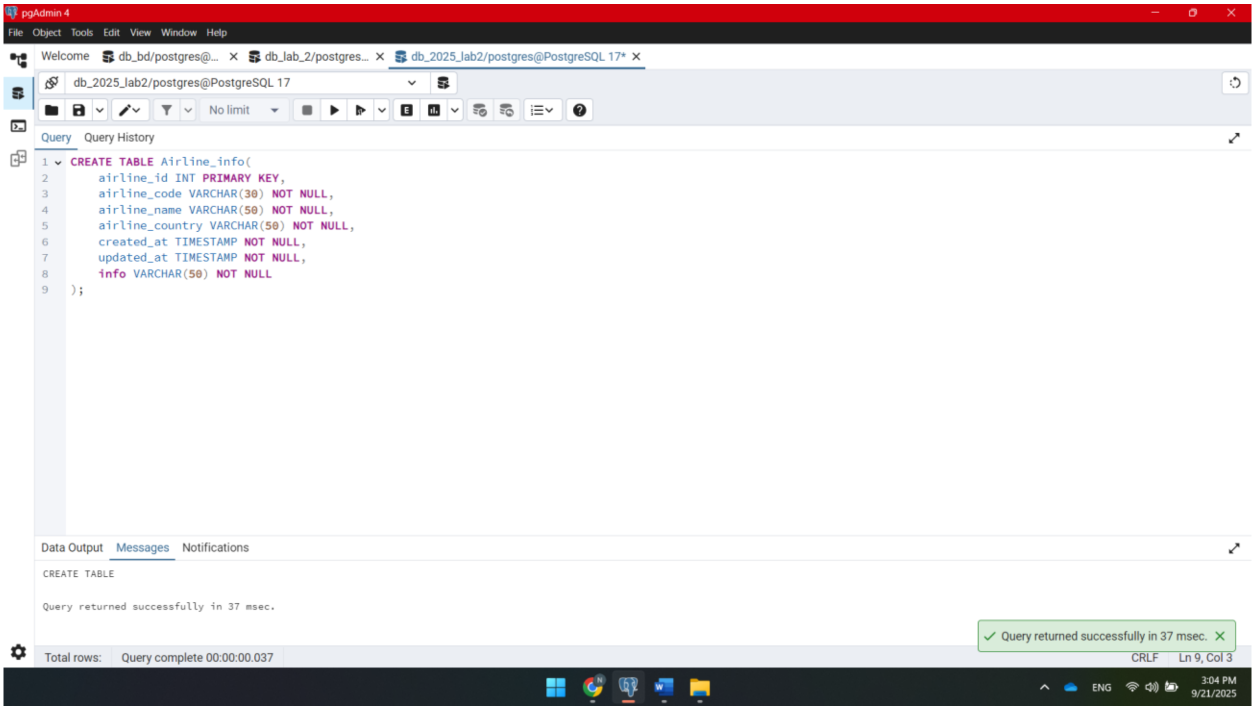
LAB_2

DDL



```
CREATE TABLE Airline_info(
    airline_id INT PRIMARY KEY,
    airline_code VARCHAR(30) NOT NULL,
    airline_name VARCHAR(50) NOT NULL,
    airline_country VARCHAR(50) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL,
    info VARCHAR(50) NOT NULL
);
```

```
CREATE TABLE

Query returned successfully in 37 msec.
```

✓ Query returned successfully in 37 msec.

Total rows: Query complete 00:00:00.037

CREATE TABLE Airline_info(

airline_id INT PRIMARY KEY,

airline_code VARCHAR(30) NOT NULL,

airline_name VARCHAR(50) NOT NULL,

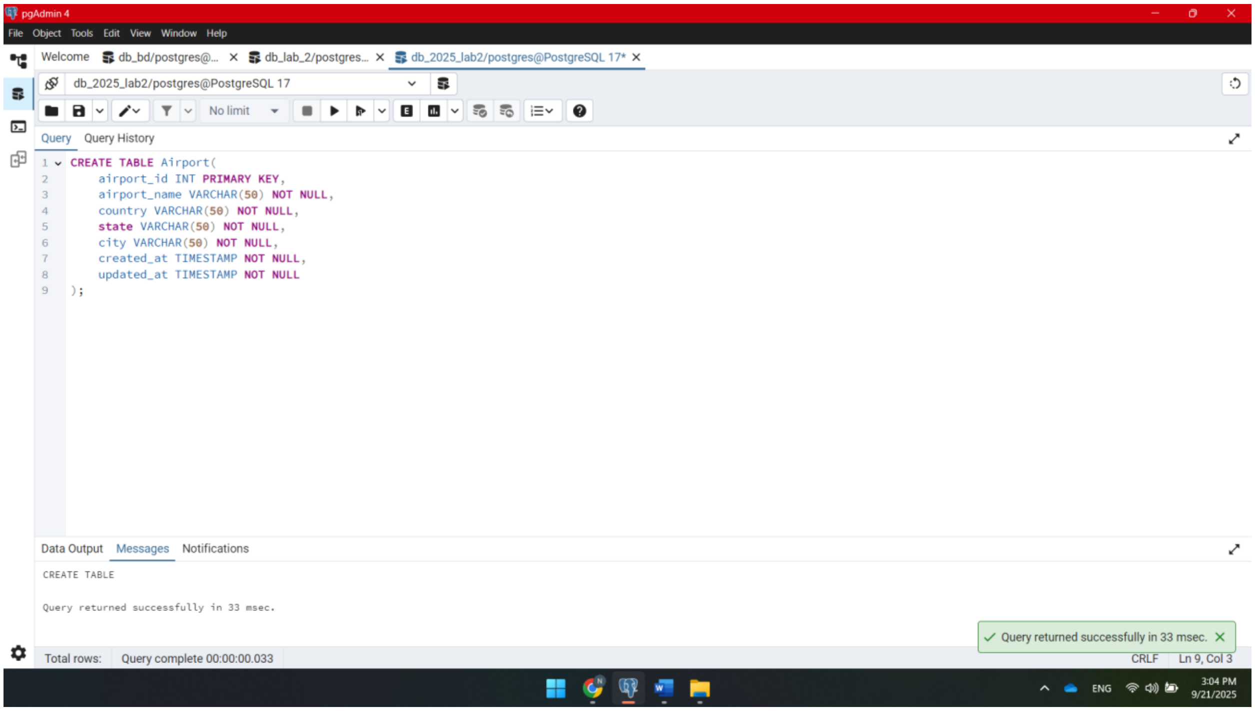
airline_country VARCHAR(50) NOT NULL,

created_at TIMESTAMP NOT NULL,

updated_at TIMESTAMP NOT NULL,

info VARCHAR(50) NOT NULL

);


pgAdmin 4
File Object Tools Edit View Window Help
Welcome
db_bd/postgres@...
db_lab_2/postgres...
db_2025_lab2/postgres@PostgreSQL 17*
db_2025_lab2/postgres@PostgreSQL 17
No limit
Query Query History
Data Output Messages Notifications
CRLF Ln 9, Col 3
ENG
3:04 PM
9/21/2025

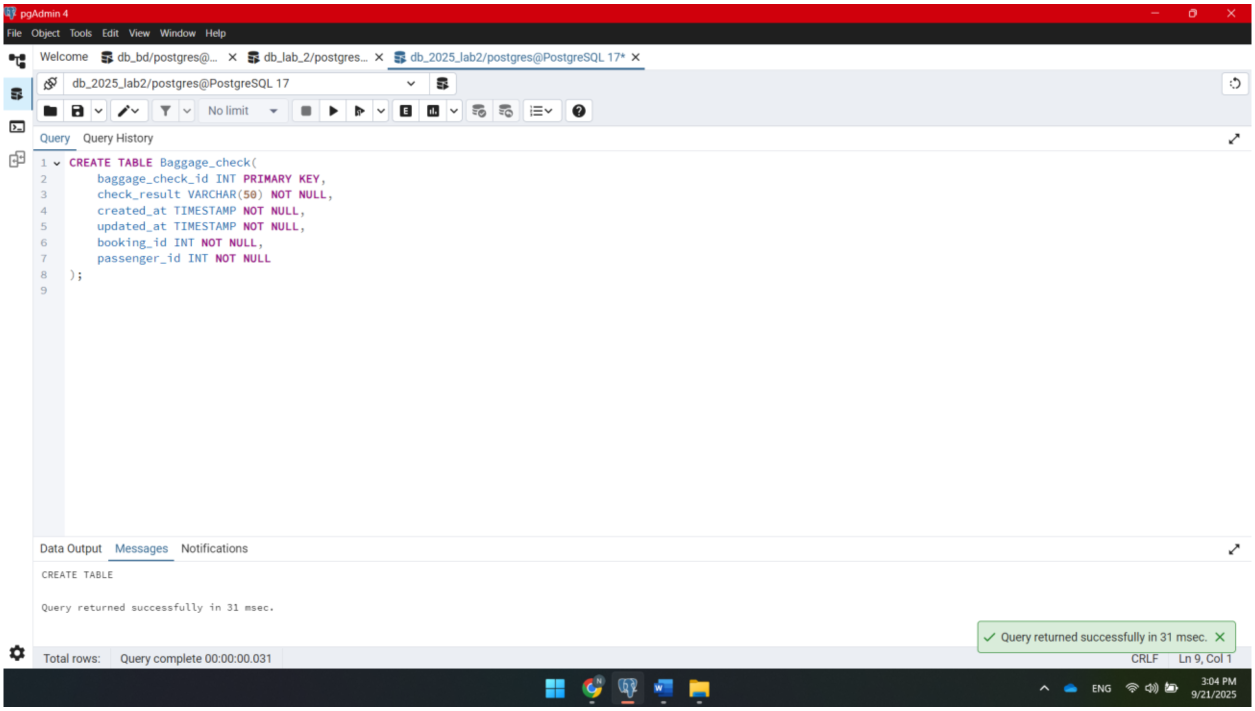
```
CREATE TABLE Airport(
    airport_id INT PRIMARY KEY,
    airport_name VARCHAR(50) NOT NULL,
    country VARCHAR(50) NOT NULL,
    state VARCHAR(50) NOT NULL,
    city VARCHAR(50) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL
);
```

```
CREATE TABLE

Query returned successfully in 33 msec.
```

Query returned successfully in 33 msec.

Total rows: Query complete 00:00:00.033

```
CREATE TABLE Airport(
    airport_id INT PRIMARY KEY,
    airport_name VARCHAR(50) NOT NULL,
    country VARCHAR(50) NOT NULL,
    state VARCHAR(50) NOT NULL,
    city VARCHAR(50) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL
);
```



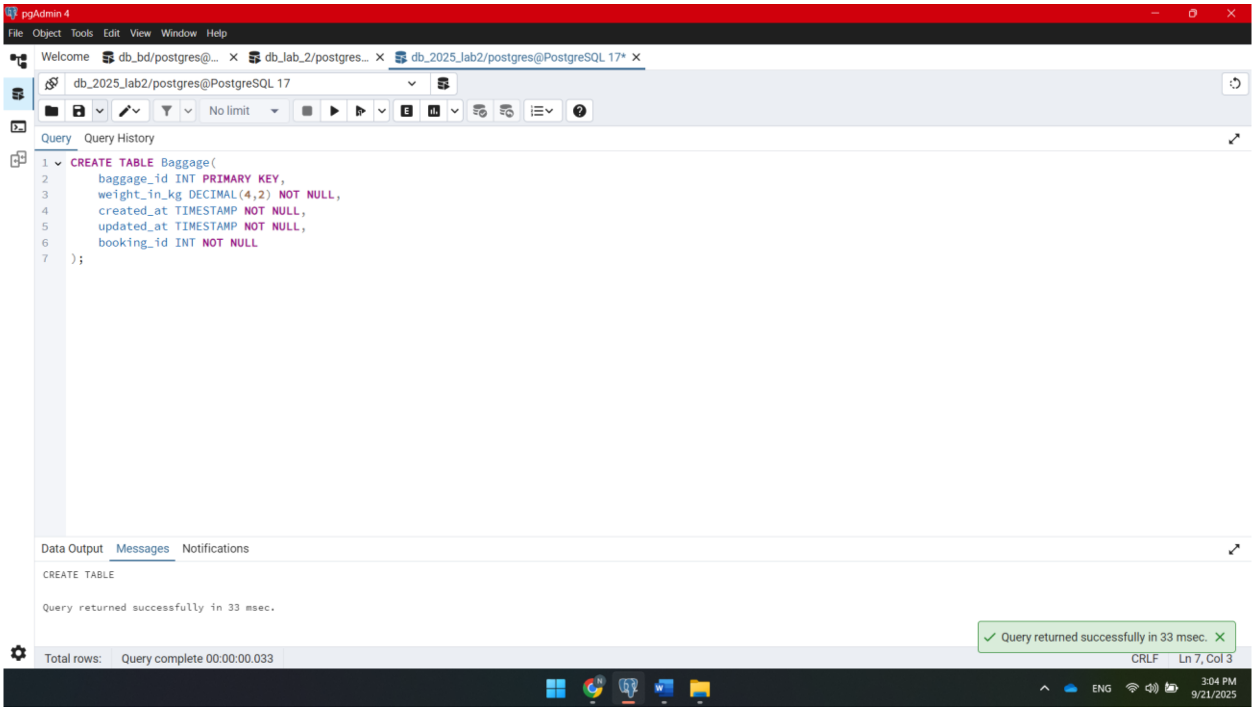
```
CREATE TABLE Baggage_check(
    baggage_check_id INT PRIMARY KEY,
    check_result VARCHAR(50) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL,
    booking_id INT NOT NULL,
    passenger_id INT NOT NULL
);
```

```
CREATE TABLE

Query returned successfully in 31 msec.
```

✓ Query returned successfully in 31 msec.

Total rows: Query complete 00:00:00.031

```
CREATE TABLE Baggage_check(
    baggage_check_id INT PRIMARY KEY,
    check_result VARCHAR(50) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL,
    booking_id INT NOT NULL,
    passenger_id INT NOT NULL
);
```

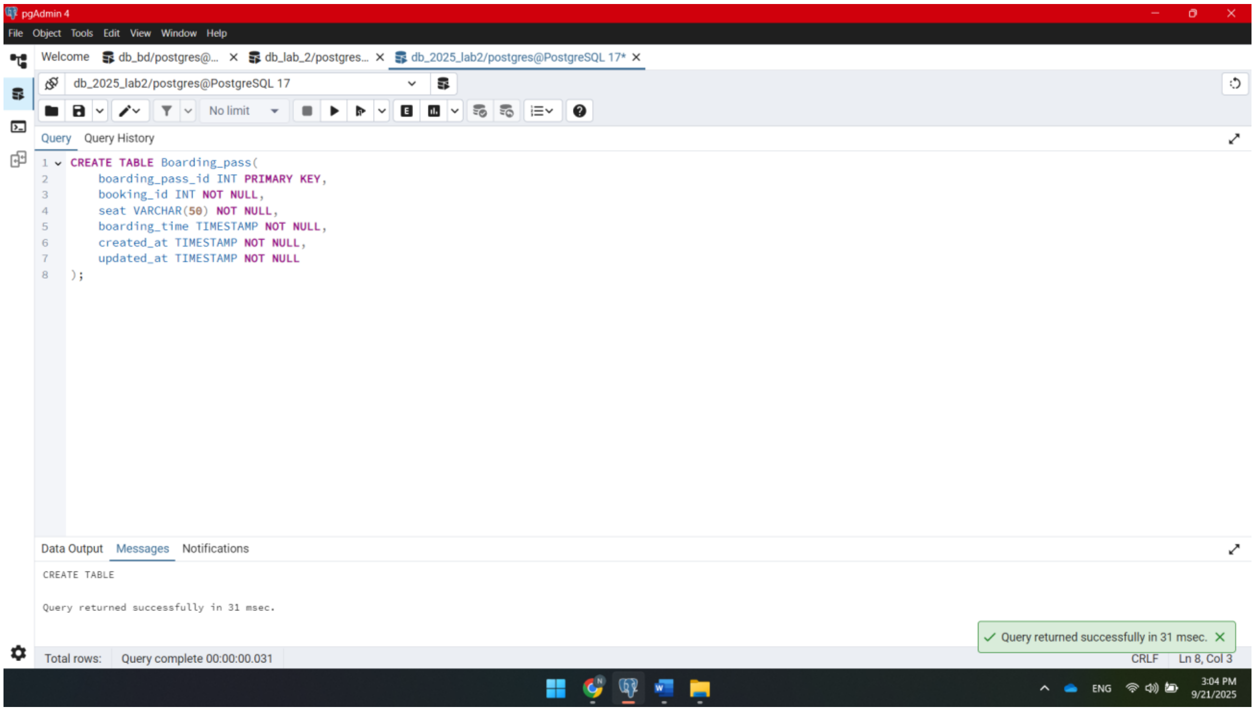


```
CREATE TABLE Baggage(
    baggage_id INT PRIMARY KEY,
    weight_in_kg DECIMAL(4,2) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL,
    booking_id INT NOT NULL
);
```

```
CREATE TABLE

Query returned successfully in 33 msec.
```

Query returned successfully in 33 msec.

```
CREATE TABLE Baggage(
    baggage_id INT PRIMARY KEY,
    weight_in_kg DECIMAL(4,2) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL,
    booking_id INT NOT NULL
);
```



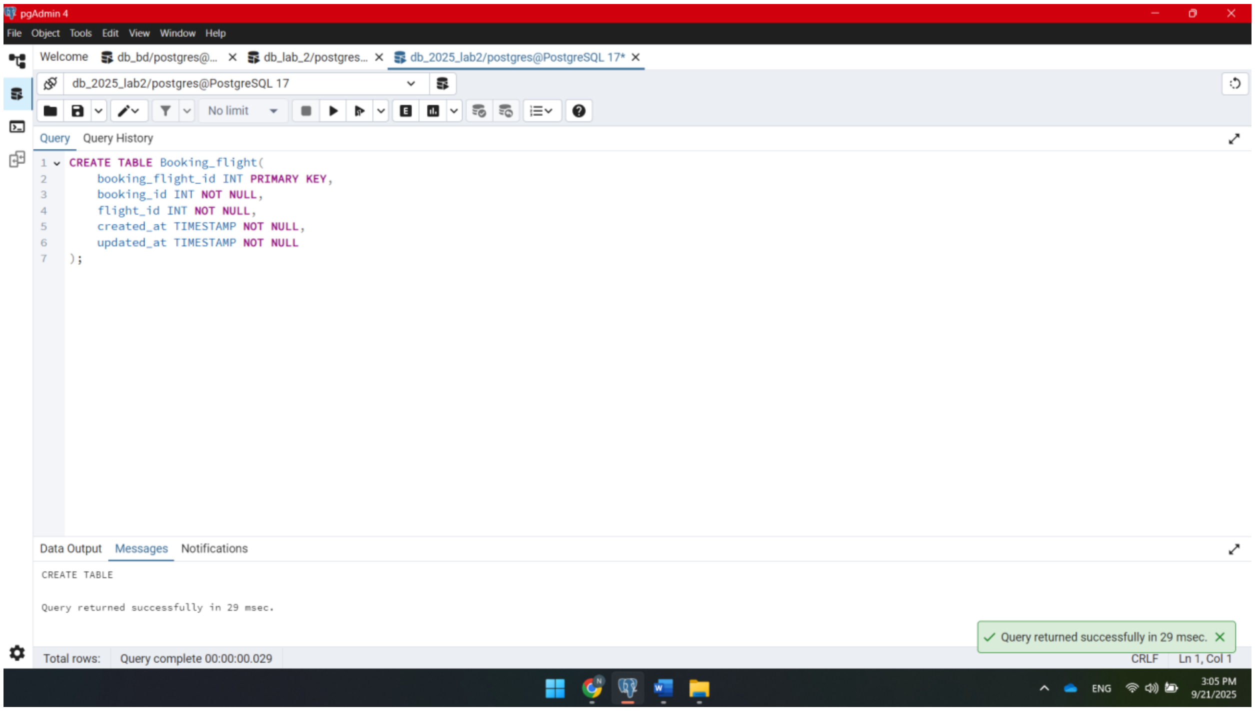
```sql
CREATE TABLE Boarding_pass(
    boarding_pass_id INT PRIMARY KEY,
    booking_id INT NOT NULL,
    seat VARCHAR(50) NOT NULL,
    boarding_time TIMESTAMP NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL
);
```

```
CREATE TABLE

Query returned successfully in 31 msec.
```

✓ Query returned successfully in 31 msec.

Total rows: Query complete 00:00:00.031

```sql
CREATE TABLE Boarding_pass(
    boarding_pass_id INT PRIMARY KEY,
    booking_id INT NOT NULL,
    seat VARCHAR(50) NOT NULL,
    boarding_time TIMESTAMP NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL
);
```



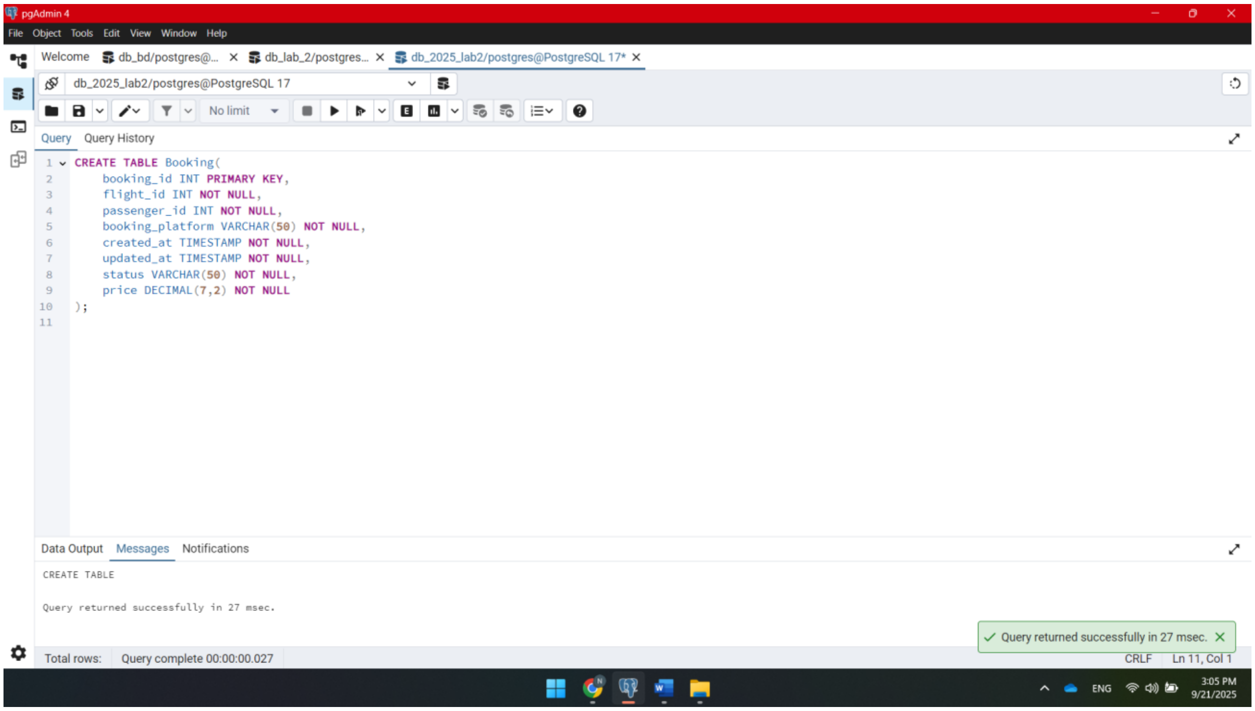
```
CREATE TABLE Booking_flight(
    booking_flight_id INT PRIMARY KEY,
    booking_id INT NOT NULL,
    flight_id INT NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL
);
```

```
CREATE TABLE

Query returned successfully in 29 msec.
```

Query returned successfully in 29 msec.

Total rows: Query complete 00:00:00.029

```
CREATE TABLE Booking_flight(
    booking_flight_id INT PRIMARY KEY,
    booking_id INT NOT NULL,
    flight_id INT NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL
);
```



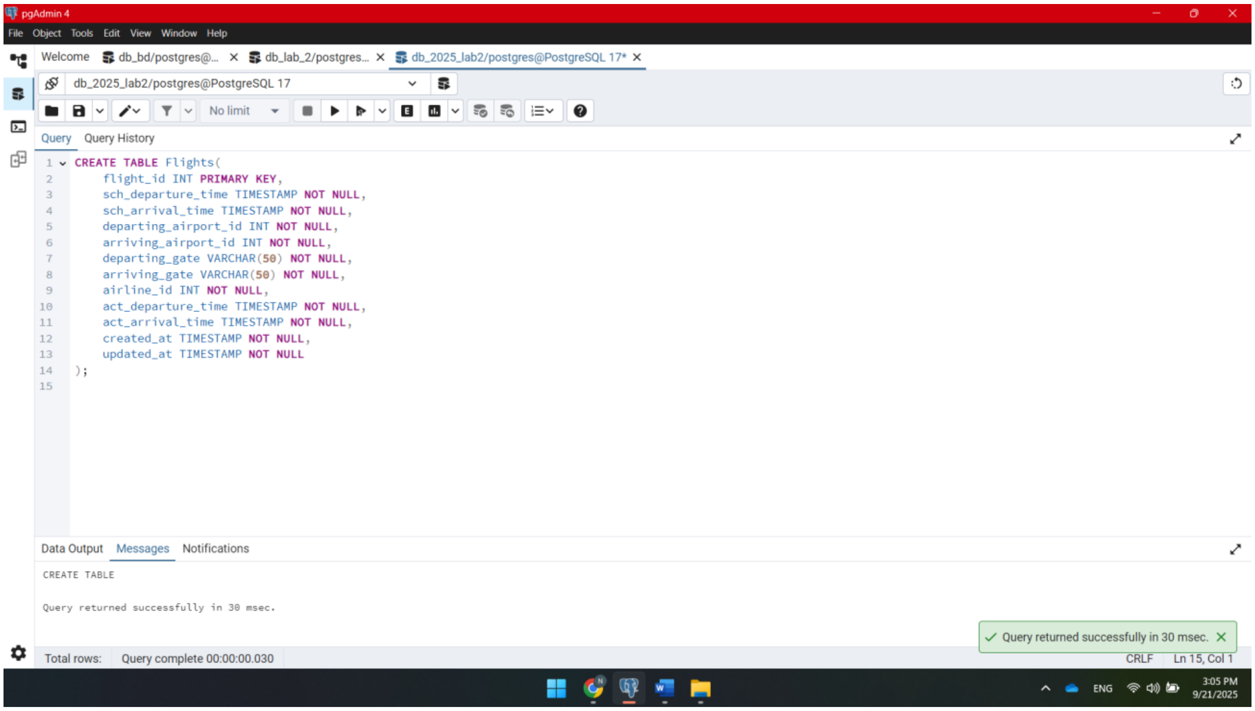
```
CREATE TABLE Booking(
    booking_id INT PRIMARY KEY,
    flight_id INT NOT NULL,
    passenger_id INT NOT NULL,
    booking_platform VARCHAR(50) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL,
    status VARCHAR(50) NOT NULL,
    price DECIMAL(7,2) NOT NULL
);
```

```
CREATE TABLE

Query returned successfully in 27 msec.
```

✓ Query returned successfully in 27 msec.

Total rows: Query complete 00:00:00.027

```
CREATE TABLE Booking(
    booking_id INT PRIMARY KEY,
    flight_id INT NOT NULL,
    passenger_id INT NOT NULL,
    booking_platform VARCHAR(50) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL,
    status VARCHAR(50) NOT NULL,
    price DECIMAL(7,2) NOT NULL
);
```



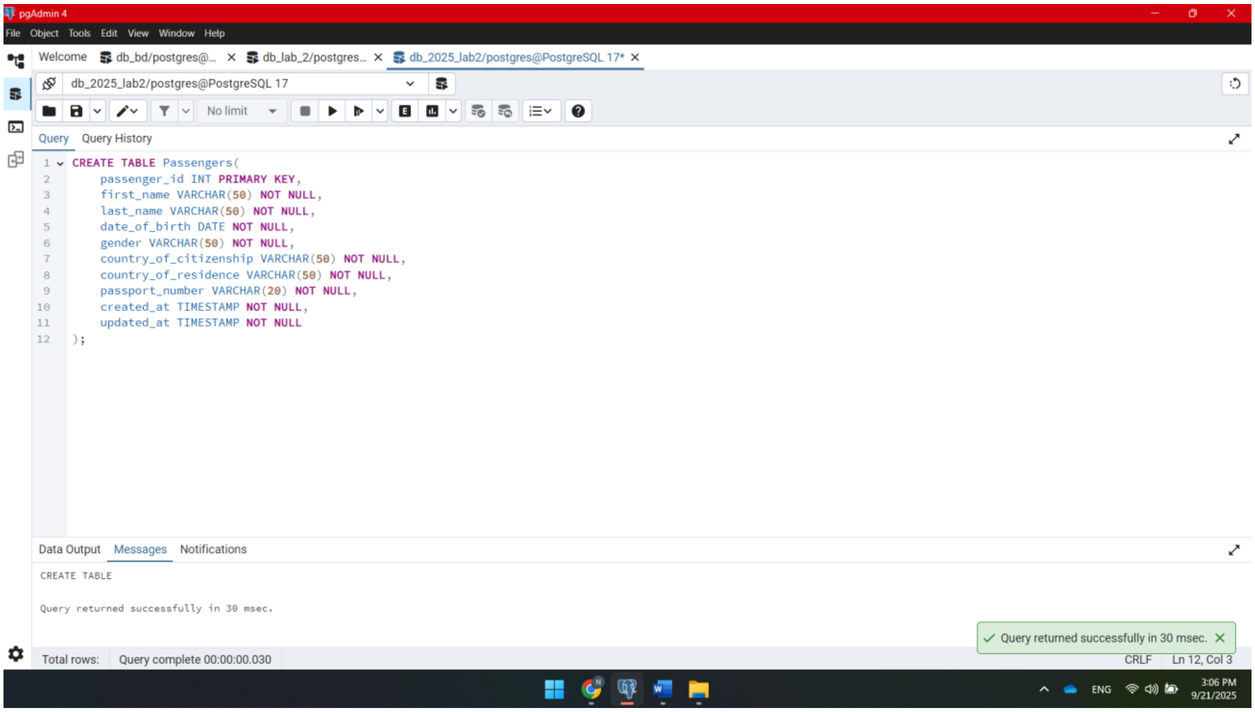
```
CREATE TABLE Flights(
    flight_id INT PRIMARY KEY,
    sch_departure_time TIMESTAMP NOT NULL,
    sch_arrival_time TIMESTAMP NOT NULL,
    departing_airport_id INT NOT NULL,
    arriving_airport_id INT NOT NULL,
    departing_gate VARCHAR(50) NOT NULL,
    arriving_gate VARCHAR(50) NOT NULL,
    airline_id INT NOT NULL,
    act_departure_time TIMESTAMP NOT NULL,
    act_arrival_time TIMESTAMP NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL
);
```

```
CREATE TABLE

Query returned successfully in 30 msec.
```

Query returned successfully in 30 msec.

Total rows: Query complete 00:00:00.030

```
CREATE TABLE Flights(
    flight_id INT PRIMARY KEY,
    sch_departure_time TIMESTAMP NOT NULL,
    sch_arrival_time TIMESTAMP NOT NULL,
    departing_airport_id INT NOT NULL,
    arriving_airport_id INT NOT NULL,
    departing_gate VARCHAR(50) NOT NULL,
    arriving_gate VARCHAR(50) NOT NULL,
    airline_id INT NOT NULL,
    act_departure_time TIMESTAMP NOT NULL,
    act_arrival_time TIMESTAMP NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL
);
```



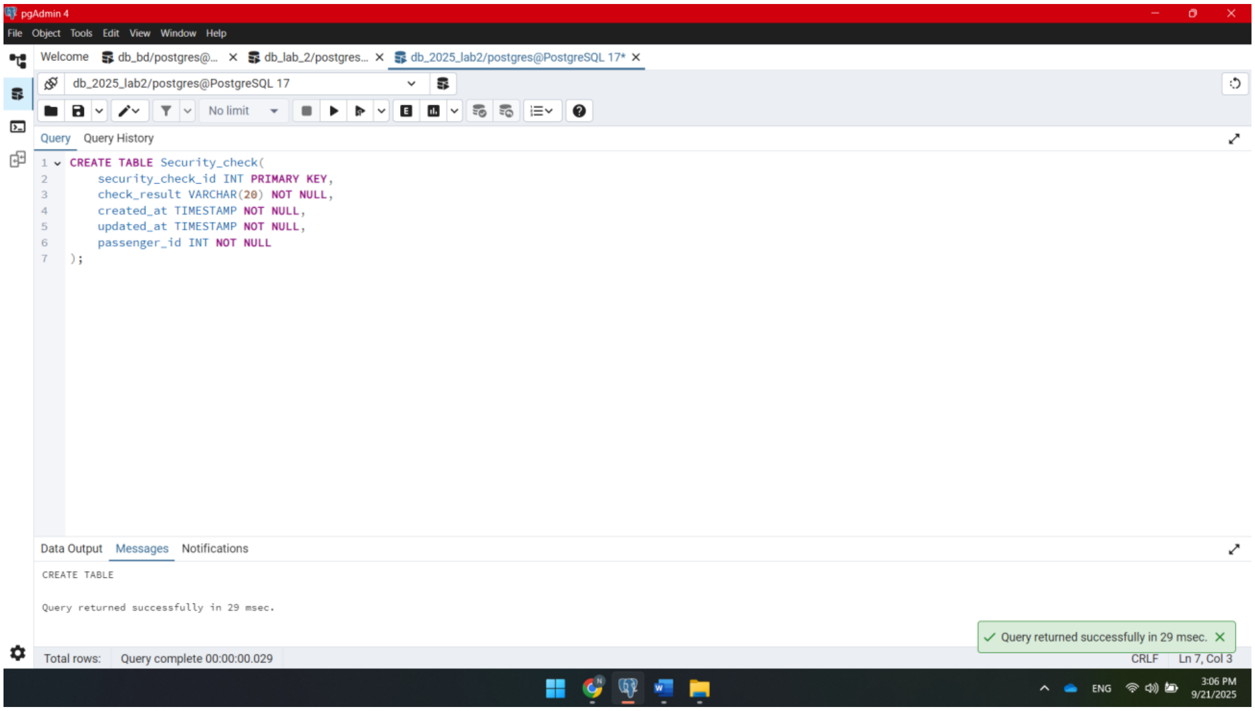
```
CREATE TABLE Passengers(
    passenger_id INT PRIMARY KEY,
    first_name VARCHAR(50) NOT NULL,
    last_name VARCHAR(50) NOT NULL,
    date_of_birth DATE NOT NULL,
    gender VARCHAR(50) NOT NULL,
    country_of_citizenship VARCHAR(50) NOT NULL,
    country_of_residence VARCHAR(50) NOT NULL,
    passport_number VARCHAR(20) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL
);
```

```
CREATE TABLE

Query returned successfully in 30 msec.
```

Query returned successfully in 30 msec.

Total rows: Query complete 00:00:00.030

```
CREATE TABLE Passengers(
    passenger_id INT PRIMARY KEY,
    first_name VARCHAR(50) NOT NULL,
    last_name VARCHAR(50) NOT NULL,
    date_of_birth DATE NOT NULL,
    gender VARCHAR(50) NOT NULL,
    country_of_citizenship VARCHAR(50) NOT NULL,
    country_of_residence VARCHAR(50) NOT NULL,
    passport_number VARCHAR(20) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL
);
```

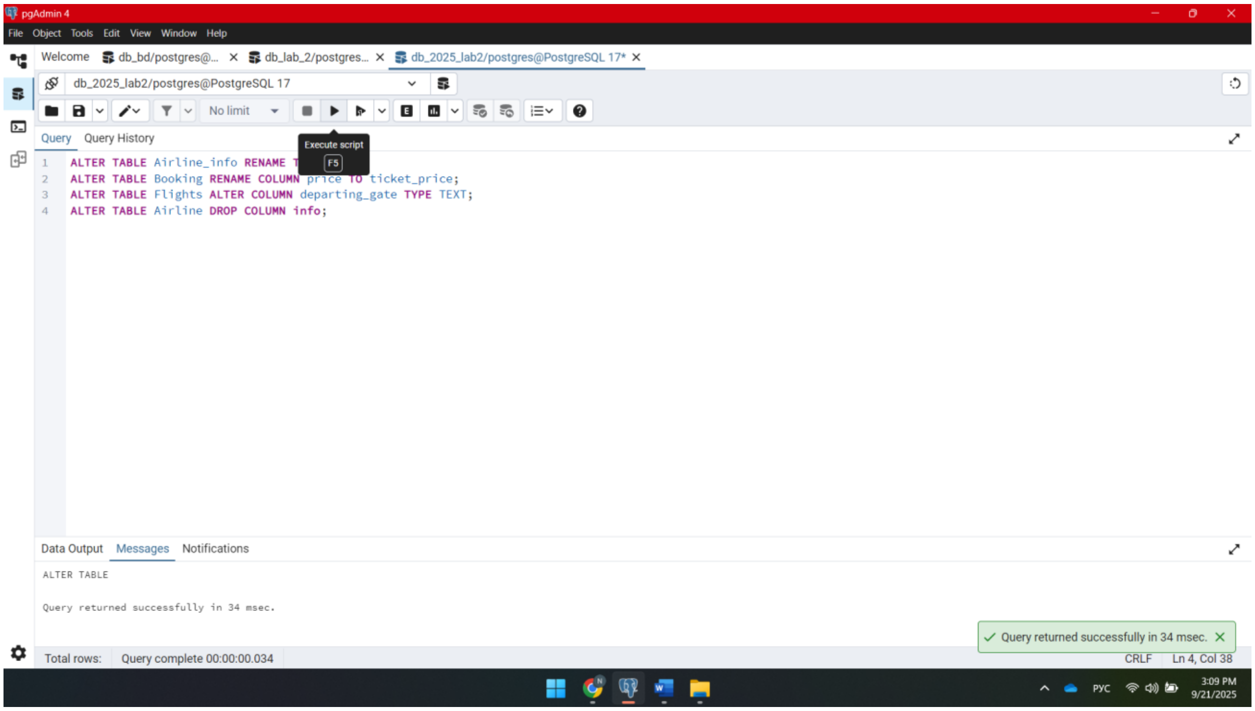


```
CREATE TABLE Security_check(
    security_check_id INT PRIMARY KEY,
    check_result VARCHAR(20) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL,
    passenger_id INT NOT NULL
);
```

```
CREATE TABLE

Query returned successfully in 29 msec.
```

Query returned successfully in 29 msec.

```
CREATE TABLE Security_check(
    security_check_id INT PRIMARY KEY,
    check_result VARCHAR(20) NOT NULL,
    created_at TIMESTAMP NOT NULL,
    updated_at TIMESTAMP NOT NULL,
    passenger_id INT NOT NULL
);
```



```
ALTER TABLE Airline_info RENAME T
ALTER TABLE Booking RENAME COLUMN price TO ticket_price;
ALTER TABLE Flights ALTER COLUMN departing_gate TYPE TEXT;
ALTER TABLE Airline DROP COLUMN info;
```

```
ALTER TABLE

Query returned successfully in 34 msec.
```

✓ Query returned successfully in 34 msec.

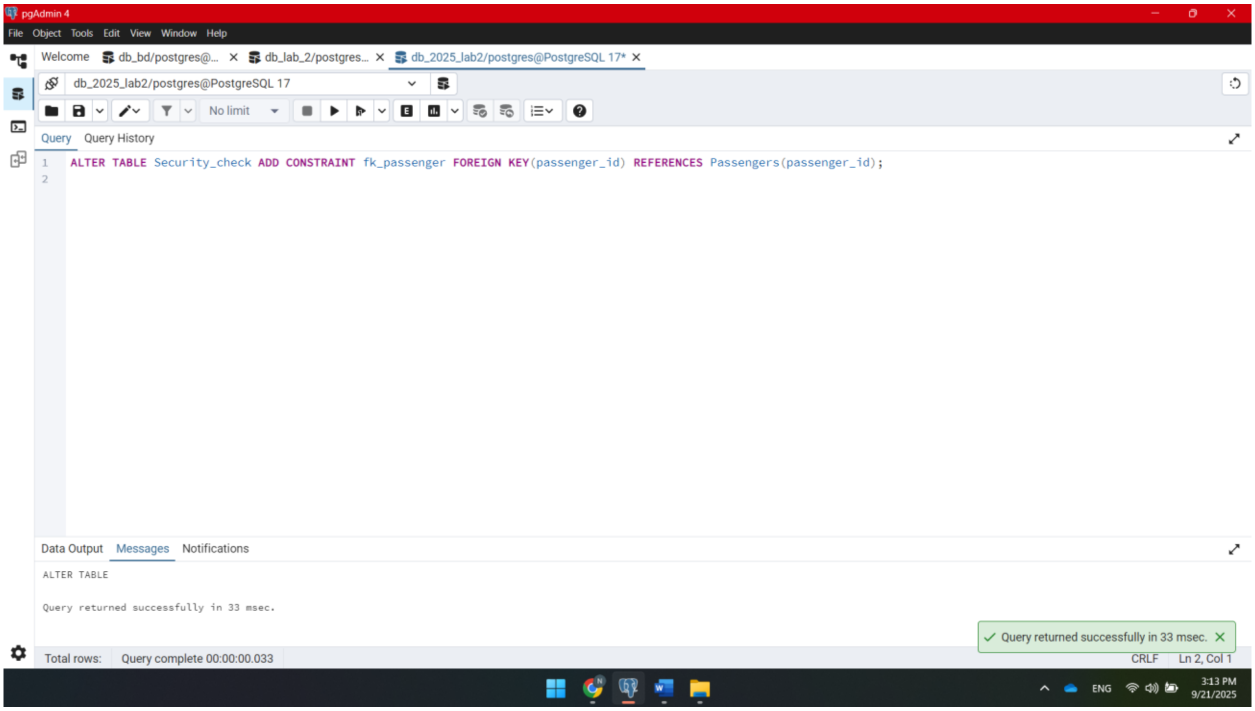
Total rows: Query complete 00:00:00.034 Ln 4, Col 38

5 ALTER TABLE Airline_info RENAME TO Airline;

6 ALTER TABLE Booking RENAME COLUMN price TO ticket_price;

7 ALTER TABLE Flights ALTER COLUMN departing_gate TYPE TEXT;

8 ALTER TABLE Airline DROP COLUMN info;

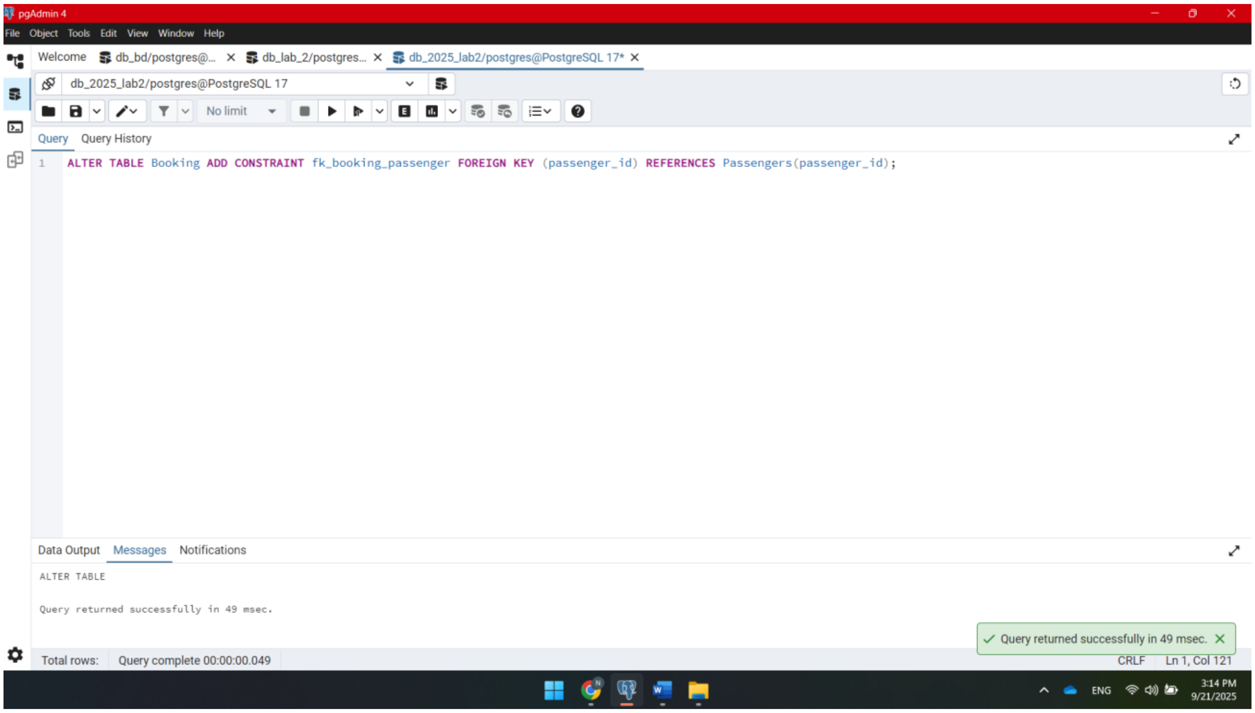


```
ALTER TABLE Security_check ADD CONSTRAINT fk_passenger FOREIGN KEY(passenger_id) REFERENCES Passengers(passenger_id);
```

```
ALTER TABLE

Query returned successfully in 33 msec.
```

✓ Query returned successfully in 33 msec.

ALTER TABLE Security_check ADD CONSTRAINT fk_passenger FOREIGN KEY (passenger_id) REFERENCES Passengers(passenger_id);

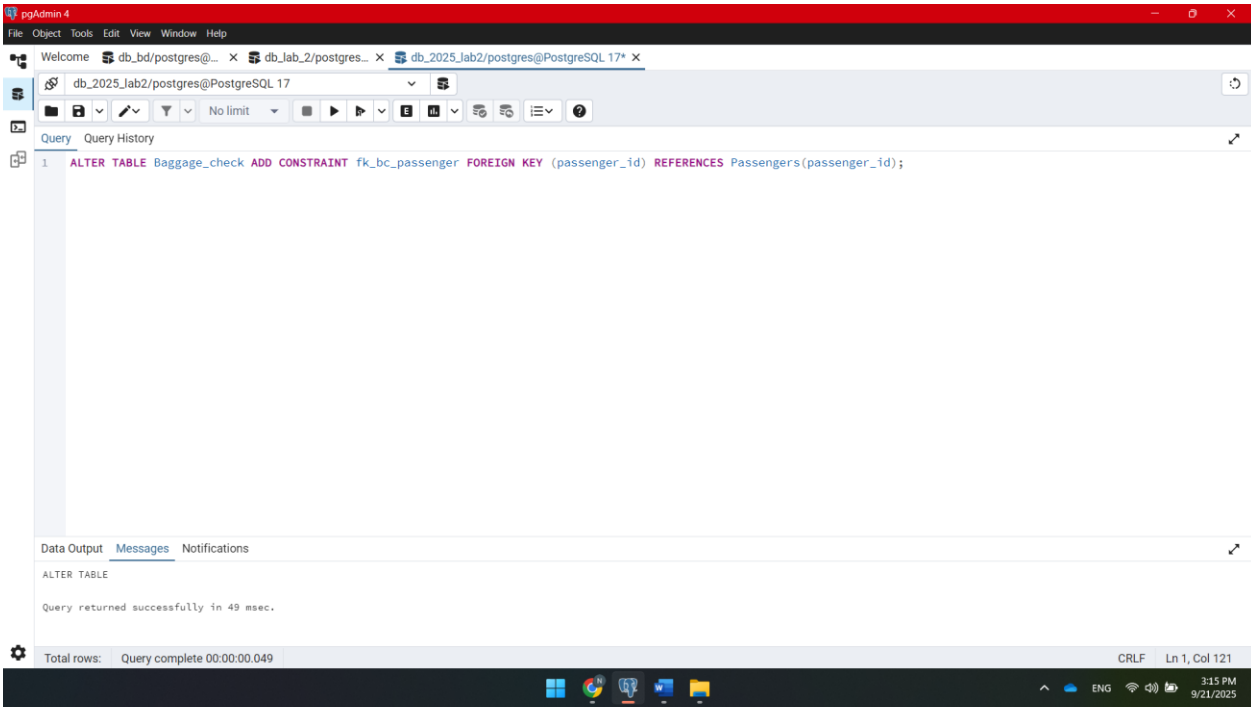


```
ALTER TABLE Booking ADD CONSTRAINT fk_booking_passenger FOREIGN KEY (passenger_id) REFERENCES Passengers(passenger_id);
```

```
ALTER TABLE

Query returned successfully in 49 msec.
```

✓ Query returned successfully in 49 msec.

ALTER TABLE Booking ADD CONSTRAINT fk_booking_passenger FOREIGN KEY (passenger_id) REFERENCES Passengers(passenger_id);

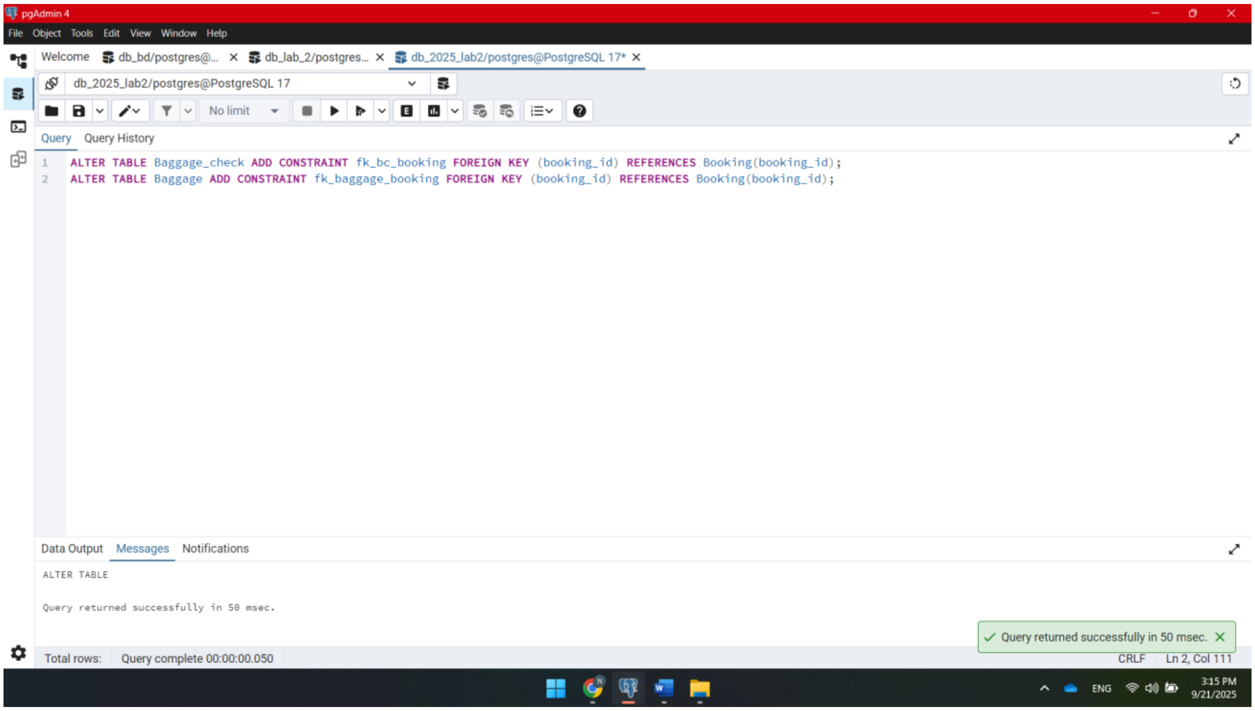


```
ALTER TABLE Baggage_check ADD CONSTRAINT fk_bc_passenger FOREIGN KEY (passenger_id) REFERENCES Passengers(passenger_id);
```

```
ALTER TABLE

Query returned successfully in 49 msec.
```

Query complete 00:00:00.049

ALTER TABLE Baggage_check ADD CONSTRAINT fk_bc_passenger FOREIGN KEY (passenger_id) REFERENCES Passengers(passenger_id);



```
ALTER TABLE Baggage_check ADD CONSTRAINT fk_bc_booking FOREIGN KEY (booking_id) REFERENCES Booking(booking_id);
ALTER TABLE Baggage ADD CONSTRAINT fk_baggage_booking FOREIGN KEY (booking_id) REFERENCES Booking(booking_id);
```

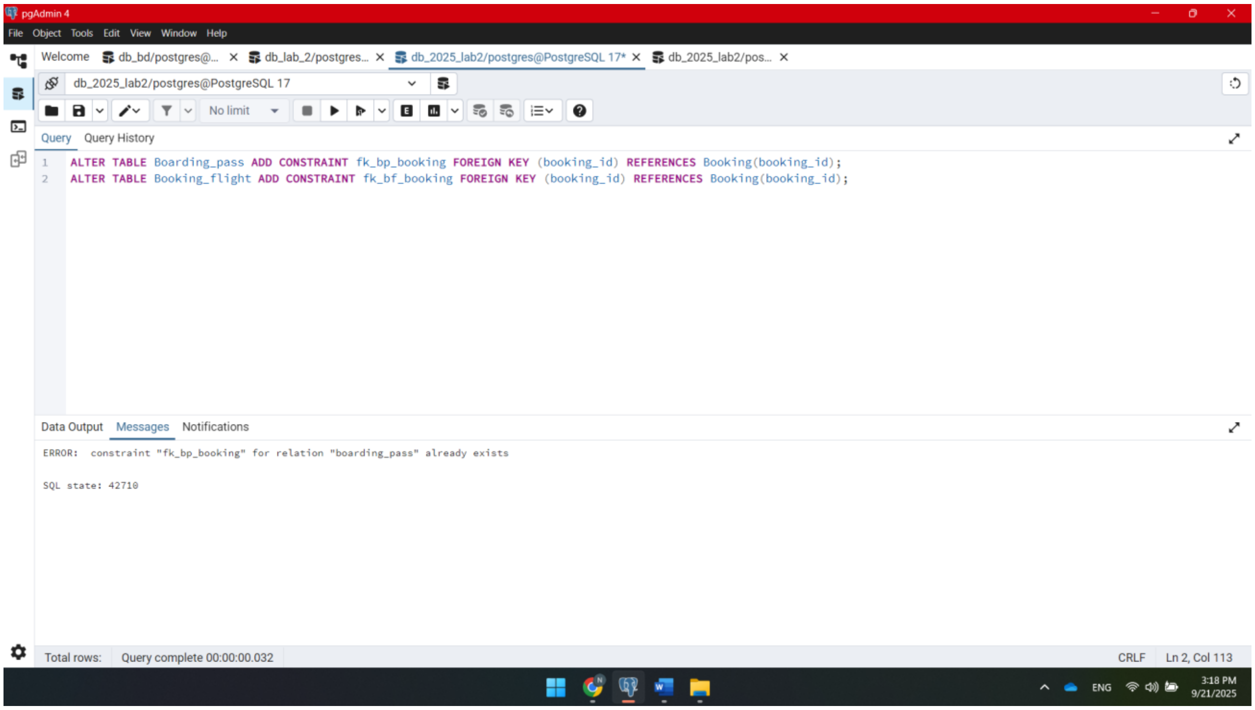
```
ALTER TABLE

Query returned successfully in 50 msec.
```

✓ Query returned successfully in 50 msec.

Query complete 00:00:00.050

ALTER TABLE Baggage_check ADD CONSTRAINT fk_bc_booking FOREIGN KEY (booking_id) REFERENCES Booking(booking_id);

ALTER TABLE Baggage ADD CONSTRAINT fk_baggage_booking FOREIGN KEY (booking_id) REFERENCES Booking(booking_id);

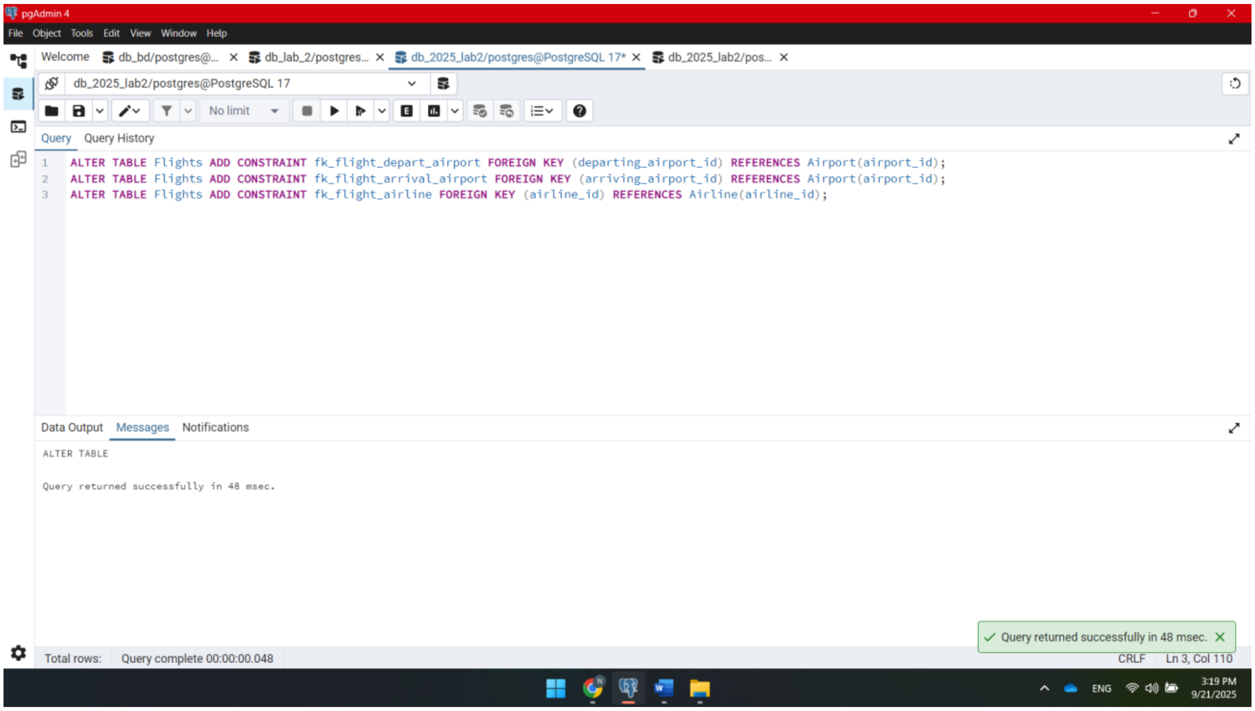


```
ALTER TABLE Boarding_pass ADD CONSTRAINT fk_bp_booking FOREIGN KEY (booking_id) REFERENCES Booking(booking_id);
ALTER TABLE Booking_flight ADD CONSTRAINT fk_bf_booking FOREIGN KEY (booking_id) REFERENCES Booking(booking_id);
```

```
ERROR:  constraint "fk_bp_booking" for relation "boarding_pass" already exists

SQL state: 42710
```

ALTER TABLE Boarding_pass ADD CONSTRAINT fk_bp_booking FOREIGN KEY (booking_id) REFERENCES Booking(booking_id);

ALTER TABLE Booking_flight ADD CONSTRAINT fk_bf_booking FOREIGN KEY (booking_id) REFERENCES Booking(booking_id);



```sql
ALTER TABLE Flights ADD CONSTRAINT fk_flight_depart_airport FOREIGN KEY (departing_airport_id) REFERENCES Airport(airport_id);
ALTER TABLE Flights ADD CONSTRAINT fk_flight_arrival_airport FOREIGN KEY (arriving_airport_id) REFERENCES Airport(airport_id);
ALTER TABLE Flights ADD CONSTRAINT fk_flight_airline FOREIGN KEY (airline_id) REFERENCES Airline(airline_id);
```

```
ALTER TABLE

Query returned successfully in 48 msec.
```

Query returned successfully in 48 msec.

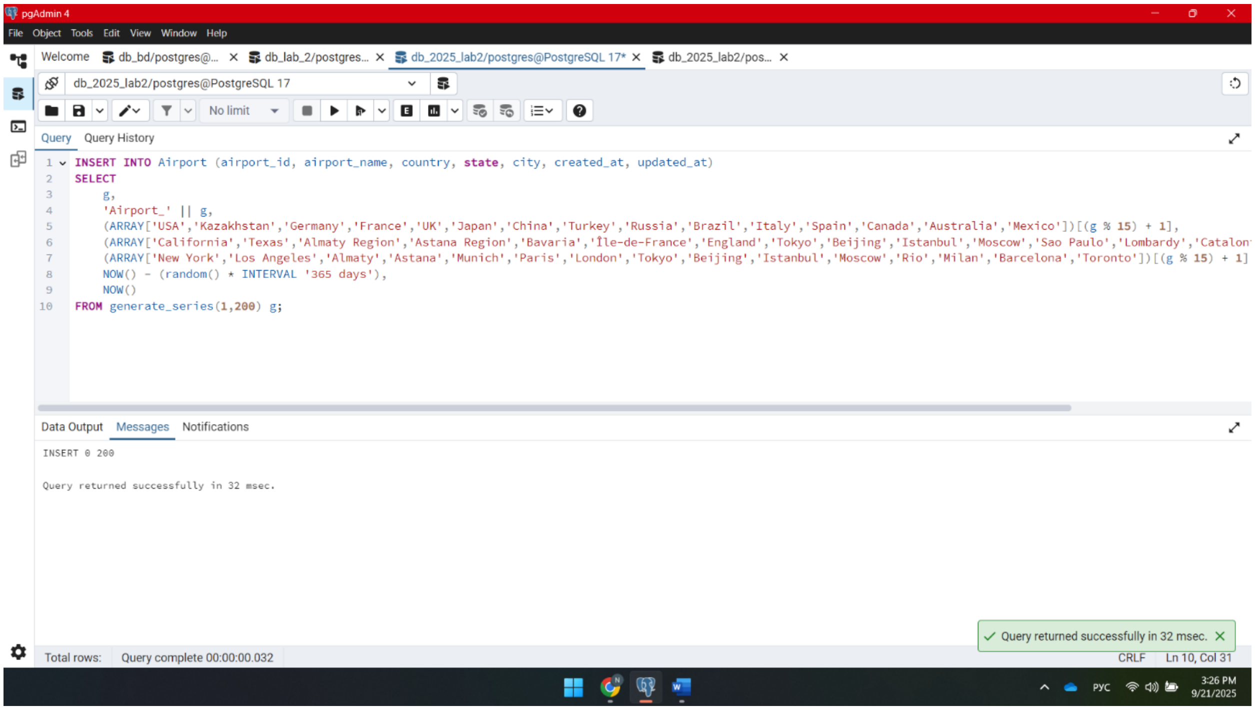
ALTER TABLE Booking_flight ADD CONSTRAINT fk_bf_flight FOREIGN KEY (flight_id) REFERENCES Flights(flight_id);

ALTER TABLE Flights ADD CONSTRAINT fk_flight_depart_airport FOREIGN KEY (departing_airport_id) REFERENCES Airport(airport_id);

ALTER TABLE Flights ADD CONSTRAINT fk_flight_arrival_airport FOREIGN KEY (arriving_airport_id) REFERENCES Airport(airport_id);

ALTER TABLE Flights ADD CONSTRAINT fk_flight_airline FOREIGN KEY (airline_id) REFERENCES Airline(airline_id);

DML



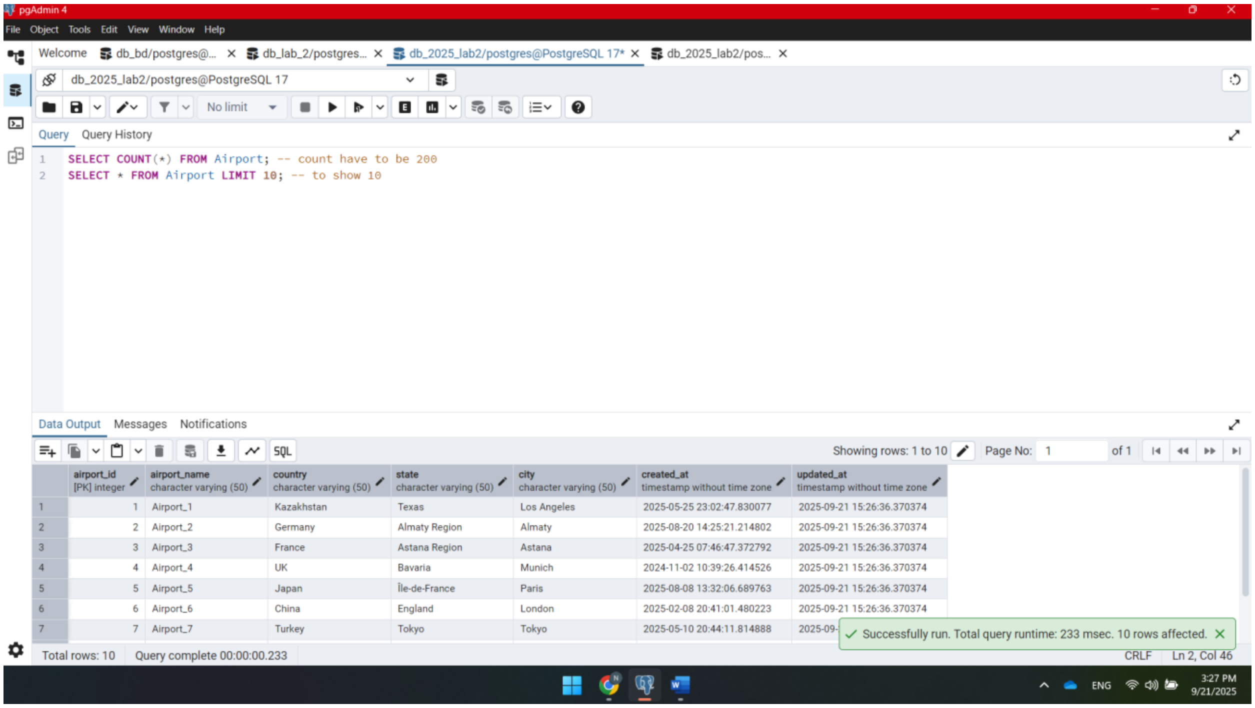
pgAdmin 4
File Object Tools Edit View Window Help
Welcome
db_bd/postgres@...
db_lab_2/postgres...
db_2025_lab2/postgres@PostgreSQL 17*
db_2025_lab2/pos...
db_2025_lab2/postgres@PostgreSQL 17
No limit
Query
Query History

```
INSERT INTO Airport (airport_id, airport_name, country, state, city, created_at, updated_at)
SELECT
    g,
    'Airport_' || g,
    (ARRAY['USA','Kazakhstan','Germany','France','UK','Japan','China','Turkey','Russia','Brazil','Italy','Spain','Canada','Australia','Mexico'])[(g % 15) + 1],
    (ARRAY['California','Texas','Almaty Region','Astana Region','Bavaria','Île-de-France','England','Tokyo','Beijing','Istanbul','Moscow','Sao Paulo','Lombardy','Catalon
    (ARRAY['New York','Los Angeles','Almaty','Astana','Munich','Paris','London','Tokyo','Beijing','Istanbul','Moscow','Rio','Milan','Barcelona','Toronto'])[(g % 15) + 1]
    NOW() - (random() * INTERVAL '365 days'),
    NOW()
FROM generate_series(1,200) g;
```

```
INSERT 0 200

Query returned successfully in 32 msec.
```

Query returned successfully in 32 msec.
Total rows:
Query complete 00:00:00.032
CRLF
Ln 10, Col 31
РУС
3:26 PM
9/21/2025

```
INSERT INTO Airport (airport_id, airport_name, country, state, city, created_at, updated_at)

SELECT

    g,

    'Airport_' || g,


(ARRAY['USA','Kazakhstan','Germany','France','UK','Japan','China','Turkey','Russia','Brazil','Italy','Spain','Canada','Australia','Mexico'])[(g % 15) + 1],

    (ARRAY['California','Texas','Almaty Region','Astana Region','Bavaria','Île-de-France','England','Tokyo','Beijing','Istanbul','Moscow','Sao Paulo','Lombardy','Catalonia','Ontario'])[(g % 15) + 1],

    (ARRAY['New York','Los Angeles','Almaty','Astana','Munich','Paris','London','Tokyo','Beijing','Istanbul','Moscow','Rio','Milan','Barcelona','Toronto'])[(g % 15) + 1],

    NOW() - (random() * INTERVAL '365 days'),
    NOW()
FROM generate_series(1,200) g;
```



```
SELECT COUNT(*) FROM Airport; -- count have to be 200
SELECT * FROM Airport LIMIT 10; -- to show 10
```

Showing rows: 1 to 10 Page No: 1 of 1

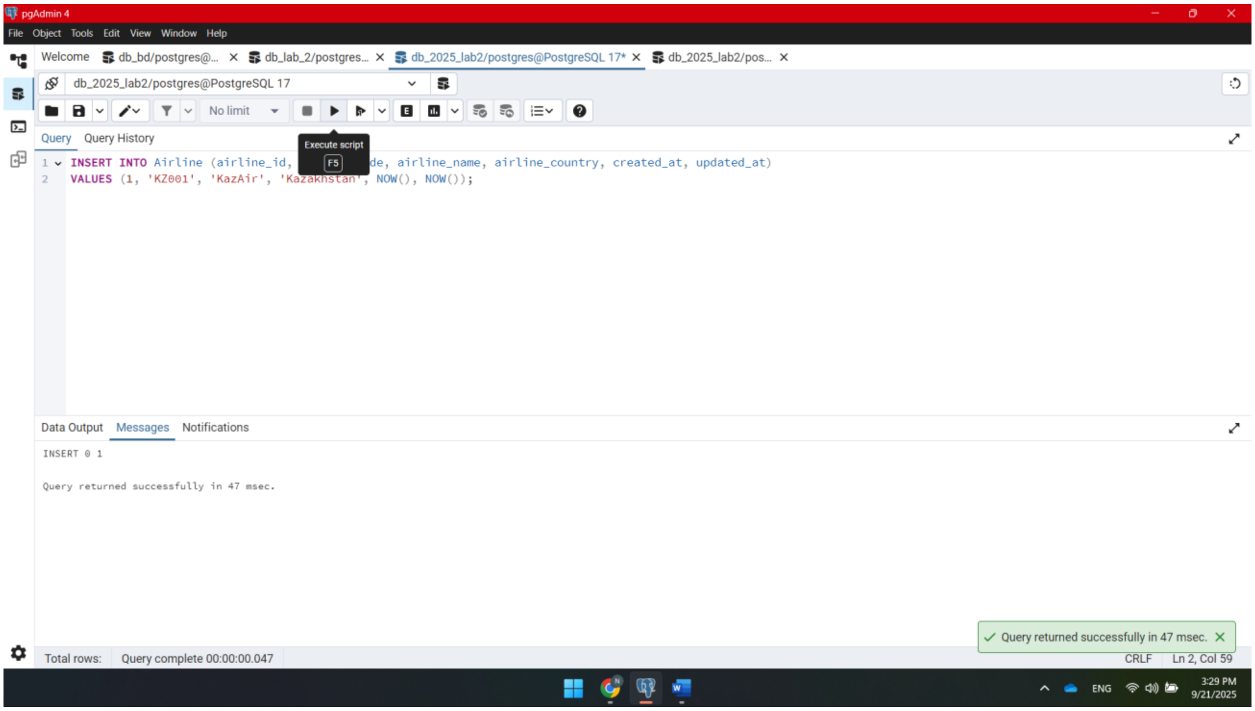
	airport_id [PK] integer	airport_name character varying (50)	country character varying (50)	state character varying (50)	city character varying (50)	created_at timestamp without time zone	updated_at timestamp without time zone
1	1	Airport_1	Kazakhstan	Texas	Los Angeles	2025-05-25 23:02:47.830077	2025-09-21 15:26:36.370374
2	2	Airport_2	Germany	Almaty Region	Almaty	2025-08-20 14:25:21.214802	2025-09-21 15:26:36.370374
3	3	Airport_3	France	Astana Region	Astana	2025-04-25 07:46:47.372792	2025-09-21 15:26:36.370374
4	4	Airport_4	UK	Bavaria	Munich	2024-11-02 10:39:26.414526	2025-09-21 15:26:36.370374
5	5	Airport_5	Japan	Île-de-France	Paris	2025-08-08 13:32:06.689763	2025-09-21 15:26:36.370374
6	6	Airport_6	China	England	London	2025-02-08 20:41:01.480223	2025-09-21 15:26:36.370374
7	7	Airport_7	Turkey	Tokyo	Tokyo	2025-05-10 20:44:11.814888	2025-09-

✓ Successfully run. Total query runtime: 233 msec. 10 rows affected.

Total rows: 10 Query complete 00:00:00.233

SELECT COUNT(*) FROM Airport; -- Должно быть 200

SELECT * FROM Airport LIMIT 10; -- Посмотреть первые 10 записей



```
INSERT INTO Airline (airline_id,            de, airline_name, airline_country, created_at, updated_at)
VALUES (1, 'KZ001', 'KazAir', 'Kazakhstan', NOW(), NOW());
```

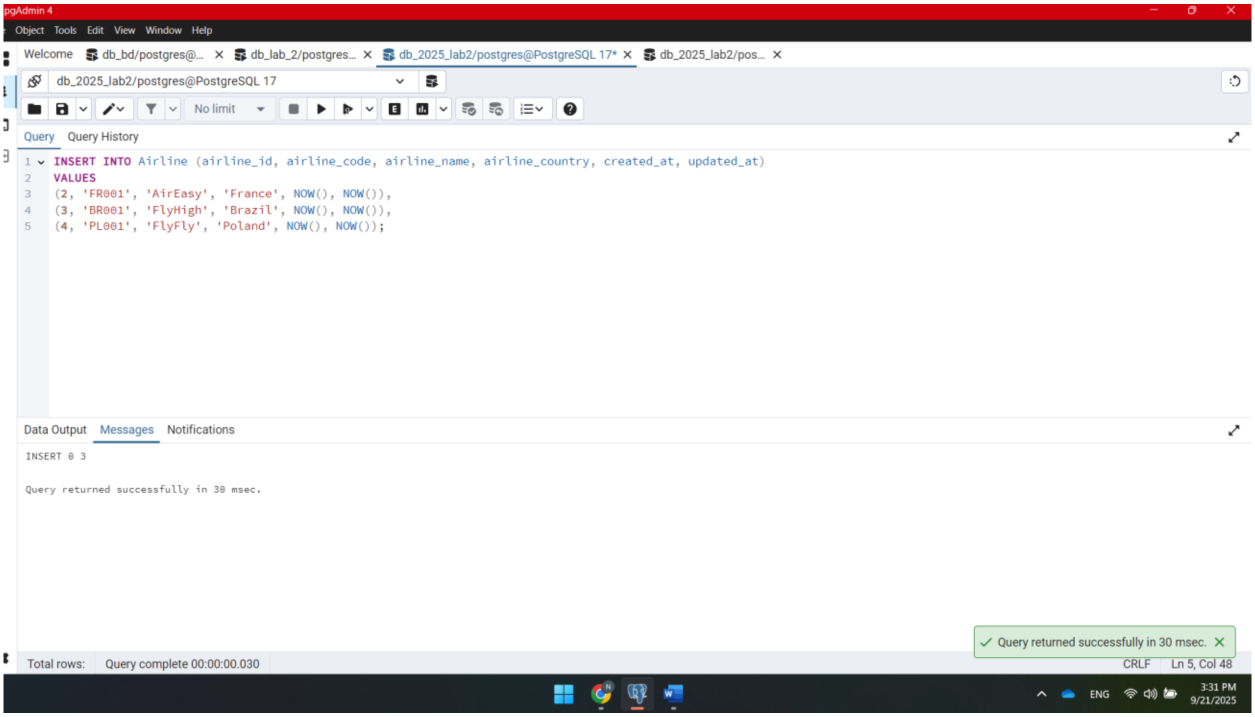
```
INSERT 0 1

Query returned successfully in 47 msec.
```

Query returned successfully in 47 msec.

Total rows: Query complete 00:00:00.047

INSERT INTO Airline (airline_id, airline_code, airline_name, airline_country, created_at, updated_at)

VALUES (1, 'KZ001', 'KazAir', 'Kazakhstan', NOW(), NOW());



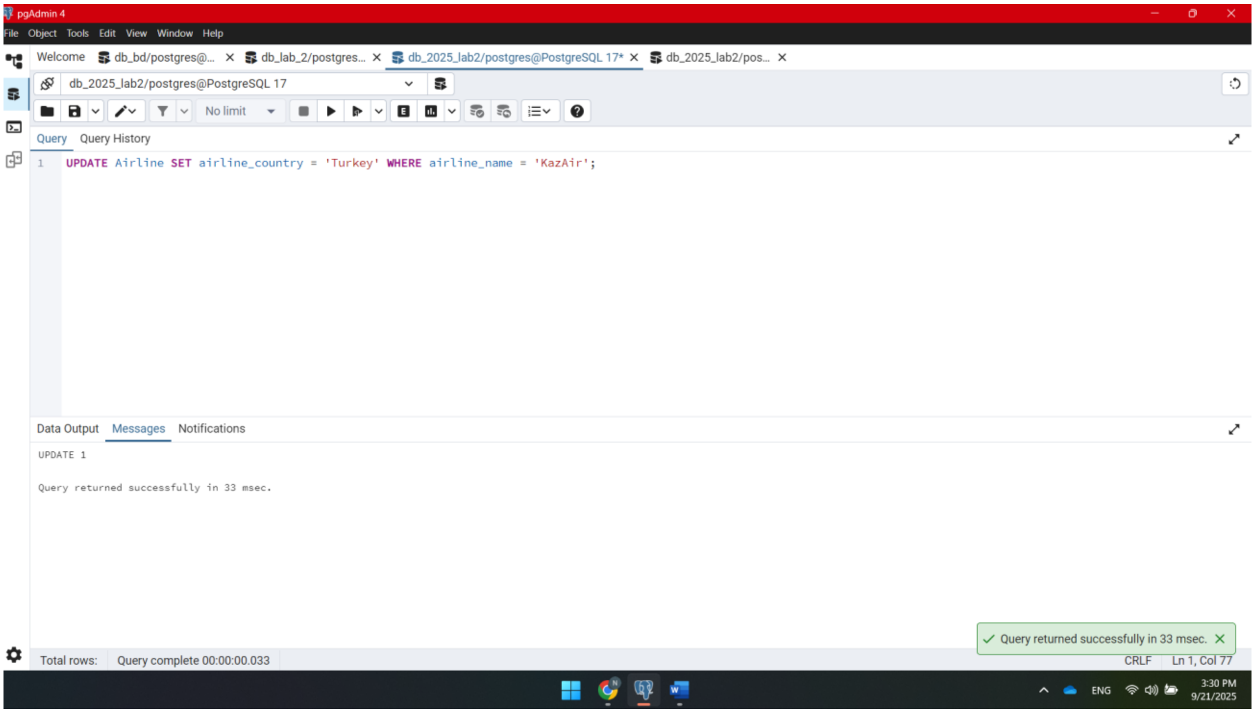
```
INSERT INTO Airline (airline_id, airline_code, airline_name, airline_country, created_at, updated_at)
VALUES
(2, 'FR001', 'AirEasy', 'France', NOW(), NOW()),
(3, 'BR001', 'FlyHigh', 'Brazil', NOW(), NOW()),
(4, 'PL001', 'FlyFly', 'Poland', NOW(), NOW());
```

```
INSERT 0 3

Query returned successfully in 30 msec.
```

Query returned successfully in 30 msec.

Total rows: Query complete 00:00:00.030

UPDATE Airline SET airline_country = 'Turkey' WHERE airline_name = 'KazAir';



```
UPDATE Airline SET airline_country = 'Turkey' WHERE airline_name = 'KazAir';
```

```
UPDATE 1

Query returned successfully in 33 msec.
```

✓ Query returned successfully in 33 msec.

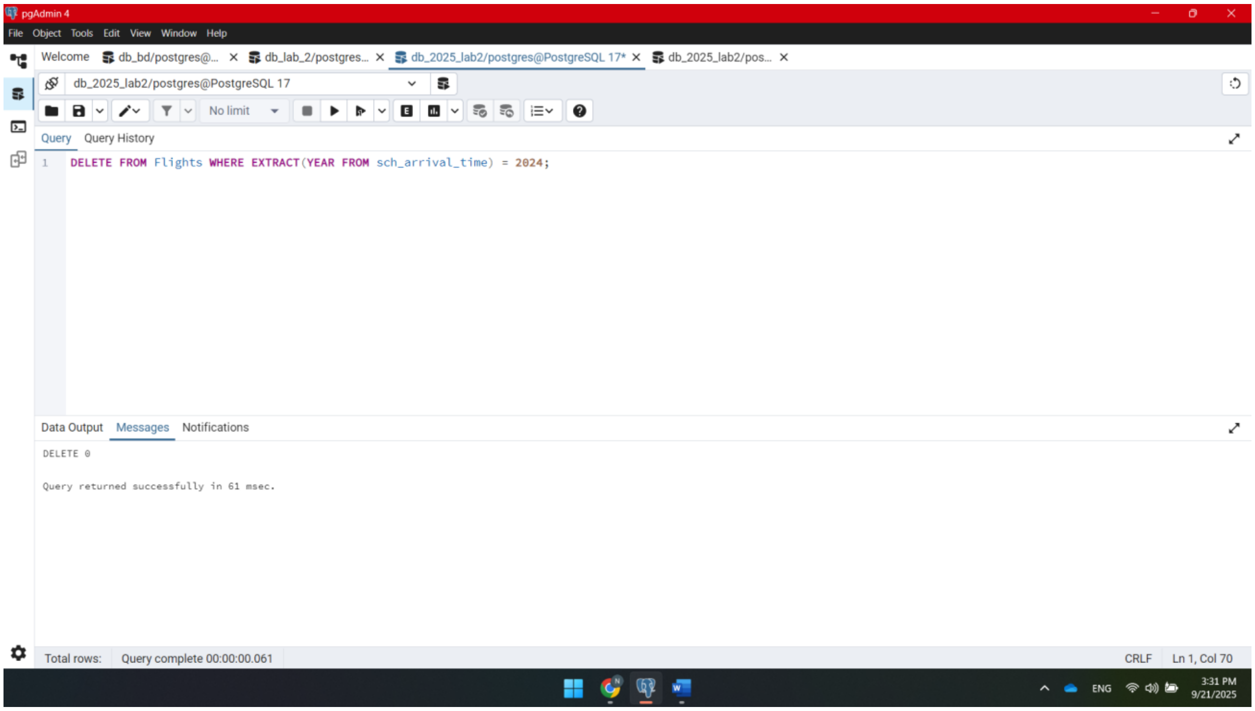
INSERT INTO Airline (airline_id, airline_code, airline_name, airline_country, created_at, updated_at)

VALUES

(2, 'FR001', 'AirEasy', 'France', NOW(), NOW()),

(3, 'BR001', 'FlyHigh', 'Brazil', NOW(), NOW()),

(4, 'PL001', 'FlyFly', 'Poland', NOW(), NOW());

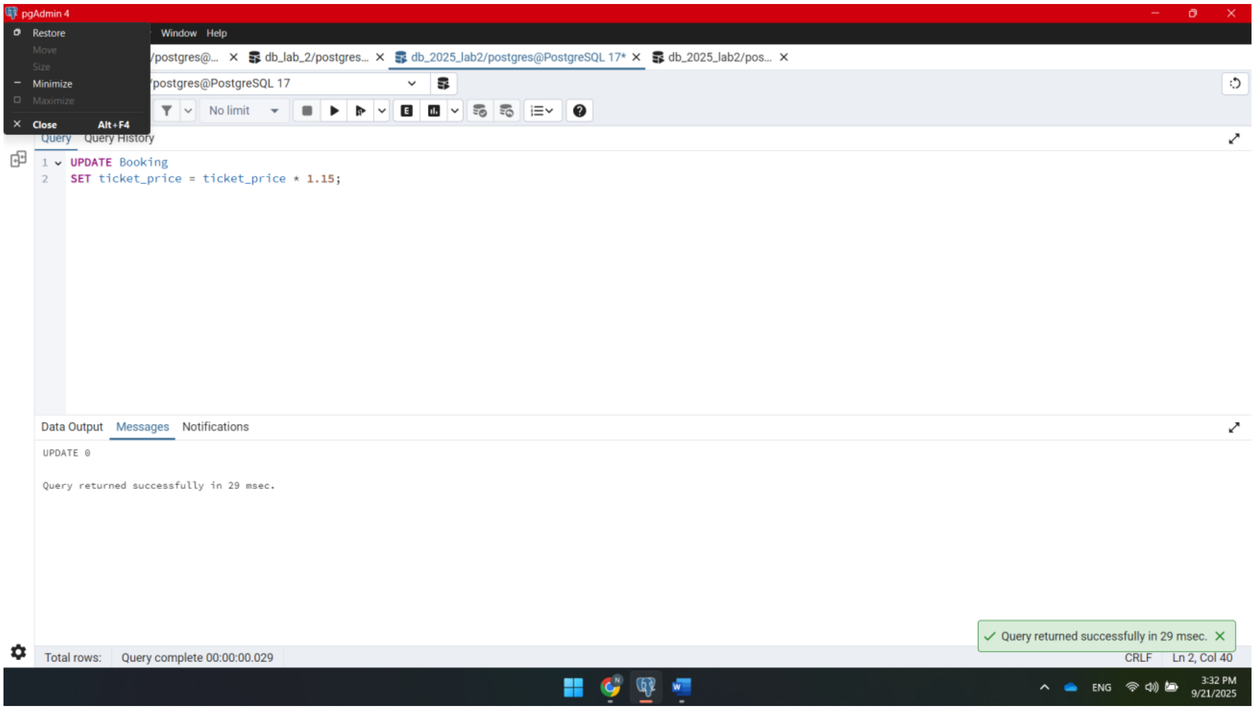


```
DELETE FROM Flights WHERE EXTRACT(YEAR FROM sch_arrival_time) = 2024;
```

```
DELETE 0

Query returned successfully in 61 msec.
```

Total rows: Query complete 00:00:00.061 CRLF Ln 1, Col 70

DELETE FROM Flights WHERE EXTRACT(YEAR FROM sch_arrival_time) = 2024;



```
UPDATE Booking
SET ticket_price = ticket_price * 1.15;
```

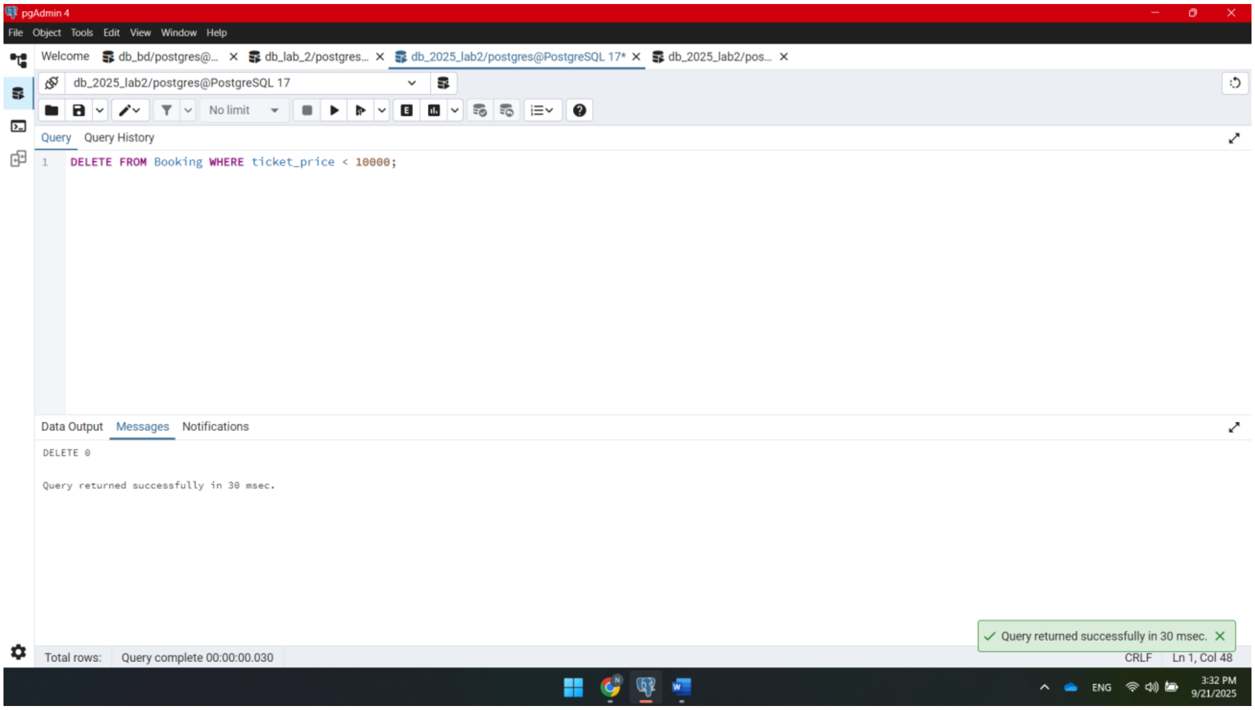
```
UPDATE 0

Query returned successfully in 29 msec.
```

✓ Query returned successfully in 29 msec.

Total rows: Query complete 00:00:00.029 CRLF Ln 2, Col 40

UPDATE Booking

SET ticket_price = ticket_price * 1.15;



```
DELETE FROM Booking WHERE ticket_price < 10000;
```

```
DELETE 0

Query returned successfully in 30 msec.
```

Query returned successfully in 30 msec.
Total rows:
Query complete 00:00:00.030
CRLF
Ln 1, Col 48
ENG
3:32 PM
9/21/2025

DELETE FROM Booking WHERE ticket_price < 10000;