

Airport System: Flight Booking System

You are tasked with building a simple Flight Booking System for an airport. The system should handle flight details, booking passengers, and assigning seats.

Requirements:

1. Class Definitions:

- **Flight**: Represents a flight with attributes like flight number, destination, departure time, and available seats.
- **Passenger**: Represents a passenger with attributes like name, passport number, and contact information.
- **Booking**: Represents a booking made by a passenger for a specific flight. It includes the passenger, the flight, and the seat assigned.

2. Functionality:

- Each **Flight** can have multiple passengers. However, there are limited seats available for each flight.
- Passengers can book seats on a flight, but they must be assigned a seat based on availability.
- The **Booking** class will represent a successful booking and should contain methods for checking if a seat is available and for assigning a seat to the passenger.

3. Behavior:

- Implement the `book_ticket()` method in the **Flight** class to handle the booking process.
- Implement a method to check if a seat is available (`is_seat_available()` in the **Flight** class).
- Use OOP principles like **Encapsulation**, **Inheritance** (optional), **Polymorphism**, and **Abstraction** to structure the solution cleanly.

Steps:

1. Class **Flight**:

- Attributes:
 - `flight_number` (str): The unique identifier for the flight.
 - `destination` (str): The destination of the flight.
 - `departure_time` (str): The time of departure in "HH:MM" format.
 - `available_seats` (int): The number of available seats on the flight.
 - `booked_passengers` (list): A list to store passengers who have booked tickets for this flight.
- Methods:
 - `is_seat_available()`: Returns a boolean indicating whether there are available seats.

- `book_ticket(passenger)`: Books a ticket for a passenger and assigns them a seat if available.
2. **Class Passenger:**
- Attributes:
 - `name` (str): The name of the passenger.
 - `passport_number` (str): The unique identifier for the passenger.
 - `contact_info` (str): The contact information of the passenger.
 - Methods:
 - `get_details()`: Returns a string with the passenger's details.
3. **Class Booking:**
- Attributes:
 - `flight`: The flight associated with the booking.
 - `passenger`: The passenger who made the booking.
 - `seat_number`: The assigned seat number.
 - Methods:
 - `get_booking_info()`: Returns the booking information including flight details and passenger details.

Example Flow:

```
# Create some flights
flight1 = Flight(flight_number="A123", destination="Paris",
departure_time="15:30", available_seats=2)
flight2 = Flight(flight_number="B456", destination="London",
departure_time="18:45", available_seats=1)

# Create some passengers
passenger1 = Passenger(name="John Doe", passport_number="J1234567",
contact_info="john@example.com")
passenger2 = Passenger(name="Alice Smith", passport_number="A9876543",
contact_info="alice@example.com")

# Book tickets
flight1.book_ticket(passenger1)
flight1.book_ticket(passenger2) # Should successfully book the second
seat

# Attempt to book a third passenger on a full flight
flight1.book_ticket(Passenger(name="Bob White",
passport_number="B6543210", contact_info="bob@example.com"))
```

```
# Display booking information
print(flight1.booked_passengers[0].get_details()) # John Doe details
print(flight1.booked_passengers[1].get_details()) # Alice Smith
details
```