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 b.ticket\_no, b.boarding\_no, b.seat\_no, t.passenger\_id, t.passenger\_name

FROM Tickets t

JOIN Boarding\_passes b

 ON t.ticket\_no = b.ticket\_no

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

**Answer:**

SELECT seat\_no, COUNT(\*) AS allocated\_count

FROM Seats

GROUP BY seat\_no

ORDER BY allocated\_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:**

SELECT

    month\_name,

    passenger\_id,

    passenger\_name,

    total\_amount

    FROM (

       SELECT

        TO\_CHAR(b.book\_date, 'Mon-YY') AS month\_name,

        t.passenger\_id,

        t.passenger\_name,

        b.total\_amount,

        RANK() OVER (PARTITION BY TO\_CHAR(b.book\_date, 'Mon-YY') ORDER BY b.total\_amount DESC) AS ranking

    FROM

        Bookings b

    JOIN

        Tickets t ON b.book\_ref = t.book\_ref

) ranked\_data

WHERE

    ranking = 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:**

SELECT

    TO\_CHAR(date\_trunc('month', T1.book\_date), 'Mon-YY') AS month\_name,

    T2.passenger\_id,

    T2.passenger\_name,

    T1.total\_amount

FROM

    bookings AS T1

JOIN

    tickets AS T2 ON T1.book\_ref = T2.book\_ref;

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

    T1.passenger\_id,

    T1.passenger\_name,

    T2.ticket\_no,

    COUNT(T2.flight\_id) AS flight\_count

FROM

    tickets AS T1

JOIN

    boarding\_passes AS T2 on T1.ticket\_no= T2.ticket\_no

GROUP BY

    T1.passenger\_id,

    T1.passenger\_name,

    T2.ticket\_no

HAVING

    COUNT(T2.flight\_id) > 1;

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

Expected Output: just one number is required.

**Answer:**

SELECT COUNT(\*)

FROM flights

WHERE actual\_departure 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 AS flight\_number,

    departure\_airport,

    arrival\_airport,

    aircraft\_code,

    EXTRACT(EPOCH FROM (actual\_arrival - actual\_departure))/60 as duration

FROM FLIGHTS

ORDER BY (actual\_arrival - actual\_departure) DESC

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,

    CONCAT(EXTRACT(HOUR FROM scheduled\_departure), ':', LPAD(EXTRACT(MINUTE FROM scheduled\_departure)::TEXT, 2, '0')) AS departure\_time,

    CONCAT(EXTRACT(HOUR FROM scheduled\_arrival), ':', LPAD(EXTRACT(MINUTE FROM scheduled\_arrival)::TEXT, 2, '0')) AS arrival\_time

FROM FLIGHTS

WHERE EXTRACT(HOUR FROM scheduled\_departure) BETWEEN 6 AND 10;

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 EarliestMorningFlights AS (

    SELECT

        MIN(scheduled\_departure) AS earliest\_departure,

        departure\_airport

    FROM FLIGHTS

    WHERE EXTRACT(HOUR FROM scheduled\_departure) BETWEEN 6 AND 10

    GROUP BY departure\_airport

)

SELECT

    F.flight\_id,

    F.flight\_no AS flight\_number,

    F.scheduled\_departure,

    F.scheduled\_arrival,

    F.departure\_airport,

    CONCAT(EXTRACT(HOUR FROM F.scheduled\_departure), ':', LPAD(EXTRACT(MINUTE FROM F.scheduled\_departure)::TEXT, 2, '0')) AS departure\_time

FROM FLIGHTS F

JOIN EarliestMorningFlights EMF ON F.departure\_airport = EMF.departure\_airport AND F.scheduled\_departure = EMF.earliest\_departure;

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(\*) AS seat\_count

FROM SEATS

GROUP BY aircraft\_code, fare\_conditions;

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

Expected Output : Count of aircraft codes

**Answer:**

SELECT

    COUNT(DISTINCT aircraft\_code) AS count\_of\_aircraft\_codes

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

A.airport\_name

FROM FLIGHTS F

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

GROUP BY A.airport\_name

ORDER BY COUNT(\*) DESC

LIMIT 1;

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

Expected Output : Airport\_name

**Answer:**

SELECT

    A.airport\_name

FROM FLIGHTS F

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

GROUP BY A.airport\_name

ORDER BY COUNT(\*) ASC

LIMIT 1;

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

Expected Output : Flight Count

**Answer:**

SELECT

    COUNT(\*) 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,

    aircraft\_code,

    flight\_id AS ranges

FROM FLIGHTS

WHERE flight\_id 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(\*) 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 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 AS Departure\_airport,

    COUNT(\*) AS Flight\_count

FROM FLIGHTS

WHERE departure\_airport IN ('KZN', 'DME', 'NBC', 'NJC', 'GDX', 'SGC', 'VKO', 'ROV')

GROUP BY departure\_airport;

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 AS Flight\_no,

    aircraft\_code AS Aircraft\_code,

    flight\_id AS Range,

    departure\_airport AS Departure\_airport

FROM FLIGHTS

WHERE flight\_id 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 AS 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%' or (F.status = 'Cancelled' OR F.status = 'Delayed')

GROUP BY A.model, F.flight\_id;

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 AS 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:

SELECT

    A.airport\_name

FROM FLIGHTS F

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

WHERE F.status = 'Cancelled'

GROUP BY A.airport\_name

ORDER BY COUNT(\*) DESC

LIMIT 1;

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

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

**Answer:**

SELECT

    F.flight\_id AS 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 LastFlightPerAirport AS (

    SELECT

        departure\_airport,

        MAX(scheduled\_departure) AS max\_departure\_time

    FROM FLIGHTS

    GROUP BY departure\_airport

)

SELECT

    F.flight\_id AS Flight\_id,

    F.flight\_no AS Flight\_number,

    F.scheduled\_departure,

    F.departure\_airport

FROM FLIGHTS F

JOIN LastFlightPerAirport LFA ON F.departure\_airport = LFA.departure\_airport AND F.scheduled\_departure = LFA.max\_departure\_time;

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 AS Passenger\_name,

    SUM(TF.amount) AS total\_refund

FROM TICKET\_FLIGHTS TF

JOIN FLIGHTS F ON TF.flight\_id = F.flight\_id

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

WHERE F.status like 'Cancelled'

GROUP BY T.passenger\_name

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

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

**Answer:**

WITH CancelledFlights AS (

    SELECT

        flight\_id,

        flight\_no,

        scheduled\_departure,

        departure\_airport,

        ROW\_NUMBER() OVER (PARTITION BY departure\_airport ORDER BY scheduled\_departure) AS row\_num

    FROM FLIGHTS

    WHERE status = 'Cancelled'

)

SELECT

    flight\_id,

    flight\_no,

    scheduled\_departure,

    departure\_airport

FROM CancelledFlights

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 F.aircraft\_code = A.aircraft\_code

WHERE A.model LIKE '%Airbus%'or F.status like 'Cancelled'

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

*Expected Output : Flight\_no, range*

**Answer:**

SELECT

    F.flight\_no,

    A.range

FROM FLIGHTS F

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

WHERE A.range = (

    SELECT MAX(range) FROM AIRCRAFTS

);