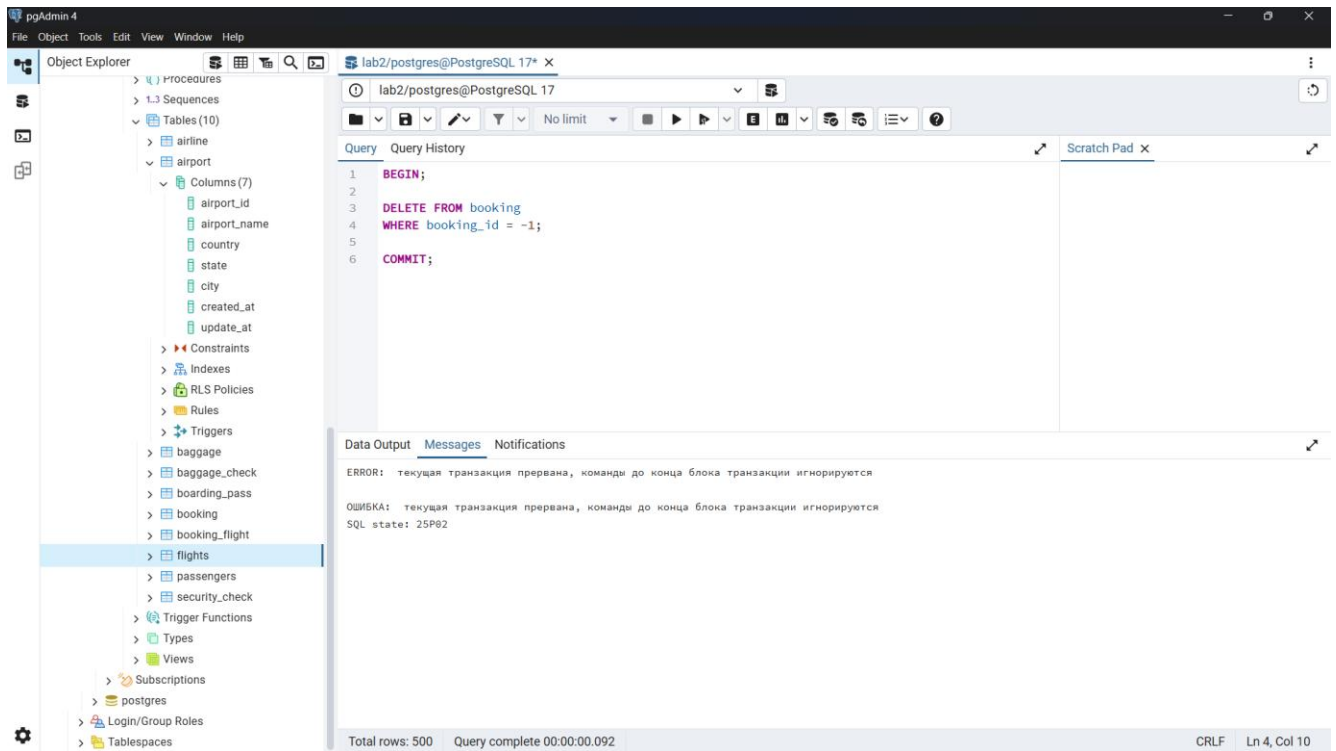


# Laboratory work 9

1.

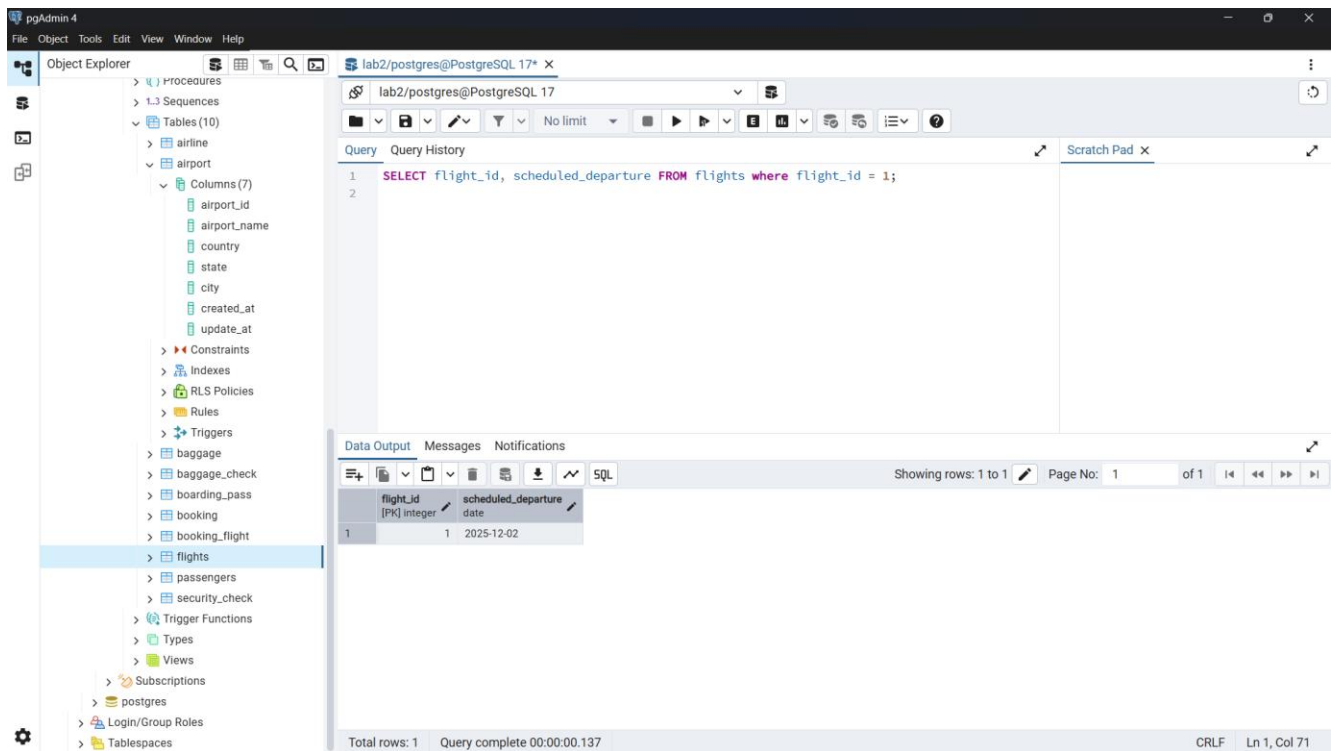


The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer displays the database structure, with the 'flights' table selected under the 'airline' schema. The main query editor displays the following SQL code:

```
1 BEGIN;  
2  
3 DELETE FROM booking  
4 WHERE booking_id = -1;  
5  
6 COMMIT;
```

The 'Messages' tab at the bottom shows an error message: "ERROR: текущая транзакция прервана, команды до конца блока транзакции игнорируются" (ERROR: current transaction is aborted, commands ignored up to the end of the transaction block). The status bar at the bottom indicates "Total rows: 500" and "Query complete 00:00:00.092".

2.



The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer displays the database structure, with the 'flights' table selected under the 'airline' schema. The main query editor displays the following SQL code:

```
1 SELECT flight_id, scheduled_departure FROM flights where flight_id = 1;  
2
```

The 'Data Output' tab at the bottom shows the results of the query in a table with two columns: 'flight\_id' (integer) and 'scheduled\_departure' (date). The table contains one row with the values 1 and 2025-12-02.

flight_id	scheduled_departure
1	2025-12-02

The status bar at the bottom indicates "Total rows: 1" and "Query complete 00:00:00.137".

pgAdmin 4

File Object Tools Edit View Window Help

lab2/postgres@PostgreSQL 17\*

Object Explorer

- Procedures
- Sequences
- Tables (10)
  - airline
  - airport
    - Columns (7)
      - airport\_id
      - airport\_name
      - country
      - state
      - city
      - created\_at
      - update\_at
    - Constraints
    - Indexes
    - RLS Policies
    - Rules
    - Triggers
  - baggage
  - baggage\_check
  - boarding\_pass
  - booking
  - booking\_flight
  - flights
  - passengers
  - security\_check
  - Trigger Functions
  - Types
  - Views
- Subscriptions
- postgres
- Login/Group Roles
- Tablespaces

Query

```
1 SELECT flight_id, departure_time FROM flights where flight_id = 1;
2
3 BEGIN;
4
5 UPDATE flights
6 SET scheduled_departure = '2025-12-20 09:00'
7 WHERE id = 1;
8
9 COMMIT;
10
11 SELECT flight_id, departure_time FROM flights where flight_id = 1;
12
```

Scratch Pad

Data Output Messages Notifications

ROLLBACK

Query returned successfully in 69 msec.

✓ Query returned successfully in 69 msec. ✕

Total rows: Query complete 00:00:00.069 CRLF Ln 9, Col 1

pgAdmin 4

File Object Tools Edit View Window Help

lab2/postgres@PostgreSQL 17\*

Object Explorer

- Materialized Views
- Operators
- Procedures
- Sequences
- Tables (10)
  - airline
  - airport
    - Columns (7)
      - airport\_id
      - airport\_name
      - country
      - state
      - city
      - created\_at
      - update\_at
    - Constraints
    - Indexes
    - RLS Policies
    - Rules
    - Triggers
  - baggage
  - baggage\_check
  - boarding\_pass
  - booking
  - booking\_flight
  - flights
  - passengers
  - security\_check
  - Trigger Functions
  - Types
  - Views
- Subscriptions
- postgres
- Login/Group Roles
- Tablespaces

Query

```
1 SELECT flight_id, departure_time FROM flights where flight_id = 1;
2
3 BEGIN;
4
5 UPDATE flights
6 SET scheduled_departure = '2025-12-20 09:00'
7 WHERE id = 999999;
8
9 COMMIT;
10
11 SELECT flight_id, departure_time FROM flights where flight_id = 1;
12
```

Scratch Pad

Data Output Messages Notifications

ROLLBACK

Query returned successfully in 69 msec.

Total rows: Query complete 00:00:00.069 CRLF Ln 9, Col 1

3.

pgAdmin 4

lab2/postgres@PostgreSQL 17\*

Object Explorer

- airport\_id
- airport\_name
- country
- state
- city
- created\_at
- update\_at
- Constraints
- Indexes
- RLS Policies
- Rules
- Triggers
- baggage
- baggage\_check
- boarding\_pass
- booking
  - Columns (7)
    - booking\_id
    - passenger\_id
    - booking\_platform
    - created\_at
    - update\_at
    - status
    - price
  - Constraints
  - Indexes
  - RLS Policies
  - Rules
  - Triggers
  - booking\_flight
  - flights
  - passengers
  - security\_check

Query

```
1 select * from booking where booking_id = 1;
2 begin;
3
4 update booking set price = price - 100 where booking_id = 1;
5
6 commit;
7
8 select * from booking where booking_id = 1;
9
```

Data Output

COMMIT

Query returned successfully in 62 msec.

Total rows: Query complete 00:00:00.062

✓ Query returned successfully in 62 msec. ✕

CRLF Ln 6, Col 1

4.

pgAdmin 4

lab2/postgres@PostgreSQL 17\*

Object Explorer

- baggage
- baggage\_check
- boarding\_pass
- booking
  - Columns (7)
    - booking\_id
    - passenger\_id
    - booking\_platform
    - created\_at
    - update\_at
    - status
    - price
  - Constraints
  - Indexes
  - RLS Policies
  - Rules
  - Triggers
  - booking\_flight
  - flights
  - passengers
    - Columns (10)
      - passenger\_id
      - first\_name
      - last\_name
      - date\_of\_birth
      - gender
      - country\_of\_citizenship
      - country\_of\_residence
      - passport\_number
      - created\_at
      - update\_at
    - Constraints

Query

```
1 select
2   p.first_name,
3   p.last_name,
4   p.update_at AS p_update_at,
5   b.update_at AS b_update_at
6 from passengers p
7 left join booking b
8 ON b.passenger_id = p.passenger_id
9 where p.passenger_id = 1;
10
11 begin;
12
13 update passengers
14 set
15   first_name = 'Edige',
16   last_name = 'Tleshak';
17
```

Data Output

Showing rows: 1 to 2 | Page No: 1 of 1

	first_name character varying (50)	last_name character varying (50)	p_update_at date	b_update_at date
1	Hilde	Irnis	2024-03-07	2024-01-02
2	Hilde	Irnis	2024-03-07	2023-11-09

Total rows: 2 Query complete 00:00:00.089

✓ Successfully run. Total query runtime: 89 msec. 2 rows affected. ✕

CRLF Ln 1, Col 1

pgAdmin 4

lab2/postgres@PostgreSQL 17\*

Object Explorer

- baggage
- baggage\_check
- boarding\_pass
- booking
  - Columns (7)
    - booking\_id
    - passenger\_id
    - booking\_platform
    - created\_at
    - update\_at
    - status
    - price
  - Constraints
  - Indexes
  - RLS Policies
  - Rules
  - Triggers
- booking\_flight
- flights
- passengers
  - Columns (10)
    - passenger\_id
    - first\_name
    - last\_name
    - date\_of\_birth
    - gender
    - country\_of\_citizenship
    - country\_of\_residence
    - passport\_number
    - created\_at
    - update\_at
  - Constraints

Query

```

11 begin;
12
13 update passengers
14 set
15     first_name = 'Edige',
16     last_name = 'Ilesbek',
17     update_at = NOW()
18 where passenger_id = 1;
19
20 update booking
21 set
22     update_at = NOW()
23 where passenger_id = 1;
24
25 commit;
26

```

Data Output Messages Notifications

ПРЕДУПРЕЖДЕНИЕ: нет незавершённой транзакции  
COMMIT

Query returned successfully in 62 msec.

Total rows: Query complete 00:00:00.062 CRLF Ln 25, Col 1

pgAdmin 4

lab2/postgres@PostgreSQL 17\*

Object Explorer

- baggage
- baggage\_check
- boarding\_pass
- booking
  - Columns (7)
    - booking\_id
    - passenger\_id
    - booking\_platform
    - created\_at
    - update\_at
    - status
    - price
  - Constraints
  - Indexes
  - RLS Policies
  - Rules
  - Triggers
- booking\_flight
- flights
- passengers
  - Columns (10)
    - passenger\_id
    - first\_name
    - last\_name
    - date\_of\_birth
    - gender
    - country\_of\_citizenship
    - country\_of\_residence
    - passport\_number
    - created\_at
    - update\_at
  - Constraints

Query

```

1 select
2     p.first_name,
3     p.last_name,
4     p.update_at AS p_update_at,
5     b.update_at AS b_update_at
6 from passengers p
7 left join booking b
8 ON b.passenger_id = p.passenger_id
9 where p.passenger_id = 1;
10
11 begin;
12
13 update passengers
14 set
15     first_name = 'Edige',
16     last_name = 'Ilesbek'

```

Data Output Messages Notifications

Showing rows: 1 to 2 Page No: 1 of 1

	first_name	last_name	p_update_at	b_update_at
1	Edige	Ilesbek	2025-12-02	2025-12-02
2	Edige	Ilesbek	2025-12-02	2025-12-02

Successfully run. Total query runtime: 81 msec. 2 rows affected.

Total rows: 2 Query complete 00:00:00.081 CRLF Ln 1, Col 1

5.

pgAdmin 4

lab2/postgres@PostgreSQL 17\*

Query

```

1 insert into passengers(passenger_id, first_name, last_name, date_of_birth, gender, country_
2
3
4
5 values(
6     1000,
7     'Ivan',
8     'Petrov',
9     '1998-04-12',
10    'male',
11    'Russia',
12    'Kazakhstan',
13    'N12345678',
14    NOW(),
15    NOW());
16
17 COMMIT;

```

Data Output Messages Notifications

COMMIT

Query returned successfully in 69 msec.

Total rows: Query complete 00:00:00.069 CRLF Ln 16, Col 1

6.

pgAdmin 4

lab2/postgres@PostgreSQL 17\*

Query

```

1 select
2     f.flight_id,
3     b.price
4 from booking b
5 join booking_flight bf on b.booking_id = bf.booking_id
6 join flights f on f.flight_id = bf.flight_id
7 where f.flight_id = 1;
8
9
10 begin;
11
12 select
13     f.flight_id,
14     b.price
15 from booking b
16 join flights f on b.booking_id = f.booking_id;
17

```

Data Output Messages Notifications

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

flight_id	price
1	7368.73

Total rows: 1 Query complete 00:00:00.074 CRLF Ln 1, Col 1

pgAdmin 4

File Object Tools Edit View Window Help

Object Explorer

- price
- Constraints
- Indexes
- RLS Policies
- Rules
- Triggers
- booking\_flight
- flights
  - Columns (14)
    - 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
    - update\_at
- passengers
  - Columns (10)
    - passenger\_id
    - first\_name
    - last\_name

lab2/postgres@PostgreSQL 17\*

lab2/postgres@PostgreSQL 17

Query Query History

```
6 join flights f on f.flight_id = bf.flight_id
7 where f.flight_id = 1;
8
9 begin;
10
11 UPDATE booking b
12 SET price = b.price + 30
13 FROM booking_flight bf
14 JOIN flights f ON f.flight_id = bf.flight_id
15 WHERE b.booking_id = bf.booking_id
16 AND f.flight_id = 1;
17
18 commit;
19
20
21
```

Scratch Pad

Data Output Messages Notifications

UPDATE 1

Query returned successfully in 70 msec.

Total rows: Query complete 00:00:00.070 CRLF Ln 9, Col 1

pgAdmin 4

File Object Tools Edit View Window Help

Object Explorer

- price
- Constraints
- Indexes
- RLS Policies
- Rules
- Triggers
- booking\_flight
- flights
  - Columns (14)
    - 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
    - update\_at
- passengers
  - Columns (10)
    - passenger\_id
    - first\_name
    - last\_name

lab2/postgres@PostgreSQL 17\*

lab2/postgres@PostgreSQL 17

Query Query History

```
6 join flights f on f.flight_id = bf.flight_id
7 where f.flight_id = 1;
8
9 begin;
10
11 UPDATE booking b
12 SET price = b.price + 30
13 FROM booking_flight bf
14 JOIN flights f ON f.flight_id = bf.flight_id
15 WHERE b.booking_id = bf.booking_id
16 AND f.flight_id = 1;
17
18 commit;
19
20
21
```

Scratch Pad

Data Output Messages Notifications

COMMIT

Query returned successfully in 70 msec.

Total rows: Query complete 00:00:00.070 CRLF Ln 18, Col 1

✓ Query returned successfully in 70 msec. ✕

pgAdmin 4

lab2/postgres@PostgreSQL 17\*

lab2/postgres@PostgreSQL 17

```

1 select
2     f.flight_id,
3     b.price
4 from booking b
5 join booking_flight bf on b.booking_id = bf.booking_id
6 join flights f on f.flight_id = bf.flight_id
7 where f.flight_id = 1;
8
9 begin;
10
11 UPDATE booking b
12 SET price = b.price + 30
13 FROM booking_flight bf
14 JOIN flights f ON f.flight_id = bf.flight_id
15 WHERE b.booking_id = bf.booking_id
16 AND f.flight_id = 1;

```

Data Output Messages Notifications

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

flight_id	price
integer	numeric(7,2)
1	7398.73

Total rows: 1 Query complete 00:00:00.096 CRLF Ln 1, Col 1

7.

pgAdmin 4

lab2/postgres@PostgreSQL 17\*

lab2/postgres@PostgreSQL 17

```

1 begin;
2
3 update baggage
4 set weight_in_kg = 10
5 where booking_id = 1;
6
7 commit;

```

Data Output Messages Notifications

COMMIT

Query returned successfully in 71 msec.

Total rows: Query complete 00:00:00.071

✓ Query returned successfully in 71 msec. ✕

CRLF Ln 7, Col 1

8.



pgAdmin 4

lab2/postgres@PostgreSQL 17\*

lab2/postgres@PostgreSQL 17

```
begin;
update booking
set price = price * 0.9
where passenger_id = 1;
commit;
select passenger_id, price
from booking
where passenger_id = 1;
```

Data Output Messages Notifications

passenger_id	price
1	4697.96
2	8674.26

Total rows: 2 Query complete 00:00:00.104 CRLF Ln 8, Col 1

9.

pgAdmin 4

lab2/postgres@PostgreSQL 17\*

lab2/postgres@PostgreSQL 17

```
FROM booking_flight bf
WHERE b.booking_id = bf.booking_id
AND bf.flight_id = 1;
UPDATE booking_flight
SET flight_id = 3
WHERE flight_id = 1;
SELECT b.booking_id, b.price, bf.flight_id
FROM booking b
JOIN booking_flight bf ON b.booking_id = bf.booking_id
WHERE bf.flight_id = 3;
COMMIT;
```

Data Output Messages Notifications

booking_id	price	flight_id
1	174	1638.75

Total rows: 1 Query complete 00:00:00.079

Successfully run. Total query runtime: 79 msec. 1 rows affected.



pgAdmin 4

File Object Tools Edit View Window Help

lab2/postgres@PostgreSQL 17\*

Object Explorer

- booking\_id
- passenger\_id
- booking\_platform
- created\_at
- update\_at
- status
- price
- > Constraints
- > Indexes
- > RLS Policies
- > Rules
- > Triggers
- booking\_flight
  - Columns (5)
    - booking\_flight\_id
    - booking\_id
    - flight\_id
    - created\_at
    - update\_at
  - > Constraints
  - > Indexes
  - > RLS Policies
  - > Rules
  - > Triggers
- flights
  - Columns (14)
    - flight\_id
    - flight\_no
    - scheduled\_departure
    - scheduled\_arrival
    - departure\_airport\_id
    - arrival\_airport\_id
  - > Constraints
  - > Indexes
  - > RLS Policies
  - > Rules
  - > Triggers

Query

```
5 FROM booking_flight bf
6 WHERE b.booking_id = bf.booking_id
7 AND bf.flight_id = 1;
8
9
10 UPDATE booking_flight
11 SET flight_id = 3
12 WHERE flight_id = 1;
13
14 SELECT b.booking_id, b.price, bf.flight_id
15 FROM booking b
16 JOIN booking_flight bf ON b.booking_id = bf.booking_id
17 WHERE bf.flight_id = 3;
18
19 COMMIT;
20
```

Query History

Scratch Pad

Data Output Messages Notifications

Showing rows: 1 to 2 Page No: 1 of 1

	booking_id integer	price numeric (7,2)	flight_id integer
1	174	1638.75	3
2	200	300.00	3

Total rows: 2 Query complete 00:00:00.066 CRLF Ln 13, Col 1