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

 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 t.ticket\_no, bp.boarding\_no, bp.seat\_no,t.passenger\_id,t.passenger\_name

from boarding\_passes bp

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:** WITH Seat\_Count AS (

    SELECT seat\_no, COUNT(ticket\_no) AS allocation\_count

    FROM boarding\_passes

    GROUP BY seat\_no

)

SELECT seat\_no

FROM Seat\_Count

WHERE allocation\_count = (SELECT MIN(allocation\_count) FROM Seat\_Count);

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 Ranked\_payments as (Select to\_char(b.book\_date,'yyyy-mm' ) as year\_Month, t.passenger\_name, t.passenger\_id, b.total\_amount,

Dense\_rank() over(partition by to\_char(b.book\_date,'yyyy-mm') order by b.total\_amount desc) as Rnk

from bookings b

join tickets t

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

 Select year\_Month, passenger\_name, passenger\_id, total\_amount

 from Ranked\_payments

 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 Ranked\_payments as (Select to\_char(b.book\_date,'yyyy-mm' ) as year\_Month, t.passenger\_name, t.passenger\_id, b.total\_amount,

Dense\_rank() over(partition by to\_char(b.book\_date,'yyyy-mm') order by b.total\_amount) as Rnk

from bookings b

join tickets t

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

 Select year\_Month, passenger\_name, passenger\_id, total\_amount

 from Ranked\_payments

 where rnk =1

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

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

**Answer:**

SELECT ticket\_no, flight\_id, fare\_conditions, amount

FROM ticket\_flights

WHERE ticket\_no IN (

    SELECT ticket\_no

    FROM ticket\_flights

    GROUP BY ticket\_no

    HAVING COUNT(DISTINCT flight\_id) > 1);

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

Expected Output: just one number is required.

**Answer:**  Select Count(distinct ticket\_no)

from tickets

Where ticket\_no not in (Select distinct ticket\_no from boarding\_passes)

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

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

**Answer:** WITH Flight\_Durations AS (

    SELECT distinct flight\_no, departure\_airport, arrival\_airport,

           scheduled\_arrival - scheduled\_departure AS flight\_duration

    FROM flights

)

SELECT  flight\_no, departure\_airport, arrival\_airport, flight\_duration

FROM Flight\_Durations

WHERE flight\_duration = (SELECT MAX(flight\_duration) FROM Flight\_Durations);

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:** With Flight\_Flag As (Select  flight\_id, flight\_no, scheduled\_departure, scheduled\_arrival,

Case when TO\_CHAR(scheduled\_departure, 'HH24:MI') between '06:00' and '11:00' then 'Morning' Else 'others' End As timings

from flights )

Select \*

from Flight\_Flag

where timings ='Morning'

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 Morning\_Flights AS (

    SELECT

        flight\_id, flight\_no, scheduled\_departure, scheduled\_arrival, departure\_airport, arrival\_airport,status, aircraft\_code,

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

    FROM flights

   Where TO\_CHAR(scheduled\_departure, 'HH24:MI') between '06:00' and '11:00'

)

SELECT

    flight\_id, flight\_no, scheduled\_departure, scheduled\_arrival, departure\_airport,

    scheduled\_departure AS timings

FROM Morning\_Flights

WHERE rn = 1;

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

Expected Output: Airport\_code.

**Answer:** SELECT 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

    s.aircraft\_code,

    s.fare\_conditions,

    COUNT(s.seat\_no) AS seat\_count

FROM

    seats s

GROUP BY

    s.aircraft\_code,

    s.fare\_conditions

ORDER BY

    s.aircraft\_code,

    s.fare\_conditions;

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 aircraft\_count

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 Departure\_Counts AS (

    SELECT departure\_airport, COUNT(actual\_departure) AS departure\_count

    FROM flights

    GROUP BY departure\_airport

)

SELECT a.airport\_name

FROM airports a

JOIN Departure\_Counts f ON a.airport\_code = f.departure\_airport

WHERE f.departure\_count = (SELECT max(departure\_count) FROM Departure\_Counts);

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

Expected Output : Airport\_name

**Answer:** WITH Departure\_Counts AS (

    SELECT departure\_airport, COUNT(\*) AS departure\_count

    FROM flights

    GROUP BY departure\_airport

)

SELECT a.airport\_name

FROM airports a

JOIN Departure\_Counts f ON a.airport\_code = f.departure\_airport

WHERE f.departure\_count = (SELECT min(departure\_count) FROM Departure\_Counts);

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 f.flight\_id, 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(\*) 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(\*) AS flight\_count

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(\*)

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

from flights f

join aircrafts a

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

where a.range between 3000 and 6000

and f.departure\_airport ='DME'

order by 1

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

from flights f

join aircrafts a

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

and a.model like '%Airbus%'

and f.status in ('Delayed','Cancelled')

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

from flights f

join aircrafts a

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

and a.model like '%Boeing%'

and f.status in ('Delayed','Cancelled')

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

Expected Output : Airport\_name   
**Answer:**

With Cancelled\_count As (Select a.airport\_name, count(f.\*) as Cnt

from flights f

join airports a

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

and f.status ='Cancelled'

group by 1),

Rnk As (Select \*, Dense\_rank() over(order by cnt desc ) as rnk\_count

from Cancelled\_count)

Select Airport\_name

from rnk where rnk\_count=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

and 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:**

SELECT flight\_id, flight\_no, scheduled\_departure, departure\_airport

FROM (

    SELECT flight\_id, flight\_no, scheduled\_departure, departure\_airport, ROW\_NUMBER() OVER (PARTITION BY departure\_airport, CAST(scheduled\_departure AS DATE)

    ORDER BY scheduled\_departure DESC) AS rn

    FROM flights

) AS last\_flights

WHERE rn = 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:**

With Cancelled\_tickets as (Select t.ticket\_no,t.book\_ref, t.passenger\_name

from tickets t

left join ticket\_flights tf

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

and tf.flight\_id in (Select distinct flight\_id from flights where status='Cancelled'))

Select ct.passenger\_name, sum(b.total\_amount) as ref\_amt

from bookings b

join Cancelled\_tickets ct

on b.book\_ref=ct.book\_ref

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 cancellation As (SELECT flight\_id,

           flight\_no,

           scheduled\_departure,

           departure\_airport,

           ROW\_NUMBER() OVER (PARTITION BY departure\_airport

                              ORDER BY scheduled\_departure) AS rn

    FROM flights

    WHERE status = 'Cancelled')

Select flight\_id, flight\_no, scheduled\_departure, departure\_airport

from cancellation

where rn=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 f.status='Cancelled'

and a.model like '%Airbus%'

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

*Expected Output : Flight\_no, range*

**Answer:**

With ranked\_range as (Select f.flight\_no, a.range, Dense\_rank() over(Order by a.range desc) as rn

from flights f

join aircrafts a

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

Select flight\_no, range

from ranked\_range

where rn=1