**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\User\Downloads\•%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-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

bp.ticket\_no,

boarding\_no,

seat\_no,

passenger\_id,

passenger\_name

FROM BOARDING\_PASSES bp

join TICKETS t

on t.ticket\_no=bp.ticket\_no

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

**Answer:** with cte1 as (SELECT seat\_no,

count(seat\_no),

dense\_rank()over(order by count(seat\_no) ASC) as seat\_rank

from BOARDING\_PASSES

group by 1)

SELECT seat\_no

from cte1

where seat\_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 cte1 as (SELECT to\_char(book\_date, 'mmm-yy') as Month\_name,

passenger\_id,

passenger\_name,

total\_amount,

dense\_rank()over(order by total\_amount DESC) as pay\_rank

from BOOKINGS b

join TICKETS t

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

Select Month\_name,

passenger\_id,

passenger\_name,

total\_amount

from cte1

where pay\_rank=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 cte1 as (SELECT to\_char(book\_date, 'mmm-yy') as Month\_name,

passenger\_id,

passenger\_name,

total\_amount,

dense\_rank()over(order by total\_amount ASC) as pay\_rank

from BOOKINGS b

join TICKETS t

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

Select Month\_name,

passenger\_id,

passenger\_name,

total\_amount

from cte1

where pay\_rank=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:** WITH CTE AS

(SELECT T.PASSENGER\_ID

    ,T.PASSENGER\_NAME

    ,T.TICKET\_NO

    ,COUNT(DISTINCT FLIGHT\_NO) AS FLIGHT\_CNT

FROM TICKETS T

LEFT JOIN TICKET\_FLIGHTS F ON T.TICKET\_NO = F.TICKET\_NO

LEFT JOIN FLIGHTS FF ON F.FLIGHT\_ID = FF.FLIGHT\_ID

GROUP BY 1,2,3

)

SELECT \*

FROM CTE

WHERE FLIGHT\_CNT>1

ORDER BY FLIGHT\_CNT DESC;

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

Expected Output: just one number is required.

**Answer:** with cte1 as (SELECT

count(ticket\_no) as ticket\_count

from TICKETS

where ticket\_no NOT IN ( SELECT ticket\_no FROM

BOARDING\_PASSES)

group by ticket\_no)

SELECT sum(ticket\_count) as no\_of\_tickets\_without\_boarding\_passes

from cte1

group by ticket\_count

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

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

 WITH Duration AS (

    SELECT

        flight\_no,

        departure\_airport,

        arrival\_airport,

        aircraft\_code,

        (scheduled\_arrival::TIMESTAMP - scheduled\_departure::TIMESTAMP)  AS durations

    FROM

        Flights

)

,CTE\_RNK AS (

SELECT \*,

dense\_rank() over (order by time\_spent desc) as rnk

FROM

(select \*,EXTRACT(hour FROM durations)\*60+EXTRACT(minutes FROM durations)+EXTRACT(seconds FROM durations)/60 as time\_spent

from DURATION

)f

)

SELECT DISTINCT

flight\_no,

departure\_airport,

arrival\_airport,

aircraft\_code,

durations

FROM CTE\_RNK

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:** WITH cte1 AS (

    SELECT

        \*,

        scheduled\_departure::time AS timings

    FROM

        Flights

)

SELECT

    flight\_id,

    flight\_no,

    scheduled\_departure,

    scheduled\_arrival,

    timings

FROM

    cte1

WHERE

    timings BETWEEN '06:00:00' AND '11:00:00'

ORDER BY

    timings DESC;

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

cte1 AS (

    SELECT

        \*,

        scheduled\_departure::time AS timings

    FROM

        FLIGHTS

),

cte2 AS (

    SELECT

        \*,

        DENSE\_RANK() OVER (PARTITION BY departure\_airport ORDER BY scheduled\_departure ASC) AS earliest\_flight\_rank

    FROM

        cte1

    where timings between '02:00:00' and '06:00:00'

)

SELECT

    flight\_id,

    flight\_no,

    scheduled\_departure,

    scheduled\_arrival,

    departure\_airport,

    timings

FROM

    cte2

WHERE

    earliest\_flight\_rank = 1

ORDER BY

    scheduled\_departure ASC;

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'

order by 1 ;

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,

fare\_conditions,

count(seat\_no) as seat\_count

from SEATS s

join AIRCRAFTS a

on a.Aircraft\_code=s.Aircraft\_code

group by 1,2

order by 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 num\_of\_aircrafts\_with\_business\_class

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 cte1 AS (

    SELECT

        departure\_airport,

        COUNT(flight\_no) AS num\_of\_departure\_flights

    FROM

        flights

    GROUP BY

        departure\_airport

)

SELECT

    airport\_name

FROM

    cte1 c

JOIN

    AIRPORTS a ON a.airport\_code = c.departure\_airport

ORDER BY

    num\_of\_departure\_flights DESC

LIMIT 1;

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

Expected Output : Airport\_name

**Answer:** WITH cte1 AS (

    SELECT

        departure\_airport,

        COUNT(flight\_no) AS num\_of\_departure\_flights

    FROM

        flights

    GROUP BY

        departure\_airport

)

SELECT

    airport\_name

FROM

    cte1 c

JOIN

    AIRPORTS a ON a.airport\_code = c.departure\_airport

ORDER BY

    num\_of\_departure\_flights ASC

LIMIT 1;

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

Expected Output : Flight Count

**Answer:** SELECT

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

 Flight\_no,

 f.aircraft\_code,

 range as ranges

 FROM flights f

 join aircrafts a

 on f.aircraft\_code=a.aircraft\_code

 where range between 3000 and 6000

 order by 3 DESC

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 num\_of\_flights

 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(flight\_id) AS num\_of\_flights

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) AS num\_of\_flights

FROM

    flights

WHERE

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

GROUP BY

    departure\_airport

order by

    num\_of\_flights DESC

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

    Flight\_no,

    f.aircraft\_code,

    range,

    departure\_airport

FROM

    flights f

join

    AIRCRAFTS a

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

WHERE

    range BETWEEN 3000 AND 6000

    AND departure\_airport = 'DME'

order by range  ;

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,

    model as aircraft\_model

FROM

    flights f

join

    AIRCRAFTS a

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

WHERE

    (model ilike '%Airbus%')

    AND (status = 'Cancelled' or status ='Delayed')

order by 1

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,

    model as aircraft\_model

FROM

    flights f

join

    AIRCRAFTS a

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

WHERE

    (model ilike '%Boeing%')

    AND (status = 'Cancelled' or status ='Delayed')

order by 1

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

Expected Output : Airport\_name

WITH cancelled\_count\_cte AS (

    SELECT

        arrival\_airport,

        status,

        COUNT(status) AS cancelled\_count

    FROM

        flights

    WHERE

        status = 'Cancelled'

    GROUP BY

        1, 2

),

count\_rank AS (

    SELECT

        \*,

        DENSE\_RANK() OVER (ORDER BY cancelled\_count DESC) AS cancelled\_rank

    FROM

        cancelled\_count\_cte

)

SELECT

    a.airport\_name

FROM

    AIRPORTS a

JOIN

    count\_rank cr ON a.airport\_code = cr.arrival\_airport

WHERE

    cancelled\_rank = 1;

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

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

**Answer:** SELECT

    Flight\_id,

    model as aircraft\_model

FROM

    flights f

join

    AIRCRAFTS a

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

WHERE

    model ilike '%Airbus%'

order by 1

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

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

**Answer:** with

rank\_details AS (

    SELECT \*,

           DENSE\_RANK() OVER (PARTITION BY departure\_airport ORDER BY scheduled\_departure DESC) AS flight\_rank

    FROM flights

)

SELECT

    flight\_id,

    flight\_no,

    scheduled\_departure,

    departure\_airport

FROM rank\_details

WHERE flight\_rank = 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(AMOUNT) AS TOTAL\_REFUND

 FROM FLIGHTS  FF

 JOIN TICKET\_FLIGHTS F ON F.FLIGHT\_ID = FF.FLIGHT\_ID

 JOIN TICKETS T ON T.TICKET\_NO = F.TICKET\_NO

 WHERE FF.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

rank\_details AS (

    SELECT \*,

           DENSE\_RANK() OVER (PARTITION BY departure\_airport ORDER BY scheduled\_departure) AS flight\_rank

    FROM flights

    where status='Cancelled'

)

SELECT

    flight\_id,

    flight\_no,

    scheduled\_departure,

    departure\_airport

FROM rank\_details

Where flight\_rank=1

order by 3

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

*Expected Output : Flight\_id*

**Answer:** SELECT

Flight\_id

from AIRCRAFTS a

join FLIGHTS f

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

where a.model ilike '%Airbus%' and f.status ilike '%Cancelled%'

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

*Expected Output : Flight\_no, range*

**Answer:** with flights\_with\_highest\_range as

 (SELECT flight\_no,

 range,

 DENSE\_RANK()over(order by range DESC) as range\_rank

 from FLIGHTS f

 join AIRCRAFTS a

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

 SELECT

 distinct

 flight\_no,

 range,

 range\_rank

 from flights\_with\_highest\_range

 where range\_rank=1

 order by 1