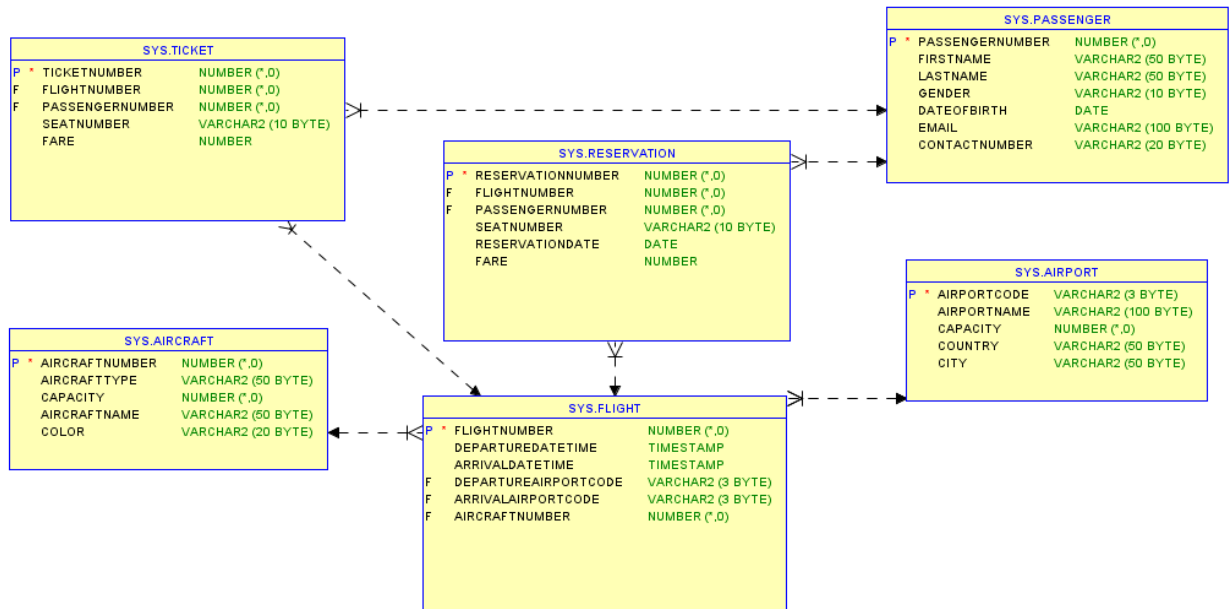


To create queries, I used ERD. It helps to take columns from which tables and how we should join them. It helps to understand queries below now as well.



## Query 1

```

SELECT Passenger.FirstName, Passenger.LastName, Ticket.SeatNumber
FROM Passenger
JOIN Ticket ON Passenger.PassengerNumber = Ticket.PassengerNumber
WHERE Ticket.FlightNumber = 101;
    
```

	FIRSTNAME	LASTNAME	SEATNUMBER
1	John	Doe	A1

This query retrieves passenger information for a specific flight. This query retrieves the first name, last name, and seat number of passengers on flight number 101 by joining the Passenger and Ticket tables. Here inner join is used that lists passengers that bought tickets only. From the joined results, it displays name and seat of the passenger.

## Query 2

```

SELECT Flight.FlightNumber, DepartureAirport.AirportName AS DepartureAirport,
ArrivalAirport.AirportName AS ArrivalAirport
FROM Flight
JOIN Airport DepartureAirport ON Flight.DepartureAirportCode =
DepartureAirport.AirportCode
JOIN Airport ArrivalAirport ON Flight.ArrivalAirportCode =
ArrivalAirport.AirportCode;
    
```

	FLIGHTNUMBER	DEPARTUREAIRPORT	ARRIVALAIRPORT
1	103	Heathrow Airport	John F. Kennedy International Airport
2	110	Indira Gandhi International Airport	John F. Kennedy International Airport
3	101	John F. Kennedy International Airport	Los Angeles International Airport
4	102	Los Angeles International Airport	Heathrow Airport
5	104	Charles de Gaulle Airport	San Francisco International Airport
6	105	San Francisco International Airport	Haneda Airport
7	106	Haneda Airport	Sydney Airport
8	107	Sydney Airport	Dubai International Airport
9	108	Dubai International Airport	Beijing Capital International Airport
10	109	Beijing Capital International Airport	Indira Gandhi International Airport

This query lists flights with departure and arrival airport names. This query lists flight numbers along with their corresponding departure and arrival airport names by joining the Flight table with the Airport table twice (once for departure and once for arrival). Because Airport code is connected to Flight table twice, first time with departure airport code and second time with arrival airport code as foreign keys, query joined the table twice.

### Query 3

```

SELECT Reservation.ReservationNumber, Passenger.FirstName,
Passenger.LastName, Flight.FlightNumber, Flight.DepartureDateTime
FROM Reservation
JOIN Passenger ON Reservation.PassengerNumber = Passenger.PassengerNumber
JOIN Flight ON Reservation.FlightNumber = Flight.FlightNumber;

```

	RESERVATIONNUMBER	FIRSTNAME	LASTNAME	FLIGHTNUMBER	DEPARTUREDATETIME
1	2001	John	Doe	101	15-JAN-23 08.00.00.000000000 AM
2	2002	Jane	Smith	102	20-FEB-23 12.00.00.000000000 PM
3	2003	Bob	Johnson	103	25-MAR-23 02.30.00.000000000 PM
4	2004	Alice	Williams	104	10-APR-23 10.00.00.000000000 AM
5	2005	Charlie	Brown	105	05-MAY-23 04.45.00.000000000 PM
6	2006	Eva	Davis	106	15-JUN-23 08.30.00.000000000 AM
7	2007	George	Miller	107	20-JUL-23 02.00.00.000000000 PM
8	2008	Olivia	Clark	108	10-AUG-23 06.30.00.000000000 PM
9	2009	Sam	Taylor	109	05-SEP-23 12.15.00.000000000 PM
10	2010	Sophia	Lee	110	30-OCT-23 08.45.00.000000000 PM

This query displays reservations with passenger and flight information. This query shows reservation details, including reservation number, passenger name, flight number, and departure time, by joining the Reservation, Passenger, and Flight tables. The format of the time could be made nicer, since it is not the point of the assignment, it is left as it is.

#### Query 4

```
SELECT Passenger.FirstName, Passenger.LastName, Flight.FlightNumber,
DepartureAirport.City AS DepartureCity
FROM Passenger
JOIN Ticket ON Passenger.PassengerNumber = Ticket.PassengerNumber
JOIN Flight ON Ticket.FlightNumber = Flight.FlightNumber
JOIN Airport DepartureAirport ON Flight.DepartureAirportCode =
DepartureAirport.AirportCode
WHERE DepartureAirport.City = 'New York';
```

	FIRSTNAME	LASTNAME	FLIGHTNUMBER	DEPARTURECITY
1	John	Doe	101	New York

This query finds passengers on flights departing from a New York. It retrieves the first name, last name, flight number, and departure city of passengers on flights departing from New York by joining the Passenger, Ticket, Flight, and Airport tables.

#### Query 5

```
SELECT Flight.FlightNumber, Flight.DepartureDateTime, Aircraft.AircraftType,
Aircraft.Color
FROM Flight
JOIN Aircraft ON Flight.AircraftNumber = Aircraft.AircraftNumber;
```

	FLIGHTNUMBER	DEPARTUREDATETIME	AIRCRAFTTYPE	COLOR
1	101	15-JAN-23 08.00.00.000000000	AM Boeing 737	Blue
2	102	20-FEB-23 12.00.00.000000000	PM Airbus A320	Silver
3	103	25-MAR-23 02.30.00.000000000	PM Boeing 747	Gold
4	104	10-APR-23 10.00.00.000000000	AM Embraer E190	Red
5	105	05-MAY-23 04.45.00.000000000	PM Airbus A380	White
6	106	15-JUN-23 08.30.00.000000000	AM Boeing 777	Green
7	107	20-JUL-23 02.00.00.000000000	PM Bombardier CRJ900	Silver
8	108	10-AUG-23 06.30.00.000000000	PM Airbus A330	Purple
9	109	05-SEP-23 12.15.00.000000000	PM Boeing 757	Orange
10	110	30-OCT-23 08.45.00.000000000	PM Airbus A340	SkyBlue

This query shows flights with aircraft type and color information. It lists flight numbers, departure times, aircraft types, and colors by joining the Flight table with the Aircraft table based on the common AircraftNumber.

#### Query 6

```
SELECT Passenger.FirstName, Passenger.LastName,
Reservation.ReservationNumber, Reservation.SeatNumber
FROM Passenger
JOIN Reservation ON Passenger.PassengerNumber = Reservation.PassengerNumber
```

**WHERE** Reservation.FlightNumber = 102;

	FIRSTNAME	LASTNAME	RESERVATIONNUMBER	SEATNUMBER
1	Jane	Smith	2002	B2

This query lists passengers and reservations for a flight number 102. It retrieves the first name, last name, reservation number, and seat number of passengers for flight number 102 by joining the Passenger and Reservation tables using common column of passenger number.

### Query 7

```
SELECT Flight.FlightNumber, DepartureAirport.Country AS DepartureCountry,
Aircraft.AircraftName
FROM Flight
JOIN Airport DepartureAirport ON Flight.DepartureAirportCode =
DepartureAirport.AirportCode
JOIN Aircraft ON Flight.AircraftNumber = Aircraft.AircraftNumber
WHERE DepartureAirport.Country = 'USA';
```

	FLIGHTNUMBER	DEPARTURECOUNTRY	AIRCRAFTNAME
1	101	USA	BlueBird
2	102	USA	SilverStar
3	105	USA	DiamondSky

This query displays flights departing from a USA with aircraft names. It lists flight numbers, departure countries, and aircraft names for flights departing from USA by joining the Flight, Airport (for departure), and Aircraft tables.

### Query 8

```
SELECT Passenger.FirstName, Passenger.LastName, SUM(Ticket.Fare) AS TotalFare
FROM Passenger
JOIN Ticket ON Passenger.PassengerNumber = Ticket.PassengerNumber
GROUP BY Passenger.FirstName, Passenger.LastName;
```

	FIRSTNAME	LASTNAME	TOTALFARE
1	Charlie	Brown	450
2	Alice	Williams	350.25
3	Olivia	Clark	700
4	Sophia	Lee	550
5	Jane	Smith	400.75
6	John	Doe	300.5
7	Eva	Davis	600.5
8	Bob	Johnson	500
9	George	Miller	250.75
10	Sam	Taylor	400.25

This query shows passengers with their total fare spent. It displays the first name, last name, and total fare spent by each passenger by joining the Passenger and Ticket tables and using the

SUM function to calculate total fare. To use Sum function, query must use group. As can be seen, it is grouping by both names.

### Query 9

```
SELECT Flight.FlightNumber, DepartureAirport.Country AS DepartureCountry,
ArrivalAirport.Country AS ArrivalCountry
FROM Flight
JOIN Airport DepartureAirport ON Flight.DepartureAirportCode =
DepartureAirport.AirportCode
JOIN Airport ArrivalAirport ON Flight.ArrivalAirportCode =
ArrivalAirport.AirportCode;
```

	FLIGHTNUMBER	DEPARTURECOUNTRY	ARRIVALCOUNTRY
1	103	UK	USA
2	110	India	USA
3	101	USA	USA
4	102	USA	UK
5	104	France	USA
6	105	USA	Japan
7	106	Japan	Australia
8	107	Australia	UAE
9	108	UAE	China
10	109	China	India

This query lists flights with departure and arrival airport countries. It retrieves flight numbers, departure countries, and arrival countries by joining the Flight, Airport (for departure), and Airport (for arrival) tables.

### Query 10

```
SELECT Reservation.ReservationNumber, Passenger.FirstName,
Passenger.LastName, Aircraft.AircraftType, Aircraft.AircraftName
FROM Reservation
JOIN Passenger ON Reservation.PassengerNumber = Passenger.PassengerNumber
JOIN Flight ON Reservation.FlightNumber = Flight.FlightNumber
JOIN Aircraft ON Flight.AircraftNumber = Aircraft.AircraftNumber;
```

	RESERVATIONNUMBER	FIRSTNAME	LASTNAME	AIRCRAFTTYPE	AIRCRAFTNAME
1	2001	John	Doe	Boeing 737	BlueBird
2	2002	Jane	Smith	Airbus A320	SilverStar
3	2003	Bob	Johnson	Boeing 747	GoldenEagle
4	2004	Alice	Williams	Embraer E190	RedRocket
5	2005	Charlie	Brown	Airbus A380	DiamondSky
6	2006	Eva	Davis	Boeing 777	GreenJet
7	2007	George	Miller	Bombardier CRJ900	SilverBullet
8	2008	Olivia	Clark	Airbus A330	PurpleWings
9	2009	Sam	Taylor	Boeing 757	SunsetExpress
10	2010	Sophia	Lee	Airbus A340	SkyDancer

This query retrieves reservations with passenger and aircraft information. It fetches reservation numbers, passenger names, aircraft types, and aircraft names by joining the Reservation, Passenger, Flight, and Aircraft tables.

While creating these queries, I used the SQL JOIN operation to combine data from multiple tables based on common columns (foreign keys because all relations are one to many). The SELECT statement was then used to specify the columns to be retrieved, and WHERE clauses were used to filter results based on specific conditions.