

--lab4

--1)

```
SELECT UPPER(airline_name) AS airline_name FROM Airline;
```

--2)

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

--3)

```
SELECT flight_id FROM Flights WHERE airline_id IN (1, 2);
```

--4)

```
SELECT airport_name FROM Airport  
WHERE airport_name ILIKE '%Reginal%' AND airport_name ILIKE '%Air%';
```

--5)

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

--6)

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

--7)

```
SELECT first_name, last_name,  
CASE  
    WHEN DATE_PART('year', AGE(date_of_birth)) BETWEEN 18 AND 35 THEN 'Young'
```

```
        WHEN DATE_PART('year', AGE(date_of_birth)) BETWEEN 36 AND 55 THEN 'Adult'
    END AS age_group FROM Passengers;
```

```
select * from booking;
```

```
--8)
```

```
SELECT booking_id, ticket_price,
```

```
CASE
```

```
    WHEN ticket_price < 20000 THEN 'cheap'
```

```
    WHEN ticket_price BETWEEN 21000 AND 35000 THEN 'medium'
```

```
    ELSE 'expensive'
```

```
END AS price_category FROM Booking;
```

```
--9)
```

```
SELECT airline_country, COUNT(*) AS airline_count FROM Airline
```

```
GROUP BY airline_country;
```

```
--10)
```

```
SELECT flight_id, sch_arrival_time, act_arrival_time FROM Flights
```

```
WHERE act_arrival_time > sch_arrival_time;
```

```
-- lab5
```

```
--1)
```

```
ALTER TABLE Passengers
```

```
ADD CONSTRAINT chk_passenger_age_min_10
```

```
CHECK (DATE_PART('year', AGE(date_of_birth)) >= 10);
```

```
--2)
```

```
ALTER TABLE Booking
```

```
ADD CONSTRAINT chk_ticket_price_range
```

```
CHECK (ticket_price BETWEEN 0 AND 50000);
```

```
--3)
```

```
ALTER TABLE Baggage
```

```
ADD CONSTRAINT chk_baggage_weight
```

```
CHECK (weight_in_kg BETWEEN 1 AND 23);
```

```
--4)
```

```
ALTER TABLE Airport
```

```
ADD CONSTRAINT chk_airport_name_length
```

```
CHECK (CHAR_LENGTH(airport_name) >= 10);
```

```
--5)
```

```
ALTER TABLE Airline
```

```
ADD CONSTRAINT uq_airline_code UNIQUE (airline_code);
```

```
ALTER TABLE Passengers
```

```
ADD CONSTRAINT uq_passport_number UNIQUE (passport_number);
```

```
ALTER TABLE Airport
```

```
ADD CONSTRAINT uq_airport_name UNIQUE (airport_name);
```

```
ALTER TABLE Booking
```

```
ADD CONSTRAINT uq_booking UNIQUE (flight_id, passenger_id);
```

```
--6)
```

```
ALTER TABLE Passengers
```

```
ADD CONSTRAINT chk_gender_age
```

```
CHECK (
```

```
    (gender = 'Male' AND DATE_PART('year', AGE(date_of_birth)) >= 18)
```

```
    OR (gender = 'Female' AND DATE_PART('year', AGE(date_of_birth)) >= 19)
```

```
);
```

```
--7)
```

```
ALTER TABLE Passengers
```

```
ADD CONSTRAINT chk_country_age
```

```
CHECK (
```

```
    (country_of_citizenship = 'Kazakhstan' AND DATE_PART('year', AGE(date_of_birth)) >= 18)
```

```
    OR (country_of_citizenship = 'France' AND DATE_PART('year', AGE(date_of_birth)) >= 17)
```

```
    OR (country_of_citizenship NOT IN ('Kazakhstan', 'France') AND DATE_PART('year', AGE(date_of_birth)) >= 19)
```

```
);
```

```
--8)
```

```
ALTER TABLE Booking
```

```
ADD COLUMN ticket_discount DECIMAL(5,2);
```

ALTER TABLE Booking

ADD CONSTRAINT chk_ticket_discount

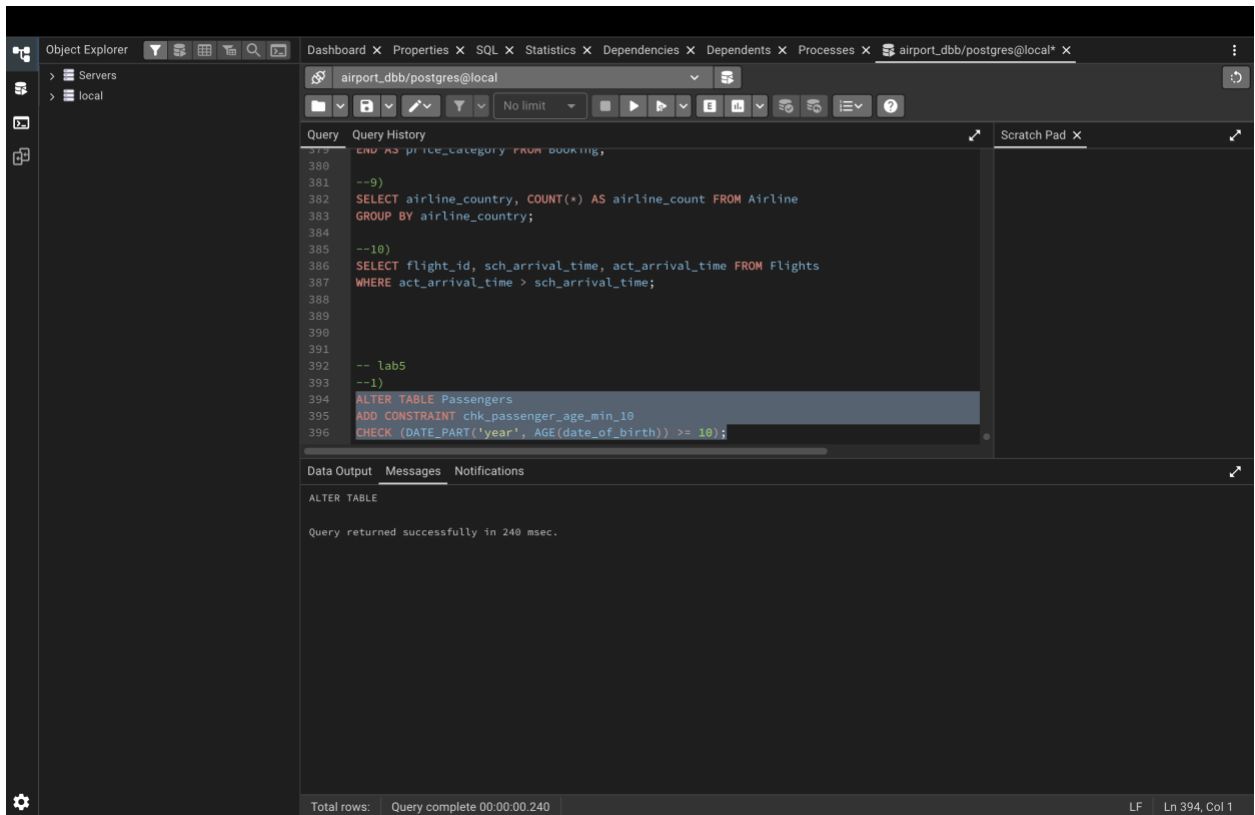
CHECK (

(created_at >= '2024-01-01' AND ticket_discount = ticket_price * 0.05)

OR (created_at < '2024-01-01' AND ticket_discount = ticket_price * 0.10)

);

1)



The screenshot shows a PostgreSQL IDE interface with a dark theme. The top toolbar includes icons for file operations, query execution, and settings. The main editor displays a SQL script with line numbers 379 to 396. The script includes several SELECT queries and an ALTER TABLE statement for the 'Passengers' table. The 'Passengers' table has a new constraint 'chk_passenger_age_min_10' defined as a CHECK constraint. The bottom panel shows the 'Messages' tab with a confirmation message: 'Query returned successfully in 240 msec.' The status bar at the bottom indicates 'Total rows: Query complete 00:00:00.240' and 'Ln 394, Col 1'.

```
379 END AS price_category FROM booking;
380
381 --9)
382 SELECT airline_country, COUNT(*) AS airline_count FROM Airline
383 GROUP BY airline_country;
384
385 --10)
386 SELECT flight_id, sch_arrival_time, act_arrival_time FROM Flights
387 WHERE act_arrival_time > sch_arrival_time;
388
389
390
391
392 -- lab5
393 --1)
394 ALTER TABLE Passengers
395 ADD CONSTRAINT chk_passenger_age_min_10
396 CHECK (DATE_PART('year', AGE(date_of_birth)) >= 10);
```

ALTER TABLE

Query returned successfully in 240 msec.

Total rows: Query complete 00:00:00.240 LF Ln 394, Col 1

2)

Object Explorer | board | Properties | SQL | Statistics | Dependencies | Dependents | Processes | airport_dbb/postgres@local* | public.passengers...

Foreign Data Wrappers
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Schemas (1)
public
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Domains
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Tables (10)
airline
airport
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
passengers
security_check
Trigger Functions
Types
Views
Subscriptions
postgres
Login/Group Roles
Tablespaces
local

Query History

```
--10)
385 SELECT flight_id, sch_arrival_time, act_arrival_time FROM Flights
386 WHERE act_arrival_time > sch_arrival_time;
387
388
389
390
391
392 -- lab5
393 --1)
394 ALTER TABLE Passengers
395 ADD CONSTRAINT chk_passenger_age_min_10
396 CHECK (DATE_PART('year', AGE(date_of_birth)) >= 10);
397
398 --2)
399 ALTER TABLE Booking
400 ADD CONSTRAINT chk_ticket_price_range
401 CHECK (ticket_price BETWEEN 0 AND 50000);
```

Data Output | Messages | Notifications

ALTER TABLE

Query returned successfully in 97 msec.

Total rows: Query complete 00:00:00.097 LF Ln 399, Col 1

Query returned successfully in 97 msec.

3)

Object Explorer | board | Properties | SQL | Statistics | Dependencies | Dependents | Processes | airport_dbb/postgres@local* | public.passengers...

Foreign Data Wrappers
Languages
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Schemas (1)
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Tables (10)
airline
airport
baggage
baggage_check
boarding_pass
booking
booking_flight
flights
passengers
security_check
Trigger Functions
Types
Views
Subscriptions
postgres
Login/Group Roles
Tablespaces
local

Query History

```
--1)
391
392 -- lab5
393 --1)
394 ALTER TABLE Passengers
395 ADD CONSTRAINT chk_passenger_age_min_10
396 CHECK (DATE_PART('year', AGE(date_of_birth)) >= 10);
397
398 --2)
399 ALTER TABLE Booking
400 ADD CONSTRAINT chk_ticket_price_range
401 CHECK (ticket_price BETWEEN 0 AND 50000);
402
403 --3)
404 ALTER TABLE Baggage
405 ADD CONSTRAINT chk_baggage_weight
406 CHECK (weight_in_kg BETWEEN 1 AND 23);
407
```

Data Output | Messages | Notifications

ERROR: check constraint "chk_baggage_weight" of relation "baggage" is violated by some row

SQL state: 23514

Total rows: Query complete 00:00:00.068 LF Ln 404, Col 1

4)

Object Explorer | board | Properties | SQL | Statistics | Dependencies | Dependents | Processes | airport_dbb/postgres@local* | public.passengers...

Query History

```

394 ALTER TABLE Passengers
395 ADD CONSTRAINT chk_passenger_age_min_10
396 CHECK (DATE_PART('year', AGE(date_of_birth)) >= 10);
397
398 --2)
399 ALTER TABLE Booking
400 ADD CONSTRAINT chk_ticket_price_range
401 CHECK (ticket_price BETWEEN 0 AND 50000);
402
403 --3)
404 ALTER TABLE Baggage
405 ADD CONSTRAINT chk_baggage_weight
406 CHECK (weight_in_kg BETWEEN 1 AND 23);
407
408 --4)
409 ALTER TABLE Airport
410 ADD CONSTRAINT chk_airport_name_length
411 CHECK (CHAR_LENGTH(airport_name) >= 10);

```

Data Output | Messages | Notifications

ERROR: check constraint "chk_airport_name_length" of relation "airport" is violated by some row

SQL state: 23514

Total rows: | Query complete 00:00:00.068 | LF | Ln 408, Col 1

5)

Object Explorer | board | Properties | SQL | Statistics | Dependencies | Dependents | Processes | airport_dbb/postgres@local* | public.passengers...

Query History

```

406 CHECK (weight_in_kg BETWEEN 1 AND 23);
407
408 --4)
409 ALTER TABLE Airport
410 ADD CONSTRAINT chk_airport_name_length
411 CHECK (CHAR_LENGTH(airport_name) >= 10);
412
413 --5)
414 ALTER TABLE Airline
415 ADD CONSTRAINT uq_airline_code UNIQUE (airline_code);
416
417 ALTER TABLE Passengers
418 ADD CONSTRAINT uq_passport_number UNIQUE (passport_number);
419
420 ALTER TABLE Airport
421 ADD CONSTRAINT uq_airport_name UNIQUE (airport_name);
422
423 ALTER TABLE Booking
424 ADD CONSTRAINT uq_booking UNIQUE (flight_id, passenger_id);

```

Data Output | Messages | Notifications

ALTER TABLE

Query returned successfully in 52 msec.

✓ Query returned successfully in 52 msec. ✕

Total rows: | Query complete 00:00:00.052 | LF | Ln 413, Col 1

6)

Object Explorer | board | Properties | SQL | Statistics | Dependencies | Dependents | Processes | airport_dbb/postgres@local | public.passengers...

Query History

```
415 ADD CONSTRAINT uq_flight_code UNIQUE (flight_code);
416
417 ALTER TABLE Passengers
418 ADD CONSTRAINT uq_passport_number UNIQUE (passport_number);
419
420 ALTER TABLE Airport
421 ADD CONSTRAINT uq_airport_name UNIQUE (airport_name);
422
423 ALTER TABLE Booking
424 ADD CONSTRAINT uq_booking UNIQUE (flight_id, passenger_id);
425
426 --6)
427 ALTER TABLE Passengers
428 ADD CONSTRAINT chk_gender_age
429 CHECK (
430 (gender = 'Male' AND DATE_PART('year', AGE(date_of_birth)) >= 18)
431 OR (gender = 'Female' AND DATE_PART('year', AGE(date_of_birth)) >= 19)
432 );
```

Data Output Messages Notifications

ALTER TABLE

Query returned successfully in 38 msec.

Total rows: Query complete 00:00:00.038 LF Ln 426, Col 1

Query returned successfully in 38 msec.

7)

Object Explorer | board | Properties | SQL | Statistics | Dependencies | Dependents | Processes | airport_dbb/postgres@local | public.passengers...

Query History

```
425 --6)
426 ALTER TABLE Passengers
427 ADD CONSTRAINT chk_gender_age
428 CHECK (
429 (gender = 'Male' AND DATE_PART('year', AGE(date_of_birth)) >= 18)
430 OR (gender = 'Female' AND DATE_PART('year', AGE(date_of_birth)) >= 19)
431 );
432
433 --7)
434 ALTER TABLE Passengers
435 ADD CONSTRAINT chk_country_age
436 CHECK (
437 (country_of_citizenship = 'Kazakhstan' AND DATE_PART('year', AGE(date_of_birth)) >=
438 OR (country_of_citizenship = 'France' AND DATE_PART('year', AGE(date_of_birth)) >= 17)
439 OR (country_of_citizenship NOT IN ('Kazakhstan', 'France') AND DATE_PART('year', AGE(d
440
441 );
```

Data Output Messages Notifications

ALTER TABLE

Query returned successfully in 42 msec.

Total rows: Query complete 00:00:00.042 LF Ln 435, Col 1

Query returned successfully in 42 msec.

8)

The screenshot shows the DBeaver SQL editor interface. The left sidebar displays the 'Object Explorer' with a tree view of the database schema. The 'public' schema is expanded, showing various objects like aggregates, collations, domains, FTS configurations, FTS dictionaries, FTS parsers, FTS templates, foreign tables, functions, materialized views, operators, procedures, sequences, tables (10), and views. The 'passengers' table is selected. The main editor area shows a SQL query with line numbers 429 to 445. The query is as follows:

```
429 CHECK (  
430 (gender = 'Male' AND DATE_PART('year', AGE(date_of_birth)) >= 18)  
431 OR (gender = 'Female' AND DATE_PART('year', AGE(date_of_birth)) >= 19)  
432 );  
433  
434 --7)  
435 ALTER TABLE Passengers  
436 ADD CONSTRAINT chk_country_age  
437 CHECK (  
438 (country_of_citizenship = 'Kazakhstan' AND DATE_PART('year', AGE(date_of_birth)) >= 17)  
439 OR (country_of_citizenship = 'France' AND DATE_PART('year', AGE(date_of_birth)) >= 17)  
440 OR (country_of_citizenship NOT IN ('Kazakhstan', 'France') AND DATE_PART('year', AGE(d  
441 );  
442  
443 --8)  
444 ALTER TABLE Booking  
445 ADD COLUMN ticket_discount DECIMAL(5,2);
```

The 'Data Output' tab at the bottom shows the message: 'Query returned successfully in 39 msec.' The status bar at the bottom indicates 'Total rows: Query complete 00:00:00.039' and 'LF Ln 444, Col 1'.

The screenshot shows the DBeaver SQL editor interface. The left sidebar displays the 'Object Explorer' with a tree view of the database schema. The 'public' schema is expanded, showing various objects like aggregates, collations, domains, FTS configurations, FTS dictionaries, FTS parsers, FTS templates, foreign tables, functions, materialized views, operators, procedures, sequences, tables (10), and views. The 'booking' table is selected. The main editor area shows a SQL query with line numbers 436 to 452. The query is as follows:

```
436 ALTER TABLE Passengers  
437 ADD CONSTRAINT chk_country_age  
438 CHECK (  
439 (country_of_citizenship = 'Kazakhstan' AND DATE_PART('year', AGE(date_of_birth)) >= 17)  
440 OR (country_of_citizenship = 'France' AND DATE_PART('year', AGE(date_of_birth)) >= 17)  
441 OR (country_of_citizenship NOT IN ('Kazakhstan', 'France') AND DATE_PART('year', AGE(d  
442 );  
443  
444 --8)  
445 ALTER TABLE Booking  
446 ADD COLUMN ticket_discount DECIMAL(5,2);  
447  
448 ALTER TABLE Booking  
449 ADD CONSTRAINT chk_ticket_discount  
450 CHECK (  
451 (created_at >= '2024-01-01' AND ticket_discount = ticket_price * 0.05)  
452 OR (created_at < '2024-01-01' AND ticket_discount = ticket_price * 0.10)  
453 );
```

The 'Data Output' tab at the bottom shows the message: 'Query returned successfully in 42 msec.' The status bar at the bottom indicates 'Total rows: Query complete 00:00:00.042' and 'LF Ln 452, Col 3'.