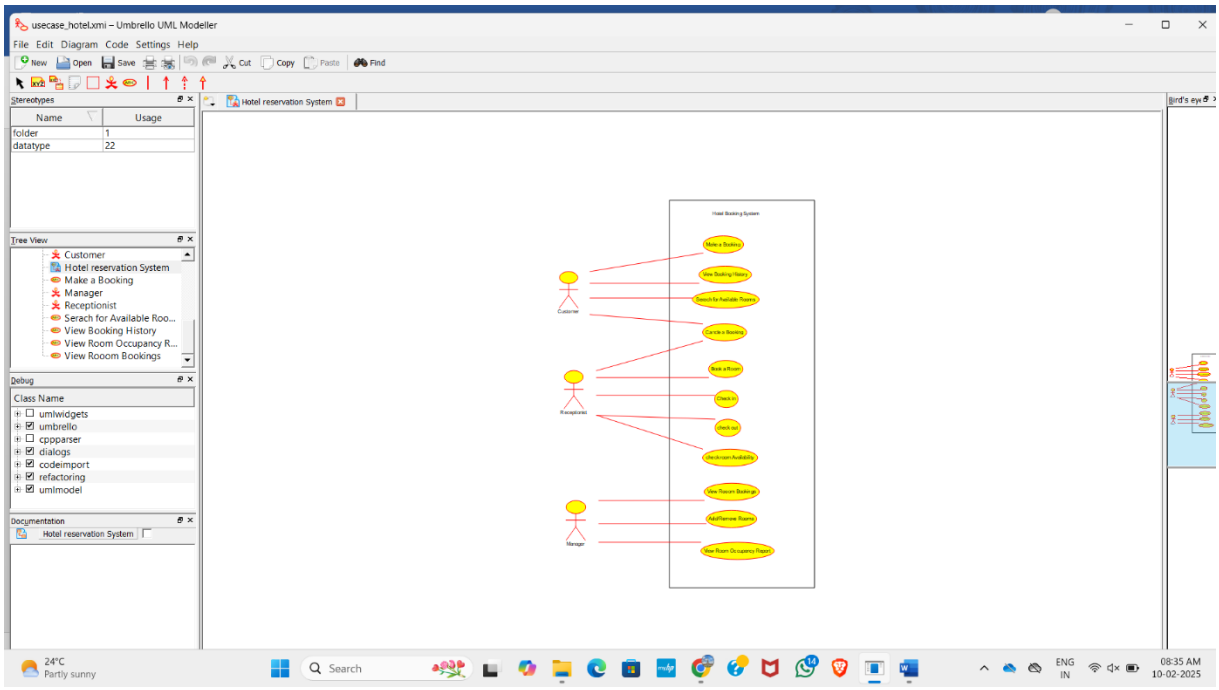
1. Hotel Reservation System

Aim : To design a UML Diagram for a Hotel Reservation System, which allows customers to book hotels online by specifying their accommodation requirements.

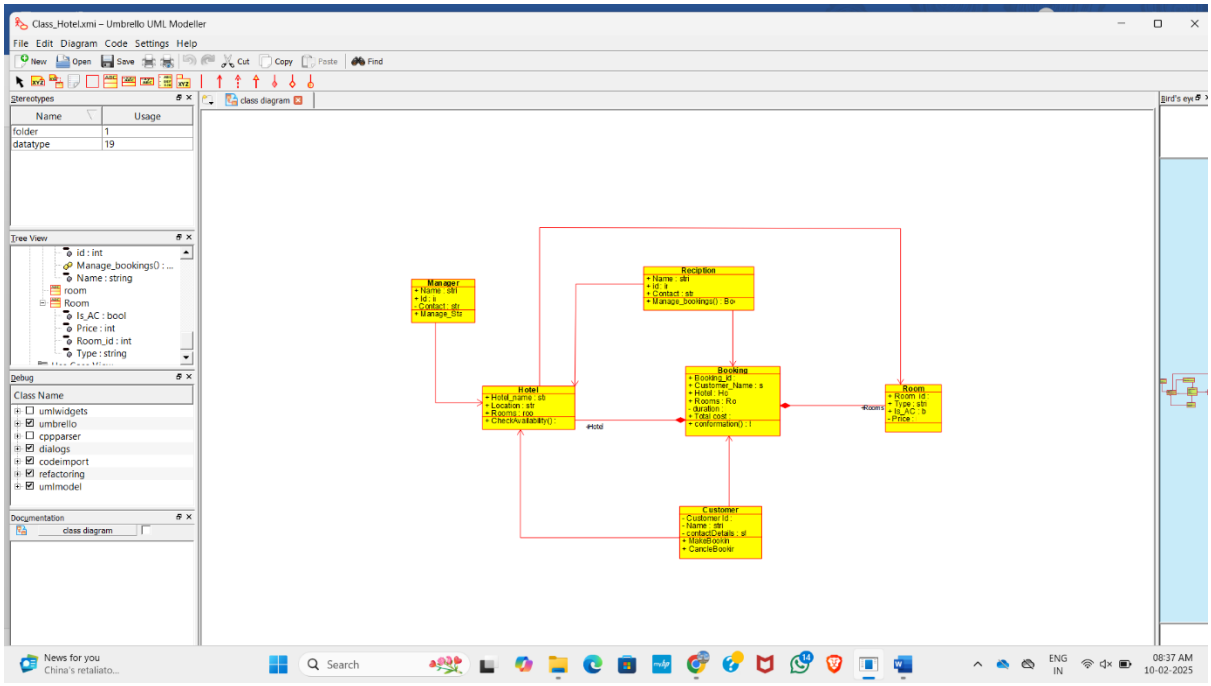
Procedure :

1. Identify the Actors and Use Cases
    - Actors: Customer, Hotel, Reservation System, Payment System
    - Use Cases: Search Hotel, Check Availability, Calculate Charges, Confirm Reservation, Make Payment
2. Create the Use Case Diagram
    - Show the interaction between the Customer and the System using Use Cases.
    - Connect use cases with actors using associations.
3. Design the Class Diagram
    - Identify the key classes: Customer, Hotel, Room, Reservation, Payment, System
    - Define attributes and methods for each class.
    - Represent relationships between classes (e.g., aggregation, association, inheritance).
4. Develop the Sequence Diagram
    - Show how the customer interacts with the system step by step.
    - Include objects and messages exchanged between them in sequential order.
5. Draw the Activity Diagram
    - Illustrate the flow of actions in booking a hotel, from searching hotels to making payment.
    - Use decision nodes to represent conditions like checking availability and confirming reservation.
6. Review and Validate UML Diagrams
    - Check if all required functionalities are covered.
    - Ensure proper associations between actors, classes, and objects.
7. Document and Present the UML Model
    - Explain each diagram and its purpose in the system.
    - Use UML tools (like Lucidchart, Draw.io, or StarUML) for clear visualization.

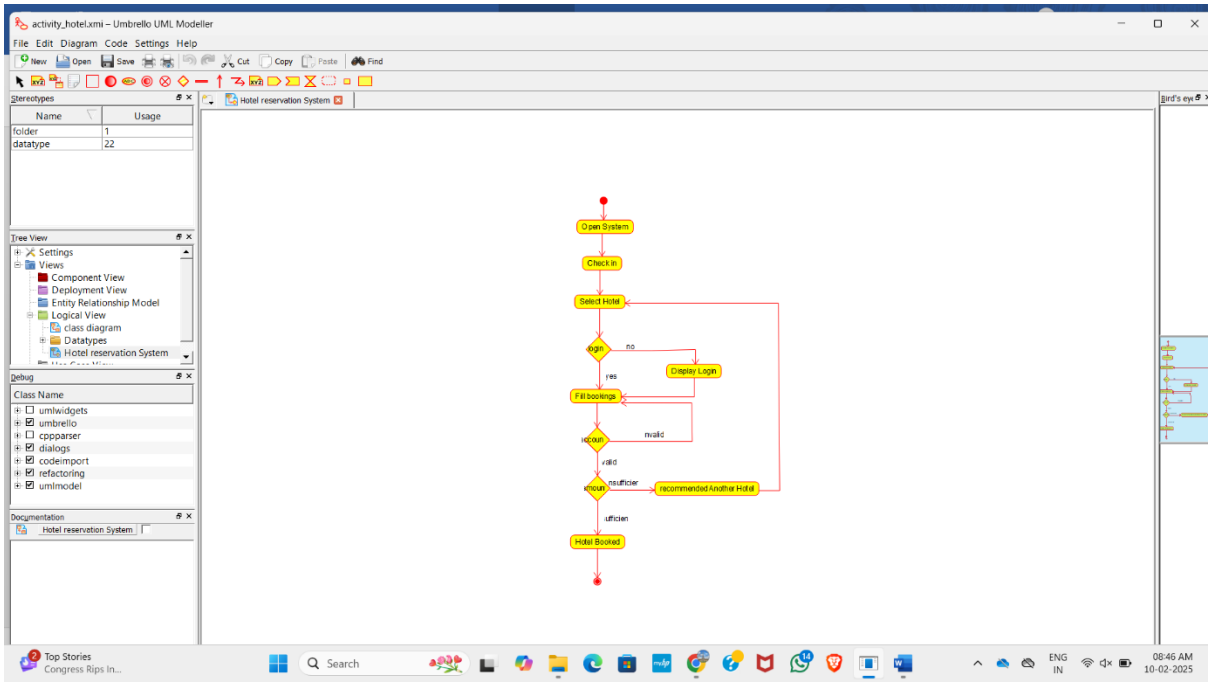
Use Case Diagram :



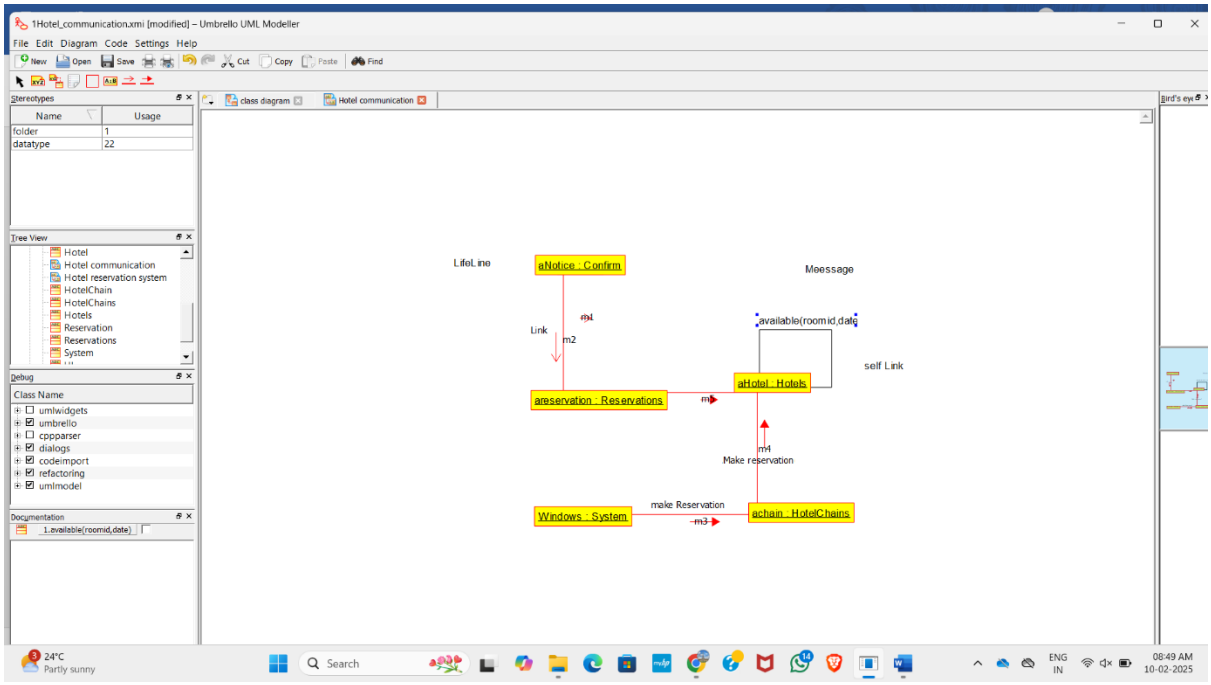
Class Diagram :



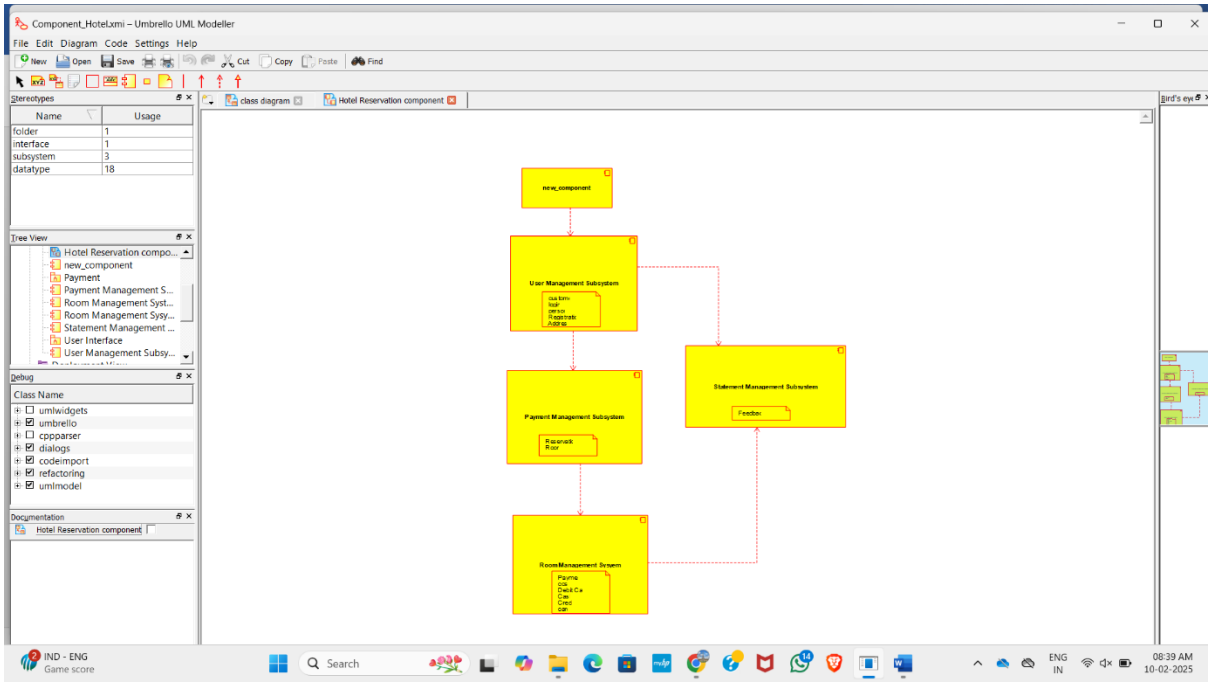
Activity Diagram :



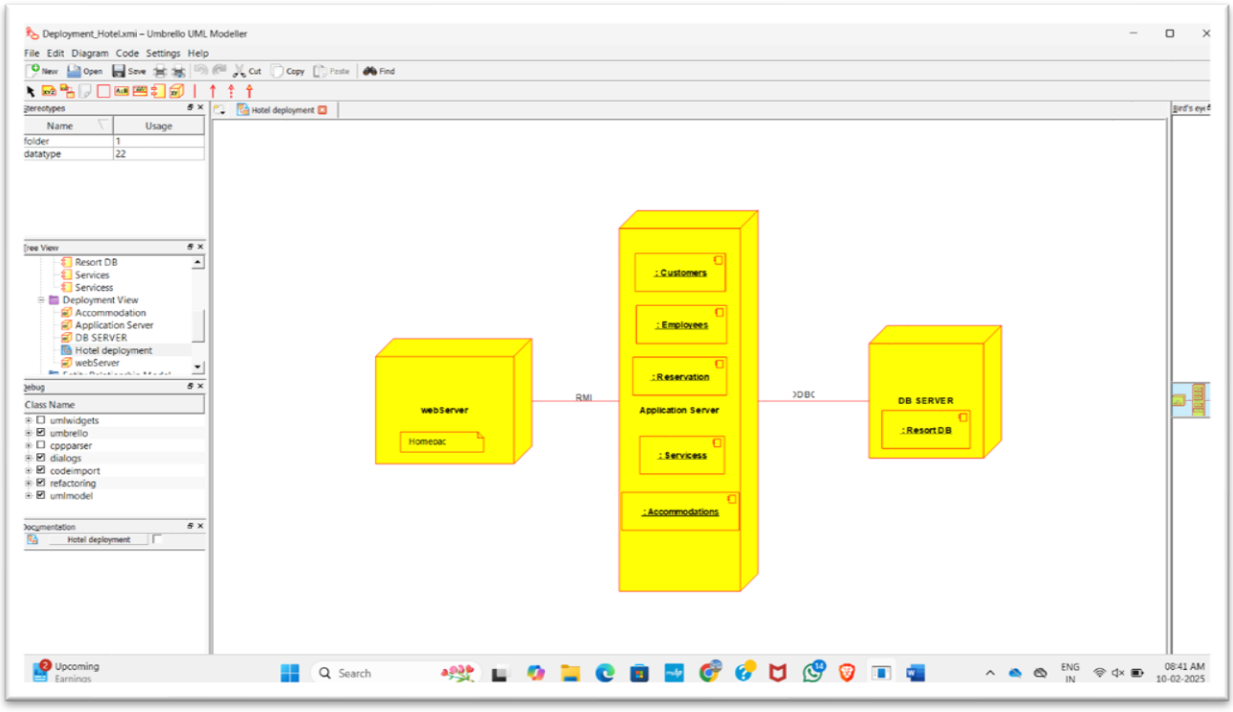
Communication Diagram :



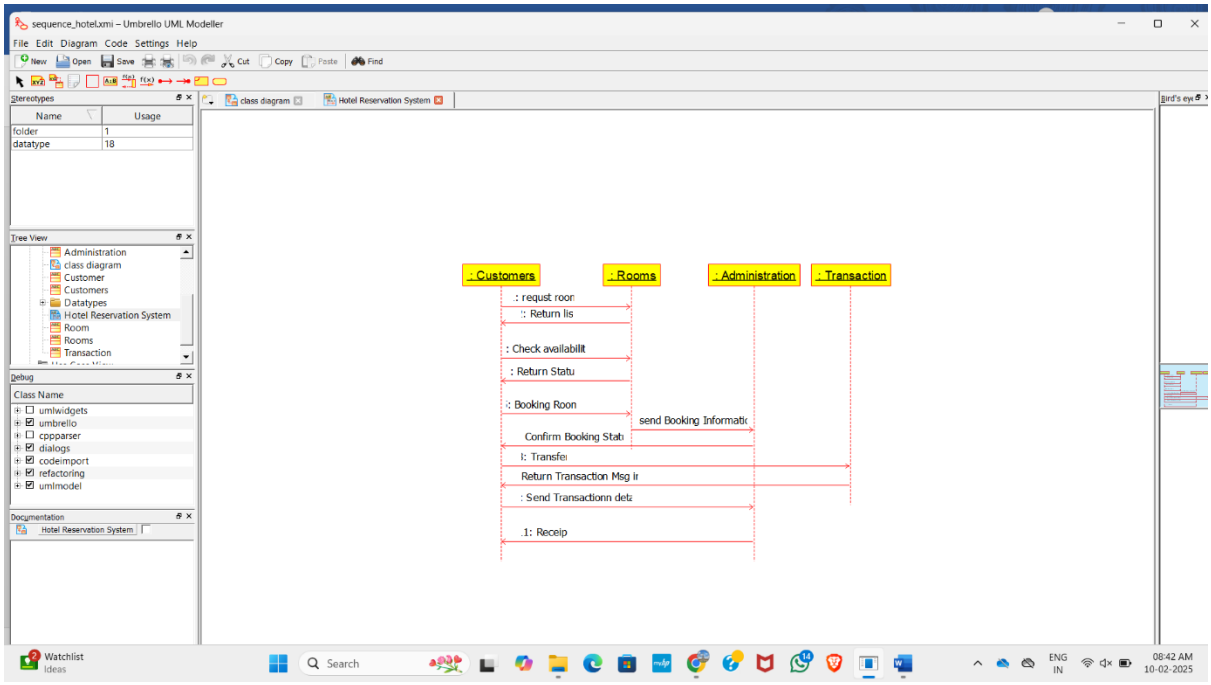
Component Diagram :



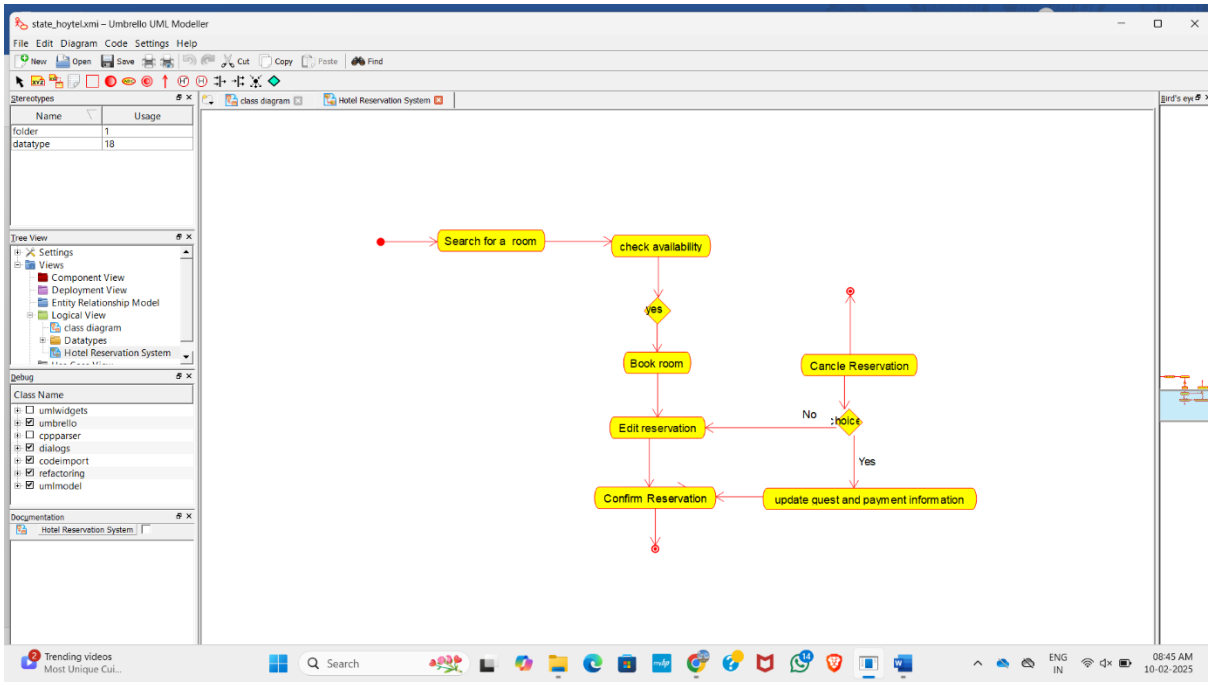
Deployment Diagram :



Sequence Diagram :



State Diagram :



Result :

The UML diagrams successfully represent the Hotel Reservation System, covering the customer's journey from hotel search to booking confirmation. The diagrams help in understanding the workflow, system interactions, and relationships between different entities in the reservation system.