**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](file:///C:\Users\Lenovo\AppData\Roaming\Microsoft\Word\•%09https:\www.skillovilla.com\playground\sql%3fexerciseId=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-mon-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

   b.ticket\_no,

   b.boarding\_no,

   b.seat\_no,

   t.passenger\_id,

   t.passenger\_name

FROM BOARDING\_PASSES as b

INNER JOIN TICKETS as 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:**

WITH least\_assigned\_table1 as (

    SELECT seat\_no,

    RANK()OVER(order by count(seat\_no)asc) as least\_rank

FROM boarding\_passes

GROUP BY seat\_no)

SELECT

    seat\_no

FROM least\_assigned\_table1

WHERE least\_rank = 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 MonthlyMaxAmounts as (SELECT

TO\_CHAR(b.book\_date, 'mon-yy') as Month\_Name,passenger\_id,passenger\_name,total\_amount,

ROW\_NUMBER() OVER(PARTITION BY TO\_CHAR(b.book\_date, 'mon-yy')ORDER BY b.total\_amount DESC) as Row\_Num

FROM bookings b

JOIN tickets t

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

SELECT

Month\_Name,passenger\_id,passenger\_name,total\_amount

FROM MonthlyMaxAmounts WHERE Row\_Num = 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 MonthlyMaxAmounts as (SELECT

TO\_CHAR(b.book\_date, 'mon-yy') as Month\_Name,passenger\_id,passenger\_name,total\_amount,

ROW\_NUMBER() OVER(PARTITION BY TO\_CHAR(b.book\_date, 'mon-yy')ORDER BY b.total\_amount ASC) as Row\_Num

FROM bookings b

JOIN tickets t

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

SELECT

Month\_Name,passenger\_id,passenger\_name,total\_amount

FROM MonthlyMaxAmounts WHERE Row\_Num = 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 tickets t

   JOIN ticket\_flights f

   ON t.ticket\_no=f.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) as tickets\_without\_boarding\_pass

FROM TICKETS as t

LEFT JOIN BOARDING\_PASSES as bp

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

WHERE bp.ticket\_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 longest\_duration\_flight as (

SELECT

    DISTINCT flight\_no as Flight\_Number,

    departure\_airport,

    arrival\_airport,

    aircraft\_code,

    (scheduled\_arrival - scheduled\_departure) as duration,

    RANK()OVER(ORDER BY scheduled\_arrival - scheduled\_departure DESC ) as rankings

FROM FLIGHTS

)

SELECT

    Flight\_Number,

    departure\_airport,

    arrival\_airport,

    aircraft\_code,

    duration

FROM longest\_duration\_flight

WHERE rankings = 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,

CASE

WHEN EXTRACT(HOUR FROM scheduled\_departure) >= 6 AND

EXTRACT(HOUR FROM scheduled\_departure) < 11 THEN 'Morning'

        ELSE 'Not Morning'

    END 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:**

WITH EarlyMorningFlights AS (

    SELECT

    flight\_id,

    flight\_no,

    scheduled\_departure,

    scheduled\_arrival,

    departure\_airport,

    CAST(scheduled\_departure AS time) as timing,

    ROW\_NUMBER() OVER(PARTITION BY departure\_airport ORDER BY scheduled\_departure) AS row\_num

    FROM flights

    WHERE CAST(scheduled\_departure AS time)BETWEEN '02:00:00' AND '06:00:00')

    SELECT

    flight\_id,

    flight\_no,

    scheduled\_departure,

    scheduled\_arrival,

    departure\_airport,

    timing

    FROM EarlyMorningFlights

    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) 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\_of\_aircraft\_codes

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 airports as a

INNER JOIN flights as f

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

GROUP BY 1

ORDER BY COUNT(scheduled\_departure) DESC

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 airports as a

INNER JOIN flights as f

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

GROUP BY 1

ORDER BY COUNT(scheduled\_departure) ASC

LIMIT 1

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

Expected Output : Flight Count

**Answer:**

SELECT

    count(\*) 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

   DISTINCT f.flight\_no as Flight\_number,

   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(DISTINCT flight\_id) as Flight\_count

FROM flights

WHERE (departure\_airport = 'URS' AND arrival\_airport = 'KUF') or (departure\_airport = 'KUF' AND arrival\_airport = 'URS')

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

Expected Output : Flight count

**Answer:**

SELECT

    COUNT(\*) 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(\*) as count\_of\_flights

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

    f.flight\_no,

    f.aircraft\_code,

    a.range,

    f.departure\_airport

FROM FLIGHTS as f

INNER JOIN AIRCRAFTS as 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:**

WITH CTE\_TABLE as (

SELECT

    f.flight\_id as flight\_id,

    a.model as aircraft\_model,

    f.status as status

FROM FLIGHTS as f

JOIN AIRCRAFTS as a

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

)

SELECT

    flight\_id,

    aircraft\_model

FROM CTE\_TABLE

WHERE aircraft\_model like '%Airbus%' AND (status = 'Cancelled' or 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:**

WITH CTE\_TABLE as (

SELECT

    f.flight\_id as flight\_id,

    a.model as aircraft\_model,

    f.status as status

FROM FLIGHTS as f

JOIN AIRCRAFTS as a

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

)

SELECT

    flight\_id,

    aircraft\_model

FROM CTE\_TABLE

WHERE aircraft\_model like '%Boeing%' AND (status = 'Cancelled' or status = 'Delayed')

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

Expected Output : Airport\_name

WITH AIRPORT\_MOST\_CANCELLED\_FLIGHTS as (

SELECT

    Airport\_name,

    RANK()OVER(ORDER BY COUNT(Flight\_id)DESC) as rnk

FROM FLIGHTS as f

INNER JOIN AIRPORTS as a

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

WHERE status = 'Cancelled'

GROUP BY 1

)

SELECT

    Airport\_name

FROM AIRPORT\_MOST\_CANCELLED\_FLIGHTS

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 as f

INNER JOIN aircrafts as 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 last\_flight\_id\_flying as (

    SELECT

    flight\_id,

    flight\_no as flight\_number,

    scheduled\_departure,

    departure\_airport,

    RANK()OVER(PARTITION BY departure\_airport ORDER BY scheduled\_departure DESC) as rnk

    FROM flights)

SELECT

    flight\_id,

    flight\_number,

    scheduled\_departure,

    departure\_airport

FROM last\_flight\_id\_flying

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,

    MAX(tf.amount) as total\_refund

FROM flights as f

INNER JOIN ticket\_flights as tf

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

INNER JOIN tickets as t

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

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 FIRST\_CANCELLED\_FLIGHT AS (

SELECT

flight\_id,

flight\_no as flight\_number,

scheduled\_departure,

departure\_airport,

status,

Rank()over(partition by departure\_airport order by scheduled\_departure ASC) AS rnk

FROM flights

where status = 'Cancelled')

SELECT

flight\_id,

flight\_number,

scheduled\_departure,

departure\_airport

FROM FIRST\_CANCELLED\_FLIGHT

WHERE RNK = 1

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

*Expected Output : Flight\_id*

**Answer:**

Select flight\_id

from flights f

inner join aircrafts a

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

where model like '%Airbus%' and status = 'Cancelled'

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

*Expected Output : Flight\_no, range*

**Answer:**

With t1 as (select f.flight\_no, max(a.range)as range

from flights f

inner join aircrafts a

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

group by 1),

t2 as

(select \*, rank()over (order by range desc)as rnk

from t1)

select

flight\_no,

range

from t2

where rnk = 1