**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*

*bp.ticket\_no, bp.boarding\_no, bp.seat\_no, t.passenger\_id, t.passenger\_name*

*FROM*

*BOARDING\_PASSES bp*

*JOIN*

*tickets 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, COUNT(seat\_no) AS seat\_allocation\_count*

*FROM*

*boarding\_passes*

*GROUP BY*

*seat\_no*

*ORDER BY*

*seat\_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 table1 as (*

*select*

*TO\_CHAR(b.book\_date,'mmm-yy') as month\_name,*

*t.passenger\_id,*

*t.passenger\_name,*

*b.total\_amount*

*from bookings b*

*join tickets t*

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

*table2 as (*

*select*

*\*,*

*rank()over(partition by month\_name order by total\_amount desc ) top\_spend*

*from table1)*

*select*

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

*from table2*

*where top\_spend =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 table1 as (*

*select*

*TO\_CHAR(b.book\_date,'mmm-yy') as month\_name,*

*t.passenger\_id, t.passenger\_name, b.total\_amount*

*from bookings b*

*join tickets t*

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

*table2 as (*

*select*

*\*,*

*rank()over(partition by month\_name order by total\_amount asc ) low\_spend*

*from table1)*

*select*

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

*from table2*

*where low\_spend =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, bp.ticket\_no AS ticket\_number,*

*COUNT(DISTINCT bp.flight\_id) AS flight\_count*

*FROM*

*Tickets t*

*JOIN*

*Boarding\_Passes bp ON t.ticket\_no = bp.ticket\_no*

*GROUP BY*

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

*HAVING*

*COUNT(DISTINCT bp.flight\_id) > 1*

*ORDER BY*

*t.passenger\_id;*

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

Expected Output: just one number is required.

**Answer:** *SELECT*

*COUNT(\*) AS tickets\_without\_boarding\_pass*

*FROM*

*BOARDING\_PASSES*

*WHERE*

*boarding\_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 FlightDurationRank AS (*

*SELECT*

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

*scheduled\_departure, scheduled\_arrival,*

*RANK() OVER (ORDER BY scheduled\_arrival - scheduled\_departure DESC) AS*

*duration\_rank*

*FROM flights*

*)*

*SELECT*

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

*scheduled\_departure, scheduled\_arrival,*

*scheduled\_arrival - scheduled\_departure AS duration*

*FROM FlightDurationRank*

*WHERE duration\_rank = 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,*

*TO\_CHAR(scheduled\_departure::timestamp, 'YYYY-MM-DD"T"HH24:MI:SS.MS"Z"') AS*

*departure\_time,*

*TO\_CHAR(scheduled\_arrival::timestamp, 'YYYY-MM-DD"T"HH24:MI:SS.MS"Z"') AS*

*arrival\_time*

*FROM flights*

*WHERE*

*EXTRACT(HOUR FROM scheduled\_departure) BETWEEN 6 AND 11;*

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 ranked\_flights AS (*

*SELECT*

*flight\_id, flight\_no,*

*scheduled\_departure, scheduled\_arrival, departure\_airport,*

*cast(scheduled\_departure as time) timings*

*FROM flights*

*), table2 as (SELECT*

*\*,*

*dense\_rank ()over (partition by departure\_airport order by timings asc ) as rnk*

*from ranked\_flights*

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

*SELECT*

*flight\_id, flight\_no,*

*scheduled\_departure, scheduled\_arrival, departure\_airport,timings*

*FROM table2*

*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 = '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*

*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) 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:** *SELECT*

*a.airport\_name*

*FROM*

*airports a*

*JOIN*

*( SELECT*

*departure\_airport, COUNT(\*) AS departure\_count*

*FROM*

*flights*

*GROUP BY*

*departure\_airport*

*ORDER BY*

*departure\_count DESC*

*LIMIT 1*

*) AS max\_departures*

*ON*

*a.airport\_code = max\_departures.departure\_airport;*

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

Expected Output : Airport\_name

**Answer:** *SELECT*

*a.airport\_name*

*FROM*

*airports a*

*JOIN*

*( SELECT*

*departure\_airport,*

*COUNT(\*) AS departure\_count*

*FROM*

*Flights*

*GROUP BY*

*departure\_airport*

*ORDER BY*

*departure\_count ASC*

*LIMIT 1*

*) AS max\_departures*

*ON*

*a.airport\_code = max\_departures.departure\_airport;*

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*

*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'*

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;*

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 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 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 as aircraft\_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

*SELECT*

*a.airport\_name*

*FROM*

*airports a*

*JOIN*

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

*WHERE*

*f.status = 'Cancelled'*

*GROUP BY*

*a.airport\_name*

*ORDER BY*

*COUNT(\*) DESC*

*LIMIT 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*

*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:** *WITH LastFlightPerAirport AS (*

*SELECT*

*departure\_airport,*

*MAX(scheduled\_departure) AS max\_departure*

*FROM*

*flights*

*GROUP BY*

*departure\_airport*

*)*

*SELECT*

*f.flight\_id, f.flight\_no as flight\_number, f.scheduled\_departure, f.departure\_airport*

*FROM*

*flights f*

*JOIN*

*LastFlightPerAirport l ON f.departure\_airport = l.departure\_airport AND f.scheduled\_departure*

*= l.max\_departure;*

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*

*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:** *WITH FirstCancelledFlightPerAirport AS (*

*SELECT*

*departure\_airport,*

*MIN(scheduled\_departure) AS min\_departure*

*FROM*

*flights*

*WHERE*

*status = 'Cancelled'*

*GROUP BY*

*departure\_airport*

*)*

*SELECT*

*f.flight\_id, f.flight\_no as flight\_number, f.scheduled\_departure, f.departure\_airport*

*FROM*

*flights f*

*JOIN*

*FirstCancelledFlightPerAirport c ON f.departure\_airport = c.departure\_airport AND*

*f.scheduled\_departure = c.min\_departure*

*WHERE*

*f.status = 'Cancelled';*

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 f.status = 'Cancelled' and*

*a.model like '%Airbus%';*

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

*Expected Output : Flight\_no, range*

**Answer:** *WITH Max\_Range\_Flights AS (*

*SELECT*

*f.flight\_no, a.range,*

*ROW\_NUMBER() OVER (PARTITION BY f.flight\_no ORDER BY a.range DESC) AS rnk*

*FROM*

*flights f*

*JOIN*

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

*)*

*SELECT*

*flight\_no, range*

*FROM*

*Max\_Range\_Flights*

*WHERE*

*rnk = 1;*