DAY-3 Subqueries, Set Operators & CTEs ABHISHEK ALLABOINA

SCHEMA DIAGRAM FOR AIRLINES DATABASE

Creation of database and tables:

CREATE DATABASE AirlineDB;

use AirlineDB;

```
CREATE TABLE airPassengerProfile (
    profileId VARCHAR(10) PRIMARY KEY,
    password VARCHAR(10),
    firstName VARCHAR(10),
    lastName VARCHAR(10),
    address VARCHAR(100),
    mobileNumber BIGINT,
    emailId VARCHAR(30)
);

CREATE TABLE airFlight (
    flightId VARCHAR(10) PRIMARY KEY,
    airlineId VARCHAR(10),
    airlineName VARCHAR(30),
    fromLocation VARCHAR(20),
    toLocation VARCHAR(20),
    departureTime TIME,
    arrivalTime TIME,
    duration TIME,
    totalSeats INT
);

CREATE TABLE airFlightDetails (
    flightId VARCHAR(10),
    flightDepartureDate DATE,
    price DECIMAL(8,2),
    availableSeats INT,
    PRIMARY KEY (flightId, flightDepartureDate),
```

```
    FOREIGN KEY (flightId) REFERENCES airFlight(flightId)
);

CREATE TABLE airTicketInfo (
    ticketId VARCHAR(10) PRIMARY KEY,
    profileId VARCHAR(10),
    flightId VARCHAR(10),
    flightDepartureDate DATE,
    status VARCHAR(10),
    FOREIGN KEY (profileId) REFERENCES airPassengerProfile(profileId),
    FOREIGN KEY (flightId) REFERENCES airFlight(flightId)
);

CREATE TABLE airCreditCardDetails (
    profileId VARCHAR(10),
    cardNumber BIGINT,
    cardType VARCHAR(10),
    expirationMonth INT,
    expirationYear INT,
    PRIMARY KEY (cardNumber),
    FOREIGN KEY (profileId) REFERENCES airPassengerProfile(profileId)
);
```

Queries:

1.

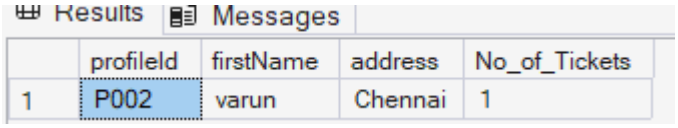
```
select f.flightId,f.fromLocation,f.toLocation,DATENAME(MONTH,fd.flightDepartureDate) AS
Month_Name,
AVG(fd.price) AS Average_Price
FROM airFlight f
JOIN airFlightDetails fd
ON f.flightId=fd.flightId
WHERE airlineName='AirIndia'
GROUP BY
f.flightId,f.fromLocation,f.toLocation,DATENAME(MONTH,fd.flightDepartureDate)
ORDER BY
f.flightId,
Month_Name;
```

	flightId	fromLocation	toLocation	Month_Name	Average_Price
1	F102	Delhi	Bangalore	April	6000.000000
2	F102	Delhi	Bangalore	May	6400.000000
3	F102	Delhi	Bangalore	September	6200.000000
4	F106	Chennai	Hyderabad	April	5250.000000

2.

```
SELECT TOP 1 WITH TIES
   p.profileId,
   p.firstName,
   p.address,
   COUNT(t.ticketId) AS No_of_Tickets
FROM airPassengerProfile p
JOIN airTicketInfo t ON p.profileId = t.profileId
JOIN airFlight f ON t.flightId = f.flightId
WHERE f.airlineName = 'AirIndia'
GROUP BY
   p.profileId,
```

```
    p.firstName,
    p.address
ORDER BY COUNT(t.ticketId) ASC, p.firstName ASC;
```



Results | Messages

	profileId	firstName	address	No_of_Tickets
1	P002	varun	Chennai	1

3.
```
SELECT
f.fromLocation AS From_Location,
f.toLocation AS To_Location,
DATENAME(MONTH,fd.flightDepartureDate) AS Month_Name,
COUNT(fd.flightDepartureDate) AS No_of_Services

FROM airFlight f
JOIN airFlightDetails fd
    ON f.flightId = fd.flightId
GROUP BY
    f.fromLocation,
    f.toLocation,
    DATENAME(MONTH, fd.flightDepartureDate),
    MONTH(fd.flightDepartureDate)
ORDER BY
    f.fromLocation,
    f.toLocation,
    MONTH(fd.flightDepartureDate);
```

	From_Location	To_Location	Month_Name	No_of_Services
1	Chennai	Hyderabad	April	2
2	Chennai	Mumbai	September	1
3	Delhi	Bangalore	April	1
4	Delhi	Bangalore	May	1
5	Delhi	Bangalore	September	1
6	Hyderabad	Pune	April	1
7	Hyderabad	Pune	May	1
8	Hyderabad	Pune	September	1
9	Kolkata	Delhi	September	1
10	Mumbai	Delhi	September	1

4. SELECT TOP 1 WITH TIES

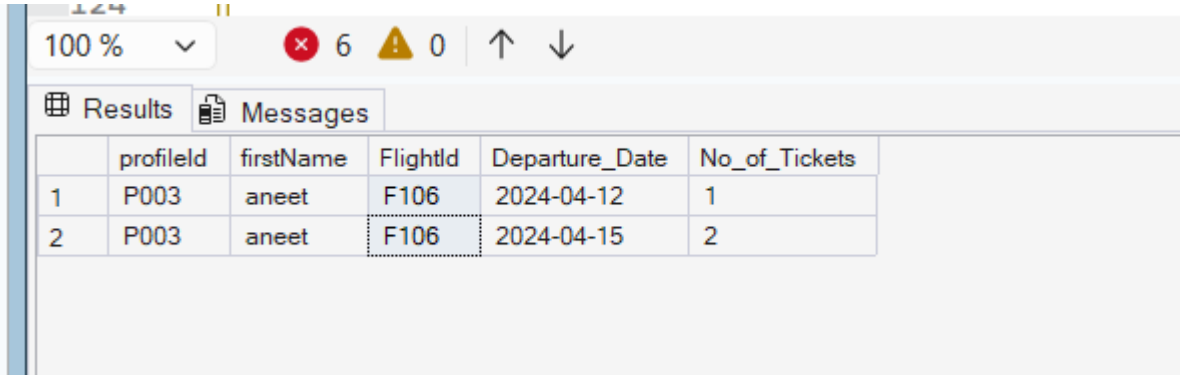
```
    p.profileId,
    p.firstName,
    p.address,
    COUNT(t.ticketId) AS No_of_Tickets
FROM airPassengerProfile p
JOIN airTicketInfo t ON p.profileId = t.profileId
JOIN airFlight f ON t.flightId = f.flightId
WHERE f.airlineName = 'AirIndia'
GROUP BY
    p.profileId,
    p.firstName,
    p.address
ORDER BY COUNT(t.ticketId) DESC, p.firstName;
```

	profileId	firstName	address	No_of_Tickets
1	P003	aneet	Ahmedabad	3

5. SELECT

```
    p.profileId,
    p.firstName,
    f.flightId AS FlightId,
    t.flightDepartureDate AS Departure_Date,
```

```
    COUNT(t.ticketId) AS No_of_Tickets
FROM airPassengerProfile p
JOIN airTicketInfo t
ON p.profileId=t.profileId
JOIN airFlight f
ON t.flightId=f.flightId
WHERE
f.fromLocation='Chennai'
and f.toLocation='Hyderabad'
GROUP BY
  p.profileId,
    p.firstName,
    p.lastName,
    f.flightId,
    t.flightDepartureDate
ORDER BY
p.profileId,
f.flightId,
t.flightDepartureDate ASC;
```



	profileId	firstName	FlightId	Departure_Date	No_of_Tickets
1	P003	aneet	F106	2024-04-12	1
2	P003	aneet	F106	2024-04-15	2

6.

```
SELECT
   f.flightId,
   f.fromLocation,
   f.toLocation,
   fd.price AS Ticket_Price,
   fd.flightDepartureDate
FROM airFlight f
JOIN airFlightDetails fd
   ON f.flightId = fd.flightId
WHERE MONTH(fd.flightDepartureDate) = 4;
```

	flightId	fromLocation	toLocation	Ticket_Price	flightDepartureDate
1	F102	Delhi	Bangalore	6000.00	2024-04-10
2	F104	Hyderabad	Pune	4600.00	2024-04-20
3	F106	Chennai	Hyderabad	5200.00	2024-04-12
4	F106	Chennai	Hyderabad	5300.00	2024-04-15

7.

```
select f.flightId,f.fromLocation,f.toLocation,
avg(fd.price) AS Price
FROM airFlight f
JOIN airFlightDetails fd
ON f.flightId=fd.flightId
GROUP BY
f.flightId,
f.fromLocation,
f.toLocation
ORDER BY
f.flightId ASC,f.fromLocation ASC,
f.toLocation ASC;
```

	flightId	fromLocation	toLocation	Price
1	F101	Mumbai	Delhi	5500.000000
2	F102	Delhi	Bangalore	6200.000000
3	F103	Chennai	Mumbai	4800.000000
4	F104	Hyderabad	Pune	4633.333333
5	F105	Kolkata	Delhi	7000.000000
6	F106	Chennai	Hyderabad	5250.000000

8.

```
select distinct
p.profileId,
p.firstName+','+p.lastName AS customer_name,
p.address
from airPassengerProfile p
join airTicketInfo t
on p.profileId=t.profileId
join airFlight f
on t.flightId=f.flightId
where f.fromLocation='Chennai'
and f.toLocation='Hyderabad'
order by p.profileId asc;
```

	profileId	customer_name	address
1	P003	aneet,Padda	Ahmedabad

9.

```
select top 1  with ties profileId,count(ticketId) as cnt
from airTicketInfo
group by profileId
order by count(ticketId) desc;
```

	profileId	cnt
1	P003	4

10. SELECT

f.flightId,

f.fromLocation,

f.toLocation,

COUNT(t.ticketId) AS No_of_Tickets

FROM airFlight f

JOIN airTicketInfo t

ON f.flightId = t.flightId

WHERE f.airlineName = 'AirIndia'

GROUP BY

f.flightId,

f.fromLocation,

f.toLocation

HAVING COUNT(t.ticketId) >= 1

ORDER BY f.flightId ASC;

	flightId	fromLocation	toLocation	No_of_Tickets
1	F102	Delhi	Bangalore	3
2	F106	Chennai	Hyderabad	3