

DAY-3 ASSIGNMENT

AirlineDB:

1. CREATE DATABASE AirlineDB;
USE AirlineDB;
2. Create table commands for all the tables with constraints, relationships etc.

```
CREATE TABLE air_passenger_profile (
    profile_id      VARCHAR(10) PRIMARY KEY,
    password        VARCHAR(100) NOT NULL,
    first_name      VARCHAR(50) NOT NULL,
    last_name       VARCHAR(50) NOT NULL,
    address         VARCHAR(255),
    mobile_number   BIGINT      NOT NULL,
    email_id        VARCHAR(100) NOT NULL UNIQUE
);

CREATE TABLE air_flight (
    flight_id        VARCHAR(10) PRIMARY KEY,
    airline_id       VARCHAR(10) NOT NULL,
    airline_name     VARCHAR(50) NOT NULL,
    from_location    VARCHAR(30) NOT NULL,
    to_location      VARCHAR(30) NOT NULL,
    departure_time   TIME        NOT NULL,
    arrival_time     TIME        NOT NULL,
    duration_time    VARCHAR(10),
    total_seats      INT         NOT NULL
);

CREATE TABLE air_flight_details (
    flight_id          VARCHAR(10) NOT NULL,
    flight_departure_date DATE        NOT NULL,
    price              DECIMAL(10,2) NOT NULL,
    available_seats    INT         NOT NULL,
    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) NOT NULL,
    flight_id          VARCHAR(10) NOT NULL,
    flight_departure_date DATE        NOT NULL,
    status              VARCHAR(20) NOT NULL,
    CONSTRAINT fk_ticket_profile
        FOREIGN KEY (profile_id)
        REFERENCES air_passenger_profile(profile_id),
);
```

```

        CONSTRAINT fk_ticket_flight
            FOREIGN KEY (flight_id, flight_departure_date)
            REFERENCES air_flight_details(flight_id, flight_departure_date)
    );

CREATE TABLE air_credit_card_details (
    profile_id      VARCHAR(10) NOT NULL,
    card_number     BIGINT      NOT NULL,
    card_type       VARCHAR(20) NOT NULL,
    expiration_month TINYINT    NOT NULL CHECK (expiration_month BETWEEN 1
AND 12),
    expiration_year SMALLINT   NOT NULL,
    CONSTRAINT pk_card
        PRIMARY KEY (profile_id, card_number),
    CONSTRAINT fk_card_profile
        FOREIGN KEY (profile_id)
        REFERENCES air_passenger_profile(profile_id)
);

```

3. Create table commands for all the tables with constraints, relationships etc.

```

INSERT INTO air_passenger_profile
(profile_id, password, first_name, last_name, address, mobile_number,
email_id)
VALUES
('P001', 'pass1', 'Ravi', 'Kumar', 'Chennai', 9876543210, 'ravi@gmail.com'),
('P002', 'pass2', 'Arun', 'Verma', 'Hyderabad', 9876543211, 'arun@gmail.com'),
('P003', 'pass3', 'Neha', 'Sharma', 'Bangalore', 9876543212, 'neha@gmail.com'),
('P004', 'pass4', 'Kiran', 'Rao', 'Chennai', 9876543213, 'kiran@gmail.com');

INSERT INTO air_flight
(flight_id, airline_id, airline_name, from_location, to_location,
departure_time, arrival_time, duration_time, total_seats)
VALUES
('F101', 'A001', 'ABC
Airlines', 'Chennai', 'Hyderabad', '08:00', '09:30', '1.5Hr', 180),
('F102', 'A001', 'ABC Airlines', 'Hyderabad', 'Delhi', '10:00', '12:00', '2Hr', 200),
('F103', 'A001', 'ABC
Airlines', 'Chennai', 'Hyderabad', '18:00', '19:30', '1.5Hr', 160);

INSERT INTO air_flight_details
(flight_id, flight_departure_date, price, available_seats)
VALUES
('F101', '2025-04-05', 5000, 150),
('F101', '2025-04-12', 5200, 140),
('F101', '2025-05-10', 5300, 130),
('F103', '2025-04-10', 4800, 120),
('F102', '2025-06-01', 7000, 180);

INSERT INTO air_ticket_info
(ticket_id, profile_id, flight_id, flight_departure_date, status)

```

```
VALUES
('T001', 'P001', 'F101', '2025-04-05', 'CONFIRMED'),
('T002', 'P001', 'F101', '2025-04-12', 'CONFIRMED'),
('T003', 'P001', 'F103', '2025-04-10', 'CONFIRMED'),
('T004', 'P001', 'F101', '2025-05-10', 'CONFIRMED'),
('T005', 'P002', 'F101', '2025-04-05', 'CONFIRMED'),
('T006', 'P003', 'F103', '2025-04-10', 'CONFIRMED'),
('T007', 'P003', 'F101', '2025-05-10', 'CONFIRMED'),
('T008', 'P004', 'F101', '2025-04-12', 'CONFIRMED'),
('T009', 'P004', 'F103', '2025-04-10', 'CONFIRMED');

INSERT INTO air_credit_card_details
(profile_id, card_number, card_type, expiration_month, expiration_year)
VALUES
('P001', 4444333322221111, 'VISA', 10, 2030),
('P002', 5555444433332222, 'MASTER', 12, 2031),
('P003', 666655554443333, 'VISA', 8, 2030),
('P004', 7777666655554444, 'AMEX', 7, 2032);
```

QUESTIONS:

-- 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 a.flight_id,c.from_location,c.to_location,
DATENAME(MONTH,b.flight_departure_date) as Month_Name,AVG(b.price) as Average_Price
FROM air_ticket_info a JOIN air_flight_details b
ON b.flight_id=a.flight_id
JOIN air_flight c
ON c.flight_id=b.flight_id
WHERE c.airline_name='ABC AIRLINES' and a.status='Confirmed'
GROUP BY
a.flight_id,c.from_location,c.to_location,DATENAME(MONTH,b.flight_departure_date)
ORDER BY a.flight_id,Month_Name;
```

	flight_id	from_location	to_location	Month_Name	Average_Price
1	F101	Chennai	Hyderabad	April	5100.000000
2	F101	Chennai	Hyderabad	May	5300.000000
3	F103	Chennai	Hyderabad	April	4800.000000

-- 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.

```
WITH TicketCount AS(
SELECT b.profile_id,b.first_name,b.address,COUNT(*) AS No_of_Tickets
FROM air_ticket_info a JOIN air_passenger_profile b
ON b.profile_id=a.profile_id
JOIN air_flight c
ON a.flight_id=c.flight_id
WHERE c.airline_name='ABC Airlines'
GROUP BY b.profile_id,b.first_name,b.address
)

SELECT * FROM TicketCount
WHERE No_of_Tickets=(SELECT MIN(No_of_Tickets) FROM TicketCount)
ORDER BY first_name;
```

	profile_id	first_name	address	No_of_Tickets
1	P002	Arun	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.

-- Display the records in ascending order based on From_Location and then by To_Location and then by month name.

```
SELECT b.from_location,b.to_location,DATENAME(Month,a.flight_departure_date) AS Month_Name,COUNT(*) AS No_of_Services
FROM air_flight_details a JOIN air_flight b
ON b.flight_id=a.flight_id
GROUP BY
from_location,to_location,DATENAME(Month,a.flight_departure_date),MONTH(a.flight_departure_date)
ORDER BY b.from_location,b.to_location,MONTH(a.flight_departure_date);
```

	from_location	to_location	Month_Name	No_of_Services
1	Chennai	Hyderabad	April	3
2	Chennai	Hyderabad	May	1
3	Hyderabad	Delhi	June	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.

```
WITH TicketCount AS(
SELECT b.profile_id,b.first_name,b.address,COUNT(*) AS No_of_Tickets
FROM air_ticket_info a JOIN air_passenger_profile b
ON b.profile_id=a.profile_id
JOIN air_flight c
ON a.flight_id=c.flight_id
WHERE c.airline_name='ABC Airlines'
GROUP BY b.profile_id,b.first_name,b.address
)
```

```
SELECT * FROM TicketCount
WHERE No_of_Tickets=(SELECT MAX(No_of_Tickets) FROM TicketCount)
ORDER BY first_name;
```

	profile_id	first_name	address	No_of_Tickets
1	P001	Ravi	Chennai	4

```
-- 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,
--   then by flight id and then by departure date.
```

```
SELECT
b.profile_id,b.first_name,b.last_name,a.flight_id,a.flight_departure_date,COUNT(*)  

AS No_of_Tickets  

FROM air_ticket_info a JOIN air_passenger_profile b  

ON b.profile_id=a.profile_id  

JOIN air_flight c  

ON a.flight_id=c.flight_id  

WHERE c.from_location='Chennai' AND c.to_location='Hyderabad'  

GROUP BY b.profile_id,b.first_name,b.last_name,a.flight_id,a.flight_departure_date  

ORDER BY b.profile_id,a.flight_id,a.flight_departure_date;
```

	profile_id	first_name	last_name	flight_id	flight_departure_date	No_of_Tickets
1	P001	Ravi	Kumar	F101	2025-04-05	1
2	P001	Ravi	Kumar	F101	2025-04-12	1
3	P001	Ravi	Kumar	F101	2025-05-10	1
4	P001	Ravi	Kumar	F103	2025-04-10	1
5	P002	Arun	Verma	F101	2025-04-05	1
6	P003	Neha	Sharma	F101	2025-05-10	1
7	P003	Neha	Sharma	F103	2025-04-10	1
8	P004	Kiran	Rao	F101	2025-04-12	1
9	P004	Kiran	Rao	F103	2025-04-10	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 b.flight_id,b.from_location,b.to_location,a.price
FROM air_flight_details a JOIN air_flight b
ON a.flight_id=b.flight_id
WHERE DATENAME(MONTH,a.flight_departure_date)='April';
```

	flight_id	from_location	to_location	price
1	F101	Chennai	Hyderabad	5000.00
2	F101	Chennai	Hyderabad	5200.00
3	F103	Chennai	Hyderabad	4800.00

-- 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 b.flight_id,b.from_location,b.to_location,AVG(a.price) AS Price
FROM air_flight_details a JOIN air_flight b
ON a.flight_id=b.flight_id
GROUP BY b.flight_id,b.from_location,b.to_location
ORDER BY b.flight_id,b.from_location,b.to_location
```

	flight_id	from_location	to_location	Price
1	F101	Chennai	Hyderabad	5166.666666
2	F102	Hyderabad	Delhi	7000.000000
3	F103	Chennai	Hyderabad	4800.000000

-- 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 between),
-- 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(b.profile_id),b.first_name+' '+b.last_name as
customer_name,b.address
FROM air_ticket_info a JOIN air_passenger_profile b
ON b.profile_id=a.profile_id
JOIN air_flight c
ON a.flight_id=c.flight_id
WHERE c.from_location='Chennai' AND c.to_location='Hyderabad'
ORDER BY b.profile_id;
```

	profile_id	customer_name	address
1	P001	Ravi Kumar	Chennai
2	P002	Arun Verma	Hyderabad
3	P003	Neha Sharma	Bangalore
4	P004	Kiran Rao	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.
```

```
WITH TicketCount AS(
SELECT b.profile_id,b.first_name,b.address,COUNT(*) AS No_of_Tickets
FROM air_ticket_info a JOIN air_passenger_profile b
ON b.profile_id=a.profile_id
JOIN air_flight c
ON a.flight_id=c.flight_id
GROUP BY b.profile_id,b.first_name,b.address
)

SELECT * FROM TicketCount
WHERE No_of_Tickets=(SELECT MAX(No_of_Tickets) FROM TicketCount)
ORDER BY profile_id;
```

	profile_id	first_name	address	No_of_Tickets
1	P001	Ravi	Chennai	4

```
-- 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 at least 1 ticket is booked.
-- Display the records sorted in ascending order based on flight id.
```

```
SELECT a.flight_id,c.from_location,c.to_location,COUNT(*) AS No_of_Tickets
FROM air_ticket_info a JOIN air_passenger_profile b
ON b.profile_id=a.profile_id
JOIN air_flight c
ON a.flight_id=c.flight_id
WHERE c.airline_name='ABC Airlines'
GROUP BY a.flight_id,c.from_location,c.to_location
ORDER BY a.flight_id;
```

	flight_id	from_location	to_location	No_of_Tickets
1	F101	Chennai	Hyderabad	6
2	F103	Chennai	Hyderabad	3