UNIVERSITÀ DEGLI STUDI
DI MESSINA

Bachelor of Computer Science- Data Analysis

Project for Web Programming Course

Hotel Room booking website

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Overview of the Project

The **Hotel Booking Website** is a web application designed to streamline the hotel reservation process for both users and administrators. It allows users to browse, book rooms , and managing reservation while providing administrators with tools to manage reservations, rooms, and hotels effectively.

The website is developed using **HTML**, **CSS**, **JavaScript**, **PHP** for the backend, and **MySQL** as the database management system. It features filtering and searching capabilities, separate interfaces for users and administrators.

Objectives and Goals:

The primary objective of the **Hotel Booking Website** is to create an intuitive and functional platform for hotel reservations. It aims to simplify the process for users while enabling administrators to efficiently manage hotel operations. Key goals include:

- **User-Friendly Interface**: Provide a visually appealing and intuitive design to ensure a seamless navigation experience for users.
- **Backend Functionality**: Implement robust backend logic to handle userauthentication, room bookings, and hotel management.
- **Dynamic Features** : provide the list of hotels , list of rooms with details for each room and hotel.

Motivation:

The idea for this project came from observing how my landlord, an elderly man, manages his hotels and rental properties. His approach is entirely based on phone calls, which felt a bit outdated in today's digital age.

I thought it would be interesting to explore how a simple online system could streamline tasks like viewing room availability, managing bookings, and displaying property details. While this project is not meant to fully tackle such real-world problems, it gave me the opportunity to experiment with creating a straightforward, functional platform for showcasing and managing hotel rooms in a more modern way.

Scope and Limitations:

Scope

The scope of the room booking website encompasses a wide array of features and functionalities designed to cater to both users and administrators. Each feature has been carefully implemented to enhance the overall user experience and streamline administrative tasks. Below is a detailed explanation of the features:

User Features

1. **User Sign-Up**:
    - New users can easily register and create accounts by providing their information.
    - This ensures personalized experiences for returning users.
2. **User Login Authentication**:
    - Provides a secure mechanism for users to log in using their credentials (username and password).
    - Ensures the safety of sensitive data and prevents unauthorized access.
3. **Home Page with Featured Hotels**:
    - Displays hotels on the homepage for quick navigation.
    - Aims to attract user attention with visually appealing hotel images and descriptions.
4. **Viewing Hotels**:
    - Allows users to browse through a list of all available hotels.
    - Includes a search functionality to filter hotels by name, enabling users to quickly locate their desired hotels.
5. **Viewing Detailed Room and Hotel Information**:
    - Users can view comprehensive details about each hotel and its associated rooms.
    - Includes features like hotel address, room types, images, pricing.
    - Ensures that users have all necessary information before making a booking decision.
6. **Booking Rooms and Managing Reservations**:
    - Offers a seamless process for users to book rooms directly from the website.
    - Users can also view, edit, or cancel their reservations, providing full control over their bookings.

Admin Feature

1. **Adding, Editing, and Deleting Hotels and Rooms**:
    - Administrators have the ability to add new hotels and rooms, ensuring the website stays updated with current offerings.
    - Includes adding rooms functionalities such as pricing, room type and hotel descriptions.
    - Admins can also remove outdated or unavailable hotels and rooms.
2. **Viewing Reservation Details (Admin)**:
    - Admins can access and manage all user reservations.
    - Helps administrators monitor and track bookings efficiently.

Limitations:

Despite the project's objectives, certain limitations were identified:

1. **Time Constraints**: Limited time prevented the implementation of additional features like payment for the reservation.
2. **Feature Limitations**: Features like multi-language support , user rating, real-time availability updates are yet to be implemented.
3. **Design Consistency**: Some pages require further improvements in styling for a cohesive user experience.
4. **Technical Challenges**: Issues such as optimizing the image display with more options and improving server response times remain areas for improvement.

Technologies, Frameworks, and Libraries Used:

- **Frontend:** HTML, CSS, JavaScript, Bootstrap
- **Backend:** PHP, MySQL
- **Frameworks/Libraries:** AJAX
- **Development Tools:** Visual Studio Code, XAMPP

Overview of the frameworks

1. **HTML (Hypertext Markup Language):**
    - What it does: HTML is like the blueprint of a webpage. It defines the different parts of a webpage, like headings, paragraphs, images, and links.
2. **CSS (Cascading Style Sheets):**
    - What it does: CSS makes a webpage look pretty. It's like the paint, wallpaper, and furniture that decorate the HTML structure.

3. **JavaScript:**
    - What it does: JavaScript makes a webpage interactive. It's like adding lights, buttons, and gadgets to a room.

4. **PHP:**
    - What it does: PHP is like the behind-the-scenes worker. It handles all the heavy lifting on the server, like getting data from databases and generating web pages.

5. **XAMPP:**

is a cross-platform software stack that provides a local development environment. It includes Apache (web server), MySQL (database), PHP, and Perl. XAMPP allows developers to build, test, and run websites or applications locally. It’s commonly used for PHP-based projects before live **deployment**

6. **AJAX (Asynchronous JavaScript and XML):**

What it does: AJAX allows web pages to update content dynamically without reloading the entire page. It's like having a conversation with the server in the background while you're still using the webpage.

System Design

Architecture Overview:

The hotel booking website follows a client-server architecture, where the client-side interface interacts with the server-side backend to provide users with an intuitive and functional experience for hotel and room management. The system architecture comprises several key components,and it is developed using XAMPP as the local development environment for managing the Apache server, PHP backend, and MySQL database.The system architecture comprises several key components:

1. **Client Side**:
    - The client-side interface is built using **HTML**, **CSS**, and **JavaScript**, providing users with a responsive and visually engaging interface.
    - Users interact with the client-side interface through web browsers on both desktop and mobile devices to view hotels, rooms, and manage reservations.
2. **Server Side**:
    - The server-side backend is implemented using **PHP**, which handles user and admin requests, processes business logic, and communicates with the database.
    - PHP scripts are executed on the server to dynamically generate web pages and manage business functionalities like booking, filtering, and user authentication.
3. **Database**:
    - The system data is stored and managed using a relational database powered by **MySQL**.
    - MySQL is used to store and organize data about hotels, rooms, reservations, users, and admin activities, ensuring data integrity and scalability.

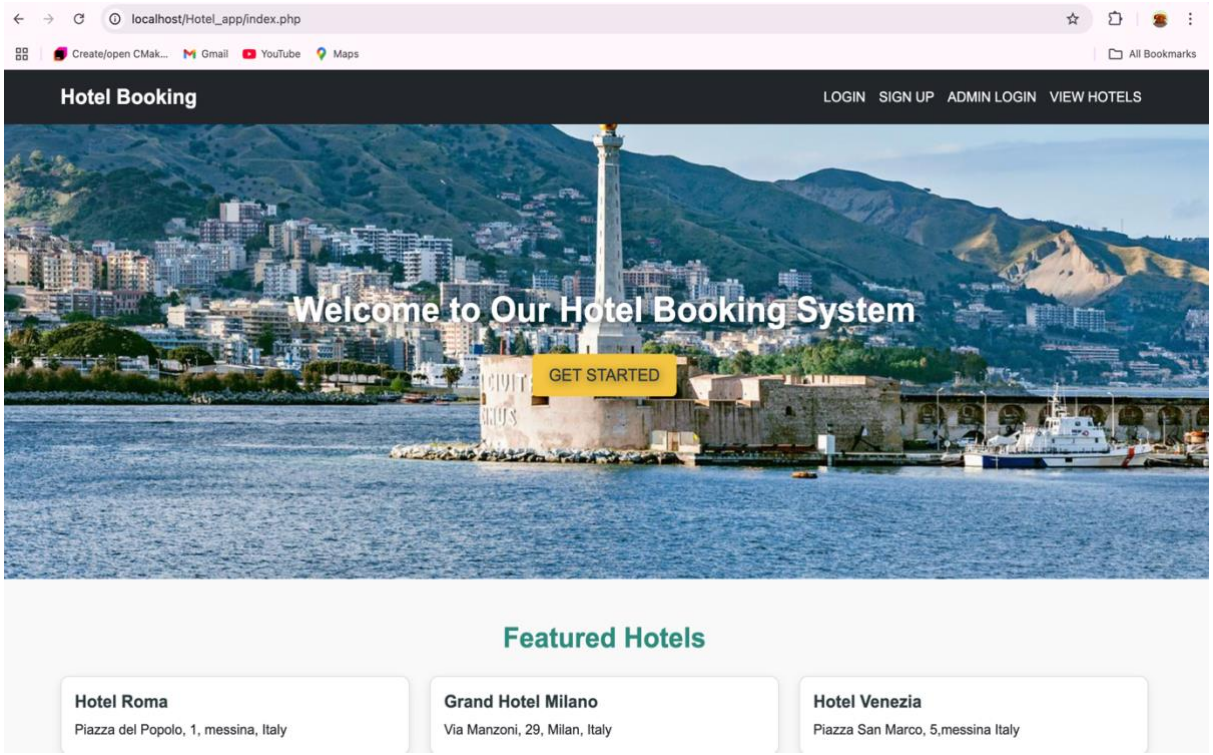
4. XAMPP Integration:

XAMPP serves as the development platform, offering an integrated environment to manage the **Apache** server, **PHP** scripts, and **MySQL** database.

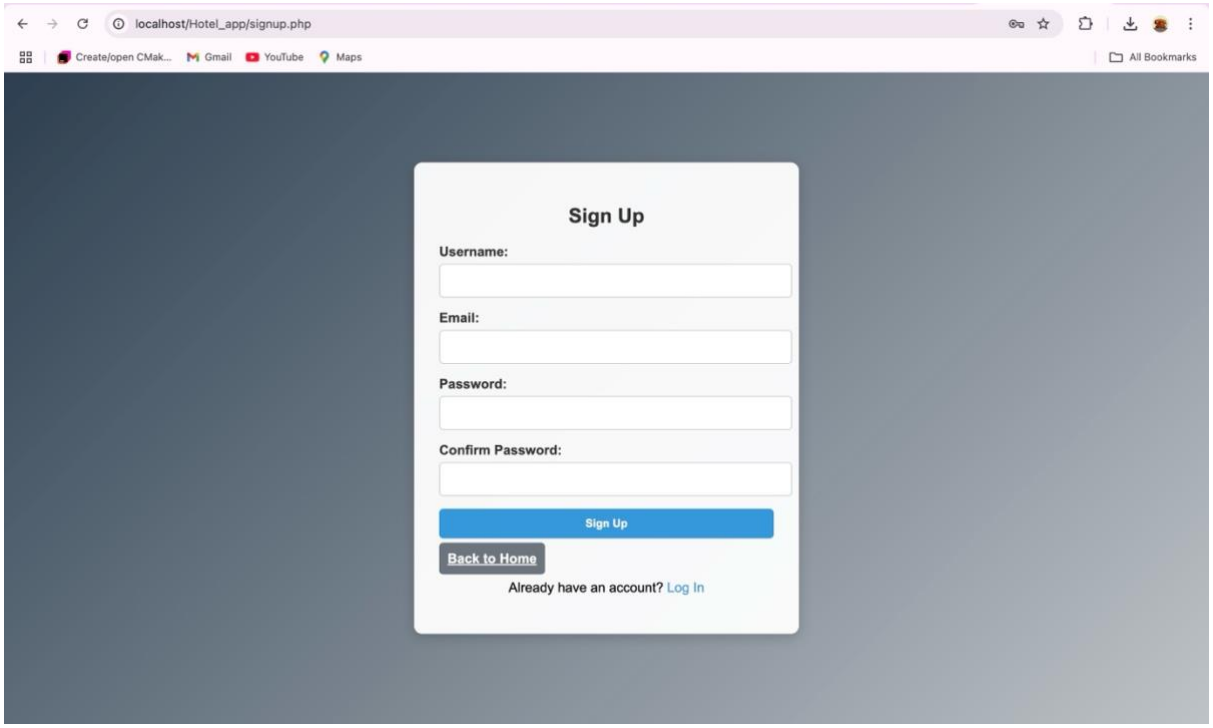
XAMPP simplifies local development and testing by providing all necessary components for the website in a single package.

Some screenshots of my website:

Home page:

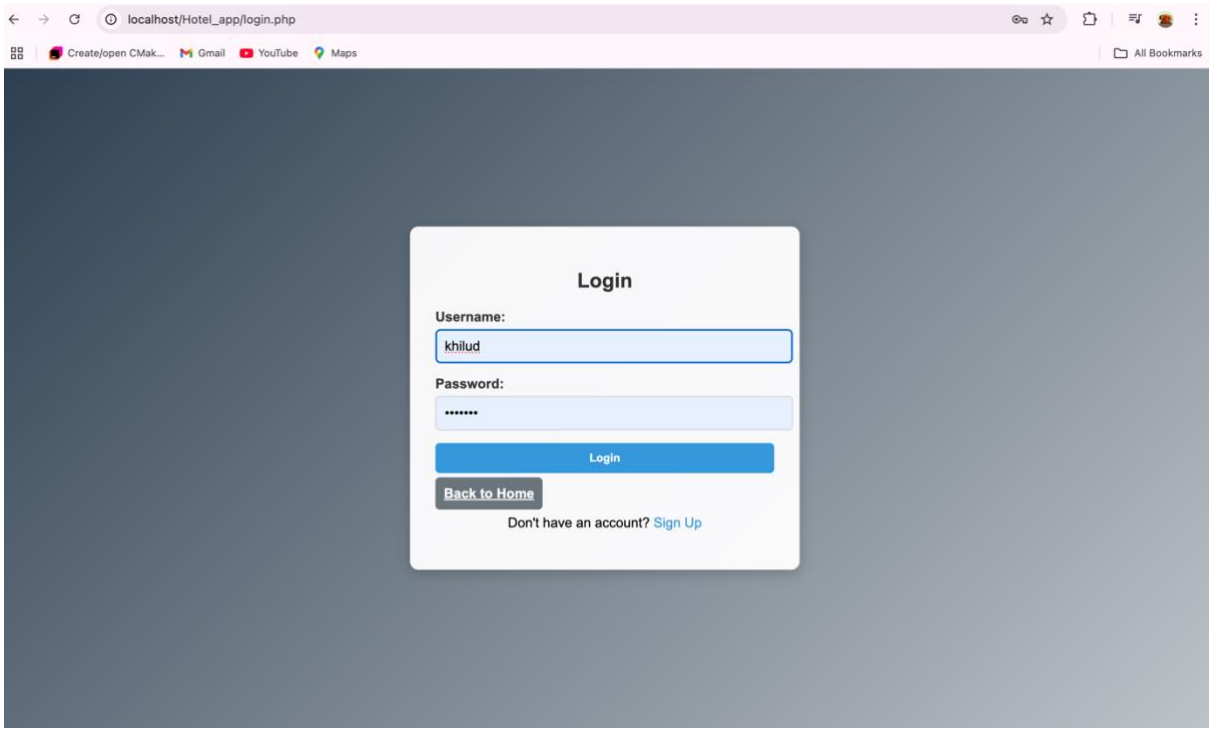


User Sign up:



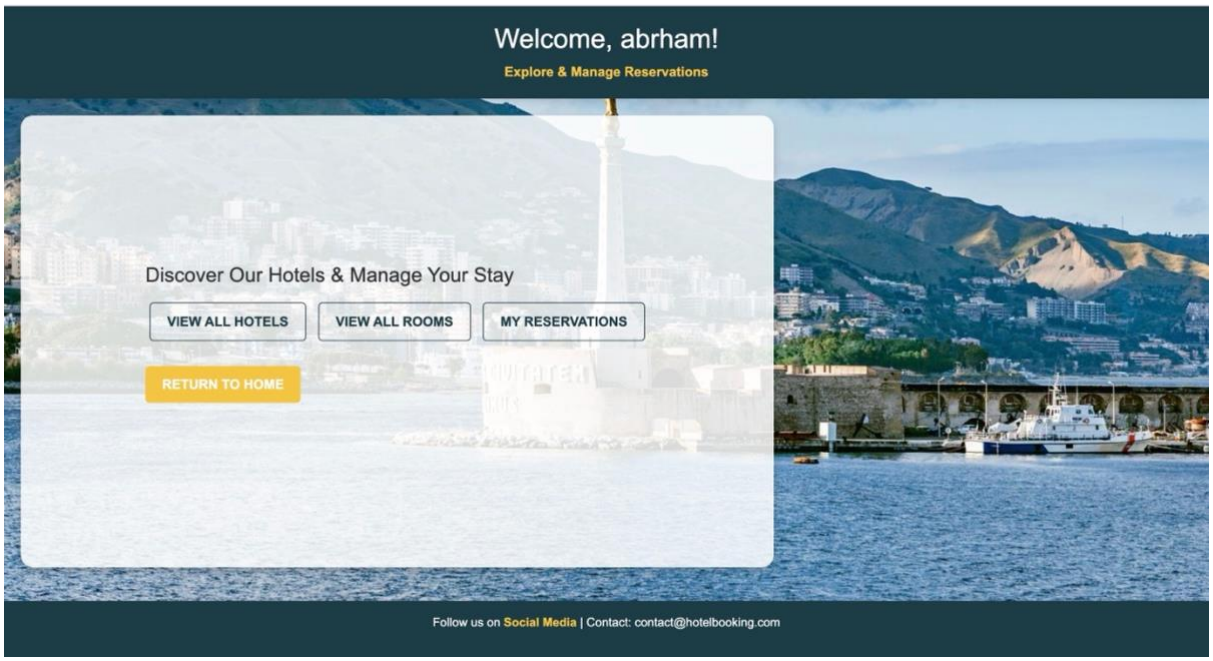
User login :

Login page with sign up option.



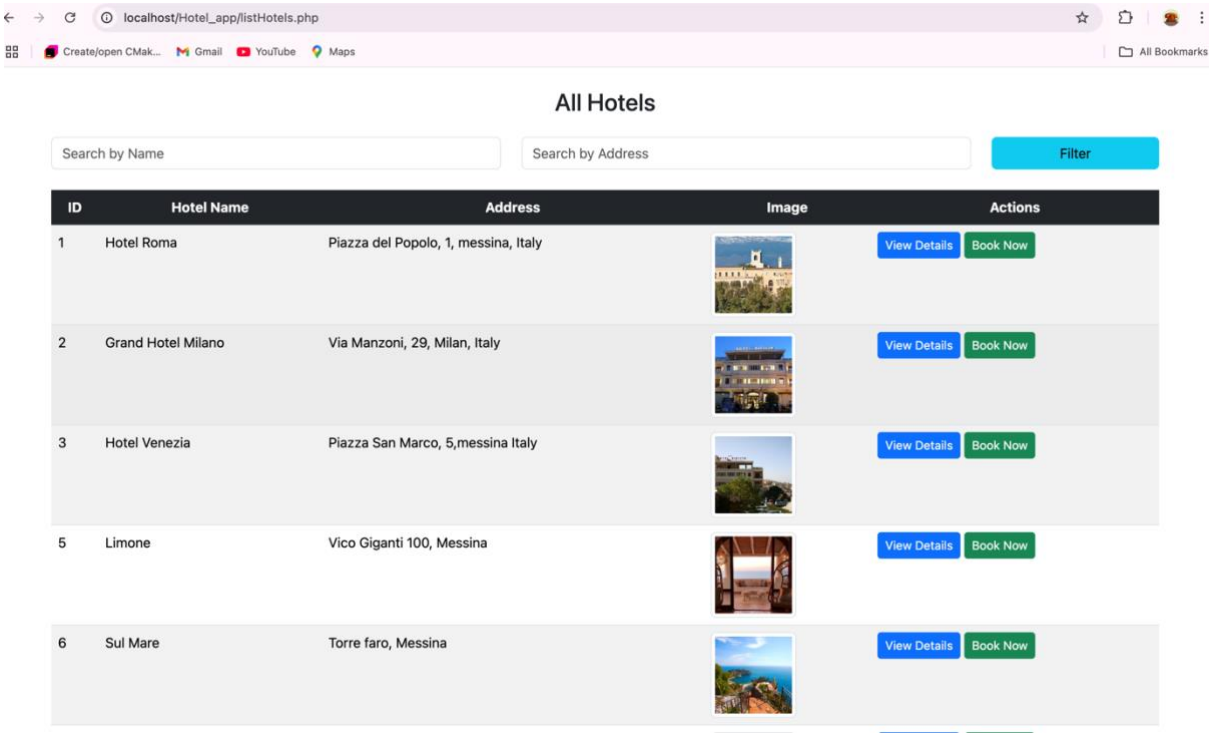
User home page :

Contains the options to view the available hotels, rooms and reservations



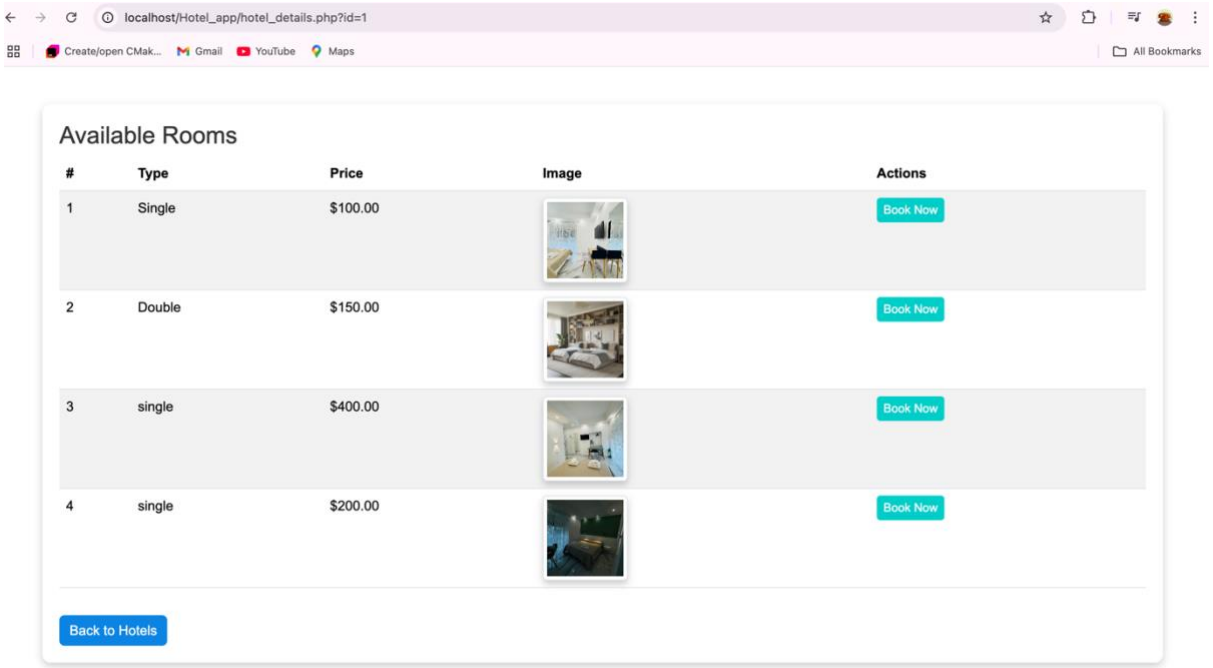
Hotels page :-

Contains the list of hotels with name, address and to see hotel details , which will direct us to booking/ resrvation page

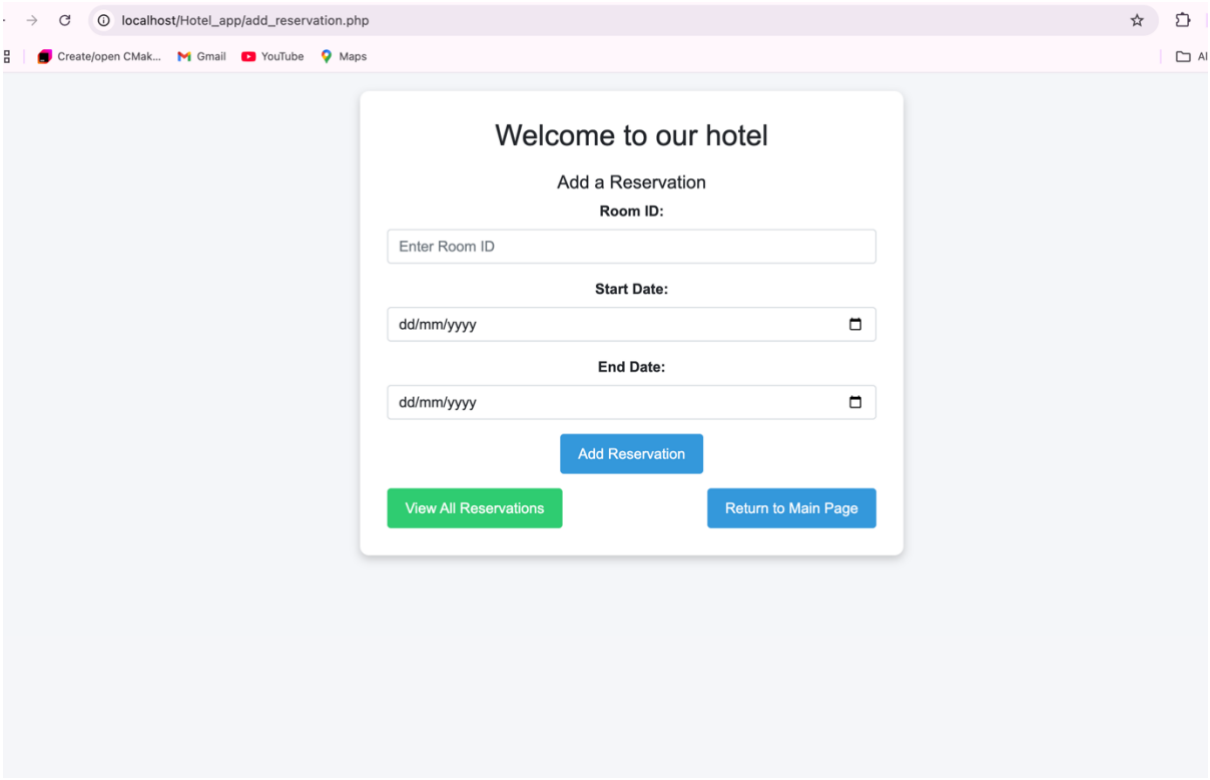


Rooms page:

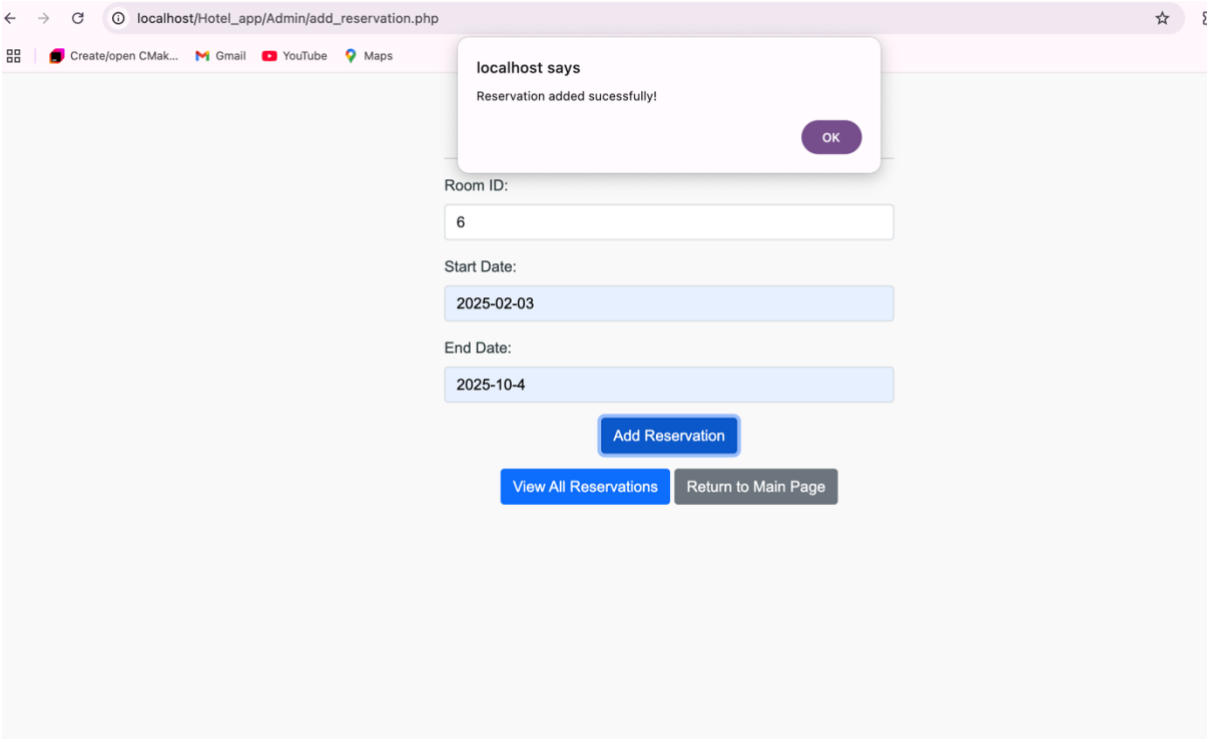
Displays Available rooms on each hotel section



Reservation page

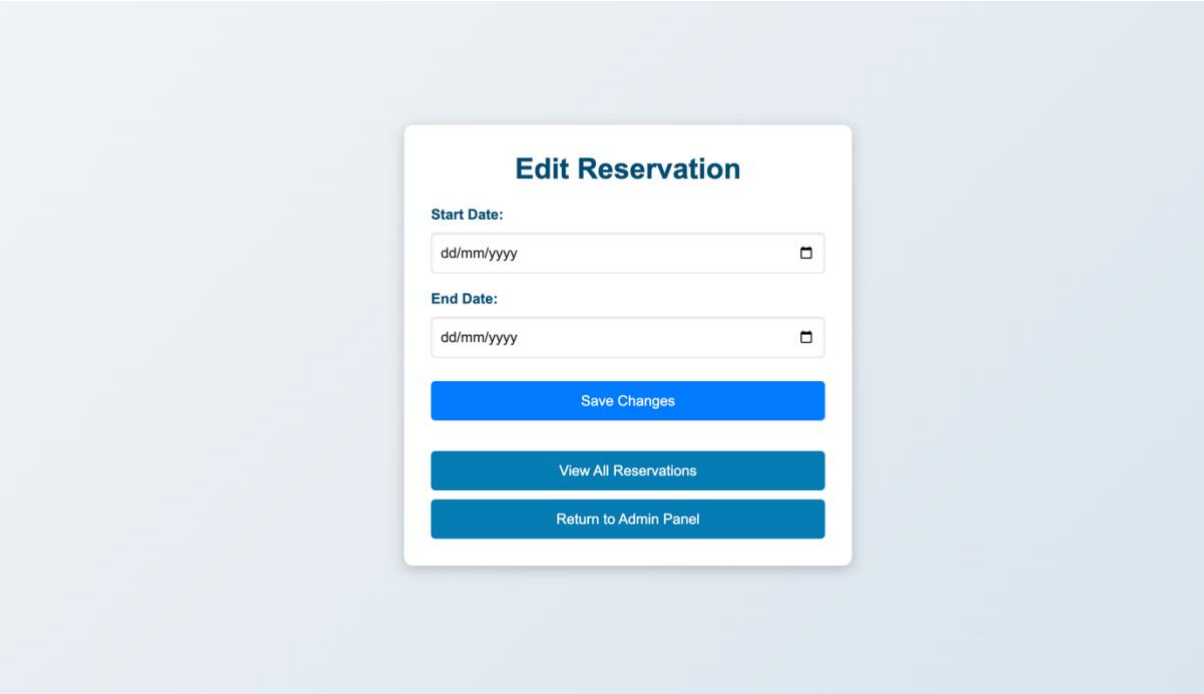


Reservation made



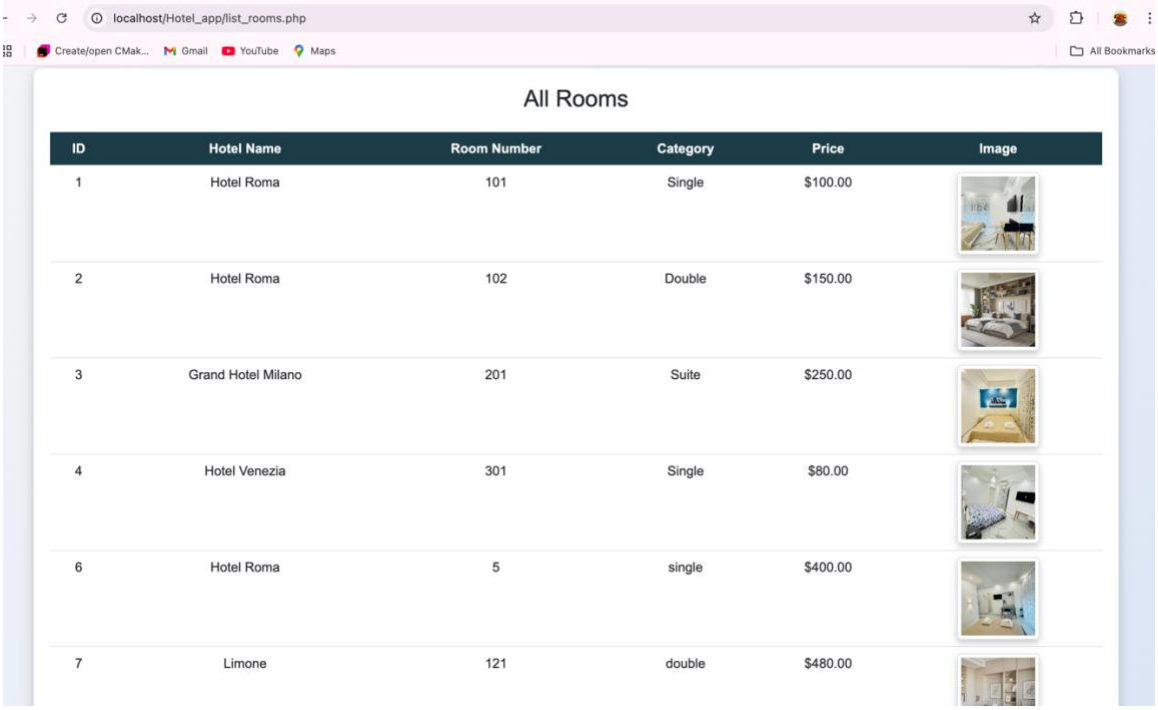
Edit Reservation:

A page to edit our reservation made.



List All rooms page:

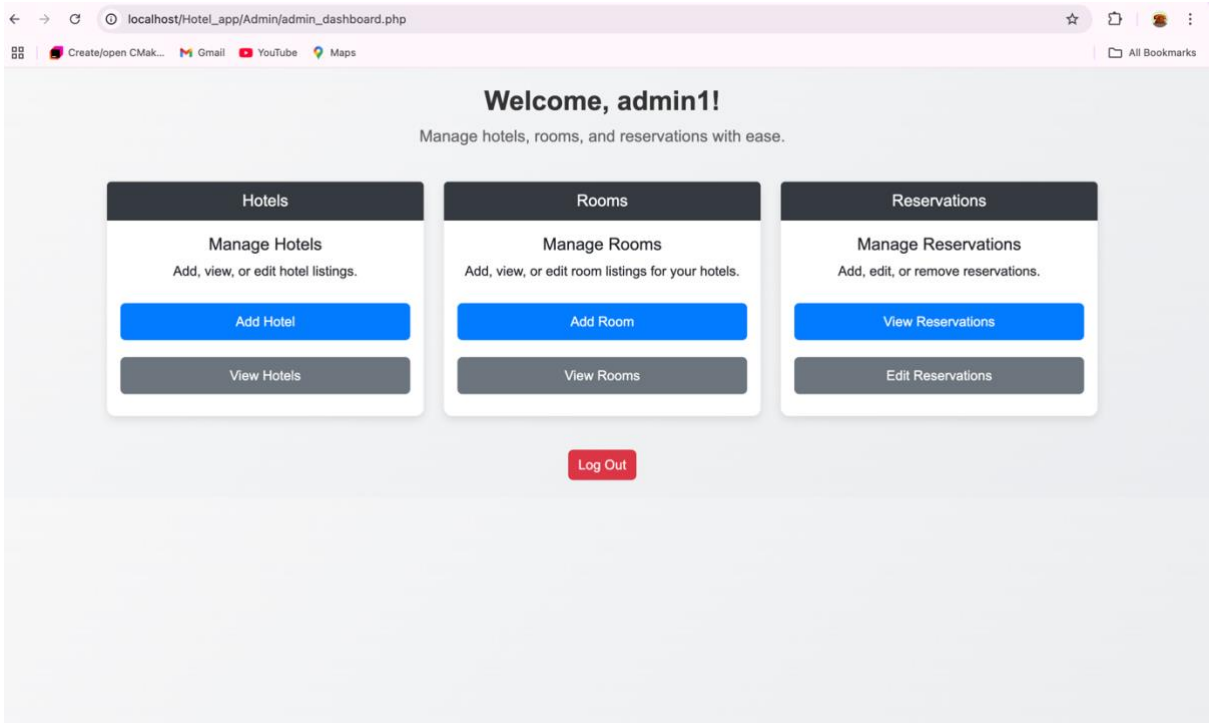
All the available rooms are listed with there hotel name , type of room , price and image.



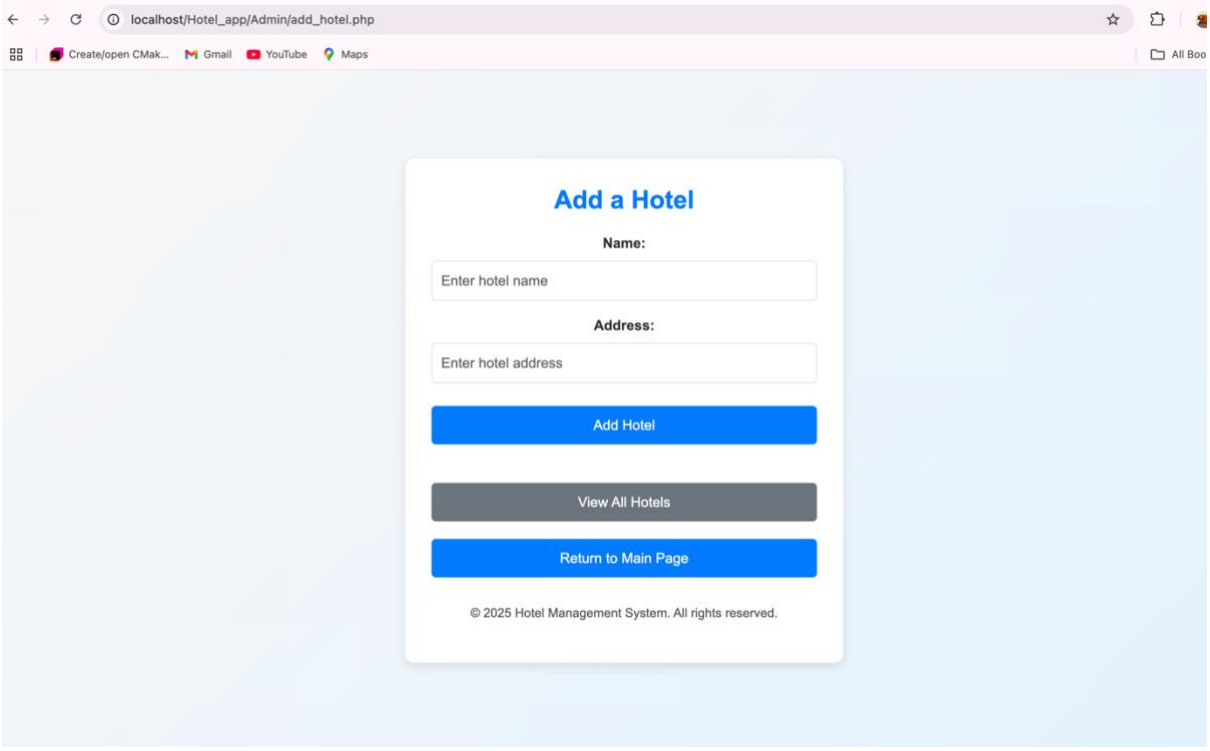
List of all reservation made:

Admin Page:

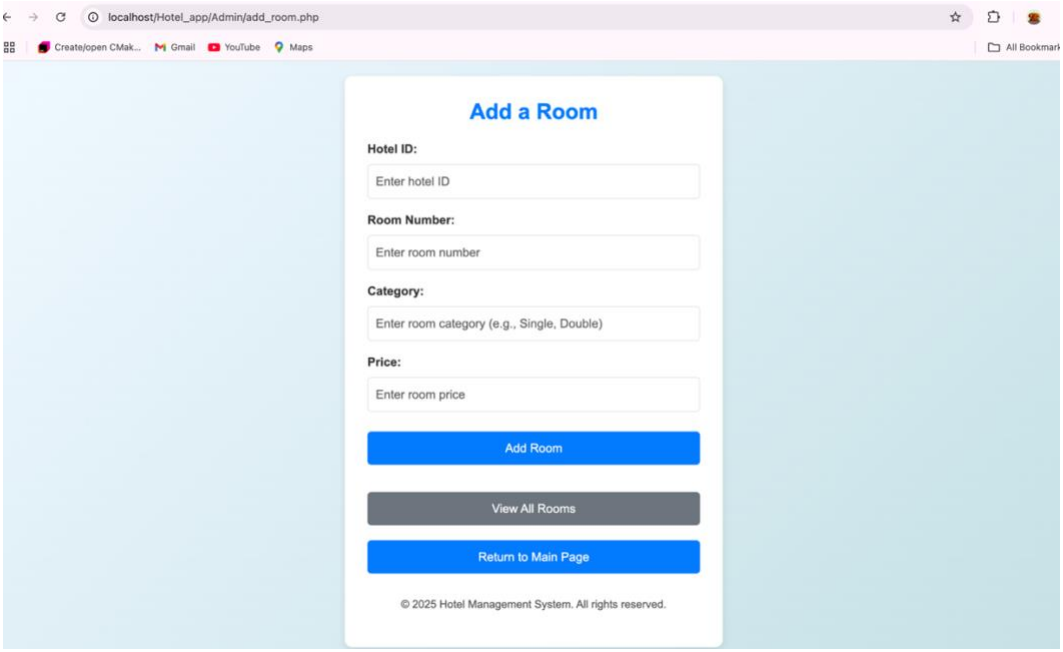
The admin page contains its separate adding , deleting and managing rooms .



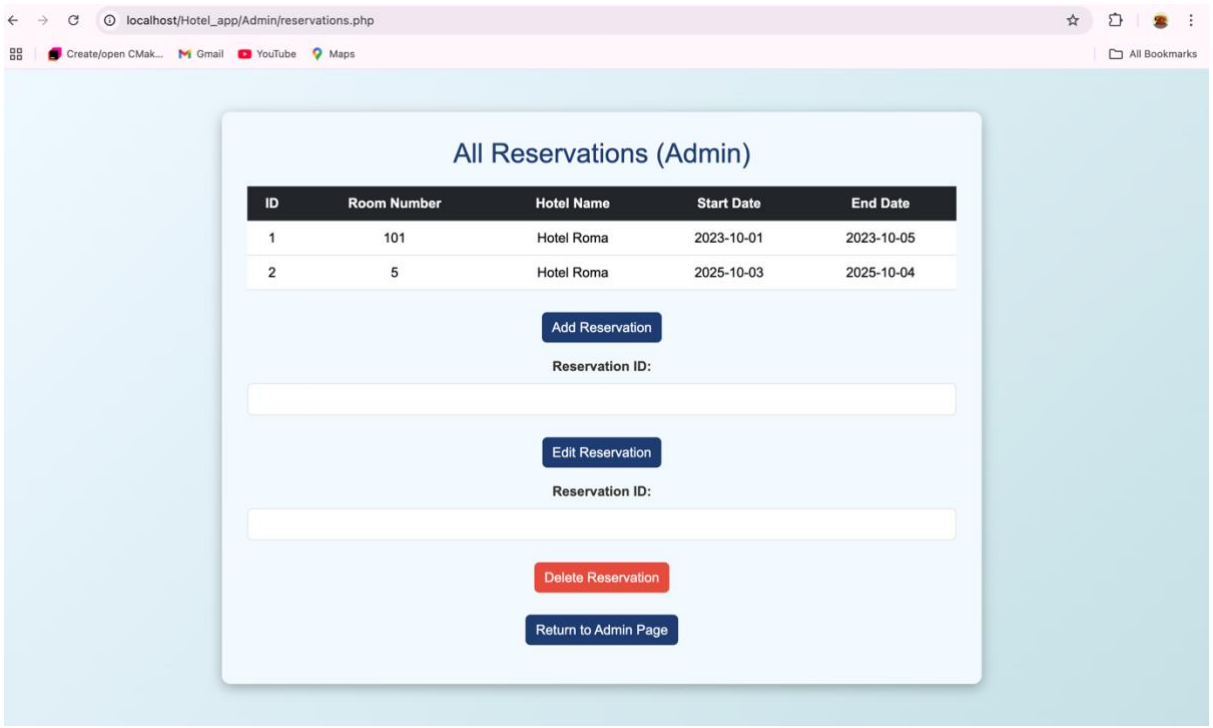
Add hotel page



Add rooms



Reservation page:- a page for admin to add reservation, edit and delete reservation



Database Schema Overview:

1. **Admin Table**:
    - Manages information about administrators of the website.
    - **Fields**: id, username, password, email.
2. **Users Table**:
    - Stores user information for account management.
    - **Fields**: id, username, password, email.
3. **Hotels Table**:
    - Contains details about hotels available for reservation.
    - **Fields**: id, name, address, image.
4. **Rooms Table**:
    - Stores details about rooms in each hotel.
    - **Fields**: id, hotel_id, room_number, category, price.
5. **Reservations Table**:
    - Keeps track of reservations made by users or admins.
    - **Fields**: id, room_id, user_id, admin_id, start_date, end_date.

Conclusion

The hotel booking website project was a valuable learning experience, allowing me to explore and implement the key aspects of web development, including frontend, backend, and database management.
Using technologies like HTML, CSS, JavaScript, PHP, and MySQL, I was able to create a functional platform that offers features for users to browse hotels, view detailed room information, make reservations, and for admins to efficiently manage properties and bookings.

While the project successfully incorporates essential functionalities such as filtering, user authentication,reservation there are areas for further improvement, such as optimizing the design for a more seamless user experience and implementing additional features like personalized recommendations. This project not only helped me enhance my technical skills but also provided insight into the importance of user-focused design and functionality in web applications. Overall, it serves as a stepping stone for more complex and feature-rich systems in the future.