**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-mm-dd') booking\_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

    TICKET\_FLIGHTS.ticket\_no,

    BOARDING\_PASSES.boarding\_no,

    BOARDING\_PASSES.seat\_no,

    TICKETS.passenger\_id,

    TICKETS.passenger\_name

from TICKET\_FLIGHTS

left join BOARDING\_PASSES on BOARDING\_PASSES.ticket\_no=TICKET\_FLIGHTS.ticket\_no

inner join TICKETS on TICKETS.ticket\_no=TICKET\_FLIGHTS.ticket\_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 1

order by count(seat\_no) 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 t1 as (

 select

    to\_char(scheduled\_departure,'Mon-yy') month\_name,

    extract(year from scheduled\_departure) year\_num,

    extract(month from scheduled\_departure) month\_num,

    passenger\_id,

    passenger\_name,

    sum(amount) total\_amount

 from FLIGHTS

 inner join TICKET\_FLIGHTS on TICKET\_FLIGHTS.flight\_id=FLIGHTS.flight\_id

 inner join TICKETS on TICKETS.ticket\_no=TICKET\_FLIGHTS.ticket\_no

 group by scheduled\_departure,passenger\_id,passenger\_name

 ),

 t2 as

 ( select

    \*,

    row\_number() over(partition by month\_name order by total\_amount desc) monthly\_ranking

 from t1)

select

    month\_name,

    passenger\_id,

    passenger\_name,

    total\_amount

from t2

where monthly\_ranking=1

order by year\_num,month\_num

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 t1 as (

 select

    to\_char(scheduled\_departure,'Mon-yy') month\_name,

    extract(year from scheduled\_departure) year\_num,

    extract(month from scheduled\_departure) month\_num,

    passenger\_id,

    passenger\_name,

    sum(amount) total\_amount

 from FLIGHTS

 inner join TICKET\_FLIGHTS on TICKET\_FLIGHTS.flight\_id=FLIGHTS.flight\_id

 inner join TICKETS on TICKETS.ticket\_no=TICKET\_FLIGHTS.ticket\_no

 group by scheduled\_departure,passenger\_id,passenger\_name

 ),

 t2 as

 ( select

    \*,

    row\_number() over(partition by month\_name order by total\_amount) monthly\_ranking

 from t1)

select

    month\_name,

    passenger\_id,

    passenger\_name,

    total\_amount

from t2

where monthly\_ranking=1

order by year\_num,month\_num

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

    TICKETS.passenger\_id,

    TICKETS.passenger\_name,

    TICKETS.ticket\_no,

    count(TICKET\_FLIGHTS.flight\_id) flights\_count

from TICKETS

inner join TICKET\_FLIGHTS on TICKETS.ticket\_no=TICKET\_FLIGHTS.ticket\_no

inner join FLIGHTS on TICKET\_FLIGHTS.flight\_id=FLIGHTS.flight\_id

group by 1,2,3

having count(TICKET\_FLIGHTS.flight\_id) >1

order by flights\_count desc

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

Expected Output: just one number is required.

**Answer:**select

    count(TICKET\_FLIGHTS.ticket\_no)

from TICKET\_FLIGHTS

left join BOARDING\_PASSES on TICKET\_FLIGHTS.ticket\_no= BOARDING\_PASSES.ticket\_no

where BOARDING\_PASSES.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 t1 as(

select

    flight\_no,

    departure\_airport,

    arrival\_airport,

    aircraft\_code,

    actual\_arrival-actual\_departure duration

from FLIGHTS

where actual\_arrival-actual\_departure is not null

order by duration desc),

t2 as

(select

    \*,

    rank() over(order by duration desc) duration\_ranking

from t1)

select

    flight\_no,

    departure\_airport,

    arrival\_airport,

    aircraft\_code,

    duration

from t2

where duration\_ranking=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

    \*

from (

select

    flight\_id,

    flight\_no,

    scheduled\_departure,

    scheduled\_arrival,

    to\_char(scheduled\_departure,'HH24:MI') timings

from FLIGHTS) t1

where to\_timestamp(timings,'HH24:MI')::time between '06:00'::time and '11:00'::time

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,

    to\_char(scheduled\_departure,'HH24:MI:SS') timings

from AIRPORTS

left join FLIGHTS on FLIGHTS.departure\_airport=AIRPORTS.airport\_code

),

t2 as

( select

    \*,

    row\_number() over(partition by departure\_airport order by timings) departure\_ranking

from t1)

select

    flight\_id,

    flight\_no,

    scheduled\_departure,

    scheduled\_arrival,

    departure\_airport,

    timings

from t2

where departure\_ranking=1

order by timings

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(seat\_no) seat\_count

from SEATS

group by 1,2

order by 1

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

Expected Output : Count of aircraft codes

**Answer:**select

    count(distinct aircraft\_code) aircraft\_code\_Count

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

    airport\_name

from AIRPORTS

left join FLIGHTS on FLIGHTS.departure\_airport=AIRPORTS.airport\_code

group by 1

order by count(actual\_departure) desc

limit 1

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

Expected Output : Airport\_name

**Answer:**select

    airport\_name

from AIRPORTS

left join FLIGHTS on FLIGHTS.departure\_airport=AIRPORTS.airport\_code

group by 1

order by count(scheduled\_departure)

limit 1

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

Expected Output : Flight Count

**Answer:** select

    count(flight\_no)

from AIRPORTS

 left join FLIGHTS on FLIGHTS.departure\_airport=AIRPORTS.airport\_code

 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

   distinct flight\_no,

   AIRCRAFTS.aircraft\_code,

   AIRCRAFTS.range

from AIRCRAFTS

left join FLIGHTS on AIRCRAFTS.aircraft\_code=FLIGHTS.aircraft\_code

where range between '3000' and '6000'

order by 3

1. **Write a query to get the count of flights flying between URS and KUF?**

Expected Output : Flight\_count

**Answer:**select

    count(flight\_id)

from FLIGHTS

where departure\_airport in ('URS','KUF') and arrival\_airport in ('URS','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(flight\_id)

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\_id)

from FLIGHTS

where departure\_airport in ('KZN','DME','NBC','NJC','GDX','SGC','VKO','ROV')

group by 1

order by 2

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

   distinct flight\_no,

   AIRCRAFTS.aircraft\_code,

   AIRCRAFTS.range,

   departure\_airport

from AIRCRAFTS

left join FLIGHTS on AIRCRAFTS.aircraft\_code=FLIGHTS.aircraft\_code

where range between '3000' and '6000' and departure\_airport='DME'

order by 3

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:**

 with t1 as

 (select

    flight\_id,

    model,

case

    when actual\_arrival is null then 'Cancelled'

    when actual\_arrival<=scheduled\_arrival then 'Ontime'

    else 'Delayed'

end as arrival\_status

 from FLIGHTS

 inner join AIRCRAFTS on AIRCRAFTS.aircraft\_code=FLIGHTS.aircraft\_code

 where model like ('%Airbus%')

 )

 select

    flight\_id,

    model

from t1

 where arrival\_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:**

 with t1 as

 (select

    flight\_id,

    model,

case

    when actual\_arrival is null then 'Cancelled'

    when actual\_arrival<=scheduled\_arrival then 'Ontime'

    else 'Delayed'

end as arrival\_status

 from FLIGHTS

 inner join AIRCRAFTS on AIRCRAFTS.aircraft\_code=FLIGHTS.aircraft\_code

 where model like ('%Boeing%')

 )

 select

    flight\_id,

    model

from t1

 where arrival\_status in ('Cancelled','Delayed')

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

Expected Output : Airport\_name

**Answer:**

with t1 as

 (select

    airport\_name,

case

    when actual\_arrival is null then 'Cancelled'

    when actual\_arrival<=scheduled\_arrival then 'Ontime'

    else 'Delayed'

end as arrival\_status

 from FLIGHTS

 inner join AIRPORTS on AIRPORTS.airport\_code=FLIGHTS.arrival\_airport

 )

 select airport\_name  from t1

 where arrival\_status in ('Cancelled')

 group by 1

 order by count(arrival\_status) desc

 limit 1

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

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

**Answer:** select

    flight\_id,

    model

 from FLIGHTS

 inner join AIRCRAFTS on AIRCRAFTS.aircraft\_code=FLIGHTS.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,actual\_departure,

    rank() over(partition by departure\_airport order by actual\_departure desc) departure\_ranking

 from FLIGHTS

 where actual\_departure is not null

 )

 select

    flight\_id,

    flight\_no,

    scheduled\_departure,

    departure\_airport

from t1

where departure\_ranking=1

order by 3

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

    TICKETS.passenger\_name,

    sum(TICKET\_FLIGHTS.amount) total\_refund

from TICKETS

left join TICKET\_FLIGHTS on TICKET\_FLIGHTS.ticket\_no = TICKETS.ticket\_no

inner join FLIGHTS on FLIGHTS.flight\_id =TICKET\_FLIGHTS.flight\_id

where actual\_departure is null

group by 1

order 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 t1 as (

 select

    flight\_id,

    flight\_no,

    scheduled\_departure,

    departure\_airport,actual\_departure,

    row\_number() over(partition by departure\_airport order by actual\_departure) departure\_ranking

 from FLIGHTS

 where actual\_departure is null

 )

 select

    flight\_id,

    flight\_no,

    scheduled\_departure,

    departure\_airport

from t1

where departure\_ranking=1

order by 3

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

*Expected Output : Flight\_id*

**Answer:**select

    flight\_id

 from AIRCRAFTS

 inner join FLIGHTS on AIRCRAFTS.aircraft\_code=FLIGHTS.aircraft\_code

 where model like ('%Airbus%') and actual\_departure is null

order by 1

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

*Expected Output : Flight\_no, range*

**Answer:**with t1 as (

select

    FLIGHTS.flight\_no,

    AIRCRAFTS.range,

    rank() over(order by AIRCRAFTS.range desc) range\_ranking

 from AIRCRAFTS

 inner join FLIGHTS on AIRCRAFTS.aircraft\_code=FLIGHTS.aircraft\_code

 )

 select

    distinct flight\_no,

    range

from t1

where range\_ranking=1

order by 1