**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 formatted\_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 t.ticket\_no, bp.boarding\_no, s.seat\_no AS seat\_number, t.passenger\_id, t.passenger\_name

FROM Boarding\_passes bp

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

JOIN Seats s ON bp.seat\_no = s.seat\_no;

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

**Answer:**

SELECT seat\_no

FROM Seats

GROUP BY seat\_no

ORDER BY COUNT(\*)

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 MonthlyPassengerTotals AS (

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

           t.passenger\_id,

           t.passenger\_name,

           SUM(tf.amount) AS total\_amount,

           RANK() OVER (PARTITION BY TO\_CHAR(b.book\_date, 'Mon-YY') ORDER BY SUM(tf.amount) DESC) AS rank

    FROM Bookings b

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

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

    GROUP BY month\_name, t.passenger\_id, t.passenger\_name

)

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

FROM MonthlyPassengerTotals

WHERE 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 MonthlyPassengerTotals AS (

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

           t.passenger\_id,

           t.passenger\_name,

           SUM(tf.amount) AS total\_amount,

           RANK() OVER (PARTITION BY TO\_CHAR(b.book\_date, 'Mon-YY') ORDER BY SUM(tf.amount) ASC) AS rank

    FROM Bookings b

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

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

    GROUP BY month\_name, t.passenger\_id, t.passenger\_name

)

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

FROM MonthlyPassengerTotals

WHERE 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:**

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

HAVING COUNT(tf.flight\_id) > 1;

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

Expected Output: just one number is required.

**Answer:**

SELECT COUNT(\*)

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:**

SELECT flight\_no, departure\_airport, arrival\_airport, aircraft\_code,

    EXTRACT(EPOCH FROM (actual\_arrival - actual\_departure)) AS duration\_seconds

FROM Flights

ORDER BY duration\_seconds 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

FROM Flights

WHERE EXTRACT(HOUR FROM scheduled\_departure) >= 6 AND EXTRACT(HOUR FROM scheduled\_departure) < 12;

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

FROM Flights

WHERE (scheduled\_departure, departure\_airport) IN (

    SELECT MIN(scheduled\_departure), departure\_airport

    FROM Flights

    WHERE EXTRACT(HOUR FROM scheduled\_departure) >= 6 AND EXTRACT(HOUR FROM scheduled\_departure) < 12

    GROUP BY departure\_airport

);

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 aircraft\_code, fare\_conditions, COUNT(\*) AS seat\_count

FROM Seats

GROUP 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)

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 departure\_airport

FROM Flights

GROUP BY departure\_airport

ORDER BY COUNT(\*) DESC

LIMIT 1;

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

Expected Output : Airport\_name

**Answer:**

SELECT departure\_airport

FROM Flights

GROUP BY departure\_airport

ORDER BY COUNT(\*)

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 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(\*)

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(\*)

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;

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 AS Flight\_no,

       f.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 IN ('Cancelled', '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 IN ('Cancelled', 'Delayed');

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

Expected Output : Airport\_name

**Answer:**

SELECT airport\_name

FROM (

    SELECT a.airport\_name,

           COUNT(\*) AS cancelled\_flights,

           RANK() OVER (ORDER BY COUNT(\*) DESC) AS flight\_rank

    FROM Flights f

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

    WHERE f.status = 'Cancelled'

    GROUP BY a.airport\_name

) AS ranked\_flights

WHERE flight\_rank = 1;

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

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

**Answer:**

SELECT f.flight\_id

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:**

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

FROM Flights f

JOIN (

    SELECT departure\_airport, MAX(scheduled\_departure) AS last\_flight\_date

    FROM Flights

    GROUP BY departure\_airport

) AS max\_dates ON f.departure\_airport = max\_dates.departure\_airport AND f.scheduled\_departure = max\_dates.last\_flight\_date;

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:**

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

FROM Flights f

JOIN (

    SELECT departure\_airport, MIN(scheduled\_departure) AS first\_cancelled\_flight\_date

    FROM Flights

    WHERE status = 'Cancelled'

    GROUP BY departure\_airport

) AS min\_dates ON f.departure\_airport = min\_dates.departure\_airport AND f.scheduled\_departure = min\_dates.first\_cancelled\_flight\_date;

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:**

SELECT distinct 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 Aircrafts);