

LaMora Resort's Website

Reservation booking and management system

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ABSTRACT

This project aims to address key challenges faced by guests and staff alike, leveraging technology to streamline reservation processes and enhance operational efficiency. By digitizing and automating key tasks, the website facilitates seamless interactions for guests, empowering them to easily browse, book, and manage reservations. Additionally, robust management tools provided to resort staff enable efficient administration of rooms, staff, and financial transactions. Through a user-friendly interface and advanced functionalities, the LaMora Resorts website sets new benchmarks in hospitality, promising unparalleled convenience, reliability, and satisfaction for all stakeholders involved.

CCS CONCEPTS: Web Application • User Interface • Database Management Systems • Web Development • Authentication and Authorization • Network Protocol

Additional Keywords and Phrases: Reservation system, Financial analytics, Staff administration, Responsive Design, Form Validation

1 INTRODUCTION

In an era characterized by rapid technological advancements and evolving consumer expectations, the hospitality industry faces a pressing need to adapt and innovate. Traditional reservation and management systems often struggle to keep pace with the dynamic demands of modern travelers, leading to inefficiencies, frustrations, and missed opportunities. Recognizing these challenges as opportunities for transformation, the LaMora Resorts project sets out to harness the power of digital technology to revolutionize the hospitality experience.

The project seeks to empower administrative staff with specialized tools and insights to efficiently manage resort operations, optimize resource allocation, and drive strategic decision-making. Through comprehensive dashboards, reservation management systems, and financial analytics capabilities, the LaMora Resorts project equips administrators with the tools they need to streamline workflows, enhance productivity, and deliver exceptional service to guests.

1.1 System Design

The system design of the project entails a meticulously crafted architecture aimed at delivering seamless interactions for guests and administrative staff. Leveraging HTML, CSS, JavaScript, PHP, and Bootstrap, the project integrates front-end and back-end technologies to ensure a cohesive user experience. Front-end design focuses on creating intuitive interfaces, with HTML providing structural organization, CSS styling elements, and JavaScript adding interactivity. Bootstrap ensures responsiveness across devices. On the back end, PHP facilitates dynamic content generation and database interactions, with MySQL managing data storage. User authentication and registration mechanisms secure guest accounts, while reservation management functionalities enable easy booking and administration. Admins access a comprehensive dashboard displaying key metrics, allowing efficient management of reservations, financial analytics, and staff administration. The system's design aims to optimize resort operations, delivering exceptional service and satisfaction to guests and staff alike.

1.2 Methodology

The methodology employed for the project began with thorough research into existing websites, aimed at comprehensively understanding user requirements and interface preferences. Concurrently, database development commenced alongside the implementation of website functionalities, ensuring a parallel progression of backend and frontend components. Following the development phase, rigorous testing procedures were undertaken, encompassing unit testing, functional testing, and user acceptance testing. Through these iterative testing cycles, the system underwent meticulous scrutiny, identifying and addressing any discrepancies or deficiencies in functionality or user experience. Subsequent to testing, comprehensive reviews were conducted, leading to iterative code refinements and enhancements. This systematic approach ensured that the final product met stringent quality standards and aligned closely with user expectations, thereby enhancing overall usability and satisfaction.

1.3 Motivation/Significance/Aims of the Website

Recognizing the limitations of traditional reservation and management systems, the project seeks to harness the power of digital technology to address these challenges. Through the strategic integration of HTML, CSS, JavaScript, PHP, and Bootstrap, alongside intuitive user interfaces and robust management functionalities, the project aims to revolutionize guest satisfaction and operational effectiveness. By streamlining processes and optimizing resource utilization, LaMora Resorts endeavors to create an immersive and seamless experience for guests, empowering them to navigate the reservation process effortlessly and access personalized services.

1.4 Target Audience:

The LaMora Resorts website is designed to serve primarily two key audience categories: guests and administrative staff. Each audience is catered to with specialized functionalities aimed at enhancing their respective experiences and optimizing resort management processes.

For guests, the website serves as a convenient and accessible platform to facilitate their booking journey. Through intuitive interfaces and seamless navigation, guests can effortlessly register, login, and make reservations for themselves or others offering flexibility in selecting preferred dates and accommodations. With clear and user-friendly interfaces, guests can browse available rooms, check availability, and confidently secure their bookings.

On the other hand, administrative staff, including managers and authorized personnel, benefit from a suite of specialized functionalities tailored to their specific needs. The website provides comprehensive dashboards that offer real-time insights into crucial aspects of resort management, such as room occupancy, staff availability, and financial performance. These insights empower administrators to make informed decisions and optimize resource allocation. Moreover, the website offers tools for efficient reservation management, allowing staff to handle bookings, modify reservations, and address guest inquiries with ease. Additionally, features for invoice viewing and staff administration streamline administrative tasks, enabling staff to focus on delivering exceptional service to guests.

2 RESERVATION BOOKING AND MANAGEMENT APPLICATION

In this section, we will delve into the core concept underpinning the reservation booking and management system of the website. This encompasses both the front-end and back-end aspects, as well as user navigation and key functionalities.

2.1 Main Concept

The main concept of the LaMora Resorts website is to provide a comprehensive platform that seamlessly connects guests with the resort's services while offering efficient management tools for administrative staff. This concept revolves around enhancing the booking experience for guests by providing convenient access to accommodations and facilitating the reservation process. Simultaneously, it aims to streamline resort operations for staff through intuitive management functionalities, ultimately elevating the overall hospitality experience and fostering lasting relationships with clientele.

2.2 Project Components

In this section, we'll delve into the technical aspects of both the front-end and back-end design of the system. The front-end pertains to the user-facing elements, encompassing the user interface, design components, and visible functionalities on web pages. Meanwhile, the backend manages server-side operations, data storage, and business logic. It's responsible for processing user requests, database management, and executing computations.

2.2.1 Frontend

The frontend of the website serves as the user-facing interface, providing a seamless experience for visitors. It encompasses various pages, including signup and login pages, where users can create accounts or access their existing ones securely. The homepage showcases details about the packages offered by LaMora Resorts, presenting enticing visuals and information to captivate potential guests. Additionally, users can easily book reservations for themselves or others directly from the homepage, simplifying the booking process. This frontend functionality is achieved using HTML, CSS, JavaScript, and Bootstrap, which collectively enable the creation of visually appealing and responsive web pages. These technologies work in tandem to ensure a user-friendly experience, enhancing accessibility and engagement for visitors to the website.

2.2.2 Backend

The backend of the website serves as the backbone of its operations, handling server-side functionalities and data management. We utilize tools such as Cyberduck or WinSCP for file transfer, PHPMyAdmin for database management, and SQL queries for data manipulation. These tools enable us to efficiently organize and maintain the website's data, ensuring seamless interactions between the frontend and backend. Additionally, scripting with PHP allows us to implement dynamic features and perform server-side processing, enhancing the website's functionality and responsiveness. Together, these backend technologies form a robust infrastructure that powers the website's operations, ensuring reliability and scalability for optimal performance.

2.3 User Navigation

User navigation in the reservation booking and management system is akin to navigating through a building with clear signage directing you where to go. In this system, users are guided through each step of the process with clear instructions and intuitive buttons. Whether they're registering, selecting a reservation, or finalizing their booking, the navigation is designed to be straightforward and user-friendly, ensuring that everyone can easily participate. In the upcoming section, we'll explore user navigation through a specific use case to illustrate its simplicity and effectiveness.

2.4 Key Functionalities

- *User Registration and Login for Guests:* Guests visiting the website have the option to register for an account, providing their name, email address, and creating a password. Registration enables guests to access enhanced features such as personalized booking experiences and special offers. Once registered, guests can log in using their credentials, ensuring a seamless and secure experience each time they visit the website.
- *Account Creation for New Users:* New users are prompted to provide essential details such as their name, email address, and preferred password, ensuring a smooth registration experience.

- *Admin Login for Exclusive Access:* Administrative staff members are granted exclusive access to the admin dashboard, providing them with specialized tools and functionalities for managing resort operations and viewing metrics.
- *Dashboard for Admins to Monitor Key Metrics:* Admins can view real-time data on room occupancy, staff count, and financial performance, allowing for informed decision-making and strategic planning. Interactive charts and graphs provide admins with dynamic insights into revenue generation, guest demographics, and booking trends, facilitating proactive management and optimization of resort resources.
- *Reservation Management Capabilities for Admins:* Admins have robust reservation management capabilities, allowing them to confirm, edit, and delete reservations as needed. They can review reservation details, including guest information, room preferences, and booking dates, to provide personalized service and enhance guest satisfaction.
- *Export Feature for Admins to Export Reservation Data:* Admin can export/ download the reservation data for further analysis and reporting.
- *Payment Section for Admins to Manage Invoices:* The payment section enables admins to view and manage user-generated invoices, ensuring accuracy and transparency in financial transactions. Admins can review invoice details, including payment status, guest information, and booking details, to facilitate timely and efficient payment processing.
- *Staff and Room Management Functionalities for Admins:* Admins can add a staff member and assign a role from the pre-defined roles or delete the staff member. A dashboard is displayed with the list of staff members and their assigned roles. Similar functionality is provided for rooms.

2.4 Key Data Supplied to the Users

1. *Booking and amenities package information:* Can view the packages and included amenities about the room types at the resort, facilitating informed booking decisions.
2. *Booking status:* Upon successfully booking a room, guest receives a success message regarding the reservation, but the booking is not confirmed.
3. *Booking Confirmation:* Admin can view and edit the booking status. Invoice is generated only when the admin confirms a particular reservation.
4. *Booking metrics for admin:* Admins have access to a dashboard displaying metrics, including the total number of rooms, staff count, and profits earned. Interactive charts regarding the bookings are visible which helps in strategic decision-making and planning.

3 SYSTEM NAVIGATION

In this section, we'll explore user and admin navigation through specific scenarios tailored to each persona, illustrating how they interact with the system.

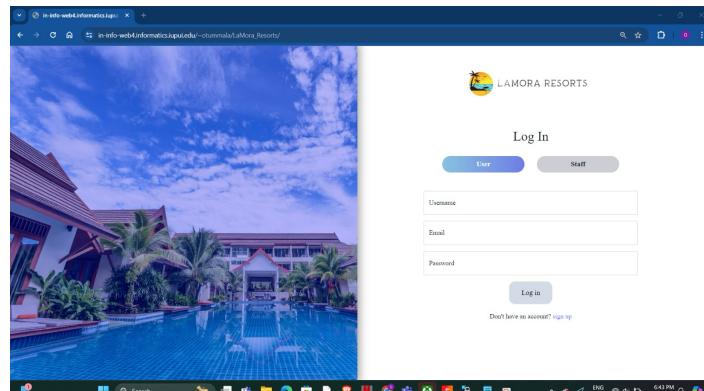


Figure 1: Welcome page of the Reservation Booking and Management system application

The image above illustrates the main landing page presented to the user. The landing page depicted above presents users with a clear choice between logging in as a regular user or as staff/admin. For new visitors to the website, the option to “sign up” as a new user is prominently displayed, offering a seamless entry point into the booking system.

3.1 User Navigation

Let's consider a scenario where Laasya, a new user is trying to book a room at the resort. She is presented with an user friendly interface as showed in Figure 1. Being a new user, she notices she has to create a new account for herself and clicks on the hyperlink named “sign up”. She is directed to the Sign up page as shown in Figure 2.

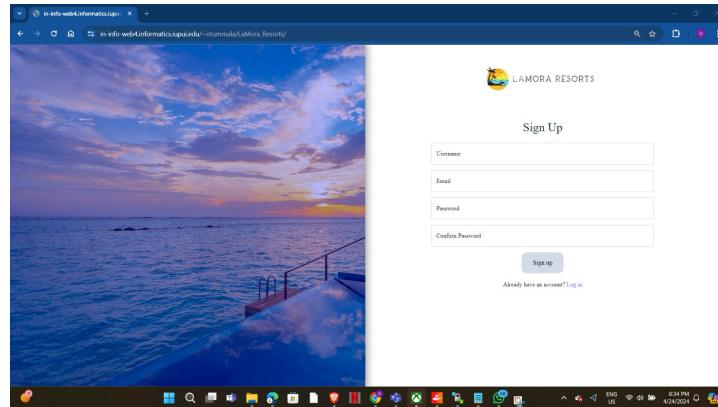


Figure 2: User registration page

In the user registration page, she gives all the details necessary to create an account. In case she enters an invalid email address, she will be presented with an error message to add “@” including a domain id. Similarly, the password attribute has complexity requirements which needs to be fulfilled by the user. In case she enters a basic password which does not meet out requirements, she will be presented with a message to rewrite the password meeting the requirements. Once all the data provided by the her is valid, she will be directed to the log in page as shown in figure1. Now, she enters the valid credentials given by her during the registration and enters in the home page of the website as shown in the below figure.

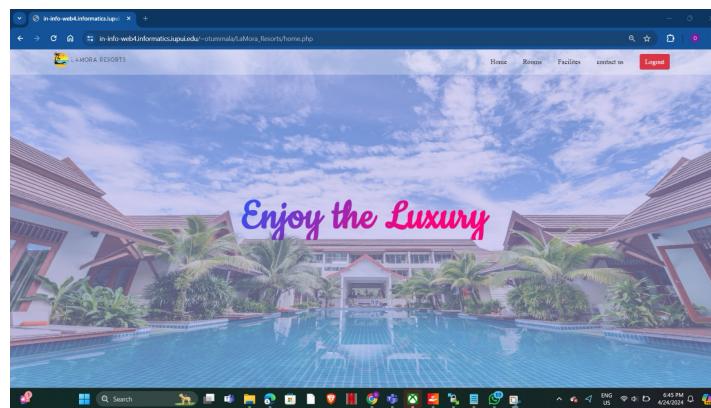


Figure 3: Home page of the LaMora Resorts

The homepage has hyperlinks which will redirect the user to the particular section of the website. Laasya would like to view the room type available at the resort and hence clicks on the hyper link named “Rooms” which will redirect her to the Rooms section of the website.

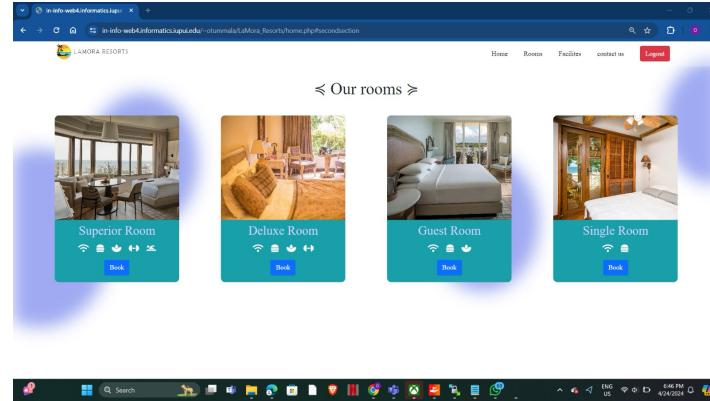


Figure 4: Room Types available with included amenities

All the facilities of are included within the respective package which is indicated by the icons under each room type as shown in figure 4. Now, Laasya wants to book herself a superior room and hence clicks on “Book Now” button which will present her a pop-up form for reservation.

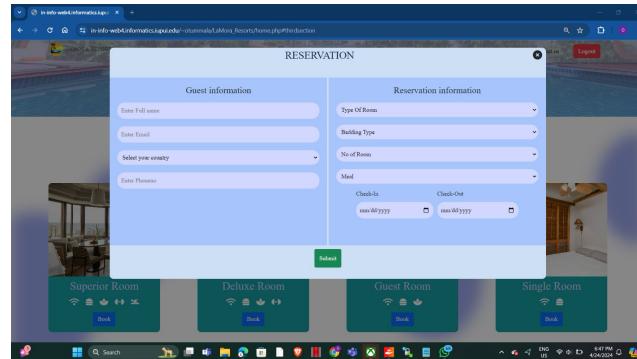


Figure 5: Reservation form

Laasya fills in all the required valid details regarding her reservation and click on submit. After successful booking, she will be presented with a success message saying “Reservation successful”. The reservation is successful but not confirmed. It must be confirmed by the admin themselves at the resort. Laasya now can either book another room or logout, which will lead her to the user login page as shown in figure 1.

3.2 Admin Navigation

To understand the admin end of the website, let's consider a user scenario. The admin can view the booking metrics; create, edit and delete a reservation, generate invoices for confirmed bookings and add new rooms/staff. Rakesh, an admin will initially be presented with the login page similar to the user to enter into the admin portal.

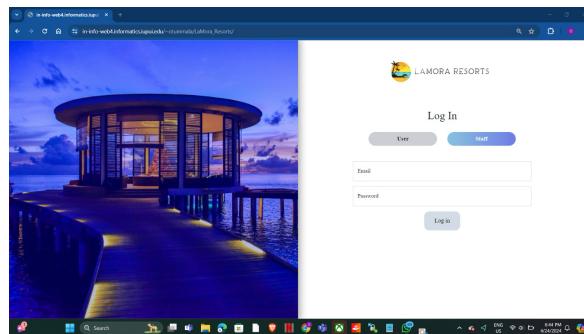


Figure 6: Admin login page

Once the admin enters valid credentials in the login page as shown in figure 6, they will be direct to the admin portal, where he can view the total booked rooms, total staff, profits earned until now and interactive visualizations regarding the booked rooms and profit.

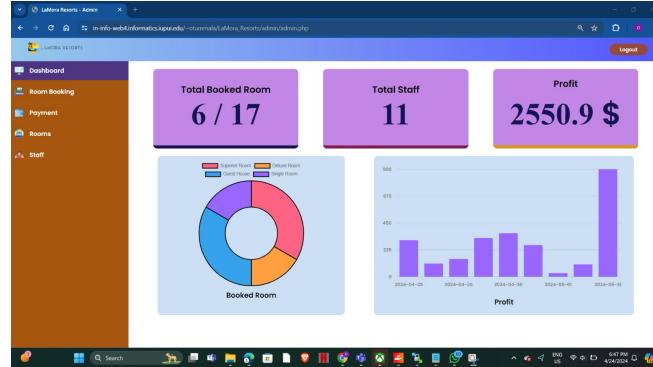


Figure 7: Admin dashboard after successful login

Figure 7 illustrates the admin dashboard after successful login of the admin. Rakesh can now view the above mentioned metrics about the rooms and the profits earned. In section 3.2, we have seen a user booking a room. The admin, Rakesh, can now confirm the booking under the Room Booking tab.

ID	Name	Email	Country	Phone	Type of Room	Type of Bed	No of Room	Meal	Check In	Check Out	No of Day	Status	Action
51	anuradha	anuradha@gmail.com	India	9899010007	Superior Room	Double	1	Rooms only	2024-04-24	2024-04-25	1	Confirmed	<button>Update</button> <button>Delete</button>
52	rakesh	rakesh@gmail.com	India	3192142236	Deluxe Room	Double	1	Full Board	2024-04-25	2024-04-27	2	Confirmed	<button>Update</button> <button>Delete</button>
54	lasya	lasya@gmail.com	United States	3174017620	Guest House	Quad	1	Full Board	2024-04-24	2024-04-30	6	Confirmed	<button>Update</button> <button>Delete</button>
58	Rakesh	rswj@gmail.com	Afghanistan	7890541220	Superior Room	Double	1	Breakfast	2024-04-25	2024-04-27	2	Not Confirmed	<button>Confirm</button> <button>Update</button> <button>Delete</button>
59	Rakesh	rakesh@gmail.com	Zambia	0876714521	Guest House	Triple	1	Half Board	2024-04-27	2024-05-01	4	Not Confirmed	<button>Confirm</button> <button>Update</button> <button>Delete</button>

Figure 8: Room booking tab to edit, confirm or delete the room booking

Rakesh will be displayed by the screen as shown in figure 8 when clicked on Room booking tab. Here, he can confirm the booking of a particular guest, edit the existing booking or delete the booking if required. He can add a new booking by clicking on “Add” icon on the top. In the search bar he can search for a particular reservation based on the name registered in the booking. In case, he wants to export the data of the reservations/ booking, he can click on the download icon to export it as an xlsx file.

ID	Name	Room Type	Bed Type	Check In	Check Out	No of Day	No of Room	Meal Type	Room Rent	Bed Rent	Meals	Total Bill	Action
51	anuradha	Superior Room	Double	2024-04-24	2024-04-25	1	1	Rooms only	3000.00	0.00	0.00	3000.00	<button>Update</button> <button>Delete</button>
52	rakesh	Deluxe Room	Double	2024-04-25	2024-04-27	2	1	Full Board	1000.00	20.00	0.00	1100.00	<button>Update</button> <button>Delete</button>
53	anu	Superior Room	Double	2024-04-24	2024-04-25	1	1	Breakfast	1400.00	20.00	60.00	1460.00	<button>Update</button> <button>Delete</button>
54	lasya	Guest House	Quad	2024-04-24	2024-04-30	6	1	Full Board	2700.00	108.00	412.00	3240.00	<button>Update</button> <button>Delete</button>
55	Rakesh	Superior Room	Quad	2024-04-25	2024-04-30	5	1	Rooms only	3500.00	140.00	0.00	3640.00	<button>Update</button> <button>Delete</button>
56	Renuj	Deluxe Room	Double	2024-04-25	2024-04-30	5	1	Breakfast	2500.00	50.00	100.00	2650.00	<button>Update</button> <button>Delete</button>

Figure 9: Payment tab of confirmed bookings

Rakesh can generate invoices for confirmed booking by clicking on “Payment” tab on the navigation bar. Figure 9 illustrates us the screen displayed for the admin to view the payments for each booking. Clicking on the print icon directs him to the print page of the invoice. Figure 10 below illustrate the invoice generated for a user named “mounika”.

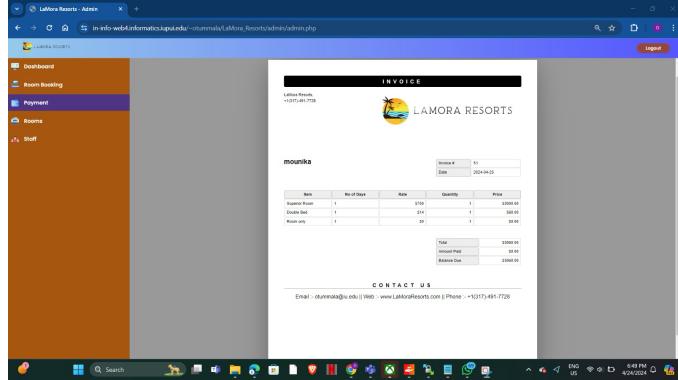


Figure 10: Invoice generated for a confirmed booking

Under the Rooms tab, Rakesh can view all the rooms present at the resort. He can either add a room or delete it according to the requirement. Figure 11 (a) illustrates us the view of Rooms tab. Similarly, navigating to the staff stab, will direct Rakesh to the list of all the staff members at the resort. He can either add or delete the staff members based on requirement. Figure 11 (b) illustrates us the screen displayed for the staff tab.

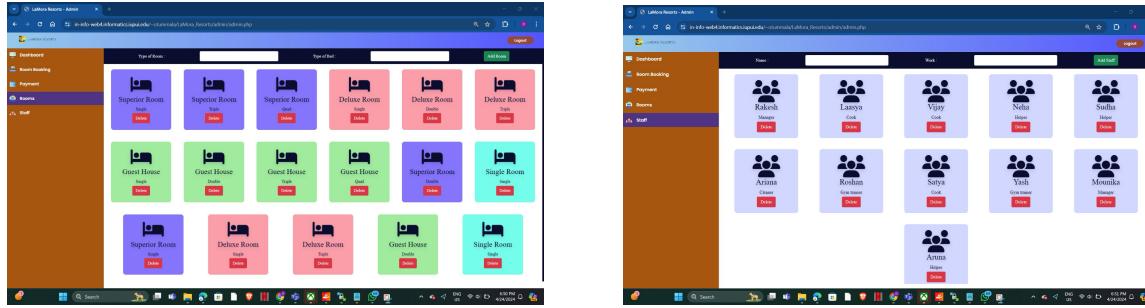


Figure 11: (a) Rooms present at the resort; (b) Staff present at the resort

4 DATA SOURCES

In the database schema for the LaMora Resorts project, six tables are employed to manage various aspects of the system's functionality and data storage. Here are the schema for those tables:

- emp_login (**empid**, Emp_Email, Emp_password)
- room (**id**, type, bedding)
- staff (**id**, name, work)
- signup (**UserID**, Username, Email, Password)
- roombook (**id**, Name, Email, Country, Phone, Roomtype, Bed, Meal, NoofRoom, cin, cout, nodays, stat)
- payment (**id**, Name, Email, RoomType, Bed, NoofRoom, cin, cout, noofdays, roomtotal, bedtotal, meal, mealtotal, finaltotal)

The *emp_login* table stores the login credentials of administrators. This table ensures secure access to the administrative interface, allowing authorized personnel to manage the system's operations effectively.

The *room* table contains essential information pertaining to the types of rooms available at the resort, including details such as room type and bedding configurations. Admins have exclusive access to this table, enabling them to add or remove rooms as needed to accommodate guest demands. This table plays a crucial role in generating dashboard metrics related to room availability and occupancy rates.

Similarly, the *staff* table stores details about resort staff members, including their names and assigned roles. Admins utilize this table to manage staffing requirements by adding or removing staff members as necessary. By maintaining a comprehensive record of staff information, administrators can ensure efficient allocation of resources and optimal staffing levels to meet operational demands.

The *signup* table captures user signup details, including user IDs, usernames, email addresses, and passwords. This table facilitates user authentication and registration processes, allowing guests to create accounts and reserve rooms for themselves or others. It serves as a foundational component of the system, enabling personalized experiences for users and facilitating seamless booking transactions.

The *roombook* table records room reservation details, such as guest names, contact information, room types, check-in and check-out dates, and reservation status. Admins use this table to review, confirm, edit, or delete reservations, ensuring accurate and efficient management of guest accommodations. This table serves as a central repository for booking information, facilitating effective communication and coordination between guests and resort staff.

Lastly, the *payment* table stores information related to invoices generated for confirmed bookings. It includes details such as guest names, email addresses, room types, billing amounts, and payment statuses. Although no direct relationship is established between the 'roombook' and 'payment' tables, the 'payment' table provides a comprehensive record of financial transactions, allowing administrators to track revenue generated and review payment histories. This separation enables flexibility in managing reservations and payments, ensuring accurate financial reporting and analysis while maintaining data integrity.

5 SECURITY

The security architecture of the LaMora Resorts website is meticulously designed to uphold the confidentiality, integrity, and availability of user data and operations. From the initial interaction with potential guests, stringent security measures are implemented, starting with HTTPS encryption to secure all data exchanges and protect personal information during registration and booking. User authentication mechanisms, supported by backend verification processes, ensure the legitimacy of user accounts, effectively preventing fraudulent registrations and unauthorized access attempts. Throughout the user journey, from registration to reservation, data remains safeguarded through secure session management. Industry-standard encryption protocols are employed during the booking process, with manual confirmation of bookings by resort administrators serving as an additional security layer to process only genuine reservations. The admin dashboard is fortified with multi-factor authentication and role-based access controls, mitigating unauthorized access and misuse of administrative privileges. Reservation and financial management functionalities undergo rigorous validation and review processes to maintain data integrity, accuracy, and transparency in all transactions. Furthermore, staff and room management features incorporate access controls to prevent unauthorized modifications, thereby enhancing overall data security and operational efficiency.

6 LIMITATIONS & FUTURE WORK

In the ongoing development of the project, there are several key enhancements planned to further optimize the user experience for both guests and administrators.

For guests, the addition of a user profile feature is paramount, allowing users to conveniently view and edit their profile information as needed. This feature will empower guests to personalize their experience on the platform, ensuring that their preferences and details are accurately reflected. Additionally, the implementation of a forgot password feature will provide a seamless solution for users who may encounter login issues, offering a user-friendly method to reset their password and regain access to their account. Another important enhancement for guests is the introduction of a room selection feature based on availability. By enabling users to choose their preferred room from

those available, rather than relying solely on administrator reservations, this feature will grant guests greater flexibility and control over their booking decisions.

For administrators, future work includes enhancing the functionality related to adding staff members. This will involve incorporating more detailed options and parameters to streamline the onboarding process and ensure comprehensive management of staff profiles. Additionally, the inclusion of staff scheduling capabilities within the admin dashboard will facilitate efficient allocation of shifts and tasks, enabling administrators to effectively manage staffing levels and resources. These enhancements are essential for optimizing administrative workflows and ensuring smooth operation of the resort's operations, aligning with the project's goal of delivering a seamless and exceptional hospitality experience for both guests and staff alike.

7 CONCLUSION

In conclusion, the Reservation Booking and Management System exemplifies our unwavering commitment to delivering a secure and streamlined platform for guests to book accommodations and for administrators to oversee resort operations seamlessly. Through meticulous implementation of robust security measures—including HTTPS encryption, stringent user authentication protocols, and thorough data validation processes—we prioritize the confidentiality, integrity, and availability of all user interactions and data.

Our dedication to excellence extends beyond user experience and personalization, encompassing a steadfast commitment to upholding the highest standards of cybersecurity. By prioritizing security, we instill trust and confidence in both guests and administrators alike. With our Reservation Booking and Management System, guests can book stays with peace of mind, knowing their data is safeguarded, while administrators can efficiently manage reservations and optimize resort operations, assured of the reliability and security of our platform.

8. REFERENCES AND APIs

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- <https://unpkg.com/sweetalert@2.1.2/dist/sweetalert.min.js>