

LAB 5

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

The screenshot shows a database console interface with the following components:

- Database Explorer:** A tree view on the left showing the database structure. The 'passengers' table is expanded, showing columns: `passenger_id` (integer), `first_name` (varchar(50)), `last_name` (varchar(50)), `date_of_birth` (date), `gender` (varchar(50)), `country_of_citizenship`, `country_of_residence`, `passport_number` (varchar), `created_at` (timestamp), and `updated_at` (timestamp).
- Console:** The main area for executing SQL. It shows a query to select flight numbers from flights, followed by an SQL command to add a CHECK constraint to the passengers table:

```
alter table passengers
add constraint check_passenger_age
check(extract(year from age(current_date, date_of_birth)) >= 10);
```
- Error Message:** A red banner at the bottom of the console displays the error: `[23514] ERROR: check constraint "check_passenger_age" of relation "passengers" is violated by some row`. Links for 'Explain with AI' and 'Fix with AI' are provided.
- Services:** A section at the bottom showing transaction details. It includes a timestamp `[2025-10-15 01:01:09]` and the same error message.

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

The screenshot shows a database console window titled "console [db_internationalAirports]". The SQL code in the editor is as follows:

```
151 and flight_no is not null
152 group by flight_no
153 having count(distinct airline_id) = 2;
154
155
156 alter table passengers
157 add constraint check_passenger_age
158 check(extract(year from age(current_date, date_of_birth)) >= 10);
159
160
161 ✓ alter table booking
162 add constraint check_price
163 check (ticket_price between 0 and 50000);
164
165
166
167
168
169
170
```

Below the editor, the "Services" section shows a transaction log:

```
Tx + >
  dt [2025-10-15 01:10:56] completed in 21 ms
```

The status bar at the bottom indicates "Database Consoles > db_internationalAirports > console [db_internationalAirports]" with a character count of 163:42, LF, UTF-8, and 4 spaces.

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

The screenshot shows the same database console window. The SQL code now includes a third command:

```
165 alter table baggage
166 add constraint check_weight
167 check (weight_in_kg between 1 and 23);
168
169
170
171
172
```

An error message is displayed in a red box at the bottom of the editor:

```
[23514] ERROR: check constraint "check_weight" of relation "baggage" is violated by some row
```

Below the editor, the "Services" section shows the transaction log with the error:

```
Tx + >
  dt [2025-10-15 01:12:26] [23514] ERROR: check constraint "check_weight" of relation "baggage" is violated by some row
```

The status bar at the bottom indicates "Database Consoles > db_internationalAirports > console [db_internationalAirports]" with a character count of 165:1, LF, UTF-8, and 4 spaces.

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

console [db_internationalAirports] x

postgres.public

```
157 add constraint check_passenger_age
158 check(extract(year from age(current_date, date_of_birth)) >= 10);
159
160
161 alter table booking
162 add constraint check_price
163 check (ticket_price between 0 and 50000);
164
165 alter table baggage
166 add constraint check_weight
167 check (weight_in_kg between 1 and 23);
168
169
170 alter table airport
171 add constraint check_airport_name
172 check(length(airport_name)<=10);
173
174
175
176
177
178
```

[23514] ERROR: check constraint "check_airport_name" of relation "airport" is violated by some row

Explain with AI Fix with AI x

Services

Tx: +, >

dt [2025-10-15 01:15:32] [23514] ERROR: check constraint "check_airport_name" of relation "airport" is violated by some row

Database Consoles > db_internationalAirports > console [db_internationalAirports]

170:1 LF UTF-8 4 spaces

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

Database Explorer

console [db_internationalAirports] x

postgres.public

db_internationalAirports

public

tables 10

- airline
- airport
- baggage
- baggage_check
 - columns 6
 - baggage_check_id integer
 - check_result varchar(50)
 - created_at timestamp = nov
 - updated_at timestamp = no
 - booking_id integer
 - passenger_id integer
- keys 3
- foreign keys 2
- indexes 3
- boarding_pass
- booking
- booking_flight
- flights
- passengers
- security_check
- sequences 2

```
168
169
170 alter table airport
171 add constraint check_airport_name
172 check(length(airport_name)<=10);
173
174
175 alter table airline
176 add constraint unique_names
177 unique(airline_name, airline_id);
178
179 alter table airport
180 add constraint unique_airport_names
181 unique(airport_name);
182
183 alter table baggage
184 add constraint u_baggage_booking
185 unique(baggage_id, booking_id);
186
187 alter table baggage_check
188 add constraint u_passenger_id
189 unique(passenger_id, baggage_check_id);
190
191
192
193
```

Services

Output Result 15 x

Data

Database Consoles > db_internationalAirports > console [db_internationalAirports]

177:34 LF UTF-8 4 spaces

Database Explorer console [db_internationalAirports]

db_internationalAirports public

- tables 10
 - airline
 - airport
 - columns 7
 - airport_id integer = nextval()
 - airport_name text
 - country varchar(50)
 - state varchar(50)
 - city varchar(50)
 - created_at timestamp = now()
 - updated_at timestamp = now()
 - keys 2
 - indexes 2
 - baggage
 - baggage_check
 - columns 6
 - baggage_check_id integer
 - check_result varchar(50)
 - created_at timestamp = now()
 - updated_at timestamp = now()
 - booking_id integer
 - passenger_id integer

```
168
169
170 alter table airport
171 add constraint check_airport_name
172 check(length(airport_name)<=10);
173
174
175 alter table airline
176 add constraint unique_names
177 unique(airline_name, airline_id);
178
179 ✓ alter table airport
180 add constraint unique_airport_names
181 unique(airport_name, city);
182
183 alter table baggage
184 add constraint u_baggage_booking
185 unique(baggage_id, booking_id);
186
187 alter table baggage_check
188 add constraint u_passenger_id
189 unique(passenger_id, baggage_check_id);
190
191
192
193
```

Services

Output Result 15

Database Consoles > db_internationalAirports > console [db_internationalAirports] 181:28 LF UTF-8 4 spaces

Database Explorer console [db_internationalAirports]

db_internationalAirports

- airport
- baggage
 - columns 5
 - baggage_id integer = nextval()
 - weight_in_kg numeric(4,2)
 - created_at timestamp = now()
 - updated_at timestamp = now()
 - booking_id integer
 - keys 4
 - foreign keys 1
 - indexes 4
- baggage_check
- boarding_pass
- booking
 - columns 8
 - booking_id integer = nextval()
 - flight_id integer
 - passenger_id integer
 - booking_platform varchar(50)
 - created_at timestamp = now()
 - updated_at timestamp = now()
 - status varchar(50)
 - ticket_price numeric(7,2)

```
168
169
170 alter table airport
171 add constraint check_airport_name
172 check(length(airport_name)<=10);
173
174
175 alter table airline
176 add constraint unique_names
177 unique(airline_name);
178
179 alter table airport
180 add constraint unique_airport_names
181 unique(airport_name);
182
183 ✓ alter table baggage
184 add constraint u_baggage_booking
185 unique(baggage_id, booking_id);
186
187
188
189
190
191
192
193
```

Services

Output Result 15

Database Consoles > db_internationalAirports > console [db_internationalAirports] 185:32 LF UTF-8 4 spaces

Database Explorer console [db_internationalAirports] x

db_internationalAirports

- airport
- baggage
- baggage_check
 - columns 6
 - baggage_check_id integer
 - check_result varchar(50)
 - created_at timestamp = nov
 - updated_at timestamp = no
 - booking_id integer
 - passenger_id integer
- keys 3
- foreign keys 2
- indexes 3
- boarding_pass
- booking
- booking_flight
- flights
- passengers
- security_check
- sequences 2

Database Objects

Server Objects

international_airport@localhost

Services

Output Result 15 x

Data

Database Consoles > db_internationalAirports > console [db_internationalAirports]

189:40 LF UTF-8 4 spaces

```
173
174
175 alter table airline
176 add constraint unique_names
177 unique(airline_name);
178
179 alter table airport
180 add constraint unique_airport_names
181 unique(airport_name);
182
183 alter table baggage
184 add constraint u_baggage_booking
185 unique(baggage_id, booking_id);
186
187 alter table baggage_check
188 add constraint u_passenger_id
189 unique(passenger_id, baggage_check_id);
190
191
192
193
```

Database Explorer console [db_internationalAirports] x

airport_lab3 1 of 4

internationalAirports 1 of 4

postgres 1 of 3

public

- tables 10
 - airline
 - airport
 - baggage
 - baggage_check
 - boarding_pass
 - columns 6
 - boarding_pass_id integer
 - booking_id integer
 - seat varchar(50)
 - boarding_time timestamp
 - created_at timestamp = nov
 - updated_at timestamp = no
 - keys 3
 - foreign keys 1
 - indexes 3
 - booking
 - booking_flight
 - flights
 - passengers

Database Objects

Server Objects

Services

Output Result 15 x

Data

Database Consoles > db_internationalAirports > console [db_internationalAirports]

193:35 LF UTF-8 4 spaces

```
173
174
175 alter table airline
176 add constraint unique_names
177 unique(airline_name, airline_id);
178
179 alter table airport
180 add constraint unique_airport_names
181 unique(airport_name, city);
182
183 alter table baggage
184 add constraint u_baggage_booking
185 unique(baggage_id, booking_id);
186
187 alter table baggage_check
188 add constraint u_passenger_id
189 unique(passenger_id, baggage_check_id);
190
191 alter table boarding_pass
192 add constraint u_time
193 unique(booking_id, boarding_time);
194
195
196
197
```

Database Explorer console [db_internationalAirports]

db_internationalAirports

- tables 10
 - airline
 - airport
 - baggage
 - baggage_check
 - boarding_pass
 - booking
 - columns 8
 - booking_id integer = nextval
 - flight_id integer
 - passenger_id integer
 - booking_platform varchar
 - created_at timestamp = now
 - updated_at timestamp = now
 - status varchar(50)
 - ticket_price numeric(7,2)
 - keys 2
 - foreign keys 2
 - indexes 2
 - checks 1
 - booking_flight
 - flights
 - passengers

```
179 alter table airport
180 add constraint unique_airport_names
181 unique(airport_name, city);
182
183 alter table baggage
184 add constraint u_baggage_booking
185 unique(baggage_id, booking_id);
186
187 alter table baggage_check
188 add constraint u_passenger_id
189 unique(passenger_id, baggage_check_id);
190
191 alter table boarding_pass
192 add constraint u_time
193 unique(booking_id, boarding_time);
194
195 alter table booking
196 add constraint u_flight
197 unique(passenger_id, booking_id);
```

Services

Output Result 15

Database Consoles > db_internationalAirports > console [db_internationalAirports]

Database Explorer console [db_internationalAirports]

db_internationalAirports

- airport
- baggage
- baggage_check
- boarding_pass
- booking
- booking_flight
 - columns 5
 - booking_flight_id integer =
 - booking_id integer
 - flight_id integer
 - created_at timestamp = now
 - updated_at timestamp = now
 - keys 2
 - foreign keys 2
 - indexes 2
- flights
- passengers
- security_check
- sequences 2

Database Objects

Server Objects

internationalAirport@localhost

```
179 alter table airport
180 add constraint unique_airport_names
181 unique(airport_name, city);
182
183 alter table baggage
184 add constraint u_baggage_booking
185 unique(baggage_id, booking_id);
186
187 alter table baggage_check
188 add constraint u_passenger_id
189 unique(passenger_id, baggage_check_id);
190
191 alter table boarding_pass
192 add constraint u_time
193 unique(booking_id, boarding_time);
194
195 alter table booking
196 add constraint u_flight
197 unique(passenger_id, booking_id);
198
199 alter table booking_flight
200 add constraint u_bbf
201 unique (booking_id, flight_id, booking_flight_id);
202
203
204
```

Services

Output Result 15

Database Consoles > db_internationalAirports > console [db_internationalAirports]

Database Explorer console [db_internationalAirports] x

postgres.public

db_internationalAirports

- baggage_check
- boarding_pass
- booking
- booking_flight
- flights
 - columns 13
 - flight_id integer = nextval('fl')
 - sch_departure_time times
 - sch_arrival_time timestamp
 - departing_airport_id integ
 - arriving_airport_id integer
 - departing_gate text
 - arriving_gate varchar(50)
 - airline_id integer
 - act_departure_time timest
 - act_arrival_time timestamp
 - created_at timestamp = nov
 - updated_at timestamp = no
 - flight_no varchar(30)
 - keys 2
 - foreign keys 3
 - indexes 2
- passengers

```
187 alter table baggage_check
188 add constraint u_passenger_id
189 unique(passenger_id, baggage_check_id);
190
191 alter table boarding_pass
192 add constraint u_time
193 unique(booking_id, boarding_time);
194
195 alter table booking
196 add constraint u_flight
197 unique(passenger_id, booking_id);
198
199 alter table booking_flight
200 add constraint u_bbf
201 unique (booking_id, flight_id, booking_flight_id);
202
203
204 ✓ alter table flights
205 add constraint u_no
206 unique (flight_no, flight_id);
207
208
209
```

Services

Output Result 15 x

Data

Database Consoles > db_internationalAirports > console [db_internationalAirports]

206:31 LF UTF-8 4 spaces

Database Explorer console [db_internationalAirports] x

postgres.public

db_internationalAirports

- baggage_check
- boarding_pass
- booking
- booking_flight
- flights
- passengers
 - columns 10
 - passenger_id integer = nex
 - first_name varchar(50)
 - last_name varchar(50)
 - date_of_birth date
 - gender varchar(50)
 - country_of_citizenship va
 - country_of_residence vari
 - passport_number varchar
 - created_at timestamp = nov
 - updated_at timestamp = no
 - keys 3
 - indexes 3
- security_check
- sequences 2

Database Objects

Server Objects

Services

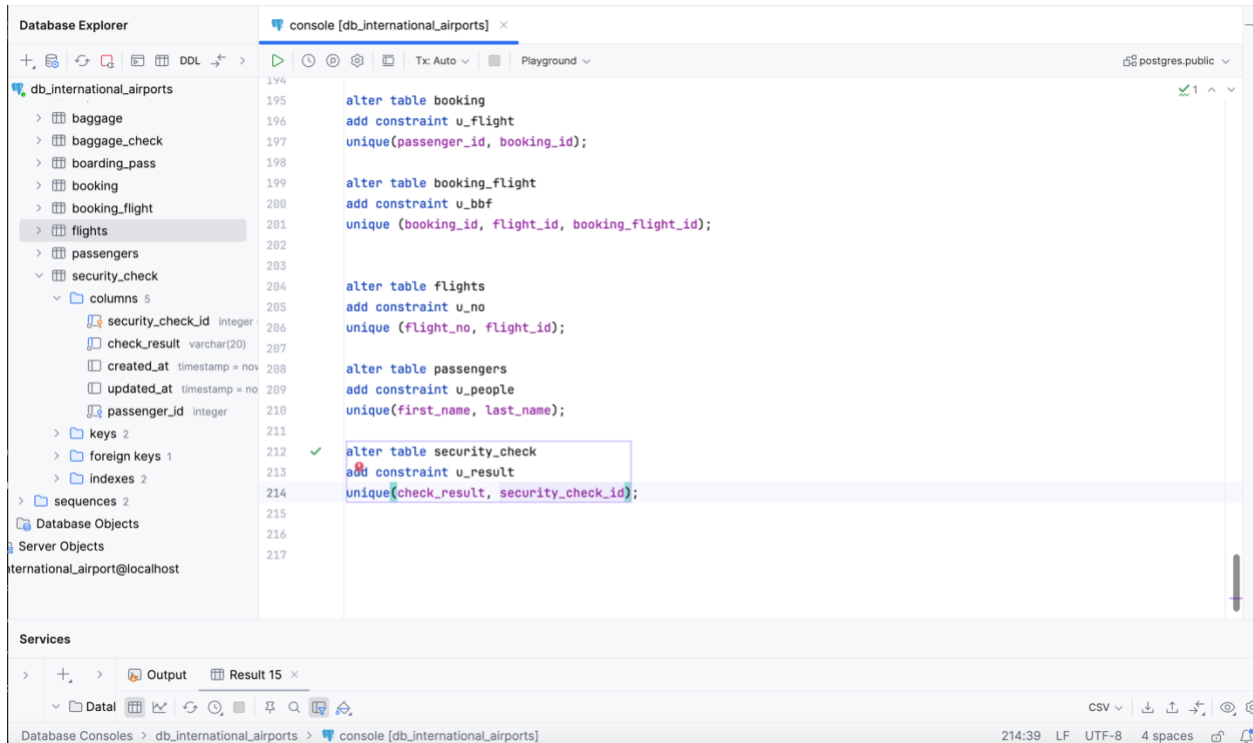
Output Result 15 x

Data

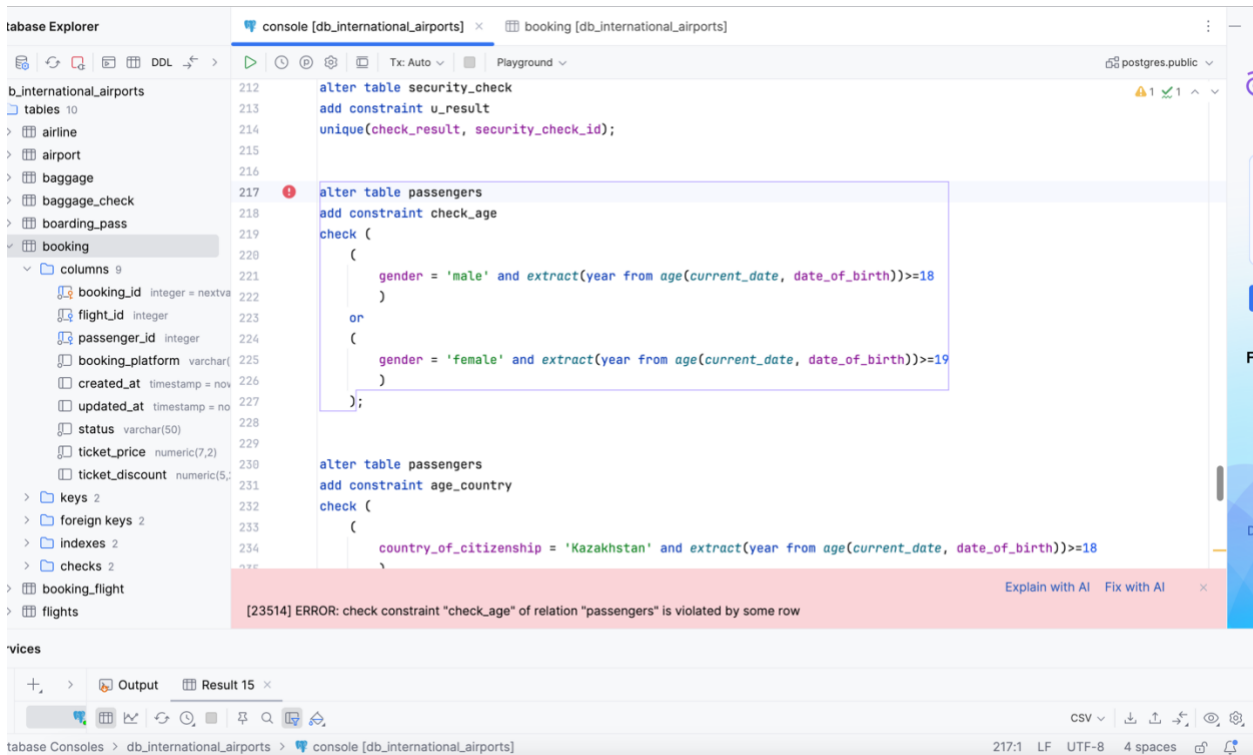
```
191 alter table boarding_pass
192 add constraint u_time
193 unique(booking_id, boarding_time);
194
195 alter table booking
196 add constraint u_flight
197 unique(passenger_id, booking_id);
198
199 alter table booking_flight
200 add constraint u_bbf
201 unique (booking_id, flight_id, booking_flight_id);
202
203 alter table flights
204 add constraint u_no
205 unique (flight_no, flight_id);
206
207 ✓ alter table passengers
208 add constraint u_people
209 unique(first_name, last_name);
210
211
212
213
```

Database Consoles > db_internationalAirports > console [db_internationalAirports]

210:31 LF UTF-8 4 spaces



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.



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.

The screenshot shows a database console interface with a sidebar on the left displaying a database schema for 'b_international_airports'. The main area shows a SQL script being executed. The script includes an 'alter table passengers' command to add a check constraint named 'age_country'. The constraint has three conditions: passengers from Kazakhstan must be at least 18 years old, passengers from France must be at least 17 years old, and passengers from other countries must be at least 19 years old. Below this, there is an 'alter table booking' command to add a 'ticket_discount' column of type 'decimal(5,2)'. An error message at the bottom states: '[23514] ERROR: check constraint "age_country" of relation "passengers" is violated by some row'. The console also shows a 'Result 15' tab at the bottom.

```

228
229
230 alter table passengers
231 add constraint age_country
232 check (
233 (
234     country_of_citizenship = 'Kazakhstan' and extract(year from age(current_date, date_of_birth))>=18
235 )
236 or
237 (
238     country_of_citizenship = 'France' and extract(year from age(current_date, date_of_birth))>=17
239 )
240 or
241 (
242     country_of_citizenship not in('Kazakhstan', 'France') and extract(year from age(current_date, date_of_birth))>=19
243 )
244 );
245
246
247
248 alter table booking
249 add column ticket_discount decimal(5,2);
250

```

[23514] ERROR: check constraint "age_country" of relation "passengers" is violated by some row

Result 15

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.

Database Explorer

db_international_airports

tables 10

airline

airport

baggage

baggage_check

boarding_pass

booking

columns 9

booking_id integer = nextva

flight_id integer

passenger_id integer

booking_platform varchar(

created_at timestamp = nov

updated_at timestamp = no

status varchar(50)

ticket_price numeric(7,2)

ticket_discount numeric(5,

keys 2

foreign keys 2

indexes 2

checks 2

booking_flight

flights

console [db_international_airports]

booking [db_international_airports]

postgres.public

alter table booking
add column ticket_discount decimal(5,2);

alter table booking
add constraint ch_ticket_discount
check (
 (
 created_at >= '2024-01-01' and ticket_discount = 0.05
)
 or
 (
 created_at < '2024-01-01' and ticket_discount = 0.1
)
);

update booking
set ticket_discount = case
 when created_at >= '2024-01-01' then 0.05
 else 0.1
end;

Services

Output

Result 15

CSV

255:31

LF

UTF-8

4 spaces