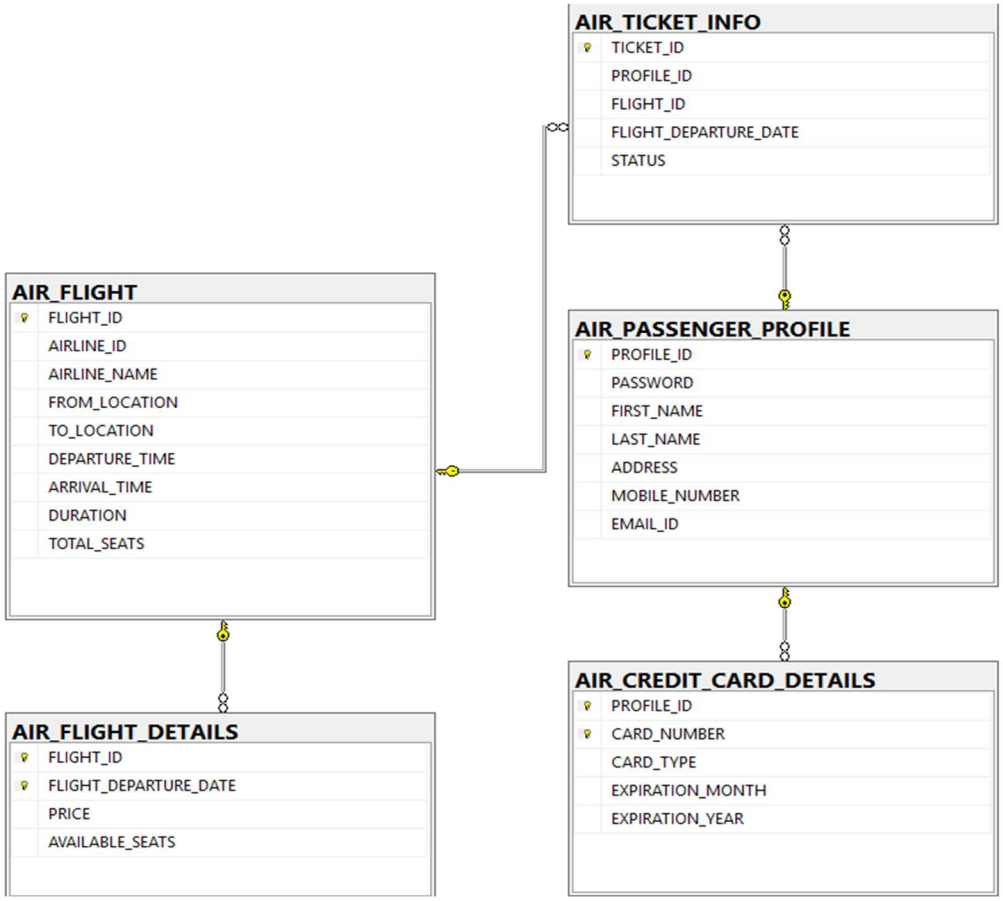
Day 3 - Daily Exercises – SQL Server

Create Database

Create database AirlineManagementDB;

Use AirlineManagementDB;



Create Tables

```
CREATE TABLE AIR_PASSENGER_PROFILE (
   PROFILE_ID VARCHAR(10) PRIMARY KEY,
   PASSWORD VARCHAR(20),
   FIRST_NAME VARCHAR(20),
   LAST_NAME VARCHAR(20),
   ADDRESS VARCHAR(100),
   MOBILE_NUMBER BIGINT,
   EMAIL_ID VARCHAR(40) );
```

```
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,
    PRIMARY KEY (FLIGHT_ID, FLIGHT_DEPARTURE_DATE),
    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),
    FOREIGN KEY (PROFILE_ID) REFERENCES AIR_PASSENGER_PROFILE(PROFILE_ID),
    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(15),
    EXPIRATION_MONTH INT,
    EXPIRATION_YEAR INT,
    PRIMARY KEY (PROFILE_ID, CARD_NUMBER),
    FOREIGN KEY (PROFILE_ID) REFERENCES AIR_PASSENGER_PROFILE(PROFILE_ID)
);
INSERT INTO AIR_PASSENGER_PROFILE VALUES
('P001','pwd1','Ravi','Kumar','Chennai',9876543210,'ravi@gmail.com'),
('P002','pwd2','Anita','Sharma','Hyderabad',9876543211,'anita@gmail.com'),
('P003','pwd3','Suresh','Reddy','Bangalore',9876543212,'suresh@gmail.com'),
('P004','pwd4','Meena','Iyer','Chennai',9876543213,'meena@gmail.com'),
('P005','pwd5','Rahul','Verma','Delhi',9876543214,'rahul@gmail.com'),
('P006','pwd6','Kiran','Patel','Ahmedabad',9876543215,'kiran@gmail.com'),
('P007','pwd7','Neha','Singh','Mumbai',9876543216,'neha@gmail.com'),
('P008','pwd8','Arjun','Nair','Kochi',9876543217,'arjun@gmail.com'),
('P009','pwd9','Divya','Joshi','Pune',9876543218,'divya@gmail.com'),
('P010','pwd10','Amit','Das','Kolkata',9876543219,'amit@gmail.com');
```

```
INSERT INTO AIR_FLIGHT VALUES
('F101','A01','ABC Airlines','Chennai','Hyderabad','08:00','09:30','01:30',180),
('F102','A01','ABC Airlines','Chennai','Bangalore','10:00','11:00','01:00',160),
('F103','A01','ABC Airlines','Hyderabad','Delhi','12:00','14:30','02:30',200),
('F104','A01','ABC Airlines','Mumbai','Chennai','09:00','11:00','02:00',180),
('F105','A01','ABC Airlines','Delhi','Mumbai','15:00','17:00','02:00',190),
('F106','A01','ABC Airlines','Bangalore','Kochi','07:00','08:30','01:30',150),
('F107','A01','ABC Airlines','Kolkata','Delhi','06:00','08:30','02:30',170),
('F108','A01','ABC Airlines','Pune','Hyderabad','18:00','19:30','01:30',160),
('F109','A01','ABC Airlines','Ahmedabad','Mumbai','13:00','14:30','01:30',155),
('F110','A01','ABC Airlines','Chennai','Delhi','20:00','22:45','02:45',210);

INSERT INTO AIR_FLIGHT_DETAILS VALUES
('F101','2024-04-10',4500,50),
('F101','2024-05-10',4800,45),
('F102','2024-04-12',3200,60),
('F103','2024-06-15',6500,40),
('F104','2024-04-20',5000,55),
('F105','2024-07-05',7000,35),
('F106','2024-04-18',3400,70),
('F107','2024-08-01',6200,30),
('F108','2024-04-22',4100,65),
('F110','2024-05-25',7500,25);

INSERT INTO AIR_TICKET_INFO VALUES
('T001','P001','F101','2024-04-10','BOOKED'),
('T002','P001','F101','2024-04-10','BOOKED'),
('T003','P002','F101','2024-05-10','BOOKED'),
```

('T004','P003','F102','2024-04-12','BOOKED'),

('T005','P004','F101','2024-04-10','BOOKED'),

('T006','P005','F103','2024-06-15','BOOKED'),

('T007','P006','F104','2024-04-20','BOOKED'),

('T008','P007','F108','2024-04-22','BOOKED'),

('T009','P008','F110','2024-05-25','BOOKED'),

('T010','P001','F101','2024-05-10','BOOKED');

INSERT INTO AIR_CREDIT_CARD_DETAILS VALUES

('P001',4111111111111111,'VISA',5,2026),

('P002',4222222222222222,'MASTER',8,2027),

('P003',4333333333333333,'VISA',12,2025),

('P004',4444444444444444,'MASTER',9,2026),

('P005',4555555555555555,'VISA',11,2028),

('P006',4666666666666666,'MASTER',7,2027),

('P007',4777777777777777,'VISA',6,2026),

('P008',4888888888888888,'MASTER',10,2025),

('P009',4999999999999999,'VISA',3,2029),

('P010',4000000000000000,'MASTER',4,2026);

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(fd2.PRICE)

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 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	April	4500.000000
2	F101	Chennai	Hyderabad	May	4800.000000
3	F102	Chennai	Bangalore	April	3200.000000
4	F103	Hyderabad	Delhi	June	6500.000000
5	F104	Mumbai	Chennai	April	5000.000000
6	F105	Delhi	Mumbai	July	7000.000000
7	F106	Bangalore	Kochi	April	3400.000000
8	F107	Kolkata	Delhi	August	6200.000000
9	F108	Pune	Hyderabad	April	4100.000000
10	F110	Chennai	Delhi	May	7500.000000

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)

 x) ORDER BY p.FIRST_NAME;
```

	PROFILE_ID	FIRST_NAME	ADDRESS	No_of_Tickets
1	P002	Anita	Hyderabad	1
2	P008	Arjun	Kochi	1
3	P006	Kiran	Ahmedabad	1
4	P004	Meena	Chennai	1
5	P007	Neha	Mumbai	1
6	P005	Rahul	Delhi	1
7	P003	Suresh	Bangalore	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	Bangalore	Kochi	April	1
2	Chennai	Bangalore	April	1
3	Chennai	Delhi	May	1
4	Chennai	Hyderabad	April	1
5	Chennai	Hyderabad	May	1
6	Delhi	Mumbai	July	1
7	Hyderabad	Delhi	June	1
8	Kolkata	Delhi	August	1
9	Mumbai	Chennai	April	1
10	Pune	Hyderabad	April	1

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) x)
ORDER BY p.FIRST_NAME;
```

	PROFILE_ID	FIRST_NAME	ADDRESS	No_of_Tickets
1	P001	Ravi	Chennai	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 Ɵckets 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	P001	Ravi	Kumar	F101	2024-04-10	2
2	P001	Ravi	Kumar	F101	2024-05-10	1
3	P002	Anita	Sharma	F101	2024-05-10	1
4	P004	Meena	Iyer	F101	2024-04-10	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.

```
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	4500.00
2	F102	Chennai	Bangalore	3200.00
3	F104	Mumbai	Chennai	5000.00
4	F106	Bangalore	Kochi	3400.00
5	F108	Pune	Hyderabad	4100.00

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	4650.000000
2	F102	Chennai	Bangalore	3200.000000
3	F103	Hyderabad	Delhi	6500.000000
4	F104	Mumbai	Chennai	5000.000000
5	F105	Delhi	Mumbai	7000.000000
6	F106	Bangalore	Kochi	3400.000000
7	F107	Kolkata	Delhi	6200.000000
8	F108	Pune	Hyderabad	4100.000000
9	F109	Ahmedabad	Mumbai	NULL
10	F110	Chennai	Delhi	7500.000000

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	P001	Ravi Kumar	Chennai
2	P002	Anita Sharma	Hyderabad
3	P004	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.

```
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 ) x
) ORDER BY PROFILE_ID;
```

	PROFILE_ID
1	P001

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	5
2	F102	Chennai	Bangalore	1
3	F103	Hyderabad	Delhi	1
4	F104	Mumbai	Chennai	1
5	F108	Pune	Hyderabad	1
6	F110	Chennai	Delhi	1