

Laboratory work 5

We continue to work with the database from the previous laboratory works.

Take a full-page screenshot that covers the code and results of each task.

1. Add a CHECK constraint to passenger table to provide that passengers must be at least 10 years old.

```
ALTER TABLE public.passengers
ADD CONSTRAINT check_min_age CHECK (date_of_birth <= CURRENT_DATE - INTERVAL '1 years');

SELECT
    first_name,
    last_name,
    date_of_birth,
    EXTRACT(YEAR FROM AGE(CURRENT_DATE, date_of_birth)) AS age,
    CASE
        WHEN EXTRACT(YEAR FROM AGE(CURRENT_DATE, date_of_birth)) < 10 THEN 'Недостаточный возраст'
        ELSE 'Соответствует'
    END AS age_status
FROM
    public.passengers;
```

Output Result 8

	first_name	last_name	date_of_birth	age	age_status
1	Hilde	Irnis	2000-01-03	24	Соответствует
2	Arvy	Sparsholt	1974-06-09	50	Соответствует
3	Reinald	Pockocke	1982-06-07	42	Соответствует
4	Con	Borrel	1986-10-17	37	Соответствует

2. Add a CHECK constraint to accept values in booking price not more than 50000tg and less than 0tg.

```
ALTER TABLE public.booking
ADD CONSTRAINT check_booking_price CHECK (price <= 50000 AND price >= 0);

INSERT INTO public.booking (booking_id, passenger_id, booking_platform, created_at, update_at, status, price)
VALUES ( booking_id 1, passenger_id 1, booking_platform 'OnLine', created_at CURRENT_DATE, update_at CURRENT_DATE, status 'Confirmed', price 60000.00);
```

Database Sessions console

Database

- airports@localhost
- console_1 38 ms
- console_1 38 ms
- console

Output Result 11

	constraint_name	constraint_type	definition
1	check_booking_price	c	CHECK (((price <= 50000 AND price >= 0)))

ОШИБКА: новая строка в отношении "booking" нарушает ограничение-проверку "check_booking_price"
Детали: Ошибочная строка содержит (1, 1, Online, 2024-10-16, 2024-10-16, Confirmed, 60000.00).

3. Add a CHECK constraint to accept the luggage weight between 1 and 23 kg.

```
-----3
ALTER TABLE public.baggage
ADD CONSTRAINT check_luggage_weight CHECK (weight_in_kg BETWEEN 1 AND 23);
```

4. Add a CHECK constraint to ensure that all values in airport_name must have at least 10 characters.

```
-----4
ALTER TABLE public.airport
ADD CONSTRAINT check_airport_name_length CHECK (LENGTH(airport_name) >= 10);
```

5. Add UNIQUE constraint to some columns in each table in database.

```
-----5
ALTER TABLE public.passengers
ADD CONSTRAINT unique_passport_number UNIQUE (passport_number);

ALTER TABLE public.booking
ADD CONSTRAINT unique_booking_platform UNIQUE (booking_platform);

ALTER TABLE public.airline
ADD CONSTRAINT unique_airline_code UNIQUE (airline_code);
```

6. Add a CHECK constraint to ensure that male passengers must be at least 18 years old and female passengers must be 19 years old.

```
-----6
ALTER TABLE public.passengers
ADD CONSTRAINT check_age_by_gender CHECK (
    (gender = 'male' AND date_of_birth <= CURRENT_DATE - INTERVAL '18 years') OR
    (gender = 'female' AND date_of_birth <= CURRENT_DATE - INTERVAL '19 years')
);
-----7
```

7. Add a CHECK constraint to add rule as follow (use column country_of_citizenship):

- Passengers from Kazakhstan must be at least 18 years old.
- Passengers from France must be at least 17 years old.
- Passengers from other countries must be at least 19 years old.

```
ALTER TABLE public.passengers
ADD CONSTRAINT check_age_by_country CHECK (
    (country_of_citizenship = 'Kazakhstan' AND date_of_birth <= CURRENT_DATE - INTERVAL '18 years') OR
    (country_of_citizenship = 'France' AND date_of_birth <= CURRENT_DATE - INTERVAL '17 years') OR
    (country_of_citizenship NOT IN ('Kazakhstan', 'France') AND date_of_birth <= CURRENT_DATE - INTERVAL '19 years')
);
```

8. Add a ticket_discount column to table booking and a CHECK constraint to apply some discount based on ticket price and created time:

- the constraint applies a 5% discount for tickets created after 2024-01-01,
and 10% discount for tickets created before 2024-01-01.

```
);
-----8
ALTER TABLE public.booking
ADD COLUMN ticket_discount numeric(5, 2),
ADD CONSTRAINT check_ticket_discount CHECK (
    (created_at > '2024-01-01' AND ticket_discount = price * 0.05) OR
    (created_at <= '2024-01-01' AND ticket_discount = price * 0.10)
);
```