**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](file:///D:\Skill%20o%20Villa\SQL%20Capstone%20Project\•%09https:\www.skillovilla.com\playground\sql%3fexerciseId=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 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, BOARDING\_NO, SEAT\_NO, PASSENGER\_ID, 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:**

WITH T1 AS (Select

 s.Seat\_no, count(ticket\_no) as ticket\_no

 from boarding\_passes bp

 Left join seats s

 on s.Seat\_no = bp.Seat\_no

 group by 1)

 Select

  Seat\_no

  from t1

  where ticket\_no = (Select min(ticket\_no)from t1)

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

 from bookings b

 join tickets t

 on b.book\_ref = t.book\_ref

 group by 1,2,3,4), T2 AS (

 SELECT

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

  DENSE\_RANK() OVER(PARTITION BY Month\_name ORDER BY total\_amount DESC) AS RANK\_1

 FROM T1 )

 SELECT

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

FROM T2

WHERE RANK\_1 = 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 T1 AS (SELECT

 TO\_CHAR(book\_date, 'Mon-yy') as Month\_name, passenger\_id, passenger\_name, b.total\_amount

 from bookings b

 join tickets t

 on b.book\_ref = t.book\_ref

 group by 1,2,3,4), T2 AS (

 SELECT

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

  DENSE\_RANK() OVER(PARTITION BY Month\_name ORDER BY total\_amount asc) AS RANK\_1

 FROM T1 )

 SELECT

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

FROM T2

WHERE RANK\_1 = 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, COUNT(FLIGHT\_ID) AS FLIGHT\_COUNT

FROM TICKETS T

JOIN BOARDING\_PASSES BP

ON T.TICKET\_NO = BP.TICKET\_NO

GROUP BY 1,2,3

having COUNT(FLIGHT\_ID) > 1

order by 1

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

Expected Output: just one number is required.

**Answer: 251 COUNT**

SELECT

 COUNT(\*)

 FROM TICKETS T

 LEFT JOIN BOARDING\_PASSES BP

 ON T.TICKET\_NO = BP.TICKET\_NO

 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 t1 as (SELECT

 FLIGHT\_NO, Departure\_airport, arrival\_airport, aircraft\_code,

 (scheduled\_arrival - scheduled\_departure) as duration

 from flights)

, t2 as (

 SELECT

  FLIGHT\_NO, Departure\_airport, arrival\_airport, aircraft\_code, duration,

  dense\_rank() over(order by duration desc) as rank\_1

  from t1)

SELECT

 FLIGHT\_NO, Departure\_airport, arrival\_airport, aircraft\_code, duration

 from t2

 where rank\_1 = 1

 order by 5 desc

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,

    cast(scheduled\_departure as time) AS TIMINGS

    from flights

    WHERE CAST(scheduled\_departure as time) BETWEEN '06:00:00' AND '10:59:59'

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,

    cast(scheduled\_departure as time) timings,

    dense\_RANK () OVER (PARTITION BY DEPARTURE\_AIRPORT ORDER BY cast(scheduled\_departure as time) ASC) RANK\_1

    FROM FLIGHTS

 )

 SELECT

  FLIGHT\_ID, FLIGHT\_NO, SCHEDULED\_DEPARTURE, SCHEDULED\_ARRIVAL, DEPARTURE\_AIRPORT, TIMINGS

  FROM T1

WHERE CAST(scheduled\_departure as time) between '02:00:00' and '05:59:59' and RANK\_1 = 1

Order by 6

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) AS SEAT\_COUNT

 FROM SEATS

 GROUP BY 1,2

order by 1,2

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

Expected Output : Count of aircraft codes

**Answer: count 7**

SELECT

COUNT (distinct A.AIRCRAFT\_CODE)

 FROM AIRCRAFTS A

 JOIN  SEATS S

 ON A.AIRCRAFT\_CODE = S.AIRCRAFT\_CODE

 WHERE FARE\_CONDITIONS = 'Business'

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

Expected Output : Airport\_name

**Answer:**

WITH T1 AS (

SELECT airport\_name, COUNT(departure\_AIRPORT) AS total\_departures,

rank() over (order by count(departure\_AIRPORT)desc ) as rank\_1

FROM AIRPORTS a

join FLIGHTS f

on a.airport\_code=f.departure\_AIRPORT

GROUP BY airport\_name)

SELECT

airport\_name

FROM T1

where rank\_1 = 1

ORDER BY total\_departures DESC

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

Expected Output : Airport\_name

**Answer:**

WITH T1 AS (

SELECT airport\_name, COUNT(departure\_AIRPORT) AS total\_departures,

rank() over (order by count(departure\_AIRPORT)asc ) as rank\_1

FROM AIRPORTS a

join FLIGHTS f

on a.airport\_code=f.departure\_AIRPORT

GROUP BY airport\_name)

SELECT

airport\_name, total\_departures

FROM T1

where rank\_1 = 1

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

1. **Identify flight ids having range between 3000 to 6000**

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

**Answer:**

SELECT

 FLIGHT\_NO, F.AIRCRAFT\_CODE, RANGE

 FROM FLIGHTS F

 JOIN AIRCRAFTS A

 ON F.AIRCRAFT\_CODE = A.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: COUNT 24**

select count(\*)

from flights

where (departure\_airport='KUF'  and arrival\_airport='URS’)

OR (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: COUNT 301**

SELECT

 COUNT(FLIGHT\_NO) AS FLIGHT\_COUNT

 FROM FLIGHTS

 WHERE DEPARTURE\_AIRPORT = 'NOZ' OR DEPARTURE\_AIRPORT = '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 FLIGHT\_COUNT

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

 FLIGHT\_NO, F.AIRCRAFT\_CODE, RANGE, 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

**Answer:**

with t1 as

(SELECT airport\_name, rank() over (partition by airport\_name order by count(status) desc) as rank\_1

from airports a

JOIN flights f

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

WHERE status = 'Cancelled'

group by 1)

SELECT

 airport\_name

 from t1

 where rank\_1 = 1

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

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

**Answer:**

Select

 Flight\_id, Model as aircraft\_model

from aircrafts a

join flights 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,

      ROW\_NUMBER() OVER(PARTITION BY DEPARTURE\_AIRPORT ORDER BY SCHEDULED\_DEPARTURE DESC) AS RANK\_1

    FROM FLIGHTS)

SELECT

 FLIGHT\_ID, FLIGHT\_NO, SCHEDULED\_DEPARTURE, DEPARTURE\_AIRPORT

 FROM T1

 WHERE RANK\_1 = 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

 T.PASSENGER\_NAME, sum(AMOUNT)

FROM TICKET\_FLIGHTS TF

JOIN TICKETS T

ON TF.TICKET\_NO = t.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 T1 AS (SELECT

 FLIGHT\_ID, FLIGHT\_NO, SCHEDULED\_DEPARTURE, DEPARTURE\_AIRPORT,

 ROW\_NUMBER() OVER (PARTITION BY DEPARTURE\_AIRPORT ORDER  BY SCHEDULED\_DEPARTURE ASC) AS RANK\_1

FROM FLIGHTS

WHERE STATUS = 'Cancelled')

SELECT

 FLIGHT\_ID, FLIGHT\_NO, SCHEDULED\_DEPARTURE, DEPARTURE\_AIRPORT

 FROM T1

 WHERE RANK\_1 = 1

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 model like '%Airbus%' and Status = 'Cancelled'

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

*Expected Output : Flight\_no, range*

**Answer:**

WITH T1 AS (

    SELECT

    FLIGHT\_NO, range,

    RANK () OVER( PARTITION BY FLIGHT\_ID ORDER BY range desc) AS RNK

FROM FLIGHTS F

JOIN AIRCRAFTS A

ON F.AIRCRAFT\_CODE=A.AIRCRAFT\_CODE

)

SELECT FLIGHT\_NO , range

FROM t1

WHERE RNK=1