

1 task

The screenshot shows the pgAdmin interface with the Object Explorer on the left and a query editor on the right. The query editor contains the following SQL code:

```
--1
CREATE PROCEDURE insert_new_flight(fl_id INT, fl_no VARCHAR, sch_dep DATE, sch_arr DATE, dep_air_id INT,
arr_air_id INT, dep_gate VARCHAR, arr_gate VARCHAR, air_id INT, status VARCHAR, act_dep DATE, act_arr DATE,
cr_at DATE, upd_at DATE)
LANGUAGE plpgsql
AS $$
BEGIN
INSERT INTO flights(flight_id, flight_no, scheduled_departure, scheduled_arrival, departure_airport_id,
arrival_airport_id, departing_gate, arriving_gate, airline_id, status, actual_departure,
actual_arrival, created_at, updated_at)
VALUES(fl_id, fl_no, sch_dep, sch_arr, dep_air_id, arr_air_id, dep_gate, arr_gate, air_id, status, act_dep,
act_arr, cr_at, upd_at);
END;
$$;

CALL insert_new_flight(1007, 'ES-AN', '2021-05-06', '2023-12-16', 20, 16, '95',
'26', 33, 'Boarding', '2021-11-28', '2025-11-28', '2023-10-08', '2024-05-07');
```

The query was executed successfully, as indicated by the message "Query returned successfully in 87 msec." at the bottom of the editor.

2 task

The screenshot shows the pgAdmin interface with the Object Explorer on the left and a query editor on the right. The query editor contains the following SQL code:

```
--2
CREATE PROCEDURE update_status(
p_flight_id INT,
p_new_status VARCHAR)
LANGUAGE plpgsql
AS $$
BEGIN
UPDATE flights SET status = 'delayed', update_at = NOW()
WHERE flight_id = p_flight_id;
END;
$$;

CALL update_status(1007, 'delayed');
```

The query was executed successfully, as indicated by the message "Query returned successfully in 61 msec." at the bottom of the editor.

3 task

Object Explorer Query History Scratch Pad

```

CREATE PROCEDURE get_flights_from_airport(
    p_airport_id INT,
    OUT flight_cursor REFCURSOR
)
LANGUAGE plpgsql
AS $$
BEGIN
    flight_cursor := 'cur_flights';
    OPEN flight_cursor FOR
        SELECT flight_id, flight_no, scheduled_departure, scheduled_arrival, status
        FROM flights
        WHERE departure_airport_id = p_airport_id
        ORDER BY scheduled_departure;
    END;
$$;

CALL get_flights_from_airport(1,'cur_flights');
FETCH ALL FROM cur_flights;

```

flight_id	flight_no	scheduled_departure	scheduled_arrival	status
1	168	2023-03-21	2023-05-24	Delayed
2	231	2023-04-04	2024-02-24	Boarding
3	335	US-MO	2023-04-14	Delayed
4	564	JP-12	2023-04-27	Boarding
5	165	US-FL	2023-04-30	Boarding
6	193	US-WA	2023-05-02	Delayed
7	994	US-IN	2023-05-06	Delayed
8	456	PG-CPM	2023-05-16	Delayed
9	61	AU-WA	2023-05-16	Delayed

Showing rows: 1 to 48 | Page No: 1 of 1 | < << > >> | SQL

✓ Successfully run. Total query runtime: 81 msec. 48 rows affected. CRLF Ln 6156 Col 28

4 task

Object Explorer Query History Scratch Pad

```

FETCH ALL FROM cur_flights;

--4
CREATE FUNCTION avg_delay(p_airport_id INT)
RETURNS INTERVAL
LANGUAGE plpgsql
AS $$

DECLARE
    avg_delay INTERVAL;
BEGIN
    SELECT AVG(actual_arrival - scheduled_arrival)
    INTO avg_delay
    FROM flights
    WHERE arrival_airport_id = p_airport_id;
    RETURN avg_delay;
END;
$$;

SELECT avg_delay(2);

```

avg_delay
00:00:22.75

Showing rows: 1 to 1 | Page No: 1 of 1 | < << > >> | SQL

✓ Successfully run. Total query runtime: 126 msec. 1 rows affected. CRLF Ln 6176 Col 28

5 task

Object Explorer postgres/postgres@PostgreSQL 17 airport_2/postgres@PostgreSQL 17 airport_2.sql* my_airport/postgr...

```

Query Query History
6175
6176
6177 --5
6178 CREATE PROCEDURE list_passengers(p_flight_no VARCHAR, OUT ref refcursor)
6179 LANGUAGE plpgsql
6180 AS $$
6181 BEGIN
6182   ref := 'passenger_cursor';
6183   OPEN ref FOR
6184     SELECT p.passenger_id,p.first_name,p.last_name
6185     FROM passengers p
6186     JOIN booking b ON b.passenger_id = p.passenger_id
6187     JOIN booking_flight bf ON b.booking_id = bf.booking_id
6188     JOIN flights f ON f.flight_id = bf.flight_id
6189     WHERE f.flight_no = p_flight_no;
6190   END;
6191 $$;
6192 CALL list_passengers('US-CT', 'passenger_cursor');
6193   FETCH ALL FROM passenger_cursor;
6194
Data Output Messages Notifications
Showing rows: 1 to 2    Page No: 1    of 1    < << > >> << <<< >>>
+-----+-----+-----+
| passenger_id | first_name | last_name |
+-----+-----+-----+
| 9 | Alphonso | Philippou |
| 32 | Elfrieda | Schukert |
+-----+-----+-----+
Total rows: 2    Query complete 00:00:00.072    CRLF    Ln 6188, Col 45

```

6 task

Object Explorer postgres/postgres@PostgreSQL 17 LAB22.sql* airport_2/postgres@PostgreSQL 17 airport_2.sql* my_airport/postgr...

```

Query Query History
6194
6195
6196
6197
6198
6199 --6
6200 CREATE PROCEDURE get_top_passenger(OUT ref REFCURSOR)
6201 LANGUAGE plpgsql
6202 AS $$
6203 BEGIN
6204   ref := 'passenger_cursor';
6205   OPEN ref FOR
6206     SELECT p.passenger_id, p.first_name ||' '| p.last_name,
6207     COUNT(bf.flight_id) AS total_flights
6208     FROM passengers p
6209     JOIN booking b ON p.passenger_id = b.passenger_id
6210     JOIN booking_flight bf ON b.booking_id = bf.booking_id
6211     GROUP BY p.passenger_id, p.first_name ||' '| p.last_name
6212     ORDER BY total_flights DESC
6213     LIMIT 1;
6214   END;
6215 $$;
6216
6217 BEGIN;
6218 CALL get_top_passenger('passenger_cursor');
6219   FETCH ALL FROM passenger_cursor;
6220 COMMIT;
6221
Data Output Messages Notifications
COMMIT
Query returned successfully in 41 msec.

Total rows:    Query complete 00:00:00.041    CRLF    Ln 6194, Col 1

```

7 task

The screenshot shows the pgAdmin interface with the Object Explorer on the left and a query editor on the right. The query editor contains the following SQL code:

```

6219 --7
6220
6221 CREATE PROCEDURE delayed_flights(ref OUT refcursor)
6222 LANGUAGE plpgsql
6223 AS
6224 $$
6225 BEGIN
6226 ref := 'delayed_flights_cursor';
6227
6228 OPEN ref FOR
6229 SELECT * FROM flights
6230 WHERE (actual_arrival - actual_departure) > 1;
6231
6232 END;
6233 $$;
6234
6235 BEGIN;
6236 CALL delayed_flights('refcursor');
6237 FETCH ALL FROM "delayed_flights_cursor";
6238 COMMIT;
6239
6240
6241
6242

```

The Data Output tab shows the message: "Query returned successfully in 63 msec." and the status: "COMMIT".

8 task

The screenshot shows the pgAdmin interface with the Object Explorer on the left and a query editor on the right. The query editor contains the following SQL code:

```

6244
6245
6246 --8
6247
6248 CREATE FUNCTION count_flights()
6249 RETURNS TABLE(
6250   airline_id INT,
6251   airline_name VARCHAR,
6252   count_flights BIGINT)
6253 LANGUAGE plpgsql
6254 AS
6255 $$
6256 BEGIN
6257   RETURN QUERY
6258     SELECT a.airline_id, a.airline_name, COUNT(f.flight_id) AS count_flights
6259     FROM airline a
6260     LEFT JOIN flights f ON f.airline_id = a.airline_id
6261     GROUP BY a.airline_id, a.airline_name;
6262
6263 END;
6264 $$;
6265
6266 SELECT * FROM count_flights();
6267

```

The Data Output tab shows the message: "Showing rows: 1 to 50" and the status: "Page No: 1 of 1". The results table is as follows:

	airline_id	airline_name	count_flights
1	42	SJS	14
2	29	NHT	29
3	4	KHS	13
4	34	SMM	19
5	41	RBR	16
6	40	CII	24
7	46	YBQ	15

The Data Output tab shows the message: "Total rows: 50" and the status: "Query complete 00:00:00.068".

9 task

Object Explorer

```

--9
CREATE PROCEDURE average(p_flight_no VARCHAR,
OUT avg_price NUMERIC)
LANGUAGE plpgsql
AS
$$
BEGIN
SELECT AVG(price)
INTO avg_price FROM booking b
JOIN booking_flight bf ON b.booking_id = bf.booking_id
JOIN flights f ON f.flight_id = bf.flight_id
WHERE f.flight_no = p_flight_no;
END;
$$;
CALL average('US-NM', NULL);

```

Data Output Messages Notifications

avg_price	numeric
1	3761.5575000000000000

Total rows: 1 Query complete 00:00:00.089

You are currently running version 9.6 of pgAdmin 4, however the current version is 9.9.

Please click [here](#) for more information.

CRLF Ln 6284, Col 1

10 task

Object Explorer

```

--10
CREATE PROCEDURE highest_flight(OUT p_flight_no VARCHAR, OUT p_dep VARCHAR, OUT p_arr VARCHAR, OUT p_max_price NUMERIC)
LANGUAGE plpgsql
AS
$$
BEGIN
SELECT f.flight_no, a_dep.airport_name, a_arr.airport_name,
MAX(b.price)
INTO p_flight_no,p_dep,p_arr, p_max_price
FROM booking b
JOIN booking_flight bf ON bf.booking_id = b.booking_id
JOIN flights f ON f.flight_id = bf.flight_id
JOIN airport a_dep ON a_dep.airport_id = f.departure_airport_id
JOIN airport a_arr ON a_arr.airport_id = f.arrival_airport_id
GROUP BY f.flight_no, a_dep.airport_name, a_arr.airport_name
ORDER BY MAX(b.price) DESC
LIMIT 1;
END;
$$;
CALL highest_flight(NULL, NULL, NULL, NULL);

```

Data Output Messages Notifications

p_flight_no	p_dep	p_arr	p_max_price	
1	CN-35	Garbajay Airport	Henri Coandă International Airport	9851.86

Total rows: 1 Query complete 00:00:00.072

You are currently running version 9.6 of pgAdmin 4, however the current version is 9.9.

Please click [here](#) for more information.

CRLF Ln 6304, Col 1