

Database Project – Stage 1 – Asher Remer and Yishai Dredzen

In this project, we will be creating a database for a fictional airline. Any similarities to real airlines' databases are purely incidental.

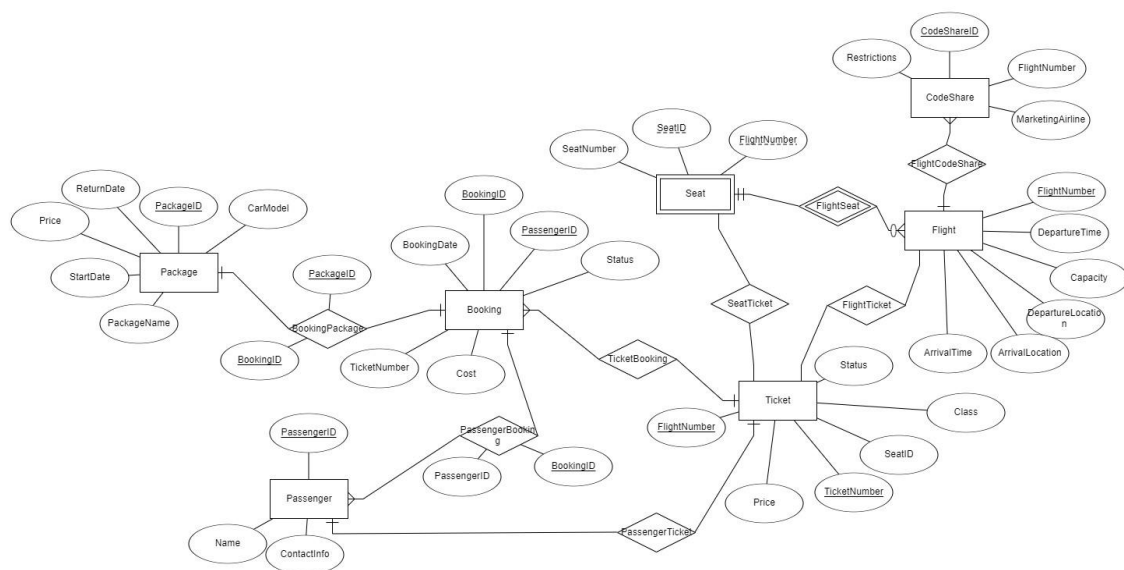
We will be managing the ticketing part of the airline database. We have seven entities as follows:

1. **Ticket:** Contains details about the ticket, the passenger, the flight and other details.
2. **Passenger:** Details about the passenger.
3. **Flight:** Details about the flight, departure and arrival times and locations.
4. **Booking:** Details about a customer's booking, date of the booking.
5. **Rental Package:** Details of car rental if a customer wants to add on to their booking.
6. **CodeShare:** Information about code-share agreements between us and other airlines, flight numbers and other details.
7. **Seat:** Represents seats on flights. This is a weak entity as it is completely dependent on Flights.

Properties of the entities are as follows:

1. **Ticket:** TicketNumber, SeatID, Class, Status, Price
2. **Passenger:** PassengerID, Name, ContactInfo
3. **Flight:** FlightNumber, DepartureLocation, DepartureTime, ArrivalLocation, ArrivalTime, Capacity
4. **Booking:** BookingID, TicketNumber, PassengerID, BookingDate, Status
5. **Rental Package:** PackageID, Package Name, BookingID, StartDate, ReturnDate, CarModel, Price
6. **CodeShare:** CodeShareID, FlightNumber, MarketingAirline, Restrictions
7. **Seat:** SeatID, FlightNumber, SeatNumber

Below is a screenshot of the ERD, created using erdplus.com:



The relationships between the entities are as follows:

1. **PassengerBooking:** A booking is linked to a specific customer/passenger by their unique Passenger ID.
2. **TicketBooking:** A booking is linked to a ticket by its unique ticket number.
3. **PackageBooking:** A booking is linked to a rental package order through the Booking ID in the Package entity.
4. **TicketFlight:** A ticket is linked to a flight through the assigned flight number.
5. **FlightCodeShare:** Code sharing is linked to a flight through the assigned flight number.
6. **FlightSeat:** The Seats available on the flight.

Since we offer packages of flights with car rentals, we created a Booking entity which manages both.

The Package entity manages the car rentals whilst the Ticket entity manages the flight tickets.

The Flight entity manages the flights which many tickets belong to. The seat entity which is completely dependent on Flight, manages which seats are

The Code Share entity is connected to the Flight entity since certain flights are bundled with other airlines.

We decided to link ticket and passenger to a booking without connecting passenger to a ticket directly as a passenger can book a car rental in addition to a flight and so made sense to link it all to a booking entity.

Below is a screenshot of the DSD:

