

Laboratory work 6

JOIN operations tasks

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

The screenshot shows a database console interface with a query editor and a results table. The query is as follows:

```
1 SELECT *
2 FROM Flights f
3 JOIN Airline a ON f.airline_id = a.airline_id
4 WHERE a.airline_name = 'IPC';
5
```

The results table displays 7 rows of flight data for the airline 'IPC'.

flight_id	flight_no	scheduled_departure	scheduled_arrival	departure_airport_id	arrival_airport_id
13	BR-PE	2024-01-16	2023-06-02	13	
33	MZ-G	2023-09-21	2023-11-29	4	
36	AU-NT	2023-03-29	2023-05-06	12	
73	FR-K	2023-12-26	2023-04-30	18	
78	US-VT	2023-08-28	2023-08-02	20	
143	PH-BUK	2023-08-20	2023-10-24	12	
170	SD-01	2023-12-02	2023-12-17	3	

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

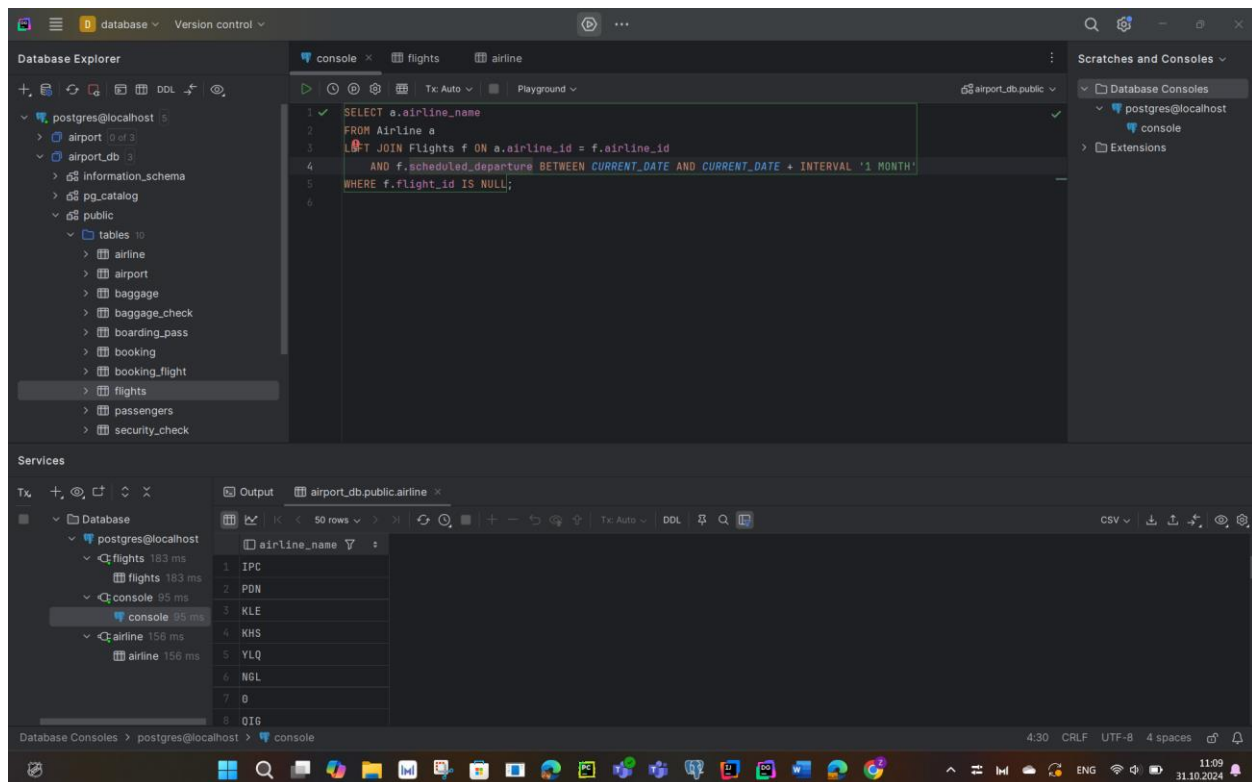
The screenshot shows a database console interface with a query editor and a results table. The query is as follows:

```
1 SELECT f.flight_id, f.flight_no, a.airport_name AS departure_airport
2 FROM Flights f
3 JOIN Airport a ON f.departure_airport_id = a.airport_id;
4
```

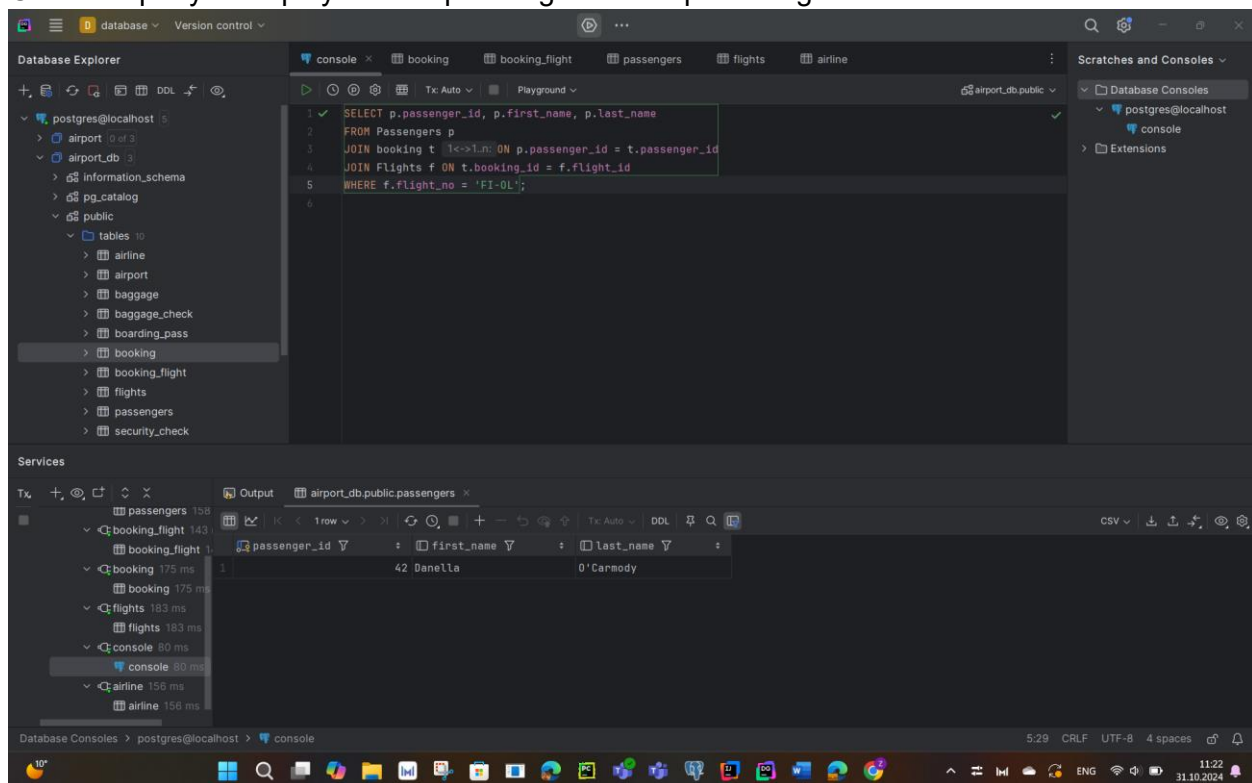
The results table displays 8 rows of flight data with their respective departure airport names.

flight_id	flight_no	departure_airport
1	US-CT	Elorza Airport
2	US-NM	Figari Sud-Corse Airport
3	FI-OL	Darchula Airport
4	RU-KR	Lime Acres Finch Mine Airport
5	RO-DJ	Hana Airport
6	CA-SK	Darchula Airport
7	AU-TAS	Ocean Falls Seaplane Base
8	US-AZ	Figari Sud-Corse Airport

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



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



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

The screenshot shows a database management tool interface. On the left, the 'Database Explorer' pane shows a PostgreSQL database with a 'public' schema containing tables like 'airline', 'airport', 'baggage', 'baggage_check', 'boarding_pass', 'booking', 'booking_flight', 'flights', 'passengers', and 'security_check'. The main console area displays a SQL query:

```

1 SELECT f.flight_id, f.flight_no,
2      AVG(t.price) AS avg_price,
3      SUM(t.price) AS total_price,
4      MAX(t.price) AS max_price,
5      MIN(t.price) AS min_price
6 FROM Flights f
7 JOIN booking t ON f.flight_id = t.passenger_id
8 GROUP BY f.flight_id, f.flight_no;

```

The 'Output' pane shows the results of the query, which are 8 rows. The columns are: flight_id, flight_no, avg_price, total_price, max_price, and min_price.

flight_id	flight_no	avg_price	total_price	max_price	min_price
184	PH-BAS	3901.094	19505.47	9455.29	408.12
87	AU-QLD	3425.245	6850.49	5132.5	1717.99
51	US-DE	3525.48	7050.96	6640.49	410.47
70	MY-12	2065.175	4130.35	2578.41	1551.94
176	AZ-YE	8735.7	8735.7	8735.7	8735.7
22	GB-ENG	2643.5925	10574.37	4966.58	382.97
156	PG-MBA	5009.49	20037.96	7462.13	2314.39
173	DE-NI	7212.68	14425.36	8309.6	6115.76

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.

The screenshot shows the same database management tool interface. The main console area displays a new SQL query:

```

1 SELECT f.flight_id, f.flight_no, a.airline_name, arr.airport_name AS destination_airport
2 FROM Flights f
3 JOIN Airline a ON f.airline_id = a.airline_id
4 JOIN Airport arr ON f.arrival_airport_id = arr.airport_id
5 JOIN booking_flight bf ON f.flight_id = bf.flight_id
6 JOIN Passengers p ON bf.booking_id = p.passenger_id
7 WHERE p.country_of_residence = 'China';

```

The 'Output' pane shows the results of the query, which are 8 rows. The columns are: flight_id, flight_no, airline_name, and destination_airport.

flight_id	flight_no	airline_name	destination_airport
2	US-NM	SMM	Zephyrhills Municipal Airport
11	TH-S7	YBQ	Delta County Airport
16	NA-CA	PIO	Figari Sud-Corse Airport
35	US-CA	CLY	Ocean Falls Seaplane Base
79	US-AR	NHT	Akunag Heliport
86	AU-NT	KMA	Zephyrhills Municipal Airport
96	VN-05	GVA	Pitalito Airport
123	TL-80	RUG	Garbaharev Airport

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

Database Explorer: postgres@localhost, public schema, tables: airline, airport, baggage, baggage_check, boarding_pass, booking, booking_flight, flights, passengers, security_check.

```

1 SELECT p.first_name, p.last_name, ar.airport_name AS arrival_destination
2 FROM passengers p
3 JOIN booking b ON p.passenger_id = b.passenger_id
4 JOIN booking_flight bf ON b.booking_id = bf.booking_id
5 JOIN flights f ON bf.flight_id = f.flight_id
6 JOIN airport ar ON f.arrival_airport_id = ar.airport_id
7 WHERE DATE_PART('year', AGE(p.date_of_birth)) < 18;

```

Services: Tx: Auto, Playground, airport_db:public

Output: Result 12, 47 rows

	first_name	last_name	arrival_destination
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	Zedekiah	Jull	Figari Sud-Corse Airport

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

Database Explorer: postgres@localhost, public schema, tables: airline, airport, baggage, baggage_check, boarding_pass, booking, booking_flight, flights, passengers, security_check.

```

1 SELECT p.first_name || ' ' || p.last_name AS full_name, p.passport_number, f.actual_arrival AS arrival_time
2 FROM passengers p
3 JOIN booking b ON p.passenger_id = b.passenger_id
4 JOIN booking_flight bf ON b.booking_id = bf.booking_id
5 JOIN flights f ON bf.flight_id = f.flight_id;
6

```

Services: Tx: Auto, Playground, airport_db:public

Output: Result 14, 1-500 of 501+

	full_name	passport_number	arrival_time
1	Muhammad Fass	109932770-9	2023-07-18
2	Trevar Brown	788025864-7	2024-02-11
3	Auria Breffit	570537341-4	2023-07-11
4	Archie Toffel	677556708-1	2023-06-17
5	Sanders Biddles	514546405-3	2023-09-05
6	Sanders Biddles	514546405-3	2024-03-01
7	Remington Piggot	470074456-1	2023-05-31
8	Glynis Marle	209933120-0	2024-02-02

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

database Version control

Database Explorer

- postgres@localhost
 - pg_catalog
 - public
 - tables 10
 - airline
 - airport
 - baggage
 - baggage_check
 - boarding_pass
 - booking
 - booking_flight
 - flights
 - passengers
 - security_check
 - Database Objects
 - postgres 1 of 3
 - snake 0 of 3

console

```
1 SELECT f.flight_no, f.scheduled_departure, f.scheduled_arrival, a.airline_name, ap.country AS airport_country
2 FROM flights f
3 JOIN airline a ON f.airline_id = a.airline_id
4 JOIN airport ap ON f.departure_airport_id = ap.airport_id
5 WHERE a.airline_country = ap.country
6 GROUP BY ap.country, f.flight_no, f.scheduled_departure, f.scheduled_arrival, a.airline_name;
```

Scratches and Consoles

- Database Consoles
 - postgres@localhost
 - console
 - Extensions

Services

Output Result 15

	flight_no	scheduled_departure	scheduled_arrival	airline_name	airport_country
1	CL-AR	2023-06-28	2023-07-01	YLP	Brazil
2	IT-45	2023-10-02	2023-08-04	RBR	Brazil
3	PG-WPD	2023-03-22	2023-06-23	YLP	Brazil
4	SB-WE	2023-11-29	2023-09-26	PDN	Brazil
5	US-WA	2023-09-09	2023-04-01	YLP	Brazil
6	AU-NSW	2023-06-24	2023-08-17	YHB	China
7	AU-NT	2023-10-06	2023-08-11	YHB	China
8	AU-WA	2023-03-27	2023-10-02	SJS	China

Database Consoles > postgres@localhost > console

6:54 CRLF UTF-8 4 spaces

11:36 31.10.2024