

SE MINI-PROJECT REPORT ON

# **HOTEL MANAGEMENT SYSTEM**

(IT Workspace)

Submitted in partial fulfillment of the requirements  
of the degree of bachelor's in engineering  
by

|               |         |
|---------------|---------|
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CHEMBUR, MUMBAI-400088.

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## *Certificate*

*This is to certify that the report of the mini project entitled*

### **“Hotel Management System”**

*is a Bonafide work of*

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**UNIVERSITY OF MUMBAI**

during semester III in partial fulfilment of the requirement for the award of the degree of

**BACHELOR OF ENGINEERING**

in

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## Approval for Mini Project Report for S. E. semester IV

This project report entitled “**Hotel Management System**” by *Umang Jain, Shreya Pawar, Sarvesh Patil*, and *Mohit Rathod* is approved for semester IV in partial fulfillment of the requirement for the award of the degree of Bachelor of Engineering.

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Examiners:

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2. \_\_\_\_\_

Date: 04/05/2023

Place: Mumbai

## DECLARATION

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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## **ABSTRACT**

This project is primarily designed to give an insight to Front desk-based hotel management system. It is because of problem associated with the existing system which involves the use of manual method in processing and keeping information int the system. So, among the numerous problems associated with the existing system are; staff are spending far too much time chasing mistakes instead of attending to customers, sales going unrecorded, inventory does not match your tallies and other. Hence, we create hotel management system in a modular form so that it can be adapted by different hotels with different specifications. Hotel front desk personnel can enter all the relevant data about the customers, staffs, rooms, and other hotel details. Hotel Managers can have overview of the hotel by looking through the database at a later stage for decision making. This approach will help you to better manage your resources eventually.

# INTRODUCTION

Back in 1970's, the first hotel management system was introduced. however, till the present time, not all hotel has one. Hence, it can be deduced that there are still many hotels with a non-proper management system of which do not fulfill the criteria of modern hotel .thanks to the modern technology that has been a blessing to the hotel industry. The revolution of technology in the front office department has empowered hotel front desk staff to be more efficient, productive and guest-centric. Every multi-departmental physical business needs to have a front office or reception to receive the visitor's front office department is the face and as well as the voice of business. Regardless of the star rating of the hotel or the hotel type, the front office department is a common link between the customers and the business. This tradition of front office is elevated by The "HOTEL MANAGEMENT SYSTEM". It was created to address the issues that plagued the previous manual system i.e. the file handling .This program is designed to eliminate, and in some cases, decrease, the problems that the current system has.

To eliminate data entry mistakes, the software is kept as simple as possible. When inputting incorrect data, it also displays an error notice. The user doesn't require any formal expertise to operate this system. Admin will be able to view, update and modify the staff and customers data add new customers , add new rooms, update rooms availability, add new staff, alter/ add salary of staff, customers details, etc.

One of the major drawbacks of the database management system is that it is not secure i.e., any attacker can easily access the database without having an authorizedkey by inputting a password and username of admin because of which the data is vulnerable.



## **OBJECTIVE**

The main objective of this project is to create a hotel management framework which overcomes the existing manual system by the help of computerized equipment and full-fledged computer software, fulfilling their requirement, so that their valuable information can be stored for longer period with easy accessing and manipulating of the same. The system proposes the efficiency of the front desk personnel .

The following are the operations included in our system :

1. Hotel Room Bookings and Reservation
2. Front Desk Operations
3. Managing Guest Profile
4. User Privilege and security control
5. Keeping a tab on guest check-in check-out status
6. Maintenance of hotel rooms.
7. Providing a user friendly interface.

# SOFTWARE USED

## PROGRAMMING LANGUAGES:

- Python (frontend)
  - Tkinter is a built-in GUI (Graphical User Interface) library in Python that allows you to create desktop applications with a graphical interface. Tkinter provides a set of tools to create buttons, menus, text boxes, and other widgets for building interactive user interfaces.
  - It is a wrapper around the Tk GUI toolkit, which was developed by John Ousterhout. Tk is a cross-platform toolkit that can be used on Windows, macOS, and Linux. Tkinter is included with Python by default, so you don't need to install any additional libraries to use it.
  - It is a powerful GUI library that can be used to create complex applications with a rich graphical interface. There are many resources available online for learning Tkinter and building GUI applications with it
- MYSQL (backend)

MySQL is a popular open-source relational database management system (RDBMS) that uses SQL (Structured Query Language) to manage and query data. It is developed, distributed and supported by Oracle Corporation. We have used the mysql-connector-python library to perform a variety of database operations, including creating tables, inserting and updating data, and more.

## APPLICATIONS USED:

- Pycharm Community Edition 2022.3.2
- Wamp Server

## OPERATING SYSTEM:

- Windows 11 Version 22H2

# **REVIEW OF LITERATURE**

## **01) OPTIMIZATION AND IMPLEMENTATION OF HOTEL DATA HIERARCHICAL MANAGEMENT METHOD BASED ON B/S METHOD**

This research paper was Introduced in year 2019 by YANGJINGJING. To better promote the development of the hotel industry and improve the work efficiency of the hotel industry, this paper proposes to optimize the hierarchical management method of hotel data based on B/S mode, to maximize the economic benefits in the hotel operation process, and to ensure the accurate processing of massive data and information security in the hotel operation. Combined with the current era background, the common data management methods in hotels are deeply studied and analyzed. Based on combining traditional methods, optimization suggestions are put forward for the current common data management problems. Combined with feature collection methods, the hierarchical classification of massive and complex data is completed. The management requirements of hotel operators and the experience requirements of users are fully met, thus achieving the goal of improving the safety of data management.

## **02) RESEARCH ON THE APPLICATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGY IN TEACHING INTRODUCTION TO HOTEL MANAGEMENT IN THE CONTEXT OF SMART HOTEL**

This research paper was published in year 2021 by QINGHUI Guo. The rapid development and application of information technology has brought new opportunities for the development of the hospitality industry. hotels have introduced modern technologies in management, engineering, service, and marketing to achieve hotel intelligence, thus deriving the concept of "smart hotel". The so-called smart hotel refers to the hotel that has a complete set of intelligent system, and through digital and network, the hotel achieve digital information service technology, such as intelligent access control system, intelligent power switch, interactive video system, computer network system. Since the emergence of Hangzhou Huang long Hotel - the world's first smart hotel in 2009 until now, the industry has done a lot of exploration and attempts in the field of smart hotels.

### 03) CONSTRUCTION OF HOTEL MANAGEMENT INTELLIGENCE SYSTEM BASED ON PROCESS DATA COLLECTION AND OPTIMIZATION ALGORITHM

This paper was published in year 2022, by Fei Lui. In this paper, in order to solve some problems faced in a manual hotel management system an effective and easy to use software is designed, and some points over that are thoroughly discussed. The paper first discuss about the currently hotel management issues and optimization required for the business purpose. It discuss that hotel and tourism industry has benefited significantly since employing almost 10.31% of the total employed population and it needs further growth and therefore there exists a need for a smart hotel management system. Further the paper discuss the difficulties faced in creating such a system and which are, large amount of knowledge system, participating units, difficult to control execution time, communication and coordination is difficult, etc. It further suggests that using artificial intelligence and internet of things it is possible to create an effective system which works at a high speed and enhances the competitiveness of the hotel. Further is suggest and algorithm, PROCESS DATA COLLECTION AND OPTIMIZATION which talks about how we can manage the data collected during the execution of the system and how we can optimize the process effectively. Further it talks about creating an intelligence, which can be used to perform tasks like booking a room, storing data elements like name, passwords, id proofs, etc. And reaching towards the end the paper gives an idea about how a hotel management system can be created on the process optimization algorithm and explains it briefly. And the at the end is talks about the small experiment performed to test the process optimization algorithm.

### 04) A DESIGN AND IMPLEMENTATION OF HOTEL ROOM MANAGEMENT SYSTEM .

This paper was Published in year 2019 by wei wei. In this paper, they suggest to analyzing the market demand and as per that the detailed design should be made at which it ensures the complete implementation of the system. Further they highlight the system structural and functional design in which for structural there different forms and types of table and for functional they firstly set the outflow of the system as that the references of that for structural is developed. Now by the advantages of the java platform and layered architecture technologies, the advanced, applicable and reliable system is developed, which can have the long term development goal of the system. It realizes the information of hotel management and plays a positive role in improving the efficiency of hotel room management information. The only key of the Better management system is to meet the final needs of the system users because which will never remain constant. And then also thinking for the future development which will be limited terms like:

1. Improve the interface and add some humanized functions.
2. Increasing the credit rating system can achieve better communication with customer and let customers have better choices and experience .

## **COMPARITIVE ANALYSIS**

### **STUDY OF EXISTING SYSTEM:**

Old system of Hotel Management is fully based on paperwork. Hotel management must manage all record of customers and rooms on papers. Paperwork is a difficult job. There can be delay and the problem of human error in allocating rooms and providing resources. And to overcome the problems new system was created.

### **STUDY OF PROPOSED SYSTEM:**

The whole concept of new system is based around idea of storing data virtually with less chaos and easy handling of data. They are computerized systems that facilitate the management of properties, individual property, equipment, including maintenance, legalities, and personnel all through a single piece of software. They replaced old-fashioned, paper-based methods that tended to be bought Hospitality industry.

## **IMPLEMENTATION OF THE PROJECT**

- MySQL Connection
- Login Page
- Dashboard
- Admin
- Reception
- Add Employee
- Add Room
- View Employee Data
- View Customer info
- View Room Status
- Check-In
- Check-Out
- Search room
- Update room status
- Room info

## E-R DIAGRAM:

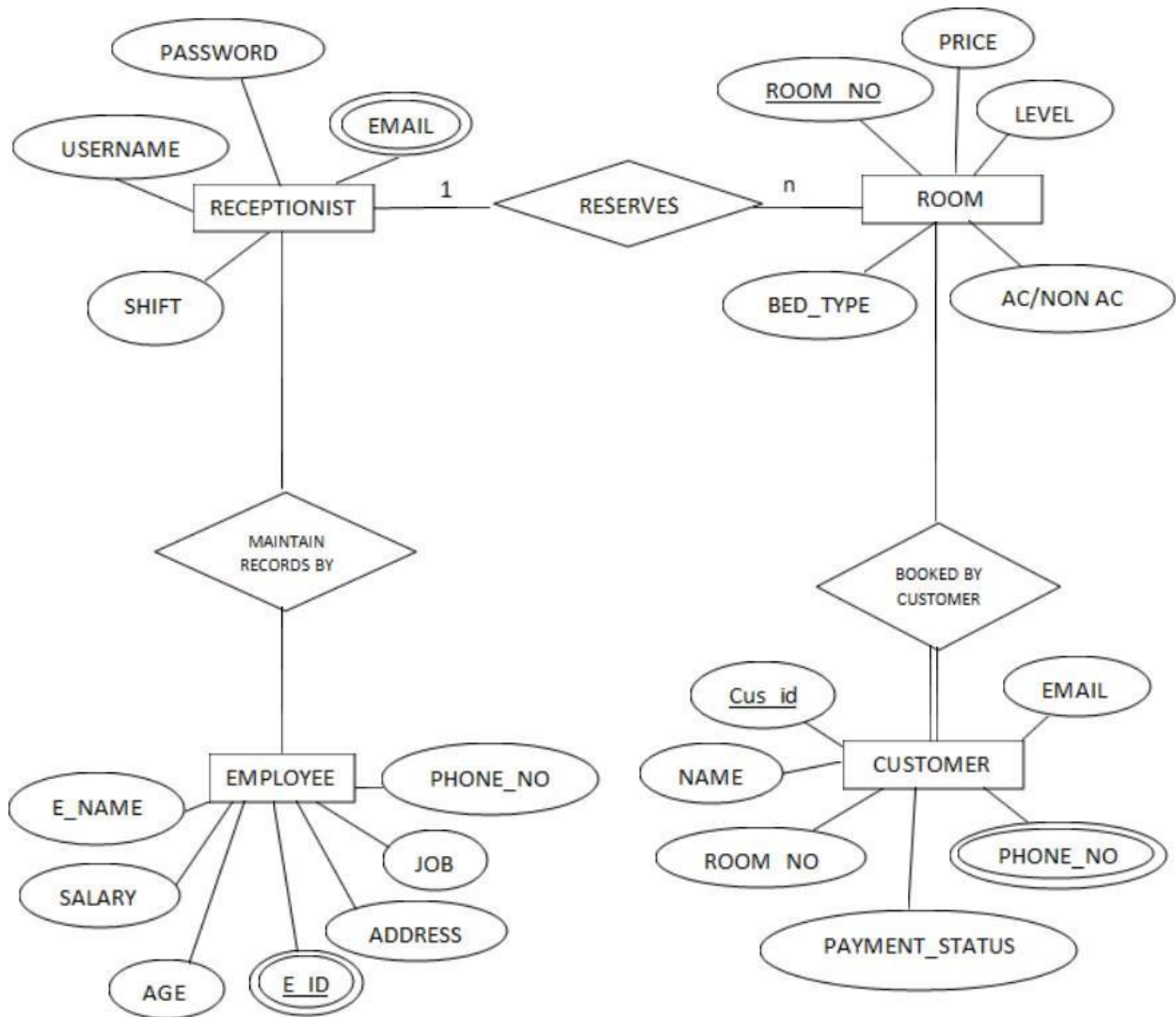


Figure no- 7.1 ER-Diagram of the system.

## SYSTEM FLOW:

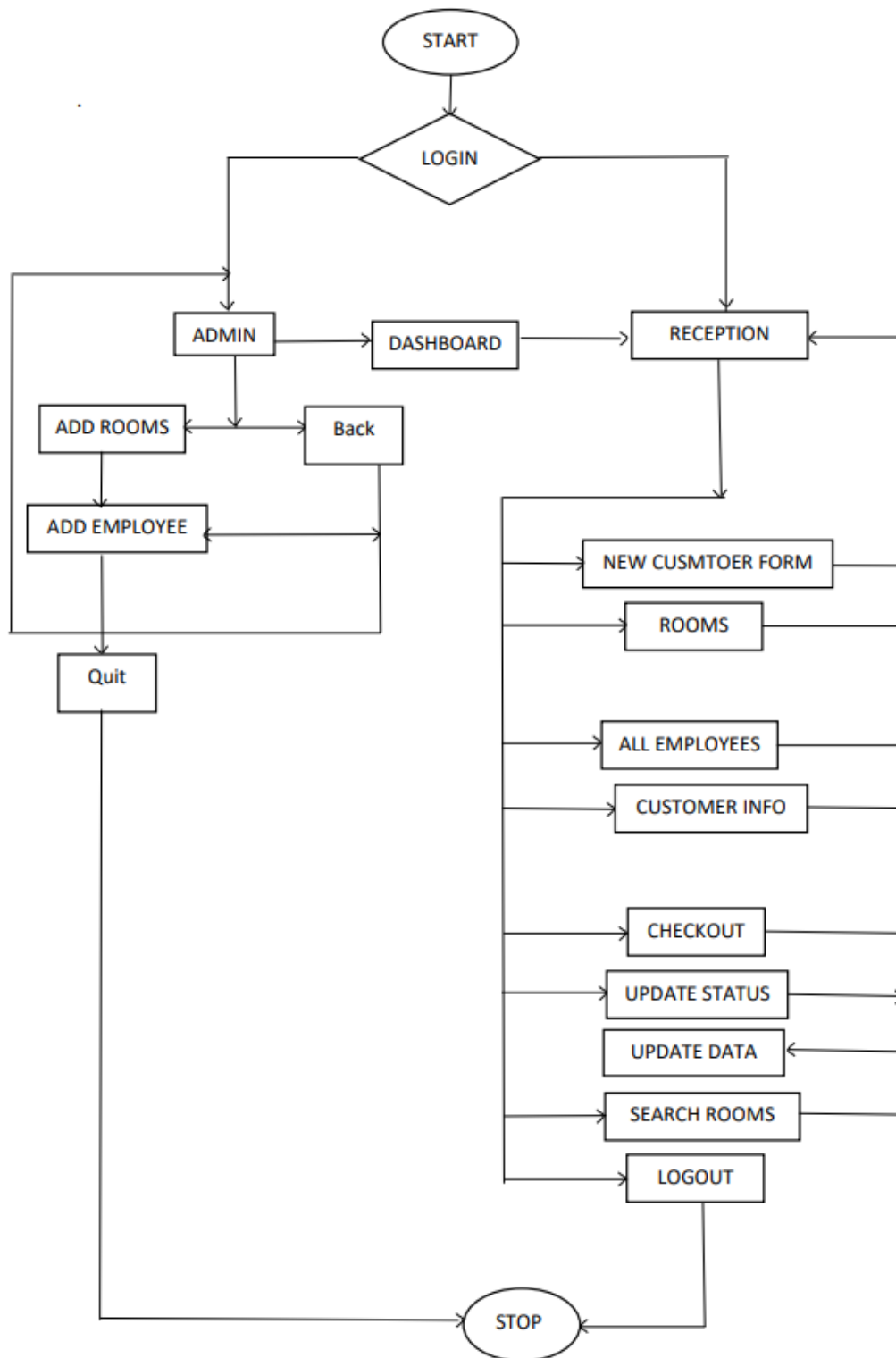


Figure no- 7.2 Organizational Structure of the system.



## DESIGN DETAILS

Following are the screens of the Hotel Management System where you can see all the features of this system in use and you can also see the GUI of the system:

### LOGIN PAGE

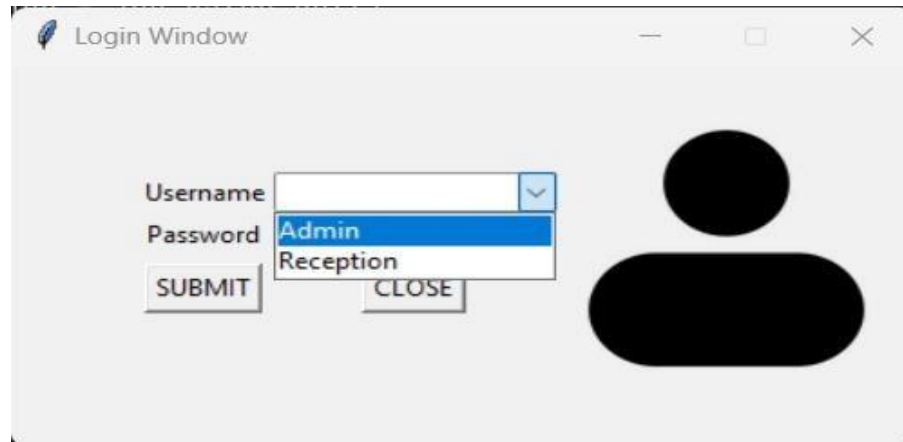


Figure no- 7.3 Choice of logging

### MAIN DASHBOARD

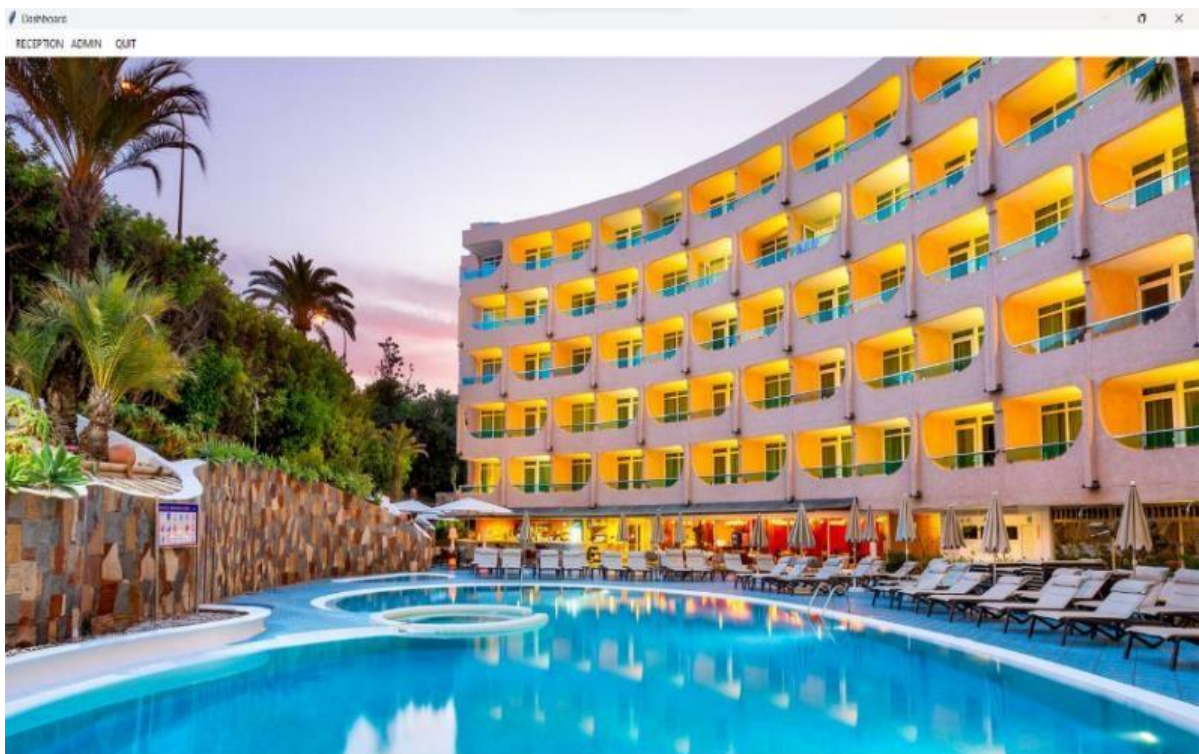


Figure no- 7.4 Panel of the system

ADMIN



Figure no- 7.5 Authorized user interface

RECEPTION



Figure no- 7.6 Administrator interface

CHECK-IN

New Customer Form

Document :

Customer ID :

Name :

Gender :

☒ MALE ☐ FEMALE

Country :

Room Number :

Checkin Time :

2023-04-09 19:34:51.478757

Deposit :

ADD

BACK

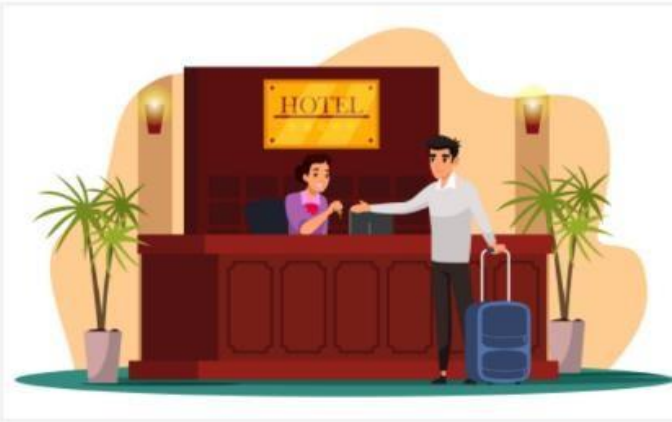


Figure no- 7.7 Customer Check-in data

CHECK-OUT

tk

Customer ID

46

Name

Elon Musk

Room Number

106

Checkin Time

2023-04-27 00:05:17:

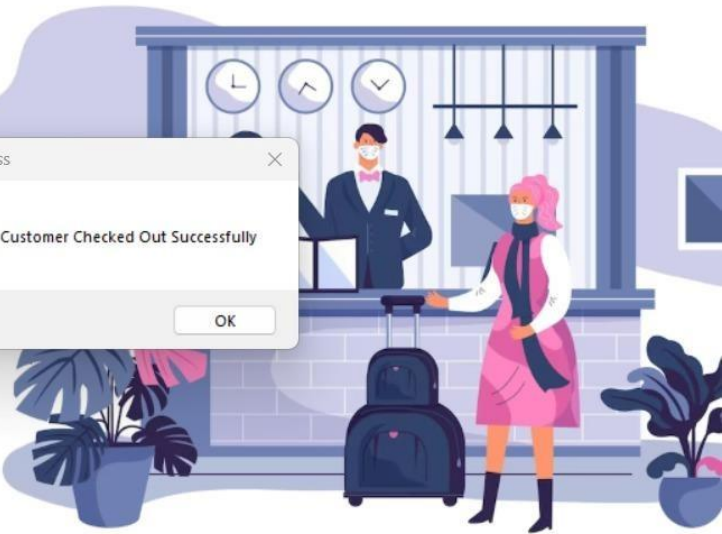
Checkout Time

2023-04-27 20:32:41.359012

Back

Checkout

Check



Success

Customer Checked Out Successfully

OK

Figure no- 7.8 Customer check-out data

## CUSTOMER INFO

| Customer Info   |              |       |        |         |      |                       |         |
|-----------------|--------------|-------|--------|---------|------|-----------------------|---------|
| Document        | Phone Number | Name  | Gender | Country | Room | Checkin Time          | Deposit |
| Driving license | 123          | Rinku | Female | inida   | 123  | 2023-04-09 19:19:56.9 | 4567    |
| Passport        | 104          | Arya  | Female | India   | 106  | 2023-04-27 03:20:24.5 | 2000    |

Back

Figure no- 7.9 Customer Details

## ALL EMPLOYEES

| Employee info |     |        |                  |        |            |                     |
|---------------|-----|--------|------------------|--------|------------|---------------------|
| name          | age | gender | job              | salary | phone      | email               |
| Shreya        | 21  | Female | Manager          | 32000  | 5236412879 | shreyap@gmail.com   |
| Mohit         | 22  | MALE   | Room Service     | 2200   | 5874125986 | mohit12@gmail.com   |
| Sarvesh       | 21  | MALE   | Housekeeping     | 2000   | 7854123658 | sarvesh90@gmail.com |
| Umang         | 23  | MALE   | Front Desk Clerl | 3000   | 9857412563 | umangj354@gmail.com |
| Yash          | 22  | MALE   | Housekeeping     | 3000   | 9587452365 | yash@gmail.com      |
| Vasundhara    | 19  | Female | Room Service     | 23456  | 9874563214 | Vasu@gmail.com      |
| Arya          | 32  | Female | Kitchen Staff    | 1234   | 897456321  | arya@gmail.com      |
| harsh         | 23  | Male   | Kitchen Staff    | 123456 | 6598741238 | harsh2@gmail.com    |

BACK

Figure no- 7.10 Employee Details

## ROOMS INFO

| Room        |              |                 |       |            |
|-------------|--------------|-----------------|-------|------------|
| Room number | Availability | Cleaning status | Price | Bedtype    |
| 101         | Available    | Cleaned         | 5000  | Single Bed |
| 102         | occupied     | Cleaned         | 6000  | double Bed |
| 106         | Available    | Clean           | 12345 | Double     |

Back

Figure no- 7.11 Room Details

## SEARCH ROOMS

| Search Room |              |                 |       |            |
|-------------|--------------|-----------------|-------|------------|
| Room number | Availability | Cleaning status | Price | Bedtype    |
| 101         | Occupied     | Cleaned         | 2100  | Double Bed |
| 5           | Occupied     | Cleaned         | 10000 | double Bed |
| 102         | Occupied     | Dirty           | 3100  | Single Bed |
| 104         | Available    | Dirty           | 3000  | Single Bed |
| 122         | Available    | Clean           | 4000  | Double     |
| 104         | Available    | Dirty           | 3000  | Single Bed |
| 106         | Available    | Clean           | 3000  | Single     |
| 122         | Available    | Clean           | 4000  | Double     |

Search :  Availability

Back Show Selections

Figure no- 7.12 Availability of rooms

**ADD ROOMS**

Add Room

Room Number :

Availability :

Cleaning Status :

Price :

Bed Type :

SUBMIT

CANCEL




Figure no- 7.13 Add new rooms

**ADD EMPLOYEES**

Add Employee

Name :

Age :

Gender :

MALE

FEMALE

Job :

Salary :

Phone :

EMAIL :

SUBMIT

CANCEL




Figure no- 7.14 Recruitment interface for new employees



## UPDATE STATUS AND DATA

The image shows a web application interface with two side-by-side windows. The left window, titled "Update Data", contains a form with the following fields and values:

- Customer ID: 77
- Room Number: 102
- Name: Shreya
- Checkin Time: Wed Nov 02 21:01:27 IST 2022
- Amount Paid: 3000
- Pending Amount: 100

Below the form is an "Update" button. The right window, titled "Update Status", displays the same data and includes "Check", "Update", and "Back" buttons. To the right of the "Update Status" window is an illustration of a hotel reception desk with a staff member and a customer.

Figure no- 7.15 Change data of customers

## **FUTURE SCOPE**

The specific needs of users will not remain unchanged. How To better meet the final needs of system users is still the main Direction of this paper. At present, the work of this Paper is only a beginning, and there are many other areas to study. specifically in the following points:

(1) Improve the interface and add some humanized functions such as:

- Hotel Pick up and Drop Service
- Hotel Laundry
- Tourist package
- Guide System
- Restaurant service

(2) Increasing the credit rating system can achieve better communication with customers and let customers have better choices and experiences.

(3) To upgrade b/s architecture, database servers can be used less, without considering data synchronization between servers.

(4) The records of the customers who checked out is also important Therefore, the database will have a specific table for it.



## **CONCLUSION**

The goal of this System is to digitalize personnel databases in businesses and provide administrators access to computers. The focus of the above activity is to develop a software which makes loading the data and storing it efficiently, making it easier for the Admin. The hotel management system overcomes the manual management of all the records which creates mess and bit chaotic. We also keep provision to update the details of customers, rooms, and employees. The system allows the user to use DML queries and manipulate data as required. All pages and commands were created successfully using Java swing and AWT packages.

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