

LAB-4

ZHARAS SEMBAYEV

TASK #1

The screenshot displays the pgAdmin 4 web interface. On the left, the 'Object Explorer' shows a tree structure with 'Servers (2)' expanded, leading to 'PostgreSQL 17', then 'Databases (2)', and finally 'Airport'. The main panel shows a query executed against the 'Airport/postgres@PostgreSQL 17' connection. The query is:

```
1 SELECT UPPER(airline_name) AS uppercase_airline_name
2 FROM Airline;
```

The 'Data Output' tab at the bottom shows the results of the query. It displays a table with one column, 'uppercase_airline_name', and 11 rows of data. The first row is 'FLYFLY', and the subsequent rows are 'AIR FRANCE TEST', 'TAP PORTUGAL TEST', 'LOT POLISH TEST', and 'AIRLINE_1' through 'AIRLINE_6'. The status bar at the bottom indicates 'Total rows: 304' and 'Query complete 00:00:00.087'.

uppercase_airline_name
FLYFLY
AIR FRANCE TEST
TAP PORTUGAL TEST
LOT POLISH TEST
AIRLINE_1
AIRLINE_2
AIRLINE_3
AIRLINE_4
AIRLINE_5
AIRLINE_6
AIRLINE_7

TASK #2

The screenshot displays the pgAdmin 4 web interface. On the left, the Object Explorer shows a tree structure with 'Servers (2)' expanded, containing 'PostgreSQL' and 'PostgreSQL 17'. Under 'PostgreSQL 17', 'Databases (2)' is expanded, showing 'Airport' and 'postgres'. The 'Airport' database is selected. The main pane shows a SQL query editor with the following query:

```
SELECT REPLACE(airline_name, 'Air', 'Aero') AS replace_name
FROM Airline;
```

Below the query editor, the 'Data Output' tab is active, displaying a table with 304 rows. The table has one column, 'replace_name', of type 'text'. The first few rows are:

	replace_name
1	FlyFly
2	Aero France Test
3	TAP Portugal Test
4	LOT Polish Test
5	Aeroline_1
6	Aeroline_2
7	Aeroline_3
8	Aeroline_4
9	Aeroline_5
10	Aeroline_6
11	Aeroline_7
12	Aeroline_8
13	Aeroline_9
14	Aeroline_10
15	Aeroline_11
16	Aeroline_12
17	Aeroline_13
18	Aeroline_14
19	Aeroline_15
20	Aeroline_16
21	Aeroline_17
22	Aeroline_18

The status bar at the bottom indicates 'Total rows: 304', 'Query complete 00:00:00.097', and 'CRLF Ln 4, Col 32'. The Windows taskbar at the very bottom shows the system clock as 19:31 on 07.10.2025.

TASK #3

The screenshot displays the pgAdmin 4 web interface. On the left, the Object Explorer shows a tree structure with 'Servers (2)' expanded, showing 'PostgreSQL 17'. Under 'Databases (2)', the 'Airport' database is selected. The main pane shows the 'Query' tab with the following SQL query:

```
7 SELECT flight_id
8 FROM Flights
9 WHERE airline_id IN (3,4)
10 GROUP BY flight_id
11 HAVING COUNT(DISTINCT airline_id) = 2;
```

The 'Data Output' tab is active, showing a table with one column, 'flight_id', and one row with the value '1'. The status bar at the bottom indicates 'Total rows: 0' and 'Query complete 00:00:00.101'. The system tray at the bottom shows the date and time as '07.10.2025 19:44'.

pgAdmin 4

File Object Tools Edit View Window Help

Object Explorer

- Servers (2)
 - PostgreSQL
 - PostgreSQL 17
 - Databases (2)
 - Airport
 - Casts
 - Catalogs
 - Event Triggers
 - Extensions
 - Foreign Data Wrappers
 - Languages
 - Publications
 - Schemas
 - Subscriptions
 - postgres
 - Login/Group Roles
 - Tablespaces

Airport/postgres@PostgreSQL 17

Query Query History

```
7 SELECT flight_id
8 FROM Flights
9 WHERE airline_id IN (3,4)
10 GROUP BY flight_id
11 HAVING COUNT(DISTINCT airline_id) = 2;
```

Data Output Messages Notifications

flight_id
1

Total rows: 0 Query complete 00:00:00.101 CRLF Ln 9, Col 25

12°C Partly cloudy

Поиск

ENG 19:44 07.10.2025

TASK #4

The screenshot displays the pgAdmin 4 web interface. On the left, the Object Explorer shows the database structure, with the 'public' schema expanded and 'Tables (10)' selected. The main pane shows a SQL query executed against the 'Airport/postgres@PostgreSQL 17' database. The query is:

```
SELECT airport_name
FROM Airport
WHERE airport_name ILIKE '%Regional%'
OR airport_name ILIKE '%Air%';
```

The results are displayed in a table with 20 rows, showing the 'airport_name' column. The status bar at the bottom indicates 'Total rows: 300' and 'Query complete 00:00:00.113'.

airport_name
Airport_1
Airport_2
Airport_3
Airport_4
Airport_5
Airport_6
Airport_7
Airport_8
Airport_9
Airport_10
Airport_11
Airport_12
Airport_13
Airport_14
Airport_15
Airport_16
Airport_17
Airport_18
Airport_19
Airport_20

TASK #5

The screenshot displays the pgAdmin 4 web interface. On the left, the 'Object Explorer' pane shows the database structure, with 'Tables (10)' expanded under the 'public' schema. The main query editor on the right contains the following SQL query:

```
SELECT
first_name,
TO_CHAR(date_of_birth, 'Month DD, YYYY') AS formatted_date_of_birth
FROM Passengers;
```

Below the query editor, the 'Data Output' tab shows the results of the query. The results are displayed in a table with two columns: 'first_name' (character varying (50)) and 'formatted_date_of_birth' (text). The table contains 300 rows, with the first 20 rows visible in the screenshot.

	first_name	formatted_date_of_birth
1	Aidos	January 31, 1980
2	Dana	March 01, 1980
3	Aruzhan	March 31, 1980
4	Miras	April 30, 1980
5	Alina	May 30, 1980
6	Serik	June 29, 1980
7	Aigerim	July 29, 1980
8	Rustem	August 28, 1980
9	Madina	September 27, 1980
10	Asan	October 27, 1980
11	Aidos	November 26, 1980
12	Dana	December 26, 1980
13	Aruzhan	January 25, 1981
14	Miras	February 24, 1981
15	Alina	March 26, 1981
16	Serik	April 25, 1981
17	Aigerim	May 25, 1981
18	Rustem	June 24, 1981
19	Madina	July 24, 1981
20	Asan	August 23, 1981

The status bar at the bottom indicates 'Total rows: 300', 'Query complete 00:00:00.165', and the current cursor position is 'Ln 21, Col 17'.

TASK #6

The screenshot displays the pgAdmin 4 web interface. On the left, the 'Object Explorer' pane shows the database structure, with 'Tables (10)' expanded under the 'public' schema. The main query editor on the right contains the following SQL query:

```
SELECT flight_id
FROM Flights
WHERE act_arrival_time > sch_arrival_time;
```

Below the query editor, the 'Data Output' tab shows the results of the query. The results are displayed in a table with one row and one column:

flight_id [PK] Integer
1

The status bar at the bottom indicates 'Total rows: 1', 'Query complete 00:00:00.166', and 'Changes staged: Updated: 1'. The system tray at the bottom shows the date and time as 20:00 on 07.10.2025.

TASK #7

The screenshot displays the pgAdmin 4 web interface. On the left, the Object Explorer shows the database structure, with 'Tables (10)' expanded under the 'public' schema. The main pane shows a SQL query being executed on the 'Airport/postgres@PostgreSQL 17' database. The query filters for passengers based on their age group. The results pane shows 300 rows of data, with the first 17 rows visible. The status bar at the bottom indicates 'Total rows: 300' and 'Query complete 00:00:00.097'.

Object Explorer

- > 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
 - baggage
 - baggage_check
 - boarding_pass
 - booking
 - booking_flight
 - flights
 - passengers
 - security_check
 - Trigger Functions
 - Types

Query

```
25 WHERE act_arrival_time > sch_arrival_time;
26
27 SELECT first_name,
28 CASE
29 WHEN AGE(date_of_birth) BETWEEN INTERVAL '18 years' AND INTERVAL '35 years' THEN 'Young'
30 WHEN AGE(date_of_birth) BETWEEN INTERVAL '36 years' AND INTERVAL '55 years' THEN 'Adult'
31 ELSE 'Other'
32 END AS age_group
33 FROM Passengers;
```

Data Output

	first_name character varying (50)	age_group text
1	Aidos	Adult
2	Dana	Adult
3	Aruzhan	Adult
4	Miras	Adult
5	Alina	Adult
6	Serik	Adult
7	Aigerim	Adult
8	Rustem	Adult
9	Madina	Adult
10	Asan	Adult
11	Aidos	Adult
12	Dana	Adult
13	Aruzhan	Adult
14	Miras	Adult
15	Alina	Adult
16	Serik	Adult
17	Aigerim	Adult

Total rows: 300 Query complete 00:00:00.097 CRLF Ln 33, Col 17

TASK #8

The screenshot displays the pgAdmin 4 web interface. On the left, the Object Explorer shows a database structure with tables like 'baggage', 'baggage_check', 'boarding_pass', and 'booking'. The 'booking' table is selected, showing its columns: booking_id, flight_id, passenger_id, booking_platform, created_at, updated_at, status, and ticket_price. The main pane shows a SQL query being executed on the 'Passengers' table. The query uses a CASE statement to categorize ticket prices into 'Cheap', 'Medium', or 'Expensive'. The results pane shows 300 rows of data, with the first 17 rows visible. The status bar at the bottom indicates the query is complete and shows the current row and column positions.

```
33 FROM Passengers;
34
35 SELECT booking_id, ticket_price,
36 CASE
37 WHEN ticket_price < 100 THEN 'Cheap'
38 WHEN ticket_price BETWEEN 100 AND 300 THEN 'Medium'
39 ELSE 'Expensive'
40 END AS price_category
41 FROM Booking;
```

	booking_id [PK] integer	ticket_price numeric (7,2)	price_category text
1	1	6444.45	Expensive
2	2	7900.90	Expensive
3	3	5814.15	Expensive
4	4	11198.36	Expensive
5	5	9581.20	Expensive
6	6	23525.70	Expensive
7	7	20508.76	Expensive
8	8	11483.78	Expensive
9	9	20914.35	Expensive
10	10	8866.93	Expensive
11	11	19445.76	Expensive
12	12	12063.83	Expensive
13	13	10290.52	Expensive
14	14	9978.13	Expensive
15	15	10655.14	Expensive
16	16	24940.36	Expensive
17	17	17810.28	Expensive

Total rows: 300 Query complete 00:00:00.125 CRLF Ln 38, Col 14

TASK #9

The screenshot displays the pgAdmin 4 web interface. On the left, the Object Explorer shows a tree structure with 'Servers (2)' expanded, containing 'PostgreSQL 17'. Under 'Databases (2)', the 'Airport' database is selected, and 'Schemas (1)' is expanded. The main pane shows a SQL query in the 'Query' tab:

```
41 FROM Booking;  
42  
43 SELECT airline_country, COUNT(airline_name) AS airline_count  
44 FROM Airline  
45 GROUP BY airline_country;  
46  
47  
48  
49
```

Below the query editor, the 'Data Output' tab shows the results of the query in a table format. The table has two columns: 'airline_country' (character varying (50)) and 'airline_count' (bigint). The results are as follows:

	airline_country	airline_count
1	Brazil	75
2	Portugal	1
3	Kazakhstan	75
4	France	76
5	Poland	77

The status bar at the bottom indicates 'Total rows: 5', 'Query complete 00:00:00.154', and 'Ln 45, Col 18'. The system tray at the very bottom shows the date and time as '20:23 07.10.2025'.

TASK #10

The screenshot displays the pgAdmin 4 web interface. On the left, the 'Object Explorer' pane shows a tree structure of database objects. The 'Schemas (1)' folder is selected, revealing a 'Flights' table. The main pane shows a SQL query being executed against the 'Airport/postgres@PostgreSQL 17' database. The query is a SELECT statement that retrieves flight details and calculates the delay duration. The results are shown in a table with 5 columns: flight_id, sch_arrival_time, act_arrival_time, and delay_duration. The first row shows a flight with ID 301, scheduled for 2024-10-01 14:00:00, and arrived at 2024-10-01 14:05:00, resulting in a delay of 00:05:00.

pgAdmin 4

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Object Explorer

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Query

```
47
48
49 SELECT
50 flight_id,
51 sch_arrival_time,
52 act_arrival_time,
53 (act_arrival_time - sch_arrival_time) AS delay_duration
54 FROM Flights
55 WHERE act_arrival_time > sch_arrival_time;
```

Query History

Scratch Pad

Data Output

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

	flight_id [PK] integer	sch_arrival_time timestamp without time zone	act_arrival_time timestamp without time zone	delay_duration interval
1	301	2024-10-01 14:00:00	2024-10-01 14:05:00	00:05:00

Total rows: 1 Query complete 00:00:00.118 CRLF Ln 55, Col 43

12°C Partly cloudy

Поиск

ENG 20:26 07.10.2025