**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-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 P.TICKET\_NO,P.BOARDING\_NO,P.SEAT\_NO AS SEAT\_NUMBER,T.PASSENGER\_ID,

T.PASSENGER\_NAME FROM boarding\_passes P JOIN tickets T ON P.TICKET\_NO=T.TICKET\_NO

1. **Write a query to find the seat number which is least allocated among all the seats?**

**Answer:**WITH CTE AS (SELECT SEAT\_NO,DENSE\_RANK() OVER(ORDER BY COUNT(SEAT\_NO)) AS ALLOCATED\_COUNT\_R

 FROM boarding\_passes GROUP BY 1)

 SELECT SEAT\_NO FROM CTE WHERE ALLOCATED\_COUNT\_R=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 CTE AS (SELECT TO\_CHAR(B.BOOK\_DATE,'MMM-YY') AS MONTH\_NAME,T.PASSENGER\_ID,

T.PASSENGER\_NAME,SUM(B.TOTAL\_AMOUNT) AS TOTAL\_AMOUNT,DENSE\_RANK() OVER(PARTITION BY

TO\_CHAR(B.BOOK\_DATE,'MMM-YY') ORDER BY SUM(B.TOTAL\_AMOUNT) DESC) AS TOTAL\_AMOUNT\_RANK

FROM bookings B JOIN tickets T ON B.BOOK\_REF=T.BOOK\_REF GROUP BY 1,2,3)

SELECT MONTH\_NAME,PASSENGER\_ID,PASSENGER\_NAME,TOTAL\_AMOUNT FROM CTE WHERE TOTAL\_AMOUNT\_RANK=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 CTE AS (SELECT TO\_CHAR(B.BOOK\_DATE,'MMM-YY') AS MONTH\_NAME,T.PASSENGER\_ID,

T.PASSENGER\_NAME,SUM(B.TOTAL\_AMOUNT) AS TOTAL\_AMOUNT,DENSE\_RANK() OVER(PARTITION BY

TO\_CHAR(B.BOOK\_DATE,'MMM-YY') ORDER BY SUM(B.TOTAL\_AMOUNT)) AS TOTAL\_AMOUNT\_RANK

FROM bookings B JOIN tickets T ON B.BOOK\_REF=T.BOOK\_REF GROUP BY 1,2,3)

SELECT MONTH\_NAME,PASSENGER\_ID,PASSENGER\_NAME,TOTAL\_AMOUNT FROM CTE WHERE TOTAL\_AMOUNT\_RANK=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,T.TICKET\_NO AS TICKET\_NUMBER,

 COUNT(TF.FLIGHT\_ID) AS FLIGHT\_COUNT FROM tickets T JOIN ticket\_flights TF

 ON T.TICKET\_NO=TF.TICKET\_NO GROUP BY 1,2,3 HAVING COUNT(TF.FLIGHT\_ID)>1

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

Expected Output: just one number is required.

**Answer:**SELECT COUNT(T.TICKET\_NO) AS TICKETS\_WITH\_NO\_BOARDINGPASS\_COUNT FROM tickets T LEFT JOIN boarding\_passes 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: if you want unique records to be displayed please use distinct before flight\_number column**

WITH CTE AS (SELECT FLIGHT\_NO AS FLIGHT\_NUMBER,DEPARTURE\_AIRPORT,

 ARRIVAL\_AIRPORT,AIRCRAFT\_CODE,(SCHEDULED\_ARRIVAL-SCHEDULED\_DEPARTURE) AS

 DURATION,DENSE\_RANK() OVER(ORDER BY (SCHEDULED\_ARRIVAL-SCHEDULED\_DEPARTURE) DESC) AS

 DRANK FROM flights)

 SELECT FLIGHT\_NUMBER,DEPARTURE\_AIRPORT,ARRIVAL\_AIRPORT,AIRCRAFT\_CODE,DURATION FROM

 CTE WHERE DRANK=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,CAST(SCHEDULED\_DEPARTURE AS TIME)

 AS DEPARTURE\_TIME,CAST(SCHEDULED\_ARRIVAL AS TIME)

 AS ARRIVAL\_TIME

  FROM flights WHERE CAST(SCHEDULED\_DEPARTURE AS TIME) 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 CTE AS(SELECT FLIGHT\_ID,FLIGHT\_NO AS FLIGHT\_NUMBER,SCHEDULED\_DEPARTURE,

 SCHEDULED\_ARRIVAL,DEPARTURE\_AIRPORT,CAST(SCHEDULED\_DEPARTURE AS TIME)

 AS DEPARTURE\_TIME,CAST(SCHEDULED\_ARRIVAL AS TIME)

 AS ARRIVAL\_TIME,DENSE\_RANK() OVER(PARTITION BY DEPARTURE\_AIRPORT

 ORDER BY CAST(SCHEDULED\_DEPARTURE AS TIME))

 AS ERANK

  FROM flights WHERE CAST(SCHEDULED\_DEPARTURE AS TIME) BETWEEN

 '02:00:00' AND '06:00:00')

 SELECT FLIGHT\_ID,FLIGHT\_NUMBER,SCHEDULED\_DEPARTURE,SCHEDULED\_ARRIVAL,

 DEPARTURE\_AIRPORT,DEPARTURE\_TIME,ARRIVAL\_TIME FROM CTE WHERE ERANK=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(SEAT\_NO) AS SEAT\_COUNT FROM seats GROUP BY 1,2

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

Expected Output : Count of aircraft codes

**Answer:**WITH CTE AS(SELECT AIRCRAFT\_CODE,FARE\_CONDITIONS,

COUNT(SEAT\_NO)

AS SEAT\_COUNT FROM seats

 WHERE FARE\_CONDITIONS='Business' GROUP BY 1,2 HAVING COUNT(SEAT\_NO)>=1)

 SELECT COUNT(AIRCRAFT\_CODE) AS COUNT\_OF\_AIRCRAFT\_CODES FROM CTE

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

Expected Output : Airport\_name

**Answer:**

WITH CTE AS(SELECT DEPARTURE\_AIRPORT AS AIRPORT\_CODE,DENSE\_RANK() OVER(ORDER BY COUNT(FLIGHT\_ID) DESC)

 AS DR FROM flights GROUP BY 1)

 SELECT A.AIRPORT\_NAME FROM AIRPORTS A JOIN CTE C ON A.AIRPORT\_CODE=C.AIRPORT\_CODE WHERE C.DR=1

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

Expected Output : Airport\_name

**Answer:**

WITH CTE AS(SELECT DEPARTURE\_AIRPORT AS AIRPORT\_CODE,DENSE\_RANK() OVER(ORDER BY COUNT(FLIGHT\_ID))

AS DR FROM flights GROUP BY 1)

SELECT A.AIRPORT\_NAME FROM AIRPORTS A JOIN CTE C ON A.AIRPORT\_CODE=C.AIRPORT\_CODE WHERE C.DR=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 F.FLIGHT\_ID AS FLIGHT\_NUMBER,F.AIRCRAFT\_CODE,A.RANGE AS RANGES 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(FLIGHT\_ID) AS FLIGHT\_COUNT 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) 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\_ID) 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: If you want unique records to display then please place distinct before flight\_no column**

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

 F.DEPARTURE\_AIRPORT='DME' AND A.RANGE BETWEEN 3000 AND 6000

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

 F.STATUS IN ('Cancelled','Delayed') AND A.MODEL LIKE '%Airbus%'

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

 F.STATUS IN ('Cancelled','Delayed') AND A.MODEL LIKE '%Boeing%'

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

Expected Output : Airport\_name

**Answer:** WITH CTE AS (SELECT ARRIVAL\_AIRPORT,DENSE\_RANK() OVER(ORDER BY COUNT(FLIGHT\_ID) DESC) AS

DR FROM flights WHERE STATUS='Cancelled' GROUP BY 1)

SELECT A.AIRPORT\_NAME FROM AIRPORTS A JOIN CTE C ON A.AIRPORT\_CODE=C.ARRIVAL\_AIRPORT WHERE

C.DR=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 CTE AS(SELECT FLIGHT\_ID,FLIGHT\_NO AS FLIGHT\_NUMBER,SCHEDULED\_DEPARTURE,

DEPARTURE\_AIRPORT,DENSE\_RANK() OVER(PARTITION BY DEPARTURE\_AIRPORT,

CAST(SCHEDULED\_DEPARTURE AS DATE)

ORDER BY SCHEDULED\_DEPARTURE DESC) AS DR FROM flights)

SELECT FLIGHT\_ID,FLIGHT\_NUMBER,SCHEDULED\_DEPARTURE,DEPARTURE\_AIRPORT FROM CTE

WHERE DR=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:**WITH TOTAL\_BOOKING\_AMOUNT AS (

 SELECT T.PASSENGER\_NAME,SUM(B.TOTAL\_AMOUNT) AS TBA FROM

 bookings B JOIN tickets T ON T.BOOK\_REF=B.BOOK\_REF GROUP BY 1),

 UNCANCELLED\_FLIGHTS\_COST AS (SELECT T.PASSENGER\_NAME,SUM(TF.AMOUNT)

 AS UCFC FROM TICKETS T JOIN TICKET\_FLIGHTS TF ON T.TICKET\_NO=

 TF.TICKET\_NO GROUP BY 1)

 SELECT TBAT.PASSENGER\_NAME,(TBAT.TBA-UFC.UCFC) AS TOTAL\_REFUND

 FROM TOTAL\_BOOKING\_AMOUNT TBAT JOIN UNCANCELLED\_FLIGHTS\_COST

 UFC ON TBAT.PASSENGER\_NAME=UFC.PASSENGER\_NAME WHERE TBAT.TBA>UFC.UCFC

1. ***Identify date wise first cancelled flight id flying for every airport?***

*Expected Output : Flight\_id,flight\_number,schedule\_departure,departure\_airport*

**Answer:**WITH CTE AS(SELECT FLIGHT\_ID,FLIGHT\_NO AS FLIGHT\_NUMBER,

SCHEDULED\_DEPARTURE,DEPARTURE\_AIRPORT,DENSE\_RANK()

OVER(PARTITION BY DEPARTURE\_AIRPORT,CAST(SCHEDULED\_DEPARTURE AS DATE)

ORDER BY SCHEDULED\_DEPARTURE) AS DR FROM flights

WHERE STATUS='Cancelled')

SELECT FLIGHT\_ID,FLIGHT\_NUMBER,SCHEDULED\_DEPARTURE,

DEPARTURE\_AIRPORT FROM CTE WHERE DR=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 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: If you want unique records please place distinct before FLIGHT\_NO column in any of the below two sql statements**

WITH CTE AS(SELECT F.FLIGHT\_NO,A.RANGE,DENSE\_RANK() OVER(ORDER BY A.RANGE DESC) AS RANGERANK

 FROM flights F JOIN aircrafts A ON F.AIRCRAFT\_CODE=A.AIRCRAFT\_CODE)

SELECT FLIGHT\_NO,RANGE FROM CTE WHERE RANGERANK=1