**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

    BP.TICKET\_NO,

    BP.BOARDING\_NO,

    BP.SEAT\_NO,

    T.PASSENGER\_ID,

    T.PASSENGER\_NAME

FROM BOARDING\_PASSES BP

JOIN TICKETS T

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 SEAT\_ALLOCATION AS (

    SELECT

        SEAT\_NO,

        COUNT(\*) AS ALLOCATION\_COUNT

    FROM BOARDING\_PASSES

  GROUP BY 1

)

SELECT

    SEAT\_NO,

    ALLOCATION\_COUNT

FROM SEAT\_ALLOCATION

ORDER BY 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 HIGHEST\_PAYING\_PASSENGER 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,

        ROW\_NUMBER() OVER(PARTITION BY EXTRACT(MONTH FROM B.BOOK\_DATE) ORDER BY  SUM(B.TOTAL\_AMOUNT) DESC) AS RNK

    FROM BOOKINGS B

    JOIN TICKETS T

    ON T.BOOK\_REF = B.BOOK\_REF

    GROUP BY 1, 2, 3, B.BOOK\_DATE

)

SELECT

    MONTH\_NAME,

    PASSENGER\_ID,

    PASSENGER\_NAME,

    TOTAL\_AMOUNT

FROM HIGHEST\_PAYING\_PASSENGER

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 HIGHEST\_PAYING\_PASSENGER 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,

        ROW\_NUMBER() OVER(PARTITION BY EXTRACT(MONTH FROM B.BOOK\_DATE) ORDER BY  SUM(B.TOTAL\_AMOUNT) ASC) AS RNK

    FROM BOOKINGS B

    JOIN TICKETS T

    ON T.BOOK\_REF = B.BOOK\_REF

    GROUP BY 1, 2, 3, B.BOOK\_DATE

)

SELECT

    MONTH\_NAME,

    PASSENGER\_ID,

    PASSENGER\_NAME,

    TOTAL\_AMOUNT

FROM HIGHEST\_PAYING\_PASSENGER

WHERE RNK = 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,

    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(\*)

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:**

SELECT

    FLIGHT\_NO,

    DEPARTURE\_AIRPORT,

    ARRIVAL\_AIRPORT,

    AIRCRAFT\_CODE,

    MAX(ACTUAL\_ARRIVAL - ACTUAL\_DEPARTURE) AS DURATION

FROM FLIGHTS

GROUP BY 1, 2, 3, 4

LIMIT 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,

    (SCHEDULED\_ARRIVAL - SCHEDULED\_DEPARTURE) AS TIMINGS

FROM FLIGHTS

WHERE EXTRACT(HOUR FROM SCHEDULED\_DEPARTURE) BETWEEN 6 AND 11

ORDER BY 3 ASC;

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 EARLIEST\_FLIGHTS AS (

  SELECT

    F.FLIGHT\_ID,

    F.FLIGHT\_NO,

    F.SCHEDULED\_DEPARTURE,

    F.SCHEDULED\_ARRIVAL,

    F.DEPARTURE\_AIRPORT,

    (SCHEDULED\_ARRIVAL - SCHEDULED\_DEPARTURE) AS TIMINGS,

    ROW\_NUMBER() OVER (PARTITION BY F.DEPARTURE\_AIRPORT ORDER BY F.SCHEDULED\_DEPARTURE) AS RNK

  FROM FLIGHTS F

  WHERE EXTRACT(HOUR FROM F.SCHEDULED\_DEPARTURE) BETWEEN 6 AND 11

)

SELECT

    FLIGHT\_ID,

    FLIGHT\_NO,

    SCHEDULED\_DEPARTURE,

    SCHEDULED\_ARRIVAL,

    DEPARTURE\_AIRPORT,

    TIMINGS

FROM EARLIEST\_FLIGHTS

WHERE RNK = 1

ORDER BY 3 ASC;

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

Expected Output: Airport\_code.

**Answer:**

SELECT

    AIRPORT\_CODE

FROM AIRPORTS

WHERE TIMEZONE IN ('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 AIRCRAFTS A

JOIN SEATS S

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

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 A.AIRCRAFT\_CODE) AS AIRCRAFT\_COUNT

FROM AIRCRAFTS A

JOIN SEATS S

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 LEAST\_SCHEDULED\_DEPARTURE\_FLIGHTS AS (

    SELECT

        A.AIRPORT\_NAME,

        COUNT(F.FLIGHT\_ID) AS COUNT\_FLIGHT

    FROM AIRPORTS A

    JOIN FLIGHTS F

    ON A.AIRPORT\_CODE = F.DEPARTURE\_AIRPORT

    GROUP BY 1

    ORDER BY 2 DESC

)

SELECT

   AIRPORT\_NAME

FROM LEAST\_SCHEDULED\_DEPARTURE\_FLIGHTS

LIMIT 1;

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

Expected Output : Airport\_name

**Answer:**

WITH LEAST\_SCHEDULED\_DEPARTURE\_FLIGHTS AS (

    SELECT

        A.AIRPORT\_NAME,

        COUNT(F.FLIGHT\_ID) AS COUNT\_FLIGHT

    FROM AIRPORTS A

    JOIN FLIGHTS F

    ON A.AIRPORT\_CODE = F.DEPARTURE\_AIRPORT

    GROUP BY 1

    ORDER BY 2 ASC

)

SELECT

   AIRPORT\_NAME

FROM LEAST\_SCHEDULED\_DEPARTURE\_FLIGHTS

LIMIT 1;

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

Expected Output : Flight Count

**Answer:**

SELECT

    COUNT(FLIGHT\_ID)

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,

    A.AIRCRAFT\_CODE,

    A.RANGE

FROM FLIGHTS F

JOIN AIRCRAFTS A

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

WHERE A.RANGE BETWEEN 3000 AND 6000

GROUP BY 1, 2, 3;

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 = '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(\*) 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

    F.FLIGHT\_NO,

    A.AIRCRAFT\_CODE,

    A.RANGE,

    F.DEPARTURE\_AIRPORT

FROM FLIGHTS F

JOIN AIRCRAFTS A

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

WHERE A.RANGE BETWEEN 3000 AND 6000

AND F.DEPARTURE\_AIRPORT = 'DME'

GROUP BY 1, 2, 3, 4;

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

    FLIGHT\_ID,

    A.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

    FLIGHT\_ID,

    A.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 MOST\_CANCELLED\_FLIGHTS AS (

    SELECT

        A.AIRPORT\_NAME,

        COUNT(FLIGHT\_ID)

    FROM FLIGHTS F

    JOIN AIRPORTS A

    ON F.ARRIVAL\_AIRPORT = A.AIRPORT\_CODE

    WHERE F.STATUS = 'Cancelled'

    AND F.ARRIVAL\_AIRPORT IS NOT NULL

    GROUP BY 1

    ORDER BY 2 DESC

)

SELECT

    AIRPORT\_NAME

FROM MOST\_CANCELLED\_FLIGHTS

LIMIT 1;

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

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

**Answer:**

SELECT

    F.FLIGHT\_ID,

    A.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 LAST\_FLIGHTS AS (

    SELECT

        FLIGHT\_ID,

        FLIGHT\_NO,

        SCHEDULED\_DEPARTURE,

        DEPARTURE\_AIRPORT,

        ROW\_NUMBER() OVER(PARTITION BY DEPARTURE\_AIRPORT ORDER BY CAST(SCHEDULED\_DEPARTURE AS DATE) DESC) AS ROW\_NUM

    FROM FLIGHTS

)

SELECT

    FLIGHT\_ID,

    FLIGHT\_NO,

    SCHEDULED\_DEPARTURE,

    DEPARTURE\_AIRPORT

FROM LAST\_FLIGHTS

WHERE ROW\_NUM = 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,

    MAX(tf.AMOUNT) AS TOTAL\_REFUND

FROM FLIGHTS f

INNER JOIN TICKET\_FLIGHTS tf

ON tf.FLIGHT\_ID = f.FLIGHT\_ID

INNER JOIN TICKETS t

ON t.TICKET\_NO = tf.TICKET\_NO

WHERE 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 FIRST\_CANCELLED\_FLIGHTS AS (

    SELECT

        FLIGHT\_ID,

        FLIGHT\_NO,

        SCHEDULED\_DEPARTURE,

        DEPARTURE\_AIRPORT,

        ROW\_NUMBER() OVER(PARTITION BY DEPARTURE\_AIRPORT ORDER BY CAST(SCHEDULED\_DEPARTURE AS DATE)) AS ROW\_NUM

    FROM FLIGHTS

    WHERE STATUS = 'Cancelled'

)

SELECT

    FLIGHT\_ID,

    FLIGHT\_NO,

    SCHEDULED\_DEPARTURE,

    DEPARTURE\_AIRPORT

FROM FIRST\_CANCELLED\_FLIGHTS

WHERE ROW\_NUM = 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:**

WITH HIGHEST\_RANGE AS (

    SELECT

        F.FLIGHT\_ID,

        MAX(RANGE) AS RANGE

    FROM FLIGHTS F

    JOIN AIRCRAFTS A

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

    GROUP BY 1

    ORDER BY 2 DESC

)

SELECT

    FLIGHT\_ID,

    RANGE

FROM HIGHEST\_RANGE;