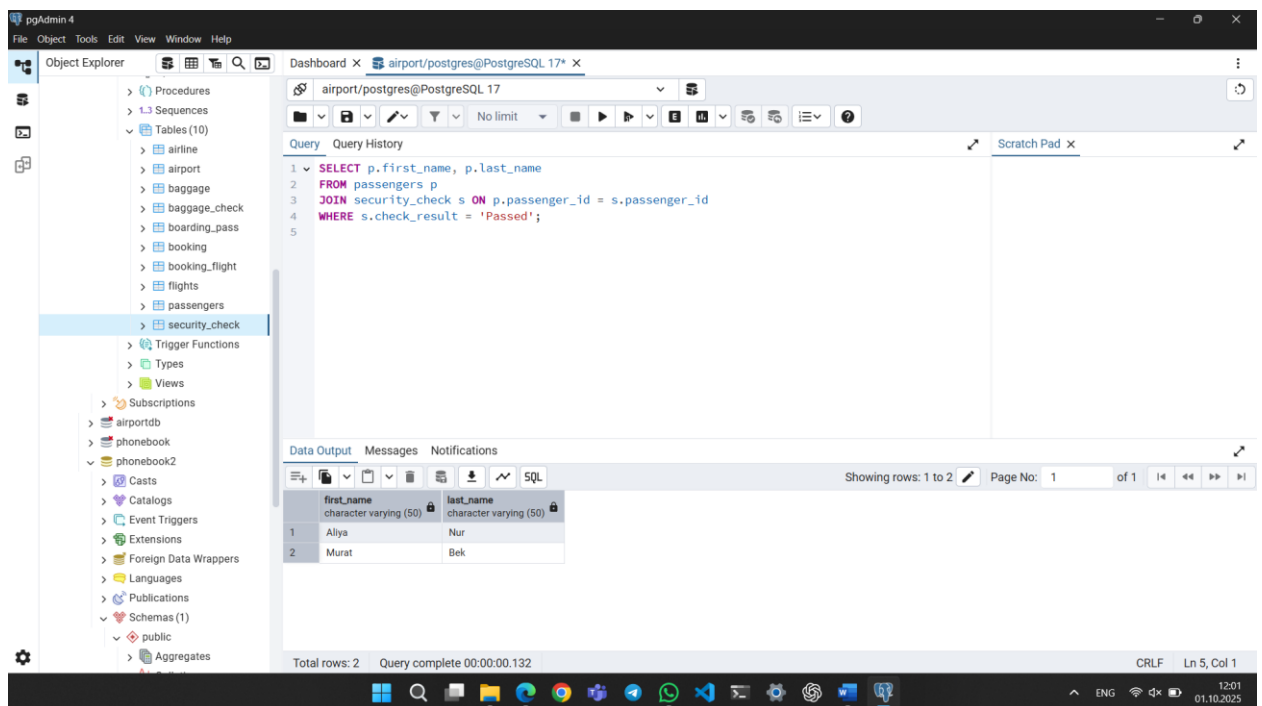
	first_name	last_name	total_bookings
1	Murat	Bek	1

The status bar at the bottom indicates 'Total rows: 1' and 'Query complete 00:00:00.134'. The system tray at the bottom right shows the time as 11:59 on 01.10.2025.

6. This query finds the passenger who made the most bookings



7. This query calculates the average baggage weight of all passengers



8. This query lists passengers who successfully passed the security check

The screenshot shows the pgAdmin 4 web interface. On the left, the 'Object Explorer' pane displays a tree view of database objects. The 'Tables (10)' folder is expanded, showing tables like 'airline', 'airport', 'baggage', 'baggage_check', 'boarding_pass', 'booking', 'booking_flight', 'flights', 'passengers', 'security_check', 'Trigger Functions', 'Types', 'Views', and 'Subscriptions'. The 'flights' table is selected. The main pane shows a SQL query editor with the following query:

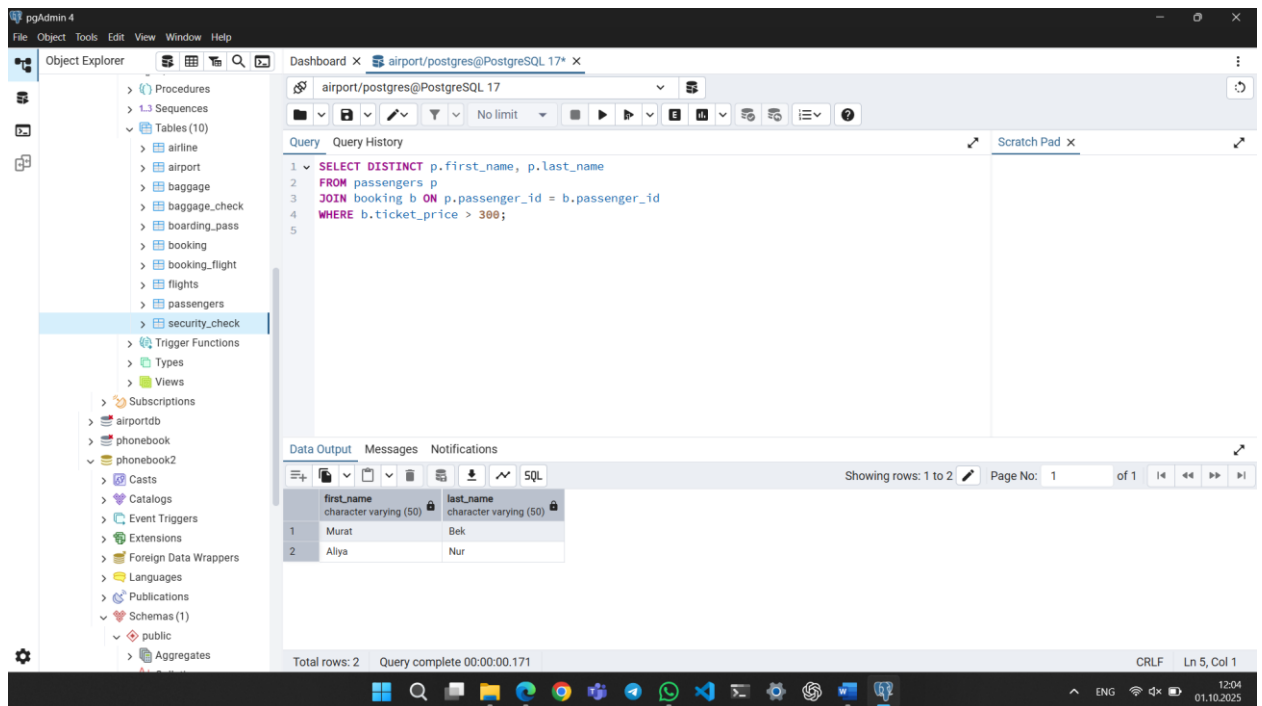
```
1 SELECT * FROM flights
2 WHERE departing_airport_id = 4;
3
```

Below the query editor, the 'Data Output' pane displays the results of the query. It shows a table with 10 columns: flight_id, sch_departure_time, sch_arrival_time, departing_airport_id, arriving_airport_id, departing_gate, arriving_gate, airline_id, and sct_departure_time. The results show 1 row of data.

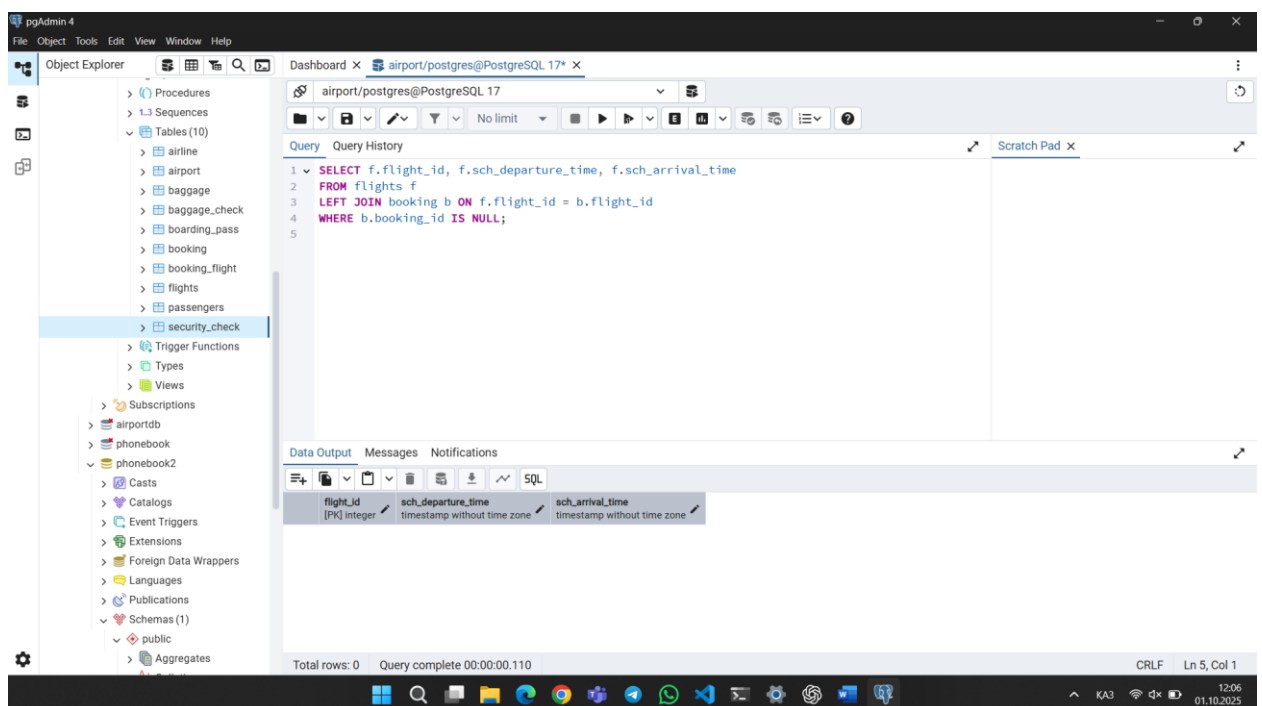
flight_id	sch_departure_time	sch_arrival_time	departing_airport_id	arriving_airport_id	departing_gate	arriving_gate	airline_id	sct_departure_time
103	2024-03-10 10:00:00	2024-03-10 14:00:00	4	5	A1	B2	3	2024-03-10 10:00:00

The status bar at the bottom indicates 'Total rows: 1' and 'Query complete 00:00:00.108'.

9. This query shows flights that depart from airport with ID 1



10. This query lists passengers who bought tickets more expensive than 300



11. This query finds flights that do not have any bookings

The screenshot shows the pgAdmin 4 interface with a SQL query executed. The query is as follows:

```
1 SELECT p.first_name, p.last_name, COUNT(b.baggage_id) AS total_baggage
2 FROM passengers p
3 JOIN booking bk ON p.passenger_id = bk.passenger_id
4 JOIN baggage b ON bk.booking_id = b.booking_id
5 GROUP BY p.first_name, p.last_name;
```

The result set shows two rows of data:

first_name	last_name	total_baggage
Murat	Bek	1
Aliya	Nur	1

The status bar indicates "Total rows: 2" and "Query complete 00:00:00.110".

12. This query counts how many baggage items each passengers has

The screenshot shows the pgAdmin 4 interface with a SQL query executed. The query is as follows:

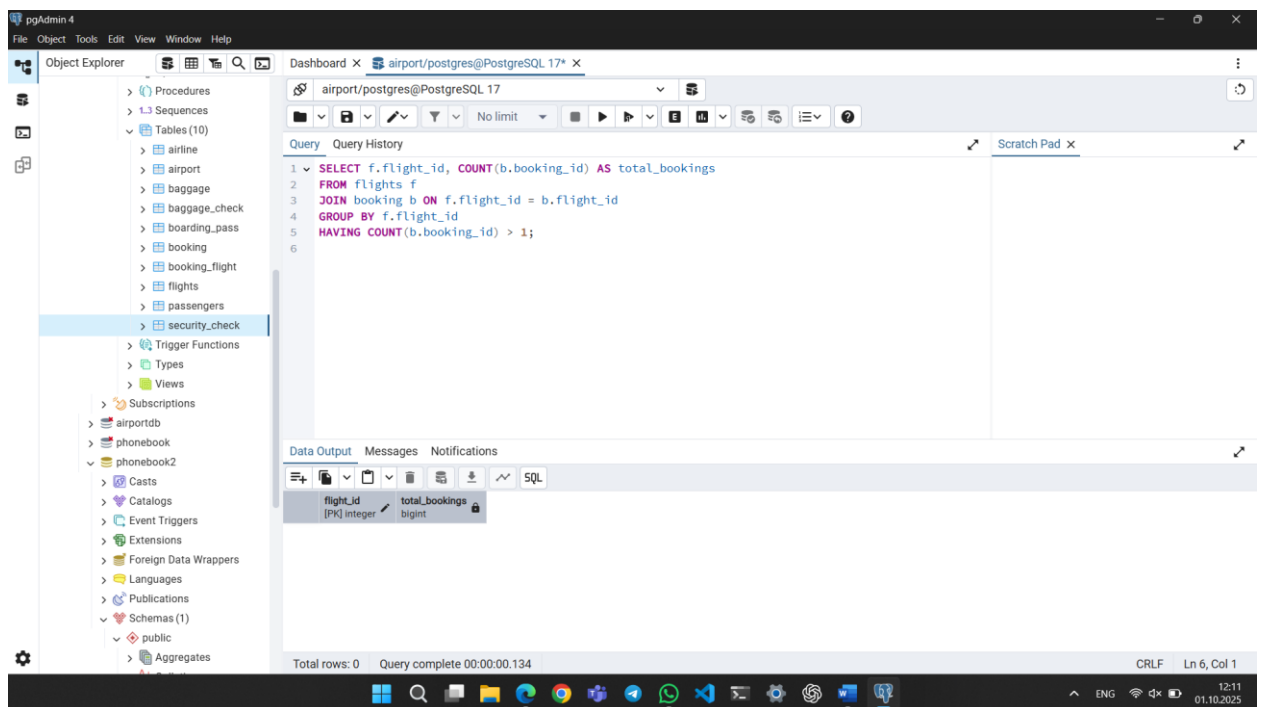
```
1 SELECT p.first_name, p.last_name, f.flight_id, f.sch_departure_time, f.sch_arrival_time
2 FROM passengers p
3 JOIN booking b ON p.passenger_id = b.passenger_id
4 JOIN flights f ON b.flight_id = f.flight_id;
```

The result set shows two rows of data:

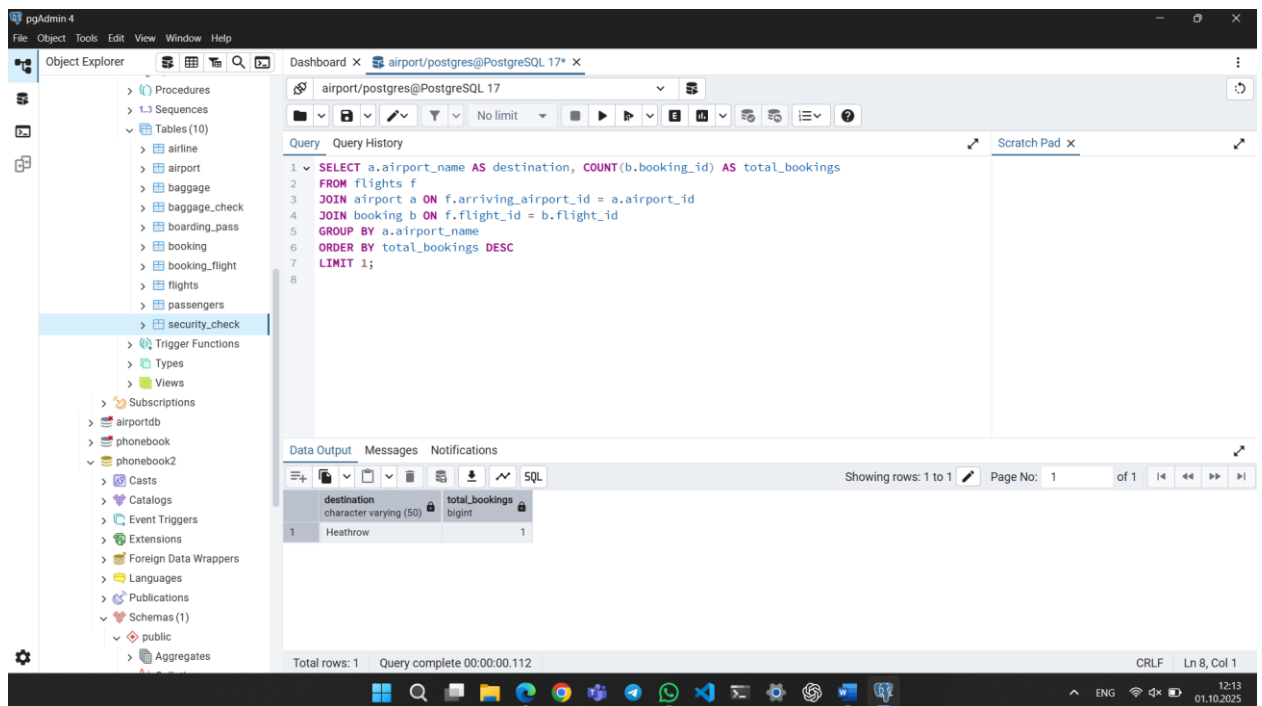
first_name	last_name	flight_id	sch_departure_time	sch_arrival_time
Aliya	Nur	103	2024-03-10 10:00:00	2024-03-10 14:00:00
Murat	Bek	104	2024-04-01 09:00:00	2024-04-01 13:00:00

The status bar indicates "Total rows: 2" and "Query complete 00:00:00.096".

13. This query shows passengers with their booked flights



14. This query lists flights that have more than one booking



15. This query finds the destination with the highest number of bookings