case-based assignment for an Airline Flight Booking System. The system involves managing data related to flights, passengers, bookings, airports, airlines, and payments. The assignment includes the database schema and 10 SQL queries for performing common operations in such a system.

```
CREATE DATABASE AIRWAYS ;


USE AIRWAYS ;
```

AIRLINES TABLE

```
CREATE TABLE AIRLINES (

AIRLINE_ID INT PRIMARY KEY,

AIRLINE_NAME VARCHAR(100),

COUNTRY VARCHAR(100),

IATA_CODE VARCHAR(10) );

INSERT INTO AIRLINES (AIRLINE_ID, AIRLINE_NAME, COUNTRY, IATA_CODE)

VALUES

   (1, 'American Airlines', 'United States', 'AA'),

   (2, 'Delta Air Lines', 'United States', 'DL'),

   (3, 'Lufthansa', 'Germany', 'LH'),

   (4, 'Air France', 'France', 'AF'),

   (5, 'Emirates', 'United Arab Emirates', 'EK'),

   (6, 'British Airways', 'United Kingdom', 'BA'),

   (7, 'Qantas', 'Australia', 'QF'),

   (8, 'Singapore Airlines', 'Singapore', 'SQ'),

   (9, 'Japan Airlines', 'Japan', 'JL'),

   (10, 'Air Canada', 'Canada', 'AC');
```

AIRPORTS TABLLE

```
CREATE TABLE AIRPORTS (
AIRPORT_ID INT PRIMARY KEY,
AIRPORT_NAME VARCHAR(100),
CITY VARCHAR(100),
COUNTRY VARCHAR(100) );

INSERT INTO AIRLINES (AIRLINE_ID, AIRLINE_NAME, COUNTRY, IATA_CODE)
VALUES
   (1, 'American Airlines', 'United States', 'AA'),
   (2, 'Delta Air Lines', 'United States', 'DL'),
   (3, 'Lufthansa', 'Germany', 'LH'),
   (4, 'Air France', 'France', 'AF'),
   (5, 'Emirates', 'United Arab Emirates', 'EK'),
   (6, 'British Airways', 'United Kingdom', 'BA'),
   (7, 'Qantas', 'Australia', 'QF'),
   (8, 'Singapore Airlines', 'Singapore', 'SQ'),
   (9, 'Japan Airlines', 'Japan', 'JL'),
   (10, 'Air Canada', 'Canada', 'AC');
```

PASSENGERS TABLE

```
CREATE TABLE PASSENGERS (
PASSENGER_ID INT PRIMARY KEY,
FIRST_NAME VARCHAR(100),
```

```
LAST_NAME VARCHAR(100),
EMAIL VARCHAR(100),
PHONE VARCHAR(20) );

INSERT INTO PASSENGERS (PASSENGER_ID, FIRST_NAME, LAST_NAME, EMAIL, PHONE)
VALUES
   (1, 'Michael', 'Scott', 'michael.scott@email.com', '555-1234'),
   (2, 'Pam', 'Beesly', 'pam.beesly@email.com', '555-5678'),
   (3, 'Jim', 'Halpert', 'jim.halpert@email.com', '555-8765'),
   (4, 'Dwight', 'Schrute', 'dwight.schrute@email.com', '555-4321'),
   (5, 'Angela', 'Martin', 'angela.martin@email.com', '555-6789');
```

PAYMENTS TABLE

```
CREATE TABLE PAYMENTS (
PAYMENT_ID INT PRIMARY KEY,
BOOKING_ID INT,
PAYMENT_DATE DATETIME,
AMOUNT DECIMAL(10,2),
PAYMENT_METHOD VARCHAR(20),
FOREIGN KEY (BOOKING_ID) REFERENCES BOOKINGS(BOOKING_ID) );

INSERT INTO PAYMENTS (PAYMENT_ID, BOOKING_ID, PAYMENT_DATE, AMOUNT, PAYMENT_METHOD)
VALUES
```

(1, 101, '2025-05-01 10:00:00', 350.00, 'Credit Card'),

(2, 102, '2025-05-02 11:30:00', 420.50, 'Debit Card'),

(3, 103, '2025-05-03 09:45:00', 275.75, 'Cash'),

(4, 104, '2025-05-04 15:20:00', 600.00, 'UPI'),

(5, 105, '2025-05-05 14:10:00', 150.00, 'Net Banking');

BOOKINGS TABLE

```
CREATE TABLE BOOKINGS (

BOOKING_ID INT PRIMARY KEY,

FLIGHT_ID INT,

PASSENGER_ID INT,

BOOKING_DATE DATETIME,

SEAT_CLASS VARCHAR(20),

STATUS VARCHAR(20),

FOREIGN KEY (FLIGHT_ID) REFERENCES FLIGHTS(FLIGHT_ID),

FOREIGN KEY (PASSENGER_ID) REFERENCES PASSENGERS(PASSENGER_ID) );


INSERT INTO BOOKINGS (BOOKING_ID, FLIGHT_ID, PASSENGER_ID, BOOKING_DATE, SEAT_CLASS,
STATUS)

VALUES

(101, 201, 1, '2025-05-01 08:00:00', 'Economy', 'Confirmed'),

(102, 202, 2, '2025-05-02 09:15:00', 'Business', 'Confirmed'),

(103, 203, 3, '2025-05-03 10:30:00', 'Economy', 'Cancelled'),

(104, 204, 4, '2025-05-04 11:45:00', 'First Class', 'Confirmed'),
```

(105, 205, 5, '2025-05-05 12:00:00', 'Economy', 'Pending');

FLIGHTS TABLE

```
CREATE TABLE FLIGHTS (
FLIGHT_ID INT PRIMARY KEY,
AIRLINE_ID INT,
FLIGHT_NUMBER VARCHAR(20),
DEPARTURE_AIRPORT_ID INT,
ARRIVAL_AIRPORT_ID INT,
DEPARTURE_TIME DATETIME,
ARRIVAL_TIME DATETIME,
STATUS VARCHAR(20),
FOREIGN KEY (AIRLINE_ID) REFERENCES AIRLINES(AIRLINE_ID),
FOREIGN KEY (DEPARTURE_AIRPORT_ID) REFERENCES AIRPORTS(AIRPORT_ID),
FOREIGN KEY (ARRIVAL_AIRPORT_ID) REFERENCES AIRPORTS(AIRPORT_ID) );

INSERT INTO FLIGHTS (FLIGHT_ID, AIRLINE_ID, FLIGHT_NUMBER, DEPARTURE_AIRPORT_ID,
ARRIVAL_AIRPORT_ID, DEPARTURE_TIME, ARRIVAL_TIME, STATUS)
VALUES
(201, 1, 'AA101', 301, 302, '2025-06-01 08:00:00', '2025-06-01 12:00:00', 'Scheduled'),
(202, 2, 'DL202', 302, 303, '2025-06-02 09:30:00', '2025-06-02 13:30:00', 'Scheduled'),
(203, 3, 'LH303', 303, 304, '2025-06-03 07:45:00', '2025-06-03 11:45:00', 'Delayed'),
(204, 4, 'AF404', 304, 305, '2025-06-04 10:00:00', '2025-06-04 14:00:00', 'Cancelled'),
(205, 5, 'EK505', 305, 301, '2025-06-05 06:30:00', '2025-06-05 12:30:00', 'Scheduled');
```

1. Total Number of Bookings for Each Flight

```
SELECT

   FLIGHT_ID,

   COUNT(*) AS TOTAL_BOOKINGS

FROM BOOKINGS

GROUP BY FLIGHT_ID;
```

2. Passengers Who Have Booked Flight Number 'AI202'

```
SELECT

   P.PASSENGER_ID, P.FIRST_NAME, P.LAST_NAME

FROM BOOKINGS B

JOIN FLIGHTS F ON B.FLIGHT_ID = F.FLIGHT_ID

JOIN PASSENGERS P ON B.PASSENGER_ID = P.PASSENGER_ID

WHERE F.FLIGHT_NUMBER = 'AI202';
```

3. Total Number of Flights Departing from 'JFK'

```
SELECT

   COUNT(*) AS TOTAL_DEPARTURES

FROM FLIGHTS F

JOIN AIRPORTS A ON F.DEPARTURE_AIRPORT_ID = A.AIRPORT_ID

WHERE A.AIRPORT_NAME = 'JFK';
```

4. Flight with the Most Passengers Booked

```
SELECT
   F.FLIGHT_ID,
   F.FLIGHT_NUMBER,
   COUNT(B.BOOKING_ID) AS TOTAL_BOOKINGS
FROM FLIGHTS F
JOIN BOOKINGS B ON F.FLIGHT_ID = B.FLIGHT_ID
GROUP BY F.FLIGHT_ID, F.FLIGHT_NUMBER
ORDER BY TOTAL_BOOKINGS DESC
LIMIT 1;
```

5. Total Payment Amount for All Confirmed Bookings

```
SELECT

   SUM(P.AMOUNT) AS TOTAL_PAYMENT

FROM PAYMENTS P

JOIN BOOKINGS B ON P.BOOKING_ID = B.BOOKING_ID

WHERE B.STATUS = 'Confirmed';
```

6. Flights Departing After '2024-06-01 10:00:00'

```
SELECT *
FROM FLIGHTS
WHERE DEPARTURE_TIME > '2024-06-01 10:00:00';
```

7. Number of Bookings in Each Seat Class

```
SELECT
    SEAT_CLASS,
    COUNT(*) AS TOTAL_BOOKINGS
FROM BOOKINGS
GROUP BY SEAT_CLASS;
```

8.List of Cancelled Flights

```
SELECT *

FROM FLIGHTS

WHERE STATUS = 'Cancelled';
```

9. Average Payment Amount for Confirmed Bookings

```
SELECT

   AVG(P.AMOUNT) AS AVERAGE_PAYMENT

FROM PAYMENTS P

JOIN BOOKINGS B ON P.BOOKING_ID = B.BOOKING_ID

WHERE B.STATUS = 'Confirmed';
```

10. Total Bookings and Payment Amount Per Passenger

```
SELECT
   P.PASSENGER_ID,
   P.FIRST_NAME,
   P.LAST_NAME,
   COUNT(B.BOOKING_ID) AS TOTAL_BOOKINGS,
   COALESCE(SUM(PAY.AMOUNT), 0) AS TOTAL_PAYMENT
FROM PASSENGERS P
LEFT JOIN BOOKINGS B ON P.PASSENGER_ID = B.PASSENGER_ID
LEFT JOIN PAYMENTS PAY ON B.BOOKING_ID = PAY.BOOKING_ID
GROUP BY P.PASSENGER_ID, P.FIRST_NAME, P.LAST_NAME;
```