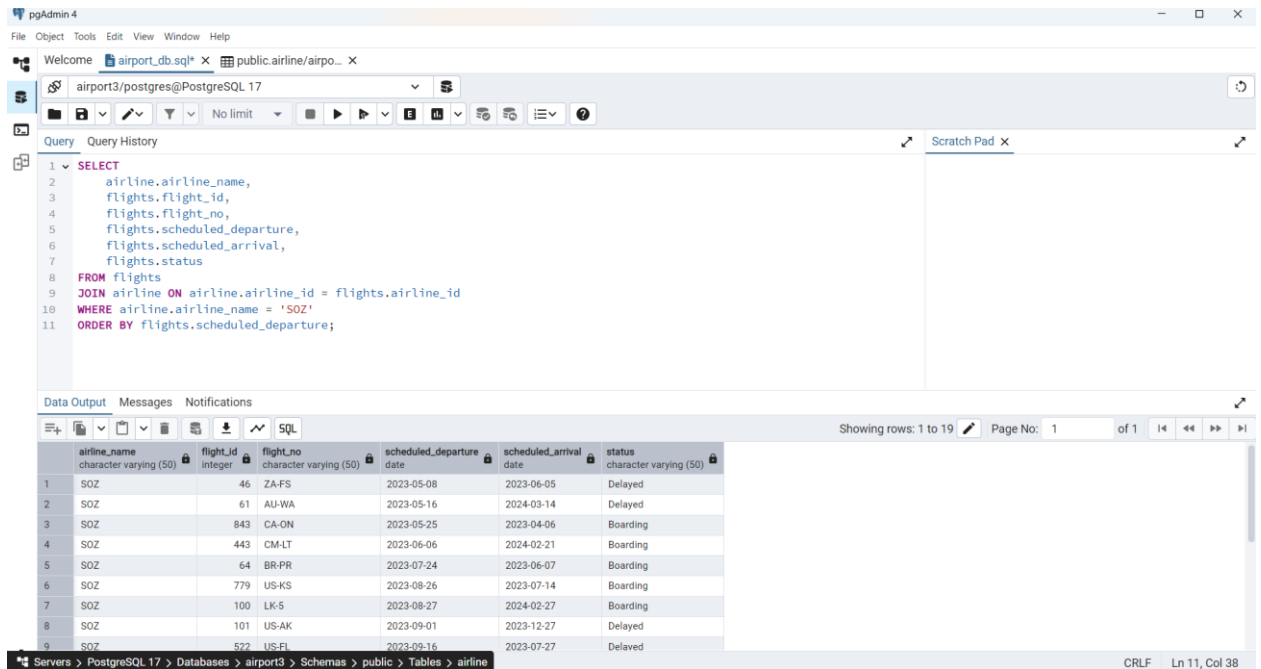


JOIN operations tasks

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



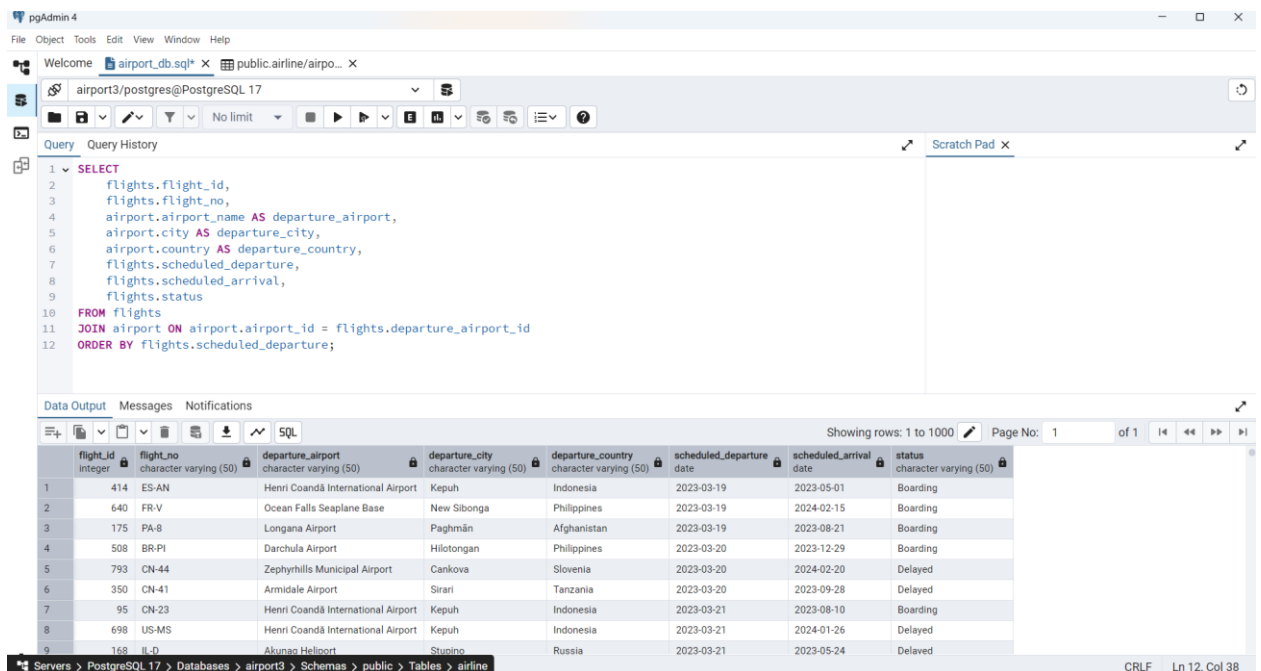
The screenshot shows the pgAdmin 4 interface. The SQL query editor contains the following query:

```
1 SELECT
2     airline.airline_name,
3     flights.flight_id,
4     flights.flight_no,
5     flights.scheduled_departure,
6     flights.scheduled_arrival,
7     flights.status
8 FROM flights
9 JOIN airline ON airline.airline_id = flights.airline_id
10 WHERE airline.airline_name = 'SOZ'
11 ORDER BY flights.scheduled_departure;
```

The Data Output pane shows the results of the query, displaying 9 rows of flight data for airline SOZ. The columns are: airline_name, flight_id, flight_no, scheduled_departure, scheduled_arrival, and status.

airline_name	flight_id	flight_no	scheduled_departure	scheduled_arrival	status
SOZ	46	ZA-FS	2023-05-08	2023-06-05	Delayed
SOZ	61	AU-WA	2023-05-16	2024-03-14	Delayed
SOZ	843	CA-ON	2023-05-25	2023-04-06	Boarding
SOZ	443	CM-LT	2023-06-06	2024-02-21	Boarding
SOZ	64	BR-PR	2023-07-24	2023-06-07	Boarding
SOZ	779	US-KS	2023-08-26	2023-07-14	Boarding
SOZ	100	LK-5	2023-08-27	2024-02-27	Boarding
SOZ	101	US-AK	2023-09-01	2023-12-27	Delayed
SOZ	572	US-FI	2023-09-16	2023-07-27	Delayed

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



The screenshot shows the pgAdmin 4 interface. The SQL query editor contains the following query:

```
1 SELECT
2     flights.flight_id,
3     flights.flight_no,
4     airport.airport_name AS departure_airport,
5     airport.city AS departure_city,
6     airport.country AS departure_country,
7     flights.scheduled_departure,
8     flights.scheduled_arrival,
9     flights.status
10 FROM flights
11 JOIN airport ON airport.airport_id = flights.departure_airport_id
12 ORDER BY flights.scheduled_departure;
```

The Data Output pane shows the results of the query, displaying 9 rows of flight data with departure airport information. The columns are: flight_id, flight_no, departure_airport, departure_city, departure_country, scheduled_departure, scheduled_arrival, and status.

flight_id	flight_no	departure_airport	departure_city	departure_country	scheduled_departure	scheduled_arrival	status
414	ES-AN	Henri Coandă International Airport	Kepuh	Indonesia	2023-03-19	2023-05-01	Boarding
640	FR-V	Ocean Falls Seaplane Base	New Sibonga	Philippines	2023-03-19	2024-02-15	Boarding
175	PA-8	Longana Airport	Paghman	Afghanistan	2023-03-19	2023-08-21	Boarding
508	BR-FI	Darchula Airport	Hilotongan	Philippines	2023-03-20	2023-12-29	Boarding
793	CN-44	Zephyrhills Municipal Airport	Cankova	Slovenia	2023-03-20	2024-02-20	Delayed
350	CN-41	Armidale Airport	Sirari	Tanzania	2023-03-20	2023-09-28	Delayed
95	CN-23	Henri Coandă International Airport	Kepuh	Indonesia	2023-03-21	2023-08-10	Boarding
698	US-MS	Henri Coandă International Airport	Kepuh	Indonesia	2023-03-21	2024-01-26	Delayed
168	IL-D	Akunas Heliport	Stupino	Russia	2023-03-21	2023-05-24	Delayed

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

pgAdmin 4

Welcome | airport_db.sql* | public.airline/airpo... X

airport3/postgres@PostgreSQL 17

Query | Query History | Scratch Pad X

```

6 SELECT
7     airline.airline_id,
8     airline.airline_name,
9     airline.airline_country
10 FROM airline
11 WHERE NOT EXISTS (
12     SELECT 1
13     FROM flights
14     CROSS JOIN date_bounds
15     WHERE flights.airline_id = airline.airline_id
16     AND flights.scheduled_departure >= date_bounds.start_next_month
17     AND flights.scheduled_departure < date_bounds.end_next_month
18 )
19 ORDER BY airline.airline_name;

```

Data Output | Messages | Notifications

Showing rows: 1 to 50 | Page No: 1 | of 1

airline_id [PK] integer	airline_name character varying (50)	airline_country character varying (50)
7	0	Iran
33	BLD	Russia
45	BUO	Sweden
50	BYH	Portugal
40	CII	Argentina
25	CLY	France
19	CSC	Peru
47	DNU	Russia
16	DUC	Poland

Servers > PostgreSQL 17 > Databases > airport3 > Schemas > public > Tables > airline

CRLF Ln 19, Col 31

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

pgAdmin 4

Welcome | airport_db.sql* | public.airline/airpo... X

airport3/postgres@PostgreSQL 17

Query | Query History | Scratch Pad X

```

1 SELECT
2     passengers.passenger_id,
3     passengers.first_name,
4     passengers.last_name,
5     passengers.passport_number,
6     flights.flight_no
7 FROM booking_flight
8 JOIN booking ON booking.booking_id = booking_flight.booking_id
9 JOIN passengers ON passengers.passenger_id = booking.passenger_id
10 JOIN flights ON flights.flight_id = booking_flight.flight_id
11 WHERE flights.flight_no = 'NP-SA'
12 ORDER BY passengers.last_name, passengers.first_name;

```

Data Output | Messages | Notifications

Showing rows: 1 to 5 | Page No: 1 | of 1

passenger_id integer	first_name character varying (50)	last_name character varying (50)	passport_number character varying (50)	flight_no character varying (50)
5	Wayne	Bangs	512588744-7	NP-SA
33	Fairlie	Ferraresi	862466049-1	NP-SA
45	Thatch	Iorizzo	374094308-4	NP-SA
163	Maryellen	MacGilmartin	041165703-8	NP-SA
76	Lorianna	Robbie	435354132-3	NP-SA

Servers > PostgreSQL 17 > Databases > airport3 > Schemas > public > Tables > airline

Successfully run. Total query runtime: 80 msec. 5 rows affected. X

CRLF Ln 12, Col 54

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

pgAdmin 4

Welcome airport_db.sql public.airline/airpo... X

airport3/postgres@PostgreSQL 17

Query Query History Scratch Pad X

```

1 SELECT
2   flights.flight_id,
3   flights.flight_no,
4   COUNT(*) AS tickets_count,
5   ROUND(AVG(booking.price), 2) AS avg_price,
6   ROUND(SUM(booking.price), 2) AS total_price,
7   ROUND(MAX(booking.price), 2) AS max_price,
8   ROUND(MIN(booking.price), 2) AS min_price
9 FROM booking_flight
10 JOIN booking ON booking.booking_id = booking_flight.booking_id
11 JOIN flights ON flights.flight_id = booking_flight.flight_id
12 GROUP BY flights.flight_id, flights.flight_no
13 ORDER BY flights.flight_id;

```

Data Output Messages Notifications

Showing rows: 1 to 614 Page No: 1 of 1

flight_id [PK] integer	flight_no character varying (50)	tickets_count bigint	avg_price numeric	total_price numeric	max_price numeric	min_price numeric
1	US-CT	1	7368.73	7368.73	7368.73	7368.73
2	US-NM	1	2520.04	2520.04	2520.04	2520.04
3	FI-OL	1	1638.75	1638.75	1638.75	1638.75
4	RU-KR	1	4044.13	4044.13	4044.13	4044.13
5	RO-DJ	3	6872.57	20617.70	9609.91	1925.47
6	CA-SK	1	5924.03	5924.03	5924.03	5924.03
7	AU-TAS	1	693.15	693.15	693.15	693.15
8	IN-OR	1	917.99	917.99	917.99	917.99
9	TH-S7	3	7672.65	23017.95	9977.57	5217.69

Servers > PostgreSQL 17 > Databases > airport3 > Schemas > public > Tables > airline CRLF Ln 13, Col 28

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.

pgAdmin 4

Welcome airport_db.sql public.airline/airpo... X

airport3/postgres@PostgreSQL 17

Query Query History Scratch Pad X

```

3 flights.flight_no,
4 airline.airline_name,
5 airport_departure.airport_name AS departure_airport,
6 airport_departure.country AS departure_country,
7 airport_arrival.airport_name AS arrival_airport,
8 airport_arrival.country AS arrival_country,
9 flights.scheduled_departure,
10 flights.scheduled_arrival,
11 flights.status
12 FROM flights
13 JOIN airline ON airline.airline_id = flights.airline_id
14 JOIN airport AS airport_departure ON airport_departure.airport_id = flights.departure_airport_id
15 JOIN airport AS airport_arrival ON airport_arrival.airport_id = flights.arrival_airport_id
16 WHERE airport_arrival.country = 'China'
17 ORDER BY flights.scheduled_departure;

```

Data Output Messages Notifications

Showing rows: 1 to 238 Page No: 1 of 1

flight_id integer	flight_no character varying (50)	airline_name character varying (50)	departure_airport character varying (50)	departure_country character varying (50)	arrival_airport character varying (50)	arrival_country character varying (50)	scheduled_departure date	scheduled_arrival date	status character varying
1	640 FR-V	NGL	Ocean Falls Seaplane Base	Philippines	Bermuda Dunes Airport	China	2023-03-19	2024-02-15	Boarding
2	793 CN-44	GYA	Zephyrhills Municipal Airport	Slovenia	Pitalito Airport	China	2023-03-20	2024-02-20	Delayed
3	698 US-MS	KKG	Henri Coandă International Airport	Indonesia	Pitalito Airport	China	2023-03-21	2024-01-26	Delayed
4	23 CN-65	YLP	Alert Bay Airport	Croatia	Lime Acres Finsch Mine Airport	China	2023-03-21	2024-01-08	Boarding
5	711 CA-NU	BLD	Elorza Airport	China	Lime Acres Finsch Mine Airport	China	2023-03-23	2023-12-12	Boarding
6	530 CW-U-A	KGF	Lime Acres Finsch Mine Airport	China	Elorza Airport	China	2023-03-24	2023-04-06	Delayed
7	934 US-AK	KMA	Melilla Airport	China	Elorza Airport	China	2023-03-25	2023-09-04	Delayed
8	3 FI-OL	SMM	Darchula Airport	Philippines	Elorza Airport	China	2023-03-29	2023-08-01	Boarding

Servers > PostgreSQL 17 > Databases > airport3 > Schemas > public > Tables > airline CRLF Ln 17, Col 38

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

pgAdmin 4

Welcome airport_db.sql public.airline/airpo...

airport3/postgres@PostgreSQL 17

Query History

```

4 passengers.last_name,
5 passengers.date_of_birth,
6 airport.airport_name AS arrival_airport,
7 airport.city AS arrival_city,
8 airport.country AS arrival_country,
9 flights.flight_no,
10 flights.scheduled_arrival
11 FROM passengers
12 JOIN booking ON booking.passenger_id = passengers.passenger_id
13 JOIN booking_flight ON booking_flight.booking_id = booking.booking_id
14 JOIN flights ON flights.flight_id = booking_flight.flight_id
15 JOIN airport ON airport.airport_id = flights.arrival_airport_id
16 WHERE EXTRACT(YEAR FROM age(CURRENT_DATE, passengers.date_of_birth)) < 18
17 ORDER BY passengers.last_name, passengers.first_name;
18

```

Data Output Messages Notifications

Showing rows: 1 to 37 Page No: 1 of 1

	passenger_id integer	first_name character varying (50)	last_name character varying (50)	date_of_birth date	arrival_airport character varying (50)	arrival_city character varying (50)	arrival_country character varying (50)	flight_no character varying (50)	scheduled_arrival date
1	70	Lester	Blades	2008-07-04	Figari Sud-Corse Airport	Itapetinga	Brazil	US-MI	2023-12-02
2	70	Lester	Blades	2008-07-04	Fort Worth Alliance Airport	Rogóznó	Poland	US-MA	2023-10-14
3	70	Lester	Blades	2008-07-04	Armidale Airport	Sirari	Tanzania	PG-CPM	2024-03-02
4	70	Lester	Blades	2008-07-04	Longana Airport	Paghmán	Afghanistan	US-KY	2023-12-02
5	70	Lester	Blades	2008-07-04	Lime Acres Finch Mine Airport	Tielu	China	US-MI	2023-07-01
6	170	Ynez	Bortoloni	2009-10-01	Delta County Airport	Polykárpi	Greece	JP-47	2023-06-04
7	34	Gwennie	Chinnery	2008-06-30	Elorza Airport	Shuiting	China	US-TX	2024-03-04
8	34	Gwennie	Chinnery	2008-06-30	Zephyrhill Municipal Airport	Cankova	Slovenia	IN-GA	2023-05-25
9	34	Gwennie	Chinnery	2008-06-30	Akunaa Heliport	Stuoino	Russia	CN-53	2024-01-31

Servers > PostgreSQL 17 > Databases > airport3 > Schemas > public > Tables > airline

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

pgAdmin 4

Welcome airport_db.sql public.airline/airpo...

airport3/postgres@PostgreSQL 17

Query History

```

1 SELECT
2 passengers.first_name || ' ' || passengers.last_name AS full_name,
3 passengers.passport_number,
4 flights.flight_no,
5 COALESCE(flights.actual_arrival, flights.scheduled_arrival) AS arrival_time,
6 NOW() AS queried_at
7 FROM passengers
8 JOIN booking ON booking.passenger_id = passengers.passenger_id
9 JOIN booking_flight ON booking_flight.booking_id = booking.booking_id
10 JOIN flights ON flights.flight_id = booking_flight.flight_id
11 ORDER BY full_name;

```

Data Output Messages Notifications

Showing rows: 1 to 1000 Page No: 1 of 1

	full_name text	passport_number character varying (50)	flight_no character varying (50)	arrival_time date	queried_at timestamp with time zone
1	Adriano Sussans	276474543-5	AU-NSW	2024-03-02	2025-11-04 22:57:33.142547+05
2	Adriano Sussans	276474543-5	AU-NT	2023-11-05	2025-11-04 22:57:33.142547+05
3	Adriano Sussans	276474543-5	TH-50	2023-10-31	2025-11-04 22:57:33.142547+05
4	Adriano Sussans	276474543-5	BR-BA	2023-09-08	2025-11-04 22:57:33.142547+05
5	Aggi Dunning	179283390-3	US-FL	2023-11-08	2025-11-04 22:57:33.142547+05
6	Aimee Iglesias	638795237-9	TC-PN	2023-12-27	2025-11-04 22:57:33.142547+05
7	Aimee Iglesias	638795237-9	CN-41	2024-01-07	2025-11-04 22:57:33.142547+05
8	Aimee Iglesias	638795237-9	US-NM	2024-01-23	2025-11-04 22:57:33.142547+05
9	Aimee Iglesias	638795237-9	AU-VIC	2023-05-09	2025-11-04 22:57:33.142547+05

Servers > PostgreSQL 17 > Databases > airport3 > Schemas > public > Tables > airline

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

pgAdmin 4

Welcome airport_db.sql* X public.airline/airpo... X

airport3/postgres@PostgreSQL 17

Query Query History Scratch Pad X

```
1 SELECT
2   airport.country AS departure_country,
3   COUNT(DISTINCT flights.flight_id) AS flights_count,
4   STRING_AGG(flights.flight_no, ', ' ORDER BY flights.flight_no) AS flight_nos
5 FROM flights
6 JOIN airline ON airline.airline_id = flights.airline_id
7 JOIN airport ON airport.airport_id = flights.departure_airport_id
8 WHERE airline.airline_country = airport.country
9 GROUP BY airport.country
10 ORDER BY airport.country;
```

Data Output Messages Notifications

Showing rows: 1 to 8 Page No: 1 of 1

	departure_country character varying (50)	flights_count bigint	flight_nos text
1	Brazil	5	CL-AR, IT-45, PG-WPD, SB-WE, US-WA
2	China	50	AU-NSW, AU-NT, AU-WA, AU-WA, BR-AM, BR-BA, BR-MG, BR-PE, BS-NP, CA-BC, CA-ON, CA-ON, CA-ON, CH-NE, CN-32, CN-32, CO-AMA, CR-A, DE-RP, ES-CN, GA-6, GL-U-A, GY-DE, ID-MU, ID-PA, IN-MP, IT-34, KE-500, MY-12, OM
3	Greece	1	AU-NT
4	Indonesia	6	CL-AN, CN-23, NZ-CAN, UG-212, US-AK, US-AK
5	Philippines	3	BR-PR, US-MI, US-MN
6	Poland	2	AU-QLD, VN-U-A
7	Russia	5	EE-39, IL-D, JP-12, MY-14, US-FL
8	Slovenia	2	CA-QC, PG-SAN

Servers > PostgreSQL 17 > Databases > airport3 > Schemas > public > Tables > airline CRLF Ln 10, Col 26