

pgAdmin 4 Object Tools Edit View Window Help pgAdmin 4 Sat 29 Nov 16:49:51

Object Explorer Servers(1) PostgreSQL 17 Databases(6) Phonebook def lab2 labw2 postgres techdat Casts Catalogs Event Triggers Extensions Foreign Data Wrappers Languages Publications Schemas(1) public Aggregates Collations Domains FTS Configurations FTS Dictionaries FTS Parsers FTS Templates Foreign Tables Functions Materialized Views Operators Procedures Sequences Tables(10) airline airport

techdat/postgres@PostgreSQL 17\* No limit

Query History

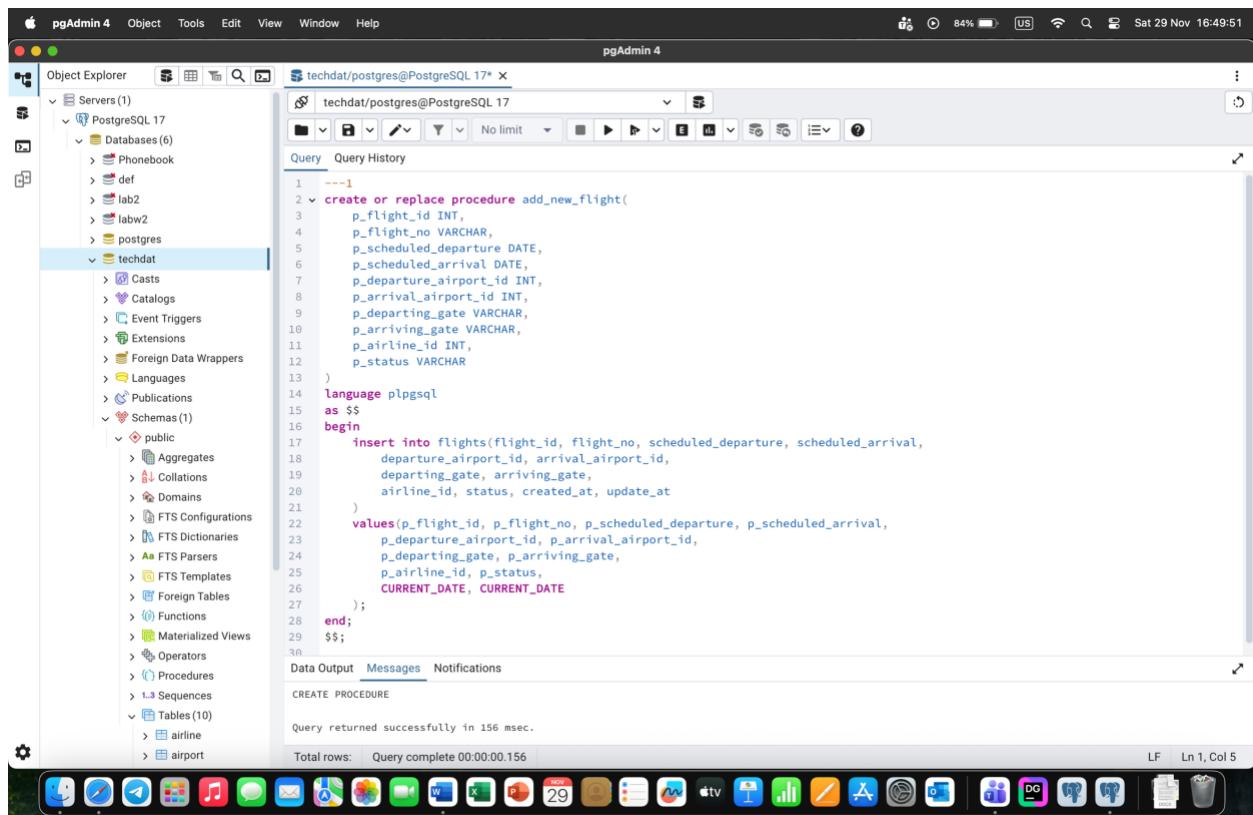
```
1 ---1
2 v create or replace procedure add_new_flight(
3     p_flight_id INT,
4     p_flight_no VARCHAR,
5     p_scheduled_departure DATE,
6     p_scheduled_arrival DATE,
7     p_departure_airport_id INT,
8     p_arrival_airport_id INT,
9     p_departing_gate VARCHAR,
10    p_arriving_gate VARCHAR,
11    p_airline_id INT,
12    p_status VARCHAR
13 )
14 language plpgsql
15 as $$
16 begin
17     insert into flights(flight_id, flight_no, scheduled_departure, scheduled_arrival,
18                         departure_airport_id, arrival_airport_id,
19                         departing_gate, arriving_gate,
20                         airline_id, status, created_at, update_at
21     )
22         values(p_flight_id, p_flight_no, p_scheduled_departure, p_scheduled_arrival,
23                p_departure_airport_id, p_arrival_airport_id,
24                p_departing_gate, p_arriving_gate,
25                p_airline_id, p_status,
26                CURRENT_DATE, CURRENT_DATE
27 );
28 end;
29 $$;
```

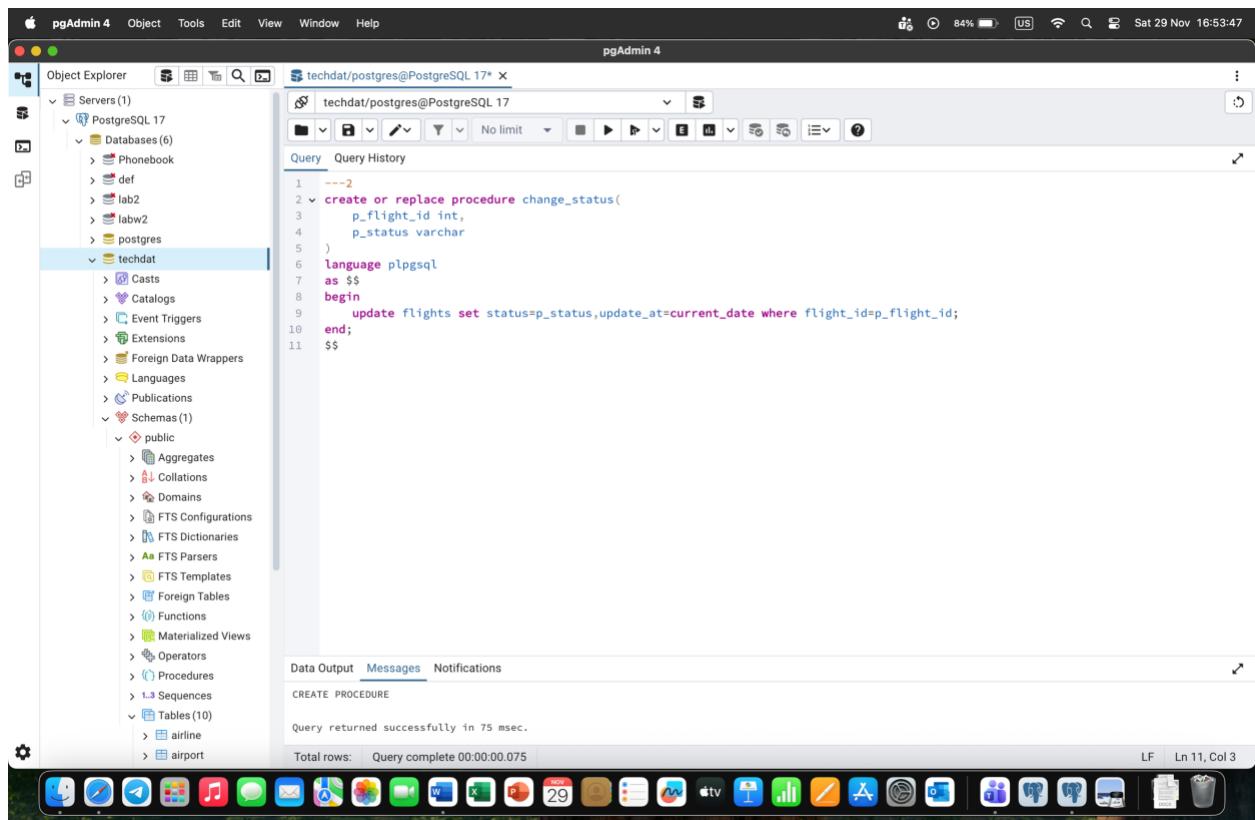
Data Output Messages Notifications

CREATE PROCEDURE

Query returned successfully in 156 msec.

Total rows: Query complete 00:00:00.155 LF Ln 1, Col 5





pgAdmin 4 Object Tools Edit View Window Help pgAdmin 4 Sat 29 Nov 17:12:14

Object Explorer techdat/postgres@PostgreSQL 17\*

techdat/postgres@PostgreSQL 17 No limit

Query History

```
1 ---3
2 v create or replace procedure flights_from_airport(
3     p_airport_id int
4 )
5 language plpgsql
6 as $$$
7 begin
8     perform flight_id, flight_no, scheduled_departure, scheduled_arrival from flights where departure_airport_id=p_airport_id;
9 end;
$$;
12
13 CALL flights_from_airport(1);
14
```

Data Output Messages Notifications

CALL

Query returned successfully in 63 msec.

Total rows: Query complete 00:00:00.063 LF Ln 12, Col 30

The screenshot shows the pgAdmin 4 interface on a Mac OS X desktop. The left pane is the Object Explorer, displaying a tree structure of databases, schemas, and objects. The 'techdat' schema is selected. The right pane is the main query window, showing a SQL script for creating a stored procedure named 'flights\_from\_airport'. The procedure takes an integer parameter 'p\_airport\_id' and performs a 'SELECT' operation on the 'flights' table to return flights departing from the specified airport. The query is executed successfully, and the results are shown in the 'Messages' tab, indicating a successful return in 63 msec. The status bar at the bottom right shows 'Query complete 00:00:00.063' and the current line and column numbers (Ln 12, Col 30). The Mac OS X dock is visible at the bottom, showing various application icons.

pgAdmin 4 Object Explorer Servers (1) PostgreSQL 17 Databases (6) techdat/postgres@PostgreSQL 17\* techdat/postgres@PostgreSQL 17 No limit Query History

```
1 -->4
2 v create or replace function avg_arrival(p_airport_id int)
3   returns interval
4   language plpgsql
5   as $$
6   declare result interval;
7 begin
8     select avg(actual_arrival - scheduled_arrival) into result
9     where arrival_airport_id=p_airport_id and actual_arrival is not null;
10    return result;
11 end;
$$
SELECT avg_arrival(1);
```

Data Output Messages Notifications

avg_arrival	
interval	00:00:06.732143

Total rows: 1 Query complete 00:00:00.065 LF Ln 14, Col 23

A screenshot of the pgAdmin 4 interface on a Mac OS X desktop. The window title is 'pgAdmin 4'. The left sidebar shows the 'Object Explorer' with a tree view of servers, databases, and tables. The 'techdat' database is selected. The main pane contains a SQL query editor with a multi-line text area showing a function definition and a select statement. Below the query editor is a 'Data Output' tab showing the results of the query as a single row in a table. The table has one column labeled 'avg\_arrival' with the value 'interval 00:00:06.732143'. At the bottom of the pgAdmin window, there is a status bar with the message 'Total rows: 1 Query complete 00:00:00.065' and file navigation icons. The Mac OS X Dock is visible at the very bottom of the screen.

pgAdmin 4 Object Explorer Servers (1) PostgreSQL 17 Databases (6) techdat/postgres@PostgreSQL 17\* techdat/postgres@PostgreSQL 17 No limit Query History

```
1 ---5
2 v create or replace function list_passe(p_flight_no varchar)
3   returns table (first_name varchar, last_name varchar)
4   language plpgsql
5   as $$ begin
6       return query
7           select p.first_name, p.last_name from passengers p
8           join booking b on p.passenger_id=b.passenger_id
9           join booking_flight bf on b.booking_id=bf.booking_id
10          join flights f on bf.flight_id=f.flight_id;
11      end;
12  $$
13
14
15
16 SELECT * FROM list_passe('AB123');
17
18 |
```

Data Output Messages Notifications

	first_name	last_name
1	Muhammad	Fass
2	Trevar	Broun

Total rows: 995 Query complete 00:00:00.074 LF Ln 18, Col 1

A screenshot of the pgAdmin 4 interface on a Mac OS X desktop. The window title is 'pgAdmin 4'. The left sidebar shows a tree view of the database structure under 'PostgreSQL 17' server, including 'Servers (1)', 'Databases (6)' (with 'techdat' selected), and various schema and table nodes. The main area has a 'Query' tab open with a SQL script. The script creates a function named 'list\_passe' that takes a flight number as input and returns a table of passenger names. It uses joins between 'passengers', 'booking', 'booking\_flight', and 'flights' tables. A sample query 'SELECT \* FROM list\_passe('AB123');' is run, and the results are displayed in a 'Data Output' table. The table has two rows: row 1 with first\_name 'Muhammad' and last\_name 'Fass', and row 2 with first\_name 'Trevar' and last\_name 'Broun'. The status bar at the bottom indicates 'Total rows: 995 Query complete 00:00:00.074'. The system tray at the bottom shows various application icons.

pgAdmin 4 Object Explorer pgAdmin 4

Servers (1) PostgreSQL 17 Databases (6) techdat/postgres@PostgreSQL 17\*

Object Explorer

- PostgreSQL 17
  - Databases (6)
    - Phonebook
    - def
    - lab2
    - labw2
    - postgres
    - techdat

Query History

```
1 ---6
2 v create or replace procedure top_fr()
3   language plpgsql
4   as $$ 
5   declare
6     r record;
7   begin
8     perform 1
9     FROM passengers p
10    JOIN booking b ON p.passenger_id = b.passenger_id
11   JOIN booking_flight bf ON b.booking_id = bf.booking_id;
12   SELECT p.passenger_id, p.first_name, p.last_name, COUNT(*)
13     INTO r
14     FROM passengers p
15    JOIN booking b ON p.passenger_id = b.passenger_id
16   JOIN booking_flight bf ON b.booking_id = bf.booking_id
17   GROUP BY p.passenger_id
18   ORDER BY COUNT(*) DESC
19   LIMIT 1;
20   RAISE NOTICE 'Top passenger: % % (% flights)', 
21   r.first_name, r.last_name, r.count;
22 end;
23 $$ 
24
25 call top_fr();
26
```

Data Output Messages Notifications

NOTICE: Top passenger: Sheela Roux (18 flights)

CALL

Query returned successfully in 68 msec.

Total rows: Query complete 00:00:00.068

LF Ln 22, Col 5

The screenshot shows the pgAdmin 4 interface on a Mac OS X desktop. The main window has a dark header bar with the title 'pgAdmin 4' and various system icons. Below the header is a toolbar with several buttons. The left side features an 'Object Explorer' pane with a tree view of database objects, including servers, databases, tables, and functions. The 'techdat' database is selected. The right side contains a 'Query' editor with a SQL code block. The SQL code defines a procedure 'top\_fr()' that performs a self-join on the 'passenger' and 'booking' tables to find the passenger with the highest number of bookings, then prints their name and the count of flights. Below the code, the 'Messages' tab shows a 'NOTICE' message indicating the top passenger is 'Sheela Roux' with 18 flights. The status bar at the bottom indicates the query completed in 68 msec. The Mac OS X dock is visible at the bottom of the screen.

pgAdmin 4 Object Explorer Servers(1) PostgreSQL 17 Databases(6) techdat/postgres@PostgreSQL 17+ X techdat/postgres@PostgreSQL 17 No limit Query History

```
1 ---7
2 v create or replace procedure top24()
3   language plpgsql
4   as $$ 
5   declare
6     r record;
7   begin
8     PERFORM 1
9     FROM flights
10    WHERE (actual_departure::timestamp - scheduled_departure::timestamp) > INTERVAL '24 hours'
11    OR (actual_arrival::timestamp - scheduled_arrival::timestamp) > INTERVAL '24 hours';
12   v select flight_no into r from flights WHERE (actual_departure::timestamp - scheduled_departure::timestamp) > INTERVAL '24 hours'
13    OR (actual_arrival::timestamp - scheduled_arrival::timestamp) > INTERVAL '24 hours';
14   v raise notice 'Flights delayed more than 24 hours:%', r.flight_no;
15   end;
16 $$
17 call top24();
```

Data Output Messages Notifications

NOTICE: Flights delayed more than 24 hours:US-CT  
CALL

Query returned successfully in 39 msec.

Total rows: Query complete 00:00:00.039 LF Ln 18, Col 14

The screenshot shows the pgAdmin 4 interface on a Mac OS X desktop. The title bar reads "pgAdmin 4" and "techdat/postgres@PostgreSQL 17+ X". The left sidebar is the "Object Explorer" showing a tree structure of databases, schemas, and objects. The "techdat" database is selected. The main pane is a "Query" window containing a PostgreSQL stored procedure named "top24". The procedure uses the "plpgsql" language and performs a self-join on the "flights" table to find flights delayed by more than 24 hours. It then raises a notice for each delayed flight. The status bar at the bottom indicates the query completed successfully in 39 msec. The Mac OS X Dock is visible at the bottom, showing various application icons.

pgAdmin 4 Object Explorer Servers(1) PostgreSQL 17 Databases(6) techdat/postgres@PostgreSQL 17\* techdat/postgres@PostgreSQL 17 No limit Query History

```
1 -->8
2 v CREATE OR REPLACE FUNCTION airline_flights_simple()
3 RETURNS TABLE(airline_id INT, flights INT)
4 LANGUAGE sql
5 AS $$
6     SELECT airline_id, COUNT(*)
7     FROM flights
8     GROUP BY airline_id;
9 $$;
10
11 SELECT * FROM airline_flights_simple();
```

Data Output Messages Notifications

airline_id	flights
1	42
2	29

Showing rows: 1 to 50 Page No: 1 of 1 LF Ln 11, Col 40

Total rows: 50 Query complete 00:00:00.053

A screenshot of the pgAdmin 4 interface on a Mac OS X desktop. The window title is 'pgAdmin 4'. The left sidebar shows the 'Object Explorer' with a tree view of servers, databases, and tables. The 'techdat' database is selected. The main pane contains a SQL query editor with the following code:

```
1 -->8
2 v CREATE OR REPLACE FUNCTION airline_flights_simple()
3 RETURNS TABLE(airline_id INT, flights INT)
4 LANGUAGE sql
5 AS $$
6     SELECT airline_id, COUNT(*)
7     FROM flights
8     GROUP BY airline_id;
9 $$;
10
11 SELECT * FROM airline_flights_simple();
```

The results of the query are displayed in a table titled 'Data Output':

airline_id	flights
1	42
2	29

At the bottom of the pgAdmin window, there is a dock with various Mac OS X application icons.

pgAdmin 4 Object Tools Edit View Window Help pgAdmin 4 techdat/postgres@PostgreSQL 17\* public.booking/tec... public.booking\_flig... public.flights/tech... Mon 1 Dec 17:07:03

Object Explorer    Schemas(1)    Query History

public

- Aggregates
- Collations
- Domains
- FTS Configurations
- FTS Dictionaries
- FTS Parsers
- FTS Templates
- Foreign Tables
- Functions
- Materialized Views
- Operators
- Procedures
- Sequences
- Tables(10)
  - airline
  - airport
  - baggage
  - baggage\_check
  - boarding\_pass
  - booking
  - booking\_flight
  - flights
  - passengers
  - security\_check
- Trigger Functions
- Types
- Views
- Subscriptions
- Login/Group Roles
- Tablespaces

Query

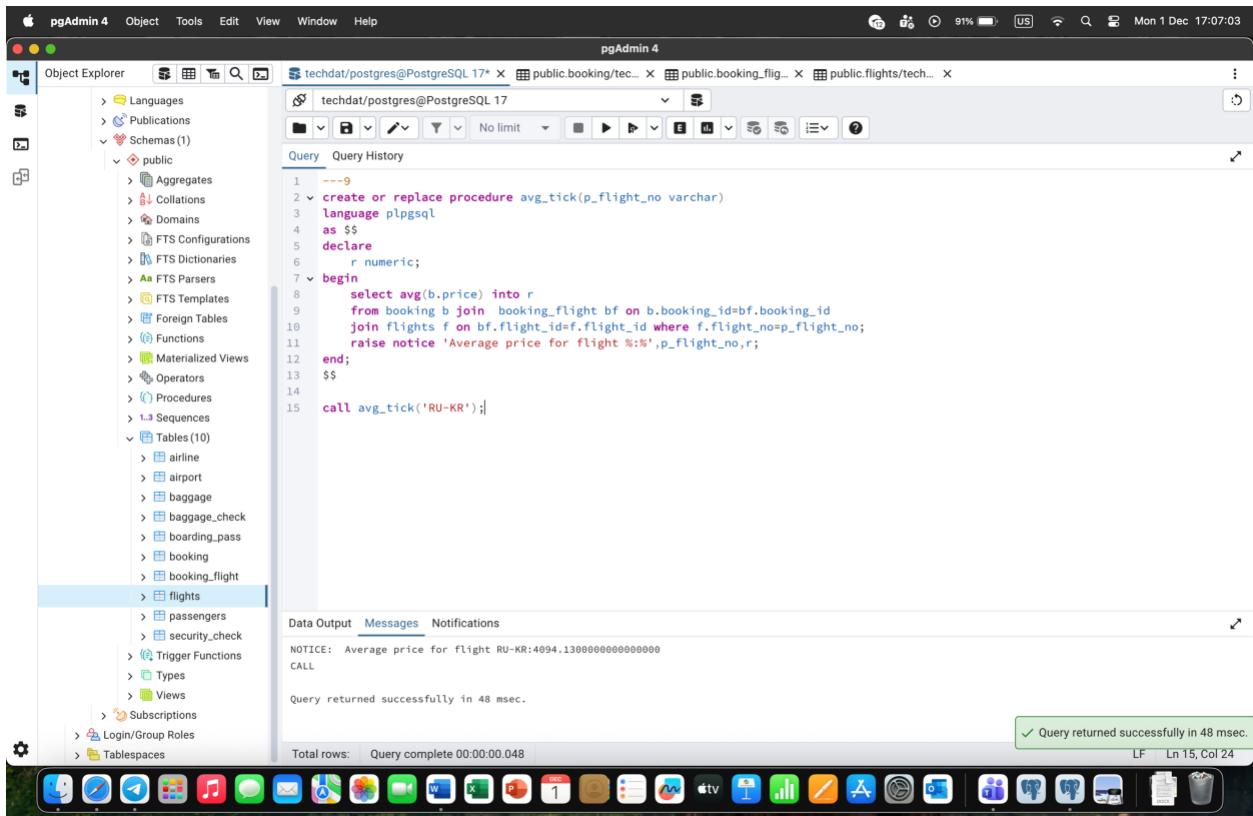
```
-->9
2 v create or replace procedure avg_tick(p_flight_no varchar)
3   language plpgsql
4   as $$ 
5   declare
6     r numeric;
7   begin
8     select avg(b.price) into r
9       from booking b join booking_flight bf on b.booking_id=bf.booking_id
10      join flights f on bf.flight_id=f.flight_id where f.flight_no=p_flight_no;
11      raise notice 'Average price for flight %:%',p_flight_no,r;
12    end;
13  $$
14
15 call avg_tick('RU-KR');
```

Data Output Messages Notifications

NOTICE: Average price for flight RU-KR:4094.1300000000000000  
CALL

Query returned successfully in 48 msec.

Total rows: Query complete 00:00:00.048 ✓ Query returned successfully in 48 msec. LF Ln 15, Col 24



pgAdmin 4 Object Tools Edit View Window Help pgAdmin 4 techdat/postgres@PostgreSQL 17\* public.booking/tec... public.booking\_flig... public.flights/tech... Mon 1 Dec 17:10:13

Object Explorer    No limit    Query History

Schema: public

- Languages
- Publications
- Schemas (1)
- public
  - Aggregates
  - Collations
  - Domains
  - FTS Configurations
  - FTS Dictionaries
  - FTS Parsers
  - FTS Templates
  - Foreign Tables
  - Functions
  - Materialized Views
  - Operators
  - Procedures
  - Sequences
  - Tables (10)
    - airline
    - airport
    - baggage
    - baggage\_check
    - boarding\_pass
    - booking
    - booking\_flight
    - flights
    - passengers
    - security\_check
  - Trigger Functions
  - Types
  - Views
  - Subscriptions
- Login/Group Roles
- Tablespaces

Query

```
-->10
2 v CREATE OR REPLACE PROCEDURE most_expensive_flight_simple()
3 LANGUAGE plpgsql
4 AS $$*
5 declare
6     r varchar;
7 BEGIN
8
9     select f.flight_no into r
10    FROM flights f
11   JOIN booking_flight bf ON f.flight_id = bf.flight_id
12   JOIN booking b ON bf.booking_id = b.booking_id
13   ORDER BY b.price DESC
14   LIMIT 1;
15   RAISE NOTICE 'Most expensive flight:%',r;
16 END;
17 $$;
18
19 CALL most_expensive_flight_simple();
20 |
```

Data Output Messages Notifications

NOTICE: Most expensive flight:NP-SA  
CALL

Query returned successfully in 49 msec.

Total rows: Query complete 00:00:00.049 LF Ln 20, Col 1

