

TASK 1

pgAdmin 4

File Object Tools Edit View Window Help

Object Explorer

- Sequences
- Tables (10)
 - airline
 - Columns (6)
 - airline_id
 - airline_code
 - airline_name
 - airline_country
 - created_at
 - updated_at
 - Constraints
 - Indexes
 - RLS Policies
 - Rules
 - Triggers
 - airport
 - baggage
 - baggage_check
 - boarding_pass
 - booking
 - booking_flight
 - flights
 - passengers
 - security_check
 - Trigger Functions
 - Types
 - Views
 - Subscriptions
 - postgres
 - Login/Group Roles

public.passengers/Airport/postgres@PostgreSQL 17*

public.passengers/Airport/postgres@PostgreSQL 17

No limit

Query Query History

```
1 ALTER TABLE passengers
2 ADD CONSTRAINT check_age
3 CHECK (EXTRACT(YEAR FROM AGE(CURRENT_DATE, date_of_birth)) >= 10)
```

Scratch Pad

Data Output Messages Notifications

Showing rows: 1 to 200 Page No: 1 of 1

	passenger_id [PK] integer	first_name character varying (50)	last_name character varying (50)	date_of_birth date	gender character varying (50)	country_of_citizenship character varying (50)	country_of_residence character varying (50)	passport_number character varying (20)	created_at timestamp
1	1	Sara	Smith	1973-05-15	Male	Kazakhstan	Poland	P00001273	2022-11-
2	2	Olga	Smith	1978-02-11	Female	France	Poland	P00002494	2025-02-
3	3	Olga	Smith	1994-07-02	Male	USA	Kazakhstan	P00003595	2024-09-
4	4	Alex	Taylor	1979-01-24	Female	Poland	China	P00004995	2023-08-
5	5	Olga	Smith	1996-11-25	Female	Spain	Kazakhstan	P00005999	2022-08-
6	6	David	Brown	1984-03-04	Male	China	Portugal	P00006770	2025-10-
7	7	Michael	Smith	1975-05-25	Female	Brazil	Poland	P00007645	2021-10-
8	8	Sara	Miller	1980-02-14	Male	USA	Brazil	P00008946	2021-11-

TASK 2

pgAdmin 4

File Object Tools Edit View Window Help

Object Explorer

- > Aggregates
- > Collations
- > Domains
- > FTS Configurations
- > FTS Dictionaries
- > FTS Parsers
- > FTS Templates
- > Foreign Tables
- > Functions
- > Materialized Views
- > Operators
- > Procedures
- > 1.3 Sequences
- > Tables (10)
 - > airline
 - > airport
 - > baggage
 - > baggage_check
 - > boarding_pass
 - > **booking**
 - > booking_flight
 - > flights
 - > passengers
 - > security_check
- > Trigger Functions
- > Types
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- > Subscriptions
- > postgres
- > Login/Group Roles
- > Tablespaces

public.booking/Airport/postgres@PostgreSQL 17* X

public.booking/Airport/postgres@PostgreSQL 17

No limit

Query Query History

```
1 ALTER TABLE booking
2 ADD CONSTRAINT check_price CHECK (ticket_price BETWEEN 0 AND 50000)
```

Scratch Pad X

Data Output Messages Notifications

Showing rows: 1 to 200 Page No: 1 of 1

	booking_id [PK] integer	flight_id integer	passenger_id integer	booking_platform character varying (50)	created_at timestamp without time zone	updated_at timestamp without time zone	status character varying (50)	ticket_price numeric (7,2)
1	1	101	71	Kiosk	2021-08-20 05:39:39	2021-09-10 05:39:39	Pending	2891.97
2	2	8	15	Kiosk	2021-06-26 20:45:18	2021-08-10 20:45:18	Confirmed	1166.22
3	3	172	125	Kiosk	2023-05-30 17:48:05	2023-06-27 17:48:05	Confirmed	2698.89
4	4	177	193	Kiosk	2024-02-09 03:56:52	2024-03-09 03:56:52	Cancelled	991.58
5	5	65	50	Website	2022-11-03 05:34:06	2023-01-17 05:34:06	Pending	2290.07
6	6	172	121	Agency	2021-10-13 07:40:56	2021-10-15 07:40:56	Pending	1146.73
7	7	178	127	Agency	2021-12-07 22:54:41	2022-02-02 22:54:41	Cancelled	1796.26
8	8	91	167	Kiosk	2023-02-07 16:14:08	2023-04-27 16:14:08	Confirmed	2831.57
9	9	153	7	Website	2022-08-08 16:06:53	2022-08-10 16:06:53	Cancelled	1993.37

Total rows: 200 Query complete 00:00:00.185 CRLF Ln 2, Col 67

TASK 3

pgAdmin 4

File Object Tools Edit View Window Help

Object Explorer

- Aggregates
- Collations
- Domains
- FTS Configurations
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- Procedures
- Sequences
- Tables (10)
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 - airport
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public.baggage/Airport/postgres@PostgreSQL 17*

public.baggage/Airport/postgres@PostgreSQL 17

No limit

Query Query History

```
1 ALTER TABLE baggage ADD CONSTRAINT check_weight CHECK(weight_in_kg BETWEEN 1 AND 23);
```

Scratch Pad

Data Output Messages Notifications

Showing rows: 1 to 200 Page No: 1 of 1

	baggage_id [PK] integer	weight_in_kg numeric (4,2)	created_at timestamp without time zone	updated_at timestamp without time zone	booking_id integer
1	1	22.05	2022-09-17 15:22:24	2022-09-20 15:22:24	59
2	2	17.13	2021-04-12 17:00:09	2021-04-18 17:00:09	81
3	3	16.35	2025-02-07 07:48:29	2025-02-12 07:48:29	48
4	4	21.38	2021-01-16 07:32:52	2021-01-24 07:32:52	183
5	5	17.40	2023-10-20 17:11:29	2023-10-30 17:11:29	8
6	6	20.00	2025-08-19 10:18:40	2025-08-22 10:18:40	42
7	7	20.00	2021-04-07 11:07:53	2021-04-16 11:07:53	32
8	8	13.10	2023-02-14 04:12:55	2023-02-22 04:12:55	47
9	9	10.34	2023-08-30 04:21:22	2023-09-05 04:21:22	147

TASK 4

pgAdmin 4

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public.airport/Airport/postgres@PostgreSQL 17*

public.airport/Airport/postgres@PostgreSQL 17

Query Query History

```
1 ALTER TABLE airport
2 ADD CONSTRAINT check_length_of_name CHECK(LENGTH(airport_name) >= 10)
```

Scratch Pad

Data Output Messages Notifications

Showing rows: 1 to 200 Page No: 1 of 1

	airport_id [PK] integer	airport_name character varying (50)	country character varying (50)	state character varying (50)	city character varying (50)	created_at timestamp without time zone	updated_at timestamp without time zone
1	1	AeroSteppe Terminal 1	Germany	StateC	Madrid	2024-10-20 09:00:00	2024-10-23 09:00:00
2	2	Altai Airfield 2	Kazakhstan	StateD	Astana	2022-06-21 09:00:00	2022-07-17 09:00:00
3	3	GoldenSteppe Air 2	Spain	StateB	New York	2023-10-10 09:00:00	2024-01-02 09:00:00
4	4	KazAir Regional Airpor...	China	StateE	Beijing	2024-05-26 09:00:00	2024-06-19 09:00:00
5	5	Central Air Hub 1	Kazakhstan	StateD	Lisbon	2022-03-03 09:00:00	2022-03-09 09:00:00
6	6	BlueSteppe Airport 1	USA	StateE	Istanbul	2021-11-27 09:00:00	2022-01-28 09:00:00
7	7	DesertWind Airport 3	Germany	StateE	Berlin	2024-02-11 09:00:00	2024-03-02 09:00:00
8	8	BlueSteppe Airport 1	China	StateB	Madrid	2022-10-13 09:00:00	2022-12-30 09:00:00
9	9	DesertWind Airport 2	Brazil	StateA	Madrid	2021-01-21 09:00:00	2021-04-20 09:00:00

Total rows: 200 Query complete 00:00:00.116 CRLF Ln 1, Col 20

TASK 5

The screenshot shows the pgAdmin 4 interface with a SQL query editor. The left sidebar displays the Object Explorer with a tree view of the database schema. The main window shows a query with 30 lines of SQL code. The status bar at the bottom indicates 'Total rows: Query complete 00:00:00.058' and 'Ln 29, Col 73'.

Object Explorer Tree View:

- state
- city
- created_at
- updated_at
- > Constraints
- > Indexes
- > RLS Policies
- > Rules
- > Triggers
- > baggage
- > baggage_check
- > boarding_pass
- > booking
- > booking_flight
- > flights
- > passengers
- > security_check
 - Columns (5)
 - security_check_i
 - check_result
 - created_at
 - updated_at
 - passenger_id
 - > Constraints
 - > Indexes
 - > RLS Policies
 - > Rules
 - > Triggers
 - > Trigger Functions
 - > Types

SQL Query:

```
1 ALTER TABLE airline
2 ADD CONSTRAINT unique_airline_code UNIQUE (airline_code);
3
4 ALTER TABLE airport
5 ADD CONSTRAINT unique_airport_name UNIQUE (airport_name);
6
7 ALTER TABLE baggage
8 ADD CONSTRAINT unique_baggage UNIQUE (booking_id, baggage_id);
9
10 ALTER TABLE baggage_check
11 ADD CONSTRAINT unique_baggage_passenger UNIQUE (passenger_id, booking_id);
12
13 ALTER TABLE boarding_pass
14 ADD CONSTRAINT unique_boarding_seat UNIQUE (booking_id, seat);
15
16 ALTER TABLE booking
17 ADD CONSTRAINT unique_booking_id UNIQUE (booking_id);
18
19 ALTER TABLE booking_flight
20 ADD CONSTRAINT unique_booking_flight UNIQUE (booking_id, flight_id);
21
22 ALTER TABLE flights
23 ADD CONSTRAINT unique_flight_schedule UNIQUE (sch_departure_time, departing_airport_id, arriving_airport_id);
24
25 ALTER TABLE passengers
26 ADD CONSTRAINT unique_passport UNIQUE (passport_number);
27
28 ALTER TABLE security_check
29 ADD CONSTRAINT unique_security_passenger UNIQUE (passenger_id, created_at);
30
```

Status Bar: Total rows: Query complete 00:00:00.058 CRLF Ln 29, Col 73

TASK 6

The screenshot displays the pgAdmin 4 web interface. On the left, the 'Object Explorer' pane shows a tree structure of database objects. The 'passengers' table is selected under the 'airport' database. The main pane shows a SQL query being executed in the 'Query' tab. The query is an ALTER TABLE statement that adds a check constraint named 'check_ages' to the 'passengers' table. The constraint checks that the age of passengers is greater than or equal to 18 for males and 19 for females. The 'Messages' tab at the bottom shows the successful execution of the query, indicating it was completed in 56 milliseconds. A status bar at the bottom right shows the cursor position at line 6, column 12.

pgAdmin 4

File Object Tools Edit View Window Help

Object Explorer

- Tables (10)
 - airline
 - airport
 - Columns (7)
 - airport_id
 - airport_name
 - country
 - state
 - city
 - created_at
 - updated_at
 - Constraints
 - Indexes
 - RLS Policies
 - Rules
 - Triggers
 - baggage
 - baggage_check
 - boarding_pass
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public.passengers/Airport/postgres@PostgreSQL 17* x

public.passengers/Airport/postgres@PostgreSQL 17

No limit

Query Query History

```
1 ALTER TABLE passengers
2 ADD CONSTRAINT check_ages
3 CHECK (
4     (gender = 'Male' AND EXTRACT(YEAR FROM AGE(CURRENT_DATE, date_of_birth)) >= 18)
5     OR (gender = 'Female' AND EXTRACT(YEAR FROM AGE(CURRENT_DATE, date_of_birth)) >= 19)
6 ) NOT VALID;
7
```

Scratch Pad x

Data Output Messages Notifications

ALTER TABLE

Query returned successfully in 56 msec.

Total rows: Query complete 00:00:00.056

✓ Query returned successfully in 56 msec. ✕

CRLF Ln 6, Col 12

TASK 7

The screenshot displays the pgAdmin 4 web interface. On the left, the 'Object Explorer' pane shows a tree structure of database objects. The 'passengers' table is selected under the 'public.passengers/Airport/postgres@PostgreSQL 17*' schema. The main pane shows the SQL query editor with the following code:

```
1 ALTER TABLE passengers
2 ADD CONSTRAINT check_country_age
3 CHECK (
4     (country_of_citizenship = 'Kazakhstan' AND EXTRACT(YEAR FROM AGE(CURRENT_DATE, date_of_birth)) >= 18)
5     OR (country_of_citizenship = 'France' AND EXTRACT(YEAR FROM AGE(CURRENT_DATE, date_of_birth)) >= 17)
6     OR (country_of_citizenship NOT IN ('Kazakhstan', 'France')
7         AND EXTRACT(YEAR FROM AGE(CURRENT_DATE, date_of_birth)) >= 19)
8 ) NOT VALID;
9
```

Below the query editor, the 'Messages' tab is active, showing the execution result:

```
ALTER TABLE

Query returned successfully in 52 msec.
```

TASK 8

The screenshot displays the pgAdmin 4 web interface. On the left, the Object Explorer shows a tree structure of database objects. The 'airline' database is expanded, showing 'Tables (10)'. The 'passengers' table is selected. The main panel shows the SQL query editor with the following code:

```
1 ALTER TABLE booking
2 ADD COLUMN ticket_discount DECIMAL(5,2);
3
4 ALTER TABLE booking
5 ADD CONSTRAINT check_ticket_discount
6 CHECK (
7     (created_at >= DATE '2024-01-01' AND ticket_discount = ticket_price * 0.05)
8     OR (created_at < DATE '2024-01-01' AND ticket_discount = ticket_price * 0.10)
9 );
```

The bottom panel shows the 'Messages' tab with the following output:

```
ALTER TABLE
Query returned successfully in 48 msec.
```