1.) HOTEL RESERVATION SYSTEM

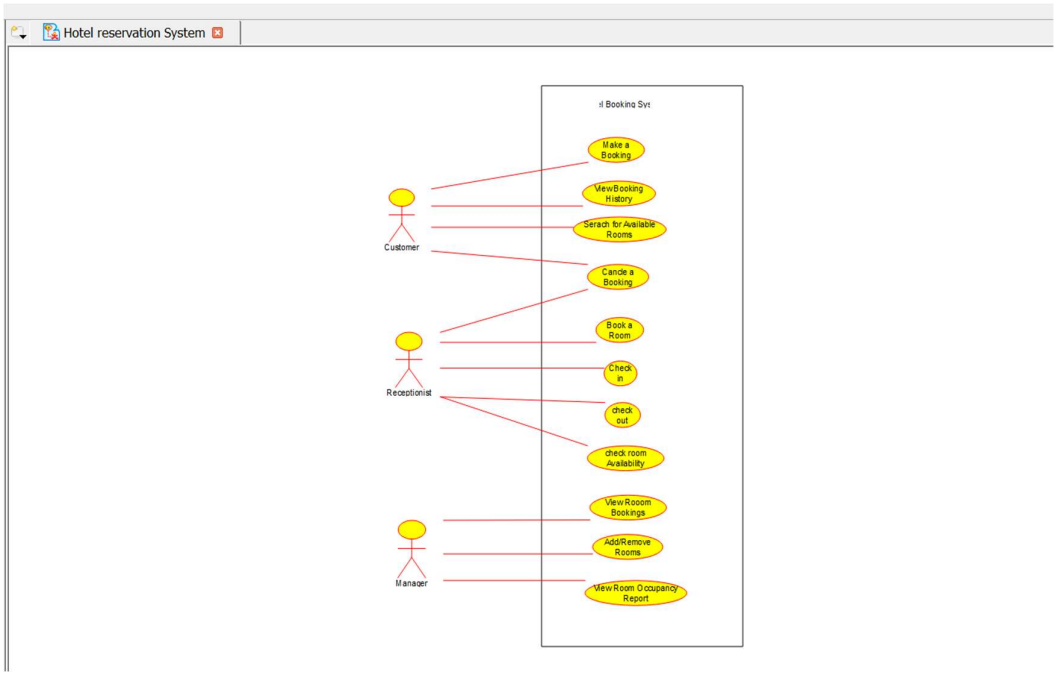
Aim:

To design a UML diagram for a Hotel Reservation System that models the process of online booking by a customer, including room selection, hotel selection, availability check, cost calculation, and confirmation.

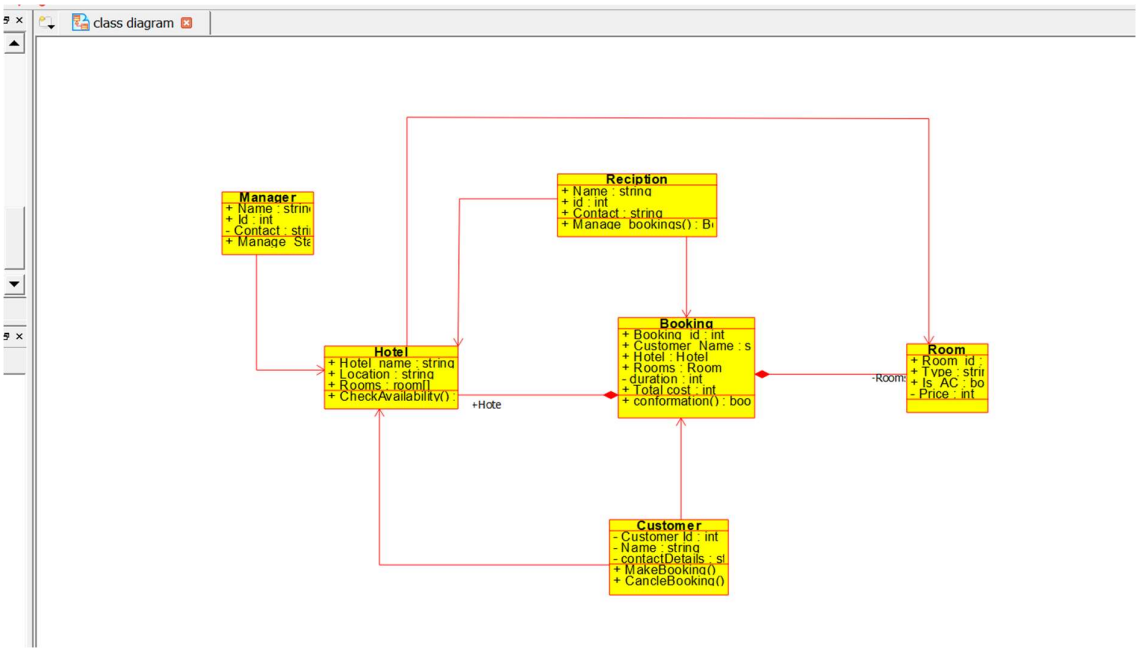
Procedure:

1. **Identify the Key Components**
    - **Actors: Customer, Hotel System, Hotel, Payment System**
    - **Classes: Customer, Hotel, Room, Reservation, Payment**
    - **Use cases: Search Hotel, Check Availability, Book Room, Calculate Charges, Confirm Reservation, Make Payment**
2. **Draw the UML Diagrams**
    - **Use Case Diagram: Represents interactions between customers and the system.**
    - **Class Diagram: Shows relationships between classes like Customer, Hotel, Room, Reservation, Payment.**
    - **Sequence Diagram: Displays the flow of interactions for the reservation process.**
3. **Define Attributes and Methods**
    - **Customer: name, contact, bookRoom ()**
    - **Hotel: name, location, rooms[], checkAvailability()**
    - **Room: type, price, availability status**
    - **Reservation: bookingID, check-in date, check-out date, confirmBooking()**
    - **Payment: paymentID, amount, processPayment()**
4. **Verify and Refine**
    - **Ensure correct relationships between classes.**
    - **Check the logical flow of interactions in sequence and use case diagrams.**

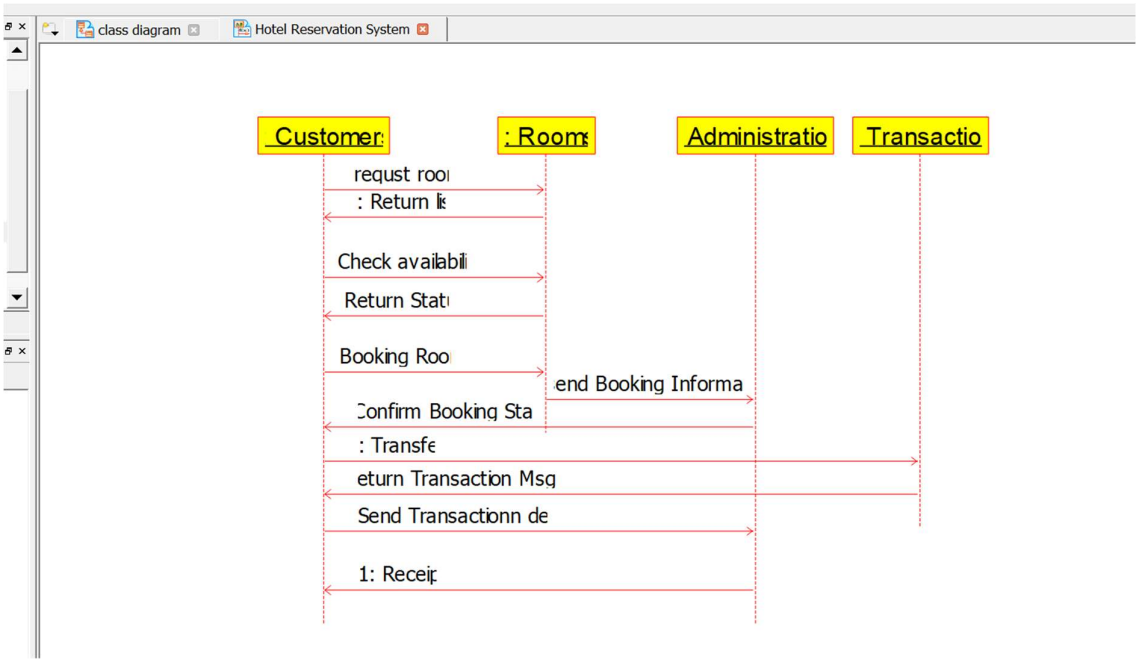
Use Case Diagram:



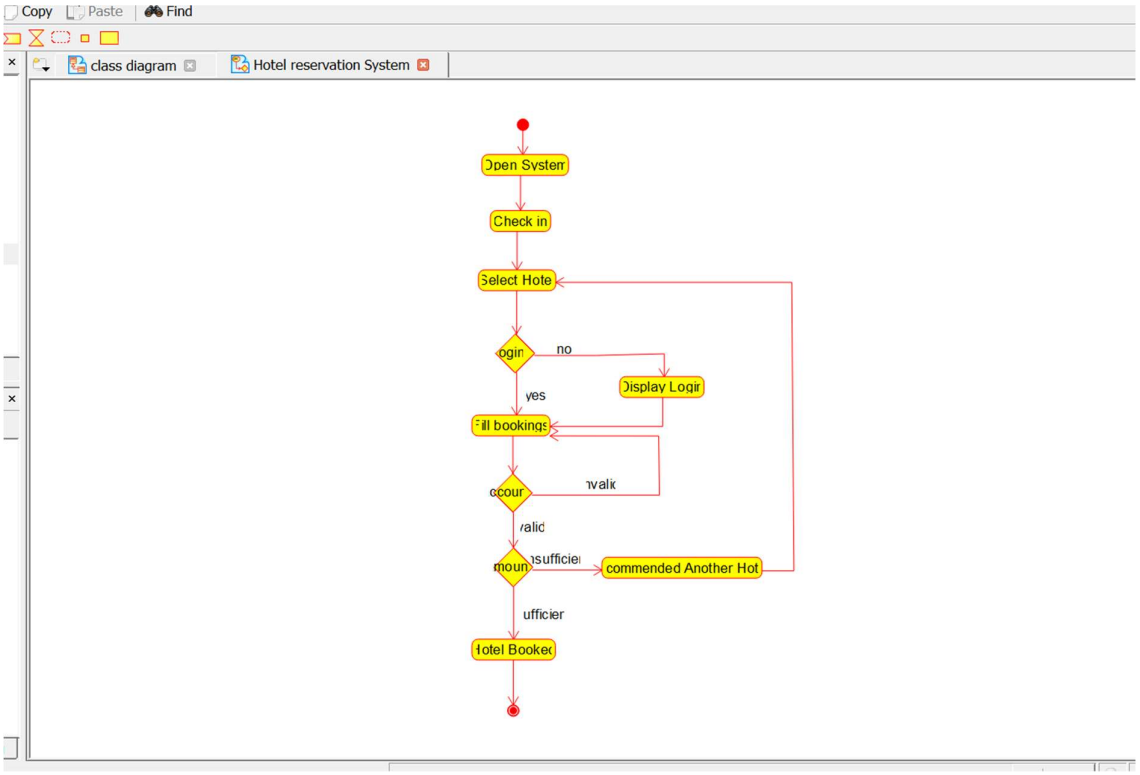
Class Diagram:



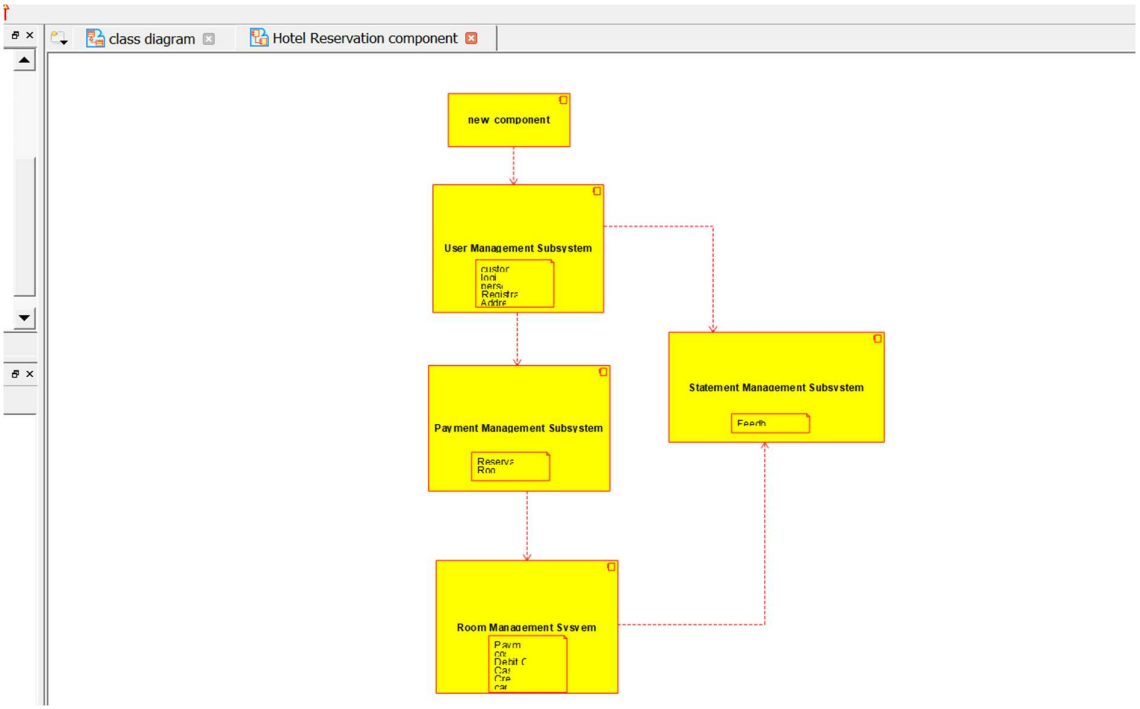
Sequence Diagram:



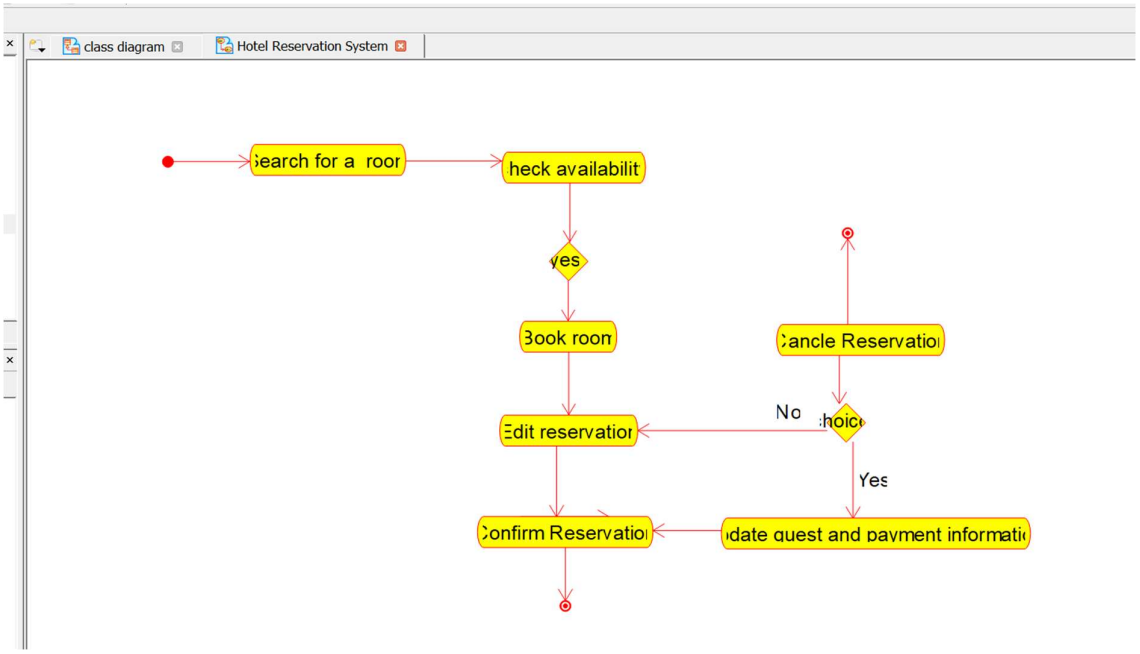
Activity Diagram:



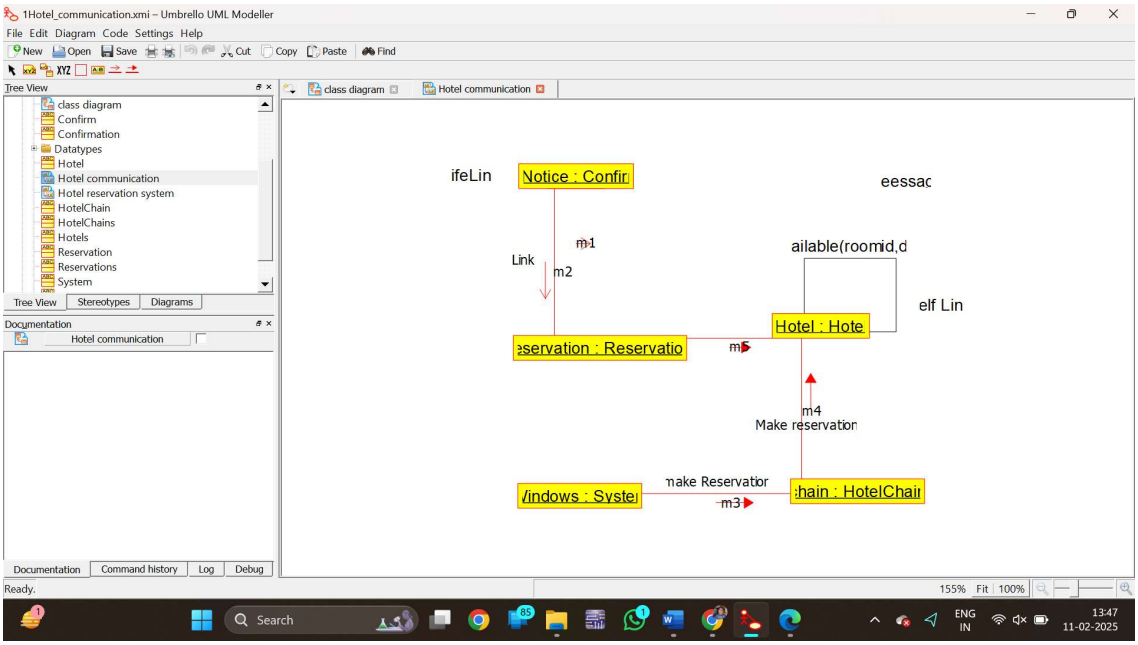
Component Diagram:



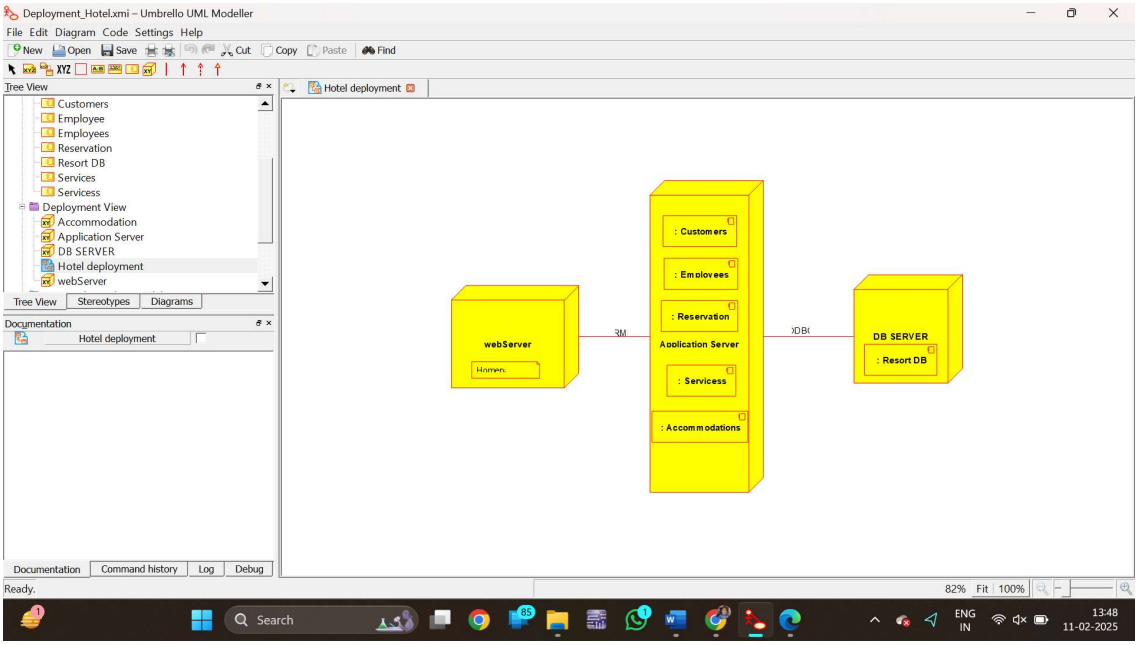
State Diagram:



Communication Diagram:



Deployment Diagram:



Result:

A UML diagram for a **Hotel Reservation System** is successfully designed, which includes use case, class, and sequence diagrams to model the online booking process.