



International Journal of Innovative Research in Computer and Communication Engineering

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.771

Volume 14, Issue 1, January 2026



International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCCE)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Review of Guest Service Applications for Room Booking and Allocation

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ABSTRACT: The hospitality sector requires effective handling of guest details, room availability, and booking operations to maintain service quality. Traditionally, many small hotels and guest houses rely on manual record keeping or basic digital tools, which often leads to data inconsistency, booking conflicts, and operational delays. With the growth of computer-based applications, several guest service solutions have been developed to improve booking accuracy and data organization.

This review paper presents an analytical study of existing guest service applications used for room booking and allocation. The paper focuses on different approaches adopted in desktop-based and web-based systems, their working principles, advantages, and limitations. The review highlights common challenges faced in traditional systems and identifies the need for simple, low-cost, and user-friendly guest service applications suitable for small-scale hospitality environments. The observations derived from this study provide a foundation for developing improved systems with better usability and reliability.

KEYWORDS: Guest service application, room booking, room allocation, desktop systems, hospitality software, booking systems

I. INTRODUCTION

Guest service operations play a crucial role in the hospitality industry. Efficient handling of room booking and allocation ensures customer satisfaction and smooth daily functioning. Inaccurate booking information or room conflicts can directly affect service quality and reputation.

In many small hotels, lodges, and guest houses, booking operations are still performed manually using paper registers. Although this approach requires minimal investment, it creates difficulties in long-term data maintenance, searching records, and preventing duplicate bookings. With increasing guest flow, manual systems become inefficient and error-prone.

To address these challenges, computer-based guest service applications have been introduced. These systems aim to automate booking processes, maintain digital records, and improve overall accuracy. This review paper studies various types of guest service applications and evaluates their effectiveness in room booking and allocation.

II. OVERVIEW OF GUEST SERVICE APPLICATIONS

Guest service applications are software systems designed to assist hospitality staff in maintaining guest information, room availability, and booking history. These systems can be broadly categorized into:

- Manual record systems
- Spreadsheet-based systems



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- Desktop-based applications
- Web-based booking platforms

Each approach differs in terms of complexity, cost, and usability.

Manual systems involve handwritten entries and physical registers. Spreadsheet-based systems provide basic digital storage but lack automation. Desktop-based applications offer offline operation and structured interfaces, while web-based systems enable online access and centralized databases.

III. EXISTING APPROACHES FOR ROOM BOOKING

A. Manual Booking Systems

Manual booking systems involve maintaining registers where guest details and room numbers are recorded. Although simple, these systems face issues such as data loss, illegible handwriting, and difficulty in record retrieval.

B. Spreadsheet-Based Systems

Spreadsheets allow digital storage of booking data and basic calculations. However, they do not provide validation mechanisms, automated allocation, or secure access control.

C. Desktop-Based Applications

Desktop applications are installed locally and provide graphical interfaces for booking operations. They offer faster processing, structured data handling, and offline usability.

D. Web-Based Booking Platforms

Web-based systems support online reservations and centralized access. However, they require continuous internet connectivity and higher implementation cost.

IV. ROOM ALLOCATION TECHNIQUES

Room allocation is a critical component of guest service applications. Allocation techniques are generally based on:

- Room type selection (single, deluxe, etc.)
- Availability checking
- Booking duration
- Guest preferences

Most existing systems follow rule-based allocation where rooms are assigned sequentially based on availability. Advanced systems may include priority-based allocation, but such features increase complexity and cost.



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V. COMPARATIVE ANALYSIS OF EXISTING SYSTEMS

System Type	Advantages	Limitations
Manual System	Low cost, easy to start	High error rate, poor record safety
Spreadsheet	Digital storage, simple	No automation, data inconsistency
Desktop Application	Offline use, user-friendly	Limited scalability
Web-Based System	Online access, real-time updates	Internet dependency, high cost

This comparison highlights that desktop-based applications provide a balanced solution for small-scale hospitality environments.

VI. CHALLENGES IDENTIFIED IN EXISTING SYSTEMS

Through the study of current guest service applications, several challenges were identified:

- Booking conflicts due to improper availability tracking
- Difficulty in maintaining historical booking records
- Lack of user-friendly interfaces
- High cost of advanced systems
- Dependency on internet connectivity
- Limited technical knowledge among users

These challenges emphasize the need for simplified and efficient solutions.

VII. OBSERVATIONS FROM THE REVIEW

The review of existing systems leads to the following observations:

1. Simplicity is more important than complexity for small hotels.
2. Offline desktop applications are more practical in rural or semi-urban areas.
3. Automated room allocation reduces human error.
4. Structured data storage improves reliability.
5. User-friendly interfaces increase adoption rate.

These observations guide the design of improved guest service applications.

VIII. FUTURE TRENDS IN GUEST SERVICE APPLICATIONS

Future guest service systems are expected to include:

- Integration with digital payment gateways



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- Automated reporting features
- Secure data backup mechanisms
- Modular system design
- Optional cloud synchronization

Such enhancements can improve performance while maintaining usability.

IX. CONCLUSION

This review paper analyzed various guest service applications used for room booking and allocation in the hospitality sector. The study compared manual, spreadsheet-based, desktop-based, and web-based systems and highlighted their strengths and limitations.

The review indicates that desktop-based guest service applications provide an effective balance between functionality, cost, and usability. The insights obtained from this review can assist in designing reliable systems that reduce operational errors and improve service efficiency. This study serves as a foundation for future research and system development in the hospitality software domain.

ACKNOWLEDGMENT

The authors would like to express sincere gratitude to the faculty members and department staff for their academic guidance and continuous support. The encouragement and suggestions provided during the preparation of this review paper were highly valuable.

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