Lab Assignment: Case Study on Use Case Diagram

Useful References -

1. What is a use case diagram? - Use case diagram

2. Use case diagram explanation

3. Examples

Tools - StarUML , draw.io, SmartDraw

Case Study 1: Hotel Reservation System

a. Prepare a detailed use case diagram for a Hotel Reservation System, including all actors, use cases, and their interactions (associations, include and extend relationships) as described by the case study given below.

b. Identify the two major use cases and write the use case specifications for the same

Case Study Description:

Design a Hotel Reservation System to automate and simplify the process of room searching, booking, check-in, check-out, and billing within a hotel environment. The primary objective of the system is to enhance customer experience, improve operational efficiency for hotel personnel, and ensure accurate management of room inventory and reservations.

The system supports three distinct user roles: Customers, Hotel Staff, and Hotel Manager, each playing a critical role in hotel operations.

Customers interact with the system to search for available rooms based on preferences such as dates, room type, and price range. They can make room reservations, view booking details, and cancel reservations when required.

Hotel Staff handle day-to-day operational tasks such as managing room availability, updating room status, performing guest check-ins and check-outs, and assisting customers during their stay. They ensure that room information is accurate and up to date in the system.

Hotel Managers oversee hotel operations at a higher level. They monitor booking activities, review occupancy levels, analyze revenue and booking performance, and generate operational reports to support business decisions.

Before confirming any room reservation, the system must always check room availability to ensure that only available rooms can be booked. This mandatory availability check prevents overbooking and maintains data consistency across the system.

Customers may cancel their reservations when needed. However, cancellation charges are applied only if the cancellation occurs after a specified deadline, such as close to the check-in date. If the cancellation occurs within the allowed free-cancellation period, no charges are applied.

The Hotel Reservation System improves service quality by providing real-time room availability, reducing manual booking errors, supporting efficient guest handling, and enabling hotel management to make informed decisions using system-generated insights.

Case Study 2: Online Hospital Appointment & Care Management

a. Prepare a detailed use case diagram for Online Hospital Appointment & Care Management System, including all actors, use cases, and their interactions (associations, include and extend relationships) as described by the case study given below.

b. Identify the two major use cases and write the use case specifications for the same

Case Study Description:

Imagine a hospital where patients no longer need to stand in long queues just to book an appointment or collect reports. The **Online Hospital Appointment & Care Management System** provides a digital platform that connects patients, doctors, hospital staff, and administrators in one integrated system.

Patients can either log in using an existing account or register as new users. Once logged in, they can search for doctors based on specialization, availability, or department. Patients can book appointments at their preferred time slots, reschedule or cancel appointments if their plans change, and view their appointment history. After consultation, patients can view prescriptions, download medical reports, and raise queries or complaints if issues arise regarding services or billing.

Doctors use the system to manage their daily schedules, view upcoming appointments, access patient medical history, and update diagnoses and prescriptions after consultations. Lab technicians upload test results, which are securely linked to patient profiles.

Hospital administrators ensure smooth operation behind the scenes. They manage doctor onboarding, department creation, appointment slots, user accounts, and monitor complaints. The system also integrates with an external notification service to send appointment reminders, prescription alerts, and report availability updates to patients.

Overall, the system improves efficiency, reduces waiting time, and ensures seamless communication between patients and hospital staff.