

DB DB\_lab2 Version control

Database Explorer

console

postgres@localhost

postgres zhanel Server Objects

--8

DROP INDEX IF EXISTS idx\_passengers\_personal;

DROP INDEX IF EXISTS idx\_passengers\_country\_dob;

DROP INDEX IF EXISTS idx\_passengers\_passport;

zhanel.public

Services

Tx

+ ⚡ ⚡ ⚡

Database

postgres@localhost

console 12 ms

Output Result 23

[2025-11-12 10:23:52] 5 rows retrieved starting from 1 in 324 ms (execution: 4 ms, fetching: 320 ms)

[2025-11-12 10:24:11] zhanel.public> DROP INDEX IF EXISTS idx\_passengers\_personal

[2025-11-12 10:24:12] completed in 9 ms

[2025-11-12 10:24:12] zhanel.public> DROP INDEX IF EXISTS idx\_passengers\_country\_dob

[2025-11-12 10:24:12] completed in 2 ms

[2025-11-12 10:24:12] zhanel.public> DROP INDEX IF EXISTS idx\_passengers\_passport

[2025-11-12 10:24:12] completed in 3 ms

Database Consoles > postgres@localhost > console

4:46 LF UTF-8 4 spaces

The screenshot shows a PostgreSQL database management interface with the following details:

- Top Bar:** Shows tabs for "DB DB\_lab2" and "Version control".
- Database Explorer:** Shows a tree view of databases:
  - postgres@localhost (selected, 2 connections)
  - postgres (3 connections)
  - zhanel (3 connections)
  - Server Objects
- Console:** A tab labeled "console" is active. The query being run is:

```
--1
CREATE INDEX idx_flights_actual_departure
ON flights (actual_departure);
```
- Services:** Shows a transaction history:
  - [2025-11-12 09:01:53] Connected to zhanel
  - [2025-11-12 09:01:53] zhanel> CREATE INDEX idx\_flights\_actual\_departure
  - [2025-11-12 09:01:53] ON flights (actual\_departure)
  - [2025-11-12 09:01:53] completed in 21 ms
- Bottom Status Bar:** Shows "Database Consoles > postgres@localhost > console" and "669 ms".
- Bottom Right:** Includes status icons for "4:1 LF UTF-8 4 spaces" and a refresh/circular arrow icon.

The screenshot shows a PostgreSQL database management interface with the following details:

**Database Explorer** (Left Panel):

- Connected to **postgres@localhost** (2 connections)
- Contains the **postgres** schema with objects: information\_schema, pg\_catalog, public.
- Contains the **zhanel** schema with objects: information\_schema, pg\_catalog, public.
  - tables** (13): airline, airport, airports, baggage, baggage\_ch, boarding\_pass, booking, booking\_flight, flight, flights.
  - columns** (14): flight\_id (integer), flight\_no (varchar(50)), scheduled\_departure (date).

**console** (Top Right Panel):

```
--1
CREATE INDEX idx_flights_actual_departure
ON flights (actual_departure);

--2
CREATE UNIQUE INDEX idx_unique_flight_no_sched_dep
ON flights (flight_no, scheduled_departure);
```

**Services** (Bottom Left Panel):

- Tx**: Transaction status
- Database**: Connected to **postgres@localhost**
- console**: 23 ms (highlighted)

**Logs** (Bottom Right Panel):

```
[2025-11-12 09:11:22] 2,144 rows affected in 19 ms
[2025-11-12 09:11:37] zhanel.public> CREATE UNIQUE INDEX idx_unique_flight_no_sched_dep
ON flights (flight_no, scheduled_departure)
[2025-11-12 09:11:37] completed in 7 ms
```

**System Bar** (Bottom):

Database Consoles > postgres@localhost > **console** 23 ms 7:45 LF UTF-8 4 spaces

DB DB\_lab2 Version control

Database Explorer

postgres@localhost

- airports
- baggage
- baggage\_ch
- boarding\_pass
- booking
- booking\_flight
- flight
- flights
  - columns 14
    - flight\_id integer
    - flight\_no varchar(50)
    - scheduled\_departure date
    - scheduled\_arrival date
    - departure\_airport\_id integer
    - arrival\_airport\_id integer
    - departing\_gate varchar(50)
    - arriving\_gate varchar(50)
    - airline\_id integer
    - status varchar(50)
    - actual\_departure date
    - actual\_arrival date
    - created\_at date
    - update\_at date
  - indexes 0

Services

Tx + ⏪ ⏴ ×

Database

postgres@localhost

console 31 ms

zhanel.public

console

--1  
CREATE INDEX idx\_flights\_actual\_departure  
ON flights (actual\_departure);  
--2  
CREATE UNIQUE INDEX idx\_unique\_flight\_no\_sched\_dep  
ON flights (flight\_no, scheduled\_departure);  
--3  
CREATE INDEX idx\_flights\_route  
ON flights (departure\_airport\_id, arrival\_airport\_id);

[2025-11-12 09:11:37] completed in 7 ms  
[2025-11-12 09:34:16] zhanel.public> CREATE INDEX idx\_flights\_route  
ON flights (departure\_airport\_id, arrival\_airport\_id)  
[2025-11-12 09:34:16] completed in 10 ms

12:55 LF UTF-8 4 spaces ⏪ ⏴

## **Services**

DB DB\_lab2 Version control

Database Explorer

postgres@localhost 2

postgres 3

zhanel 3

Server Objects

console

--5

EXPLAIN ANALYZE

```
SELECT * FROM flights
WHERE departure_airport_id = 1
AND arrival_airport_id = 3;
```

zhanel.public ✓

Services

Tx + ⚡ ⌂ ⌂ ×

Database

postgres@localhost

console 351 ms

Output --5

QUERY PLAN

```
1 Bitmap Heap Scan on flights  (cost=4.30..10.95 rows=2 width=61) (actual time=0.083..0.250 rows=4 loops=1)
2   Recheck Cond: ((departure_airport_id = 1) AND (arrival_airport_id = 3))
3   Heap Blocks: exact=3
4   -> Bitmap Index Scan on idx_flights_route  (cost=0.00..4.29 rows=2 width=0) (actual time=0.061..0.061 rows=4 loops=1)
5     Index Cond: ((departure_airport_id = 1) AND (arrival_airport_id = 3))
6 Planning Time: 1.998 ms
7 Execution Time: 1.003 ms
```

7 rows ▾ | :

5:30 LF UTF-8 4 spaces ⌂ ⌂

DB DB\_lab2 Version control

Database Explorer

console

postgres@localhost

postgres zhanel Server Objects

--6

✓ INSERT INTO passengers (first\_name, last\_name, passport\_number)  
VALUES ('Aruzhan', 'Bekova', 'P123456');

Services

Output Result 15

WHERE tablename = 'passengers'

[2025-11-12 10:02:06] 3 rows retrieved starting from 1 in 335 ms (execution: 10 ms, fetching: 325 ms)

[2025-11-12 10:02:24] zhanel.public> INSERT INTO passengers (first\_name, last\_name, passport\_number)  
VALUES ('Aruzhan', 'Bekova', 'P123456')

Tx + ⌂ ×

Database

postgres@localhost

console 15 ms

Output Result 15

WHERE tablename = 'passengers'

[2025-11-12 10:02:06] 3 rows retrieved starting from 1 in 335 ms (execution: 10 ms, fetching: 325 ms)

[2025-11-12 10:02:24] zhanel.public> INSERT INTO passengers (first\_name, last\_name, passport\_number)  
VALUES ('Aruzhan', 'Bekova', 'P123456')

Database Consoles > postgres@localhost > console

5:1 LF UTF-8 4 spaces ⌂ ⌂

The screenshot shows a PostgreSQL database interface with two main panes: a Database Explorer on the left and a console on the right.

**Database Explorer:**

- Shows the connection `postgres@localhost` with three objects: `postgres`, `zhanel`, and `Server Objects`.

**Console:**

- Shows the following SQL query:

```
--6
INSERT INTO passengers (first_name, last_name, passport_number)
VALUES ('Dana', 'Kassym', 'P654321');
```

**Output:**

- Shows the execution results:

```
[2025-11-12 10:07:22] zhanel.public> INSERT INTO passengers (first_name, last_name, passport_number)
VALUES ('Dana', 'Kassym', 'P654321')
[2025-11-12 10:07:22] 1 row affected in 5 ms
```

**Services**

**Console:**

- Shows the same SQL query and its execution results as the main interface.

**Bottom Status Bar:**

- Shows the path: Database Consoles > postgres@localhost > console
- Shows the execution time: 17 ms
- Shows the current time: 3:38
- Shows the encoding: LF
- Shows the character set: UTF-8
- Shows the word wrap setting: 4 spaces

## Services

A screenshot of the pgAdmin 4 interface. At the top, there's a toolbar with icons for Tx, a plus sign, an eye, a refresh, up and down arrows, and a close button. Below the toolbar, a sidebar shows a 'Database' folder expanded, containing a connection named 'postgres@localhost'. This connection is highlighted with a gray background and has a green elephant icon next to it. To the right of the connection name, the word 'console' and a '344 ms' latency value are displayed.

Output Result 20 ×

CSV | ↴ ↵ ⌛ ⚡ 🔍 ⚡

QUERY PLAN

```
1 Seq Scan on passengers  (cost=0.00..6.54 rows=1 width=282) (actual time=0.015..0.036 rows=1 loops=1)
2   Filter: ((date_of_birth >= '1984-01-01'::date) AND (date_of_birth <= '1984-12-31'::date) AND ((country_of_citizenship)::text = 'Philippines')
3 Rows Removed by Filter: 201
4 Planning Time: 0.956 ms
5 Execution Time: 0.048 ms
```

## Services

## Services

The screenshot shows the pgAdmin interface. On the left, a tree view displays the database structure under 'Database' and 'postgres@localhost'. A 'console' tab is active, showing a query execution time of 339 ms. The main area is titled 'Result 23' and contains a table with five rows of index definitions. The table has two columns: 'indexname' and 'indexdef'. The rows are numbered 1 to 5. Row 1: indexname 'uq\_passengers\_id', indexdef 'CREATE UNIQUE INDEX uq\_passengers\_id ON public.pass...'. Row 2: indexname 'uq\_passenger', indexdef 'CREATE UNIQUE INDEX uq\_passenger ON public.passenge...'. Row 3: indexname 'idx\_passengers\_passport', indexdef 'CREATE UNIQUE INDEX idx\_passengers\_passport ON publ...'. Row 4: indexname 'idx\_passengers\_personal', indexdef 'CREATE INDEX idx\_passengers\_personal ON public.pass...'. Row 5: indexname 'idx\_passengers\_country\_dob', indexdef 'CREATE INDEX idx\_passengers\_country\_dob ON public.pass...'. The bottom right corner of the results grid shows '5 rows'.

	indexname	indexdef
1	uq_passengers_id	CREATE UNIQUE INDEX uq_passengers_id ON public.pass...
2	uq_passenger	CREATE UNIQUE INDEX uq_passenger ON public.passenge...
3	idx_passengers_passport	CREATE UNIQUE INDEX idx_passengers_passport ON publ...
4	idx_passengers_personal	CREATE INDEX idx_passengers_personal ON public.pass...
5	idx_passengers_country_dob	CREATE INDEX idx_passengers_country_dob ON public.pass...