

DAY-3(30-12-2025)—SUBQUERIES,CTE

```
create table air_passenger_profile (  
  profile_id varchar(10) primary key,  
  password varchar(50) not null,  
  first_name varchar(30),  
  last_name varchar(30),  
  address varchar(100),  
  mobile_number bigint,  
  email_id varchar(50)  
);
```

```
create table air_flight(  
  flight_id varchar(10) primary key,  
  airline_id varchar(10),  
  airline_name varchar(30),  
  from_location varchar(20),  
  to_location varchar(20),  
  departure_time time,  
  arrival_time time,  
  duration time,  
  total_seats int  
);
```

```
create table air_flight_details (  
  flight_id varchar(10),  
  flight_departure_date date,  
  price decimal(8,2),  
  available_seats int,  
  constraint pk_flight_details primary key (flight_id, flight_departure_date),  
  constraint fk_flight_details_flight foreign key (flight_id) references  
  air_flight(flight_id)  
);
```

```
create table air_ticket_info (  
  ticket_id varchar(10) primary key,  
  profile_id varchar(10),  
  flight_id varchar(10),  
  flight_departure_date date,  
  status varchar(15),  
  constraint fk_ticket_profile foreign key (profile_id) references  
  air_passenger_profile(profile_id),  
  constraint fk_ticket_flight foreign key (flight_id) references  
  air_flight(flight_id)  
);
```

```
create table air_credit_card_details (  
  profile_id varchar(10),  
  card_number bigint,  
  card_type varchar(10),  
  expiration_month int,  
  expiration_year int,  
  constraint fk_card_profile foreign key (profile_id) references  
  air_passenger_profile(profile_id)  
);
```

```

INSERT INTO air_passenger_profile VALUES
('P001', 'pass123', 'Amit', 'Sharma', 'Hyderabad', 9876543210, 'amit@gmail.com'),
('P002', 'pass124', 'Neha', 'Reddy', 'Bangalore', 9876543211, 'neha@gmail.com'),
('P003', 'pass125', 'Rahul', 'Verma', 'Delhi', 9876543212, 'rahul@gmail.com'),
('P004', 'pass126', 'Sneha', 'Patel', 'Mumbai', 9876543213, 'sneha@gmail.com'),
('P005', 'pass127', 'Kiran', 'Kumar', 'Chennai', 9876543214, 'kiran@gmail.com'),
('P006', 'pass128', 'Anjali', 'Singh', 'Pune', 9876543215, 'anjali@gmail.com'),
('P007', 'pass129', 'Rohit', 'Mehta', 'Ahmedabad', 9876543216, 'rohit@gmail.com'),
('P008', 'pass130', 'Divya', 'Nair', 'Kochi', 9876543217, 'divya@gmail.com');

```

```

INSERT INTO air_flight VALUES
('F101', 'A01', 'IndiGo', 'Hyderabad', 'Delhi', '06:00', '08:00', '02:00', 180),
('F102', 'A02', 'ABC Airlines', 'Mumbai', 'Chennai', '09:00', '11:00', '02:00', 200),
('F103', 'A03', 'Vistara', 'Bangalore', 'Kolkata', '07:30', '10:00', '02:30', 160),
('F104', 'A01', 'IndiGo', 'Delhi', 'Pune', '12:00', '14:00', '02:00', 180),
('F105', 'A04', 'SpiceJet', 'Hyderabad', 'Goa', '15:00', '16:30', '01:30', 150),
('F106', 'A02', 'ABC Airlines', 'Chennai', 'Delhi', '18:00', '20:45', '02:45', 220),
('F107', 'A05', 'Akasa Air', 'Mumbai', 'Jaipur', '05:30', '07:00', '01:30', 140),
('F108', 'A03', 'Vistara', 'Kochi', 'Bangalore', '21:00', '22:30', '01:30', 160);

```

```

INSERT INTO air_flight_details VALUES
('F101', '2025-02-10', 5500.00, 120),
('F102', '2025-03-11', 6200.00, 140),
('F103', '2025-04-12', 7000.00, 100),
('F104', '2025-01-13', 5800.00, 130),
('F105', '2025-06-14', 4500.00, 90),
('F106', '2025-07-15', 8000.00, 150),
('F107', '2025-04-16', 4000.00, 110),
('F108', '2025-11-17', 5200.00, 125);

```

```

INSERT INTO air_ticket_info VALUES
('T001', 'P001', 'F101', '2025-02-10', 'CONFIRMED'),
('T002', 'P002', 'F102', '2025-03-11', 'BOOKED'),
('T003', 'P003', 'F103', '2025-04-12', 'CANCELLED'),
('T004', 'P004', 'F104', '2025-01-13', 'CONFIRMED'),
('T005', 'P005', 'F105', '2025-06-14', 'BOOKED'),
('T006', 'P006', 'F106', '2025-07-15', 'CONFIRMED'),
('T007', 'P007', 'F107', '2025-04-16', 'BOOKED'),
('T008', 'P008', 'F108', '2025-11-17', 'CONFIRMED');

```

```

INSERT INTO air_credit_card_details VALUES
('P001', 4111111111111111, 'VISA', 12, 2026),
('P002', 5222222222222222, 'MASTER', 11, 2025),
('P003', 4333333333333333, 'VISA', 10, 2027),
('P004', 5444444444444444, 'MASTER', 9, 2026),
('P005', 4555555555555555, 'VISA', 8, 2028),
('P006', 5666666666666666, 'MASTER', 7, 2025),
('P007', 4777777777777777, 'VISA', 6, 2027),
('P008', 5888888888888888, 'MASTER', 5, 2026);

```

```

1.
select flight_id,from_location,to_location,month_name,
avg(price) as average_price from (
    select
        af.flight_id,
        af.from_location,
        af.to_location,
        datename(month, afd.flight_departure_date) as month_name,
        afd.price
    from air_flight af
    join air_flight_details afd
    on af.flight_id = afd.flight_id
    where af.airline_name = 'ABC Airlines'
) sub
group by flight_id,from_location,to_location,month_name
order by flight_id asc,month_name asc;

```

	flight_id	from_location	to_location	Month_Name	Average_Price
1	F102	Mumbai	Chennai	March	6200.000000
2	F106	Chennai	Delhi	July	8000.000000

```

2. select
    p.profile_id,
    p.first_name,
    p.address,
    count(t.ticket_id) as no_of_tickets
from air_passenger_profile p
JOIN air_ticket_info t ON p.profile_id = t.profile_id
JOIN air_flight f ON t.flight_id = f.flight_id
where f.airline_name = 'ABC Airlines'
GROUP BY
    p.profile_id,
    p.first_name,
    p.address
having count(t.ticket_id) = (
    select min(ticket_count) from (
        select count(t2.ticket_id) as ticket_count
        from air_ticket_info t2
        join air_flight f2
        on t2.flight_id = f2.flight_id
        where f2.airline_name = 'ABC Airlines'
        group by t2.profile_id ) x
)
order by p.first_name asc;

```

Results		Messages		
	profile_id	first_name	address	no_of_tickets
1	P006	Anjali	Pune	1
2	P002	Neha	Bangalore	1

3.

```
select
    from_location,
    to_location,
    month_name as month_name,
    count(*) as no_of_services
from(
    select
        af.from_location,
        af.to_location,
        datename(month, afd.flight_departure_date) as month_name
    from air_flight af
    JOIN air_flight_details afd ON af.flight_id = afd.flight_id
) flight_month_data
GROUP BY from_location, to_location, month_name
ORDER BY from_location asc, to_location asc, month_name asc;
```

Results		Messages		
	from_location	to_location	month_name	no_of_services
1	Bangalore	Kolkata	April	1
2	Chennai	Delhi	July	1
3	Delhi	Pune	January	1
4	Hyderabad	Delhi	February	1
5	Hyderabad	Goa	June	1
6	Kochi	Bangalore	November	1
7	Mumbai	Chennai	March	1
8	Mumbai	Jaipur	April	1

✓ Query executed successfully. | Bhavana (16.0 RTM) | BHAVANA\tejav (53) | Air

4.

```
select
    p.profile_id,
    p.first_name,
    p.address,
    count(t.ticket_id) as no_of_tickets
from air_passenger_profile p
JOIN air_ticket_info t ON p.profile_id = t.profile_id
JOIN air_flight f ON t.flight_id = f.flight_id
where f.airline_name = 'ABC Airlines'
```

```

GROUP BY
    p.profile_id,
    p.first_name,
    p.address
having count(t.ticket_id) = (
    select max(ticket_count) from (
        select count(t2.ticket_id) as ticket_count
        from air_ticket_info t2
        join air_flight f2
        on t2.flight_id = f2.flight_id

        where f2.airline_name = 'ABC Airlines'
        group by t2.profile_id ) x
)
order by p.first_name asc;

```

	profile_id	first_name	address	no_of_tickets
1	P006	Anjali	Pune	1
2	P002	Neha	Bangalore	1

5.

```

select
    p.profile_id,
    p.first_name,
    p.last_name,
    t.flight_id,
    t.flight_departure_date as departure_date,
    count(t.ticket_id) as no_of_tickets
from air_passenger_profile p
join air_ticket_info t
    on p.profile_id = t.profile_id
join air_flight af
    on t.flight_id = af.flight_id
where t.flight_id in (
    select flight_id from air_flight where af.from_location = 'Chennai'
    and af.to_location='Hyderabad'
)
group by
    p.profile_id,
    p.first_name,
    p.last_name,
    t.flight_id,
    t.flight_departure_date
order by p.first_name asc;

```

Results		Messages				
profile_id	first_name	last_name	flight_id	departure_date	no_of_tickets	

6.

```

select af.flight_id,af.from_location,af.to_location,afd.price
from air_flight af
join air_flight_details afd on afd.flight_id=af.flight_id
where af.flight_id in (
    select flight_id
    from air_flight_details
    where datename(month,afd.flight_departure_date)='April'
);

```

Results		Messages		
	flight_id	from_location	to_location	price
1	F103	Bangalore	Kolkata	7000.00
2	F107	Mumbai	Jaipur	4000.00

7.

```

with avg_price_cte as (
    select
        flight_id,
        avg(price) as avg_price
    from air_flight_details
    group by flight_id
)
select af.flight_id,af.from_location,af.to_location,ap.avg_price as
price
from air_flight af
join avg_price_cte ap on af.flight_id = ap.flight_id
order by af.flight_id asc,af.from_location asc,af.to_location asc;

```

Results Messages

	flight_id	from_location	to_location	price
1	F101	Hyderabad	Delhi	5500.000000
2	F102	Mumbai	Chennai	6200.000000
3	F103	Bangalore	Kolkata	7000.000000
4	F104	Delhi	Pune	5800.000000
5	F105	Hyderabad	Goa	4500.000000
6	F106	Chennai	Delhi	8000.000000
7	F107	Mumbai	Jaipur	4000.000000
8	F108	Kochi	Bangalore	5200.000000

Query executed successfully. Bhavana (16.0 RTM) BHAVANA\tejav (53) AirDB

8.

```
select
    p.profile_id, p.first_name + ',' + p.last_name as customer_name,
    p.address
from air_passenger_profile p
where p.profile_id in (
    select distinct t.profile_id
    from air_ticket_info t
    join air_flight f on t.flight_id = f.flight_id
    where f.from_location = 'chennai' and f.to_location = 'hyderabad'
)
order by p.profile_id asc;
```

Results		Messages	
	profile_id	customer_name	address

9.

```
with ticket_count as (
    select
        profile_id,
        count(ticket_id) as cnt
    from air_ticket_info
    group by profile_id
)
select profile_id
from ticket_count
where cnt = (select max(cnt) from ticket_count)
order by profile_id;
```

Results		Messages
	profile_id	
1	P001	
2	P002	
3	P003	
4	P004	
5	P005	
6	P006	
7	P007	
8	P008	

10.

```

select
    f.flight_id,
    f.from_location,
    f.to_location,
    count(t.ticket_id) as no_of_tickets
from air_flight f
join air_ticket_info t on f.flight_id = t.flight_id
where f.flight_id in (
    select flight_id
    from air_flight
    where airline_name = 'ABC Airlines'
)
group by f.flight_id, f.from_location, f.to_location
having count(t.ticket_id) >= 1
order by f.flight_id asc;

```

Results

Messages

	flight_id	from_location	to_location	no_of_tickets
1	F102	Mumbai	Chennai	1
2	F106	Chennai	Delhi	1