

# A

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## Task №1

In this task we will use service [draw-sql](#)



## Task №2

```
CREATE SCHEMA IF NOT EXISTS travels;
```

```
CREATE TABLE travels.Employee (  
    id INT PRIMARY KEY,  
    employee_name VARCHAR(10),  
    company_id INT  
);
```

```
CREATE TABLE travels.Company (  
    id INT PRIMARY KEY,  
    company_name VARCHAR(10)  
);
```

```
CREATE TABLE travels.Trip (  
    id INT PRIMARY KEY,  
    employee_id INT,  
    startdate DATE,  
    enddate DATE,  
    cancelationdate DATE,  
    hotel_id INT,  
    ticket_1_id INT,  
    ticket_2_id INT,  
    branch_id INT  
);
```

```
CREATE TABLE travels.Flight (  
    flight_number INT PRIMARY KEY,  
    origin_city_id INT,  
    destination_city_id INT,  
    air_company VARCHAR(10),  
    departure TIMESTAMP,  
    ticket_price FLOAT  
);
```

```
CREATE TABLE travels.Hotel (  
    id INT PRIMARY KEY,  
    hotel_name VARCHAR(10),  
    hotel_address VARCHAR(10),  
    city_id INT,
```

```
        room_charge FLOAT
    );

CREATE TABLE travels.City (
    id INT PRIMARY KEY,
    city_name VARCHAR(10),
    branch_id INT
);

CREATE TABLE travels.Branch (
    id INT PRIMARY KEY,
    branch_name VARCHAR(10)
);

ALTER TABLE travels.Employee ADD FOREIGN KEY (company_id) REFERENCES
travels.Company (id);

ALTER TABLE travels.Trip ADD FOREIGN KEY (employee_id) REFERENCES
travels.Employee (id);

ALTER TABLE travels.Trip ADD FOREIGN KEY (hotel_id) REFERENCES
travels.Hotel (id);

ALTER TABLE travels.Trip ADD FOREIGN KEY (branch_id) REFERENCES
travels.Branch (id);

ALTER TABLE travels.Trip ADD FOREIGN KEY (ticket_1_id) REFERENCES
travels.Flight (flight_number);

ALTER TABLE travels.Trip ADD FOREIGN KEY (ticket_2_id) REFERENCES
travels.Flight (flight_number);

ALTER TABLE travels.Hotel ADD FOREIGN KEY (city_id) REFERENCES
travels.City (id);

ALTER TABLE travels.Flight ADD FOREIGN KEY (origin_city_id) REFERENCES
travels.City (id);

ALTER TABLE travels.Flight ADD FOREIGN KEY (destination_city_id)
REFERENCES travels.City (id);

ALTER TABLE travels.City ADD FOREIGN KEY (branch_id) REFERENCES
travels.Branch (id);
```

## Task №3

```
SELECT DISTINCT
    travels.Hotel.id,
    travels.Hotel.hotel_name
FROM
```

```
travels.Employee,
travels.Trip,
travels.Flight,
travels.City AS from_city,
travels.City AS to_city,
travels.Hotel
WHERE travels.Employee.id = travels.Trip.employee_id
AND travels.Trip.ticket_1_id = travels.Flight.flight_number

-- Employees who travel from Berlin to Paris
AND travels.Flight.origin_city_id = from_city.id
AND travels.Flight.destination_city_id = from_city.id
AND from_city.name LIKE "%Berlin%"
AND to_city.name LIKE "%Paris%"

-- Employees who travel this year and their flights were not cancelled
AND travels.Trip.canceled_date IS NULL
AND date_part('year', travels.Trip.startdate) = date_part('year',
NOW())

-- Hotels booked in these flights
AND travels.Trip.hotel_id = travels.Hotel.id;
```

## Task №4

```
SELECT SUM(travels.Hotel.room_charge)
FROM
    travels.Company,
    travels.Employee,
    travels.Trip,
    travels.Hotel,

WHERE travels.Employee.comapny_id = travels.Company.id
AND travels.Trip.employee_id = travels.Employee.id
AND travels.Trip.enddate > NOW() - INTERVAL '1 month'
AND travels.Trip.hotel_id = travels.Hotel
GROUP BY travels.Trip.hotel_id;
```

## Task №5

```
SELECT SUM(travels.Hotel.room_charge)
FROM
    travels.Company,
    travels.Employee,
    travels.Trip,
    travels.Flight,
    travels.Hotel
WHERE travels.Employee.comapny_id = travels.Company.id
AND travels.Trip.employee_id = travels.Employee.id
```

```
AND travels.enddate > NOW() - INTERVAL '1 month'
AND travels.Trip.ticket_2_id = travels.Flight.flight_number
AND travels.Trip.hotel_id = travels.Hotel.id
GROUP BY travels.Flight.origin_city_id;
```

## Task №6

```
SELECT travels.Branch.id, travels.Branch.branch_name
FROM
    travels.Branch,
    travels.Trip
WHERE travels.Trip.branch_id = travels.Branch.id
    AND travels.Trip.startdate - travels.Trip.cancelationdate <= INTERVAL
'3 days'
GROUP BY travels.Trip.branch_id
ORDER BY COUNT(*)
LIMIT 3;
```

## Task №7

```
SELECT DISTINCT
    emp1.id,
    emp1.employee_name
    emp2.id,
    emp2.employee_name
FROM
    travels.Employee AS emp1
    travels.Employee AS emp2
    travels.Trip AS trip1
    travels.Trip AS trip2
    travels.Flight AS flight1
    travels.Flight AS flight2
WHERE trip1.employee_id = emp1
    AND trip2.employee_id = emp2
    AND
    (
        (
            trip1.ticket_1_id = flight1.flight_number
            AND trip2.ticket_1_id = flight2.flight_number

            AND flight1.origin_city_id = flight2.origin_city_id
            AND flight1.destination_city_id = flight2.destination_city_id

            AND flight1.flight_number != flight2.flight_number
        )
        OR
        (
            trip1.ticket_2_id = flight1.flight_number
            AND trip2.ticket_2_id = flight2.flight_number
```

```
        AND flight1.origin_city_id = flight2.origin_city_id
        AND flight1.destination_city_id = flight2.destination_city_id

        AND flight1.flight_number != flight2.flight_number
    )
);
```