**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](about:blank)

**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 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:**

WITH Temp\_1 as

(

SELECT seat\_no, count(seat\_no), dense\_rank() over (order by count(seat\_no) asc) as rnk FROM BOARDING\_PASSES GROUP BY 1

)

SELECT seat\_no

FROM Temp\_1

WHERE rnk = 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 highest\_paying as

( SELECT

to\_char(book\_date,'mmm-yy') as Month\_name, passenger\_id, passenger\_name, total\_amount,

dense\_rank() over (PARTITION BY to\_char(book\_date,'mmm-yy') ORDER BY total\_amount DESC) as rnk

FROM BOOKINGS B JOIN TICKETS T

ON B.book\_ref = T.book\_ref

)

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

FROM highest\_paying

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 least\_paying as

( SELECT

to\_char(book\_date,'mmm-yy') as Month\_name, passenger\_id, passenger\_name, total\_amount,

dense\_rank() over (PARTITION BY to\_char(book\_date,'mmm-yy') ORDER BY total\_amount ASC) as rnk

FROM BOOKINGS B JOIN TICKETS T

ON B.book\_ref = T.book\_ref

)

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

FROM least\_paying

WHERE rnk=1 ;

1. **Identify the travel details of the flights having return journeys (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(distinct TF.flight\_id) FROM TICKETS T JOIN TICKET\_FLIGHTS TF

ON T.ticket\_no = TF.ticket\_no

GROUP BY 1,2,3

HAVING count(distinct TF.flight\_id) > 1

ORDER BY 4 DESC ;

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

Expected Output: just one number is required.

**Answer:**

SELECT count(distinct ticket\_no)

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:**

WITH longest\_duration as

(

SELECT

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

actual\_arrival-actual\_departure as duration,

dense\_rank() over (order by actual\_arrival-actual\_departure desc) as rnk

FROM FLIGHTS

WHERE actual\_arrival-actual\_departure is NOT NULL

)

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

FROM longest\_duration

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:**

WITH Temp\_1 as

(

SELECT flight\_id, flight\_no,

scheduled\_departure, to\_char(cast(scheduled\_departure as time),'HH12:MM:SS AM') as sch\_dep\_timing,

scheduled\_arrival, to\_char(cast(scheduled\_arrival as time),'HH12:MM:SS AM') as sch\_arv\_timing,

actual\_departure, to\_char(cast(actual\_departure as time),'HH12:MM:SS AM') as timings, actual\_arrival, to\_char(cast(actual\_arrival as time),'HH12:MM:SS AM') as act\_arv\_timing

FROM FLIGHTS

)

SELECT flight\_id,flight\_no,scheduled\_departure,scheduled\_arrival, timings

FROM Temp\_1

WHERE timings BETWEEN '06:00:00 AM' AND '11:00:00 AM' ;

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 Temp\_1 as

(

SELECT flight\_id, flight\_no,

scheduled\_departure, to\_char(cast(scheduled\_departure as time),'HH12:MM:SS AM') as sch\_dep\_timing,

scheduled\_arrival, to\_char(cast(scheduled\_arrival as time),'HH12:MM:SS AM') as sch\_arv\_timing,

actual\_departure, to\_char(cast(actual\_departure as time),'HH12:MM:SS AM') as timings, actual\_arrival, to\_char(cast(actual\_arrival as time),'HH12:MM:SS AM') as act\_arv\_timing, departure\_airport,

dense\_rank() over (partition by airport\_code order by to\_char(cast(actual\_departure as time),'HH:MM:SS AM') asc) as rnk

FROM AIRPORTS A LEFT JOIN FLIGHTS F

ON A.airport\_code = F.departure\_airport

)

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

FROM Temp\_1

WHERE timings BETWEEN '02:00:00 AM' AND '06:00:00 AM' AND rnk = 1 ;

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

Expected Output: Airport\_code.

**Answer:**

SELECT

distinct(airport\_code) as 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 A.aircraft\_code, S.fare\_conditions, count(S.seat\_no) as seat\_count

FROM SEATS S RIGHT JOIN AIRCRAFTS A

ON A.aircraft\_code = S.aircraft\_code

GROUP BY 1,2 ;

1. **How many aircrafts codes have at least one Business class seats?**

Expected Output : Count of aircraft codes

**Answer:**

SELECT count(distinct A.aircraft\_code)

FROM SEATS S JOIN AIRCRAFTS A

ON A.aircraft\_code = S.aircraft\_code

WHERE S.fare\_conditions = 'Business' ;

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

Expected Output : Airport\_name

**Answer:**

WITH Temp\_1 as

(

SELECT A.airport\_name, count(distinct F.flight\_id)

FROM AIRPORTS A JOIN FLIGHTS F

ON A.airport\_code = F.departure\_airport

GROUP BY 1

ORDER BY 2 DESC

LIMIT 1

)

SELECT airport\_name

FROM Temp\_1 ;

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

Expected Output : Airport\_name

**Answer:**

WITH Temp\_1 as

(

SELECT A.airport\_name, count(distinct F.flight\_id)

FROM AIRPORTS A JOIN FLIGHTS F

ON A.airport\_code = F.departure\_airport

GROUP BY 1

ORDER BY 2 ASC

LIMIT 1

)

SELECT airport\_name

FROM Temp\_1 ;

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

Expected Output : Flight Count

**Answer:**

SELECT count(distinct flight\_id) 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 as ranges

FROM Flights F JOIN AIRCRAFTS A

ON A.aircraft\_code = F.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(distinct flight\_id) 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(distinct flight\_id) 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(distinct flight\_id)

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, F.aircraft\_code, A.range, F.departure\_airport

FROM Flights F JOIN AIRCRAFTS A

ON A.aircraft\_code = F.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 A.aircraft\_code = F.aircraft\_code

WHERE A.model like '%Airbus%' AND F.status IN ( 'Delayed', '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 F JOIN AIRCRAFTS A

ON A.aircraft\_code = F.aircraft\_code

WHERE A.model like '%Boeing%' AND F.status IN ( 'Delayed', 'Cancelled' ) ;

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

Expected Output : Airport\_name

**Answer:**

SELECT airport\_name

FROM AIRPORTS A JOIN FLIGHTS F

ON A.airport\_code = F.arrival\_airport

WHERE F.status = 'Cancelled' ;

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 A.aircraft\_code = F.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 Temp\_1 as

(

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

dense\_rank() over (partition by cast(F.scheduled\_departure as date) order by

cast(F.scheduled\_departure as date) DESC, cast(F.scheduled\_departure as time) DESC) as rnk

FROM AIRPORTS A LEFT JOIN FLIGHTS F

ON A.airport\_code = F.departure\_airport

)

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

FROM Temp\_1

WHERE rnk = 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(amount) as total\_refund

FROM Tickets T JOIN TICKET\_FLIGHTS TF

ON T.ticket\_no = TF.ticket\_no

JOIN FLIGHTS F

ON F.flight\_id = TF.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 Temp\_1 as

(

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

dense\_rank() over (partition by cast(F.scheduled\_departure as date) order by

cast(F.scheduled\_departure as date) ASC, cast(F.scheduled\_departure as time) ASC) as rnk

FROM AIRPORTS A LEFT JOIN FLIGHTS F

ON A.airport\_code = F.departure\_airport

WHERE F.status = 'Cancelled'

)

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

FROM Temp\_1

WHERE rnk = 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 A.aircraft\_code = F.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 F.flight\_id,max(A.range)

FROM FLIGHTS F JOIN AIRCRAFTS A

ON A.aircraft\_code = F.aircraft\_code

GROUP BY 1

ORDER BY 1 ;