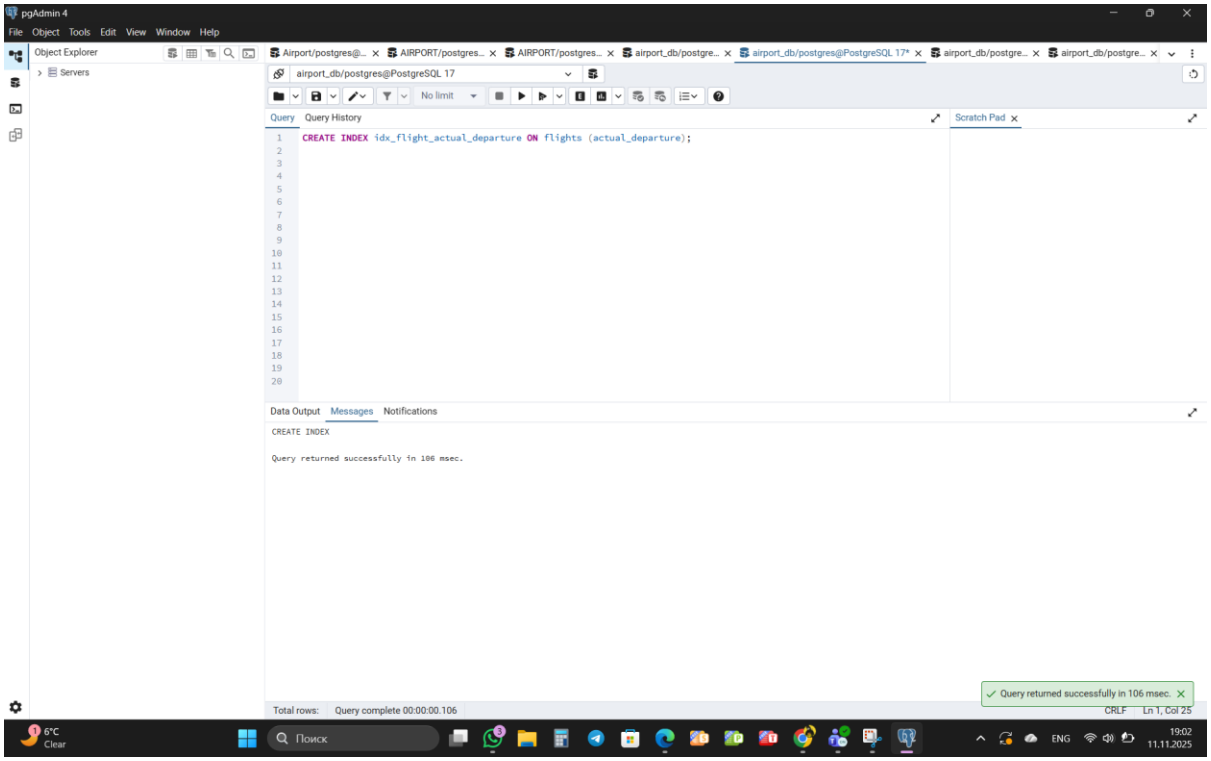
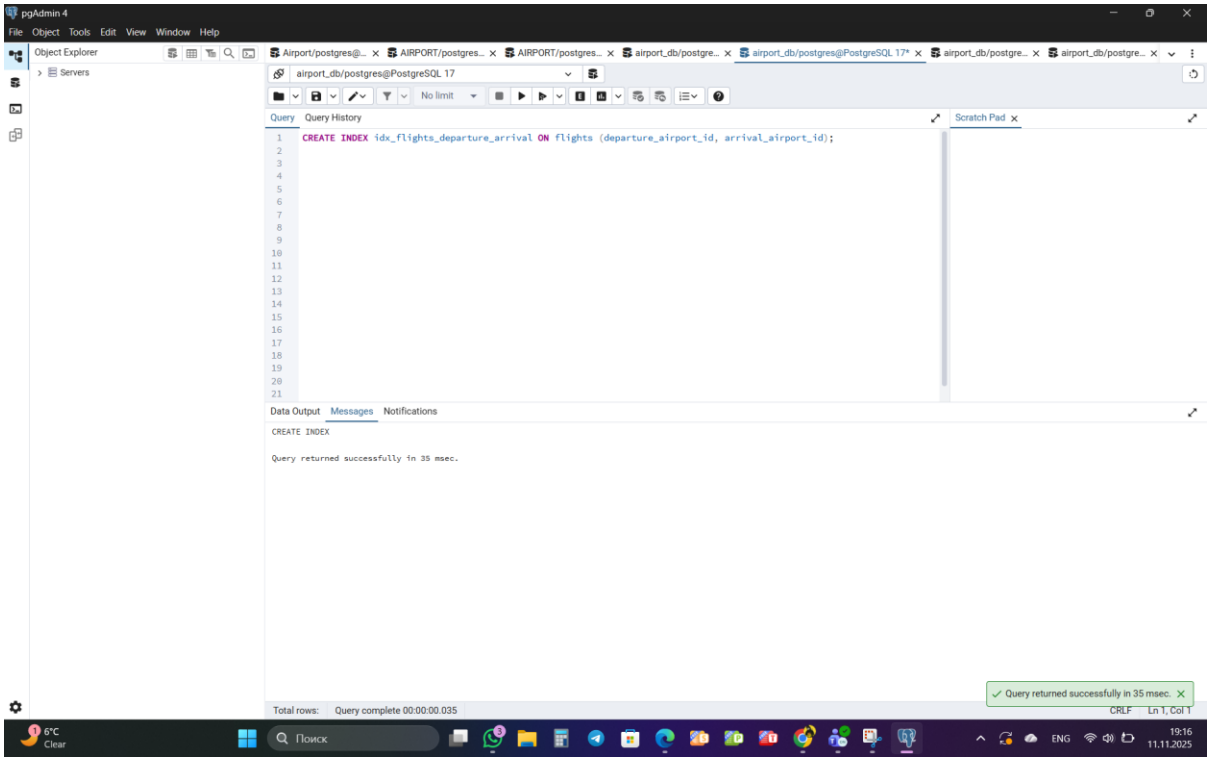
LAB 7. Nurlan Olzhas

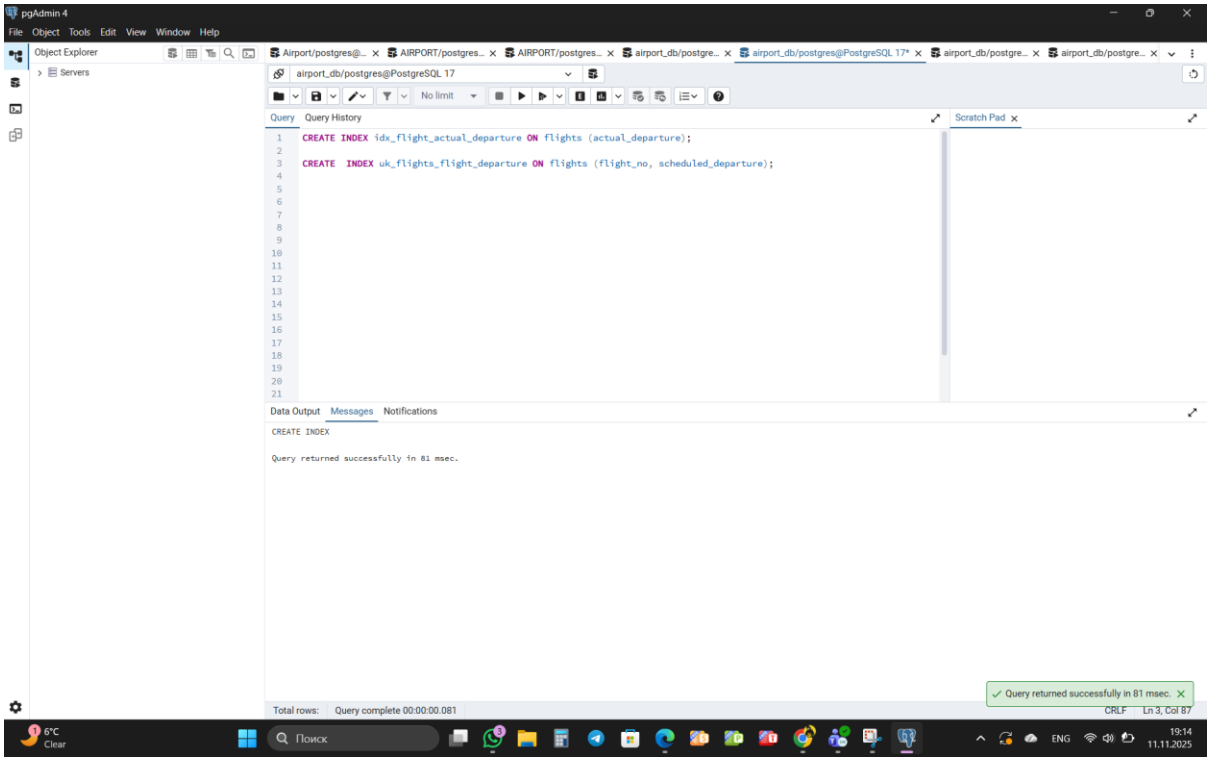
1)



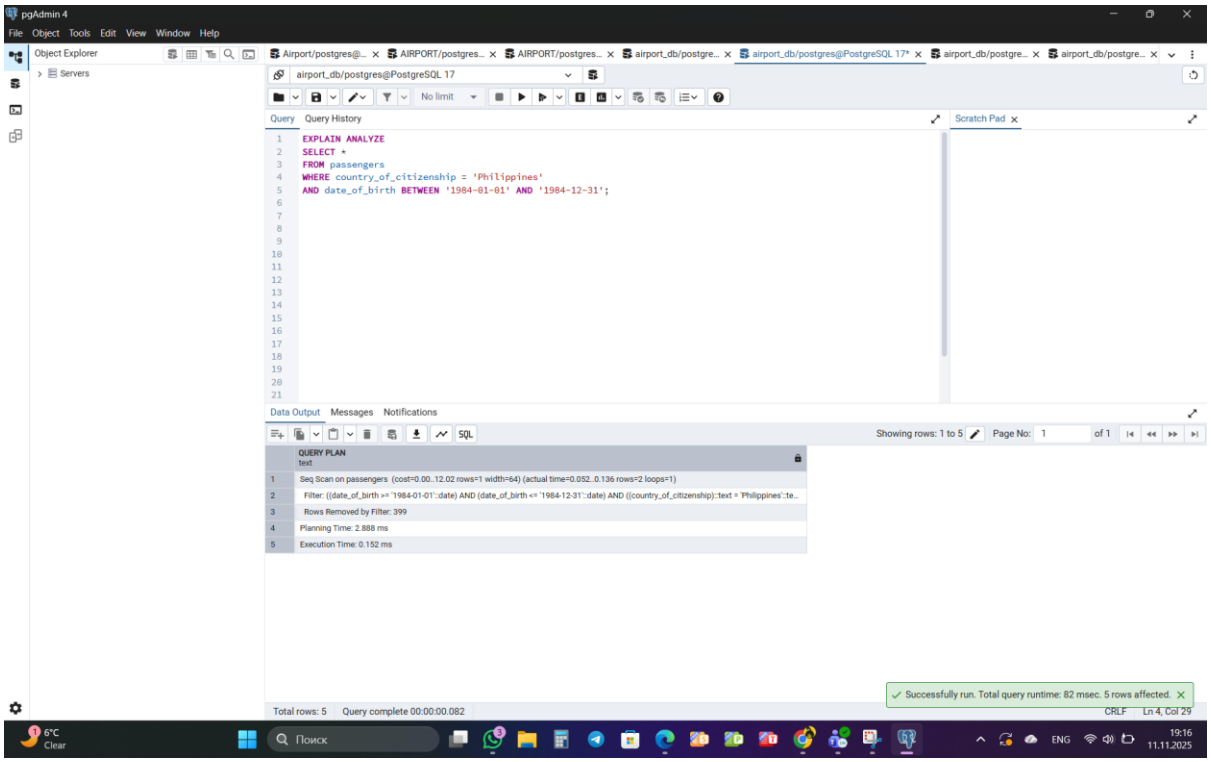
2)

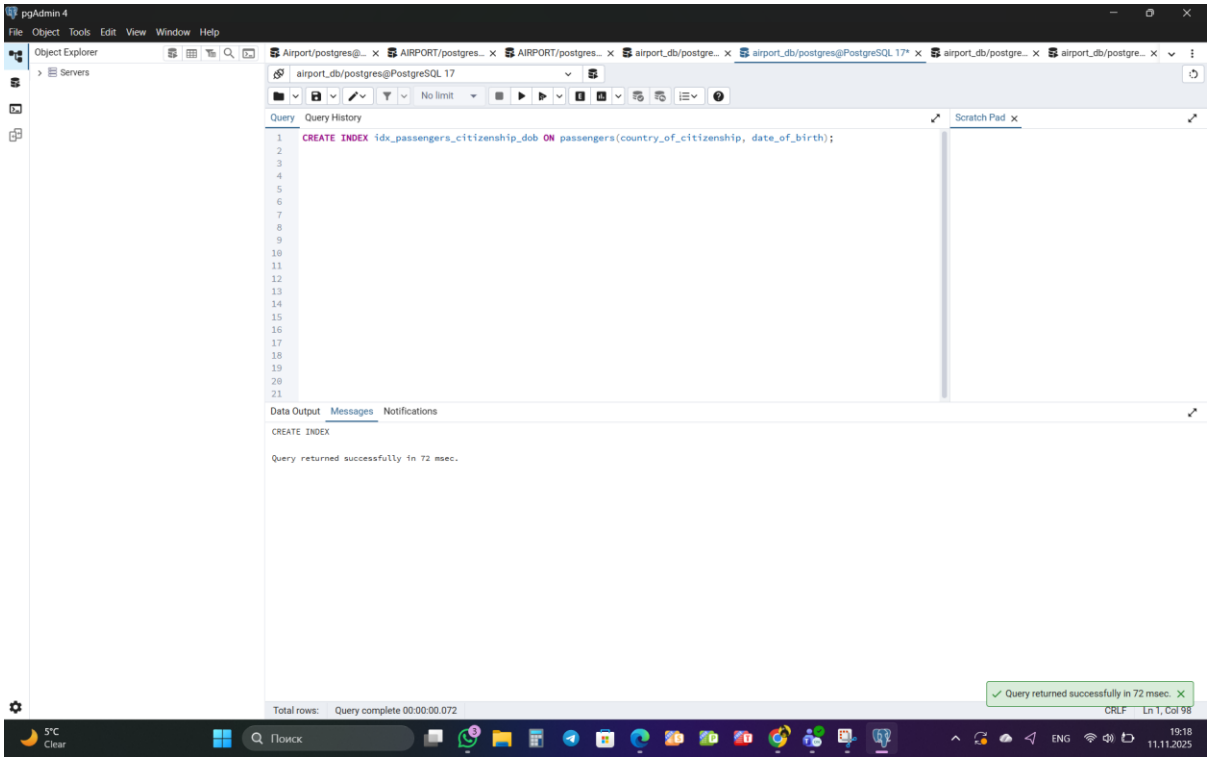


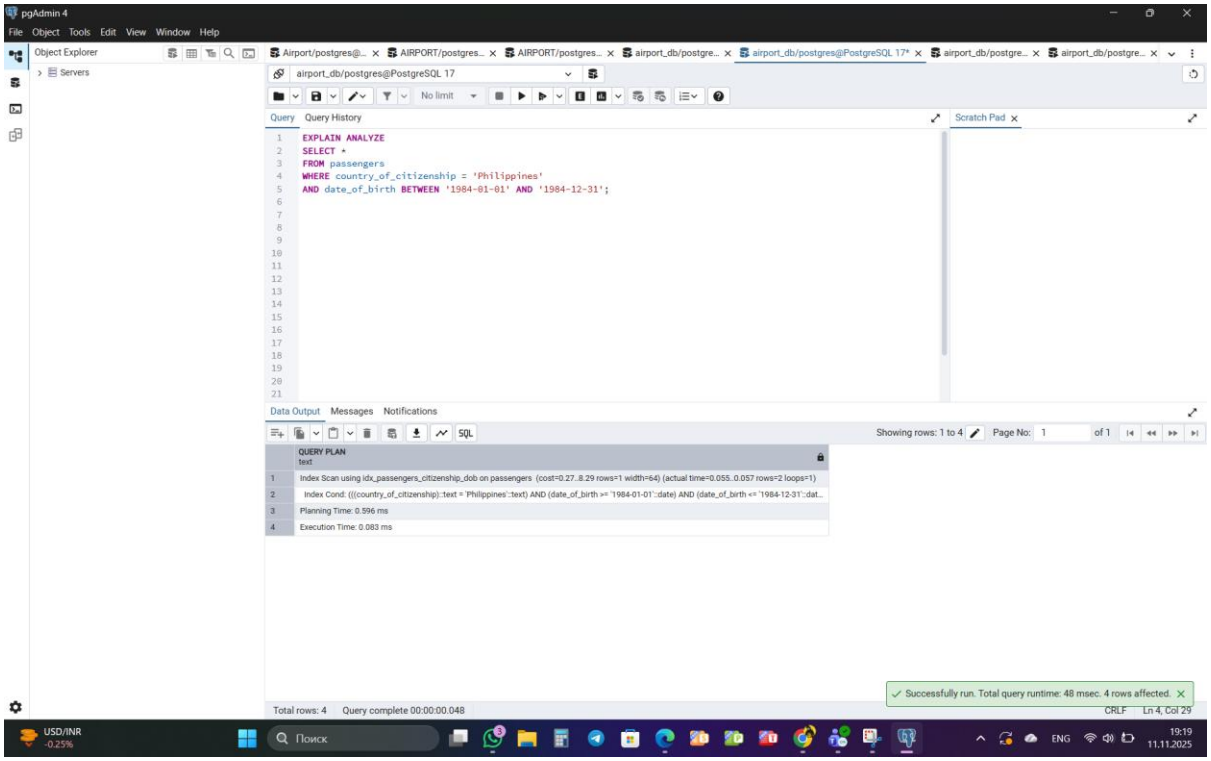
3


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Servers
airport_db/postgres@PostgreSQL 17
Query Query History
Scratch Pad
1 CREATE INDEX idx_flight_actual_departure ON flights (actual_departure);
3 CREATE INDEX uk_flights_flight_departure ON flights (flight_no, scheduled_departure);
Data Output Messages Notifications
CREATE INDEX
Query returned successfully in 81 msec.
Total rows: Query complete 00:00:00.081
CRLF Ln 3, Col 87
6°C Clear
Поиск
ENG
19:14
11.11.2025

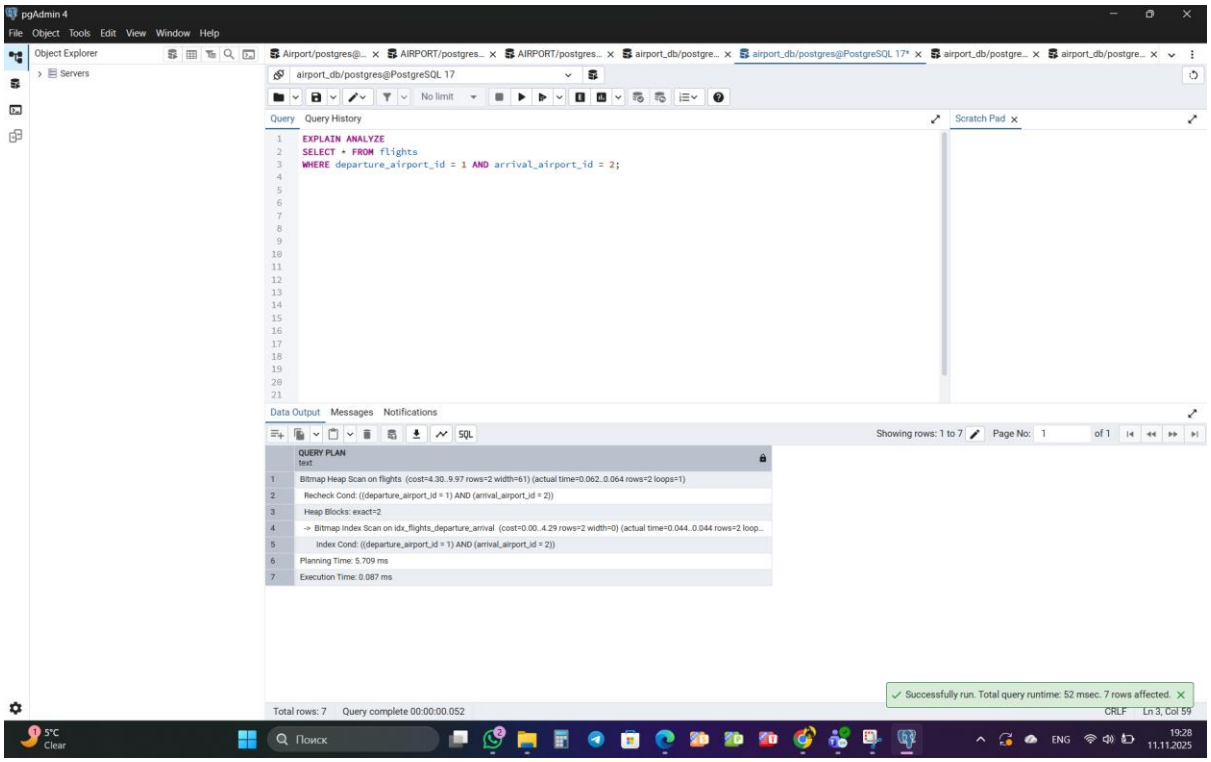
4


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Servers
airport_db/postgres@PostgreSQL 17
Query Query History
Scratch Pad
EXPLAIN ANALYZE
SELECT *
FROM passengers
WHERE country_of_citizenship = 'Philippines'
AND date_of_birth BETWEEN '1984-01-01' AND '1984-12-31';
Data Output Messages Notifications
QUERY PLAN
text
Seq Scan on passengers (cost=0.00..12.02 rows=1 width=64) (actual time=0.052..0.136 rows=2 loops=1)
Filter: ((date_of_birth >= '1984-01-01'::date) AND (date_of_birth <= '1984-12-31'::date) AND ((country_of_citizenship)::text = 'Philippines'::te...
Rows Removed by Filter: 399
Planning Time: 2.888 ms
Execution Time: 0.152 ms
Total rows: 5
Query complete 00:00:00.082
Successfully run. Total query runtime: 82 msec. 5 rows affected.
CRLF
Ln 4, Col 29
6°C
Clear
Поиск
ENG
19:16
11.11.2025

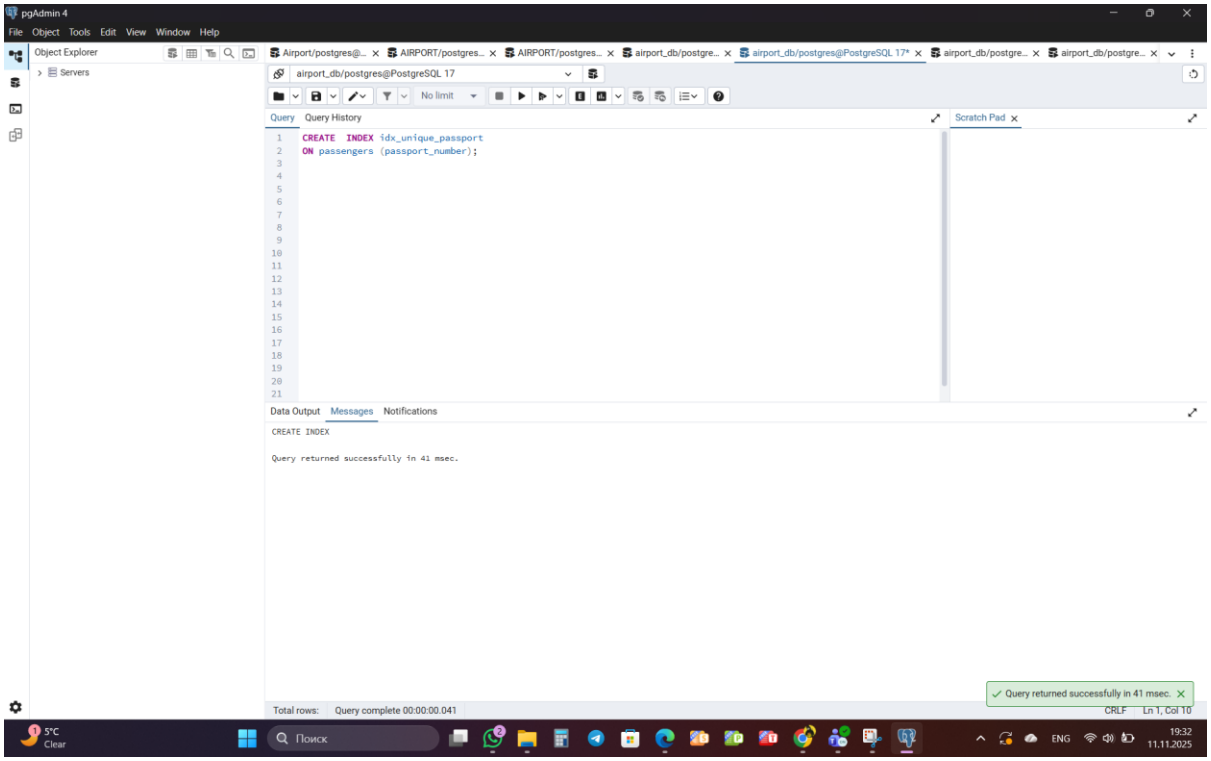

pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Servers
airport_db/postgres@PostgreSQL 17
Query Query History
Scratch Pad
CREATE INDEX idx_passengers_citizenship_dob ON passengers(country_of_citizenship, date_of_birth);
Data Output Messages Notifications
CREATE INDEX
Query returned successfully in 72 msec.
Total rows:
Query complete 00:00:00.072
Query returned successfully in 72 msec.
CRLF
Ln 1, Col 98
5°C
Clear
Поиск
ENG
19:18
11.11.2025


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Servers
airport_db/postgres@PostgreSQL 17
Query Query History
Scratch Pad
EXPLAIN ANALYZE
SELECT *
FROM passengers
WHERE country_of_citizenship = 'Philippines'
AND date_of_birth BETWEEN '1984-01-01' AND '1984-12-31';
Data Output Messages Notifications
QUERY PLAN
text
Index Scan using idx_passengers_citizenship_dob on passengers (cost=0.27..8.29 rows=1 width=64) (actual time=0.055..0.057 rows=2 loops=1)
Index Cond: (((country_of_citizenship)::text = 'Philippines'::text) AND (date_of_birth >= '1984-01-01'::date) AND (date_of_birth <= '1984-12-31'::dat...
Planning Time: 0.596 ms
Execution Time: 0.083 ms
Showing rows: 1 to 4
Page No: 1 of 1
Successfully run. Total query runtime: 48 msec. 4 rows affected.
Total rows: 4 Query complete 00:00:00.048
CRLF Ln 4, Col 29
USD/INR -0.25%
Поиск
ENG
19:19
11.11.2025

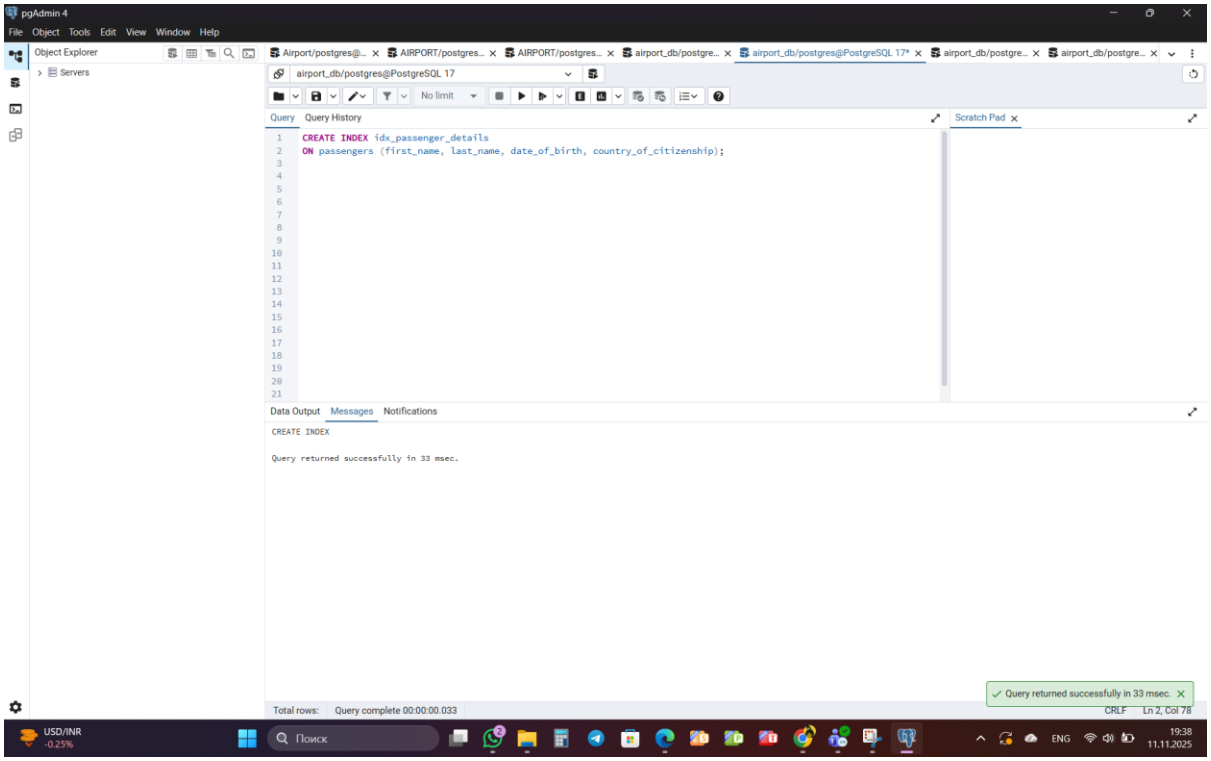
5)

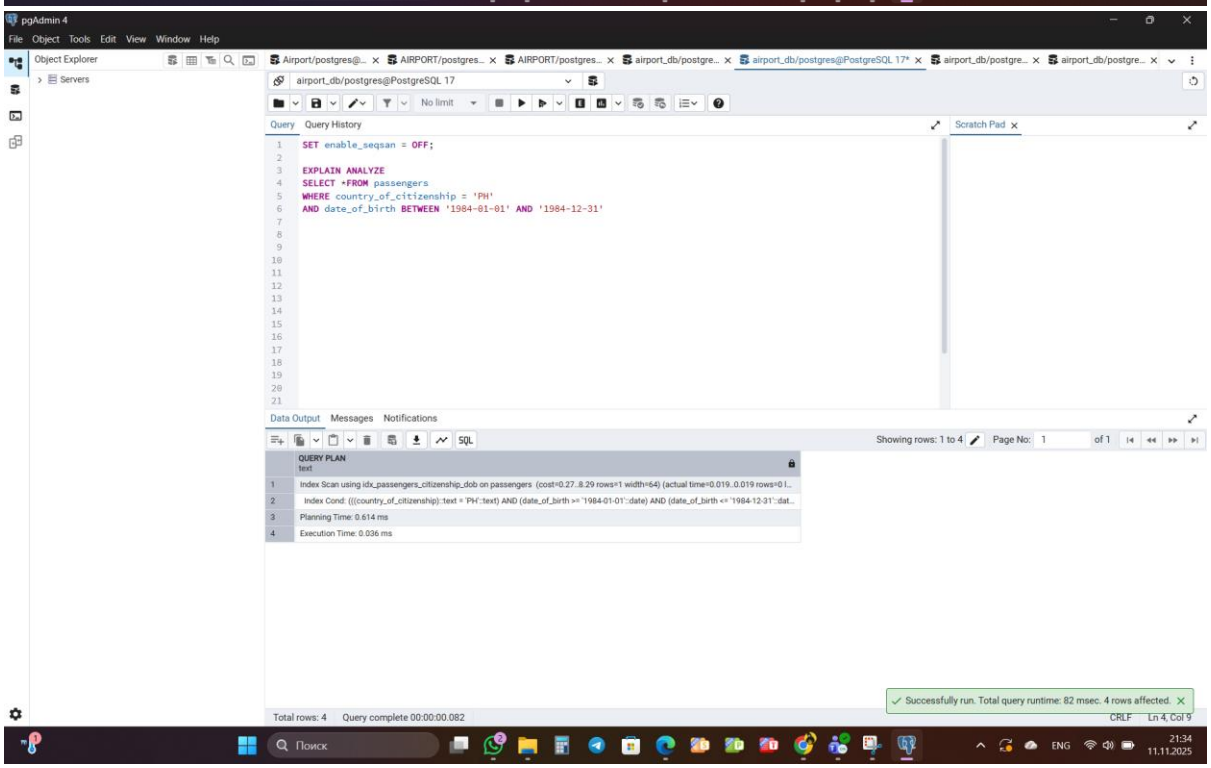

pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Servers
airport_db/postgres@PostgreSQL 17
Query Query History
Scratch Pad
EXPLAIN ANALYZE
SELECT * FROM flights
WHERE departure_airport_id = 1 AND arrival_airport_id = 2;
Data Output Messages Notifications
QUERY PLAN
text
Bitmap Heap Scan on flights (cost=4.30..9.97 rows=2 width=61) (actual time=0.062..0.064 rows=2 loops=1)
Recheck Cond: ((departure_airport_id = 1) AND (arrival_airport_id = 2))
Heap Blocks: exact=2
-> Bitmap Index Scan on idx_flights_departure_arrival (cost=0.00..4.29 rows=2 width=0) (actual time=0.044..0.044 rows=2 loop...
Index Cond: ((departure_airport_id = 1) AND (arrival_airport_id = 2))
Planning Time: 5.709 ms
Execution Time: 0.087 ms
Showing rows: 1 to 7
Page No: 1 of 1
Successfully run. Total query runtime: 52 msec. 7 rows affected.
Total rows: 7 Query complete 00:00:00.052
CRLF Ln 3, Col 59
5°C Clear
Поиск
ENG
19:28
11.11.2025

6)

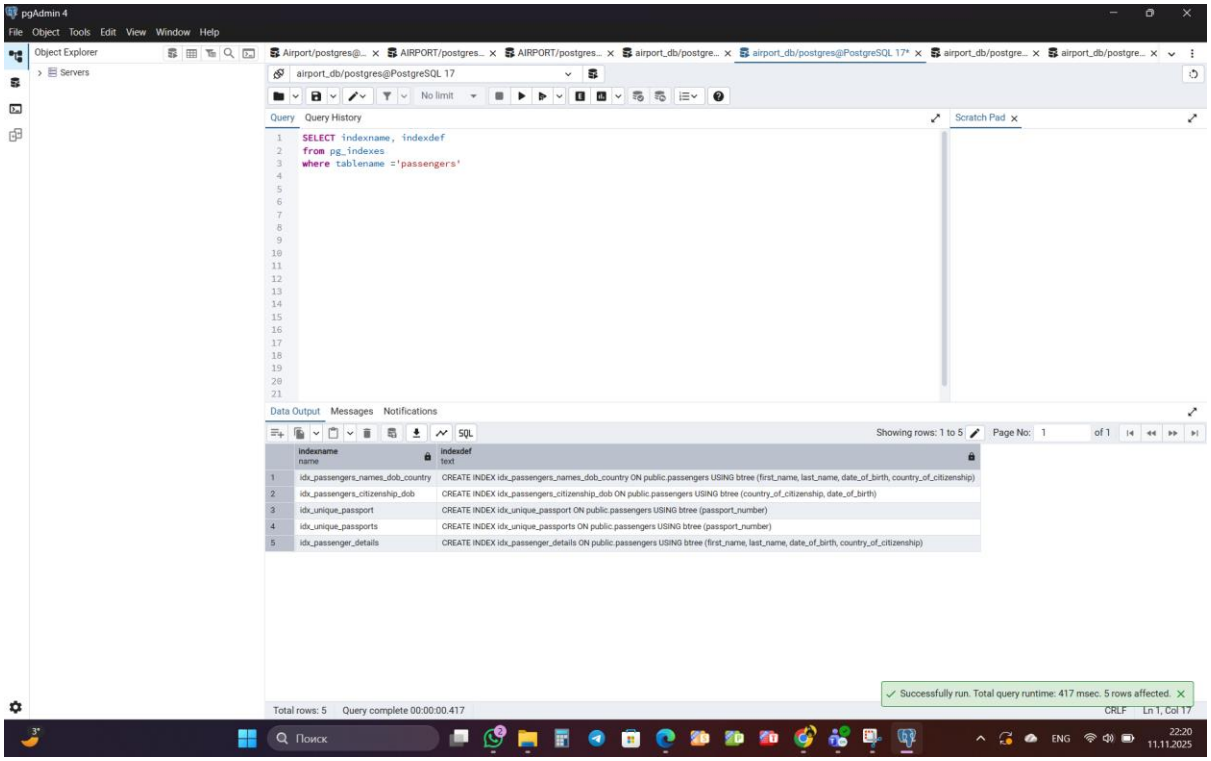

pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Servers
airport_db/postgres@PostgreSQL 17
Query Query History
Scratch Pad
CREATE INDEX idx_unique_passport
ON passengers (passport_number);
Data Output Messages Notifications
CREATE INDEX
Query returned successfully in 41 msec.
Total rows: Query complete 00:00:00.041
Query returned successfully in 41 msec.
CRLF Ln 1, Col 10
5°C Clear
Поиск
ENG
19:32 11.11.2025

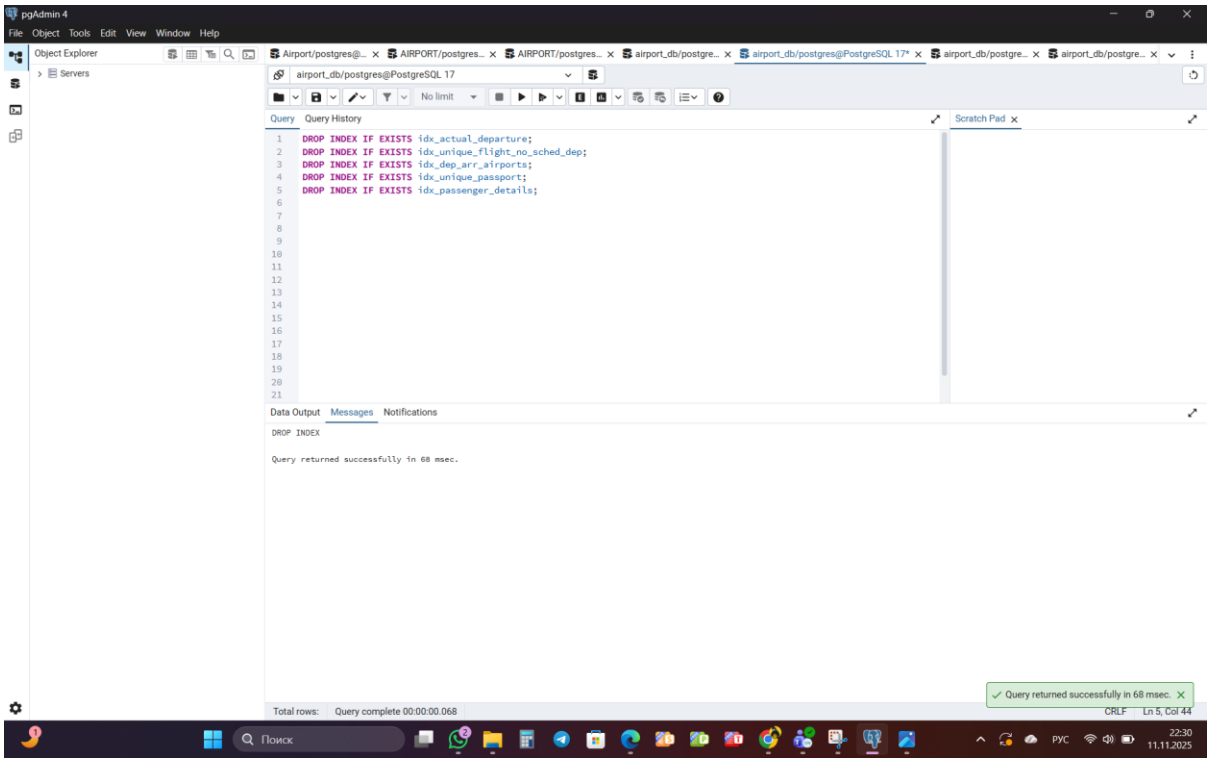
7)


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Servers
airport_db/postgres@PostgreSQL 17
Query Query History
Scratch Pad
CREATE INDEX idx_passenger_details
ON passengers (first_name, last_name, date_of_birth, country_of_citizenship);
Data Output Messages Notifications
CREATE INDEX
Query returned successfully in 33 msec.
Total rows: Query complete 00:00:00.033
Query returned successfully in 33 msec.
CRLF Ln 2, Col 78


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Servers
airport_db/postgres@PostgreSQL 17
Query Query History
Scratch Pad
SET enable_seqscan = OFF;
EXPLAIN ANALYZE
SELECT *FROM passengers
WHERE country_of_citizenship = 'PH'
AND date_of_birth BETWEEN '1984-01-01' AND '1984-12-31'
Data Output Messages Notifications
QUERY PLAN
text
Index Scan using idx_passengers_citizenship_dob on passengers (cost=0.27..8.29 rows=1 width=64) (actual time=0.019..0.019 rows=0 l...
Index Cond: (((country_of_citizenship)::text = 'PH'::text) AND (date_of_birth >= '1984-01-01'::date) AND (date_of_birth <= '1984-12-31'::dat...
Planning Time: 0.614 ms
Execution Time: 0.036 ms
Total rows: 4 Query complete 00:00:00.082
Successfully run. Total query runtime: 82 msec. 4 rows affected.
CRLF Ln 4, Col 9

8)


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Servers
airport_db/postgres@PostgreSQL 17
Query Query History
Scratch Pad
SELECT indexname, indexdef
from pg_indexes
where tablename ='passengers'
Data Output Messages Notifications
Showing rows: 1 to 5
Page No: 1 of 1
indexname name
indexdef text
1 idx_passengers_names_dob_country CREATE INDEX idx_passengers_names_dob_country ON public.passengers USING btree (first_name, last_name, date_of_birth, country_of_citizenship)
2 idx_passengers_citizenship_dob CREATE INDEX idx_passengers_citizenship_dob ON public.passengers USING btree (country_of_citizenship, date_of_birth)
3 idx_unique_passport CREATE INDEX idx_unique_passport ON public.passengers USING btree (passport_number)
4 idx_unique_passports CREATE INDEX idx_unique_passports ON public.passengers USING btree (passport_number)
5 idx_passenger_details CREATE INDEX idx_passenger_details ON public.passengers USING btree (first_name, last_name, date_of_birth, country_of_citizenship)
Successfully run. Total query runtime: 417 msec. 5 rows affected.
Total rows: 5 Query complete 00:00:00.417
CRLF Ln 1, Col 17
Поиск
ENG
22:20
11.11.2025


pgAdmin 4
File Object Tools Edit View Window Help
Object Explorer
Servers
airport_db/postgres@PostgreSQL 17
Query Query History
Scratch Pad
DROP INDEX IF EXISTS idx_actual_departure;
DROP INDEX IF EXISTS idx_unique_flight_no_sched_dep;
DROP INDEX IF EXISTS idx_dep_arr_airports;
DROP INDEX IF EXISTS idx_unique_passport;
DROP INDEX IF EXISTS idx_passenger_details;
Data Output Messages Notifications
DROP INDEX
Query returned successfully in 68 msec.
Query returned successfully in 68 msec.
Total rows:
Query complete 00:00:00.068
CRLF Ln 5, Col 44
Поиск
РУС
22:30
11.11.2025