

A tropical sunset scene with palm trees and a pool. The sky is a mix of purple, pink, and orange, with soft clouds. Several tall palm trees are silhouetted against the sky. In the foreground, a calm body of water, likely a swimming pool, reflects the colors of the sunset and the silhouettes of the trees. In the middle ground, there are several lounge chairs and large umbrellas, some of which are occupied by people. The overall atmosphere is serene and relaxing.

COMP3421 FINAL PROJECT – HOSTELS RESERVATION WEBSITE OUTLINE

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Group Members

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Background

As online booking platforms are growing rapidly and becoming the trend, tourists are more willing to make reservations through these platforms instead of booking by phone call, where online platforms bring along with convenient, transparent, and trustworthy. New York City is one of the heat tourism spots among USA province, with millions of domestic and international visitors every year. Despite there are variety of hostel booking platform, only a few even none of them focuses on the quality of the hotels. In this project, the website is designed to provide a comprehensive booking system and serve travelers seeking premium hotel accommodations in New York City.

Purposes

High-class Hotel Reservation Service

The platform exclusively focuses on 4-star and above hotels in New York City to ensure a qualified selection that satisfies the needs of high-spending customers. Partner hotels will be verified in order to ensure authenticity, high-quality imagery, and consistent service standards.

Seamless Transactions Experience

The platform will provide secure, fast, and user-friendly booking processes, minimizing steps from search to confirmation. Reliable and general payment methods and gateways will be integrated into the platform. Automated confirmation emails and receipts features will ensure smooth post-booking communication.

Potential Stakeholders

Travelers/ Customers	High-spending individuals seeking reliable and premium booking services.
Hotel Partners (4-star and above in NYC)	Businesses listing their properties on the platform.

Table 1 Stakeholders Description

Client-Side Components

1. Website Architecture

Frontend Layer

This handles what users can find and see on the website and interaction with the site, such as searching hotels, making bookings, and managing accounts. It visualises the backend data in order to display the corresponding account information and hotel details.

Backend Layer

The backend plays an important role as a bridge between the frontend and the database, which is responsible for processing requests, performing logic, and sending structured data back to the frontend.

Database Layer

This layer's goal is to store and retrieve hotel listings, user info, and book records while ensuring high data integrity and quick access during user operations.

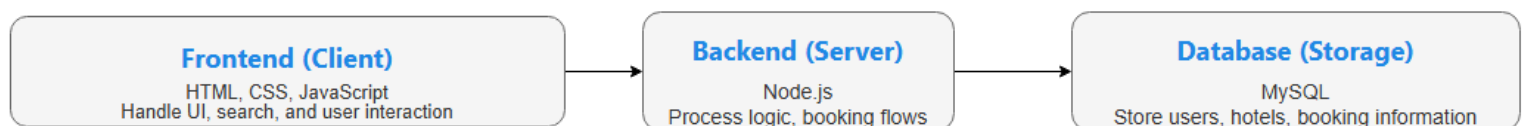


Figure 1 Website Architecture

2. Website Pages

The front end will consist of various pages with different features. The table below describes each page's functionality and what features will be included with it.

Page	Description	Main Features
Home	Landing page showcasing the premium hotels	<ul style="list-style-type: none">– Search function– Featured premium listings
Hotel lists	Displays hotels filtered by users	<ul style="list-style-type: none">– Sorting and filter panel– Scrollable list of hotels
Hotel details	Detailed profile of the selected hotel	<ul style="list-style-type: none">– Room type and price details– Ratings and customer reviews– Interactive map view
Booking/ Checkout	For completing reservations and handling payments	<ul style="list-style-type: none">– Validation input details
User Dashboard	Users can view their booking history and manage profiles	<ul style="list-style-type: none">– User details update– Booking records and status tracking
Login / Create Account	For user authentication and account creation	<ul style="list-style-type: none">– Detect user status, such as new users, existing users– Retrieve information from the database
Forgot Password	Users can reset their account password	<ul style="list-style-type: none">– Update the password from the database
Contact / Support	Allows customers to reach out for support or feedback.	<ul style="list-style-type: none">– Inquiry and feedback form– FAQs

Table 2 Website Pages Description

The figure below shows the hierarchy of the website as well as the relationship between the pages, which includes 5 main key pages and 7 subpages.

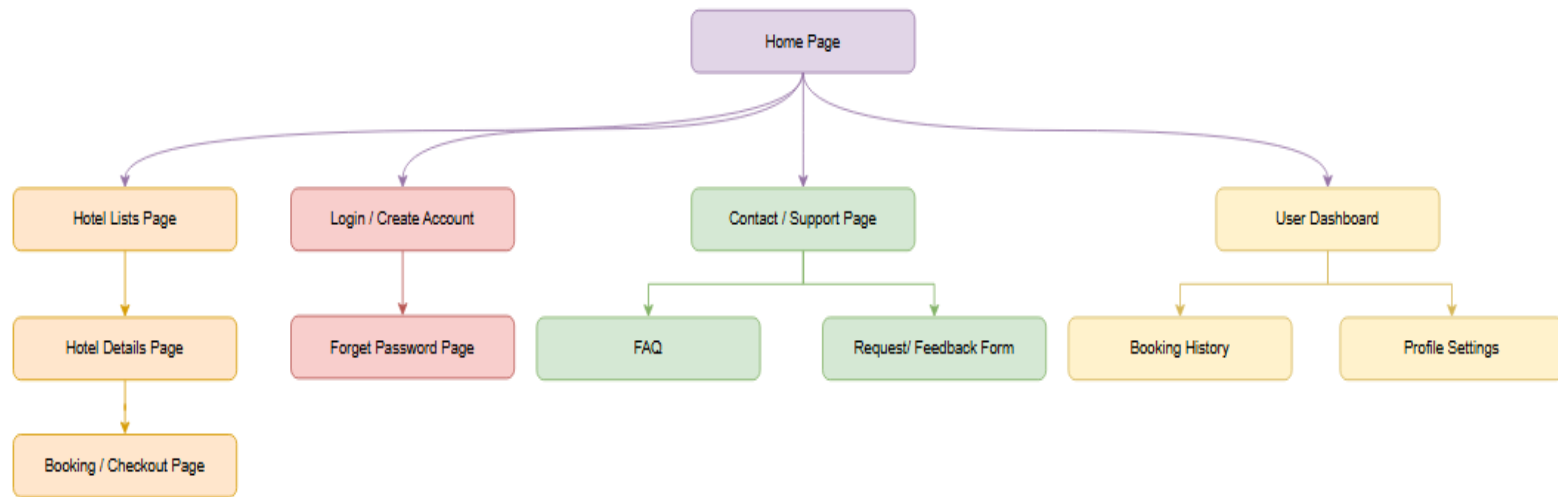


Figure 2 Website Pages Relation Tree

Server-Side Components

1. Database

The backend will use a relational database system MySQL because of its reliability and structured query capabilities. The database will include 4 tables related to Users, Hotels, Bookings, and Reviews. The ER diagram below describes the relationship between the tables and displays the entities in each table. The Users table is used to store users' account information, while the Hotels table stores information about hotels. Furthermore, the Bookings table represents the core transaction of the system, where each booking is made by a user for one hotel. The Reviews table stores the feedback from the users about the hotels.

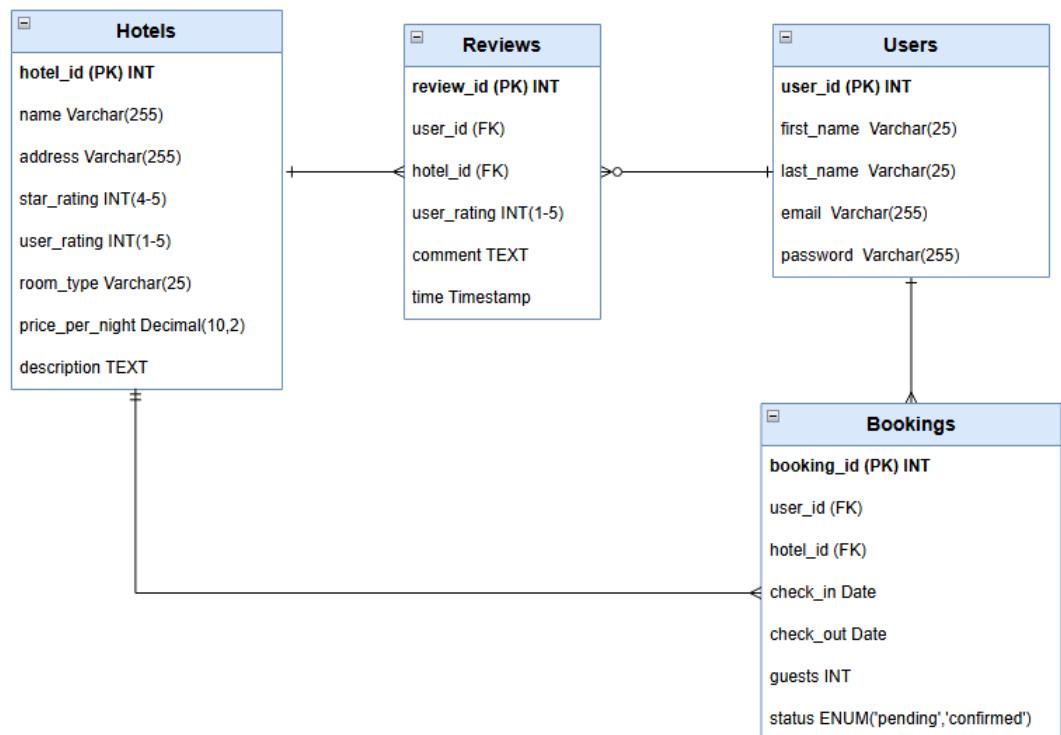


Figure 3 Database ER Diagram

2. Scripts

The scripts will be written with Node.js and expected to handle the logic between the front end and the database, which includes processing user requests such as login, searching queries, and booking, and maintaining a connection to the database.

<i>Layers</i>	<i>Purpose</i>	<i>Files</i>	<i>File Description</i>
<i>Controller</i>	Validate input	userController.js	Handles
	Apply business rules		registration, login, and reset password
	Call the model for database access	hotelController.js	Retrieves hotel details, filters
		bookingController.js	Creates hotel bookings.
<i>Model</i>	Executes SQL queries	userModel.js	SQL queries for creating and fetching users.
		hotelModel.js	SQL queries for listing and getting details of hotels.
<i>Configuration</i>	Set up connections to the database, including database credentials and ports.	db.js	Database connection setup using MySQL

Table 3 Backend Scripts Description