**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-**

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,

 bp.boarding\_no,

 bp.seat\_no as seat\_number,

 t.passenger\_id,

 t.passenger\_name

 from BOARDING\_PASSES as bp

 join TICKETS as 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:** select seat\_no

 from boarding\_passes

 group by seat\_no

 having count (seat\_no) =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 monthwise\_data as

 (select to\_char(b.book\_date,'mmm-yy') as month\_name,

 t.passenger\_id,

 t.passenger\_name,

 b.total\_amount

 from bookings as b

 join tickets as t

 on b.book\_ref = t.book\_ref

 ),

 amount\_rank as

 (

     select \*,

     dense\_rank()over (partition by month\_name order by total\_amount desc) as rnk

     from monthwise\_data

 )

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

 from amount\_rank

 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 monthwise\_data as

 (select to\_char(b.book\_date,'mmm-yy') as month\_name,

 t.passenger\_id,

 t.passenger\_name,

 b.total\_amount

 from bookings as b

 join tickets as t

 on b.book\_ref = t.book\_ref

 ),

 amount\_rank as

 (

     select \*,

     dense\_rank()over (partition by month\_name order by total\_amount asc) as rnk

     from monthwise\_data

 )

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

 from amount\_rank

 where rnk =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

passenger\_id, passenger\_name,

t.ticket\_no AS ticket\_number,

COUNT(flight\_id) AS flight\_count

FROM tickets t

INNER JOIN boarding\_passes b

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

GROUP BY 1,2,3

HAVING COUNT(flight\_id) > 1

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

Expected Output: just one number is required.

**Answer:**   select count (\*)

 from TICKETS as t

 left join BOARDING\_PASSES as 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:**  with duration\_of\_flight as

 (select distinct  flight\_no,departure\_airport,arrival\_airport,aircraft\_code,

CAST (scheduled\_arrival as TIME)-CAST(scheduled\_departure as TIME) AS durations

 from flights

 ),

 duration\_rank as

 (

     select \*,

     dense\_rank()over(order by durations desc) as rnk

     from duration\_of\_flight

 )

 select flight\_no as flight\_number,

departure\_airport,

arrival\_airport,

aircraft\_code,

durations

 from duration\_rank

 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:**    select flight\_id,

  flight\_no as flight\_number,

  scheduled\_departure,

  scheduled\_arrival,

CASE

WHEN CAST(scheduled\_departure AS TIME) BETWEEN '06:00:00' AND '11:00:00' THEN 'MORNING\_FLIGHT'

ELSE null

end as timings

from flights

where to\_char (scheduled\_departure,'HH24:MI') BETWEEN '06:00:00' AND '11:00:00'

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 t1 as

 (

select

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

CASE

WHEN CAST (scheduled\_departure AS time ) BETWEEN '02:00:00' AND '06:00:00' THEN 'EARLY\_MORNING\_FLIGHT'

ELSE NULL

END as timings,

dense\_rank()over(partition by departure\_airport order by CAST (scheduled\_departure AS time ) asc ) as rnk

from flights

where to\_char(scheduled\_departure,'HH24:MI') between '02:00:00' and '06:00:00'----Early Morning flight

 )

 select flight\_id,

flight\_no as flight\_number,

scheduled\_departure,

scheduled\_arrival,

departure\_airport,

timings

 from t1

 where rnk = 1

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

Expected Output: Airport\_code.

**Answer:**  select airport\_code

from airports

 where timezone like '%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(seat\_no) as seat\_count

 from seats

group by 1,2

order by 2 asc, 3 desc---FOR BETTER VIEW OF OUTPUT

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 count\_of\_aircraft\_codes

 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 flight\_count as

 (

select departure\_airport,

 count (flight\_no) as no\_of\_flight

 from flights

 group by 1

 order by 2 desc

LIMIT 1),

 airport\_name\_as as

 (

    select fc.\*, a.airport\_name

    from  flight\_count as fc

    join airports as a

    on a.airport\_code = fc.departure\_airport

 )

 select airport\_name

 from airport\_name\_as

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

Expected Output : Airport\_name

**Answer:**   with flight\_count as

 (select departure\_airport,

 count (flight\_no) as no\_of\_flight

 from flights

 where status='Scheduled'

 group by 1

 order by 2 asc

 limit 1

 ),

 airport\_name\_as as

 (

    select fc.\*, a.airport\_name

    from  flight\_count as fc

    join airports as a

    on a.airport\_code = fc.departure\_airport

 )

 select airport\_name

 from airport\_name\_as

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,

 a.aircraft\_code,

 a.range AS ranges

 from aircrafts as a

 join flights as f

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

 where 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(flight\_no) as flight\_count

 from flights

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

 OR (departure\_airport = 'KUF' AND arrival\_airport='URS') ---BOTH TO AND FRO BETWEEN THE AIRPORTS INCLUDED

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\_no) 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(flight\_no) as COUNT\_OF\_FLIGHTS

 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 f.flight\_no,

a.aircraft\_code,

a.range,

f.departure\_airport

 from aircrafts as a

 inner join flights as f

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

 where (range between 3000 and 6000) and (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 as f

 inner join aircrafts as a

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

 where (a.model like '%Airbus%') and (status='Delayed' or status= '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 as aircraft\_model

 from flights as f

 inner join aircrafts as a

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

 where (a.model like '%Boeing%')

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

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

Expected Output : Airport\_name

Answer :  WITH T1 AS ----FOR COUNT OF CANCELLED FLIGHT

( SELECT ARRIVAL\_AIRPORT,

 COUNT(\*) AS COUNT\_FLIGHT\_CANCELLED

 FROM FLIGHTS

 WHERE status='Cancelled'

 GROUP BY 1

 ORDER BY 2 DESC

),

 T2 AS -------FOR GETTING THE AIRPORT NAME

 (

     SELECT T1.\*,AIRPORT\_NAME

     FROM T1

     JOIN AIRPORTS AS A

     ON A.AIRPORT\_CODE = T1.ARRIVAL\_AIRPORT

 ),

T3 as ------RANKING AS PER NO OF FLIGHT CANCELLED AT EVERY ARRIVING AIRPORT

 (select T2.\*,

 RANK()OVER ( ORDER BY COUNT\_FLIGHT\_CANCELLED DESC) AS rnk

 from T2

 )

SELECT AIRPORT\_NAME FROM T3

where rnk = 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 aircrafts as a

join flights as f

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

where 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 t1 as

 (

     select flight\_id,

     flight\_no,scheduled\_departure,

     departure\_airport,

     DATE(scheduled\_departure) AS DEPARTURE\_DATE,

     ROW\_NUMBER()OVER(partition by departure\_airport, DATE(scheduled\_departure) order by scheduled\_departure desc) as row\_num

     from flights

 )

 select flight\_id,

 flight\_no as flight\_number,

 scheduled\_departure,

 departure\_airport

 from t1

 where row\_num = 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 passenger\_name,

sum (total\_amount) as total\_refund

from tickets as t

 join bookings as b

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

 join ticket\_flights as tf

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

join flights as f

on tf.flight\_id = f.flight\_id

where f.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 rankedfirst as

 (select

 flight\_id,

flight\_no,

scheduled\_departure,

departure\_airport,

 DENSE\_RANK() over (partition by departure\_airport, DATE(scheduled\_departure) order by scheduled\_departure) as flight\_rank

 from flights

 where status = 'Cancelled')

 select

 flight\_id,

flight\_no AS flight\_number,

scheduled\_departure,

departure\_airport

 from rankedfirst

 where flight\_rank = 1

order by scheduled\_departure desc

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

*Expected Output : Flight\_id*

**Answer:**   select f.flight\_id

 from flights as f

 join aircrafts as a

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

 where model like '%Airbus%' and f.status = 'Cancelled'

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

*Expected Output : Flight\_id, range*

**Answer:** SELECT

 flight\_id,

 range

 from flights f

 join aircrafts a

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

 where a.range=(SELECT MAX(range) FROM aircrafts)

 group by 1,2

THANK YOU !!!!!!!!!!!!!!!

-ABHIJEET RANJAN