Hotel Management System

Project Report

Submitted By:-

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Abstract

The hotel management website is a revolutionary platform that empowers hotels to excel in the hospitality industry. With its user-friendly interface, guests can effortlessly book rooms, while the CRM system ensures personalized services based on guest preferences. Efficient inventory and resource management optimize operations, while the integrated POS and billing system streamline financial transactions. The website's data analytics and reporting features provide valuable insights for strategic decision-making, and its robust security measures safeguard guest information. By offering a seamless, mobile-responsive experience, this website sets a new benchmark for hotels, ensuring unparalleled guest satisfaction and business success.

Website transforms hospitality with seamless booking, personalized guest services, and efficient operations, ensuring exceptional guest experiences and maximizing hotel success. With integrated POS, secure transactions, and data analytics, it sets new industry standards for streamlined hotel management.

INTRODUCTION

Existing Web Applications

Booking.com: One of the most popular hotel management websites, Booking.com allows users to search and book hotels worldwide, offering a vast inventory of accommodations and various filtering options to cater to individual preferences.

Expedia: As a comprehensive travel booking platform, Expedia provides hotel management features, enabling users to book hotels, flights, and car rentals, all in one place, making travel planning seamless and convenient.

OYO: OYO's hotel management website focuses on providing budget accommodations with a user-friendly interface for travelers, offering an extensive network of hotels across multiple destinations.

Hotels.com: This website specializes in hotel bookings, offering a simple and efficient platform for travelers to search, compare prices, and reserve rooms with exclusive deals and rewards programs.

Agoda: Targeting a global audience, Agoda provides a hotel management website that offers a diverse range of accommodations, along with user reviews and ratings, facilitating informed decision-making.

Project Objectives

The project's primary objectives are to enhance the guest experience, streamline hotel operations, and maximize revenue. Through a user-friendly booking process and personalized services, the hotel management website aims to elevate guest satisfaction. By implementing an integrated hotel management system, the project seeks to optimize resource allocation and inventory management, improving operational efficiency. Utilizing data-driven analytics, the website aims to identify revenue opportunities and cost-saving measures, contributing to the hotel's financial success.
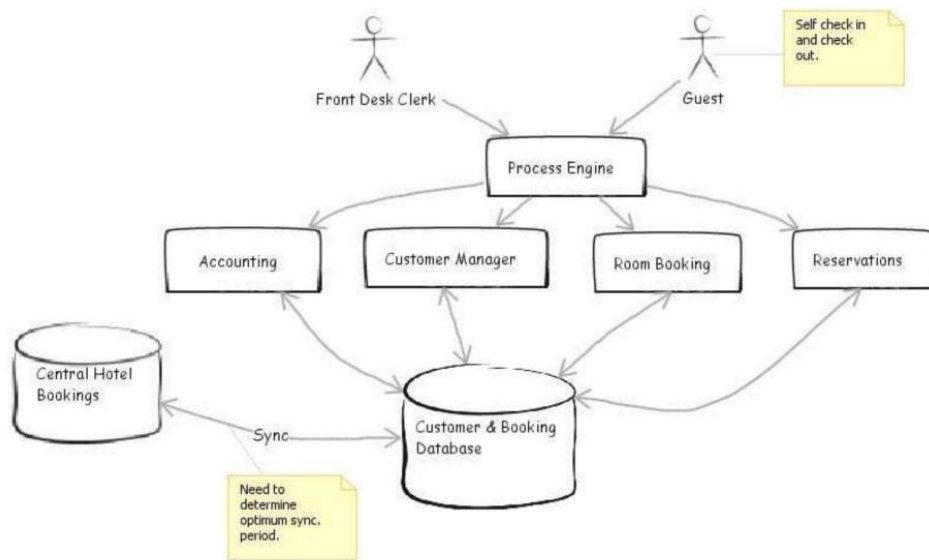
SYSTEM ARCHITECTURE

Figure 3.1 : Architecture Diagram of Hotel Management System

The hotel management system's architecture typically consists of several components that work together to provide a seamless and efficient platform for managing hotel operations.

The architecture of a hotel management system can vary based on the specific requirements of the hotel and the technology stack used by the developers. The aim is to create a scalable, reliable, and secure platform that enhances guest experiences, optimizes hotel operations, and drives business success.

WEBSITE FRONT END IMPLEMENTATION

Tools used:-

• HTML: HTML was used to create the structure of the web pages in the application.It provided a standard markup language for creating the layout and structure of the website.

• CSS: CSS was used for styling the web pages in the application. It provided a way to create visually appealing and responsive designs for the website.

• JavaScript: JavaScript is a programming language used for creating interactive elements on web pages, such as drop-down menus, forms, and animations. It can be used to add functionality to web pages and make them more user-friendly.

• jQuery: jQuery is a lightweight JavaScript library used for simplifying the process of adding interactivity to web pages. It provides a set of easy-to-use functions for handling events, manipulating HTML content, and creating animations.

WEBSITE BACK END IMPLEMENTATION

Tools used:-

MongoDB: MongoDB is a powerful NoSQL database known for its flexibility and scalability. In the hotel management website, MongoDB is used to store and manage various data, including guest information, room details, reservations, and more. Its document-based structure allows for easy handling of dynamic and unstructured data, making it an ideal choice for a diverse range of hotel-related information.

Express.js: Express.js is a fast and minimalist backend web application framework for Node.js. It acts as the middleware, handling HTTP requests and responses, routing, and business logic. In the hotel management website, Express.js is used to create robust and efficient APIs that connect the frontend to the MongoDB database, facilitating seamless communication and data retrieval.

React: React is a popular JavaScript library for building dynamic user interfaces. In the hotel management website, React forms the frontend, providing an interactive and responsive user experience. It allows developers to create reusable UI components, enabling efficient code organization and better maintenance. With its virtual DOM and one-way data flow, React optimizes rendering performance, crucial for a smooth booking process and user interaction.

Node.js: Node.js is a server-side JavaScript runtime environment that allows the execution of JavaScript code on the server. In the hotel management website, Node.js powers the backend, enabling non-blocking and event-driven I/O operations. This ensures fast handling of concurrent requests, making the website highly scalable and capable of handling a large number of users simultaneously.

By utilizing the MERN stack, the hotel management website benefits from a unified and efficient development process. JavaScript is used consistently throughout the entire application, allowing developers to work seamlessly on both the frontend and backend. This stack's combination offers the website a robust, scalable, and high-performing architecture, providing an exceptional user experience for guests and facilitating effective hotel management for staff.

SCREENSHOTS

```
1   const mongoose = require("mongoose");
2
3   //PLEASE EDIT YOUR MONGO DB CONNECTION HERE
4   /*YOU CAN FIND SAMPLE COLLECTION at mongodb_collections folder */
5   var mongoURL = "mongodb://127.0.0.1:27017/mern-rooms";
6
```

MERN HOTEL BOOKING   👤 user ▾

Admin Panel

Bookings   Rooms   Add Room   Users

transactionid	roomid	room	fromdate	todate	status
1234	6110ae308adb7a0ec49450ca	SPOT ON 37669 Hotel Shiva Sai Lodge Near Regimental Bazaar, Shivaji Nagar, Hyderabad	13-08-2021	14-08-2021	CANCELLED
1234	6110ae308adb7a0ec49450ca	SPOT ON 37669 Hotel Shiva Sai Lodge Near Regimental Bazaar, Shivaji Nagar, Hyderabad	15-08-2021	16-08-2021	CANCELLED
1234	6110ae308adb7a0ec49450ca	SPOT ON 37669 Hotel Shiva Sai Lodge Near Regimental Bazaar, Shivaji Nagar, Hyderabad	15-08-2021	16-08-2021	CANCELLED
1234	6110ae308adb7a0ec49450ca	SPOT ON 37669 Hotel Shiva Sai Lodge Near Regimental Bazaar, Shivaji Nagar, Hyderabad	15-08-2021	16-08-2021	CANCELLED
040d21cd-355b-4ada-a992-cb49e6ffd24c	6110ae308adb7a0ec49450ca	SPOT ON 37669 Hotel Shiva Sai Lodge Near Regimental Bazaar, Shivaji Nagar, Hyderabad	18-08-2021	20-08-2021	CONFIRMED

‹ 1 ›

```
    },
    "proxy": "http://localhost:5000/"
}
```
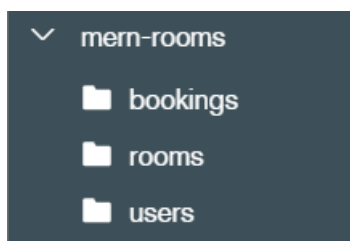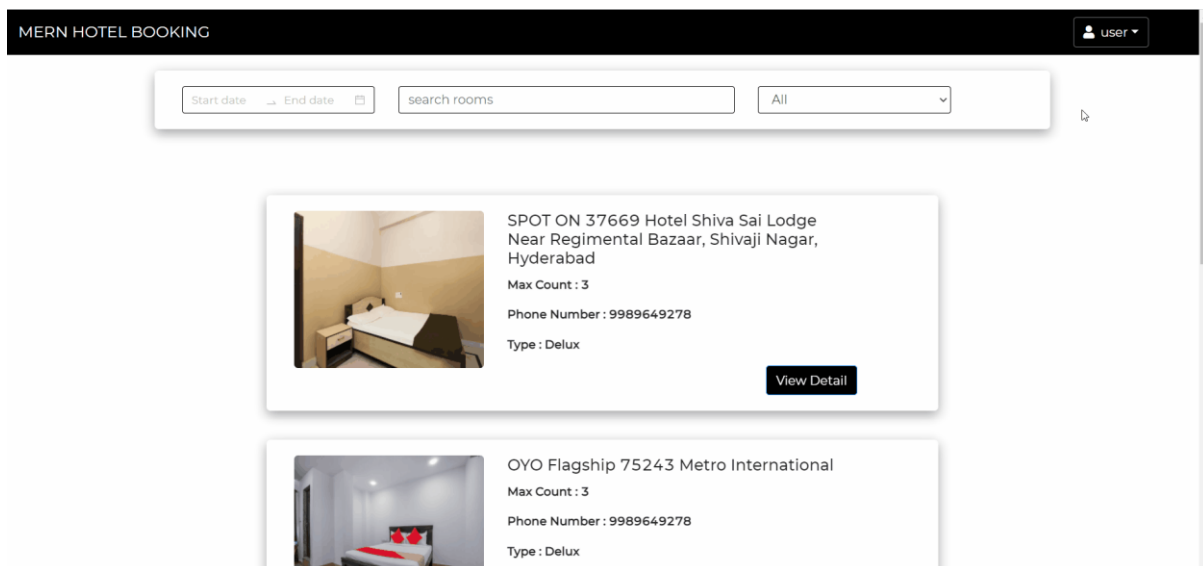
```
1   const express = require("express");
2   const moment = require("moment");
3   const stripe = require("stripe")("YOUR PRIVATE STRIP API KEY"); //
```

```
128  <div style={{ float: "right" }}>
129    <StripeCheckout
130      amount={totalAmount * 100}
131      currency="USD"
132      token={onToken}
133      stripeKey="YOUR PUBLIC STRIP API KEY"
134    >
```

MERN HOTEL BOOKING   👤 user ▾

| Start date ⟶ End date 📅 | search rooms | All ▾ |

SPOT ON 37669 Hotel Shiva Sai Lodge
Near Regimental Bazaar, Shivaji Nagar,
Hyderabad

Max Count : 3

Phone Number : 9989649278

Type : Delux

View Detail

OYO Flagship 75243 Metro International

Max Count : 3

Phone Number : 9989649278

Type : Delux

∨ mern-rooms

📁 bookings

📁 rooms

📁 users

Login

email

password

Login

CONCLUSION

In conclusion, the hotel management website built on the MERN stack presents a cutting-edge solution to revolutionize the hospitality industry. With MongoDB as the versatile and scalable database, the system efficiently manages guest data, reservations, and inventory, facilitating a seamless booking process. Express.js serves as the robust backend framework, enabling the creation of efficient APIs and implementing secure authentication mechanisms for data protection. Coupled with React on the frontend, the website offers a dynamic and interactive user interface, ensuring an exceptional guest experience and intuitive hotel management tools.

The MERN stack's integration ensures a well-rounded and high-performing architecture, addressing the unique challenges faced by the hospitality sector. Node.js as the server-side runtime environment ensures speedy handling of requests, contributing to the website's responsiveness and scalability. Leveraging RESTful APIs fosters consistency and ease of maintenance, while real-time updates keep guests and hotel staff informed of essential changes instantly. This comprehensive approach not only enhances guest satisfaction but also streamlines hotel operations, ultimately maximizing revenue and profitability.