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Hotel Management System: A Desktop-Based Solution for Streamlined Hospitality Operations

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Abstract: ***Hotel Management System (HMS) is a desktop-based application that facilitates hotel operations like room bookings, customer records, staff management, and payment processing through an interactive Java GUI with MySQL as the backend. Designed with the intent to replace traditional paper-based workflows, HMS enhances efficiency, accuracy, and security. The application allows hotel managers to handle guest information, real-time room availability, and financial transactions from a single system. This paper discusses the current challenges in hotel operations, the proposed system design, implementation methodology, and the results from practical testing.***

Keywords: Hotel Management System, Java, MySQL, Room Booking, Employee Management, Desktop Application, Automation

I. INTRODUCTION

Traditional hotel management relies heavily on paperwork, which often leads to delays, data redundancy, and errors. This paper introduces a computerized hotel management system to automate and centralize essential hotel operations. Developed using Java (Swing) for the frontend and MySQL for the backend, this system helps reduce manual intervention and ensures quick access to guest data and room availability. Key features include role-based access, automated check-in/check-out tracking, and customer detail management.

II. LITERATURE REVIEW

Hotel management research emphasizes automation, real-time data processing, and user-friendly interfaces. Studies indicate improvements in customer satisfaction and operational efficiency when hotels adopt digital solutions. Technologies like PMS (Property Management Systems) and centralized databases have revolutionized hotel administration. Literature also discusses the importance of secure user access, robust database structures, and GUI design. The need for scalable and flexible systems is crucial to adapt to varying hotel sizes and customer expectations.

III. PROBLEM DEFINITION

A. Existing Issues:

1) Time-consuming manual entry and retrieval of guest records
2) Prone to human errors in room allocation and billing
3) Inefficient check-in/check-out processes
4) Difficulty maintaining historical data
5) Lack of security and unauthorized data access

B. Proposed Solution:

1) Desktop application using Java Swing and MySQL
2) Secure role-based login for admin and staff
3) Real-time room status management
4) Automated database backup
5) Simple and attractive GUI for ease of use

IV. SYSTEM METHODOLOGY

A. Requirement Analysis

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1) Software Requirements:

- OS: Windows 10
- Java JDK, NetBeans IDE
- MySQL Community Server

2) Hardware Requirements:

- Intel i3 Processor, 4 GB RAM, 64-bit OS
- 1024x768 resolution monitor

B. System Components

- User Interface: Developed using Java Swing
- Business Logic: Java functions for room booking, customer details, etc.
- Database: MySQL to store and manage hotel data
- Authentication: Admin login for secure access

C. Key Modules

- Room Booking & Reservation
- Guest Management (Check-in/Check-out)
- Employee Management
- Payment Processing
- Report Generation

V. DEVELOPMENT AND IMPLEMENTATION

The HMS application was developed using Java's Swing API for the frontend and MySQL for backend operations. The NetBeans IDE facilitated efficient code management and debugging. Swing was chosen over AWT due to better component support and customization features. The backend was structured with normalized MySQL tables for customers, rooms, staff, and transactions. Features like validation, data encryption, and error handling were implemented to ensure system robustness.

VI. TESTING AND RESULTS

The system underwent unit and integration testing. All core functionalities such as booking, check-in/check-out, login, and data retrieval were validated. Test cases confirmed that automation reduced room allocation time by over 50% and improved data consistency. GUI testing showed that non-technical users could operate the system with minimal training.

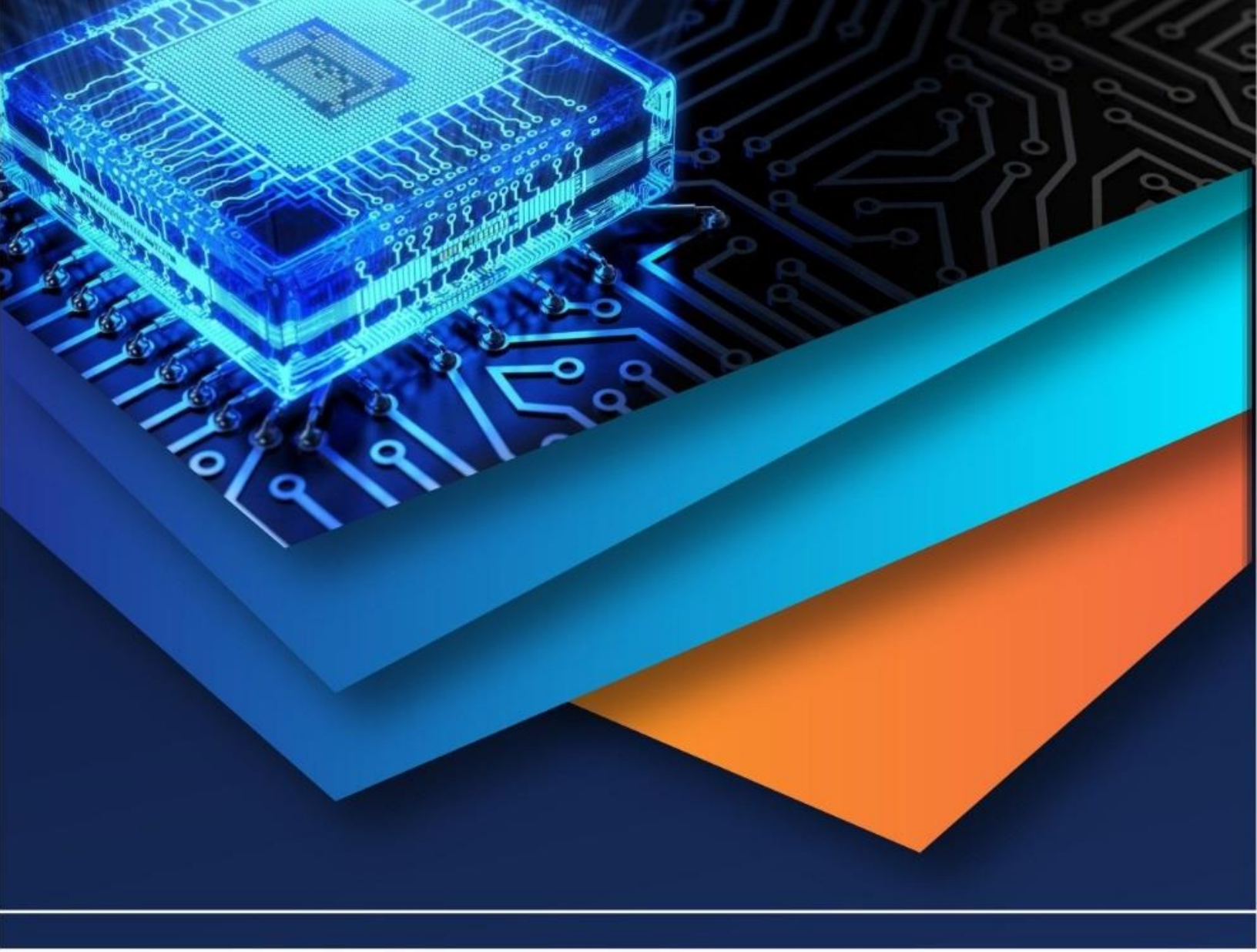
VII. CONCLUSION

This research demonstrates that a desktop-based hotel management system can significantly enhance operational efficiency and service delivery. The project replaces outdated manual systems with a secure and flexible digital platform. Future work can include mobile app integration and cloud-based database support for remote access.

REFERENCES

[1] https://opus.govst.edu/cgi/viewcontent.cgi?article=1199&context=capstones
[2] https://www.irjmets.com/uploadedfiles/paper/volume2/issue_3_march_2020/276/1628082965.pdf
[3] https://www.researchgate.net/publication/367179540_PROJECT_ON_HOTEL_MANAGEMENT_SYSTEM
[4] https://www.researchgate.net/publication/365151133_Research_on_Hotel_Management_System
[5] https://www.jetir.org/papers/JETIR2305760.pdf

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