

Airline Management System

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Description: We have decided to do the Airline Management System. We have a total of 7 classes that we are planning for this project. The classes that we are going to be implementing are Passenger, Staff Member, Flight Management, Airline Information, Schedule, Booking, Ticket Management. The system allows airline staff to manage airline flight records, flights, schedules and passenger bookings. The system will also allow passengers to be registered and associated with bookings. It will focus on practical airline tasks such as creating flights, assigning schedules, registering passengers, and creating/canceling bookings. The system will maintain catalogs of the main objects and provide CRUD operations for each catalog.

Passenger Information (Class: Passenger)

- **Entities:** passenger ID, First Name, Last Name, Email, Phone#, Emergency contact
- **Functions:** The Passenger class represents a traveler in the Airline Management System. It stores personal information, including Emergency Contact details collected during registration. Each passenger will be linked to Booking objects, allowing them to reserve flights and receive tickets within the system.

Staff Member Information (Class: Staff Member)

- **Entities:** staff ID: First Name, Last Name, Role, Salary
- **Functions:** The Staff class represents airline employees whose information is stored and maintained within the system. Staff members have assigned roles and responsibilities related to airline operations. Their records can be created, viewed, updated, and deleted within the Staff catalog. Staff may be associated with managing flights or schedules, depending on their assigned role.

Flight Management (Class: Flight)

- **Entities:** Destination, Starting Location, Flight Time, Average Flight Speed, Total Distance
- **Function:** The flight class should manage and store the destinations of the flight such as the starting location and the ending location. This class also will take the whole travel time in a flight and the speed and distance to get the whole travel time .

Booking Information (Class: Booking)

- **Entities:** Total Seats, Available Seats, Taken Seats, Seat Number
- **Function:** The booking class manages the airline seating in the airline management system. The class stores all seats and fills them by assigning tickets to the seat number and it should show you the amount of seats taken and available seats.

Airline Information (Class: Airline)

- **Entities:** Flight numbers, Plane types, Terminal/Gate number, Airline Name
- **Function:** The airline class manages the and stores information of the airline such as the different flight numbers and plane types. The class stores the information for the different flight numbers within the airline and different types of plane models. It also stores the different terminal numbers that a certain flight arrives and departs from.

Schedule Information (Class: Schedule)

- **Entities:** Departure times, Arrival times, Delayed flights, Cancelled flights, Boarding times
- **Function:** The schedule class manages the schedule in the airline system. This class stores the different arrival and departure times of different airlines and specific flights. It also stores when flights are delayed or canceled.

Extra Classes:

Ticket Management (Class: Tickets)

- **Entities:** Price, Ticket Number, Flight class, Flight Date
- **Function:** The ticket class deals with the date of the flight, what class flight the ticket is for, and the price of the tickets. The ticket class will also assign a seat based on the ticket number when purchased.