

Домашнее задание 3

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Упражнение 17

Задание

Представления могут быть, условно говоря, вертикальными и горизонтальными. При создании вертикального представления в список его столбцов включается лишь часть столбцов базовой таблицы (таблиц). Например:

```
CREATE VIEW airports_names AS
    SELECT airport_code, airport_name, city
    FROM airports;

SELECT * FROM airports_names;
```

В горизонтальное представление включаются не все строки базовой таблицы (таблиц), а производится их отбор с помощью фраз **WHERE** или **HAVING**. Например:

```
CREATE VIEW siberian_airports AS
    SELECT * FROM airports
    WHERE city = 'Новосибирск' OR city = 'Кемерово';

SELECT * FROM siberian_airports;
```

Конечно, вполне возможен и смешанный вариант, когда ограничивается как список столбцов, так и множество строк при создании представления. Подумайте, какие представления было бы целесообразно создать для нашей базы данных «Авиаперевозки». Необходимо учесть наличие различных групп пользователей, например: пилоты, диспетчеры, пассажиры, кассиры. Создайте представления и проверьте их в работе.

Решение

- Сделаем горизонтальное представление для пассажиров - Будущие рейсы

```
CREATE VIEW passenger_upcoming_flights AS
SELECT
    f.flight_no,
    f.scheduled_departure,
    dep.city AS departure_city,
    arr.city AS arrival_city,
    f.status,
    f.aircraft_code
```

```
FROM bookings.flights f
    JOIN bookings.airports dep ON f.departure_airport = dep.airport_code
    JOIN bookings.airports arr ON f.arrival_airport = arr.airport_code
WHERE f.scheduled_departure > bookings.now()
    AND f.status IN ('Scheduled', 'On Time');
```

```
demo=# CREATE VIEW passenger_upcoming_flights AS
SELECT
    f.flight_no,
    f.scheduled_departure,
    dep.city AS departure_city,
    arr.city AS arrival_city,
    f.status,
    f.aircraft_code
FROM bookings.flights f
    JOIN bookings.airports dep ON f.departure_airport = dep.airport_code
    JOIN bookings.airports arr ON f.arrival_airport = arr.airport_code
WHERE f.scheduled_departure > bookings.now()
    AND f.status IN ('Scheduled', 'On Time');
CREATE VIEW
demo=# SELECT * FROM bookings.passenger_upcoming_flights LIMIT 5;
flight_no | scheduled_departure | departure_city | arrival_city | status | aircraft_code
-----+-----+-----+-----+-----+-----+
PG0402 | 2016-11-07 11:25:00+03 | Москва | Санкт-Петербург | Scheduled | 321
PG0405 | 2016-10-14 08:35:00+03 | Москва | Санкт-Петербург | On Time | 321
PG0404 | 2016-10-14 18:05:00+03 | Москва | Санкт-Петербург | Scheduled | 321
PG0402 | 2016-10-14 11:25:00+03 | Москва | Санкт-Петербург | On Time | 321
PG0405 | 2016-10-23 08:35:00+03 | Москва | Санкт-Петербург | Scheduled | 321
(5 rows)
```

- Сделаем вертикальное представление для пилотов - Характеристики самолетов

```
CREATE VIEW pilot_aircraft_info AS
SELECT
    a.aircraft_code,
    a.model,
    a.range,
    COUNT(s.seat_no) AS total_seats,
    COUNT(CASE WHEN s.fare_conditions = 'Business' THEN 1 END) AS business_seats
FROM bookings.aircrafts a
    LEFT JOIN bookings.seats s ON a.aircraft_code = s.aircraft_code
GROUP BY a.aircraft_code, a.model, a.range;
```

```

demo=# CREATE VIEW pilot_aircraft_info AS
SELECT
    a.aircraft_code,
    a.model,
    a.range,
    COUNT(s.seat_no) AS total_seats,
    COUNT(CASE WHEN s.fare_conditions = 'Business' THEN 1 END) AS business_seats
FROM bookings.aircrafts a
    LEFT JOIN bookings.seats s ON a.aircraft_code = s.aircraft_code
GROUP BY a.aircraft_code, a.model, a.range;
CREATE VIEW
demo=# SELECT * FROM bookings.pilot_aircraft_info LIMIT 5;
aircraft_code | model | range | total_seats | business_seats
-----+-----+-----+-----+-----+
CN1 | Cessna 208 Caravan | 1200 | 12 | 0
320 | Airbus A320-200 | 5700 | 140 | 20
CR2 | Bombardier CRJ-200 | 2700 | 50 | 0
773 | Boeing 777-300 | 11100 | 402 | 30
763 | Boeing 767-300 | 7900 | 222 | 30
(5 rows)

demo=#

```

- Для диспетчеров, смешанное представление - текущие рейсы

```

CREATE VIEW dispatcher_current_flights AS
SELECT
    f.flight_no,
    f.status,
    f.scheduled_departure,
    f.actual_departure,
    dep.city AS departure_city,
    arr.city AS arrival_city,
    a.model AS aircraft
FROM bookings.flights f
    JOIN bookings.airports dep ON f.departure_airport = dep.airport_code
    JOIN bookings.airports arr ON f.arrival_airport = arr.airport_code
    JOIN bookings.aircrafts a ON f.aircraft_code = a.aircraft_code
WHERE f.scheduled_departure::date = bookings.now()::date
    OR f.scheduled_arrival::date = bookings.now()::date
ORDER BY f.scheduled_departure;

```

```
demo=# CREATE VIEW dispatcher_current_flights AS
SELECT
    f.flight_no,
    f.status,
    f.scheduled_departure,
    f.actual_departure,
    dep.city AS departure_city,
    arr.city AS arrival_city,
    a.model AS aircraft
FROM bookings.flights f
JOIN bookings.airports dep ON f.departure_airport = dep.airport_code
JOIN bookings.airports arr ON f.arrival_airport = arr.airport_code
JOIN bookings.aircrafts a ON f.aircraft_code = a.aircraft_code
WHERE f.scheduled_departure::date = bookings.now()::date
    OR f.scheduled_arrival::date = bookings.now()::date
ORDER BY f.scheduled_departure;
CREATE VIEW
demo=# SELECT * FROM bookings.dispatcher_current_flights LIMIT 5;
 flight_no | status | scheduled_departure | actual_departure | departure_city | arrival_city | aircraft
-----+-----+-----+-----+-----+-----+-----+
PG0703 | Arrived | 2016-10-12 16:15:00+03 | 2016-10-12 16:19:00+03 | Москва | Южно-Сахалинск | Airbus A319-100
PG0315 | Arrived | 2016-10-12 16:40:00+03 | 2016-10-12 16:41:00+03 | Москва | Анадырь | Airbus A319-100
PG0144 | Arrived | 2016-10-12 16:45:00+03 | 2016-10-12 16:49:00+03 | Москва | Петропавловск-Камчатский | Boeing 767-300
PG0356 | Arrived | 2016-10-12 18:10:00+03 | 2016-10-12 18:12:00+03 | Санкт-Петербург | Хабаровск | Boeing 767-300
PG0200 | Arrived | 2016-10-12 18:20:00+03 | 2016-10-12 18:22:00+03 | Москва | Владивосток | Boeing 767-300
(5 rows)
```