Day 3 - Daily Exercises

Database Creation

```
create database airlineDB;
use airlineDB;
```

Table Creation

```
create table air_passenger_profile (
   profile_id varchar(10) primary key,
   password varchar(10),
   first_name varchar(10),
   last_name varchar(10),
   address varchar(100),
   mobile_number bigint,
   email_id varchar(30)
);

create table air_flight(
   flight_id varchar(10) primary key,
   airline_id varchar(10) not null,
   airline_name varchar(30) not null,
   from_location varchar(20) not null,
   to_location varchar(20) not null,
   departure_time time,
   arrival_time time,
   duration time,
   total_seats int
);
```

```
create table air_ticket_info (
   ticket_id varchar(10) primary key,
   profile_id varchar(10),
   flight_id varchar(10),
   flight_departure_date date not null,
   status varchar(10),
   foreign key (profile_id) references air_passenger_profile(profile_id),
   foreign key (flight_id) references air_flight(flight_id)
);

create table air_flight_details (
   flight_id varchar(10)  foreign key references air_flight(flight_id) on delete cascade on update
   cascade,
   flight_departure_date date not null,
   price decimal(8,2) not null,
   available_seats int,
);

create table air_credit_card_details (
   profile_id varchar(10),
   card_number bigint,
   card_type varchar(10),
   expiration_month int,
   expiration_year int,
   primary key (profile_id, card_number),
);
```

Inserting Values into Tables

```
insert into air_passenger_profile values
('p1','abc1','Srinitha','Rao','Banglore',9876543210,'srinitha@gmail.com'),
('p2','xyz2','Harini','Rao','Hyderabad',9876543210,'harini@gmail.com'),
```

```
('p3','ghi3','Bhavya','Reddy','Chennai',9876543211,'bhavya@gmail.com'),
('p4','lmn4','Divya','Sharma','Chennai',9876543213,'divya@gmail.com');

insert into air_flight values
('f101','a1','abc airlines','chennai','hyderabad','06:00','07:30','01:30',180),
('f102','a1','abc airlines','chennai','delhi','08:00','10:30','02:30',180),
('f103','a1','abc airlines','hyderabad','chennai','18:00','19:30','01:30',180);

insert into air_flight_details values
('f101','2025-03-10',3500,100),
('f101','2025-04-05',3800,95),
('f101','2025-04-20',4000,90),
('f102','2025-04-12',6000,120),
('f102','2025-05-15',6200,110),
('f103','2025-04-18',3600,100),
('f103','2025-04-25',3900,130);

insert into air_ticket_info values
('t1','p1','f101','2024-01-10','booked'),
('t2','p1','f101','2024-02-15','booked'),
('t3','p1','f101','2024-04-05','booked'),
('t4','p2','f101','2024-04-05','booked'),
('t5','p3','f102','2024-03-12','booked'),
('t6','p4','f101','2024-01-10','booked'),
('t7','p4','f101','2024-01-10','booked');

insert into air_credit_card_details values
('p1',1111222233334444,'visa',12,2026),
('p2',2222333344445555,'master',11,2027),
('p4 ',3333444455556666,'visa',10,2025);
```

Queries

1. Write a query to display the average monthly ticket cost for each flight in ABC Airlines. The query should display the Flight_Id, From_location, To_Location, Month Name as "Month_Name" and average price as "Average_Price". Display the records sorted in ascending order based on flight id and then by Month Name.

SELECT f.flight_id,f.from_location,f.to_location,DATENAME(month, fd.flight_departure_date) AS month_name, (SELECT AVG(fd1.price) FROM air_flight_details fd1

WHERE fd1.flight_id = f.flight_id AND DATENAME(month, fd1.flight_departure_date) =DATENAME(month, fd.flight_departure_date)) AS average_price FROM air_flight f

JOIN air_flight_details fd ON f.flight_id = fd.flight_id GROUP by f.flight_id,f.from_location,f.to_location,MONTH(fd.flight_departure_date),DATENAME(month, fd.flight_departure_date) ORDER BY f.flight_id,MONTH(fd.flight_departure_date);

	flight_id	from_location	to_location	month_name	average_price
1	f101	chennai	hyderabad	March	3500.000000
2	f101	chennai	hyderabad	April	3900.000000
3	f102	chennai	delhi	April	6000.000000
4	f102	chennai	delhi	May	6200.000000
5	f103	hyderabad	chennai	April	3750.000000

2. Write a query to display the customer(s) who has/have booked least number of tickets 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 sorted in ascending order based on customer's first name.

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

GROUP BY p.profile_id,p.first_name,p.address

HAVING COUNT(t.ticket_id) =(SELECT MIN(ticket_count) FROM (SELECT COUNT(*) AS ticket_count FROM air_ticket_info GROUP BY profile_id) min_count) ORDER BY p.first_name;

	profile_id	first_name	address	no_of_tickets
1	p3	Bhavya	Chennai	1
2	p2	Harini	Hyderabad	1

3. Write a query to display the number of flight services between locations 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.

```
SELECT f.from_location,f.to_location,DATENAME(month, fd.flight_departure_date) AS month_name,

( SELECT COUNT(*) FROM air_flight_details fd2 WHERE fd2.flight_id = f.flight_id AND
DATENAME(month, fd2.flight_departure_date) =DATENAME(month, fd.flight_departure_date)) AS
no_of_services FROM air_flight f JOIN air_flight_details fd ON f.flight_id = fd.flight_id

GROUP BY f.from_location, f.to_location, f.flight_id,DATENAME(month, fd.flight_departure_date)

ORDER BY f.from_location, f.to_location,month_name;
```

	from_location	to_location	month_name	no_of_services
1	chennai	delhi	April	2
2	chennai	delhi	May	2
3	chennai	hyderabad	April	4
4	chennai	hyderabad	March	2
5	hyderabad	chennai	April	4

4. Write a query to display the customer(s) who has/have booked maximum number of tickets 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.

```
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

GROUP BY p.profile_id, p.first_name,p.address HAVING COUNT(t.ticket_id) =

( SELECT MAX(ticket_count) FROM ( SELECT COUNT(*) AS ticket_count FROM air_ticket_info GROUP
BY profile_id)count_of_ticket)

ORDER BY p.first_name;
```

	profile_id	first_name	address	no_of_tickets
1	p1	Srinitha	Banglore	3

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.

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

WHERE t.flight_id IN

(SELECT flight_id FROM air_flight WHERE from_location = 'Chennai' AND to_location = 'Hyderabad')

GROUP BY p.profile_id, p.first_name, p.last_name,t.flight_id,t.flight_departure_date ORDER BY p.profile_id, t.flight_id,t.flight_departure_date;

	profile_id	first_name	last_name	flight_id	departure_date	no_of_tickets
1	p1	Srinitha	Rao	f101	2024-01-10	1
2	p1	Srinitha	Rao	f101	2024-02-15	1
3	p1	Srinitha	Rao	f101	2024-04-05	1
4	p2	Harini	Rao	f101	2024-04-05	1
5	p4	Divya	Sharma	f101	2024-01-10	2

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.

SELECT f.flight_id,f.from_location,f.to_location,fd.price FROM air_flight f JOIN air_flight_details fd ON f.flight_id = fd.flight_id

WHERE fd.flight_departure_date IN (SELECT flight_departure_date FROM air_flight_details WHERE MONTH(flight_departure_date) = 4);

	flight_id	from_location	to_location	price
1	f101	chennai	hyderabad	3800.00
2	f101	chennai	hyderabad	4000.00
3	f102	chennai	delhi	6000.00
4	f103	hyderabad	chennai	3600.00
5	f103	hyderabad	chennai	3900.00
6	f101	chennai	hyderabad	3800.00
7	f101	chennai	hyderabad	4000.00
8	f102	chennai	delhi	6000.00
9	f103	hyderabad	chennai	3600.00
10	f103	hyderabad	chennai	3900.00

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.

```
SELECT f.flight_id,f.from_location,f.to_location, (SELECT AVG(fd.price) FROM air_flight_details fd
WHERE fd.flight_id = f.flight_id) AS avg_price

FROM air_flight f ORDER BY f.flight_id, f.from_location,f.to_location;
```

	flight_id	from_location	to_location	avg_price
1	f101	chennai	hyderabad	3766.666666
2	f102	chennai	delhi	6100.000000
3	f103	hyderabad	chennai	3750.000000

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.

```
SELECT DISTINCT p.profile_id,CONCAT(p.first_name, ' ', p.last_name) AS customer_name,p.address
FROM air_passenger_profile p

WHERE p.profile_id IN (SELECT t.profile_id FROM air_ticket_info t WHERE

t.flight_id IN( SELECT flight_id FROM air_flight WHERE from_location = 'Chennai' AND to_location =
'Hyderabad'))

ORDER BY p.profile_id;
```

	profile_id	customer_name	address
1	p1	Srinitha Rao	Banglore
2	p2	Harini Rao	Hyderabad
3	p4	Divya Sharma	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.

```
SELECT profile_id FROM air_ticket_info GROUP BY profile_id HAVING COUNT(*) = ( SELECT
MAX(ticket_count) FROM (SELECT COUNT(*) AS ticket_count FROM air_ticket_info GROUP BY
profile_id)count_ticket )ORDER BY profile_id;
```

	profile_id
1	p1

10. Write a query to display the total number of tickets 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.

SELECT f.flight_id, f.from_location,f.to_location,(SELECT COUNT(*) FROM air_ticket_info t WHERE t.flight_id = f.flight_id) AS no_of_tickets

FROM air_flight f WHERE f.flight_id IN (SELECT flight_id FROM air_ticket_info) ORDER BY f.flight_id;

	flight_id	from_location	to_location	no_of_tickets
1	f101	chennai	hyderabad	6
2	f102	chennai	delhi	1