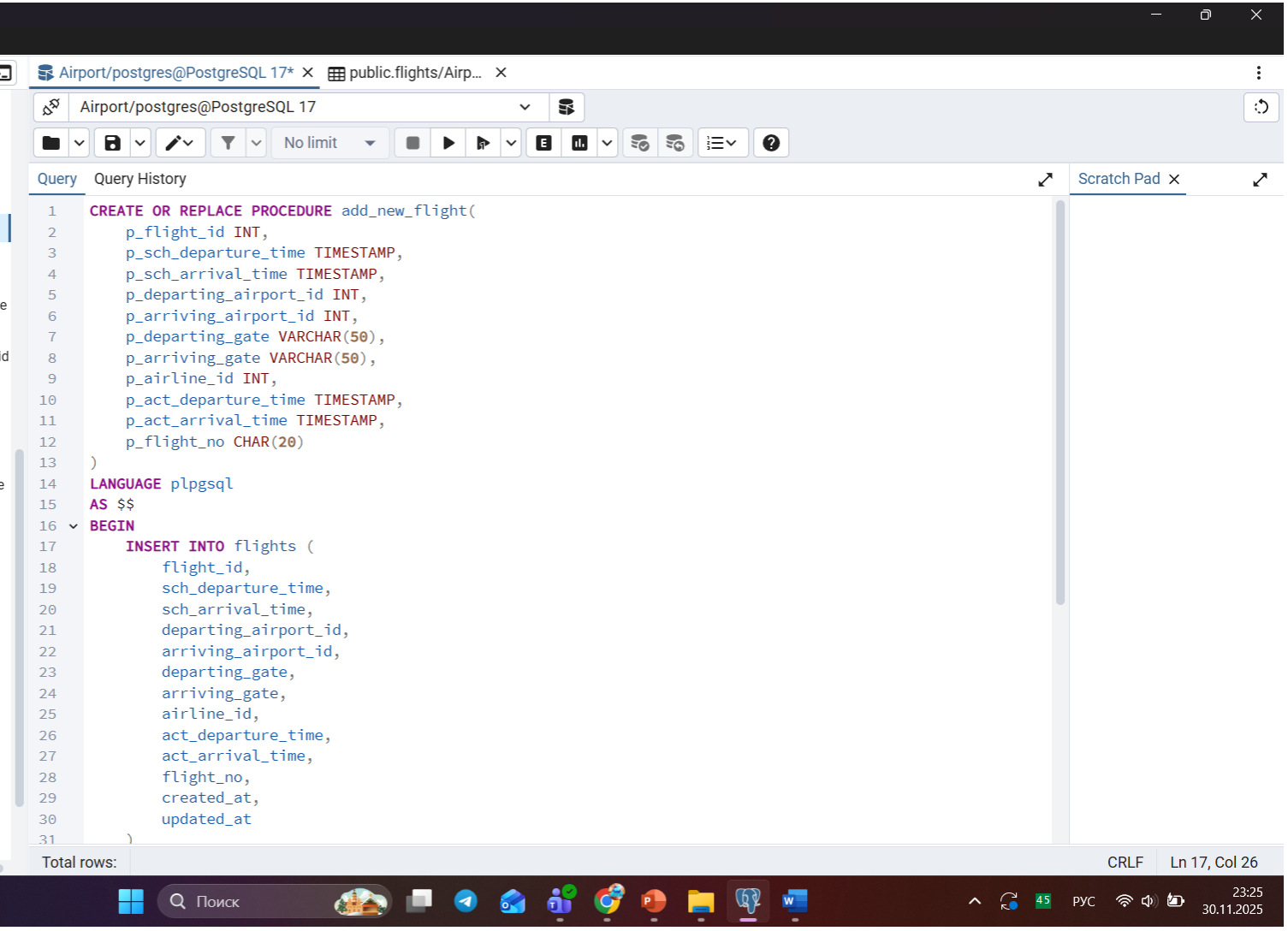
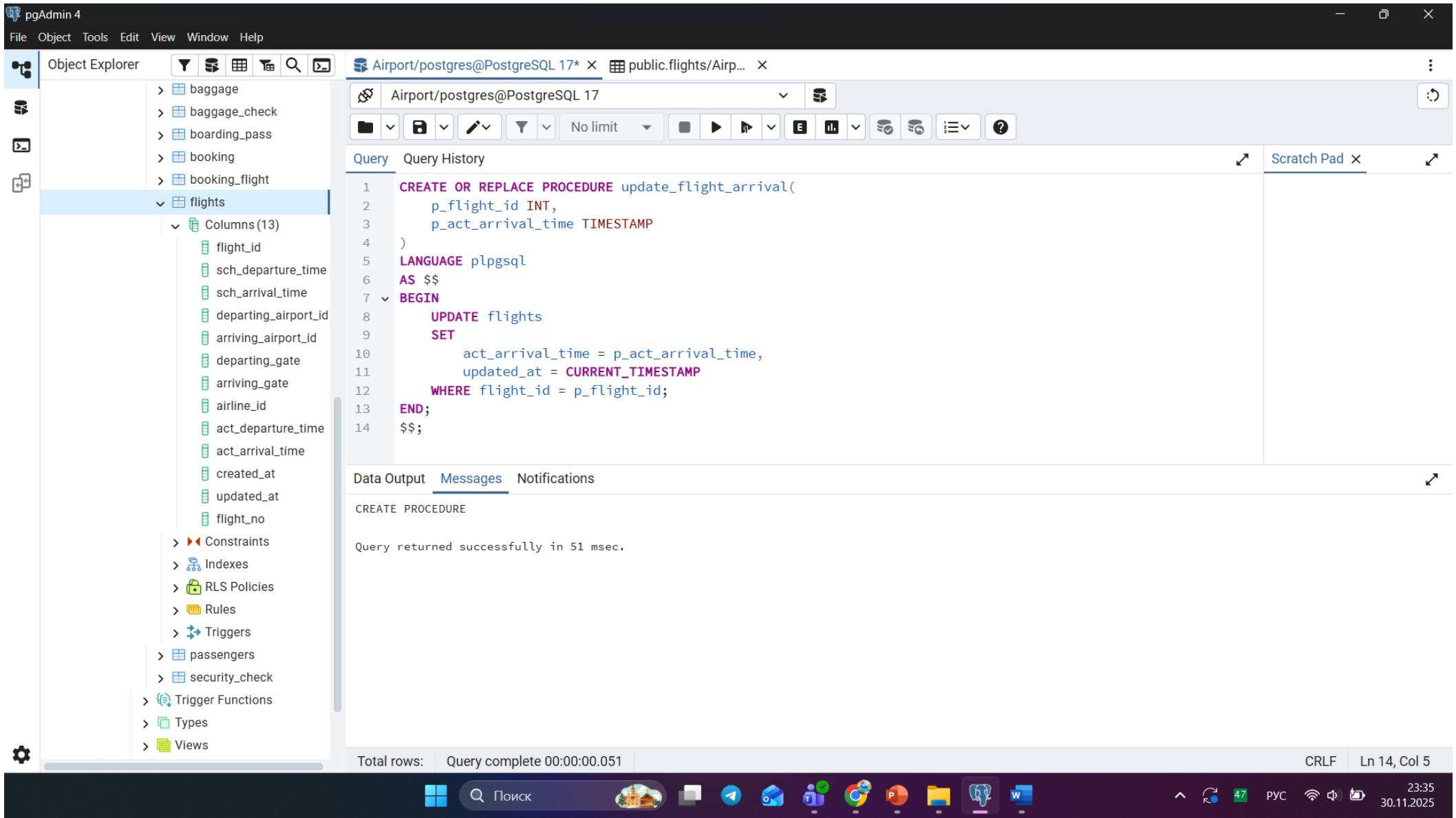
TASK 1

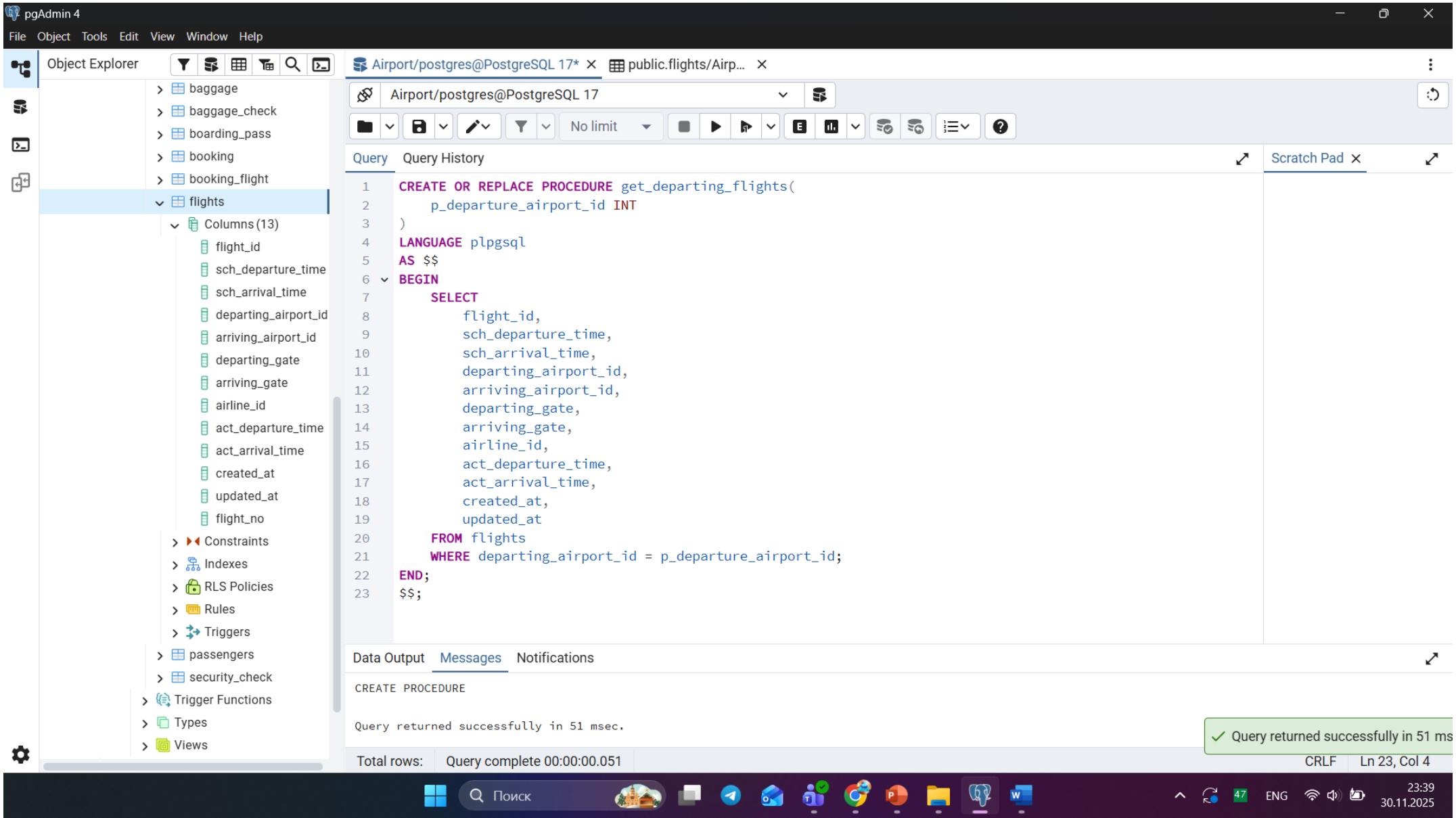



```
    )
    VALUES(
        p_flight_id,
        p_sch_departure_time,
        p_sch_arrival_time,
        p_departing_airport_id,
        p_arriving_airport_id,
        p_departing_gate,
        p_arriving_gate,
        p_airline_id,
        p_act_departure_time,
        p_act_arrival_time,
        p_flight_no,
        CURRENT_TIMESTAMP,
        CURRENT_TIMESTAMP
    );
END;
$$;
```

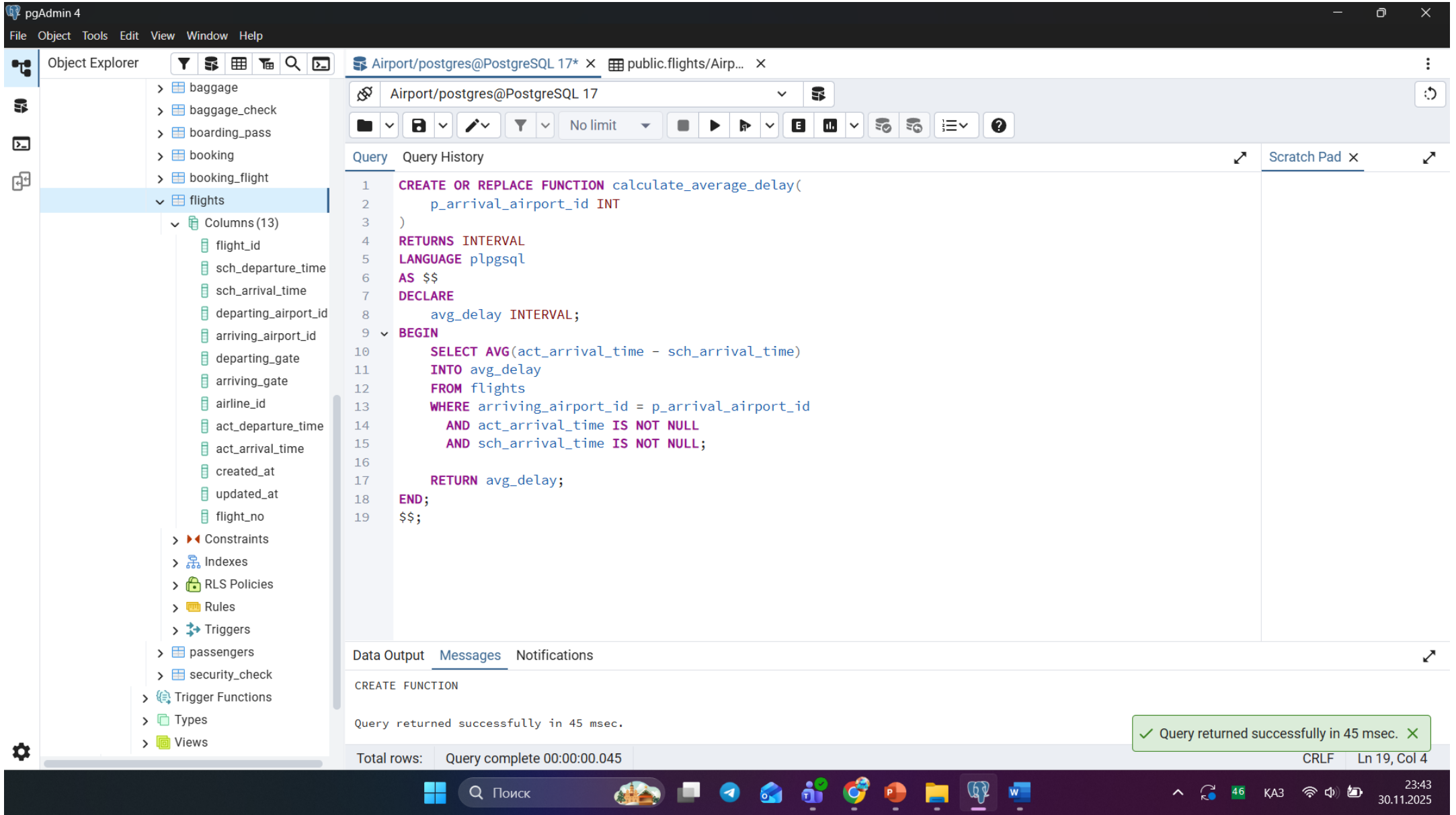
TASK 2


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Airport/postgres@PostgreSQL 17*
public.flights/Airp...
Airport/postgres@PostgreSQL 17
No limit
Query
Query History
Scratch Pad
1 CREATE OR REPLACE PROCEDURE update_flight_arrival(
2 p_flight_id INT,
3 p_act_arrival_time TIMESTAMP
4)
5 LANGUAGE plpgsql
6 AS $$
7 BEGIN
8 UPDATE flights
9 SET
10 act_arrival_time = p_act_arrival_time,
11 updated_at = CURRENT_TIMESTAMP
12 WHERE flight_id = p_flight_id;
13 END;
14 $$;
Data Output
Messages
Notifications
CREATE PROCEDURE
Query returned successfully in 51 msec.
Total rows:
Query complete 00:00:00.051
CRLF
Ln 14, Col 5
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
Columns (13)
flight_id
sch_departure_time
sch_arrival_time
departing_airport_id
arriving_airport_id
departing_gate
arriving_gate
airline_id
act_departure_time
act_arrival_time
created_at
updated_at
flight_no
Constraints
Indexes
RLS Policies
Rules
Triggers
passengers
security_check
Trigger Functions
Types
Views
Поиск
РУС
23:35
30.11.2025

TASK 3


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
Columns (13)
flight_id
sch_departure_time
sch_arrival_time
departing_airport_id
arriving_airport_id
departing_gate
arriving_gate
airline_id
act_departure_time
act_arrival_time
created_at
updated_at
flight_no
Constraints
Indexes
RLS Policies
Rules
Triggers
passengers
security_check
Trigger Functions
Types
Views
Airport/postgres@PostgreSQL 17*
public.flights/Airp...
Airport/postgres@PostgreSQL 17
No limit
Query
Query History
Scratch Pad
CREATE OR REPLACE PROCEDURE get_departing_flights(
p_departure_airport_id INT
)
LANGUAGE plpgsql
AS $$
BEGIN
SELECT
flight_id,
sch_departure_time,
sch_arrival_time,
departing_airport_id,
arriving_airport_id,
departing_gate,
arriving_gate,
airline_id,
act_departure_time,
act_arrival_time,
created_at,
updated_at
FROM flights
WHERE departing_airport_id = p_departure_airport_id;
END;
$$;
Data Output
Messages
Notifications
CREATE PROCEDURE
Query returned successfully in 51 msec.
Query returned successfully in 51 ms
Total rows:
Query complete 00:00:00.051
CRLF
Ln 23, Col 4
Поиск
ENG
23:39
30.11.2025

TASK 4


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
Columns (13)
flight_id
sch_departure_time
sch_arrival_time
departing_airport_id
arriving_airport_id
departing_gate
arriving_gate
airline_id
act_departure_time
act_arrival_time
created_at
updated_at
flight_no
Constraints
Indexes
RLS Policies
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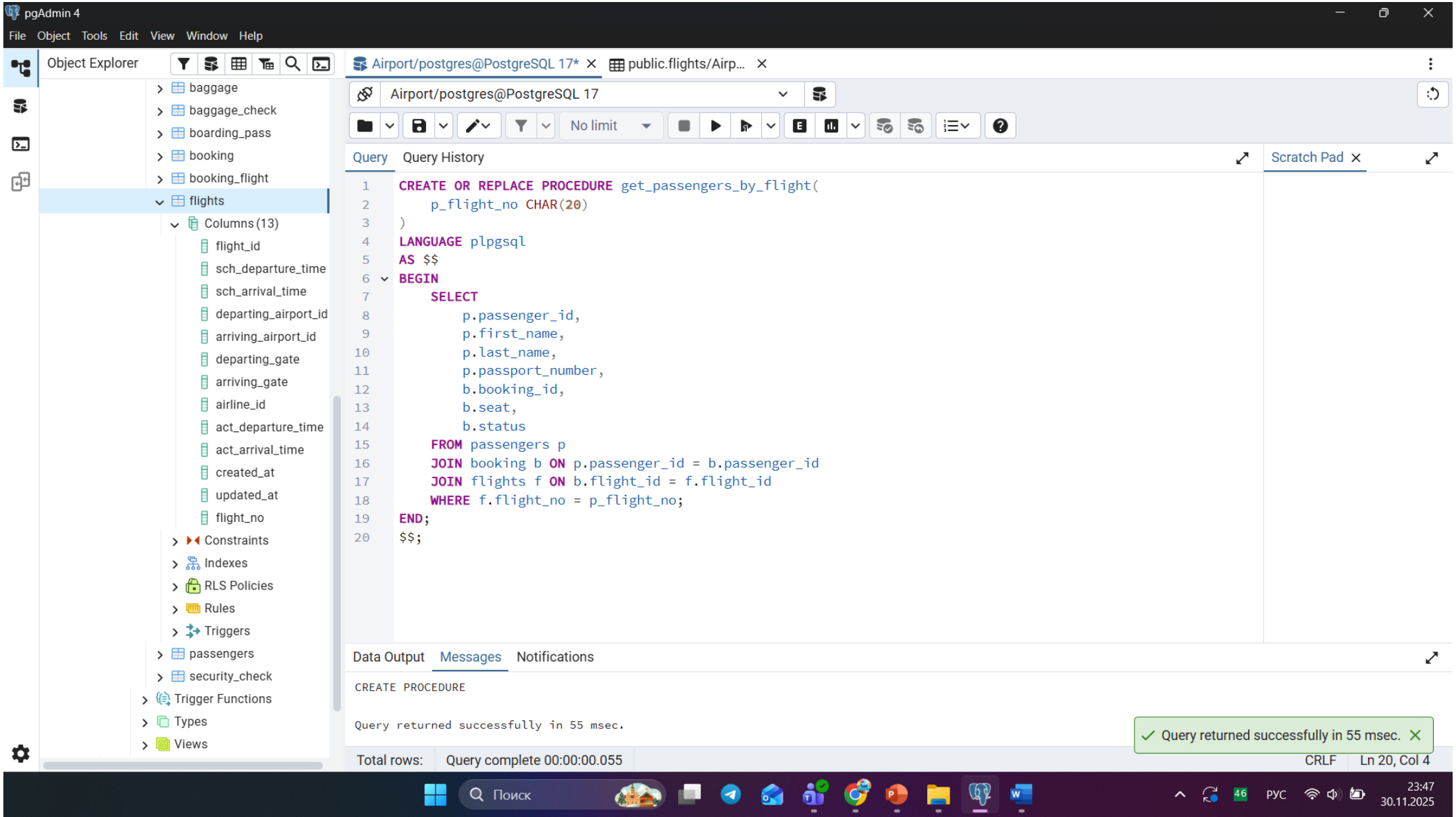
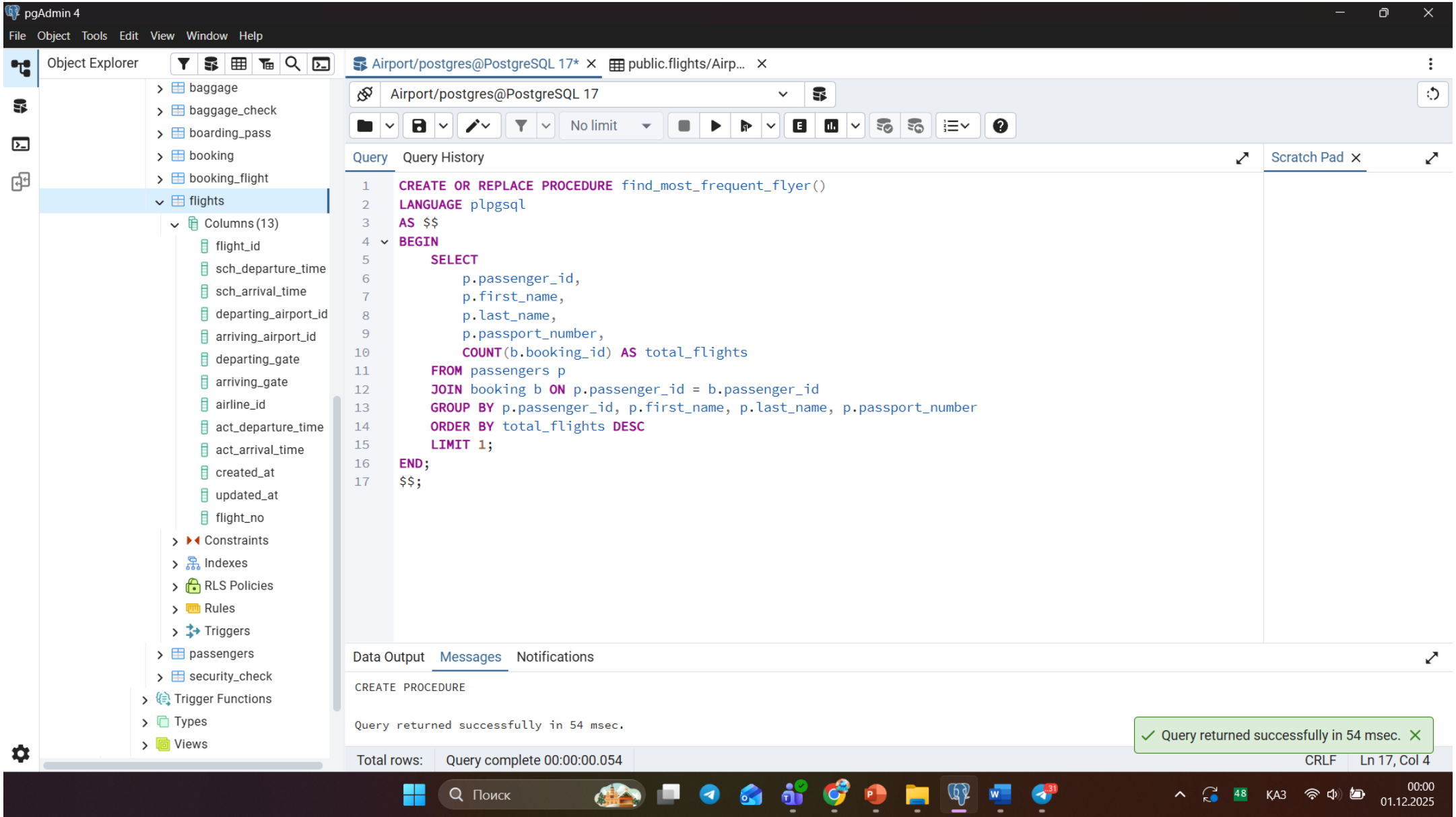
Triggers
passengers
security_check
Trigger Functions
Types
Views
Airport/postgres@PostgreSQL 17*
public.flights/Airp...
Airport/postgres@PostgreSQL 17
No limit
Query
Query History
Scratch Pad
CREATE OR REPLACE FUNCTION calculate_average_delay(
p_arrival_airport_id INT
)
RETURNS INTERVAL
LANGUAGE plpgsql
AS $$
DECLARE
avg_delay INTERVAL;
BEGIN
SELECT AVG(act_arrival_time - sch_arrival_time)
INTO avg_delay
FROM flights
WHERE arriving_airport_id = p_arrival_airport_id
AND act_arrival_time IS NOT NULL
AND sch_arrival_time IS NOT NULL;
RETURN avg_delay;
END;
$$;
Data Output
Messages
Notifications
CREATE FUNCTION
Query returned successfully in 45 msec.
Query returned successfully in 45 msec.
Total rows:
Query complete 00:00:00.045
CRLF
Ln 19, Col 4
Поиск
KAZ
23:43
30.11.2025

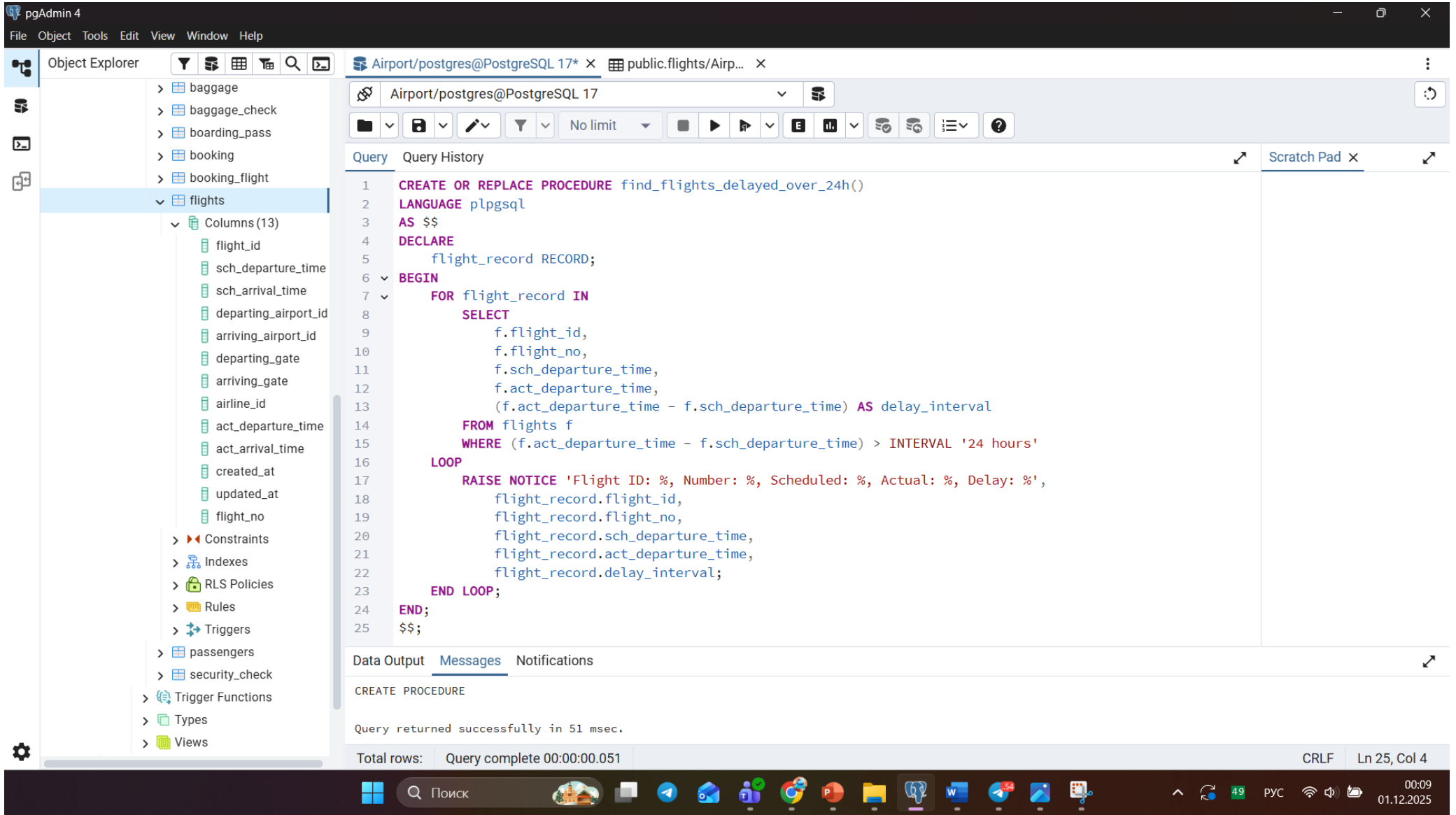
TASK 5


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
Columns (13)
flight_id
sch_departure_time
sch_arrival_time
departing_airport_id
arriving_airport_id
departing_gate
arriving_gate
airline_id
act_departure_time
act_arrival_time
created_at
updated_at
flight_no
Constraints
Indexes
RLS Policies
Rules
Triggers
passengers
security_check
Trigger Functions
Types
Views
Airport/postgres@PostgreSQL 17*
public.flights/Airp...
Airport/postgres@PostgreSQL 17
No limit
Query
Query History
Scratch Pad
CREATE OR REPLACE PROCEDURE get_passengers_by_flight(
p_flight_no CHAR(20)
)
LANGUAGE plpgsql
AS $$
BEGIN
SELECT
p.passenger_id,
p.first_name,
p.last_name,
p.passport_number,
b.booking_id,
b.seat,
b.status
FROM passengers p
JOIN booking b ON p.passenger_id = b.passenger_id
JOIN flights f ON b.flight_id = f.flight_id
WHERE f.flight_no = p_flight_no;
END;
$$;
Data Output
Messages
Notifications
CREATE PROCEDURE
Query returned successfully in 55 msec.
Query returned successfully in 55 msec.
Total rows:
Query complete 00:00:00.055
CRLF
Ln 20, Col 4
Поиск
РУС
23:47
30.11.2025

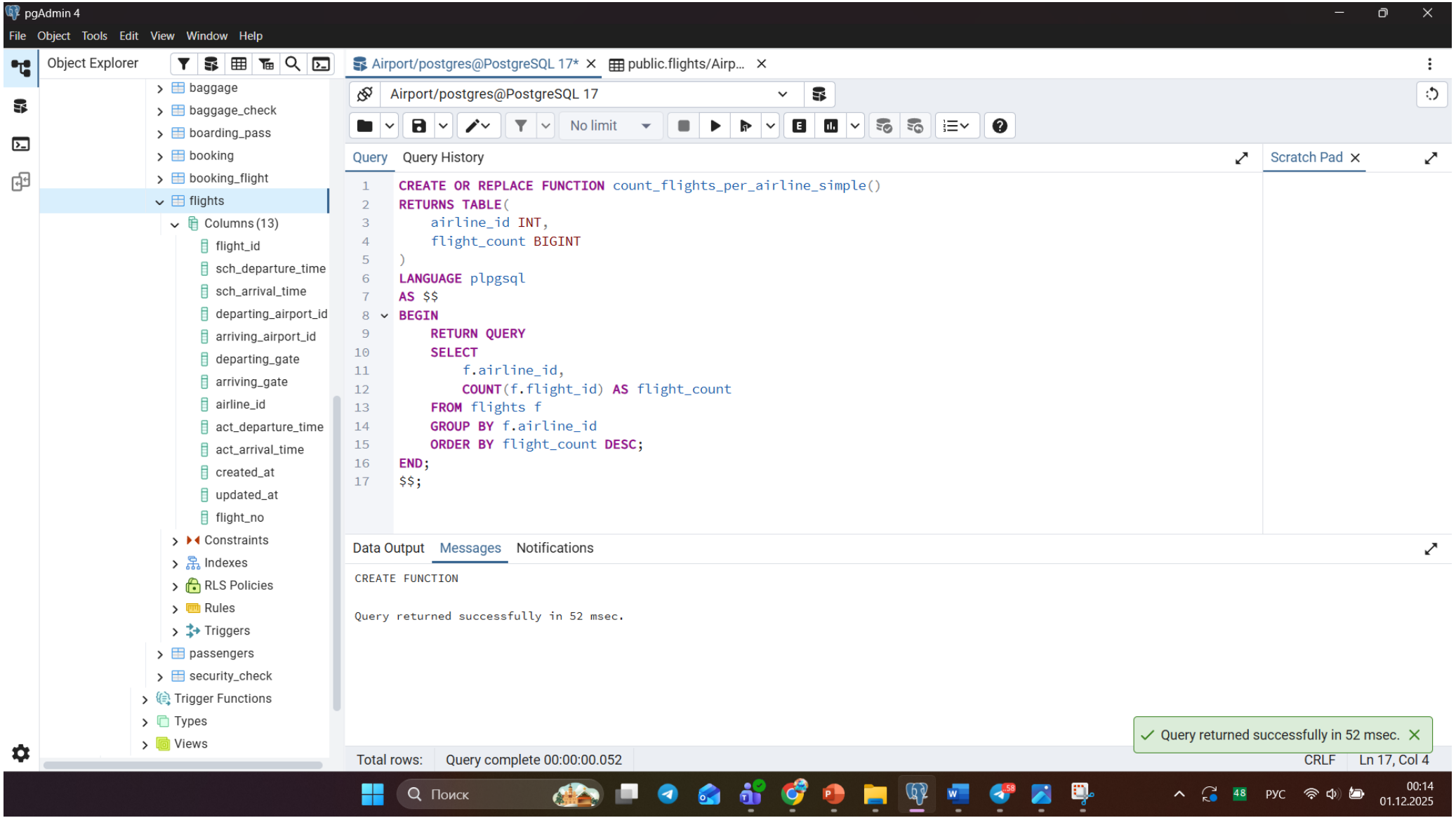
TASK 6


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Airport/postgres@PostgreSQL 17*
public.flights/Airp...
Airport/postgres@PostgreSQL 17
No limit
Query
Query History
Scratch Pad
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
Columns (13)
flight_id
sch_departure_time
sch_arrival_time
departing_airport_id
arriving_airport_id
departing_gate
arriving_gate
airline_id
act_departure_time
act_arrival_time
created_at
updated_at
flight_no
Constraints
Indexes
RLS Policies
Rules
Triggers
passengers
security_check
Trigger Functions
Types
Views
1 CREATE OR REPLACE PROCEDURE find_most_frequent_flyer()
2 LANGUAGE plpgsql
3 AS $$
4 BEGIN
5 SELECT
6 p.passenger_id,
7 p.first_name,
8 p.last_name,
9 p.passport_number,
10 COUNT(b.booking_id) AS total_flights
11 FROM passengers p
12 JOIN booking b ON p.passenger_id = b.passenger_id
13 GROUP BY p.passenger_id, p.first_name, p.last_name, p.passport_number
14 ORDER BY total_flights DESC
15 LIMIT 1;
16 END;
17 $$;
Data Output
Messages
Notifications
CREATE PROCEDURE
Query returned successfully in 54 msec.
Query returned successfully in 54 msec.
Total rows:
Query complete 00:00:00.054
CRLF
Ln 17, Col 4
Поиск
КАЗ
00:00
01.12.2025

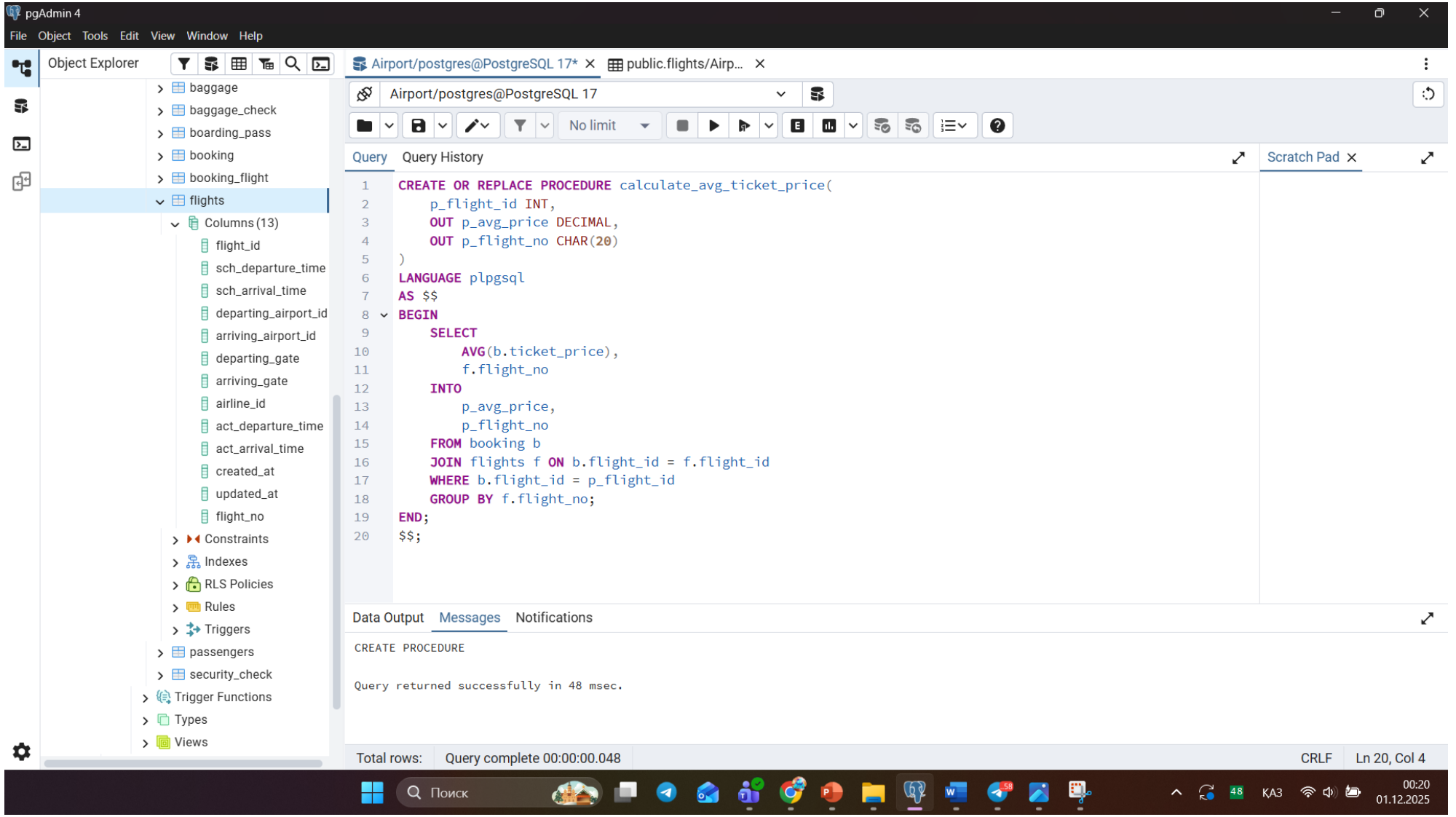
TASK 7


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
Columns (13)
flight_id
sch_departure_time
sch_arrival_time
departing_airport_id
arriving_airport_id
departing_gate
arriving_gate
airline_id
act_departure_time
act_arrival_time
created_at
updated_at
flight_no
Constraints
Indexes
RLS Policies
Rules
Triggers
passengers
security_check
Trigger Functions
Types
Views
Airport/postgres@PostgreSQL 17*
public.flights/Airp...
Airport/postgres@PostgreSQL 17
No limit
Query
Query History
Scratch Pad
CREATE OR REPLACE PROCEDURE find_flights_delayed_over_24h()
LANGUAGE plpgsql
AS $$
DECLARE
flight_record RECORD;
BEGIN
FOR flight_record IN
SELECT
f.flight_id,
f.flight_no,
f.sch_departure_time,
f.act_departure_time,
(f.act_departure_time - f.sch_departure_time) AS delay_interval
FROM flights f
WHERE (f.act_departure_time - f.sch_departure_time) > INTERVAL '24 hours'
LOOP
RAISE NOTICE 'Flight ID: %, Number: %, Scheduled: %, Actual: %, Delay: %',
flight_record.flight_id,
flight_record.flight_no,
flight_record.sch_departure_time,
flight_record.act_departure_time,
flight_record.delay_interval;
END LOOP;
END;
$$;
Data Output
Messages
Notifications
CREATE PROCEDURE
Query returned successfully in 51 msec.
Total rows:
Query complete 00:00:00.051
CRLF
Ln 25, Col 4
Поиск
РУС
00:09
01.12.2025

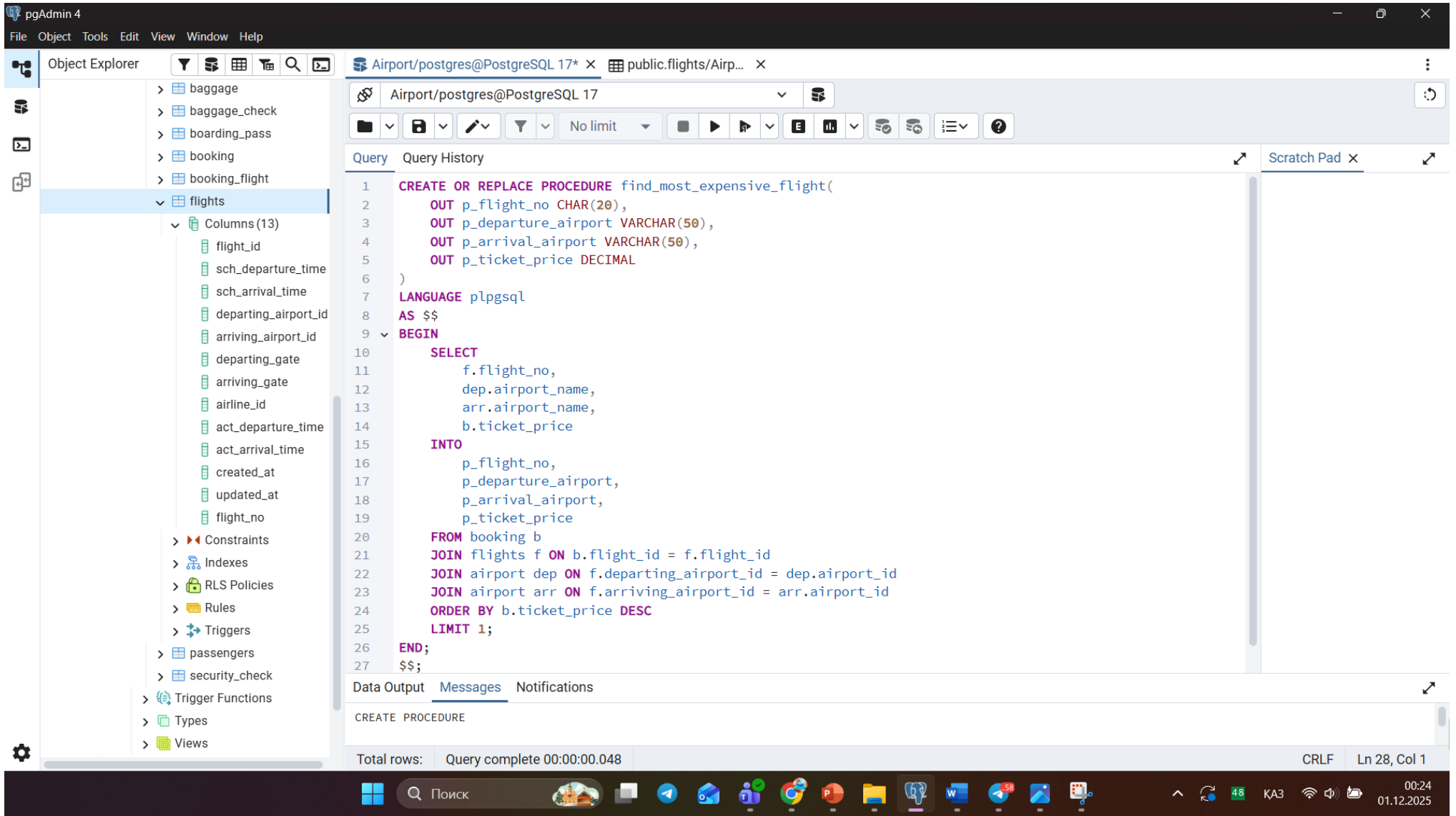
TASK 8


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Airport/postgres@PostgreSQL 17*
public.flights/Airp...
Airport/postgres@PostgreSQL 17
No limit
Query
Query History
Scratch Pad
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
Columns (13)
flight_id
sch_departure_time
sch_arrival_time
departing_airport_id
arriving_airport_id
departing_gate
arriving_gate
airline_id
act_departure_time
act_arrival_time
created_at
updated_at
flight_no
Constraints
Indexes
RLS Policies
Rules
Triggers
passengers
security_check
Trigger Functions
Types
Views
1 CREATE OR REPLACE FUNCTION count_flights_per_airline_simple()
2 RETURNS TABLE(
3 airline_id INT,
4 flight_count BIGINT
5)
6 LANGUAGE plpgsql
7 AS $$
8 BEGIN
9 RETURN QUERY
10 SELECT
11 f.airline_id,
12 COUNT(f.flight_id) AS flight_count
13 FROM flights f
14 GROUP BY f.airline_id
15 ORDER BY flight_count DESC;
16 END;
17 $$;
Data Output
Messages
Notifications
CREATE FUNCTION
Query returned successfully in 52 msec.
Query returned successfully in 52 msec.
Total rows:
Query complete 00:00:00.052
CRLF
Ln 17, Col 4
Поиск
РУС
00:14
01.12.2025

TASK 9


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
Columns (13)
flight_id
sch_departure_time
sch_arrival_time
departing_airport_id
arriving_airport_id
departing_gate
arriving_gate
airline_id
act_departure_time
act_arrival_time
created_at
updated_at
flight_no
Constraints
Indexes
RLS Policies
Rules
Triggers
passengers
security_check
Trigger Functions
Types
Views
Airport/postgres@PostgreSQL 17*
public.flights/Airp...
Airport/postgres@PostgreSQL 17
No limit
Query
Query History
Scratch Pad
CREATE OR REPLACE PROCEDURE calculate_avg_ticket_price(
p_flight_id INT,
OUT p_avg_price DECIMAL,
OUT p_flight_no CHAR(20)
)
LANGUAGE plpgsql
AS $$
BEGIN
SELECT
AVG(b.ticket_price),
f.flight_no
INTO
p_avg_price,
p_flight_no
FROM booking b
JOIN flights f ON b.flight_id = f.flight_id
WHERE b.flight_id = p_flight_id
GROUP BY f.flight_no;
END;
$$;
Data Output
Messages
Notifications
CREATE PROCEDURE
Query returned successfully in 48 msec.
Total rows:
Query complete 00:00:00.048
CRLF
Ln 20, Col 4
Поиск
ҚАЗ
00:20
01.12.2025

TASK 10


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Airport/postgres@PostgreSQL 17*
public.flights/Airp...
Airport/postgres@PostgreSQL 17
No limit
Query
Query History
Scratch Pad
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
Columns (13)
flight_id
sch_departure_time
sch_arrival_time
departing_airport_id
arriving_airport_id
departing_gate
arriving_gate
airline_id
act_departure_time
act_arrival_time
created_at
updated_at
flight_no
Constraints
Indexes
RLS Policies
Rules
Triggers
passengers
security_check
Trigger Functions
Types
Views
1 CREATE OR REPLACE PROCEDURE find_most_expensive_flight(
2 OUT p_flight_no CHAR(20),
3 OUT p_departure_airport VARCHAR(50),
4 OUT p_arrival_airport VARCHAR(50),
5 OUT p_ticket_price DECIMAL
6)
7 LANGUAGE plpgsql
8 AS $$
9 BEGIN
10 SELECT
11 f.flight_no,
12 dep.airport_name,
13 arr.airport_name,
14 b.ticket_price
15 INTO
16 p_flight_no,
17 p_departure_airport,
18 p_arrival_airport,
19 p_ticket_price
20 FROM booking b
21 JOIN flights f ON b.flight_id = f.flight_id
22 JOIN airport dep ON f.departing_airport_id = dep.airport_id
23 JOIN airport arr ON f.arriving_airport_id = arr.airport_id
24 ORDER BY b.ticket_price DESC
25 LIMIT 1;
26 END;
27 $$;
Data Output
Messages
Notifications
CREATE PROCEDURE
Total rows:
Query complete 00:00:00.048
CRLF
Ln 28, Col 1
Поиск
ҚАЗ
00:24
01.12.2025