

OOAD Lab Assignment 1

Name - Rithvik Rajesh Matta

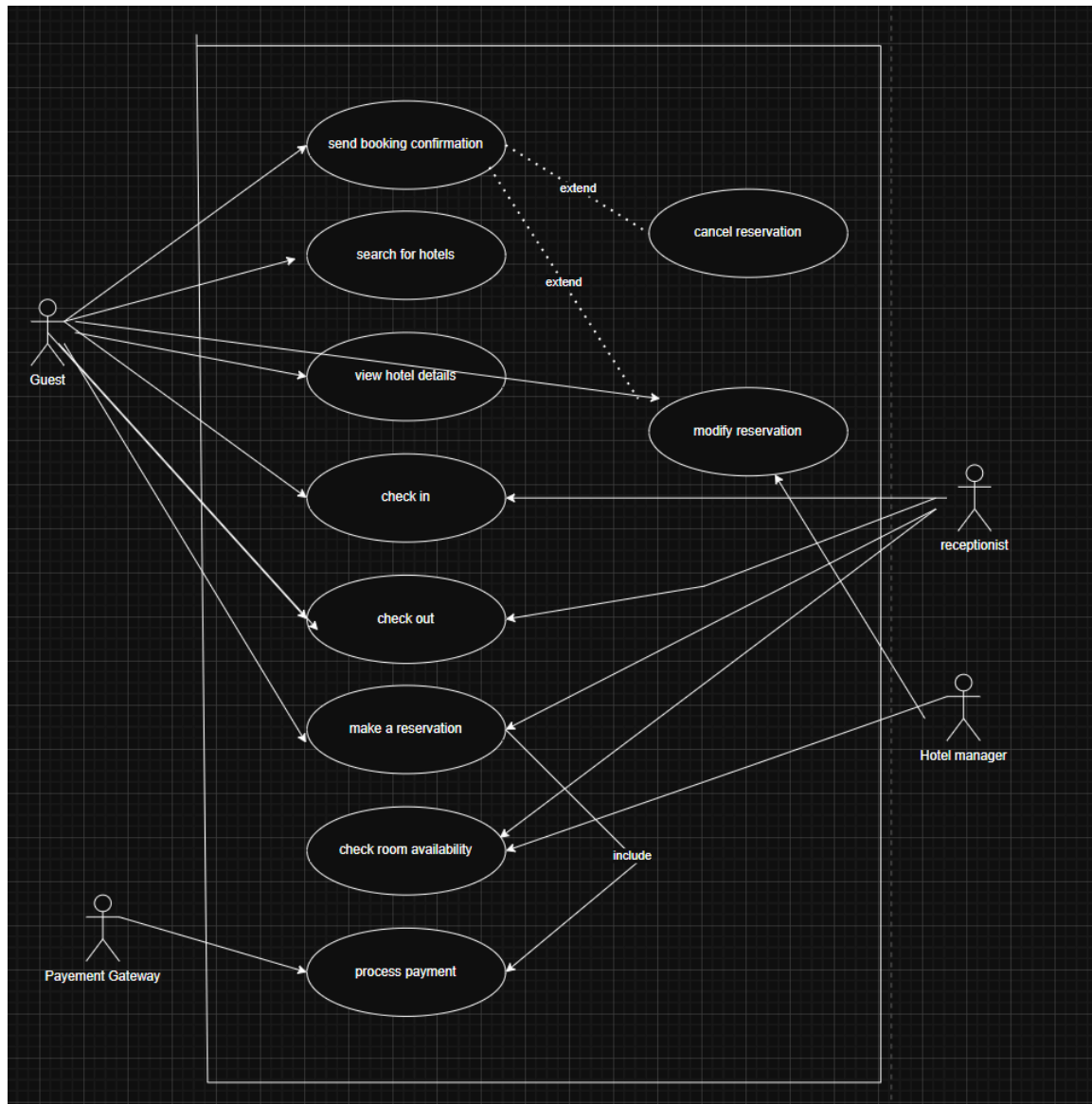
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Class - 6H

Case Study 1: Hotel Reservation System

a. Use Case Diagram – Description

The **Hotel Reservation System** automates the process of searching rooms, making reservations, handling check-in/check-out, payment processing, and management reporting. The system improves customer experience, ensures accurate room inventory management, and supports hotel staff and management operations.



Actors Identified

1. Guest (Customer)

- Searches hotels and rooms
- Views hotel details
- Makes, modifies, and cancels reservations
- Performs check-in and check-out

2. Receptionist (Hotel Staff)

- Assists guests with check-in and check-out
- Manages reservations and room availability

3. Hotel Manager

- Monitors room availability
- Oversees reservations and hotel operations

4. Payment Gateway (External Actor)

- Processes online payments securely

Use Cases in the System

Guest Use Cases

- Search for Hotels
- View Hotel Details
- Make a Reservation
- Modify Reservation
- Cancel Reservation
- Check-In
- Check-Out
- Receive Booking Confirmation

Hotel Staff (Receptionist) Use Cases

- Assist Check-In
- Assist Check-Out
- Manage Reservations

Hotel Manager Use Cases

- Monitor Room Availability
- Supervise Reservation Activities

System / External Use Cases

- Check Room Availability
 - Process Payment
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Relationships Used

<<include>> Relationships

- **Make a Reservation <<include>> Check Room Availability**
 - Room availability is always verified before confirming a booking.
- **Check Room Availability <<include>> Process Payment**
 - Payment is processed only after availability is confirmed.

<<extend>> Relationships

- **Cancel Reservation <<extend>> Send Booking Confirmation**
 - **Modify Reservation <<extend>> Search for Hotels**
 - Modification and cancellation are optional behaviors performed after reservation creation.
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System Constraints

- The system **must always check room availability** before confirming a reservation.
- **Cancellation charges are applied only if cancellation occurs after the free-cancellation deadline.**

- Payment processing is handled via an **external payment gateway**.

b. Major Use Case Specifications

Use Case 1: Make a Reservation

Item	Description
Use Case Name	Make a Reservation
Primary Actor	Guest
Supporting Actors	Receptionist, Payment Gateway
Preconditions	Guest has selected travel dates and preferences
Postconditions	Reservation is successfully confirmed
Main Flow	1. Guest searches for hotels 2. Guest views hotel details 3. Guest selects a room 4. System checks room availability 5. Guest makes payment 6. Booking confirmation is sent
Alternate Flow	If room is unavailable, system prompts guest to choose another room

Use Case 2: Cancel Reservation

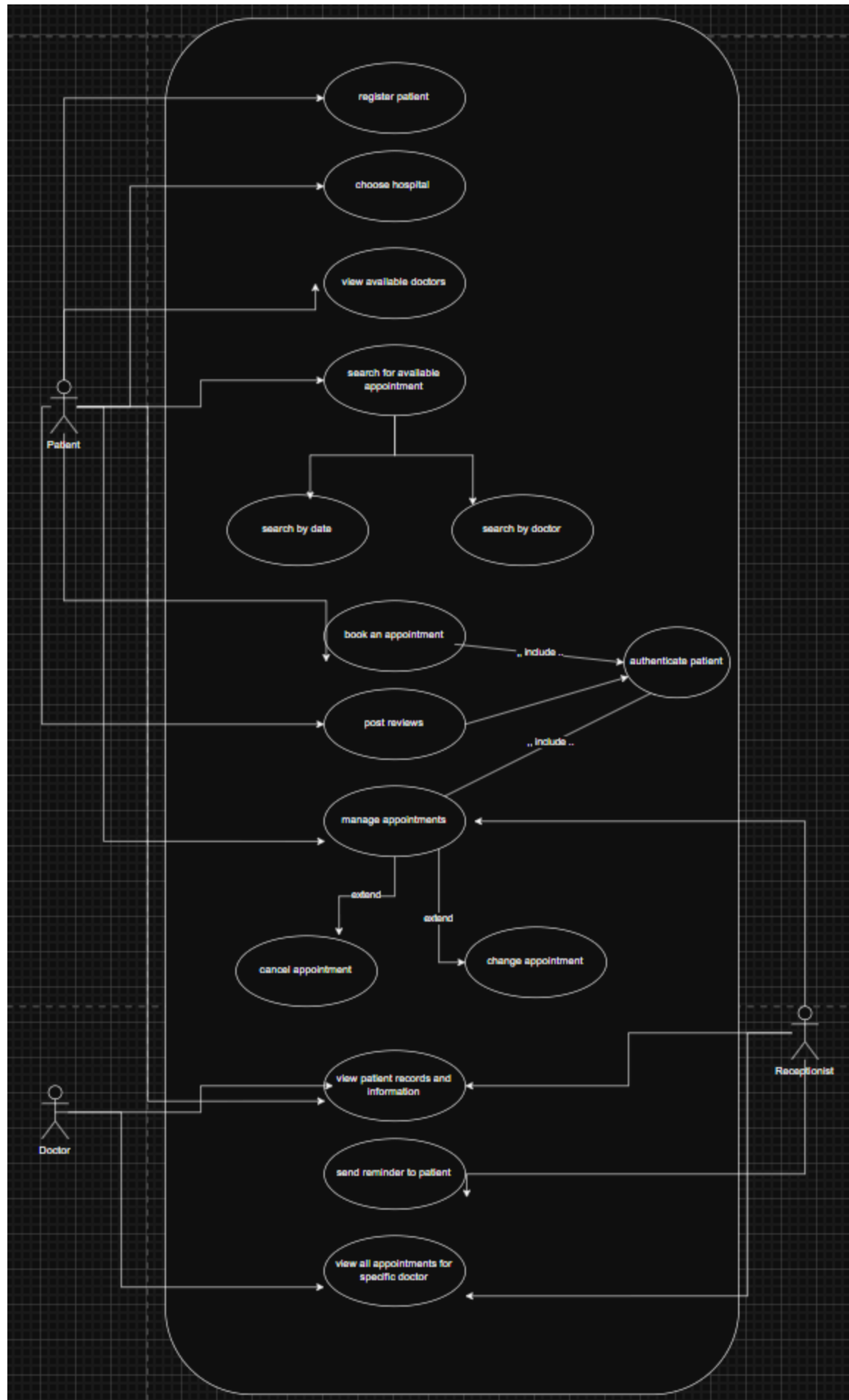
Item	Description
Use Case Name	Cancel Reservation
Primary Actor	Guest
Preconditions	Reservation exists
Postconditions	Reservation is cancelled
Main Flow	1. Guest selects reservation 2. Guest requests cancellation 3. System checks cancellation deadline 4. Reservation is cancelled
Extended Flow	If cancellation is after deadline → cancellation charges are applied

Online Hospital Appointment & Care Management System

a. Use Case Diagram – Description

The **Online Hospital Appointment & Care Management System** provides a digital platform that allows patients to book and manage hospital appointments, doctors to manage schedules and patient information, and hospital staff to support appointment handling and reminders.

The system reduces waiting time, improves operational efficiency, and ensures seamless interaction between patients, doctors, and hospital staff.



Actors Identified

1. Patient

- Registers and logs into the system
- Searches hospitals and doctors
- Books, changes, or cancels appointments
- Posts reviews and manages appointments

2. Receptionist (Hospital Staff)

- Manages appointments
- Views patient records and information
- Sends reminders to patients

3. Doctor

- Views patient records
 - Views appointments scheduled for them
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Use Cases in the System

Patient Use Cases

- Register Patient
- Choose Hospital
- View Available Doctors
- Search for Available Appointment
 - Search by Date
 - Search by Doctor
- Book an Appointment

- Manage Appointments
- Cancel Appointment
- Change Appointment
- Post Reviews

Receptionist Use Cases

- Manage Appointments
- View Patient Records and Information
- Send Reminder to Patient

Doctor Use Cases

- View Patient Records and Information
- View All Appointments for Specific Doctor

System Use Case

- Authenticate Patient

Relationships Used

<<include>> Relationships

- **Book an Appointment** <<include>> **Authenticate Patient**
- **Post Reviews** <<include>> **Authenticate Patient**
- **Manage Appointments** <<include>> **Authenticate Patient**
- **View Patient Records and Information** <<include>> **Authenticate Patient**

These indicate that authentication is mandatory before performing sensitive actions.

<<extend>> Relationships

- **Cancel Appointment <<extend>> Manage Appointments**
- **Change Appointment <<extend>> Manage Appointments**

These actions occur only when a patient chooses to modify an existing appointment.

System Constraints

- Patients must be authenticated before booking, managing appointments, or posting reviews.
 - Appointment cancellation and modification are optional extensions of appointment management.
 - Patient medical records are accessible only to authorized doctors and hospital staff.
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b. Major Use Case Specifications

Use Case 1: Book an Appointment

Item	Description
Use Case Name	Book an Appointment
Primary Actor	Patient
Supporting Actors	Receptionist
Preconditions	Patient is registered and authenticated
Postconditions	Appointment is successfully booked
Main Flow	1. Patient chooses hospital 2. Patient views available doctors 3. Patient searches for available appointment 4. Patient selects date or doctor 5. System authenticates patient 6. Appointment is booked
Alternate Flow	If no slots are available, system suggests alternate dates or doctors

Use Case 2: Manage Appointments

Item	Description
Use Case Name	Manage Appointments
Primary Actor	Patient
Supporting Actors	Receptionist
Preconditions	Patient is authenticated
Postconditions	Appointment is updated or cancelled
Main Flow	1. Patient views existing appointments 2. Patient selects appointment to manage 3. System authenticates patient 4. Patient chooses to change or cancel appointment
Extended Flow	- Cancel Appointment: Appointment is cancelled - Change Appointment: Appointment date or doctor is modified