

Problem 1: Flight Reservation System (5 Points)

Description:

Create a **Flight** class and a **Reservation** class to simulate a simple flight reservation system. The Reservation class should allow users to book seats on a flight, cancel reservations, and display the list of passengers.

Requirements:

1. Class Definition (1 Point)

- Define a Flight class with the following attributes:
 - flightNumber (String)
 - destination (String)
 - totalSeats (int)
 - availableSeats (int)
- Define a Reservation class with the following attribute:
 - passengers (an array or list of Strings to store passenger names)

2. Constructor (1 Point)

- Implement a parameterized constructor for the Flight class to initialize flightNumber, destination, and totalSeats. Set availableSeats equal to totalSeats.
- Implement a no-argument constructor for the Reservation class to initialize an empty list of passengers.

3. Methods (2 Points)

- Implement the following methods in the Reservation class:
 - bookSeat(Flight flight, String passengerName): Books a seat on the flight for the passenger (use call by reference to modify the availableSeats attribute of the Flight object).
 - cancelReservation(Flight flight, String passengerName): Cancels a reservation and frees up a seat on the flight (use call by reference to modify the availableSeats attribute of the Flight object).
 - displayPassengers(): Displays the list of passengers.

4. Object Creation and Testing (1 Point)

- Create a Flight object and a Reservation object, and demonstrate the following:
 - Book seats for at least three passengers.
 - Cancel a reservation for one passenger.
 - Display the list of passengers and the number of available seats on the flight.

Sample Output:

Flight Details:

Flight Number: F123

Destination: New York

Total Seats: 100

Available Seats: 97

Passengers:

1. John Doe
2. Jane Smith
3. Alice Johnson