



International Journal of Science, Architecture, Technology and Environment

Online Hotel Booking System

Sejal Mishra^{1*}, Shailendra Singh Tomer², Kuldeep Tiwari³

¹MCA IV Sem, SOCA, Sanjeev Agrawal Global Educational University, Bhopal, M.P.

^{2,3}Assistant Professor, School of Computer Applications, Sanjeev Agrawal Global Educational (SAGE) University, Bhopal

*Corresponding author, sejumishra14@gmail.com

DOI: <https://doi.org/10.63680/ijstate062643.43>

Abstract

The Online Hotel Booking System is a web-based application developed to simplify the process of searching, booking, and managing hotel reservations. The system provides an easy and efficient platform for customers to view hotel details, check room availability, compare prices, and make bookings online from any location. It reduces the manual work involved in traditional hotel reservation methods and improves customer convenience.

The proposed system includes features such as user registration and login, hotel and room management, online dashboard. The system ensures secure data handling and improves communication between hotels and customers.

This project is developed using modern web technologies and database management systems to provide accuracy, reliability, and fast performance. The Online Hotel Booking System helps hotels increase operational efficiency while offering customers a quick and user-friendly booking experience. The system also minimizes errors, saves time, and supports digital transformation in the hospitality industry.

Overall, the project demonstrates how automation and web technology can enhance hotel management services and provide a better experience for both customers and hotel administrators.

Keywords: Online Hotel Booking System, Hotel Reservation, Web Application, Room Booking, Hospitality Management, Database Management, Online Payment, Reservation System, Customer Management, Hotel Management System.

Introduction

The advancement of internet technology has transformed the hospitality industry by introducing online hotel booking services. Traditional hotel reservation methods require customers to visit hotels physically or contact them through phone calls, which consumes time and may lead to booking errors. To overcome these limitations, online hotel booking systems have become an effective solution.

An Online Hotel Booking System allows users to search for hotels, check room availability, compare prices, and make reservations online. The system provides convenience, transparency, and quick access to hotel services. It also helps hotel management maintain booking records efficiently and improve customer service.

The main purpose of this project is to develop a user-friendly and secure platform that automates hotel booking operations. The system reduces paperwork, minimizes manual effort, and improves communication between customers and hotel administrators. Here is a detailed

The rapid growth of internet technology and digital communication has significantly transformed the hospitality and tourism industry. In recent years, online services have become an essential part of daily life, allowing users to access information and services quickly and conveniently. One of the major developments in this field is the Online Hotel Booking System, which enables customers to reserve hotel rooms through web-based platforms without physically visiting the hotel.

Traditional hotel reservation methods were mostly manual and required customers to contact hotels through phone calls or direct visits. These methods were time-consuming, less efficient, and often resulted in booking errors, double reservations, and poor record management. With the increasing number of travelers and the growing demand for fast and reliable services, hotels need automated systems to manage reservations effectively.

The Online Hotel Booking System is designed to provide a simple, secure, and efficient platform for both customers and hotel administrators. Through this system, users can search for hotels, check room availability, compare prices, view hotel facilities, and make online bookings from any location at any time. Customers can also receive booking confirmations instantly and make secure online payments.

For hotel management, the system helps in maintaining customer records, managing room availability, handling reservations, and generating reports automatically. It reduces manual workload, improves operational efficiency, and enhances customer satisfaction. The system also provides better communication between hotels and customers through automated notifications and booking updates.

This project focuses on developing a web-based hotel booking application using modern technologies such as HTML, CSS, JavaScript, PHP, and MySQL. The main objective of the system is to automate hotel reservation processes and provide a user-friendly interface that simplifies hotel management operations.

The Online Hotel Booking System plays an important role in the digital transformation of the hospitality industry. It not only improves business efficiency but also provides customers with a comfortable and convenient booking experience. As online services continue to grow, hotel booking systems are becoming an essential requirement for modern hotel management.

Literature Review

The Online Hotel Booking System has become an important part of the hospitality industry due to the rapid growth of internet technology and online services. Many researchers and developers have studied hotel management and reservation systems to improve booking efficiency, customer satisfaction, and business operations.

According to various studies, traditional hotel reservation methods are time-consuming and less efficient because they depend on manual record management and direct communication between customers and hotel staff. Manual systems often lead to booking errors, data redundancy, and difficulties in maintaining customer information. To overcome these problems, web-based hotel booking systems were introduced.

Researchers have found that online booking systems provide better accessibility, faster reservation processes, and real-time room availability information. Customers can easily search hotels, compare prices, and make reservations online from any location. These systems also improve customer convenience by offering secure

online payment options and instant booking confirmation.

Several studies highlight the importance of database management systems in hotel booking applications. Databases help store customer records, booking information, hotel details, and payment data securely. Proper database integration improves system performance, data accuracy, and operational efficiency.

Research Methodology

The research methodology of the Online Hotel Booking System explains the methods and techniques used to develop the system successfully. This methodology includes requirement analysis, system design, data collection, development process, implementation, and testing of the application.

The main purpose of this research is to develop a web-based hotel booking system that allows customers to search hotels, check room availability, and make online reservations easily. The methodology helps in creating a user-friendly, reliable, and secure system for hotel management and customer

The research follows a system development methodology based on the Software Development Life Cycle (SDLC). The SDLC model provides a step-by-step process for designing, developing, testing, and implementing the Online Hotel Booking System.

The research is based on both qualitative and practical approaches. Information about hotel booking procedures and customer requirements was collected and analyzed to design the proposed system.

Research Approach

The research approach for the Online Hotel Booking System is based on a practical and development-oriented methodology. The main purpose of this research is to design and develop a web-based application that automates hotel reservation and management processes. The research focuses on improving booking efficiency, reducing manual work, and enhancing customer satisfaction through digital technology.

This study follows a qualitative and system development approach. Information regarding hotel booking procedures, customer requirements, and existing reservation systems was collected and analyzed to understand the problems faced in traditional hotel management systems.

The research mainly focuses on:

- Identifying problems in manual hotel booking systems
- Understanding customer and hotel management requirements
- Designing a computerized booking solution
- Developing a secure and user-friendly web application
- Testing and evaluating system performance

Proposed framework/ model

The proposed framework of the Online Hotel Booking System is designed to provide an automated and web-based solution for hotel reservation and management processes. The framework aims to improve booking efficiency, reduce manual work, and provide better services to customers through digital technology.

The proposed model follows a client-server architecture in which customers and administrators interact with

the system through a web interface. The system processes booking requests, manages hotel information, and stores customer records in a centralized database.

The framework mainly consists of the following modules:

1. User Module

The User Module is designed for customers who want to access hotel booking services online. This module provides a user-friendly interface through which customers can perform different booking activities.

Functions of User Module:

- User Registration and Login
- Hotel Search
- Room Availability Checking
- Online Room Booking
- Secure Payment
- Booking Confirmation
- Booking Cancellation

This module allows customers to make reservations anytime and from any location using the internet.

2. Admin Module

The Admin Module is responsible for managing the overall hotel booking system. Administrators can monitor and control all hotel operations through this module.

Functions of Admin Module:

- Add and Manage Hotel Details
- Manage Room Availability
- View and Manage Bookings
- Manage Customer Records
- Generate Booking Reports
- Update Room Prices and Facilities

This module helps hotel management maintain accurate records and improve operational efficiency.

Framework Architecture

The framework architecture of the Online Hotel Booking System describes the structural design of the system and explains how different components interact with each other to perform hotel reservation operations efficiently. The system is designed using a **3-tier** architecture model, which divides the system into three layers: Presentation Layer, Application Layer, and Database Layer.

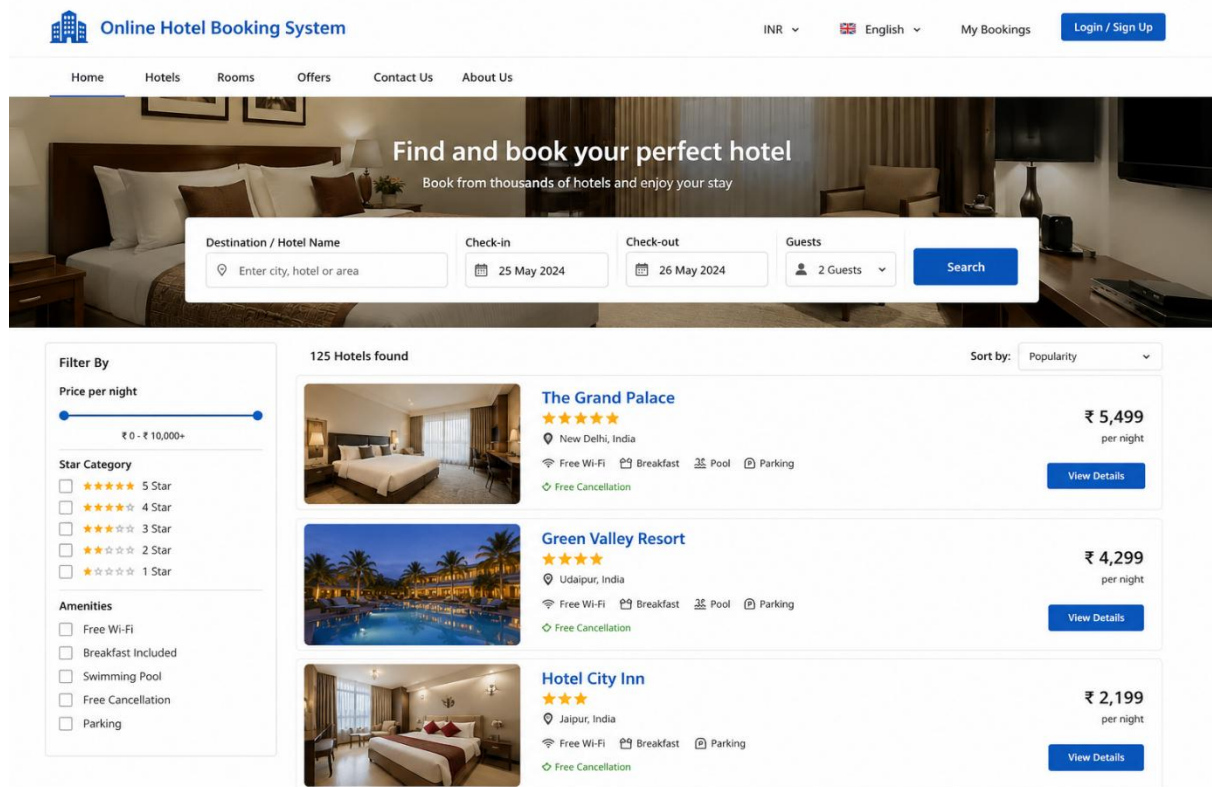
This architecture ensures smooth communication between users and the system, improves performance, and makes the system scalable and easy to maintain.

Key Features of this Model

The proposed Online Hotel Booking System model is designed to provide an efficient, automated, and user-

friendly platform for hotel reservation and management. The key features of this model focus on improving booking processes, reducing manual work, and enhancing customer satisfaction.

Diagram suggestion



Chatgpt generated image

Objective of the Framework

The objective of the proposed framework for the Online Hotel Booking System is to design and develop a smart, secure, and user-friendly platform that simplifies the hotel reservation process for both customers and hotel administrators. The framework aims to provide an efficient online environment where users can search hotels, check room availability, compare prices, and book rooms anytime and from anywhere through the internet.

Another important objective of the framework is to automate hotel management activities such as room allocation, booking management, customer record maintenance, payment processing, and cancellation handling. This automation reduces manual work, saves time, minimizes human errors, and improves the overall efficiency of hotel operations.

The framework also focuses on providing real-time updates of room availability and booking status to avoid overbooking problems and improve customer satisfaction. It aims to ensure secure storage of customer

information and secure online payment transactions using a reliable database system and authentication mechanisms.

Algorithm / Pseudocode

INPUT:

User Registration Details

Login Credentials

Hotel Search Information

Booking Details

Payment Information

OUTPUT:

Available Hotel List

Booking Confirmation

Payment Status

Booking Receipt

Updated Room Availability

START

1. Display Home Page

2. User Registration/Login

IF user is new THEN

 Register user account

ELSE

 Login with username and password

ENDIF

3. Display Hotel Search Option

4. User enters:

- Location

- Check-in Date

- Check-out Date

- Number of Rooms

5. System searches available hotels from database

6. IF hotels are available THEN

 Display hotel list with:

- Hotel Name

- Room Type

- Price

- Facilities

- Availability
- ELSE
- Display "No Rooms Available"
- GO TO Step 4
- ENDIF
- 7. User selects hotel and room
- 8. System displays booking details
- 9. User confirms booking
- 10. System calculates total amount
- 11. User selects payment method
- 12. Process payment
- 13. IF payment successful THEN
 - Generate Booking ID
 - Save booking details in database
 - Update room availability
 - Display booking confirmation
- ELSE
 - Display "Payment Failed"
- ENDIF
- 14. Admin Module
 - Admin login
 - Manage hotels
 - Manage rooms
 - Manage bookings
 - View customer records
 - Generate reports
- 15. User Logout

Results and Discussion

The Online Hotel Booking System was successfully developed and tested to provide an efficient, secure, and user-friendly platform for hotel reservation management. The system allows users to register, search hotels, check room availability, book rooms, and make online payments easily through a web-based interface. The project successfully reduced the manual work involved in traditional hotel booking methods and improved the overall booking process.

The implemented system provides real-time room availability updates, which helps prevent duplicate

bookings and overbooking problems. Users can quickly compare hotel rooms, prices, and facilities before confirming their reservations. The booking confirmation and payment modules worked accurately and generated instant booking details and receipts for customers.

The admin module was also tested successfully. It enables administrators to manage hotel details, customer information, room availability, bookings, and payment records efficiently. The database stores all information securely and allows easy retrieval of records whenever required.

The project results show that the system improves booking speed, reduces paperwork, minimizes human errors, and enhances customer satisfaction. The framework also increases operational efficiency for hotel management by automating reservation and record management tasks.

During the discussion and testing phase, it was observed that the system performs effectively for multiple users and provides a smooth booking experience. The project demonstrates how modern web technologies and database systems can be used to simplify hotel reservation services and improve business productivity.

Conclusion

The Online Hotel Booking System is a modern and efficient solution developed to simplify the hotel reservation process for both customers and hotel administrators. The project successfully provides an easy-to-use platform where users can search hotels, check room availability, compare prices, and book rooms online from anywhere at any time.

The system helps in reducing manual work, paperwork, and human errors by automating booking, payment, and hotel management processes. Features such as real-time room availability, secure login, online payment, booking confirmation, and admin management improve the overall efficiency and reliability of the system.

The project also enhances customer satisfaction by providing fast and convenient booking services. Hotel administrators can easily manage rooms, customer records, bookings, and reports through the admin panel. The database management system ensures secure storage and quick access to information.

Overall, the proposed system demonstrates the importance of web-based technologies in improving hotel management services and business productivity. The Online Hotel Booking System is cost-effective, reliable, time-saving, and capable of handling hotel operations more effectively than traditional manual methods. Future improvements such as mobile applications, AI-based recommendations, and advanced security features can further enhance the performance and usability of the system.

Declaration of Conflicting Interests

The authors declare no potential conflicts of interest with respect to the research, authorship and publication of this article.

Funding

The author received no financial support for the research, authorship and publication of this article.

References

1. Chen, L., Goh, C. F., Low, Y. M., Tan, O. K., & Lim, K. Y. (2025). From service to intention: A Technology Acceptance Model perspective on e-service quality in online hotel booking. *SAGE Open*. <https://doi.org/10.1177/21582440251397834> (Sage Journals) [1]
- Ahmad, K., & Sharma, B. K. (2023). Online satisfaction and hotel booking intentions: An information system success model perspective. *Journal of Quality Assurance in Hospitality & Tourism*, 26(6), 1161–1193. <https://doi.org/10.1080/1528008X.2023.2283502> (Taylor & Francis Online) [2]
2. Chang, C. M., Liu, L. W., Huang, H. C., & Hsieh, H. H. (2019). Factors influencing online hotel booking: Extending UTAUT2 with age, gender, and experience as moderators. *Information*, 10(9), 281. <https://doi.org/10.3390/info10090281> (MDPI) [3]
3. Law, R., & Wong, R. (2010). Analysing room rates and terms and conditions for the online booking of hotel rooms. *Asia Pacific Journal of Tourism Research*, 15(1), 43–56. <https://doi.org/10.1080/10941660903310102> (Taylor & Francis Online) [4]
4. Shukla, A., & Rodrigues, R. H. (2020). Facilitators of online hotel booking through third party aggregators: Measurement and validation in the Indian context. *International Journal of Hospitality & Tourism Administration*, 23(4), 723–753. <https://doi.org/10.1080/15256480.2020.1842840> (Taylor & Francis Online) [5]
5. Bemile, R., Achampong, A., & Danquah, E. (2014). Online hotel reservation system. *International Journal of Innovative Science, Engineering & Technology*, 1, 583–588. (SCIRP) [6]
6. Jeevanjot Singh, Mavi, A. S., & Kaur, K. (2023). Comprehensive review on web-based hotel management system. *International Journal of Engineering Research & Technology (IJERT)*, 12(11). (IJERT) [7]
7. Murphy, H. C., & Chen, M. M. (2014). Online information sources used in hotel bookings: Examining relevance and recall. *Journal of Travel Research*, 55(4). <https://doi.org/10.1177/0047287514559033> (Sage Journals) [8]
8. Toader, V., & others. (2014). Online hotel booking systems in Romania. *Procedia Economics and Finance*, 15, 1235–1242. [https://doi.org/10.1016/S2212-5671\(14\)00583-8](https://doi.org/10.1016/S2212-5671(14)00583-8) (ScienceDirect) [9]
9. Talwar, S., Dhir, A., Kaur, P., & Mäntymäki, M. (2022). Modelling the significance of website quality and online reviews to predict the intention and usage of online hotel booking platforms. *Heliyon*, 8(9). <https://doi.org/10.1016/j.heliyon.2022.e10735> (ScienceDirect) [10]