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A Review on Shree Moraya Lodge (Hotel Booking Website)

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***Abstract*— In traditional resort and lodge management systems, manual booking processes, phone-based reservations, and paper records often result in booking conflicts, data inconsistencies, and inefficient operations. This paper presents the design and development of a web-based Resort Management System for Shree Moraya Lodge, Ganapatipule, built using the MERN stack (MongoDB, Express.js, React.js, Node.js) to digitalize and streamline resort operations. The system integrates a user-facing room booking platform with a secure admin dashboard, enabling efficient management of rooms, bookings, and guest records through role-based access. The frontend is developed using React.js to provide a responsive and user-friendly interface, while the backend is powered by Node.js and Express.js, ensuring reliable API communication and business logic handling. MongoDB is used for flexible and scalable data storage of booking and guest information, and secure authentication is implemented using JWT and bcrypt. The admin panel supports manual booking entries, booking status tracking, room management, and guest handling, while the user module allows customers to browse rooms, book stays, and explore nearby tourism attractions in the Konkan region.**

Keywords*— *Lodge Management System, MERN Stack, Room Booking, Web Application, MongoDB, React.js, Node.js, JWT Authentication, Admin Dashboard, Hospitality Technology

I. INTRODUCTION

Efficient management of room bookings and guest information is essential for smooth resort operations. Traditional manual booking systems often lead to errors, delays, and lack of real-time visibility. To overcome these challenges, this project implements a web-based resort management system that connects customers and administrators through a centralized digital platform. The system ensures real-time booking management, secure authentication, and improved operational efficiency [1].

The rapid expansion of online travel platforms has radically transformed the hospitality industry. Guests now expect seamless booking experiences, instant confirmation, and easy access to accommodation and tourism information. However, small and mid-scale lodges such as Shree Moraya Lodge in Ganapatipule, Maharashtra, often lack the technological infrastructure to meet these expectations, relying on phone calls and manual registers instead [2].

The proposed system addresses these gaps by developing a comprehensive MERN-stack-based management platform that supports structured booking workflows, room availability management, guest record handling, and an informational tourism guide. Secure authentication mechanisms and a well-structured database design ensure data consistency and protection. By digitizing resort operations and providing a centralized management interface, the solution reduces manual workload and improves operational transparency [3].

A. Problem Statement

This project aims to solve the problem of delayed and inefficient lodge management by providing a streamlined digital platform for quick room bookings and guest service. It addresses difficulties users face in finding and booking accommodation during peak tourist seasons. The system ensures secure role-based access, transparent booking status communication, and simplified guest record management to enhance overall customer satisfaction [2].

II. LITERATURE REVIEW

Efficient management of hotel and resort operations has been a growing area of research with the increasing adoption of web-based reservation systems. Traditional manual booking methods suffer from double bookings, delayed updates, poor data organization, and limited customer engagement. These limitations highlight the need for integrated digital platforms that manage reservations, rooms, and interactions in real time [1][2].

A. Online Hotel Reservation Systems (2013):

Hu and Gu [1] proposed a web-based online hotel reservation system focusing on UI/UX tailored for booking workflows. Their study demonstrated that custom-designed booking interfaces with filtering and comparison features significantly improve usability and user satisfaction. However, their system used generic templates that failed to meet domain-specific needs of individual properties, indicating a clear gap for customized lodge-level solutions [1].

B. Hotel Management System Modelling (2022):

Gautam and Gaurav [2] presented a hotel management system model emphasizing inventory coordination and risk-aware design for hospitality businesses. The study highlighted the importance of integrating inventory with service workflows. While effective for larger hotel chains, the proposed architecture was unsuitable for small establishments due to high implementation complexity and the absence of low-cost real-time solutions [2].

C. Secure Document Verification (2022):

Satybaldy et al. [3] explored a framework for secure online document verification using Self-Sovereign Identity (SSI) technology with password, token, and biometric methods. Although focused on document authentication rather than hospitality directly, their principles of adaptive multi-factor authentication (MFA) are directly applicable to securing guest and staff access in lodge management systems [3].

D. Real-Time Collaboration with MERN (2024):

Iovescu [4] investigated real-time document collaboration architecture using React and Node.js, validating that the MERN stack enables scalable, dynamic, and responsive portals for multi-user environments. This study confirms the architectural suitability of the MERN stack for building dynamic booking panels and administrative control dashboards within the hospitality domain [4].

E. MERN Stack Hotel Reservation System (2022):

Jayawardena et al. [5] developed an online hotel reservation system prototype using MERN stack technologies in Sri Lanka. Their study demonstrated the stack's ability to eliminate paper-based processes, enable real-time booking, and provide distinct client and administrator views with room inventory managed digitally. This validates the MERN approach specifically for small to mid-scale hospitality platforms like Shree Moraya Lodge [5].

F. JWT-Based Web Authentication (2023):

Bucko et al. [6] analyzed JWT-based authentication versus traditional session-based authentication for web applications. Their study demonstrated that JWT tokens provide enhanced security, stateless scalability, and improved user experience in modern web applications. These findings directly support the adoption of JWT with bcrypt password hashing in the proposed lodge management system [6].

G. Identified Research Gap:

From the literature review, it is observed that existing hospitality management systems mainly focus on individual features such as booking forms or room inventory [1][2]. Very few systems provide an integrated platform combining real-time availability tracking, secure role-based authentication, administrative monitoring, and a tourism guide module. The proposed research addresses this gap by developing a unified web-based lodge management platform for Shree Moraya Lodge.

III. PROPOSED SYSTEM

The proposed system is a web-based resort management platform for Shree Moraya Lodge, Ganapatipule, built on the MERN stack. The system is designed to overcome the limitations of traditional manual lodge management by providing an integrated digital platform for room booking, guest management, and administrative control [2].

A. System Overview:

The platform enables users to request room bookings using a web interface by selecting room type and check-in/check-out dates. The system processes the request immediately and updates the admin dashboard for review and approval. Users can track their booking status in real time, and the admin can manage all operations including room inventory,

guest records, and booking history. The tourism guide module enhances the user experience by providing information about nearby attractions in the Konkan region.

B. Technology Stack:

- Frontend: React.js — Responsive, component-based user interface
- Backend: Node.js with Express.js — RESTful API and business logic
- Database: MongoDB — Flexible NoSQL document store for bookings and guests
- Authentication: JWT tokens and bcrypt — Secure role-based access control
- Deployment: Render.com cloud platform — Scalable web hosting

C. System Architecture:

The system has a modular client-server structure to promote scalability and maintainability. The frontend React.js application communicates with the backend via RESTful APIs. The backend handles business logic, authentication, request processing, and database operations. MongoDB Atlas serves as the central repository for user information, room data, booking records, and guest information. Secure JWT authorization and bcrypt hashing safeguard the data and prevent unauthorized access [6].

D. Workflow of the Proposed System:

1. User registers and logs in via secure JWT-based authentication.
2. Customer browses available rooms with date-based availability filtering.
3. Customer selects a room and submits a booking request.
4. System records the request and notifies the administrator via dashboard.
5. Admin reviews and approves or manages the booking.
6. Room availability is automatically updated in MongoDB.
7. Customer views booking confirmation and status from their account.

E. Key Modules:

- Room Management Module: Admin can add, update, and manage room listings including photos, pricing, and availability.
- Booking Module: Handles guest booking requests, date validation, and real-time availability checks.
- Guest Management Module: Maintains guest records, contact details, and booking history.
- Admin Dashboard: Centralized panel for managing bookings, room occupancy, and operational statistics.
- Tourism Guide Module: Showcases nearby tourist attractions, adventure activities, and travel tips around Ganapatipule.
- Authentication Module: Secure login and registration using JWT tokens and bcrypt password hashing.

IV. IMPLEMENTATION

The following figures illustrate the key interfaces of the Shree Moraya Lodge web application, demonstrating the user-facing booking flow, admin login, and the tourism guide module.

Fig. 1. Shree Moraya Lodge Homepage

Fig. 2. Admin Login Page

Fig. 3. Tourism Guide Module

Fig. 4. Tourist Attraction Detail

V. CHALLENGES

Although the proposed web-based lodge management system promises significant benefits, there are certain challenges to be considered to ensure successful real-world implementation.

A. Impersonal and Limited User Interaction:

Many existing hotel booking platforms provide basic booking forms with minimal real-time interaction, offering little guidance to users during the reservation process. The lack of dynamic feedback on room availability, booking confirmation, and occupancy status often leads to confusion and booking errors [1].

B. Inaccurate Room Availability Management:

Systems relying on static room counts fail to dynamically track bookings by check-in and check-out dates, risking overbooking and incorrect room allocation. The proposed date-aware booking logic in the system directly addresses this critical limitation.

C. Fragmented Booking and Guest Data Handling:

In several existing implementations, booking records and guest details are maintained in disconnected systems. This fragmented data management makes it difficult to track guest history, room occupancy, and booking status in a unified manner, creating inconsistencies across operations [2].

D. Lack of Integrated Administrative Control:

Most small-scale lodge systems lack a centralized admin dashboard that provides real-time insights into room inventory, booking status, and guest occupancy. Administrative tasks such as updating room availability, modifying bookings, and monitoring occupancy are often manual, increasing the likelihood of errors and operational delays [4].

E. Security and Privacy Concerns:

The system handles sensitive user data such as guest contact information and booking details. Privacy of data, safe JWT authentication, bcrypt-hashed credentials, and access control against unwarranted use are extremely important to ensure no data breach or misuse occurs [6][7].

F. Scalability and Performance:

The system needs to support increased booking volumes and simultaneous users without performance degradation during peak tourist seasons. Scalability requires efficient MongoDB schema design, load-balanced API services, and optimized React.js rendering on the frontend [5].

VI. FUTURE DIRECTION

The proposed Shree Moraya Lodge management system can be further improved in the future by integrating intelligent and advanced technologies to enhance the guest experience and operational efficiency.

Integration of an online payment gateway such as Razorpay or Stripe can allow guests to complete bookings with secure digital payments, eliminating the need for cash transactions. Automated email and SMS notification systems can be added to keep guests informed about booking confirmations, check-in reminders, and special offers [8].

A dedicated mobile application for both Android and iOS platforms can increase accessibility and real-time usability for both guests and administrators. Advanced analytics and reporting dashboards can provide lodge owners with insights into occupancy trends, revenue patterns, and peak booking seasons. Integration with popular OTA (Online Travel Agency) platforms can further increase the lodge's visibility and booking reach [9].

Incorporation of a reviews and ratings module can help future guests make informed booking decisions, while multilingual support can attract a wider audience of domestic and international tourists visiting the Konkan region [10].

VII. CONCLUSION

This study introduced a web-based lodge management system for Shree Moraya Lodge that addresses the shortcomings of traditional manual resort operation methods. The proposed system offers a streamlined digital platform for efficient room booking, real-time availability management, secure admin control, and an integrated tourism guide for the Konkan region [1][2].

By integrating a responsive React.js frontend with a secure Node.js/Express.js backend and MongoDB for scalable data storage, the system ensures seamless communication between user-facing booking flows and administrative operations. Secure JWT and bcrypt authentication strengthens trust and reliability, while the role-based admin dashboard supports efficient room management, booking status tracking, and guest record handling [6].

On the whole, the system proves the potential of using modern MERN stack web technologies and integrating them with secure authentication to improve the coverage and reliability of lodge management services, contributing to the evolution of smarter hospitality infrastructure for small and mid-scale tourism businesses in Maharashtra [4][5].

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