SQL Assignment: All concepts II

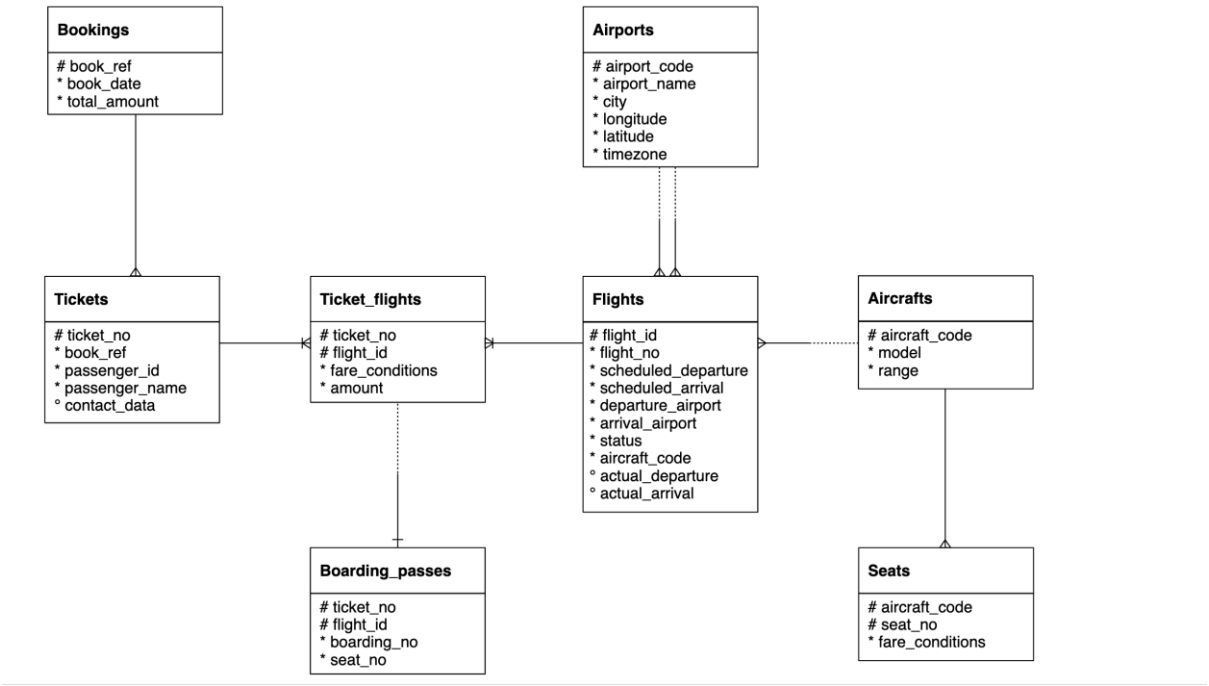
***Same database file from previous assignment will be used in this assignment. If you haven't download the first assignment yet follow the instructions:*

Download the following database file from the link:

AirlineDB:

https://drive.google.com/file/d/15ehp3FtyuYqExne3FaFcWHB4TFI_vtSR/view?usp=sharing

Table structure



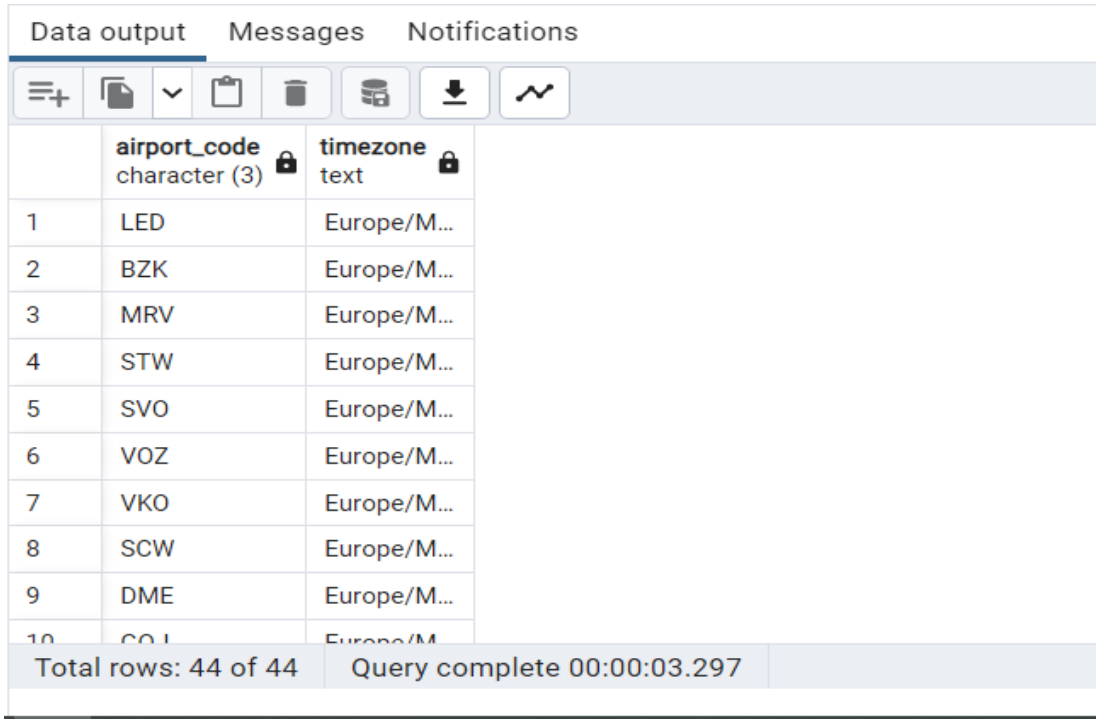
Important Instructions:

- Download the database link and restore in postgres. For restoration, you can refer to the instructions in the first chapter of SQL
- The AirlineDB is quite big in size, hence restoration might take time. Once the restoration starts, wait for 15 to 20 mins and don't shut down the computer
- Table names in database has "**booking.**" as prefix. For example, bookings.tickets, bookings.boarding_passes. Hence use the prefix in the query as well
    - Correct way of accessing tables: SELECT * FROM **bookings.tickets**
    - Wrong way of accessing tables: SELECT * FROM tickets
- Queries need to be submitted in a **word/text file**. CSV output of the queries will **NOT** be accepted
- Expected output written is written in some of the following question to make sure that you are getting the columns in the same sequence. It doesn't mean that you will get same values in the output. The exact values in your queries might be different depending on the values sorted in your copy of database.

1. Find list of airport codes in Europe/Moscow timezone

Solution:-

```
SELECT
    airport_code ,
    timezone
FROM bookings.airports
WHERE timezone = 'Europe/Moscow'
```



Data output | Messages | Notifications

	airport_code character (3)	timezone text
1	LED	Europe/M...
2	BZK	Europe/M...
3	MRV	Europe/M...
4	STW	Europe/M...
5	SVO	Europe/M...
6	VOZ	Europe/M...
7	VKO	Europe/M...
8	SCW	Europe/M...
9	DME	Europe/M...

Total rows: 44 of 44 | Query complete 00:00:03.297

2. Write a query to get the count of seats in various fare condition for every aircraft code?

Solutions:-

```
SELECT
    aircraft_code,
    fare_conditions,
    COUNT(seat_no)
FROM bookings.seats
GROUP BY 1,2
```

	aircraft_code character (3)	fare_conditions character varying (10)	count bigint
1	321	Business	28
2	773	Comfort	48
3	733	Economy	118
4	773	Economy	324
5	320	Business	20
6	319	Economy	96
7	319	Business	20
8	SU9	Business	12
9	CN1	Economy	12
10	733	Business	12

Total rows: 17 of 17 Query complete 00:00:00.127

3. How many aircrafts codes have at least one Business class seats?

Solutions:-

```
SELECT
    COUNT(aircraft_code),
    fare_conditions
FROM bookings.seats
WHERE fare_conditions = 'Business'
GROUP BY 2
```

	count bigint	fare_conditions character varying (10)
1	152	Business

4. Find out the name of the airport having maximum number of departure flight

Solution:-

```
WITH counter as
(
    SELECT
    COUNT(scheduled_departure) AS counting
    FROM bookings.flights
)
SELECT
```

```
        MAX(C.counting) AS Max_depart,
        A.airport_name->>'en'
FROM counter C
CROSS JOIN bookings.airports_data A
GROUP BY 2
ORDER BY 1 DESC
```

	max_depart bigint	?column? text
1	214867	Abakan Airport
2	214867	Anapa Vityazevo Airport
3	214867	Astrakhan Airport
4	214867	Barnaul Airport
5	214867	Begishevo Airport
6	214867	Belgorod International Airport
7	214867	Beloyarskiy Airport
8	214867	Beslan Airport
9	214867	Bogashevo Airport
10	214867	Bolshove Savino Airport

Total rows: 104 of 104 Query complete 00:00:00.120

5. Find out the name of the airport having least number of scheduled departure flights

Solution:-

```
WITH Least_departure as(
SELECT departure_airport,
COUNT(scheduled_departure)AS Depart
FROM bookings.flights
where status = 'Scheduled'
GROUP BY 1
)
SELECT airport_name->>'en' as Name_of_Airport,depart from bookings.airports_data a
left join Least_departure l ON l.departure_airport=a.airport_code
GROUP BY 1,2
ORDER BY 2
```

	name_of_airport text	depart bigint
1	Usinsk Airport	6
2	Komsomolsk-on...	7
3	Polyarny Airport	9
4	Nyagan Airport	11
5	Yelizovo Airport	11
6	Ivanovo South A...	14
7	Ugolny Airport	14
8	Sokol Airport	16
9	Kyzyl Airport	19
10	Lipetsk Airport	19

Total rows: 104 of 104 Query complete 00:00:00.101

6. How many flights from 'DME' airport don't have actual departure?

Solutions:-

```
SELECT
   departure_airport,
   COUNT(flight_no) AS no_of_flights
FROM
   bookings.flights
WHERE
   departure_airport = 'DME' AND actual_departure IS NULL
GROUP BY
   departure_airport;
```

	departure_airport character (3)	no_of_flights bigint	actual_departure timestamp with time zone
1	DME	1591	[null]

Total rows: 1 of 1 | Query complete 00:00:00.097

7. Identify flight ids having range between 3000 to 6000

Solution:-

```
SELECT
        flight_id,
        flight_no,
        aircraft_code
FROM bookings.flights
WHERE flight_id between 3000 and 6000
```

	flight_id [PK] integer	flight_no character (6)	aircraft_code character (3)
1	3000	PG0216	763
2	3001	PG0216	763
3	3002	PG0216	763
4	3003	PG0216	763
5	3004	PG0216	763
6	3005	PG0216	763
7	3006	PG0216	763
8	3007	PG0216	763
9	3008	PG0216	763
10	3009	PG0216	763

Total rows: 1000 of 3001 Query complete 00:00:00.082

8. Write a query to get the count of flights flying between URS and KUF?

Solution:-

```
SELECT
        COUNT(flight_id) AS Total_flight_count,
        departure_airport,
        arrival_airport
FROM bookings.flights
WHERE departure_airport = 'URS'
AND arrival_airport = 'KUF'
GROUP BY 2,3
```

	total_flight_count bigint	departure_airport character (3)	arrival_airport character (3)
1	396	URS	KUF

9. Write a query to get the count of flights flying from either from NOZ or KRR?

Solutions:-

```
SELECT
        COUNT(flight_id) AS Total_flight_count,
        departure_airport
FROM bookings.flights
```

```
WHERE departure_airport = 'NOZ'
OR departure_airport = 'KRR'
GROUP BY 2
```

	total_flight_count bigint	departure_airport character (3)
1	1527	KRR
2	2376	NOZ

10. Write a query to get the count of flights flying from KZN, DME, NBC,NJC,GDX,SGC,VKO,ROV

Solutions:-

```
SELECT
        COUNT(flight_id) AS Count_of_Flights,
        departure_airport
FROM bookings.flights
WHERE departure_airport IN ('KZN','DME','NBC','NJC','GDX','SGC','VKO','ROV')
GROUP BY 2
```

	count_of_flights bigint	departure_airport character (3)
1	20875	DME
2	227	GDX
3	3055	KZN
4	1471	NBC
5	1245	NJC
6	4015	ROV
7	3450	SGC
8	11145	VKO

Total rows: 8 of 8 | Query complete 00:00:00.143

11. Write a query to extract flight details having range between 3000 and 6000 and flying from DME

Solutions:-

```
SELECT
 *
FROM bookings.flights
WHERE flight_id BETWEEN 3000 AND 6000
AND departure_airport = 'DME'
```

	flight_id [PK] integer	flight_no character (6)	scheduled_departure timestamp with time zone	scheduled_arrival timestamp with time zone	departure_airport character (3)	arrival_airport character (3)	status character varying (20)	aircraft_code character (3)	actual_departure timestamp with ti
1	3000	PG0216	2017-06-19 16:40:00+05:30	2017-06-19 17:45:00+05:30	DME	KUF	Arrived	763	2017-06-19 16:45
2	3001	PG0216	2017-01-21 16:40:00+05:30	2017-01-21 17:45:00+05:30	DME	KUF	Arrived	763	2017-01-21 16:45
3	3002	PG0216	2016-12-19 16:40:00+05:30	2016-12-19 17:45:00+05:30	DME	KUF	Arrived	763	2016-12-19 16:42
4	3003	PG0216	2017-03-06 16:40:00+05:30	2017-03-06 17:45:00+05:30	DME	KUF	Arrived	763	2017-03-06 16:44
5	3004	PG0216	2016-12-10 16:40:00+05:30	2016-12-10 17:45:00+05:30	DME	KUF	Arrived	763	2016-12-10 16:45
6	3005	PG0216	2016-12-01 16:40:00+05:30	2016-12-01 17:45:00+05:30	DME	KUF	Arrived	763	2016-12-01 16:42
7	3006	PG0216	2017-03-21 16:40:00+05:30	2017-03-21 17:45:00+05:30	DME	KUF	Arrived	763	2017-03-21 16:42
8	3007	PG0216	2017-07-27 16:40:00+05:30	2017-07-27 17:45:00+05:30	DME	KUF	Arrived	763	2017-07-27 16:42
9	3008	PG0216	2016-08-21 16:40:00+05:30	2016-08-21 17:45:00+05:30	DME	KUF	Arrived	763	2016-08-21 16:41

Total rows: 1000 of 3001 | Query complete 00:00:03.760 | Ln 7, Col 30

12. Find the list of flight ids which are using aircrafts from “Airbus” company and got cancelled or delayed

```
SELECT
   F.flight_id
FROM
   bookings.flights F
LEFT JOIN
   bookings.aircrafts_data D ON F.aircraft_code = D.aircraft_code
WHERE
   D.model->>'en' LIKE '%Airbus%'
   AND F.status IN ('Cancelled', 'Delayed');
```

	flight_id [PK] integer
1	198
2	3442
3	7696
4	8344
5	20986
6	28087
7	33426
8	36190
9	38982
10	57218

Total rows: 33 of 33 | Query complete 00:00:00.094

13. Find the list of flight ids which are using aircrafts from “Boeing” company and got cancelled or delayed

Solutions:-

```
SELECT
   F.flight_id
FROM
   bookings.flights F
LEFT JOIN
   bookings.aircrafts_data D ON F.aircraft_code = D.aircraft_code
WHERE
   D.model->>'en' LIKE '%Boeing%'
   AND F.status IN ('Cancelled', 'Delayed');
```

	flight_id [PK] integer
1	8609
2	34144
3	45970
4	59203
5	71824
6	83093
7	84237
8	105007
9	110319
10	110406

Total rows: 24 of 24 Query complete 00:00:00.096

14. Which airport(name) has most cancelled flights (arriving)?

Solutions:-

```
SELECT
   D.airport_name,
   F.arrival_airport,
   COUNT(F.flight_id) AS Max_cancelled
FROM
   bookings.flights F
CROSS JOIN
   bookings.airports_data D
WHERE
   F.status = 'Cancelled'
GROUP BY
```

```
   1, 2
ORDER BY
   3 DESC
LIMIT 1;
```

	airport_name jsonb	arrival_airport character (3)	max_cancelled bigint
1	{"en": "Noyabrsk Airport", "ru": "Ноябрьск"}	DME	35

15. Identify flight ids which are using “Airbus aircrafts”

Solutions:-

```
SELECT
   F.flight_id
FROM
   bookings.flights F
LEFT JOIN
   bookings.aircrafts_data D ON F.aircraft_code = D.aircraft_code
WHERE
   D.model->>'en' LIKE '%Airbus%';
```

	flight_id [PK] integer
1	3940
2	21648
3	32925
4	33248
5	33329
6	33736
7	51428
8	51529
9	53108
10	53268

Total rows: 1000 of 20704 | Query complete 00:00:00.095

16. Identify date-wise last flight id flying from every airport?

Solutions:-

```
SELECT
   flight_id,
   scheduled_departure::date AS flight_date,
```

```
  departure_airport
FROM
  (
    SELECT
      *,
      ROW_NUMBER() OVER (PARTITION BY scheduled_departure::date, departure_airport
ORDER BY scheduled_departure DESC) AS rn
    FROM
      bookings.flights
    WHERE
      status != 'Cancelled'
  ) AS Flight_Table
WHERE
  rn = 1;
```

	flight_id [PK] integer	scheduled_departure timestamp with time zone	departure_airport character (3)
1	136446	2016-08-15 15:35:00+05:30	AAQ
2	119085	2016-08-15 14:45:00+05:30	ABA
3	199206	2016-08-15 22:40:00+05:30	AER
4	204442	2016-08-15 18:25:00+05:30	ARH
5	182582	2016-08-15 15:35:00+05:30	ASF
6	162632	2016-08-15 11:35:00+05:30	BAX
7	115681	2016-08-15 13:15:00+05:30	BQS
8	113340	2016-08-15 07:55:00+05:30	BTK
9	196898	2016-08-15 22:50:00+05:30	BZK
10	212846	2016-08-15 15:15:00+05:30	CEE

Total rows: 1000 of 38377 Query complete 00:00:01.256

17. Identify list of customers who will get the refund due to cancellation of the flights? And how much amount they will get?

Solutions:-

```
SELECT
  T.passenger_name,
  SUM(TF.refund_amount) AS refund_amount
FROM
  bookings.tickets T
  LEFT JOIN (
    SELECT
      TF.ticket_no,
```

```
        B.total_amount * 0.8 AS refund_amount
    FROM
        bookings.ticket_flights TF
        INNER JOIN bookings.flights F ON TF.flight_id = F.flight_id
        INNER JOIN bookings.bookings B ON B.book_ref = TF.book_ref
    WHERE
        F.status = 'Cancelled'
  ) TF ON T.ticket_no = TF.ticket_no
GROUP BY
  T.passenger_name;
```

	passenger_name text	refund numeric
1	ADELINA ANDRE...	90400.00
2	ADELINA CHERN...	7400.00
3	ADELINA EGORO...	23200.00
4	ADELINA FOMINA	75600.00
5	ADELINA LUKYA...	136800.00
6	ADELINA NAZAR...	271100.00
7	ADELINA NIKOL...	70100.00
8	ADELINA POLYA...	30800.00
9	ADELINA POPOVA	108600.00
10	ADELINA POTAP...	49200.00

18. Identify date wise first cancelled flight id flying for every airport?

Solutions:-

```
SELECT
  flight_id,
  scheduled_departure,
  departure_airport
FROM (
  SELECT
    *,
    ROW_NUMBER() OVER (PARTITION BY cast(scheduled_departure AS date),
departure_airport ORDER BY scheduled_departure) AS rn
  FROM
    bookings.flights
  WHERE
    status = 'Cancelled'
) AS Flight_Table
```

```
WHERE
    rn = 1;
```

	flight_id [PK] integer	scheduled_departure timestamp with time zone	departure_airport character (3)
1	42952	2017-04-24 13:00:00+05:30	SVO
2	206504	2017-04-25 15:50:00+05:30	SGC
3	188685	2017-05-02 16:00:00+05:30	CSY
4	192773	2017-05-05 14:30:00+05:30	MQF
5	153089	2017-05-05 14:05:00+05:30	UUA
6	132392	2017-05-10 21:35:00+05:30	GOJ
7	38427	2017-05-12 12:50:00+05:30	SVO
8	192368	2017-05-15 11:25:00+05:30	MQF
9	132585	2017-05-17 21:40:00+05:30	GOJ
10	149006	2017-05-23 15:00:00+05:30	OVS

19. Identify list of Airbus flight ids which got cancelled.

Solutions:-

```
SELECT
F.flight_id,
F.status,
AD.model->>'en'
FROM bookings.Flights F
LEFT JOIN bookings.aircrafts_data AD
ON  F.aircraft_code = AD.aircraft_code
WHERE AD.model->>'en' like '%Airbus%'
AND F.status='Cancelled'
```

	flight_id [PK] integer	status character varying (20)	?column? text
1	7696	Cancelled	Airbus A319-1...
2	8344	Cancelled	Airbus A319-1...
3	20986	Cancelled	Airbus A321-2...
4	28087	Cancelled	Airbus A319-1...
5	38982	Cancelled	Airbus A319-1...
6	57218	Cancelled	Airbus A319-1...

Total rows: 27 of 27 Query complete 00:00:02.562

20. Identify list of flight ids having highest range.

Solutions:-

```
SELECT
  F.flight_id,
  AC.range
FROM bookings.flights F
LEFT JOIN bookings.aircrafts AC ON F.aircraft_code = AC.aircraft_code
WHERE AC.range = (SELECT MAX(range) FROM bookings.aircrafts)
```

	flight_id [PK] integer	max integer
1	34792	11100
2	34791	11100
3	34790	11100
4	34789	11100
5	34788	11100
6	34787	11100
7	34786	11100
8	34785	11100
9	34784	11100
10	34783	11100

Total rows: 1000 of 214867 Query complete 00:00:00.488