## Day-3 SQL SERVER COMMANDS(SUB-QUERIES)

1. Write an SQL query to display the average monthly ticket cost for each flight in ABC Airlines, showing Flight_Id, From_Location, To_Location, Month Name as "Month_Name", and average price as "Average_Price", sorted in ascending order by Flight_Id and then by Month Name.

Ans:

```
SELECT  * FROM (
   SELECT
      f.flight_id,
      f.from_location,
      f.to_location,
      DATENAME(MONTH, fd.flight_departure_date) AS Month_Name,
      MONTH(fd.flight_departure_date) AS Month_Number,
      AVG(fd.price) AS Average_Price
   FROM air_flight f
   JOIN air_flight_details fd ON f.flight_id = fd.flight_id
   WHERE f.airline_name = 'ABC Airlines'
   GROUP BY
      f.flight_id,
      f.from_location,
      f.to_location,
      DATENAME(MONTH, fd.flight_departure_date),
      MONTH(fd.flight_departure_date)
) AS t
ORDER BY flight_id, Month_Number;
```

o/p:

| | flight_id | from_location | to_location | Month_Name | Month_Number | Average_Price |
|---|---|---|---|---|---|---|
| 1 | F101 | Chennai | Hyderabad | April | 4 | 3550.000000 |
| 2 | F101 | Chennai | Hyderabad | May | 5 | 3800.000000 |
| 3 | F102 | Chennai | Delhi | April | 4 | 5500.000000 |
| 4 | F103 | Hyderabad | Chennai | April | 4 | 3400.000000 |

2. Write an SQL query to display the customer(s) who have booked the least number of tickets in ABC Airlines, showing profile_id, first_name, Address, and number of tickets booked as "No_of_Tickets", sorted in ascending order by first_name.

Ans:

```
SELECT
   p.profile_id,
   p.first_name,
   p.address,
   COUNT(i.ticket_id) AS No_of_Tickets
FROM air_passenger_profile p
JOIN air_ticket_info i
   ON p.profile_id = i.profile_id
JOIN air_flight f
   ON i.flight_id = f.flight_id
WHERE f.airline_name = 'ABC Airlines'
GROUP BY
   p.profile_id,
   p.first_name,
   p.address
HAVING COUNT(i.ticket_id) = (
   SELECT MIN(ticket_count)
   FROM (
      SELECT COUNT(i2.ticket_id) AS ticket_count
      FROM air_ticket_info i2
      JOIN air_flight f2
         ON i2.flight_id = f2.flight_id
      WHERE f2.airline_name = 'ABC Airlines'
      GROUP BY i2.profile_id
   ) t)
ORDER BY p.first_name ASC;
```

o/p:

| | profile_id | first_name | address | No_of_Tickets |
|---|---|---|---|---|
| 1 | P103 | Kiran | Bangalore | 1 |
| 2 | P104 | Meena | Chennai | 1 |

3.Write a query to display the number of flight services between loca ons in a month. The Query should display From_Location, To_Location, Month as “Month_Name” and number of flight services as “No_of_Services”. Hint: The Number of Services can be calculated from the number of scheduled departure dates of a flight. The records should be displayed in ascending order based on From_Location and then by To_Location and then by month name.

Ans:

```
SELECT
    f.from_location AS From_Location,
    f.to_location AS To_Location,
    DATENAME(MONTH, d.flight_departure_date) AS Month_Name,
    COUNT(d.flight_departure_date) AS No_of_Services
FROM air_flight f
JOIN air_flight_details d
    ON f.flight_id = d.flight_id
GROUP BY
    f.from_location,
    f.to_location,
    DATENAME(MONTH, d.flight_departure_date)
ORDER BY
    f.from_location ASC,
    f.to_location ASC,
    Month_Name ASC;
```

o/p:

| | From_Location | To_Location | Month_Name | No_of_Services |
|---|---|---|---|---|
| 1 | Chennai | Delhi | April | 1 |
| 2 | Chennai | Hyderabad | April | 2 |
| 3 | Chennai | Hyderabad | May | 1 |
| 4 | Hyderabad | Chennai | April | 1 |

4. Write a query to display the customer(s) who has/have booked maximum number of ckets in ABC Airlines. The Query should display profile_id, customer’s first_name, Address and Number of tickets booked as “No_of_Tickets”. Display the records in ascending order based on customer's first name.

Ans:

```
SELECT
    p.profile_id,
    p.first_name,
    p.address,
    COUNT(i.ticket_id) AS No_of_Tickets
FROM air_passenger_profile p
JOIN air_ticket_info i
    ON p.profile_id = i.profile_id
JOIN air_flight f
    ON i.flight_id = f.flight_id
WHERE f.airline_name = 'ABC Airlines'
GROUP BY
    p.profile_id,
    p.first_name,
    p.address
HAVING COUNT(i.ticket_id) = (
    SELECT MAX(ticket_count)
    FROM (
        SELECT COUNT(i2.ticket_id) AS ticket_count
        FROM air_ticket_info i2
        JOIN air_flight f2
            ON i2.flight_id = f2.flight_id
        WHERE f2.airline_name = 'ABC Airlines'
        GROUP BY i2.profile_id
    ) t)
 ORDER BY p.first_name ASC;
```

o/p:

| | profile_id | first_name | address | No_of_Tickets |
|---|---|---|---|---|
| 1 | P102 | Anu | Hyderabad | 2 |
| 2 | P101 | Ravi | Chennai | 2 |

5. Write a query to display the number of tickets booked from Chennai to Hyderabad. The Query should display passenger profile_id,first_name,last_name, Flight_Id , Departure_Date and number of tickets booked as “No_of_Tickets”. Display the records sorted in ascending order based on profile id and then by flight id and then by departure date.

**Ans:** SELECT

```
    p.profile_id,
    p.first_name,
    p.last_name,
    i.flight_id,
    i.flight_departure_date,
    COUNT(i.ticket_id) AS No_of_tickets
FROM air_passenger_profile p
JOIN air_ticket_info i
    ON p.profile_id = i.profile_id
JOIN air_flight f
    ON i.flight_id = f.flight_id
WHERE f.from_location = 'Chennai'
  AND f.to_location   = 'Hyderabad'
  AND i.status        = 'Booked'
GROUP BY
    p.profile_id,
    p.first_name,
    p.last_name,
    i.flight_id,
    i.flight_departure_date
```

```
ORDER BY
    p.profile_id,
    i.flight_id,
    i.flight_departure_date ASC;
```

o/p:

| | profile_id | first_name | last_name | flight_id | flight_departure_date | No_of_tickets |
|---|---|---|---|---|---|---|
| 1 | P101 | Ravi | Kumar | F101 | 2024-04-05 | 2 |
| 2 | P102 | Anu | Sharma | F101 | 2024-04-15 | 1 |
| 3 | P103 | Kiran | Rao | F101 | 2024-05-10 | 1 |
| 4 | P104 | Meena | Iyer | F101 | 2024-04-05 | 1 |

6. Write a query to display flight id,from location , to location and ticket price of flights whose departure is in the month of april.

**Ans:**

```
SELECT
    f.flight_id,
    f.from_location,
    f.to_location,
    d.price,
    flight_departure_date
FROM air_flight f
JOIN air_flight_details d
    ON f.flight_id = d.flight_id
where DATENAME(MONTH, flight_departure_date)='April' ;
```

o/p:

| | flight_id | from_location | to_location | price | flight_departure_date |
|---|---|---|---|---|---|
| 1 | F101 | Chennai | Hyderabad | 3500.00 | 2024-04-05 |
| 2 | F101 | Chennai | Hyderabad | 3600.00 | 2024-04-15 |
| 3 | F102 | Chennai | Delhi | 5500.00 | 2024-04-20 |
| 4 | F103 | Hyderabad | Chennai | 3400.00 | 2024-04-25 |

7.Write a query to display the average cost of the tickets in each flight on all scheduled dates. The query should display flight_id, from_location, to_location and Average price as “Price”. Display the records sorted in ascending order based on flight id and then by from_location and then by to_location.

Ans:

```
SELECT
    f.flight_id,
    f.from_location,
    f.to_location,
    AVG(d.price) AS Price
FROM air_flight f
JOIN air_flight_details d
    ON f.flight_id = d.flight_id
GROUP BY
    f.flight_id,
    f.from_location,
    f.to_location
ORDER BY
    f.flight_id ASC,
    f.from_location ASC,
    f.to_location ASC;
```

o/p:

| | flight_id | from_location | to_location | Price |
|---|---|---|---|---|
| 1 | F101 | Chennai | Hyderabad | 3633.333333 |
| 2 | F102 | Chennai | Delhi | 5500.000000 |
| 3 | F103 | Hyderabad | Chennai | 3400.000000 |

8. Write a query to display the customers who have booked tickets from Chennai to Hyderabad. The query should display profile_id, customer_name (combine first_name & last_name with comma in b/w), address of the customer. Give an alias to the name as customer_name. Hint: Query should fetch unique customers irrespective of multiple tickets booked. Display the records sorted in ascending order based on profile id.

Ans:

```
SELECT DISTINCT
    p.profile_id,
    p.first_name + ',' + p.last_name AS customer_name,
    p.address
FROM air_passenger_profile p
JOIN air_ticket_info i
    ON p.profile_id = i.profile_id
JOIN air_flight f
    ON i.flight_id = f.flight_id
WHERE f.from_location = 'Chennai'
  AND f.to_location = 'Hyderabad'
  AND i.status = 'Booked'
ORDER BY p.profile_id ASC;
```

o/p:

| | profile_id | customer_name | address |
|---|---|---|---|
| 1 | P101 | Ravi,Kumar | Chennai |
| 2 | P102 | Anu,Sharma | Hyderabad |
| 3 | P103 | Kiran,Rao | Bangalore |
| 4 | P104 | Meena,Iyer | Chennai |

9. Write a query to display profile id of the passenger(s) who has/have booked maximum number of tickets. In case of multiple records, display the records sorted in ascending order based on profile id.

Ans:

```
SELECT
   p.profile_id,
   COUNT(i.ticket_id) AS ticket_count
FROM air_passenger_profile p
JOIN air_ticket_info i
   ON p.profile_id = i.profile_id
GROUP BY p.profile_id
HAVING COUNT(i.ticket_id) = (
   SELECT MAX(t_cnt)
   FROM (
      SELECT COUNT(i2.ticket_id) AS t_cnt
      FROM air_ticket_info i2
      GROUP BY i2.profile_id
   ) t
)
ORDER BY p.profile_id ASC;
```

o/p:

| | profile_id | ticket_count |
|---|---|---|
| 1 | P101 | 2 |
| 2 | P102 | 2 |

10. Write a query to display the total number of ckets as “No_of_Tickets” booked in each flight in ABC Airlines. The Query should display the flight_id, from_location, to_location and the number of tickets. Display only the flights in which atleast 1 ticket is booked. Display the records sorted in ascending order based on flight id.

Ans:

```
SELECT
    f.flight_id,
    f.from_location,
    f.to_location,
    COUNT(i.ticket_id) AS No_of_Tickets
FROM air_flight f
JOIN air_ticket_info i
    ON f.flight_id = i.flight_id
WHERE f.airline_name = 'ABC Airlines'
GROUP BY
    f.flight_id,
    f.from_location,
    f.to_location
HAVING COUNT(i.ticket_id) >= 1
ORDER BY f.flight_id ASC;
```

o/p:

| | flight_id | from_location | to_location | No_of_Tickets |
|---|---|---|---|---|
| 1 | F101 | Chennai | Hyderabad | 5 |
| 2 | F102 | Chennai | Delhi | 1 |