**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') AS book\_date, 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 b.ticket\_no, b.boarding\_no, (b.seat\_no) AS seat\_number, t.passenger\_id, t.passenger\_name

FROM BOARDING\_PASSES b

JOIN TICKETS t ON b.ticket\_no = t.ticket\_no;

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

**Answer:** SELECT seat\_no, COUNT(seat\_no) AS least\_allocated

FROM seats

GROUP BY seat\_no

ORDER BY 2 ASC

LIMIT 1

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 t1 AS (

    SELECT TO\_CHAR(b.book\_date, 'MON-YY') AS month\_name,

           t.passenger\_id,

           t.passenger\_name,

           SUM(b.total\_amount) AS total\_amount,

           DENSE\_RANK() OVER (PARTITION BY TO\_CHAR(b.book\_date, 'MON-YY') ORDER BY SUM(b.total\_amount) DESC) AS rnk

    FROM BOOKINGS b

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

    GROUP BY TO\_CHAR(b.book\_date, 'MON-YY'), t.passenger\_id, t.passenger\_name

)

SELECT month\_name, passenger\_id, passenger\_name, total\_amount

FROM t1

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 t1 AS (

    SELECT TO\_CHAR(b.book\_date, 'MON-YY') AS month\_name,

           t.passenger\_id,

           t.passenger\_name,

           SUM(b.total\_amount) AS total\_amount,

           DENSE\_RANK() OVER (PARTITION BY TO\_CHAR(b.book\_date, 'MON-YY') ORDER BY SUM(b.total\_amount) ASC) AS rnk

    FROM BOOKINGS b

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

    GROUP BY TO\_CHAR(b.book\_date, 'MON-YY'), t.passenger\_id, t.passenger\_name

)

SELECT month\_name, passenger\_id, passenger\_name, total\_amount

FROM t1

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 t.passenger\_id,t.passenger\_name,t.ticket\_no,count(f.flight\_id) as flight\_count

from flights f

join TICKET\_FLIGHTS tf

on f.flight\_id=tf.flight\_id

join tickets t on  tf.ticket\_no=t.ticket\_no

group by 1,2,3

having count(f.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 b ON t.ticket\_no = b.ticket\_no

WHERE b.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:** SELECT flight\_no AS flight\_number,

       departure\_airport,

       arrival\_airport,

       aircraft\_code,

       SUM(actual\_arrival - actual\_departure) AS duration

FROM flights

GROUP BY 1,2,3,4

HAVING SUM(actual\_arrival - actual\_departure) IS NOT NULL

ORDER BY 5 DESC

LIMIT 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,

       scheduled\_departure,

       scheduled\_arrival,

       EXTRACT(HOUR FROM scheduled\_departure) AS timings

FROM flights

WHERE EXTRACT(HOUR FROM scheduled\_departure) >= 6 AND EXTRACT(HOUR FROM scheduled\_departure) <= 11

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:** SELECT flight\_id,

       flight\_no,

       scheduled\_departure,

       scheduled\_arrival,

       departure\_airport,

       TO\_CHAR(scheduled\_departure, 'HH12:MI:SS AM') AS timings

FROM flights

WHERE TO\_CHAR(scheduled\_departure, 'HH12') >= '02'

  AND TO\_CHAR(scheduled\_departure, 'HH12') <= '06'

  AND TO\_CHAR(scheduled\_departure, 'AM') = 'AM'

ORDER BY timings asc

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

Expected Output: Airport\_code.

**Answer:** SELECT airport\_code

FROM airports

WHERE timezone LIKE '%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) as 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) as count\_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:** WITH t1 AS (

    SELECT

        departure\_airport AS airport\_name,

        COUNT(departure\_airport) AS departure\_flight\_count,

        DENSE\_RANK() OVER (ORDER BY COUNT(departure\_airport) DESC) AS rnk

    FROM

        flights

    GROUP BY

        departure\_airport

)

SELECT

    airport\_name from

    t1

WHERE

    rnk = 1

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

Expected Output : Airport\_name

**Answer:** WITH t1 AS (

    SELECT

        departure\_airport AS airport\_name,

        COUNT(departure\_airport) AS departure\_flight\_count,

        DENSE\_RANK() OVER (ORDER BY COUNT(departure\_airport) ASC) AS rnk

    FROM

        flights

    GROUP BY

        departure\_airport

)

SELECT

    airport\_name from

    t1

WHERE

    rnk = 1

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

Expected Output : Flight Count

**Answer:** select count(departure\_airport) as flight\_count

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 f.flight\_no, f.aircraft\_code, a.range

from flights f

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) as flight\_count

 from flights

 where departure\_airport ='URS' and arrival\_airport='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) as flight\_count

 from flights

 where departure\_airport ='NOZ' or departure\_airport ='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) AS flight\_count

FROM flights

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

GROUP BY departure\_airport;

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 f.flight\_no,a.aircraft\_code,a.range,f.departure\_airport

from flights f

join aircrafts a

on f.aircraft\_code=a.aircraft\_code

where a.range between 3000 and 6000 and f.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 f.flight\_id,a.model as aircraft\_model

from flights f

join aircrafts a

on f.aircraft\_code=a.aircraft\_code

where a.model like '%Airbus%' and f.status='Cancelled' or f.status='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 f.flight\_id,a.model as aircraft\_model

from flights f

join aircrafts a

on f.aircraft\_code=a.aircraft\_code

where a.model like '%Boeing%' and f.status='Cancelled' or f.status='Delayed'

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

Expected Output : Airport\_name

**Answer:** with t1 as

(select arrival\_airport as airport\_name,count(arrival\_airport),

dense\_rank() over(order by arrival\_airport desc) as rnk

from flights where status='Cancelled'

group by arrival\_airport)

select airport\_name

from t1

where rnk=1

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

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 t1 AS (

    SELECT

        flight\_id,

        flight\_no,

        scheduled\_departure,

        departure\_airport,

        MAX(CAST(scheduled\_arrival AS TIME)) AS max\_arrival\_time,

        DENSE\_RANK() OVER (PARTITION BY CAST(scheduled\_arrival AS DATE) ORDER BY CAST(scheduled\_arrival AS TIME) DESC) AS rnk

    FROM

        flights

    GROUP BY

        1, 2, 3, 4

)

SELECT flight\_id,

        flight\_no,

        scheduled\_departure,

        departure\_airport FROM t1

WHERE rnk = 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) AS total\_refund

FROM tickets t

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

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

where f.status='Cancelled'

GROUP BY t.passenger\_name;

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

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

**Answer:** WITH t1 AS (

    SELECT

        flight\_id,

        flight\_no,

        scheduled\_departure,

        departure\_airport,

        MIN(CAST(scheduled\_arrival AS TIME)) AS min\_arrival\_time,

        DENSE\_RANK() OVER (PARTITION BY CAST(scheduled\_arrival AS DATE) ORDER BY CAST(scheduled\_arrival AS TIME) ASC) AS rnk

    FROM

        flights

        WHERE status='Cancelled'

    GROUP BY

        1, 2, 3, 4

)

SELECT flight\_id,

        flight\_no,

        scheduled\_departure,

        departure\_airport FROM t1

WHERE rnk = 1;

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

*Expected Output : Flight\_id*

**Answer:** select f.flight\_id

from flights f

join aircrafts a

on f.aircraft\_code=a.aircraft\_code

where a.model like '%Airbus%' and f.status='Cancelled'

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

*Expected Output : Flight\_no, range*

**Answer:** WITH t1 AS (

    SELECT

        f.flight\_id,

        MAX(a.range) AS range,

        DENSE\_RANK() OVER (PARTITION BY f.flight\_id ORDER BY MAX(a.range) DESC) AS rnk

    FROM

        flights f

    JOIN

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

    GROUP BY

        f.flight\_id

)

SELECT flight\_id, range

FROM t1

WHERE rnk = 1;