**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>

**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-**

**• 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, total\_amount

FROM bookings

**• 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, b.boarding\_no,seat\_no AS seat\_number, passenger\_id, passenger\_name

FROM tickets t JOIN boarding\_passes b

ON t.ticket\_no=b.ticket\_no;

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

**Answer:**

SELECT seat\_no

FROM boarding\_passes

GROUP BY seat\_no

ORDER BY COUNT(\*) ASC LIMIT 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 monthly\_payments AS (

SELECT TO\_CHAR(b.book\_date, 'Mon-yy') AS month\_name, t.passenger\_id,t.passenger\_name,

SUM(tf.amount) as total\_amount

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 1,2,3

ORDER BY 1

),

max\_monthly\_payments AS (

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

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

FROM monthly\_payments

)

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

FROM max\_monthly\_payments

WHERE rnk=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 monthly\_payments AS (

SELECT TO\_CHAR(b.book\_date, 'Mon-yy') AS month\_name, t.passenger\_id,t.passenger\_name,

SUM(tf.amount) as total\_amount

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 1,2,3

ORDER BY 1

),

max\_monthly\_payments AS (

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

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

FROM monthly\_payments

)

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

FROM max\_monthly\_payments

WHERE rnk=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 passenger\_id, passenger\_name, t.ticket\_no, COUNT(flight\_id) AS flight\_count

FROM tickets t JOIN ticket\_flights tf

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

GROUP BY 1,2,3

HAVING COUNT(flight\_id)>1

**• How many tickets are there without boarding passes?**

Expected Output: just one number is required.

**Answer:**

SELECT COUNT(t.ticket\_no)

FROM tickets t LEFT JOIN boarding\_passes b

ON t.ticket\_no=b.ticket\_no

WHERE boarding\_no IS NULL

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

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

**Answer:**

WITH flights\_by\_rank AS (

SELECT DISTINCT(flight\_no) AS flight\_number, departure\_airport, arrival\_airport, aircraft\_code,

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

DENSE\_RANK() OVER(ORDER BY (scheduled\_arrival-scheduled\_departure) DESC) AS rnk

FROM flights

)

SELECT flight\_number, departure\_airport, arrival\_airport, aircraft\_code, duration

FROM flights\_by\_rank

WHERE rnk =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,

TO\_CHAR(scheduled\_departure, 'HH:MI AM') AS timings

FROM flights

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

AND EXTRACT(HOUR FROM scheduled\_departure)<11

ORDER BY scheduled\_departure

**• Identify the earliest morning flight available from every airport. Early morning: 2:00 am to 6:00 am.**

Expected output: flight\_id, flight\_number, scheduled\_departure, scheduled\_arrival, departure airport and timings.

**Answer:**

WITH morning\_flights AS(

SELECT flight\_id, flight\_no AS flight\_number, scheduled\_departure, scheduled\_arrival, departure\_airport,

TO\_CHAR(scheduled\_departure, 'HH24:MI:SS AM') AS timings

FROM flights

WHERE EXTRACT(HOUR FROM scheduled\_departure)>=2

AND EXTRACT(HOUR FROM scheduled\_departure)<6

),

morning\_flights\_by\_timings AS(

SELECT \*,

ROW\_NUMBER() OVER(PARTITION BY departure\_airport ORDER BY timings) AS rnk

FROM morning\_flights

)

SELECT flight\_id, flight\_number, scheduled\_departure, scheduled\_arrival, departure\_airport, timings

FROM morning\_flights\_by\_timings

WHERE rnk=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'

**• 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

ORDER BY 1,2

**• 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'

**• Find out the name of the airport having maximum number of departure flight**

Expected Output : Airport\_name

**Answer:**

WITH departure\_count AS (

SELECT departure\_airport, COUNT(\*) as flight\_count

FROM flights

GROUP BY 1

)

SELECT airport\_name

FROM departure\_count dc JOIN airports a

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

ORDER BY flight\_count DESC

LIMIT 1

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

Expected Output : Airport\_name

**Answer:**

WITH departure\_count AS (

SELECT departure\_airport, COUNT(\*) as flight\_count

FROM flights

GROUP BY 1

)

SELECT airport\_name

FROM departure\_count dc JOIN airports a

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

ORDER BY flight\_count ASC

LIMIT 1

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

Expected Output : Flight Count

**Answer:**

SELECT COUNT(flight\_id) AS flight\_count

FROM flights

WHERE departure\_airport = 'DME' AND actual\_departure IS NULL

**• Identify flight ids having range between 3000 to 6000**

Expected Output : Flight\_Number , aircraft\_code, ranges

**Answer:**

SELECT DISTINCT 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

**• 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')

OR (departure\_airport='KUF' AND arrival\_airport='URS')

**• 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='NOZ' OR departure\_airport= 'KRR'

**• 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:**

WITH all\_flight\_count AS(

SELECT departure\_airport, COUNT(flight\_ID) AS flight\_count

FROM flights

GROUP BY 1

)

SELECT \*

FROM all\_flight\_count

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

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

FROM flights f JOIN aircrafts a

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

WHERE a.range BETWEEN 3000 AND 6000

AND departure\_airport = 'DME'

**• 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 f.aircraft\_code = a.aircraft\_code

WHERE model LIKE '%Airbus%'

AND status IN ('Cancelled','Delayed')

**• 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 f.aircraft\_code = a.aircraft\_code

WHERE model LIKE '%Boeing%'

AND status IN ('Cancelled','Delayed')

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

Expected Output : Airport\_name

**Answer:**

WITH cancelled\_flights AS (

SELECT a.airport\_name, f.arrival\_airport, count(\*) AS cancelled\_count

FROM flights f JOIN airports a

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

WHERE f.status = 'Cancelled'

GROUP BY 1,2

),

cancelled\_flights\_rank AS (

SELECT \*,

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

FROM cancelled\_flights

)

SELECT airport\_name

FROM cancelled\_flights\_rank

WHERE rnk = 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

WHERE a.model LIKE '%Airbus%'

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

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

**Answer:**

WITH date\_wise\_flights AS (

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

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

FROM flights

)

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

FROM date\_wise\_flights

WHERE rnk=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 flights f JOIN ticket\_flights tf

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

JOIN tickets t

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

WHERE f.status = 'Cancelled'

GROUP BY 1

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

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

**Answer:**

WITH cancelled\_flights AS (

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

ROW\_NUMBER() OVER(PARTITION BY f.departure\_airport,DATE(f.scheduled\_departure)

ORDER BY f.scheduled\_departure) AS rnk

FROM flights f

WHERE f.status = 'Cancelled'

)

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

FROM cancelled\_flights

WHERE rnk=1

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

*Expected Output : Flight\_id*

**Answer:**

SELECT flight\_id

FROM flights f JOIN aircrafts a

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

WHERE f.status = 'Cancelled'

AND a.model LIKE '%Airbus%'

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

*Expected Output : Flight\_id, range*

**Answer:**

WITH flights\_rank AS(

SELECT flight\_id, range,

DENSE\_RANK() OVER(ORDER BY range DESC) AS rnk

FROM flights f JOIN aircrafts a

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

)

SELECT flight\_id, range

FROM flights\_rank

WHERE rnk=1