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Chosen project (system type): Airline Ticket Management System

Project Description (include 5+ entities):

In our chosen project, we have decided to model an airline ticketing system in which passengers, airports, planes, flights, tickets, and seating arrangements are the primary entities. The system will be able to add, remove, and edit these objects.

1: Passenger entries contain the biographical/personal information of the passengers, with entries for name, date of birth, gender, phone number, email address, home address, and a government issued ID number. Each passenger is given a unique passenger number which is used to match them to flights via a ticket.

2: Airport entries contain the airport's name and airport code, and are associated with plane objects which are not currently associated with a flight object. In this sense, planes which are not in use are always "stored" and associated with an airport.

3: Planes are entries containing technical information about a specific plane, including its model number, identification code, passenger limit, and location/assignment. Planes are always associated with a current airport or flight, and this assignment changes based on the timestamps associated with the flight manifest. Their passenger limit dictates the size of an array, within which passenger entries are to be associated with specific seats onboard the plane.

4: Flights are entries containing information about a plane's times of departure and arrival on a given trip, the plane's destination, the specific plane in use for the flight, and the tickets associated with the passengers.

5: Tickets are objects which have several components. They can be considered "paid" or "unpaid", and the menu terminal allows an employee to mark a ticket as paid once they have collected payment. Additionally, tickets contain information about the flight which they allow passage on, the passenger they are assigned to, the seating compartment the passenger is assigned to sit in for the duration of the flight, and the number of bags the passenger is checking.

6: Seating arrangements serve to associate tickets with each of the seats on a plane. Each flight contains information matching the passengers to a specific plane via their tickets, and the seating arrangement is an object created for each flight that tells each passenger with a ticket what seat they are assigned to.

The program will function mainly through a menu screen which allows airport employees to display, add, delete, and edit entries in the passengers, airports, planes, flights, and tickets lists, and which automatically updates the location and status of planes and flights based on the current date and time. The program will contain individual methods such as getTicketNumber() and addPassenger(), all with the goal of storing, retrieving, or editing information related to the classes above.