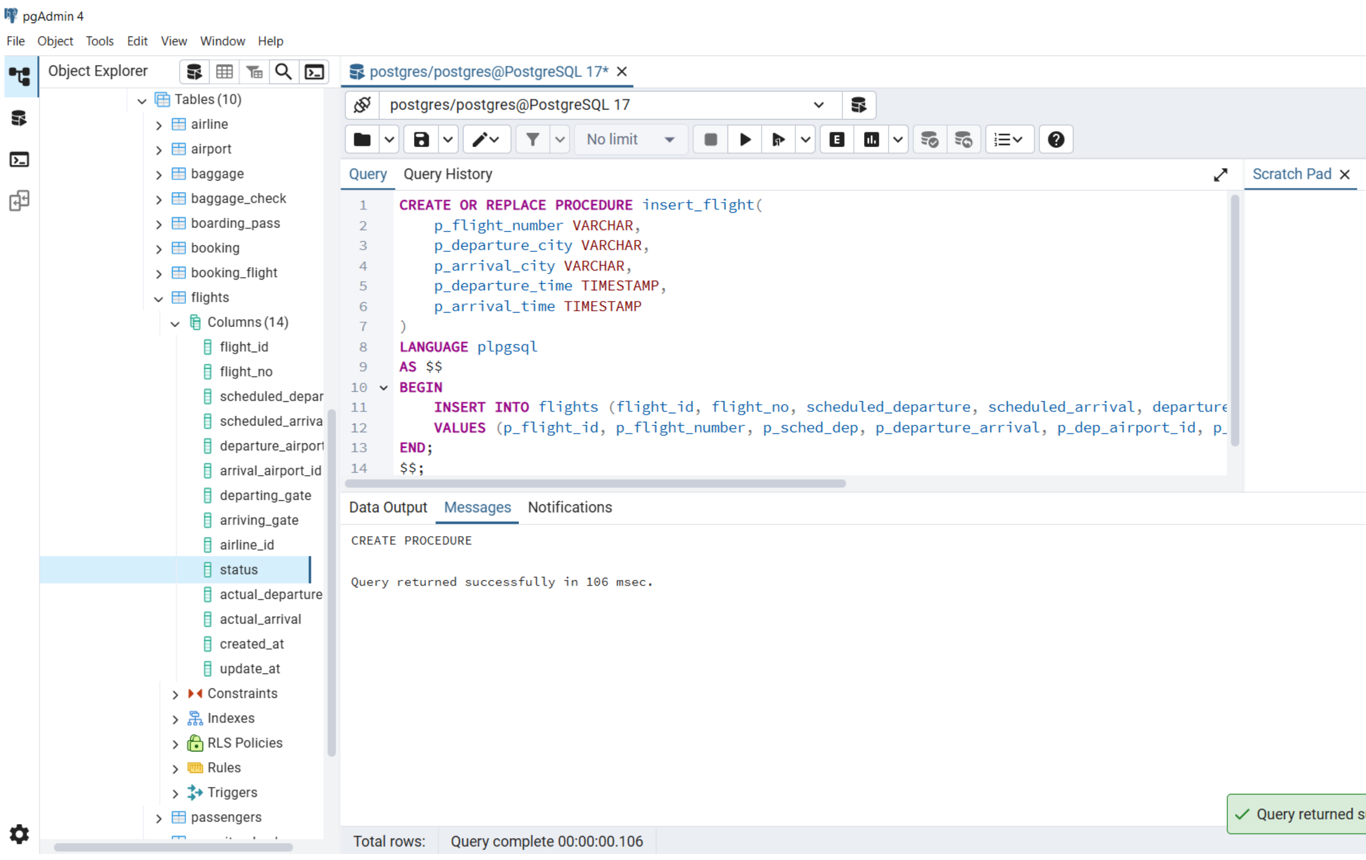
1)

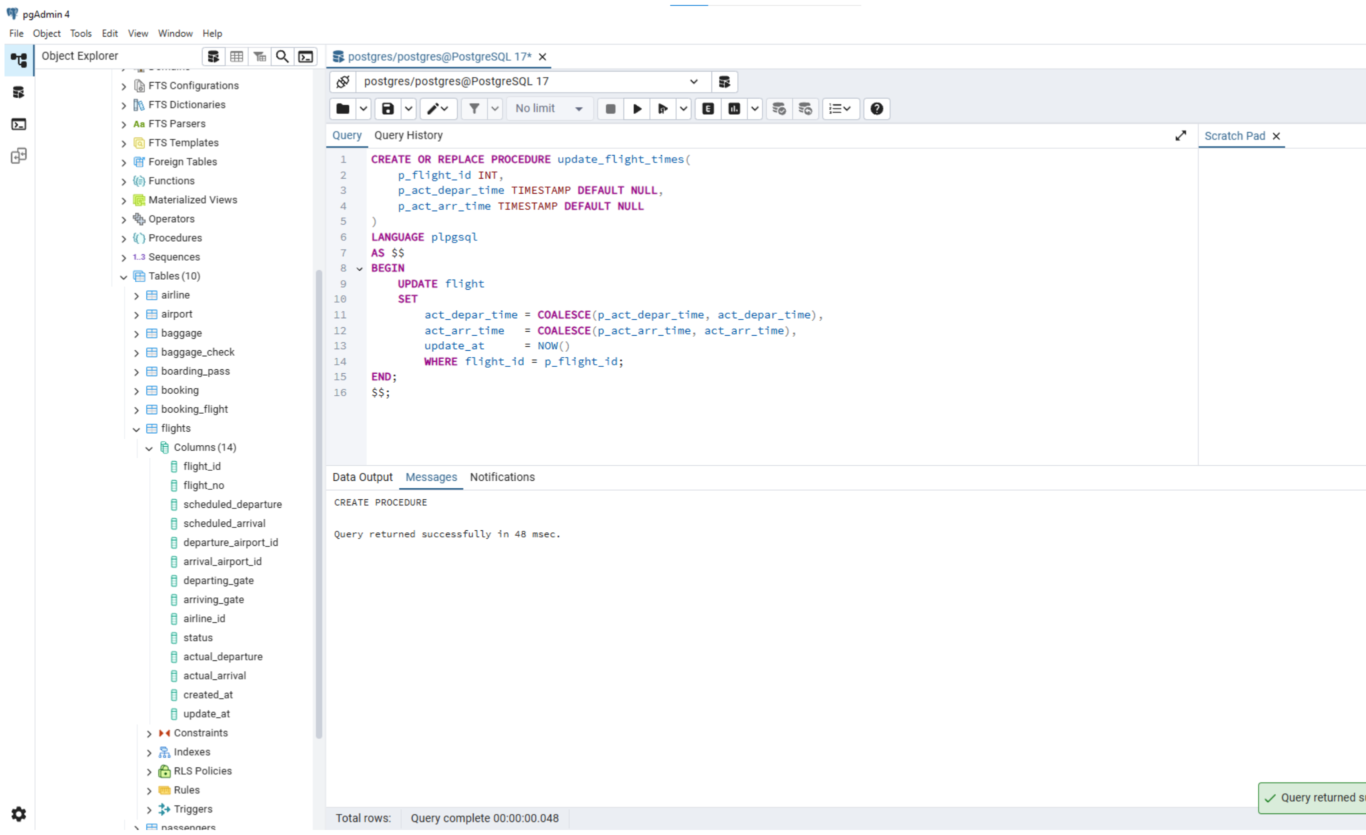


```
CREATE OR REPLACE PROCEDURE insert_flight(
    p_flight_number VARCHAR,
    p_departure_city VARCHAR,
    p_arrival_city VARCHAR,
    p_departure_time TIMESTAMP,
    p_arrival_time TIMESTAMP
)
LANGUAGE plpgsql
AS $$
BEGIN
    INSERT INTO flights (flight_id, flight_no, scheduled_departure, scheduled_arrival, departure
    VALUES (p_flight_id, p_flight_number, p_sched_dep, p_departure_arrival, p_dep_airport_id, p_
END;
$$;
```

```
CREATE PROCEDURE

Query returned successfully in 106 msec.
```

Total rows: Query complete 00:00:00.106

2)

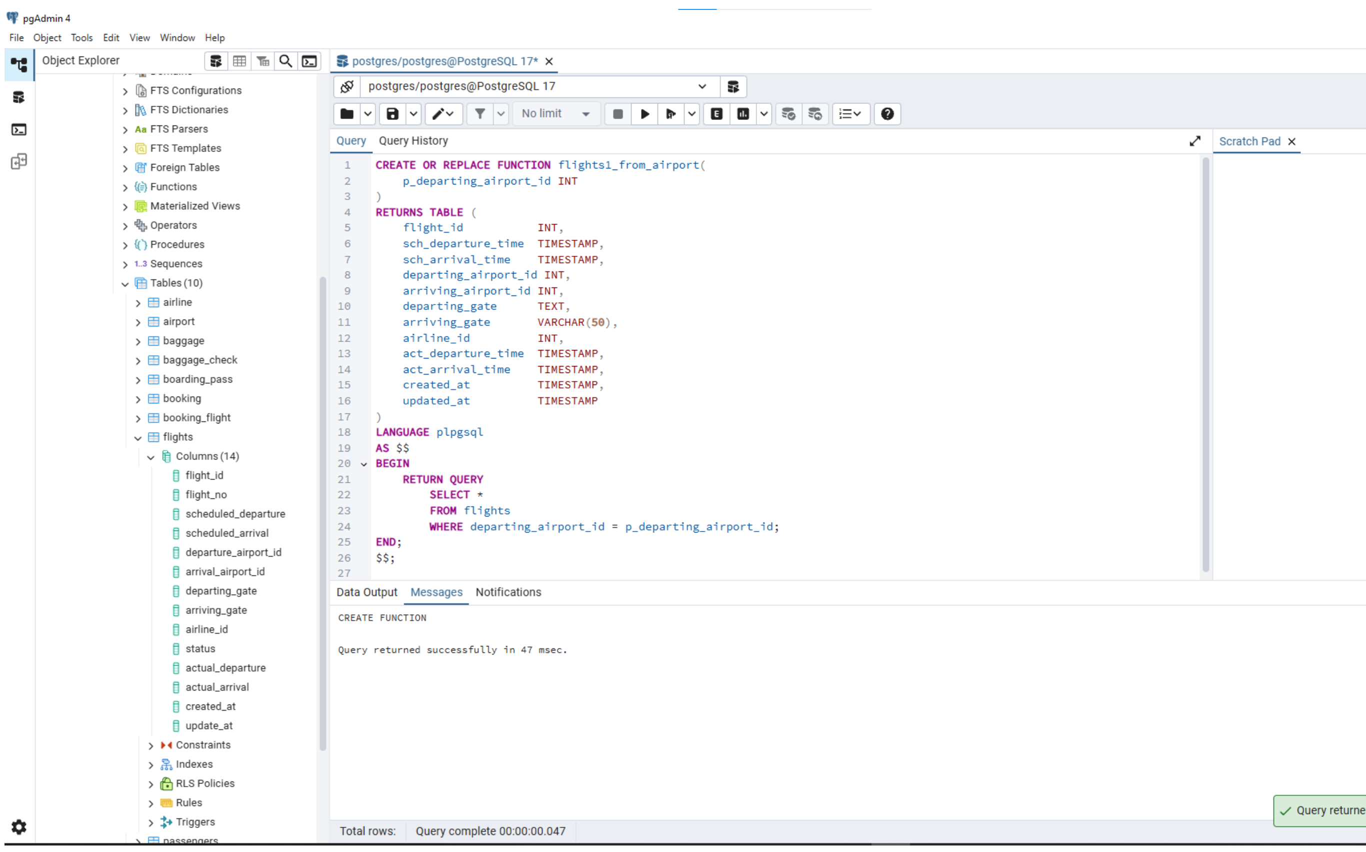


```
CREATE OR REPLACE PROCEDURE update_flight_times(
    p_flight_id INT,
    p_act_depar_time TIMESTAMP DEFAULT NULL,
    p_act_arr_time TIMESTAMP DEFAULT NULL
)
LANGUAGE plpgsql
AS $$
BEGIN
    UPDATE flight
    SET
        act_depar_time = COALESCE(p_act_depar_time, act_depar_time),
        act_arr_time   = COALESCE(p_act_arr_time, act_arr_time),
        update_at      = NOW()
        WHERE flight_id = p_flight_id;
END;
$$;
```

```
CREATE PROCEDURE

Query returned successfully in 48 msec.
```

Total rows: Query complete 00:00:00.048

3)

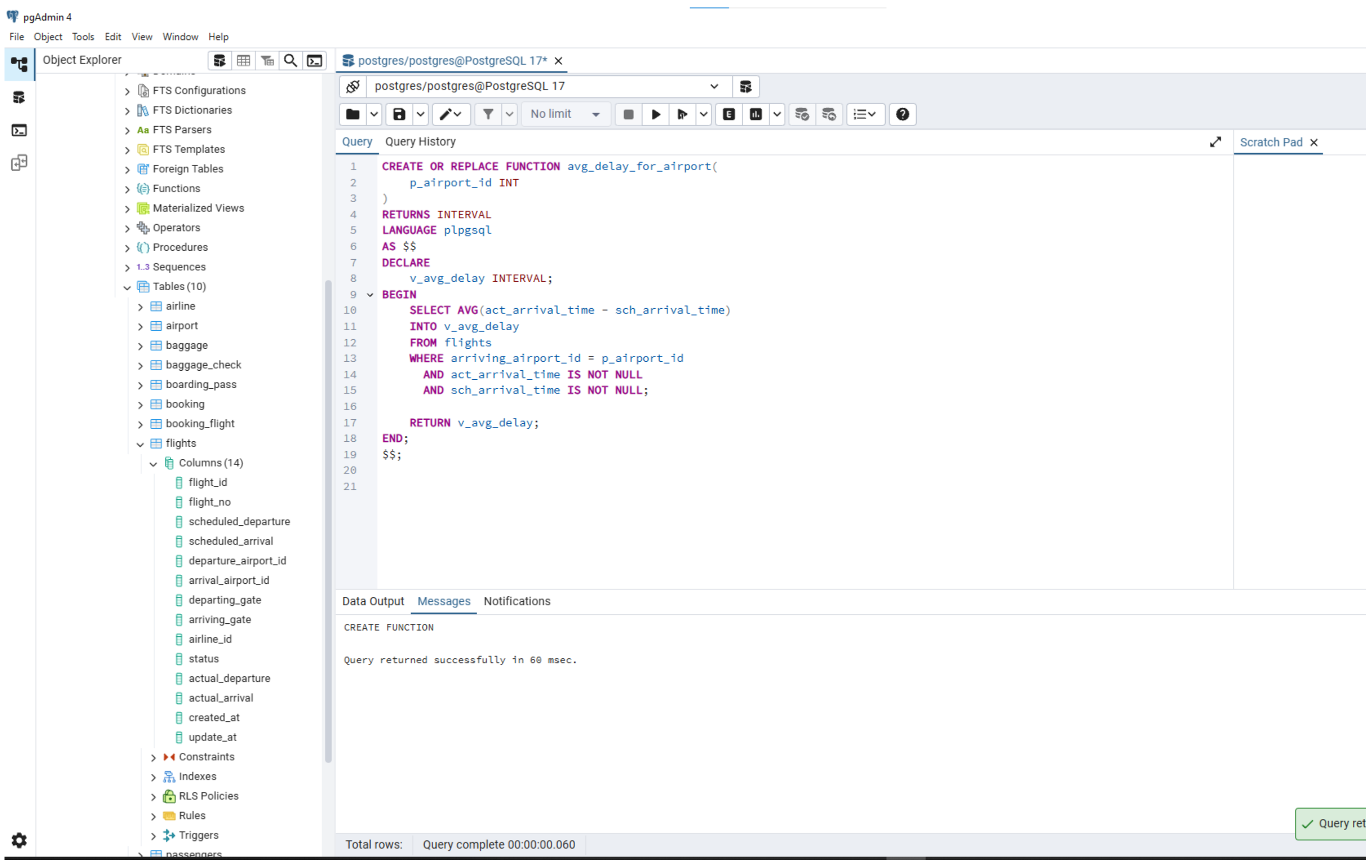


```
CREATE OR REPLACE FUNCTION flights1_from_airport(
    p_departing_airport_id INT
)
RETURNS TABLE (
    flight_id           INT,
    sch_departure_time  TIMESTAMP,
    sch_arrival_time    TIMESTAMP,
    departing_airport_id INT,
    arriving_airport_id INT,
    departing_gate      TEXT,
    arriving_gate       VARCHAR(50),
    airline_id          INT,
    act_departure_time  TIMESTAMP,
    act_arrival_time    TIMESTAMP,
    created_at          TIMESTAMP,
    updated_at          TIMESTAMP
)
LANGUAGE plpgsql
AS $$
BEGIN
    RETURN QUERY
        SELECT *
        FROM flights
        WHERE departing_airport_id = p_departing_airport_id;
END;
$$;
```

```
CREATE FUNCTION

Query returned successfully in 47 msec.
```

Total rows: Query complete 00:00:00.047

4)

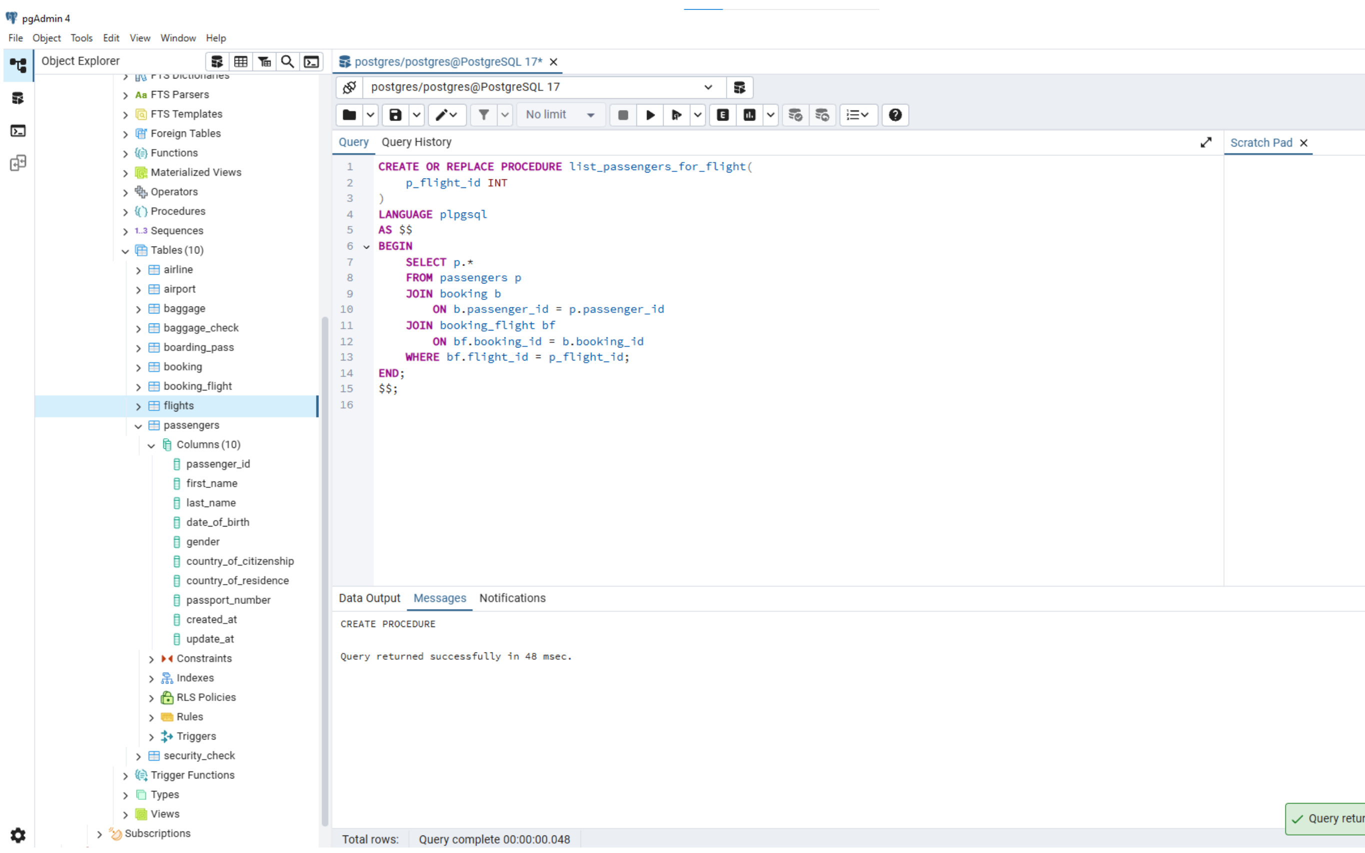


```
CREATE OR REPLACE FUNCTION avg_delay_for_airport(
    p_airport_id INT
)
RETURNS INTERVAL
LANGUAGE plpgsql
AS $$
DECLARE
    v_avg_delay INTERVAL;
BEGIN
    SELECT AVG(act_arrival_time - sch_arrival_time)
    INTO v_avg_delay
    FROM flights
    WHERE arriving_airport_id = p_airport_id
      AND act_arrival_time IS NOT NULL
      AND sch_arrival_time IS NOT NULL;

    RETURN v_avg_delay;
END;
$$;
```

```
CREATE FUNCTION

Query returned successfully in 60 msec.
```

Total rows: Query complete 00:00:00.060

5)

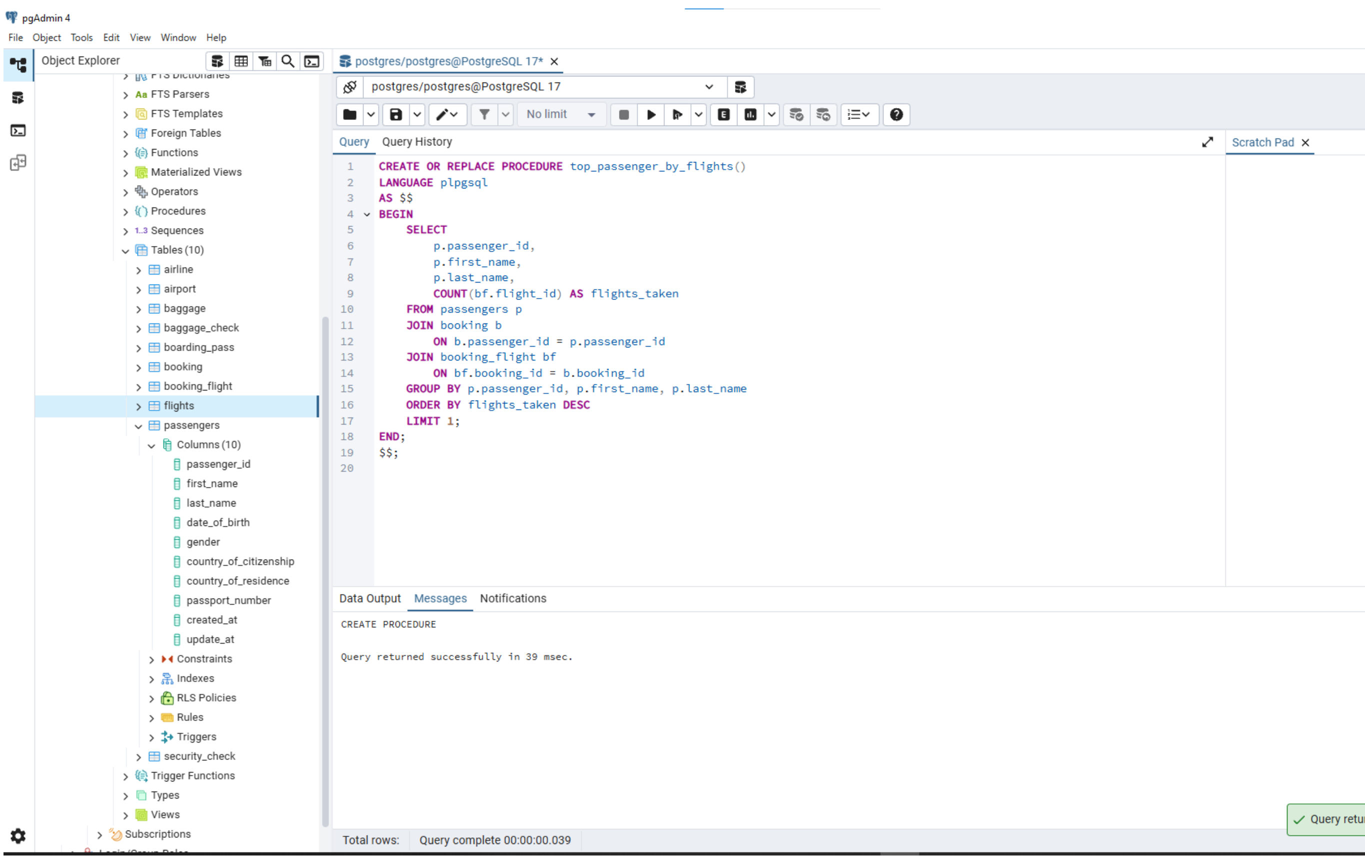


```
CREATE OR REPLACE PROCEDURE list_passengers_for_flight(
    p_flight_id INT
)
LANGUAGE plpgsql
AS $$
BEGIN
    SELECT p.*
    FROM passengers p
    JOIN booking b
        ON b.passenger_id = p.passenger_id
    JOIN booking_flight bf
        ON bf.booking_id = b.booking_id
    WHERE bf.flight_id = p_flight_id;
END;
$$;
```

```
CREATE PROCEDURE

Query returned successfully in 48 msec.
```

Total rows: Query complete 00:00:00.048

6)

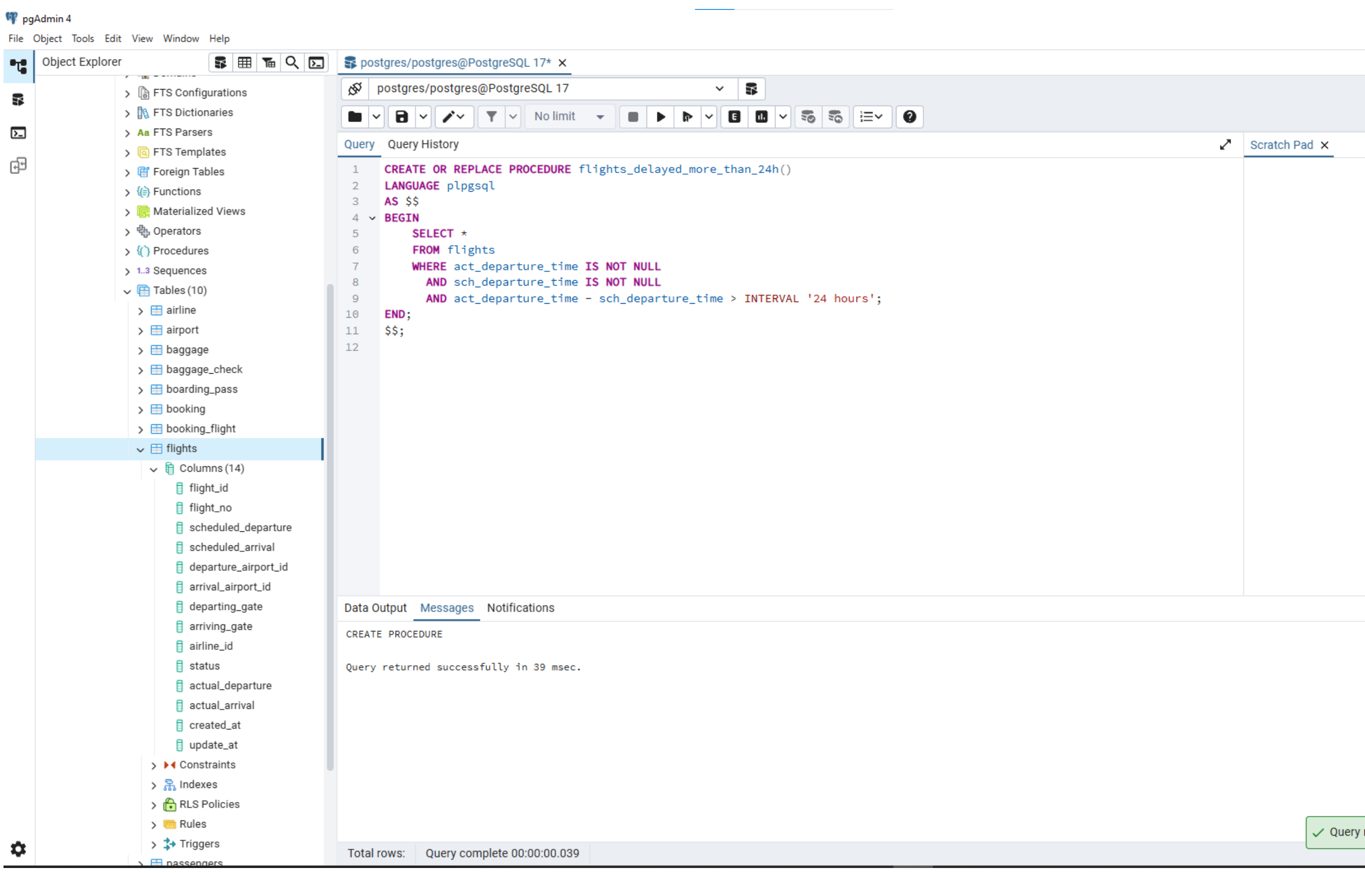


```
CREATE OR REPLACE PROCEDURE top_passenger_by_flights()
LANGUAGE plpgsql
AS $$
BEGIN
    SELECT
        p.passenger_id,
        p.first_name,
        p.last_name,
        COUNT(bf.flight_id) AS flights_taken
    FROM passengers p
    JOIN booking b
        ON b.passenger_id = p.passenger_id
    JOIN booking_flight bf
        ON bf.booking_id = b.booking_id
    GROUP BY p.passenger_id, p.first_name, p.last_name
    ORDER BY flights_taken DESC
    LIMIT 1;
END;
$$;
```

```
CREATE PROCEDURE

Query returned successfully in 39 msec.
```

Total rows: Query complete 00:00:00.039

7)

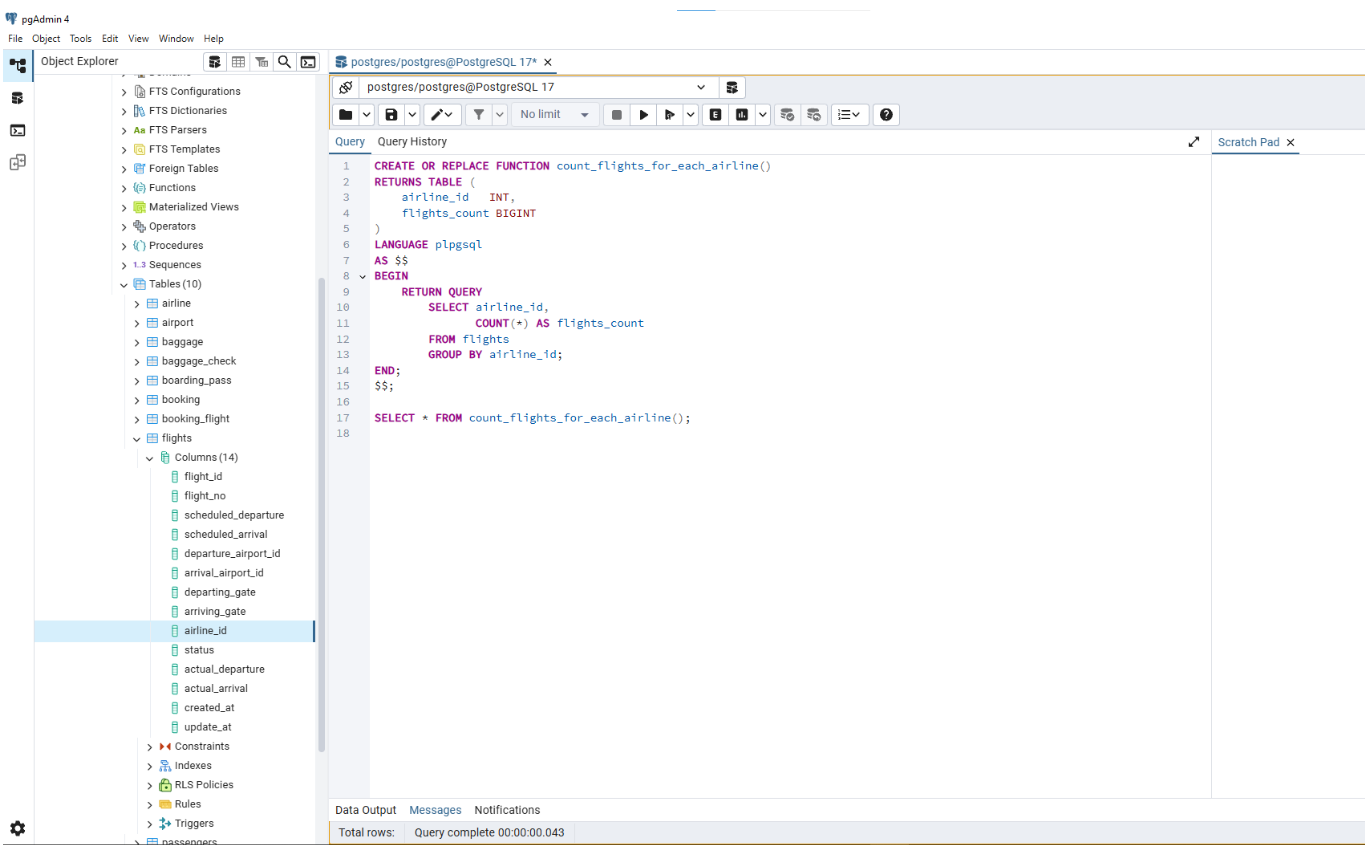


```
CREATE OR REPLACE PROCEDURE flights_delayed_more_than_24h()
LANGUAGE plpgsql
AS $$
BEGIN
    SELECT *
    FROM flights
    WHERE act_departure_time IS NOT NULL
      AND sch_departure_time IS NOT NULL
      AND act_departure_time - sch_departure_time > INTERVAL '24 hours';
END;
$$;
```

```
CREATE PROCEDURE

Query returned successfully in 39 msec.
```

Total rows: Query complete 00:00:00.039

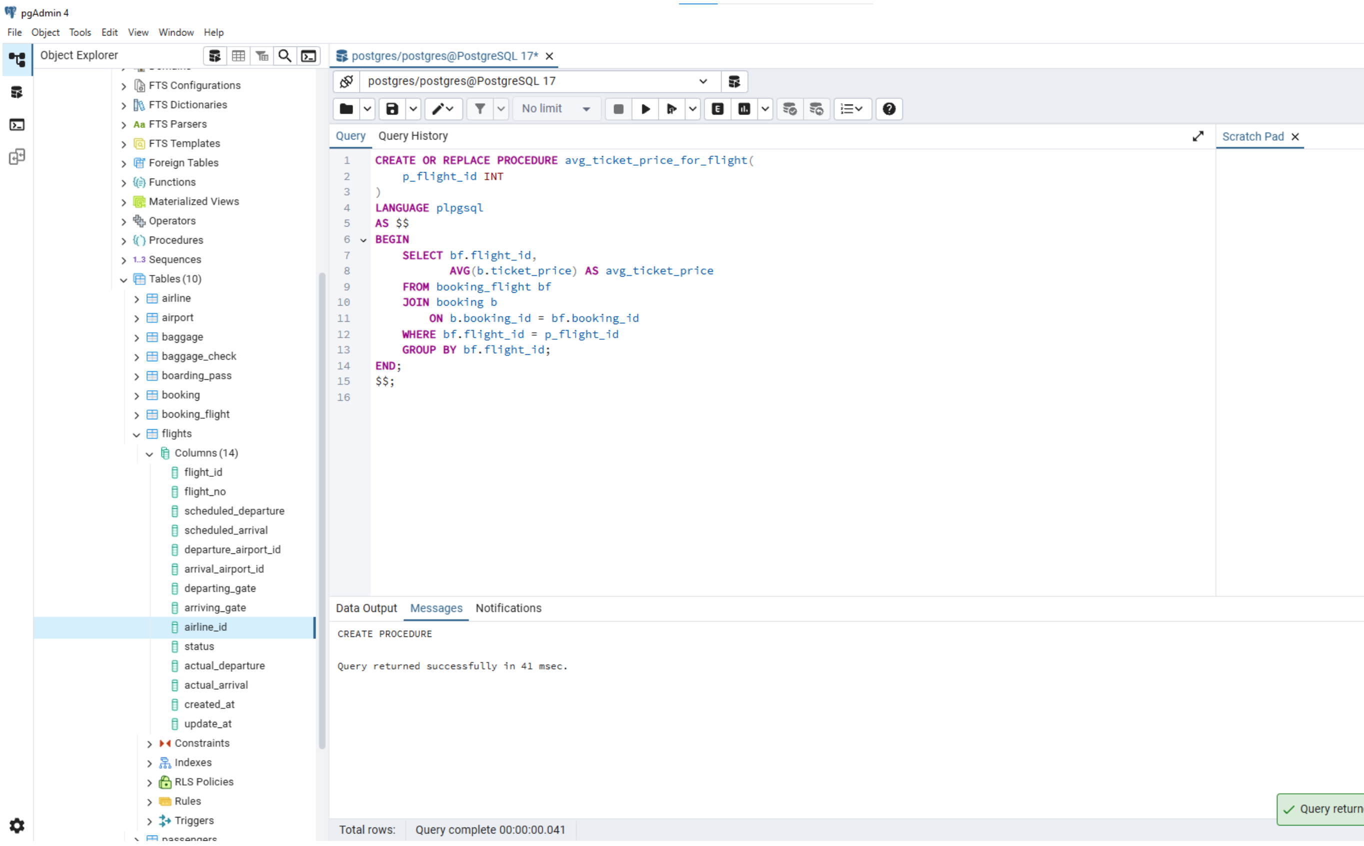
8)



```
CREATE OR REPLACE FUNCTION count_flights_for_each_airline()
RETURNS TABLE (
    airline_id    INT,
    flights_count BIGINT
)
LANGUAGE plpgsql
AS $$
BEGIN
    RETURN QUERY
        SELECT airline_id,
               COUNT(*) AS flights_count
        FROM flights
        GROUP BY airline_id;
END;
$$;

SELECT * FROM count_flights_for_each_airline();
```

Total rows: Query complete 00:00:00.043

9)



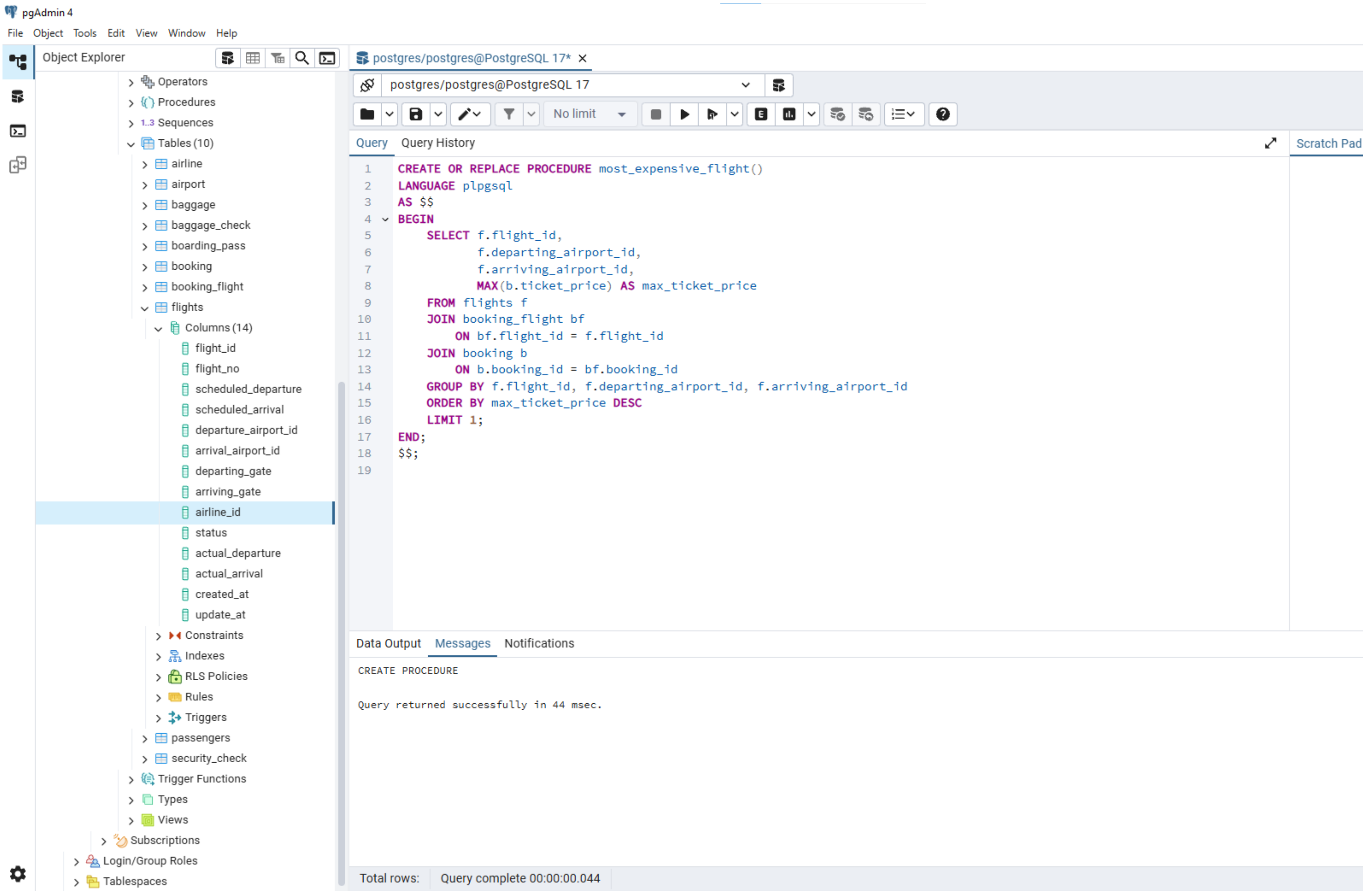
```
CREATE OR REPLACE PROCEDURE avg_ticket_price_for_flight(
    p_flight_id INT
)
LANGUAGE plpgsql
AS $$
BEGIN
    SELECT bf.flight_id,
           AVG(b.ticket_price) AS avg_ticket_price
    FROM booking_flight bf
    JOIN booking b
        ON b.booking_id = bf.booking_id
    WHERE bf.flight_id = p_flight_id
    GROUP BY bf.flight_id;
END;
$$;
```

```
CREATE PROCEDURE

Query returned successfully in 41 msec.
```

Total rows: Query complete 00:00:00.041

Query return

10)



```
CREATE OR REPLACE PROCEDURE most_expensive_flight()
LANGUAGE plpgsql
AS $$
BEGIN
    SELECT f.flight_id,
           f.departing_airport_id,
           f.arriving_airport_id,
           MAX(b.ticket_price) AS max_ticket_price
    FROM flights f
    JOIN booking_flight bf
        ON bf.flight_id = f.flight_id
    JOIN booking b
        ON b.booking_id = bf.booking_id
    GROUP BY f.flight_id, f.departing_airport_id, f.arriving_airport_id
    ORDER BY max_ticket_price DESC
    LIMIT 1;
END;
$$;
```

```
CREATE PROCEDURE

Query returned successfully in 44 msec.
```

Total rows: Query complete 00:00:00.044