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-Mon-DD') as book\_date\_formatted, 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

    t.ticket\_no,

    bp.boarding\_no,

    bp.seat\_no,

    t.passenger\_id,

    t.passenger\_name

FROM

    Tickets t

JOIN

    Boarding\_Passes bp 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:

SELECT

seat\_no,

COUNT(\*) AS allocation\_count

FROM

Boarding\_Passes

GROUP BY

seat\_no

ORDER BY

allocation\_count 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 MonthlyTotals AS (

SELECT

TO\_CHAR(book\_date, 'Mon-YY') AS month\_name,

t.passenger\_id,

t.passenger\_name,

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

FROM

Bookings b

JOIN

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

GROUP BY

TO\_CHAR(book\_date, 'Mon-YY'), t.passenger\_id, t.passenger\_name

),

HighestMonthlyPayers AS (

SELECT

month\_name,

passenger\_id,

passenger\_name,

total\_amount,

RANK() OVER (PARTITION BY month\_name ORDER BY total\_amount DESC) AS rank

FROM

MonthlyTotals

)

SELECT

month\_name,

passenger\_id,

passenger\_name,

total\_amount

FROM

HighestMonthlyPayers

WHERE

rank = 1

order by total\_amount DESC

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 MonthlyTotals AS (

    SELECT

        TO\_CHAR(book\_date, 'Mon-YY') AS month\_name,

        t.passenger\_id,

        t.passenger\_name,

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

    FROM

        Bookings b

    JOIN

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

    GROUP BY

        TO\_CHAR(book\_date, 'Mon-YY'), t.passenger\_id, t.passenger\_name

),

LowestMonthlyPayers AS (

    SELECT

        month\_name,

        passenger\_id,

        passenger\_name,

        total\_amount,

        RANK() OVER (PARTITION BY month\_name ORDER BY total\_amount ASC) AS rank

    FROM

        MonthlyTotals

)

SELECT

    month\_name,

    passenger\_id,

    passenger\_name,

    total\_amount

FROM

    LowestMonthlyPayers

WHERE

    rank = 1

ORDER by total\_amount

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 FlightCounts AS (

    SELECT

        t.passenger\_id,

        t.passenger\_name,

        t.ticket\_no,

        COUNT(tf.flight\_id) AS flight\_count

    FROM

        Tickets t

    JOIN

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

    GROUP BY

        t.passenger\_id, t.passenger\_name, t.ticket\_no

)

SELECT

    passenger\_id,

    passenger\_name,

    ticket\_no,

    flight\_count

FROM

    FlightCounts

WHERE

    flight\_count > 1;

1. How many tickets are there without boarding passes?

Expected Output: just one number is required.

Answer:

SELECT

COUNT(DISTINCT t.ticket\_no) AS tickets\_without\_boarding\_pass

FROM

Tickets t

LEFT JOIN

Boarding\_Passes 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:

SELECT

flight\_no,

departure\_airport,

arrival\_airport,

aircraft\_code,

EXTRACT(EPOCH FROM (scheduled\_arrival - scheduled\_departure)) / 3600 AS duration\_hours

FROM

Flights

ORDER BY

duration\_hours 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 AS flight\_number,

scheduled\_departure,

scheduled\_arrival,

TO\_CHAR(scheduled\_departure, 'HH24:MI') AS departure\_time

FROM

Flights

WHERE

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

OR (EXTRACT(HOUR FROM scheduled\_departure) = 11 AND EXTRACT(MINUTE FROM scheduled\_departure) = 0)

ORDER BY scheduled\_departure;

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 MorningFlights AS (

SELECT

flight\_id,

flight\_no AS flight\_number,

departure\_airport,

scheduled\_departure,

scheduled\_arrival,

TO\_CHAR(scheduled\_departure, 'HH24:MI') AS departure\_time

FROM

Flights

WHERE

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

OR (EXTRACT(HOUR FROM scheduled\_departure) = 11 AND EXTRACT(MINUTE FROM scheduled\_departure) = 0)

),

EarliestMorningFlights AS (

SELECT

departure\_airport,

MIN(scheduled\_departure) AS earliest\_departure

FROM

MorningFlights

GROUP BY

departure\_airport

)

SELECT

mf.flight\_id,

mf.flight\_number,

mf.scheduled\_departure,

mf.scheduled\_arrival,

mf.departure\_airport,

mf.departure\_time

FROM

MorningFlights mf

JOIN

EarliestMorningFlights emf

ON mf.departure\_airport = emf.departure\_airport

AND mf.scheduled\_departure = emf.earliest\_departure;

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 conditions 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

aircraft\_code,

fare\_conditions

ORDER BY aircraft\_code, 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)

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 DepartureCounts AS (

SELECT

departure\_airport,

COUNT(\*) AS departure\_count

FROM

Flights

GROUP BY

departure\_airport

)

SELECT

a.airport\_name

FROM

DepartureCounts dc

JOIN

Airports a ON dc.departure\_airport = a.airport\_code

WHERE

dc.departure\_count = (

SELECT

MAX(departure\_count)

FROM

DepartureCounts

);

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

Expected Output : Airport\_name

Answer:

WITH DepartureCounts AS (

SELECT

departure\_airport,

COUNT(\*) AS departure\_count

FROM

Flights

GROUP BY

departure\_airport

)

SELECT

a.airport\_name

FROM

DepartureCounts dc

JOIN

Airports a ON dc.departure\_airport = a.airport\_code

WHERE

dc.departure\_count = (

SELECT

MIN(departure\_count)

FROM

DepartureCounts )

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\_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(\*) 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 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(\*) AS flight\_count

FROM

Flights

WHERE

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

GROUP BY

departure\_airport

ORDER 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,

f.aircraft\_code,

a.range,

f.departure\_airport

FROM

Flights f

JOIN

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

WHERE

f.departure\_airport = 'DME'

AND a.range BETWEEN 3000 AND 6000

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

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

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 CancelledArrivals AS (

SELECT

arrival\_airport,

COUNT(\*) AS cancelled\_count

FROM

Flights

WHERE

status = 'Cancelled'

GROUP BY

arrival\_airport

)

SELECT

a.airport\_name

FROM

CancelledArrivals ca

JOIN

Airports a ON ca.arrival\_airport = a.airport\_code

WHERE

ca.cancelled\_count = (

SELECT

MAX(cancelled\_count)

FROM

CancelledArrivals)

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

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

Answer:

SELECT

f.flight\_id,

a.aircraft\_model

FROM

Flights f

JOIN

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

WHERE

a.aircraft\_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 RankedFlights AS (

    SELECT

        flight\_id,

        flight\_no AS flight\_number,

        scheduled\_departure,

        departure\_airport,

        ROW\_NUMBER() OVER (

            PARTITION BY departure\_airport, DATE(scheduled\_departure)

            ORDER BY scheduled\_departure DESC

        ) AS rank

    FROM

        Flights

)

SELECT

    flight\_id,

    flight\_number,

    scheduled\_departure,

    departure\_airport

FROM

    RankedFlights

WHERE

    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(b.total\_amount) AS total\_refund

FROM

    Bookings b

JOIN

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

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

ORDER BY

    total\_refund DESC;

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

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

Answer:

WITH CancelledFlights AS (

    SELECT

        flight\_id,

        flight\_no AS flight\_number,

        scheduled\_departure,

        departure\_airport,

        ROW\_NUMBER() OVER (

            PARTITION BY departure\_airport, DATE(scheduled\_departure)

            ORDER BY scheduled\_departure ASC

        ) AS rank

    FROM

        Flights

    WHERE

        status = 'Cancelled'

)

SELECT

    flight\_id,

    flight\_number,

    scheduled\_departure,

    departure\_airport

FROM

    CancelledFlights

WHERE

    rank = 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 TRIM(f.aircraft\_code) = TRIM(a.aircraft\_code)

WHERE

    LOWER(a.model) LIKE '%airbus%'

    AND f.status = 'Cancelled';

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

*Expected Output : Flight\_no, range*

Answer:

*WITH MaxRange AS (*

*SELECT*

*MAX(a.range) AS max\_range*

*FROM*

*Aircrafts a*

*)*

*SELECT*

*f.flight\_no,*

*a.range*

*FROM*

*Flights f*

*JOIN*

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

*WHERE*

*a.range = (SELECT max\_range FROM MaxRange);*