

Laboratory work 6

Submission format: word or pdf document containing screenshots of your tasks with answers that covers full-page (Alt+PrtSc).

JOIN operations tasks

1. Write a query that displays all flights of a specific airline.

The screenshot shows a database query editor with the following SQL query:

```
SELECT f.flight_no, f.scheduled_departure, f.scheduled_arrival
FROM flights f
JOIN airline a 1..n<->1: ON f.airline_id = a.airline_id
WHERE a.airline_name = 'IPC';
```

The query is executed, and the result is displayed in a table with 32 rows. The first four rows are shown:

| | flight_no | scheduled_departure | scheduled_arrival |
|---|-----------|---------------------|----------------------------|
| 1 | BR-PE | 2024-01-16 | 2023-06-02 00:00:00.000000 |
| 2 | MZ-G | 2023-09-21 | 2023-11-29 00:00:00.000000 |
| 3 | AU-NT | 2023-03-29 | 2023-05-06 00:00:00.000000 |
| 4 | FR-K | 2023-12-26 | 2023-04-30 00:00:00.000000 |

2. Compose a query to obtain a list of all flights with the names of departure airports.

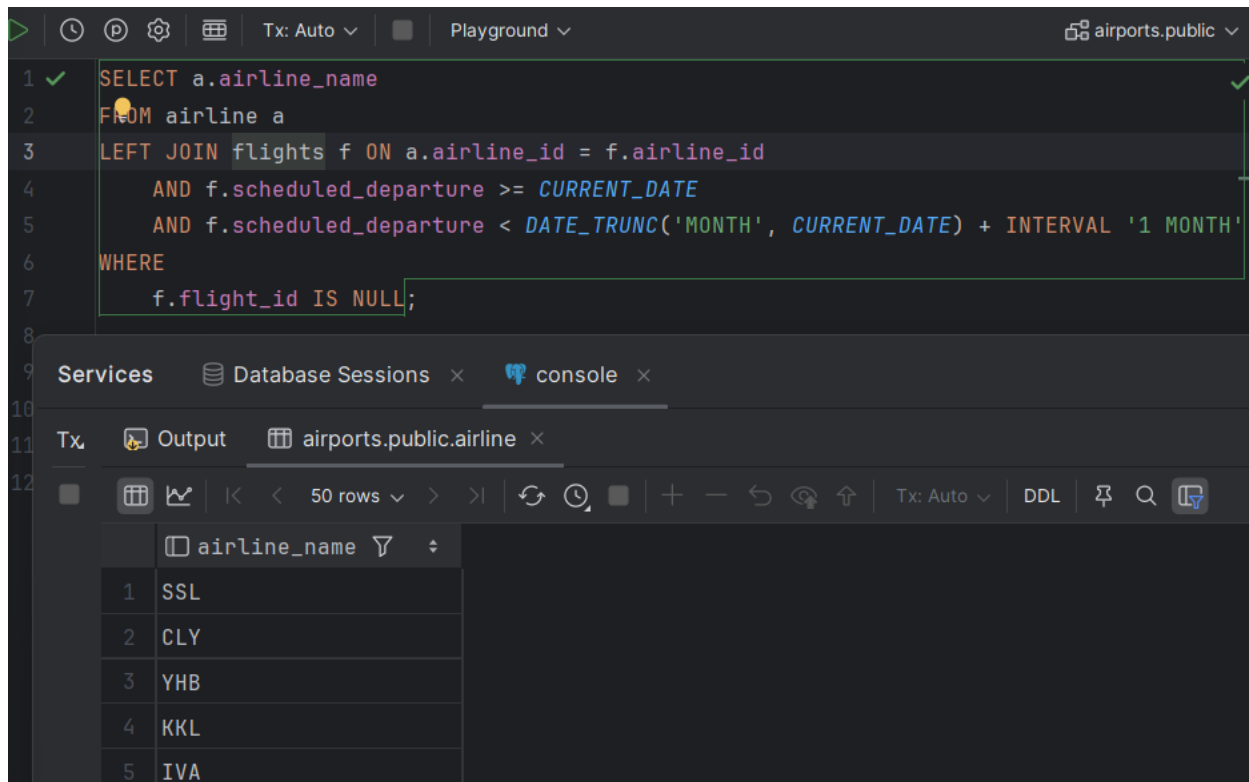
The screenshot shows a database query editor with the following SQL query:

```
SELECT f.flight_no, a1.airport_name AS departure_airport_name
FROM flights f
JOIN airport a1 1..n<->1: ON f.departure_airport_id = a1.airport_id;
```

The query is executed, and the result is displayed in a table with 501+ rows. The first four rows are shown:

| | flight_no | departure_airport_name |
|---|-----------|--------------------------------|
| 1 | US-CT | Elorza Airport |
| 2 | US-NM | Figari Sud-Corse Airport |
| 3 | FI-OL | Darchula Airport |
| 4 | RU-KR | Lime Acres Finsch Mine Airport |

3. Create a query that finds all airlines that have no flights scheduled for the next month.

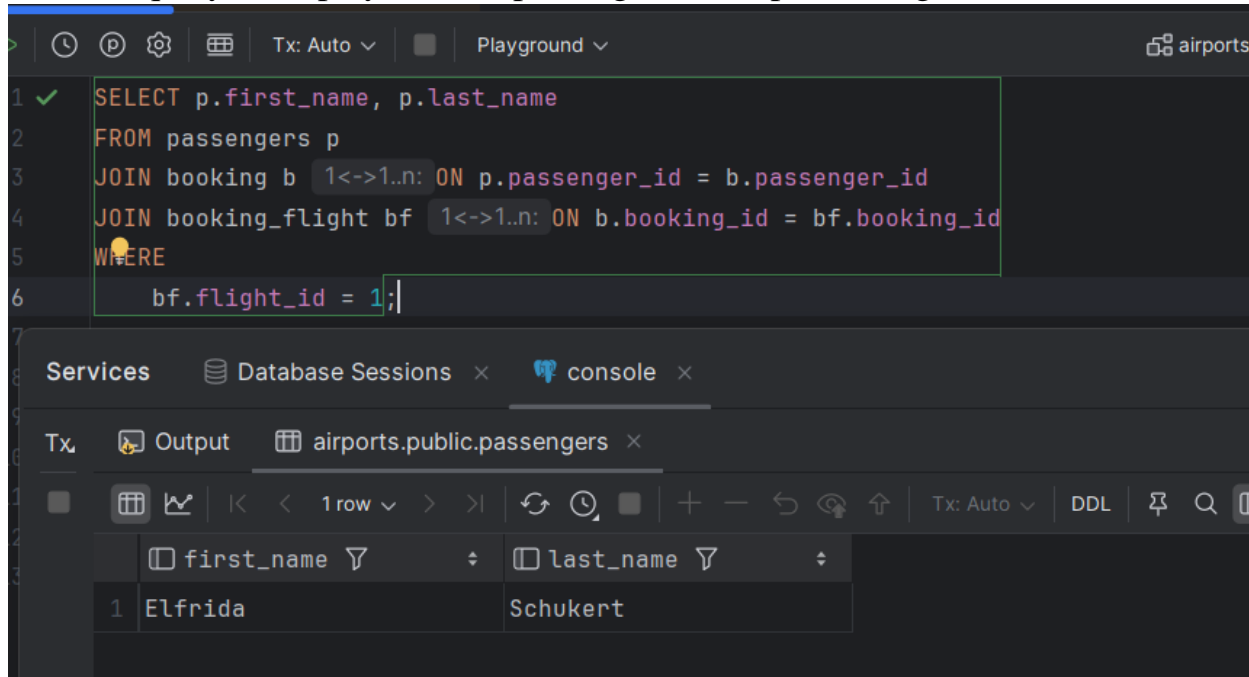


```
1 SELECT a.airline_name
2 FROM airline a
3 LEFT JOIN flights f ON a.airline_id = f.airline_id
4     AND f.scheduled_departure >= CURRENT_DATE
5     AND f.scheduled_departure < DATE_TRUNC('MONTH', CURRENT_DATE) + INTERVAL '1 MONTH'
6 WHERE
7     f.flight_id IS NULL;
```

The screenshot shows a SQL playground interface. The top panel displays the SQL query. The bottom panel shows the results of the query, which are 5 rows of airline names: SSL, CLY, YHB, KKL, and IVA. The interface includes a toolbar with various icons for editing and running the query, and a sidebar with tabs for Services, Database Sessions, and console.

| airline_name |
|--------------|
| 1 SSL |
| 2 CLY |
| 3 YHB |
| 4 KKL |
| 5 IVA |

4. Create a query to display a list of passengers on a specific flight.



```
1 SELECT p.first_name, p.last_name
2 FROM passengers p
3 JOIN booking b 1<->1..n: ON p.passenger_id = b.passenger_id
4 JOIN booking_flight bf 1<->1..n: ON b.booking_id = bf.booking_id
5 WHERE
6     bf.flight_id = 1;
```

The screenshot shows a SQL playground interface. The top panel displays the SQL query. The bottom panel shows the results of the query, which are 1 row of passenger names: Elfrida Schukert. The interface includes a toolbar with various icons for editing and running the query, and a sidebar with tabs for Services, Database Sessions, and console.

| first_name | last_name |
|------------|-----------|
| 1 Elfrida | Schukert |

5. Write a query that calculates the average, total, maximum and minimum price of tickets for each flight.

console

```

1 ✓ SELECT bf.flight_id,
2     AVG(b.price) AS average_price,
3     SUM(b.price) AS total_price,
4     MAX(b.price) AS max_price,
5     MIN(b.price) AS min_price
6 FROM booking b
7 JOIN booking_flight bf 1<->1:n: ON b.booking_id = bf.booking_id
8 GROUP BY bf.flight_id;

```

Services Database Sessions console

Tx Output Result 14

1-501+ of 501+

| | flight_id | average_price | total_price | max_price | min_price |
|---|-----------|---------------|-------------|-----------|-----------|
| 1 | 846 | 7070.45 | 7070.45 | 7070.45 | 7070.45 |
| 2 | 790 | 7988.95 | 15977.9 | 9851.86 | 6126.04 |
| 3 | 828 | 5974.54 | 5974.54 | 5974.54 | 5974.54 |
| 4 | 938 | 4635.86 | 4635.86 | 4635.86 | 4635.86 |
| 5 | 184 | 2856.2 | 5712.4 | 3529.26 | 2183.14 |
| 6 | 753 | 3153.71 | 3153.71 | 3153.71 | 3153.71 |
| 7 | 273 | 8929.2 | 8929.2 | 8929.2 | 8929.2 |

6. Create a query that shows all flights flying to a specific country by combining flights, airports and airline, and using the condition on the country name.

airports.pub

```

SELECT f.flight_no, a.airport_name AS arrival_airport, al.airline_name
FROM flights f
JOIN airport a 1:n<->1: ON f.arrival_airport_id = a.airport_id
JOIN airline al 1:n<->1: ON f.airline_id = al.airline_id
WHERE a.country = 'China';

```

Services Database Sessions console

Tx Output Result 21

238 rows

| | flight_no | arrival_airport | airli |
|---|-----------|--------------------------------|-------|
| 1 | FI-OL | Elorza Airport | SMM |
| 2 | IN-OR | Pitalito Airport | IFH |
| 3 | BR-PE | Melilla Airport | IPC |
| 4 | US-IN | Lime Acres Finsch Mine Airport | QIG |
| 5 | CN-65 | Lime Acres Finsch Mine Airport | YLP |
| 6 | BR-T0 | Pitalito Airport | CSC |
| 7 | MZ-P | Elorza Airport | PQS |

7. Display a list of minor passengers and their arrival destination.

airports.public

```

SELECT p.first_name,p.last_name,a2.airport_name AS arrival_airport_name
FROM passengers p
JOIN booking b 1<->1..n: ON p.passenger_id = b.passenger_id
JOIN booking_flight bf 1<->1..n: ON b.booking_id = bf.booking_id
JOIN flights f 1..n<->1: ON bf.flight_id = f.flight_id
JOIN airport a2 1..n<->1: ON f.arrival_airport_id = a2.airport_id
WHERE
    date_part('year', age(p.date_of_birth)) < 18;

```

Services Database Sessions console

Tx Output Result 28

47 rows

| | first_name | last_name | arrival_airport_name |
|---|------------|-----------|-----------------------------|
| 1 | Vivyan | Mallabone | Alert Bay Airport |
| 2 | Lester | Blades | Armidale Airport |
| 3 | Lester | Blades | Figari Sud-Corse Airport |
| 4 | Cleve | Edgeler | Industrial Airpark |
| 5 | Bradley | Grolle | Armidale Airport |
| 6 | Zedekiah | Jull | Garbaharey Airport |
| 7 | Cleve | Edgeler | Fort Worth Alliance Airport |

8. Display the passenger's full name, passport number, and the passenger's current time of arrival at the destination.

airports.public

```

1 SELECT CONCAT(p.first_name, ' ', p.last_name) AS full_name,p.passport_number,f.act
2 FROM passengers p
3 JOIN booking b 1<->1..n: ON p.passenger_id = b.passenger_id
4 JOIN booking_flight bf 1<->1..n: ON b.booking_id = bf.booking_id
5 JOIN flights f 1..n<->1: ON bf.flight_id = f.flight_id;

```

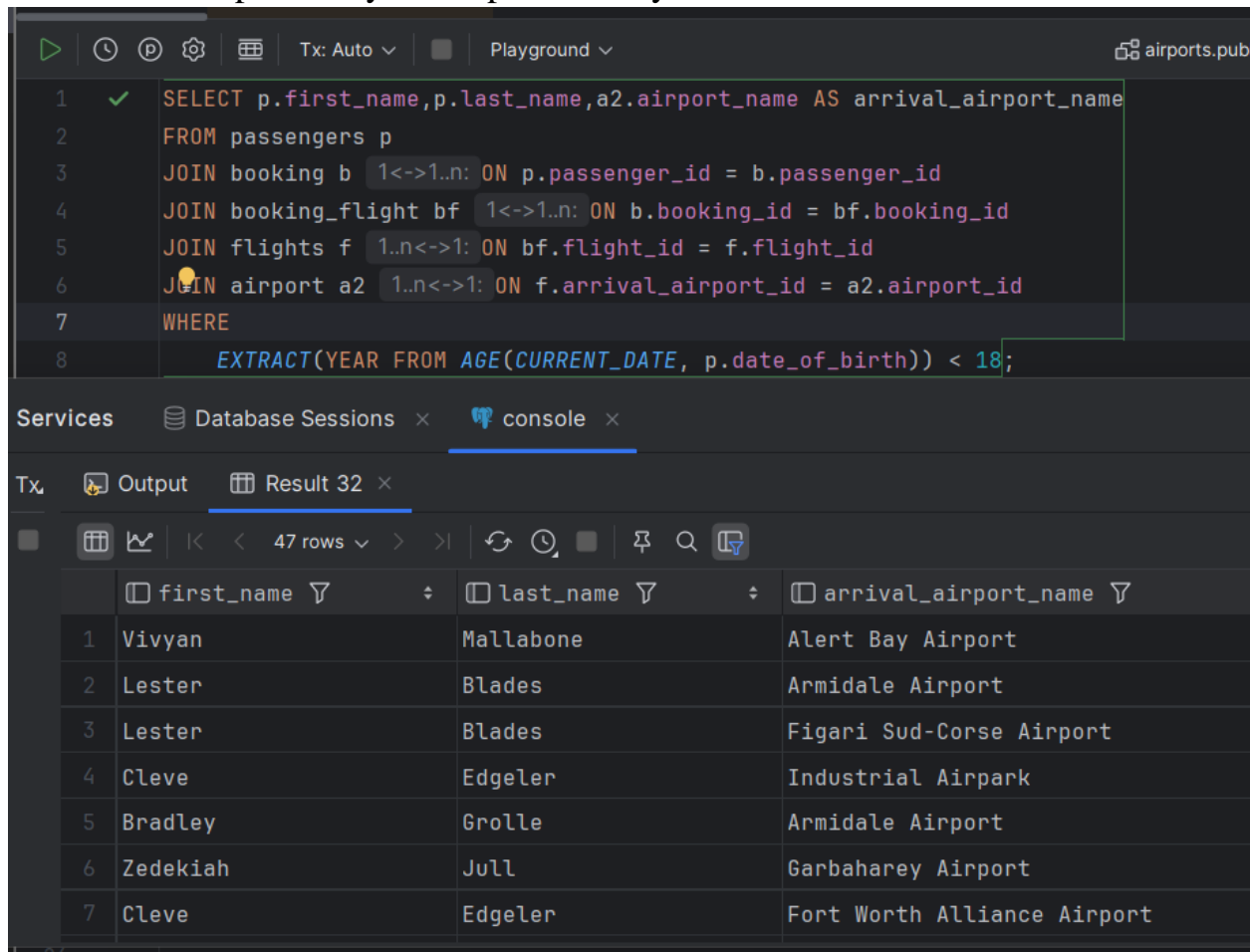
Services Database Sessions console

Output Result 29

1-500 of 501+

| | full_name | passport_number | actual_arrival |
|---|------------------|-----------------|----------------------------|
| 1 | Muhammad Fass | 109932770-9 | 2023-07-18 00:00:00.000000 |
| 2 | Trevar Broun | 788025864-7 | 2024-02-11 00:00:00.000000 |
| 3 | Auria Breffit | 570537341-4 | 2023-07-11 00:00:00.000000 |
| 4 | Archie Toffel | 677556708-1 | 2023-06-17 00:00:00.000000 |
| 5 | Sanders Biddles | 514546405-3 | 2023-09-05 00:00:00.000000 |
| 6 | Sanders Biddles | 514546405-3 | 2024-03-01 00:00:00.000000 |
| 7 | Remington Piggot | 470074456-1 | 2023-05-31 00:00:00.000000 |

9. Print a list of flights where the airline's home country and origin country are the same. Group them by the airport country.



The screenshot shows a SQL playground interface. The top section contains a SQL query with line numbers 1 through 8. The query is as follows:

```
1 SELECT p.first_name,p.last_name,a2.airport_name AS arrival_airport_name
2 FROM passengers p
3 JOIN booking b 1<->1..n: ON p.passenger_id = b.passenger_id
4 JOIN booking_flight bf 1<->1..n: ON b.booking_id = bf.booking_id
5 JOIN flights f 1..n<->1: ON bf.flight_id = f.flight_id
6 JOIN airport a2 1..n<->1: ON f.arrival_airport_id = a2.airport_id
7 WHERE
8 EXTRACT(YEAR FROM AGE(CURRENT_DATE, p.date_of_birth)) < 18;
```

Below the query editor, there is a 'Services' section with tabs for 'Database Sessions', 'console', and 'Output'. The 'Output' tab is selected, showing 'Result 32' with 47 rows. The results are displayed in a table with three columns: 'first_name', 'last_name', and 'arrival_airport_name'.

| | first_name | last_name | arrival_airport_name |
|---|------------|-----------|-----------------------------|
| 1 | Vivyan | Mallabone | Alert Bay Airport |
| 2 | Lester | Blades | Armidale Airport |
| 3 | Lester | Blades | Figari Sud-Corse Airport |
| 4 | Cleve | Edgeler | Industrial Airpark |
| 5 | Bradley | Grolle | Armidale Airport |
| 6 | Zedekiah | Jull | Garbaharey Airport |
| 7 | Cleve | Edgeler | Fort Worth Alliance Airport |