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Subject: DBS

The Flight Database stores details about an airline's flights and seat bookings. Consider the Following requirement List:

- The airline has one or more airplanes.
- An airplane has a model number, a unique registration number, and the capacity.
- An airplane flight has a unique flight number, a departure airport, a destination airport, a departure date and time and an arrival date and time.
- Each flight is carried out by a single airplane.
- A passenger has given a name, a surname and a unique email address.
- A passenger can book one or more seats on a flight.

- For above mentioned case study
  1. Identify the Entities.
  2. Specify the attributes for each of the entity.
  3. Specify the relationship among entities.
- Draw the Conceptual Model, Logical Model and Physical Model.

- <u>Answers:</u>

1. Identify the Entities:

   Ans:

   - Airline
   - Airplane
   - Flight
   - Passenger
   - Seat

2. Specify the attributes for each of the entity:

Ans:

- Airline
  - Attributes: None
- Airplane
  - Attributes: modelNumber, registrationNumber(primary key), and capacity.
- Flight
  - Attributes: flightNumber(primary key), departureAirport, destinationAirport, departureDate, departureTime, arrivalDate and arrivalTime.
- Passenger
  - Attributes: name, surname and emailAddress(primary key).
- Seat
  - Attributes: None

3. Specify the relationship among entities:

Ans:

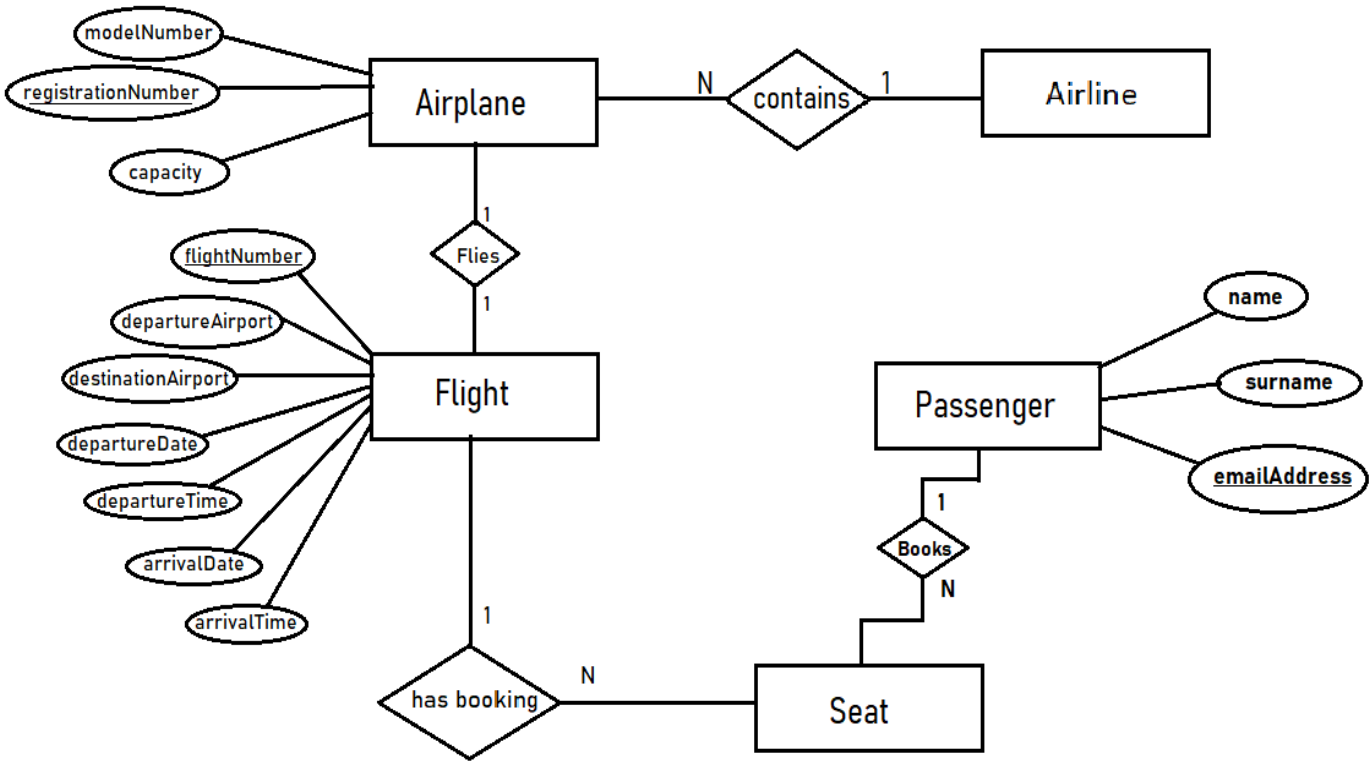
- Airline:
  - Airline has one to many relationship(1:N) with Airplane entity.
- Airplane
  - Airplane has many to one relationship(N:1) with Airline entity.
  - Airplane has one to one relationship(1:1) with Flight entity.
- Flight
  - Flight has one to one relationship(1:1) with Airplane entity.
- Passenger
  - Passenger has 1 to many relationship(1:N) with Seat entity.

- Seat
  - Seat has many to 1 relationship(N:1) with Passenger entity.

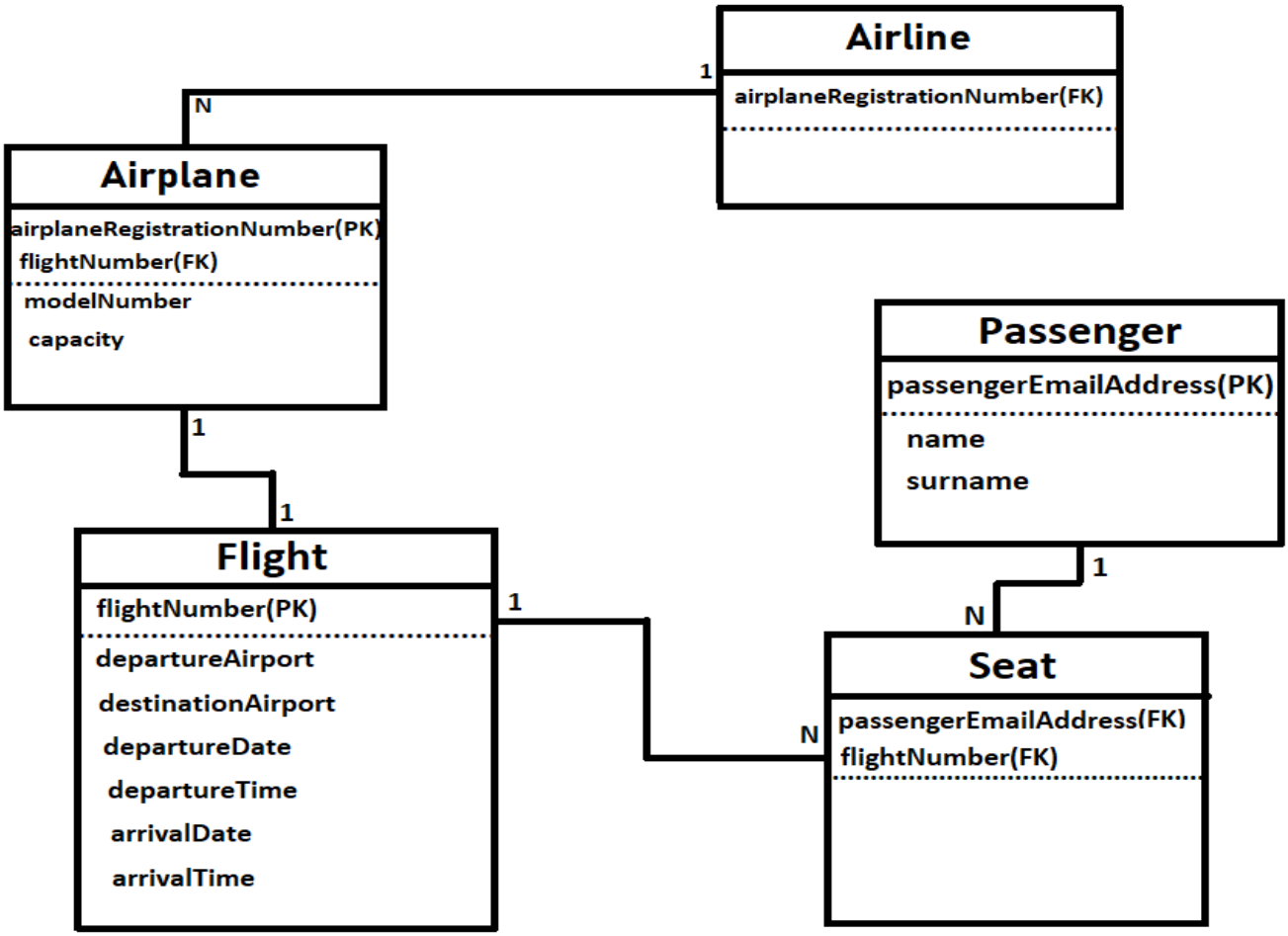
4. Draw the Conceptual Model, Logical Model and Physical Model:

Ans:

a. Conceptual Model:



b. Logical Model:



c. Physical Model: