

# CMPS 350 Web Development Fundamentals - Spring 2025

## Final Practical Exam – HotelHub: A Hotel Room Booking System

### Instructions

- The exam duration is **120 minutes**.
- **Push your code to GitHub** regularly to avoid any data loss.
- The exam is **open book**. The Use of AI or Plagiarism will result in a score of zero for all parties involved.
- Demo your work before leaving the exam.
- Add screenshots of the output to the testing sheet.
- Push your **code and testing sheet** to your GitHub repo under the **Final Exam** folder.

### Preparation

- Open the **hotel-hub base code** project and run **npm install** to get all dependencies.
- Make sure you have the **Prisma** extension in your VS Code for Prisma code highlighting.

### 1. Create the Data Model [10 pts]

Define two Prisma models **Hotel** and **Room** having one-to-many relationship as shown in the following ER diagram.

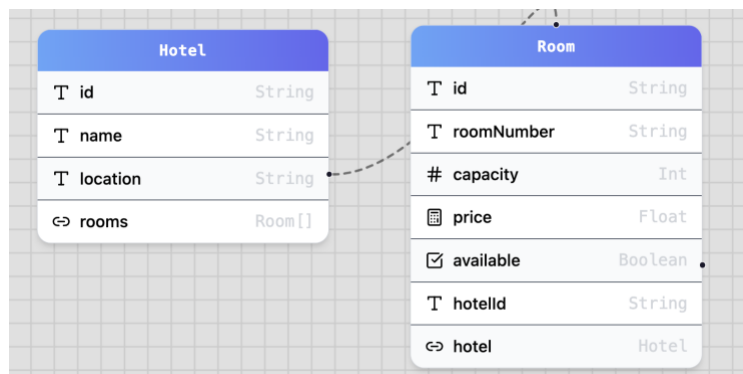


Figure 1 : HotelHub ER Diagram

Seed the database using the provided files: **data/hotels.json** and **data/rooms.json**.

### 2. Implement the RoomRepo [15]

Implement a **RoomRepo** class to handle the database logic.

- `getHotels(location?)` // Return all hotels, with optional location filtering
- `getHotel(id)` // Retrieve a specific hotel by ID with its rooms
- `addHotel(newHotel)` // Add a new hotel
- `deleteHotel(id)` // Remove a hotel by ID
- `updateRoomStatus(roomId, status)` //updates the rooms status

### 3. Implement HotelHub User Interface (75 pts)

Implement the following UI pages and components using React and Next.js. All backend actions should be wired using Server Actions only.

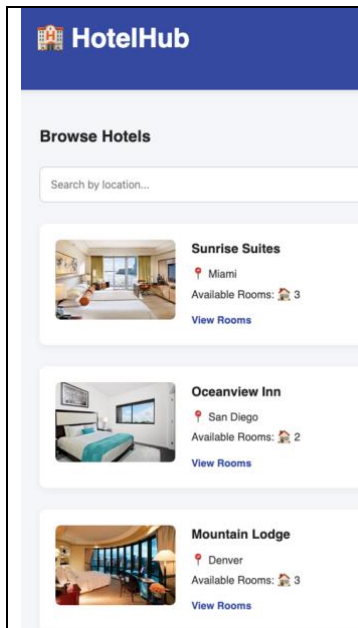


Figure 2 : Hotels Page

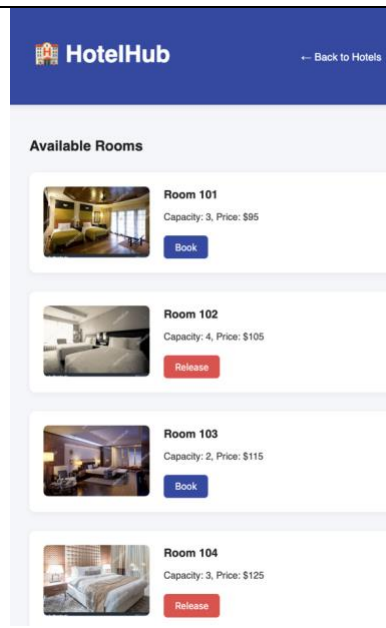


Figure 3 : Rooms Page

#### [30 pts] Hotel List Page (as shown in Figure 2)

- Display all hotels and the total number of available rooms.
- Provide the ability to search hotels by location.
- Each hotel should have a clickable link to view the rooms.

#### [25 pts] Hotel Details Page (as shown in Figure 3)

- When a hotel is clicked, display the list of its rooms.
- Show the room number, capacity, price, and availability.
- If the room is available, show a **"Book"** button.
- If the room is booked (i.e., availability is false), show a **"Release"** button instead.

#### [20 pts] Booking Toggle Button

- Clicking **"Book"** should update the room's availability to false (not available).
- Clicking **"Release"** should update it back to true (available).
- The button text should change accordingly after the update.
- You must use Server Actions to update room status.