**Please answer the following questions using Airline DB database.**

**Instruction to attempt questions:**

* Students need to write queries for the questions mentioned in the using Airline DB database
* Read the questions carefully before writing the query in **Airline Playground** (in the Playground chapter of SQL)
* Airline DB: [https://www.skillovilla.com/playground/sql?exerciseId=0181e251-6ea8-4595-ae2b-0c690119f8db](•%09https:/www.skillovilla.com/playground/sql?exerciseId=0181e251-6ea8-4595-ae2b-0c690119f8db)

**How to submit the capstone:**

* Copy the SQL query code and paste it in the answer section in this file.
* Once the assignment is done, submit the file over LMS.

**Invalid Submissions:**

* Pasting pictures of the code as answer is **NOT** acceptable.
* Uploading output data (CSVs) of the SQL queries is **NOT** acceptable.

**Write your answers(query) in the answer and submit it. To write the answer in the assignment, please follow the below example in yellow**

Example:

Questions*: Extract all the columns of the flights table*

Answer: *SELECT \* FROM flights*

**Attempt the following Questions-**

1. ***Represent the “book\_date” column in “yyyy-mmm-dd” format using Bookings table***

*Expected output: book\_ref, book\_date (in “yyyy-mmm-dd” format) , total amount*

**Answer:**

SELECT

    book\_ref,

    to\_char(book\_date, 'yyyy-mmm-dd'),

    total\_amount

FROM bookings

1. **Get the following columns in the exact same sequence.**

Expected columns in the output: ticket\_no, boarding\_no, seat\_number, passenger\_id, passenger\_name.

**Answer:**

SELECT

    bp.ticket\_no,

    boarding\_no,

    seat\_no,

    passenger\_id,

    passenger\_name

FROM boarding\_passes bp

LEFT JOIN tickets t

ON bp.ticket\_no = t.ticket\_no

1. **Write a query to find the seat number which is least allocated among all the seats?**

**Answer:**

SELECT

    s.seat\_no,

    count(\*) allocated\_seats\_count

FROM seats s

LEFT JOIN boarding\_passes bp

ON s.seat\_no = bp.seat\_no

GROUP BY 1

ORDER BY 2 ASC

LIMIT 3

1. ***In the database, identify the month wise highest paying passenger name and passenger id.***

Expected output: Month\_name(“mmm-yy” format), passenger\_id, passenger\_name and total amount

**Answer:**

with sub as (SELECT

    to\_char(book\_date, 'mmm-yy') Month\_name,

    passenger\_id,

    passenger\_name,

    sum(total\_amount) total\_amount

FROM tickets t

LEFT JOIN bookings b

ON t.book\_ref = b.book\_ref

GROUP BY 1,2,3),

main as (

SELECT

    \*,

    dense\_rank() over (partition by Month\_name order by total\_amount desc) rnk

FROM sub

)

SELECT

    Month\_name,

    passenger\_id,

    passenger\_name,

    total\_amount

FROM main

WHERE rnk=1

1. ***In the database, identify the month wise least paying passenger name and passenger id?***

Expected output: Month\_name(“mmm-yy” format), passenger\_id, passenger\_name and total amount

**Answer:**

with sub as (SELECT

    to\_char(book\_date, 'mmm-yy') Month\_name,

    passenger\_id,

    passenger\_name,

    sum(total\_amount) total\_amount

FROM tickets t

LEFT JOIN bookings b

ON t.book\_ref = b.book\_ref

GROUP BY 1,2,3),

main as (

SELECT

    \*,

    dense\_rank() over (partition by Month\_name order by total\_amount asc) rnk

FROM sub

)

SELECT

    Month\_name,

    passenger\_id,

    passenger\_name,

    total\_amount

FROM main

WHERE rnk=1

1. **Identify the travel details of non stop journeys or return journeys (having more than 1 flight).**

Expected Output: Passenger\_id, passenger\_name, ticket\_number and flight count.

**Answer:**

SELECT

    passenger\_id,

    passenger\_name,

    t.ticket\_no,

    count(flight\_id) flight\_count

FROM tickets t

LEFT JOIN boarding\_passes bp

ON t.ticket\_no = bp.ticket\_no

GROUP BY 1,2,3

HAVING count(flight\_id) > 1

1. **How many tickets are there without boarding passes?**

Expected Output: just one number is required.

**Answer:**

SELECT

    count(t.ticket\_no)

FROM tickets t

LEFT JOIN boarding\_passes bp

ON t.ticket\_no = bp.ticket\_no

WHERE boarding\_no is null

1. **Identify details of the longest flight (using flights table)?**

Expected Output: Flight number, departure airport, arrival airport, aircraft code and durations.

**Answer:**

with sub as (SELECT

    flight\_no,

    departure\_airport,

    arrival\_airport,

    aircraft\_code,

    (scheduled\_arrival - scheduled\_departure) AS durations

FROM flights

ORDER BY durations desc),

main as(

SELECT

    \*,

    dense\_rank() over(order by durations desc) rnk

FROM sub

)

SELECT

    flight\_no,

    departure\_airport,

    arrival\_airport,

    aircraft\_code,

    durations

FROM main

where rnk=1

1. **Identify details of all the morning flights (morning means between 6AM to 11 AM, using flights table)?**

Expected output: flight\_id, flight\_number, scheduled\_departure, scheduled\_arrival and timings.

**Answer:**

SELECT

    flight\_id,

    flight\_no as flight\_number,

    scheduled\_departure,

    scheduled\_arrival,

    to\_char(scheduled\_departure, 'hh:mi:ss') as timings,

    --timings2 column has been created because there was less clarity given on what was supposed to be the timings column, so I've figured it out both ways(timings,timings2)

    CASE

        WHEN EXTRACT(HOUR FROM scheduled\_departure) BETWEEN 6 AND 10 THEN 'Morning'

        ELSE 'Not Morning'

    END AS timings2

FROM flights

WHERE

    EXTRACT(HOUR FROM scheduled\_departure) BETWEEN 6 AND 10

1. **Identify the earliest morning flight available from every airport.**

Expected output: flight\_id, flight\_number, scheduled\_departure, scheduled\_arrival, departure airport and timings.

**Answer:**

WITH EarlyMorningFlights AS (

    SELECT

        flight\_id,

        flight\_no as flight\_number,

        scheduled\_departure,

        scheduled\_arrival,

        departure\_airport,

        to\_char(scheduled\_departure, 'hh:mi:ss') as timings,

        --timings2 column has been created because there was less clarity given on what was supposed to be the timings column, so I've figured it out both ways(timings,timings2)

        CASE

            WHEN EXTRACT(HOUR FROM scheduled\_departure) BETWEEN 2 AND 5 THEN 'Early Morning'

            ELSE 'Not Early Morning'

        END AS timings2

    FROM

        flights

    WHERE

        EXTRACT(HOUR FROM scheduled\_departure) BETWEEN 2 AND 5

),

main as (

    SELECT

        \*,

        row\_number() OVER (PARTITION BY departure\_airport ORDER BY timings) AS row\_num

    FROM EarlyMorningFlights

)

SELECT

    flight\_id,

    flight\_number,

    scheduled\_departure,

    scheduled\_arrival,

    departure\_airport,

    timings,

    timings2

FROM

    main

WHERE

    row\_num = 1

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

Expected Output: Airport\_code.

**Answer:**

SELECT

    distinct airport\_code

FROM airports

WHERE timezone = 'Europe/Moscow'

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

Expected Outputs: Aircraft\_code, fare\_conditions ,seat count

**Answer:**

SELECT

    aircraft\_code,

    fare\_conditions,

    count(seat\_no) seat\_count

FROM seats

GROUP BY 1,2

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

Expected Output : Count of aircraft codes

**Answer:**

SELECT

    count(distinct aircraft\_code)

FROM seats

WHERE fare\_conditions = 'Business'

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

Expected Output : Airport\_name

**Answer:**

SELECT

    airport\_name

FROM

(SELECT

    airport\_name,

    count(departure\_airport)

FROM airports a

LEFT JOIN flights f

ON a.airport\_code = f.departure\_airport

GROUP BY 1

ORDER BY 2 DESC

) as a

LIMIT 1

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

Expected Output : Airport\_name

**Answer:**

SELECT

    airport\_name

FROM

(SELECT

    airport\_name,

    count(departure\_airport)

FROM airports a

LEFT JOIN flights f

ON a.airport\_code = f.departure\_airport

GROUP BY 1

ORDER BY 2

) as a

LIMIT 1

1. **How many flights from ‘DME’ airport don’t have actual departure?**

Expected Output : Flight Count

**Answer:**

SELECT

    count(flight\_id)

FROM flights

WHERE

    departure\_airport = 'DME'

    AND actual\_departure is null

1. **Identify flight ids having range between 3000 to 6000**

Expected Output : Flight\_Number , aircraft\_code, ranges

**Answer:**

SELECT

    distinct f.flight\_no as flight\_number,

    a.aircraft\_code,

    a.range as ranges

FROM flights f

LEFT JOIN aircrafts a

ON f.aircraft\_code = a.aircraft\_code

WHERE a.range BETWEEN 3000 AND 6000

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

Expected Output : Flight\_count

**Answer:**

SELECT

    count(flight\_id)

FROM flights

WHERE

    departure\_airport in ('URS','KUF')

    AND arrival\_airport in ('URS','KUF')

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

Expected Output : Flight count

**Answer:**

SELECT

    count(flight\_id)

FROM flights

WHERE

    departure\_airport in ('NOZ','KRR')

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

Expected Output : Departure airport ,count of flights flying from these airports.

**Answer:**

SELECT

    departure\_airport,

    count(flight\_id)

FROM flights

WHERE

    departure\_airport in ('KZN','DME','NBC','NJC','GDX','SGC','VKO','ROV')

GROUP BY 1

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

Expected Output :Flight\_no,aircraft\_code,range,departure\_airport

**Answer:**

SELECT

    distinct flight\_no,

    a.aircraft\_code,

    a.range,

    departure\_airport

FROM flights f

LEFT JOIN aircrafts a

ON f.aircraft\_code = a.aircraft\_code

WHERE

    a.range BETWEEN 3000 AND 6000

    AND departure\_airport = 'DME'

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

Expected Output : Flight\_id,aircraft\_model

**Answer:**

SELECT

    flight\_id,

    a.model as aircraft\_model

FROM flights f

LEFT JOIN aircrafts a

ON f.aircraft\_code = a.aircraft\_code

WHERE

    a.model like '%Airbus%'

    AND status in ('Cancelled','Delayed')

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

Expected Output : Flight\_id,aircraft\_model

**Answer:**

SELECT

    flight\_id,

    a.model as aircraft\_model

FROM flights f

LEFT JOIN aircrafts a

ON f.aircraft\_code = a.aircraft\_code

WHERE

    a.model like '%Boeing%'

    AND status in ('Cancelled','Delayed')

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

Expected Output : Airport\_name

**Answer:**

with main as (

    SELECT

        a.airport\_name,

        count(f.arrival\_airport)

    FROM flights f

    LEFT JOIN airports a

    ON a.airport\_code = f.departure\_airport

    WHERE f.status like 'Cancelled'

    group by 1

    order by 2 desc

    limit 1)

select

airport\_name

from main

1. ***Identify flight ids which are using “Airbus aircrafts”***

*Expected Output : Flight\_id,aircraft\_model*

**Answer:**

SELECT

    f.flight\_id,

    a.model as aircraft\_model

FROM flights f

LEFT JOIN aircrafts a

ON f.aircraft\_code = a.aircraft\_code

WHERE a.model like '%Airbus%'

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

*Expected Output: Flight\_id,flight\_number,schedule\_departure,departure\_airport*

**Answer:**

WITH main AS (

    SELECT

        f.flight\_id,

        f.flight\_no,

        f.scheduled\_departure,

        f.departure\_airport,

        DATE(f.scheduled\_departure) AS departure\_date,

        ROW\_NUMBER() OVER (PARTITION BY f.departure\_airport, DATE(f.scheduled\_departure) ORDER BY f.scheduled\_departure DESC) AS row\_num

    FROM

        flights f

)

SELECT

    flight\_id,

    flight\_no as flight\_number,

    scheduled\_departure,

    departure\_airport

FROM

    main

WHERE

    row\_num = 1

1. ***Identify list of customers who will get the refund due to cancellation of the flights and how much amount they will get?***

*Expected Output : Passenger\_name,total\_refund.*

**Answer:**

SELECT

    t.passenger\_name,

    SUM(tf.amount) total\_refund

FROM tickets t

LEFT JOIN ticket\_flights tf

ON t.ticket\_no = tf.ticket\_no

LEFT JOIN flights f

ON tf.flight\_id = f.flight\_id

WHERE f.status = 'Cancelled'

GROUP BY 1

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

*Expected Output : Flight\_id,flight\_number,schedule\_departure,departure\_airport*

**Answer:**

with main as (SELECT

    flight\_id,

    flight\_no as flight\_number,

    scheduled\_departure,

    departure\_airport,

    DATE(scheduled\_departure) AS departure\_date,

    dense\_rank() OVER (PARTITION BY departure\_airport, DATE(scheduled\_departure) ORDER BY scheduled\_departure) AS row\_num

FROM flights

WHERE

    status = 'Cancelled')

SELECT

    flight\_id,

    flight\_number,

    scheduled\_departure,

    departure\_airport

FROM main

WHERE row\_num = 1

1. ***Identify list of Airbus flight ids which got cancelled.***

*Expected Output : Flight\_id*

**Answer:**

SELECT

    flight\_id

FROM flights f

LEFT JOIN aircrafts a

ON f.aircraft\_code = a.aircraft\_code

WHERE

    status = 'Cancelled'

    AND model like '%Airbus%'

1. ***Identify list of flight ids having highest range.***

*Expected Output : Flight\_no, range*

**Answer:**

SELECT

    flight\_no,

    range

FROM

(SELECT

    flight\_no,

    range,

    RANK() OVER (ORDER BY range DESC) AS rnk

FROM flights f

LEFT JOIN aircrafts a

ON f.aircraft\_code = a.aircraft\_code) a

WHERE rnk=1