

StayHub-Find & Book Your Perfect Stay

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Abstract

The hospitality and tourism industry has rapidly evolved due to advancements in digital technology and online booking platforms. Customers now prefer web-based applications that provide quick access to accommodation booking services. The proposed project, StayHub – Find and Book Your Perfect Stay, is an online accommodation booking system designed to simplify hotel and room reservations. The platform allows users to search accommodations, compare prices, view ratings, and make secure bookings online.

The system provides real-time room availability, online payment integration, booking management, and review functionality. StayHub also enables hotel owners and administrators to manage listings and reservations efficiently. The project aims to improve customer satisfaction, reduce manual work, and provide a seamless digital booking experience.

Research studies on hotel management systems show that automated booking systems improve operational efficiency and customer convenience [5], [6].

Keywords: StayHub, Hotel Booking System, Reservation Management, Online Accommodation Platform, Hospitality Management.

1. Introduction

The hospitality industry has undergone significant digital transformation with the rise of online booking platforms and reservation management systems. Modern travelers prefer web-based applications that allow them to search, compare, and book accommodations conveniently from anywhere. Online hotel booking systems provide real-time room availability, secure payment options, customer reviews, and personalized services, improving both customer experience and operational efficiency. [1], [2]

StayHub – Find and Book Your Perfect Stay is an online accommodation booking platform developed to simplify the process of finding and reserving hotels, hostels, apartments, and vacation stays. The system enables users to search accommodations based on location, budget, amenities, and ratings while allowing property owners to manage listings and reservations effectively.

The platform integrates essential hospitality technologies such as reservation management, booking engines, payment gateways, and database systems to ensure smooth and secure operations. StayHub aims to reduce manual booking processes, improve transparency in pricing and availability, and provide a seamless digital experience for users. Research in hospitality technology highlights that digital booking systems enhance customer satisfaction, automate hotel operations, and improve overall business performance.

2. Literature Survey

The rapid advancement of information technology has significantly transformed the hospitality and tourism industry. Online accommodation booking systems have become essential tools for customers and hotel owners, enabling faster reservations, real-time availability checking, secure online payments, and improved customer experiences. Several researchers have studied hotel reservation systems, online booking platforms, and customer behavior in digital hospitality services.

Gautam and Gaurav (2022) conducted research on hotel management systems and explained how automated booking platforms reduce manual work and improve operational efficiency. Their study emphasized the importance of database management systems in maintaining customer records, room availability, and reservation details efficiently. The research also highlighted that digital systems provide better customer satisfaction compared to traditional booking methods.

Williams and Olalekan (2018) proposed a reservation management system for hotels using object-oriented programming and database technologies. Their research focused on improving booking accuracy, reducing reservation conflicts, and simplifying administrative operations. The study concluded that computerized reservation systems significantly improve hotel management processes and reduce operational errors.

Teubner, Hawlitschek, and Dann (2020) studied customer behavior in online hospitality platforms. Their research analyzed how scarcity messages such as “Only one room left” influence booking intentions and customer decision-making. The study demonstrated that user interface design and booking transparency play important roles in improving customer trust and increasing reservation rates.

Shukla and Rodrigues (2022) examined online hotel booking systems in the Indian market through third-party aggregators. Their research identified important factors affecting online booking behavior, including website quality, pricing transparency, payment security, and customer reviews. The study found that trust and convenience are major factors influencing customer satisfaction in online reservation platforms.

Arzoumanidis, Petti, and Raggi (2022) explored sustainability in online booking platforms and discussed how digital systems can encourage environmentally responsible tourism practices. Their research emphasized the role of technology in supporting sustainable accommodation management and customer awareness.

Recent studies on recommendation systems and artificial intelligence in hospitality management have shown that machine learning techniques can improve personalized accommodation suggestions based on

customer preferences, location, and booking history. Researchers also found that AI-based recommendation systems increase customer engagement and improve user experience.

From the reviewed literature, it is clear that online accommodation booking systems play a vital role in modern hospitality management. Existing studies mainly focus on reservation management, customer satisfaction, and booking technologies. However, there remains a need for integrated platforms that combine user-friendly interfaces, secure payments, real-time availability, and personalized recommendations. The proposed system, **StayHub – Find and Book Your Perfect Stay**, aims to address these requirements by providing a centralized and efficient online booking solution for customers and property owners.

3. Proposed Methodology

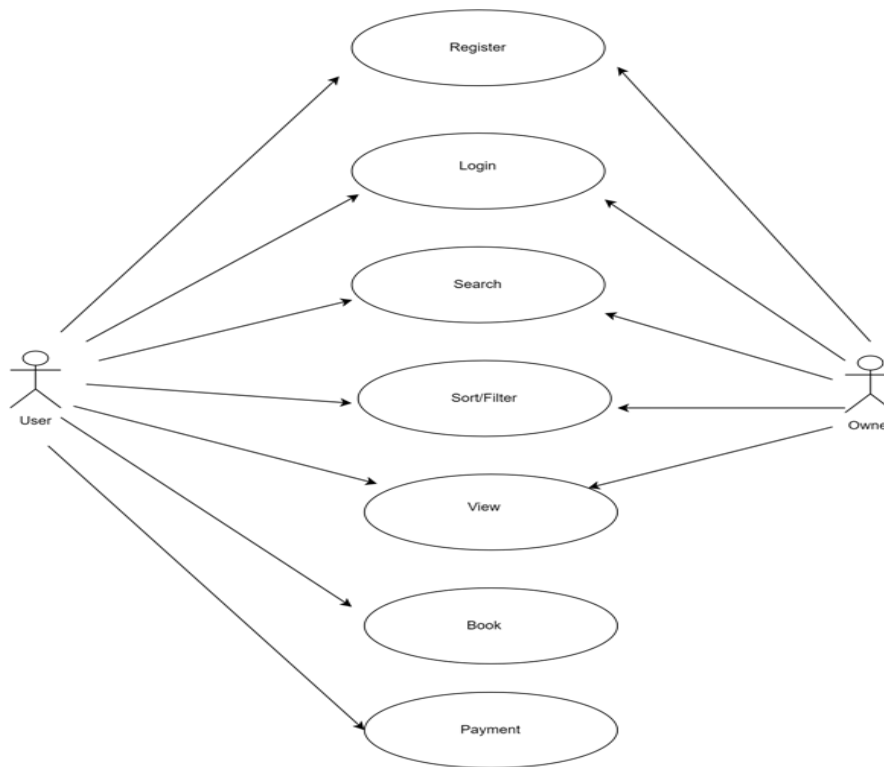


Fig 1. StayHub Booking System Workflow

The workflow of StayHub begins with user registration and login. Users can search hotels using filters such as location, price, and ratings. After viewing room details and availability, users proceed with booking and secure online payment. Finally, the system provides booking confirmation and maintains booking history for future reference.

The proposed system, **StayHub – Find and Book Your Perfect Stay**, is designed to provide an efficient and user-friendly online accommodation booking platform. The system aims to simplify the process of searching, comparing, and reserving accommodations while improving booking management for property owners and administrators. The methodology used for developing StayHub follows a systematic software development approach to ensure reliability, scalability, and security.

The development process begins with **requirement analysis**, where user needs and system requirements are identified. This phase includes studying customer expectations, hotel management requirements, booking functionalities, payment integration, and administrative controls. Information gathered during this phase helps define the features and objectives of the system.

The next phase is system design, where the architecture and structure of the platform are planned. The system is designed using a three-tier architecture consisting of the presentation layer, application layer, and database layer. The presentation layer handles the user interface, the application layer processes booking and payment operations, and the database layer stores customer, booking, and accommodation data securely. [5]

After system design, **database design and implementation** are carried out. A relational database management system such as MySQL is used to store user details, hotel information, room availability, booking records, payment details, and customer reviews. Proper database normalization techniques are applied to ensure efficient data management and reduce redundancy.

The **frontend development phase** focuses on creating an interactive and responsive user interface using HTML, CSS, JavaScript, and Bootstrap or React. The platform provides functionalities such as user registration, login, accommodation search, room booking, cancellation, and review management. The interface is designed to provide easy navigation and a seamless user experience across multiple devices.

In the **backend development phase**, server-side technologies such as PHP, Node.js, or Python are used to process user requests, manage authentication, handle booking operations, and integrate payment gateways. APIs are implemented to enable secure communication between the frontend and backend systems.

The methodology also includes payment gateway integration using secure online payment systems such as Razorpay or Stripe. This allows customers to make secure online transactions while ensuring payment verification and booking confirmation. [6]

After development, the system undergoes testing and validation to identify and fix errors. Various testing methods such as unit testing, integration testing, system testing, and user acceptance testing are performed to ensure system reliability, security, and performance. [7]

Finally, the system is deployed on cloud hosting platforms such as AWS or Firebase for public access. Regular maintenance and updates are planned to improve security, add new features, and enhance overall system performance.

The proposed methodology ensures that StayHub provides a secure, scalable, and efficient online accommodation booking solution that improves customer satisfaction and simplifies hospitality management operations.

4. System Architecture



Fig2.System Architecture

StayHub follows a three-tier architecture consisting of the presentation layer (HTML, CSS, JavaScript), application layer (backend server logic), and database layer (MySQL). The system integrates a payment gateway for secure transactions and is deployed on a cloud platform for scalability and reliability.

5. Result & Discussion

The proposed system, **StayHub – Find and Book Your Perfect Stay**, was successfully designed and developed as an online accommodation booking platform. The system provides users with an easy and efficient way to search, compare, and reserve accommodations based on their preferences such as location, price, room type, and amenities. The platform also enables hotel owners and administrators to manage room listings, bookings, customer details, and payment records effectively.

The implementation of StayHub demonstrated that the online booking process becomes faster and more convenient compared to traditional manual reservation methods. Users were able to register, log in, search available rooms, make bookings, and complete secure online payments without difficulty. The real-time room availability feature reduced the chances of duplicate bookings and improved booking accuracy.

The system was tested under different scenarios including user registration, room search, booking confirmation, cancellation, and payment processing. The results showed that the platform performs efficiently and provides accurate responses within minimal processing time. The user interface was found to be simple, interactive, and responsive across different devices, improving overall user experience.

From the administrative perspective, the platform simplified hotel management operations by automating reservation handling, customer record management, and booking tracking. Hotel owners could update room availability, pricing, and accommodation details easily through the property management dashboard. This reduced manual paperwork and minimized operational errors.

The discussion of the system highlights that online accommodation booking platforms play a significant role in modern hospitality services. StayHub improves transparency in room availability and pricing while enhancing customer satisfaction through secure and reliable services. The integration of online payment gateways increased transaction convenience and security for users. [8]

Although the system achieved its primary objectives successfully, some limitations were identified. The platform depends on internet connectivity and server availability for smooth operation. In addition, advanced features such as AI-based recommendations, multilingual support, and mobile application integration were not included in the current version but can be implemented in future enhancements.

Overall, the results indicate that StayHub provides an effective and scalable solution for digital accommodation booking and hospitality management. The system successfully reduces manual efforts, improves booking efficiency, and delivers a better user experience for customers and property owners.

6. Conclusion & Future Scope

The platform can also be extended to support short-term rental and eBooking determinant analysis as discussed in recent tourism research studies [12].

The project “StayHub – Find and Book Your Perfect Stay” was successfully developed as an online accommodation booking platform that simplifies the process of searching, comparing, and reserving hotels and other stays. The system provides a user-friendly interface that allows customers to view accommodation details, check room availability, make secure bookings, and complete online payments efficiently.

The implementation of StayHub demonstrated that digital booking systems improve convenience, reduce manual workload, and enhance operational efficiency in the hospitality industry. The platform also helps hotel owners and administrators manage room listings, reservations, customer records, and payment details effectively through a centralized system.

The project achieved its primary objectives by providing real-time booking management, secure transactions, and easy accessibility. The system improves transparency in pricing and availability while reducing booking errors and delays associated with traditional reservation methods. Overall, StayHub serves as an efficient, reliable, and scalable solution for modern accommodation booking and hospitality management.

FutureScope

The platform can also be extended to support short-term rental and eBooking determinant analysis as discussed in recent tourism research studies [12].

Although StayHub successfully fulfills its current objectives, several advanced features can be added in the future to improve functionality and user experience.

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