

LAB 3

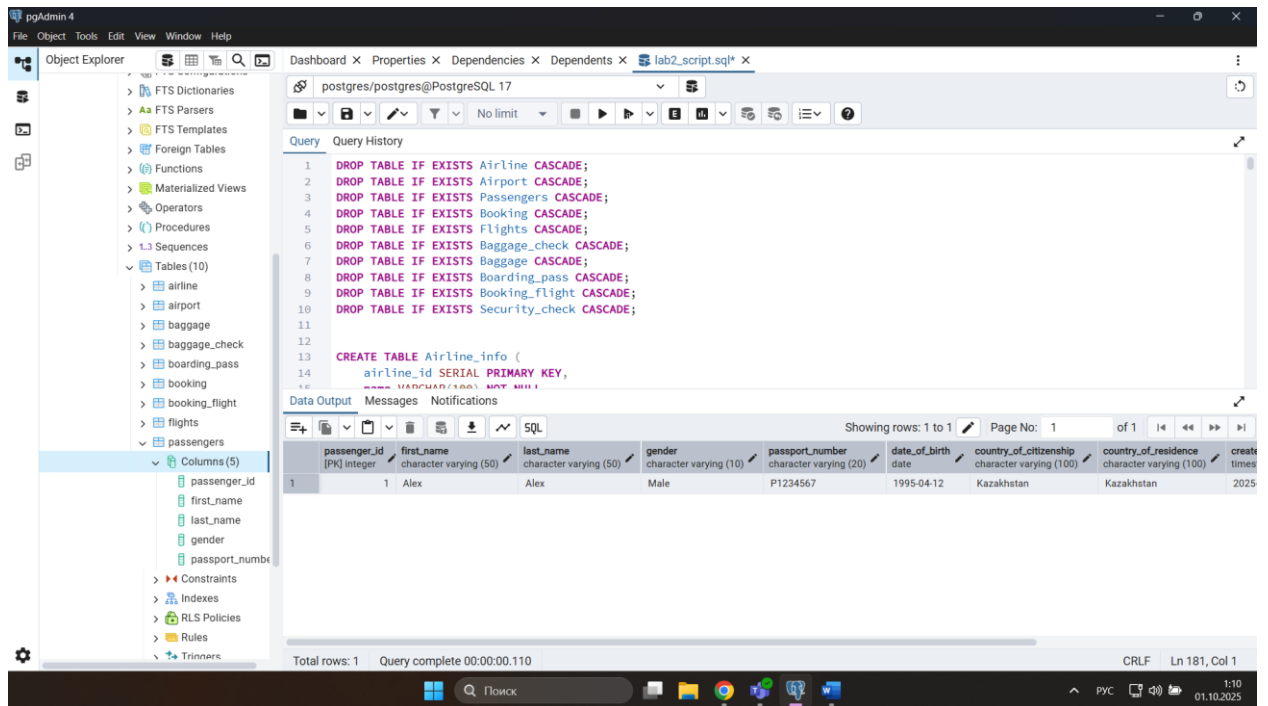
Aibekuly Akezhan

Task 1.

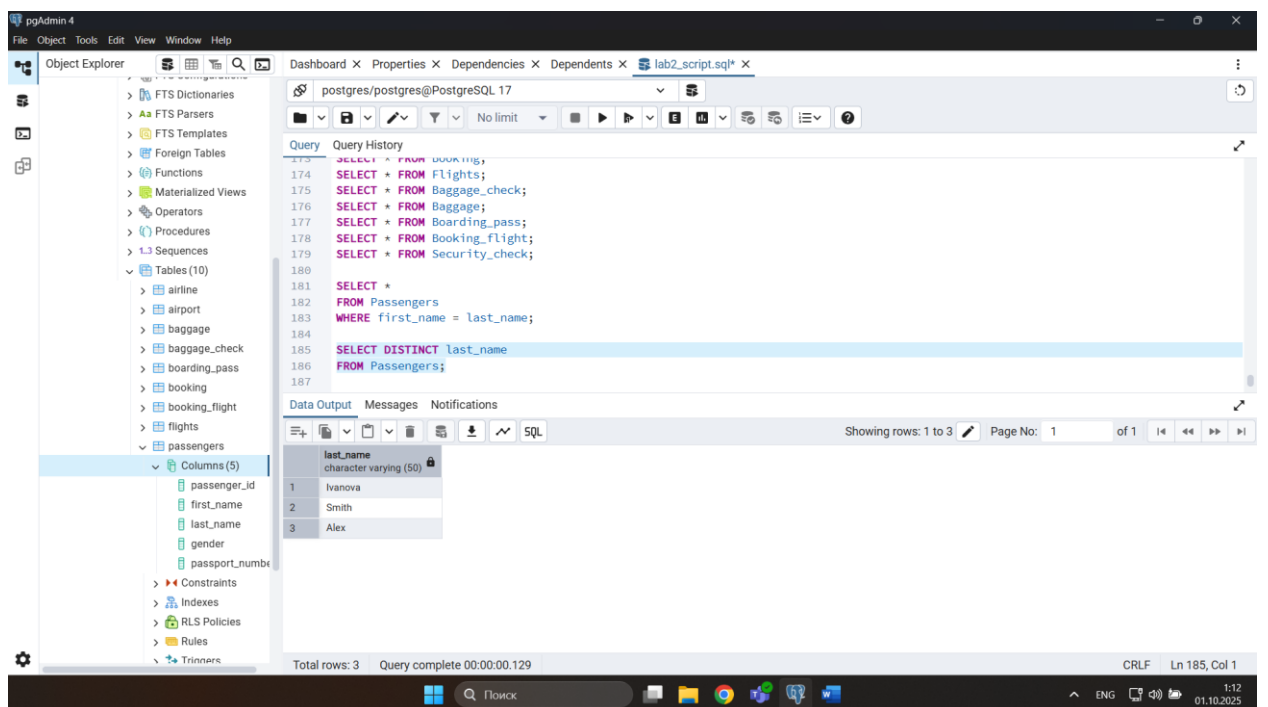
SELECT *

FROM Passengers

WHERE first_name = last_name;



TASK 2.



TASK 3.

The screenshot shows the pgAdmin 4 interface. The left sidebar displays the database structure, including tables like 'passengers'. The main window shows a SQL query in the 'Query History' tab:

```
SELECT * FROM booking_flight;  
SELECT * FROM Security_check;  
  
SELECT *  
FROM Passengers  
WHERE first_name = last_name;  
  
SELECT DISTINCT last_name  
FROM Passengers;  
  
SELECT *  
FROM Passengers  
WHERE gender = 'Male'  
AND date_of_birth BETWEEN '1990-01-01' AND '2000-12-31';
```

The 'Data Output' tab shows the results of the last query, displaying a single row for a male passenger named Alex, born on 1995-04-12, with passport number P1234567.

passenger_id	first_name	last_name	gender	passport_number	date_of_birth	country_of_citizenship	country_of_residence	created_at
1	Alex	Alex	Male	P1234567	1995-04-12	Kazakhstan	Kazakhstan	2025

TASK 4.

The screenshot shows the pgAdmin 4 interface. The left sidebar displays the database structure, including tables like 'security_check'. The main window shows a SQL query in the 'Query History' tab:

```
SELECT *  
FROM Passengers  
WHERE gender = 'Male'  
AND date_of_birth BETWEEN '1990-01-01' AND '2000-12-31';  
  
SELECT DATE_TRUNC('month', created_at) AS month, SUM(ticket_price) AS total_price  
FROM Booking  
GROUP BY month  
ORDER BY month;
```

The 'Data Output' tab shows the results of the last query, displaying a table with 5 rows, showing the total price for each month from 2023-09-01 to 2025-10-01.

month	total_price
2023-09-01 00:00:00	20000.00
2023-10-01 00:00:00	12000.00
2023-11-01 00:00:00	8000.00
2024-01-01 00:00:00	15000.00
2025-10-01 00:00:00	40000.00

TASK 5.

The screenshot shows the pgAdmin 4 interface with a SQL query editor. The query is as follows:

```

SELECT *
FROM Passengers
WHERE gender = 'Male'
AND date_of_birth BETWEEN '1998-01-01' AND '2000-12-31';

SELECT DATE_TRUNC('month', created_at) AS month, SUM(ticket_price) AS total_price
FROM Booking
GROUP BY month
ORDER BY month;

SELECT f.flight_id, f.departure_time, f.arrival_time, a.airport_name, a.country
FROM Flights f
JOIN Airport a ON f.arrival_airport_id = a.airport_id
WHERE a.country = 'China';
  
```

The Data Output section shows the following columns:

flight_id	departure_time	arrival_time	airport_name	country
integer	timestamp without time zone	timestamp without time zone	character varying (100)	character varying (100)

Total rows: 0 Query complete 00:00:00.057

TASK 6.

The screenshot shows the pgAdmin 4 interface with a SQL query editor. The query is as follows:

```

SELECT *
FROM Flights f
JOIN Airport a ON f.arrival_airport_id = a.airport_id
WHERE a.country = 'China';

SELECT *
FROM Airline
WHERE country IN ('France', 'Portugal', 'Poland')
AND created_at BETWEEN '2023-11-01' AND '2024-03-31';
  
```

The Data Output section shows the following columns:

airline_id	name	country	airline_code	created_at	updated_at
1	5 AirFrance	France	FR22	2023-12-10 00:00:00	2025-10-01 01:26:16.831098
2	6 PortugalSky	Portugal	PT11	2024-02-20 00:00:00	2025-10-01 01:26:16.831098
3	7 PolishAir	Poland	PL9	2024-03-01 00:00:00	2025-10-01 01:26:16.831098

Showing rows: 1 to 3 Page No: 1 of 1

Total rows: 3 Query complete 00:00:00.070

Successfully run. Total query runtime: 70 msec. 3 rows affected.

TASK 7.

pgAdmin 4

Object Explorer

- 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
 - Columns (3)
 - security_check_id
 - passenger_id
 - check_result
 - Constraints
 - Indexes
 - RLS Policies
 - Rules
 - Triggers
 - Trigger Functions
 - Times

Query Editor: postgres/postgres@PostgreSQL 17

```

388 FROM Flights f
389 JOIN Airport a ON f.arrival_airport_id = a.airport_id
390 WHERE a.country = 'China';
391
392 SELECT *
393 FROM Airline
394 WHERE country IN ('France', 'Portugal', 'Poland')
395 AND created_at BETWEEN '2023-11-01' AND '2024-03-31';
396
397 SELECT name
398 FROM Airline
399 WHERE country = 'Kazakhstan';
400
401
402

```

Data Output: Showing rows: 1 to 1 of 1

name
KazAir

Total rows: 1 Query complete 00:00:00.092

TASK 8.

pgAdmin 4

Object Explorer

- FTS Parsers
- FTS Templates
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- Functions
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- Procedures
- Sequences
- Tables (10)
 - airline
 - airport
 - baggage
 - baggage_check
 - boarding_pass
 - booking
 - booking_flight
 - flights
 - passengers
 - security_check
 - Columns (3)
 - security_check_id
 - passenger_id
 - check_result
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 - Triggers
 - Trigger Functions
 - Times

Query Editor: postgres/postgres@PostgreSQL 17

```

316
317 SELECT name
318 FROM Airline
319 WHERE country = 'Kazakhstan';
320
321 UPDATE Booking
322 SET ticket_price = ticket_price * 0.9
323 WHERE created_at < '2023-11-01';
324
325 SELECT booking_id, ticket_price, created_at FROM Booking;
326
327
328
329

```

Data Output: Showing rows: 1 to 8 of 1

booking_id [PK] integer	ticket_price numeric (10,2)	created_at timestamp without time zone
1	5	2023-11-20 00:00:00
2	6	2024-01-10 00:00:00
3	8	2025-10-01 01:27:24.305215
4	9	2025-10-01 01:27:24.305215
5	10	2025-10-01 01:28:56.725385
6	11	2025-10-01 01:28:56.725385
7	4	2023-10-15 00:00:00
8	7	2023-09-15 00:00:00

Total rows: 8 Query complete 00:00:00.105

Successfully run. Total query runtime: 105 msec. 8 rows affected.

TASK 9.

pgAdmin 4

File Object Tools Edit View Window Help

Dashboard X Properties X Dependencies X Dependencies X lab2_script.sql X

postgres/postgres@PostgreSQL 17

Query History

```

318 FROM Airline
319 WHERE country = 'Kazakhstan';
320
321 UPDATE Booking
322 SET ticket_price = ticket_price * 0.9
323 WHERE created_at < '2023-11-01';
324
325 SELECT booking_id, ticket_price, created_at FROM Booking;
326
327 SELECT *
328 FROM Baggage
329 WHERE weight_kg > 25
330 ORDER BY weight_kg DESC
331 LIMIT 3;
332

```

Data Output Messages Notifications

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

	baggage_id [PK] integer	booking_id integer	weight_kg numeric (5,2)	created_at timestamp without time zone	updated_at timestamp without time zone
1	13	4	30.00	2025-10-01 01:29:49.801752	2025-10-01 01:29:49.801752
2	14	5	28.00	2025-10-01 01:29:49.801752	2025-10-01 01:29:49.801752

Total rows: 2 Query complete 00:00:00.135

Successfully run. Total query runtime: 133 msec. 2 rows affected.

CRLF Ln 327, Col 1

1:39 01.10.2025

TASK 10.

pgAdmin 4

File Object Tools Edit View Window Help

Dashboard X Properties X Dependencies X Dependencies X lab2_script.sql X

postgres/postgres@PostgreSQL 17

Query History

```

329 WHERE weight_kg > 25
330 ORDER BY weight_kg DESC
331 LIMIT 3;
332
333 SELECT first_name, last_name, date_of_birth
334 FROM Passengers
335 ORDER BY date_of_birth DESC
336 LIMIT 1;
337

```

Data Output Messages Notifications

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

	first_name character varying (50)	last_name character varying (50)	date_of_birth date
1	Maria	Ivanova	1999-07-20

Total rows: 1 Query complete 00:00:00.077

Successfully run. Total query runtime: 77 msec. 1 rows affected.

CRLF Ln 333, Col 1

1:40 01.10.2025

TASK 11.

pgAdmin 4

File Object Tools Edit View Window Help

Dashboard × Properties × Dependencies × Dependencies × lab2_script.sql ×

postgres/postgres@PostgreSQL 17

Query History

```

329 WHERE weight_kg > 25
330 ORDER BY weight_kg DESC
331 LIMIT 3;
332
333 SELECT first_name, last_name, date_of_birth
334 FROM Passengers
335 ORDER BY date_of_birth DESC
336 LIMIT 1;
337
338 SELECT booking_platform, MIN(ticket_price) AS cheapest_price
339 FROM Booking
340 GROUP BY booking_platform;
341
342

```

Data Output Messages Notifications

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

booking_platform	cheapest_price
Web	10800.00
App	8000.00

Total rows: 2 Query complete 00:00:00.089

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

CRLF Ln 338, Col 1

1:41 01.10.2025

TASK 12.

pgAdmin 4

File Object Tools Edit View Window Help

Dashboard × Properties × Dependencies × Dependencies × lab2_script.sql ×

postgres/postgres@PostgreSQL 17

Query History

```

332
333
334 SELECT first_name, last_name, date_of_birth
335 FROM Passengers
336 ORDER BY date_of_birth DESC
337 LIMIT 1;
338
339 SELECT booking_platform, MIN(ticket_price) AS cheapest_price
340 FROM Booking
341 GROUP BY booking_platform;
342
343 SELECT *
344 FROM Airline
345 WHERE airline_code ~ '[0-9]';

```

Data Output Messages Notifications

Showing rows: 1 to 4 Page No: 1 of 1

airline_id	name	country	airline_code	created_at	updated_at
5	AirFrance	France	FR22	2023-12-10 00:00:00	2025-10-01 01:26:16.831098
6	PortugalSky	Portugal	PT11	2024-02-20 00:00:00	2025-10-01 01:26:16.831098
7	PolishAir	Poland	PL9	2024-03-01 00:00:00	2025-10-01 01:26:16.831098
8	KazAir	Kazakhstan	KZ1	2024-01-15 00:00:00	2025-10-01 01:26:16.831098

Total rows: 4 Query complete 00:00:00.084

Successfully run. Total query runtime: 84 msec. 4 rows affected.

CRLF Ln 342, Col 1

1:41 01.10.2025

TASK 13.

pgAdmin 4

File Object Tools Edit View Window Help

Dashboard X Properties X Dependencies X Dependents X lab2_script.sql X

postgres/postgres@PostgreSQL 17

Query History

```

337
338 SELECT booking_platform, MIN(ticket_price) AS cheapest_price
339 FROM Booking
340 GROUP BY booking_platform;
341
342 SELECT *
343 FROM Airline
344 WHERE airline_code ~ '[0-9]';
345
346 SELECT *
347 FROM Airline
348 ORDER BY created_at DESC
349 LIMIT 5;
350

```

Data Output Messages Notifications

Showing rows: 1 to 5 Page No: 1 of 1

airline_id [PK] integer	name character varying (100)	country character varying (100)	airline_code character varying (20)	created_at timestamp without time zone	updated_at timestamp without time zone
1	2 AirEasy	France	[null]	2025-10-01 01:20:16.70196	2025-10-01 01:20:16.70196
2	3 FlyHigh	Brazil	[null]	2025-10-01 01:20:16.70196	2025-10-01 01:20:16.70196
3	4 FlyFly	Poland	[null]	2025-10-01 01:20:16.70196	2025-10-01 01:20:16.70196
4	1 KazAir	Turkey	[null]	2025-10-01 01:20:16.70196	2025-10-01 01:20:16.70196
5	7 PolishAir	Poland	PL9	2024-03-01 00:00:00	2025-10-01 01:26:16.831098

Total rows: 5 Query complete 00:00:00.099

Successfully run. Total query runtime: 99 msec. 5 rows affected.

CRLF Ln 346, Col 1

1:41 01.10.2025

TASK 14.

pgAdmin 4

File Object Tools Edit View Window Help

Dashboard X Properties X Dependencies X Dependents X lab2_script.sql X

postgres/postgres@PostgreSQL 17

Query History

```

342 SELECT *
343 FROM Airline
344 WHERE airline_code ~ '[0-9]';
345
346 SELECT *
347 FROM Airline
348 ORDER BY created_at DESC
349 LIMIT 5;
350
351 SELECT *
352 FROM Baggage_Check
353 WHERE booking_id BETWEEN 200 AND 300
354 AND check_result <> 'Checked';
355

```

Data Output Messages Notifications

Showing rows: 1 to 5 Page No: 1 of 1

baggage_check_id [PK] integer	passenger_id integer	booking_id integer	check_result character varying (100)	created_at timestamp without time zone	updated_at timestamp without time zone
-------------------------------	----------------------	--------------------	--------------------------------------	--	--

Total rows: 0 Query complete 00:00:00.091

Successfully run. Total query runtime: 91 msec. 0 rows affected.

CRLF Ln 351, Col 1

1:42 01.10.2025

Task 15.

pgAdmin 4

File Object Tools Edit View Window Help

Object Explorer

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- Trigger Functions
- Times

Dashboard × Properties × Dependencies × Dependents × lab2_script.sql ×

postgres/postgres@PostgreSQL 17

Query History

```
347 SELECT *
348 FROM Airline
349 ORDER BY created_at DESC
350 LIMIT 5;
351
352 SELECT *
353 FROM Baggage_Check
354 WHERE booking_id BETWEEN 200 AND 300
355 AND check_result <> 'Checked';
356
357 SELECT *
358 FROM Baggage_Check
359 WHERE DATE_TRUNC('month', created_at) = DATE_TRUNC('month', updated_at)
360 AND updated_at < created_at;
```

Data Output Messages Notifications

baggage_check_id	passenger_id	booking_id	check_result	created_at	updated_at
[PK] integer	integer	integer	character varying (100)	timestamp without time zone	timestamp without time zone

Successfully run. Total query runtime: 85 msec. 0 rows affected.

Total rows: 0 Query complete 00:00:00.085

CRLF Ln 356, Col 1

1:42 01.10.2025