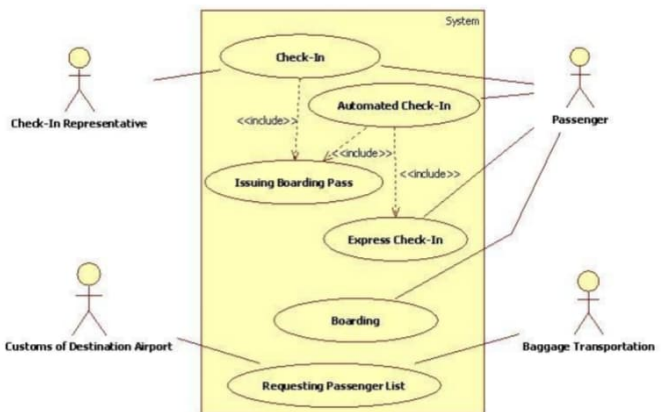**6. Draw a model for Airport management system in different views i.e. Use case view, logical view, component view, Deployment view, Database design, forward and Reverse Engineering, and Generation of documentation of the project.**

Use Case Diagram for Airport Management System:

Actor: Passenger

➢ **Search for Flights**
The passenger can search for available flights by providing criteria such as departure and destination airports, travel dates, and preferred class.

➢ **Book Flight:**
The passenger can book a flight by selecting a specific flight, providing passenger details, and making a payment.

➢ **Cancel Reservation:**
The passenger can cancel a booked flight reservation, subject to the airline's cancellation policy.

➢ **Check-in Online:**
The passenger can perform online check-in, select seats, and receive a digital boarding pass.

Actor: Airport Staff

➢ **Check-in Counter Operations:**
Airport staff can assist passengers with check-in at the airport counter, issue boarding passes, and handle special requests.

➢ **Baggage Handling:**
Airport staff can manage the process of handling checked baggage, including tagging and loading onto the aircraft.

Actor: Flight Crew

➢ **Conduct Flight:**
The flight crew is responsible for conducting the flight, ensuring passenger safety, and adhering to aviation regulations.

Actor: System

➢ **Manage Flight Schedule:**
The system allows administrators to manage and update the schedule of flights, including adding new flights and modifying existing ones.

➢ **Manage Passenger Information:**
The system manages passenger information, including reservations, check-in details, and preferences.

➢ **Generate Reports:**
The system generates various reports related to flight bookings, passenger statistics, and financial data.

Actor: Maintenance Crew

➢ **Aircraft Maintenance:**
The maintenance crew can use the system to schedule and log maintenance activities for aircraft to ensure their airworthiness.

Actor: External System (e.g., Payment Gateway)

➢ **Process Payment:**
▪ The external payment gateway interacts with the system to process payments for flight bookings made by passengers.
▪ This use case diagram outlines the interactions between different actors and the Airline System. It provides a high-level view of the functionalities of the system, including

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passenger-related actions, airport operations, flight management, and external interactions.

Activity Diagram for Airline Management System:

Activity Diagram for Airline Management System
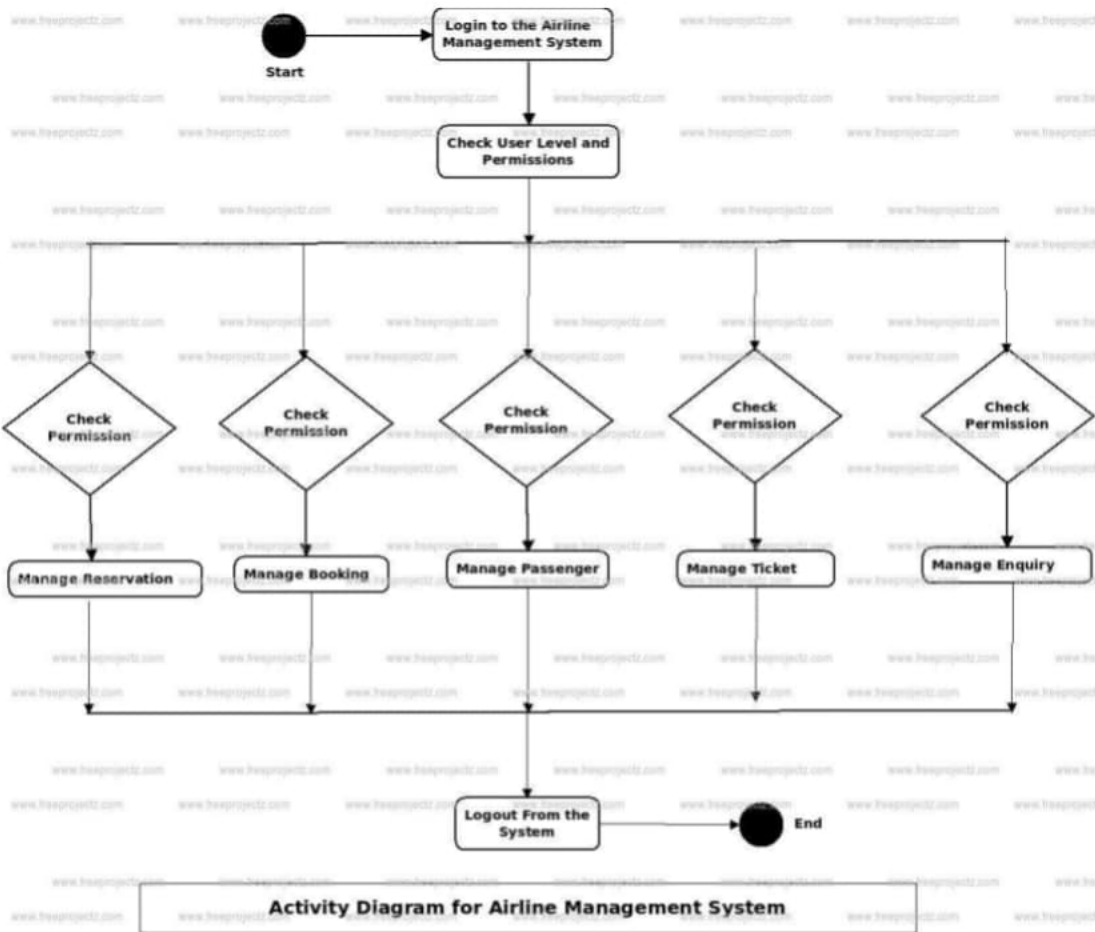
Activity: Booking a Flight

- ➤ **Search for Flights:**
  The passenger initiates a search for available flights by specifying the departure and destination airports, travel dates, and other preferences.

- ➤ **Select Flight:**
  The passenger chooses a specific flight from the search results. The system validates seat availability and provides the passenger with options.

- ➤ **Provide Passenger Information:**
  The passenger enters personal and travel information required for booking, including names, contact details, and any special requests.

- ➤ **Confirm Booking:**
  The passenger reviews the booking details, confirms the reservation, and makes the payment. The system updates the seat inventory and generates a booking confirmation.

Activity: Check-in Process:

- ➤ **Online Check-in:**
  The passenger initiates the online check-in process by providing booking details and passenger information.

- ➤ **Select Seats:**
  The passenger selects preferred seats during the online check-in process. The system validates seat availability and updates the seating arrangement.

- ➤ **Receive Boarding Pass:**
  Upon successful check-in, the system generates and provides the passenger with a digital boarding pass.

- ➤ **Baggage Drop:**
  The passenger drops off checked baggage at the airport. The system verifies baggage details and updates the handling process.

- ➤ **Security Check:**
  The passenger goes through the security check process. The system updates the passenger's status as cleared for boarding.

Boarding Process

- ➤ **Boarding The passenger boards the flight:**
  The system updates the boarding status and monitors passenger attendance.

- ➤ **Seat Verification:**
  The system verifies that each passenger is seated in their assigned seat, ensuring accurate passenger count and compliance with safety regulations.

In-flight Services:

- ➤ **Food and Beverage Service:**
  The flight crew provides food and beverage services to passengers. The system tracks inventory and updates service records.

- ➤ **Entertainment:**
  Passengers access in-flight entertainment services. The system monitors usage and updates entertainment logs.

Flight Completion:

- ➤ **Landing:**
  The flight lands at the destination airport. The system updates the flight status to "landed."

- ➤ **Baggage Retrieval:**
  Passengers retrieve their checked baggage. The system updates the baggage status and records successful retrieval.

System Maintenance:

- ➤ **Database Update:**
  - The system performs routine maintenance tasks, updating databases with flight schedules, passenger information, and other relevant data.
  - This activity diagram provides an overview of the processes involved in booking a flight, passenger check-in, airport operations, the boarding process, in-flight services, and flight completion within an airline system.