DAY-3 ASSIGNMENT

AirlineDB:

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

```sql
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),
```

```sql
        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.

```sql
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)
```

```sql
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',6666555544443333,'VISA',8,2030),
('P004',7777666655554444,'AMEX',7,2032);
```

QUESTIONS:

```sql
-- 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;


-- 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;
```

```sql
-- 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_dep
arture_date)
ORDER BY b.from_location,b.to_location,MONTH(a.flight_departure_date);


-- 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;

-- 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;
```

```sql
-- 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';

-- 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

-- 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;

-- 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;
```

```sql
-- 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;
```