A REPORT ON

“HOTEL MANAGEMENT SYSTEM”

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE

COMPUTER ENGINEERING
As prescribed by

SAVITRIBAI PHULE PUNE UNIVERSITY

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2023-2024

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CERTIFICATE

This is to certify that the project report entitled

"HOTEL MANAGEMENT SYSTEM"

Submitted By

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Is a bonafide work carried out by them under the supervision by Prof. P. R. Dongre, and it is approved for the partial fulfilment of the requirement of Savitribai Phule Pune University for the Project in the Final Year of Computer Engineering.

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Place: Pune
Date: / /2023

ACKNOWLGEMENT

It is difficult task to acknowledge all those who have been of tremendous help in this academic project work. Nevertheless, we have made an effort through this report to express our deepest gratitude to all those who have contributed their part for this project directly or indirectly.

We would like to express our sincere thanks to our principal **Dr. K P. Patil Sir** for forwarding us to do our project and offering adequate duration in completing ourproject.

We take upon the opportunity to express our deepest gratitude & heartily thanks to **Prof. S N. Shelke Sir,** Head of Computer Engineering Department for theirconstructive suggestions & encouragement during our project.

With deep sense of gratitude, we extend our earnest & sincere thanks to our project guide **Prof. P. R. Dongre,** Department of Computer Engineering for his valuable support & guidance during the development of this project & encouraging us.

I am in debt of **rest of the staff of Computer Department,** for constantinspiration in the pedagogical world of Computer Engineering Field.

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ABSTRACT

The system aims at the maintenance and management of the different Hotels that are available in the different parts of the world. It mainly takes care of the Hotel management at the core area of the database. The system provides the information regarding the different Hotels that are available and their status specific to availability. The guests can visit the site and register themselves with the required information that is expected by the system. Each registered guest can raise a request for the unit bookings. The Guests are scheduled with the information of the availability of the units for they have requested the time

The Project HOTEL MANAGEMENT SYSTEM is a web based application that allows the hotel manager to handle all hotel activities online. Interactive GUI and the ability to manage various hotel bookings and rooms make this system very flexible and convenient. The hotel manager is a very busy person and does not have the time to sit and manage the entire activities manually on paper. This application gives him the power and flexibility to manage the entire system from a single online system

Hotel Management project provides room booking, staff management and other necessary hotel management features. The system allows the manager to post available rooms in the system. Customers can view and book room online. Admin has the power of either approving or disapproving the customer's booking request.

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INTRODUCTION

Overview

Hotel Management System is a system that provides us to reserving rooms, checking whether the rooms are vacant are or not etc by using online browsing. This system is very useful to all especially for business people. For Business people they don't have sufficient time for these then they can use this type of online Hotel Management Systems. By this project we will reduce the faults in bills of their expenditure and decrease time of delay to give the bills to the customers. We can also save the bills of the customer. By this project we can also include all the taxes on the bills according to their expenditures. It has a scope to reduce the errors in making the bills. Computerized bill can be printed within fraction of seconds. Online ordering of Booking is possible by using this software. This Project is based on php. If any one wants to book the room for few days then they can specify the specific number by seeing the types of rooms we have. The bill of this online booking is
based on the type of room they can select is displayed.

HOTEL MANAGEMENT SYSTEM is a hotel reservation site script where site users will be able to search rooms availability with an online booking reservations system. Site users can also browse hotels, view room inventory, check availability, and book reservations in real-time. Site users enter check in date and check out date then search for availability and rates. After choosing the right room in the wanted hotel – all booking and reservation process is done on the site and an SMS is sent to confirm the booking

Motivation

In the Hotel Management project, a manual working pattern of hotel management will be changed with a computer system. Customers will be able to book hotel rooms in advance with an advance date of check-in. Upon arrival at the hotel, his booking status will be updated to check-in, and similar features will be implemented. In the next step, the customer's status changes to check out. The customer's information remains in the history and can be used when they return to the hotel. The user has to just search his record and use it accordingly

I. To satisfy the need for having a system that accommodates hotel management.

II. II. To avoid manual and repetitive work.

Problem Definition

The mission is to facilitate easy management and administration of a hotel with capabilities to do Booking or reservations of the rooms, Cancellation of the rooms, Cash billing, Room service, Restaurant service, Restaurant Billing, Total Billing, Travels arrangement etc. using the automated hotel management software. One can Keep detailed records or info on an unlimited amount of customers. The system lets the user Know which all rooms are available for occupancy at any point of time. This makes the Booking considerably faster. And thus helps the hotel in better management and reduce a lot of paper work as well as manpower.

SYSTEM ANALYSIS

➢ Hardware Requirements

- Multi-core – 2.5 GHz processor or better.
- 8GB RAM.
- Windows 10, or 11.
- 250GB (or more) SSD.
- Mouse and Keyboard (wired or wireless)
- Monitor with 1024 X 768 resolution or higher.

➢Software Requirements

- Windows Xp, Windows 7(or up)
- Python IDLE
- MySQL

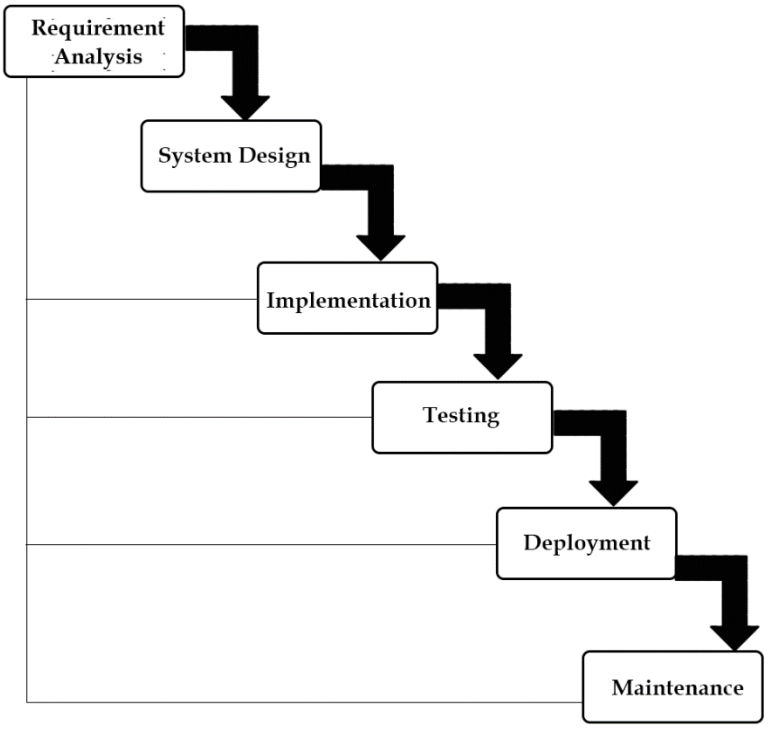
SYSTEM PLANNING

Software Development Life Cycle Model

WATERFALL MODEL

The waterfall model was selected as the SDLC model due to the following reasons:

- Requirements were very well documented, clear and fixed.
- Technology was adequately understood.
- Simple and easy to understand and use.
- There were no ambiguous requirements.
- Easy to manage due to the rigidity of the model. Each phase has specific deliverables and a review process.
- Clearly defined stages.
- Well understood milestones. Easy to arrange tasks.



SYSTEM DESIGN

System Architecture

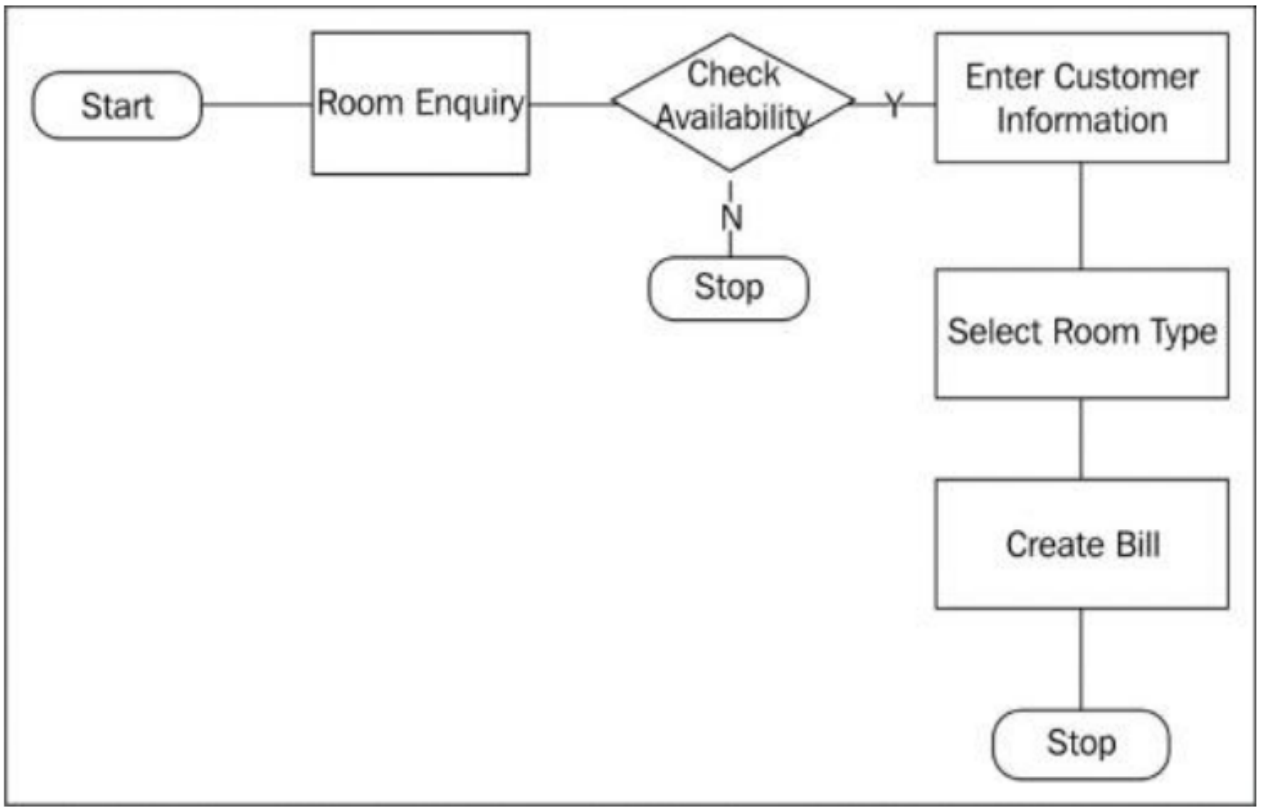


Fig. 01 – System Architecture

Data Flow Diagrams

Level 0: -

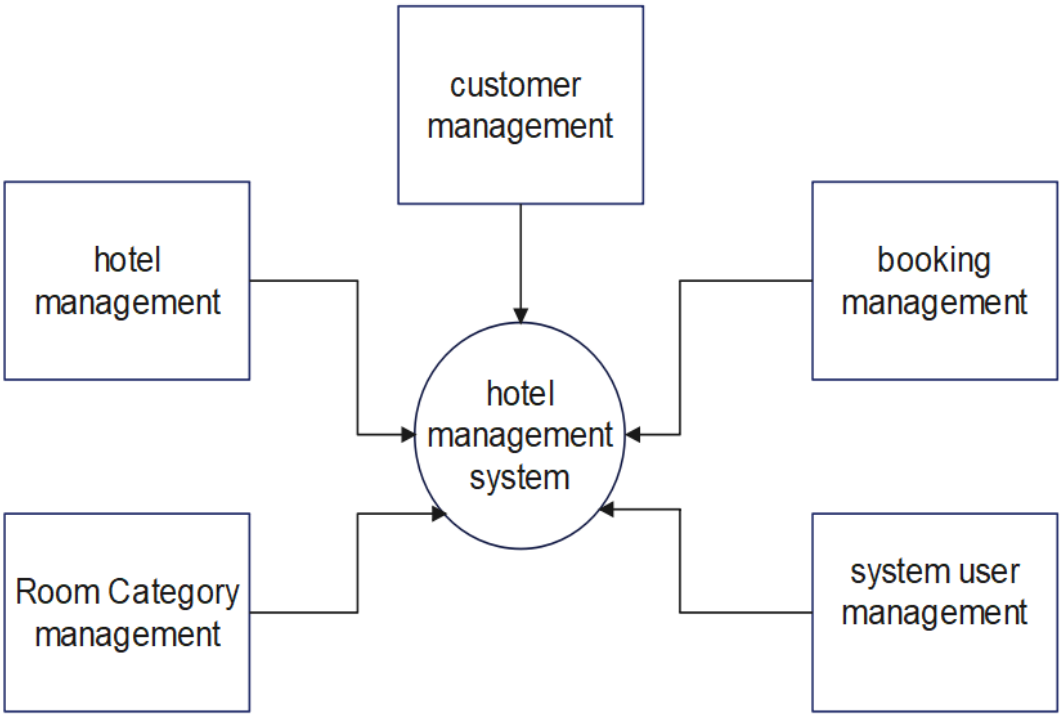


Fig. 02 – DFD Level 0

Level 1: -

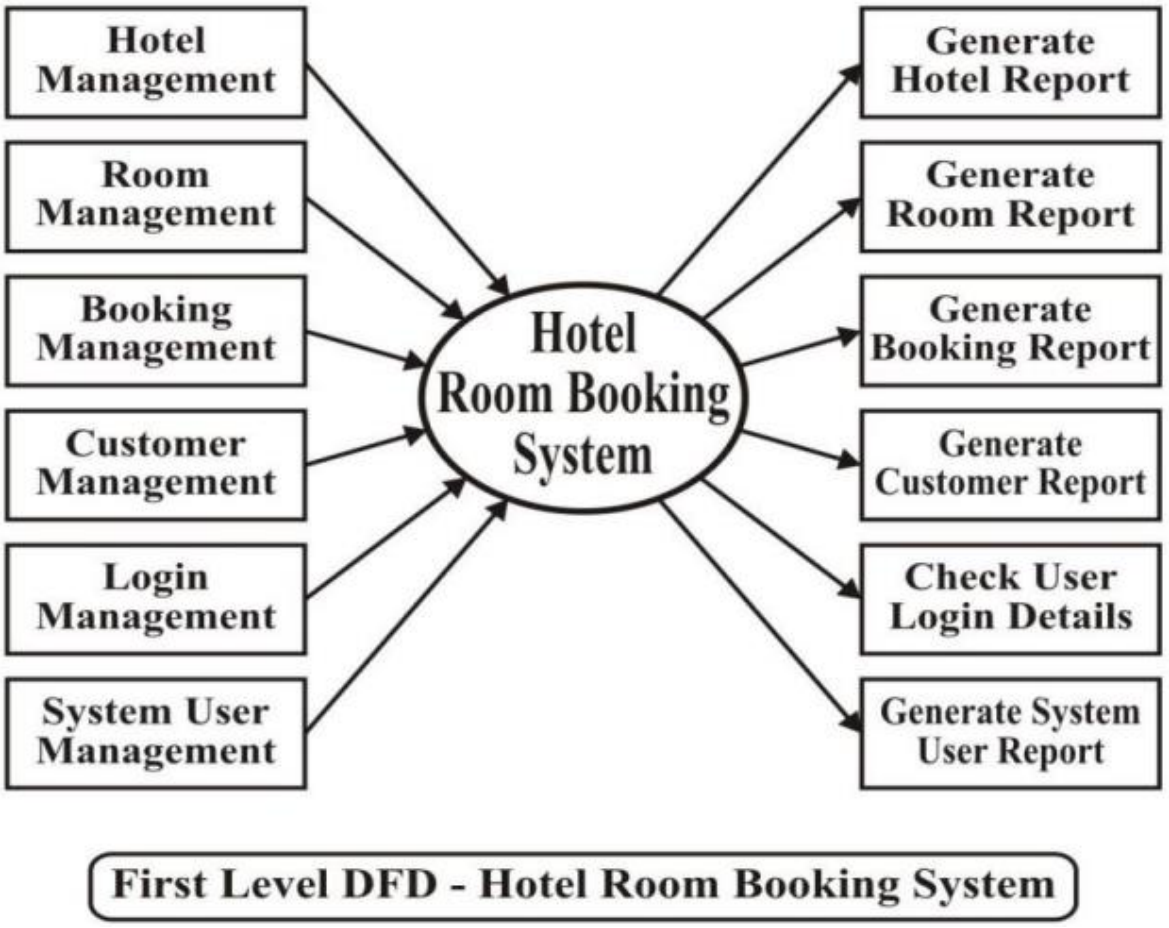


Fig. 03 – DFD Level 1

Level 2: -

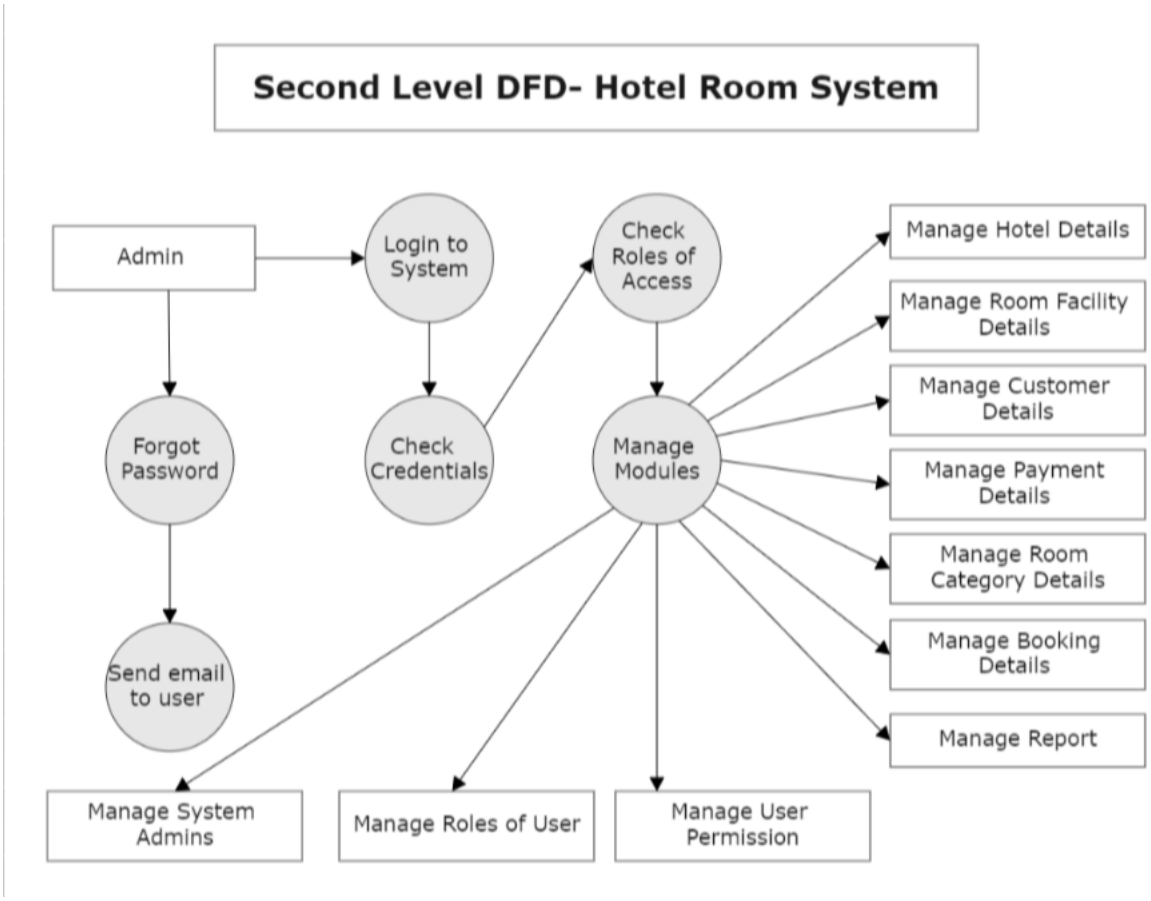


Fig. 04 – DFD Level 2

Entity Relationship Diagram

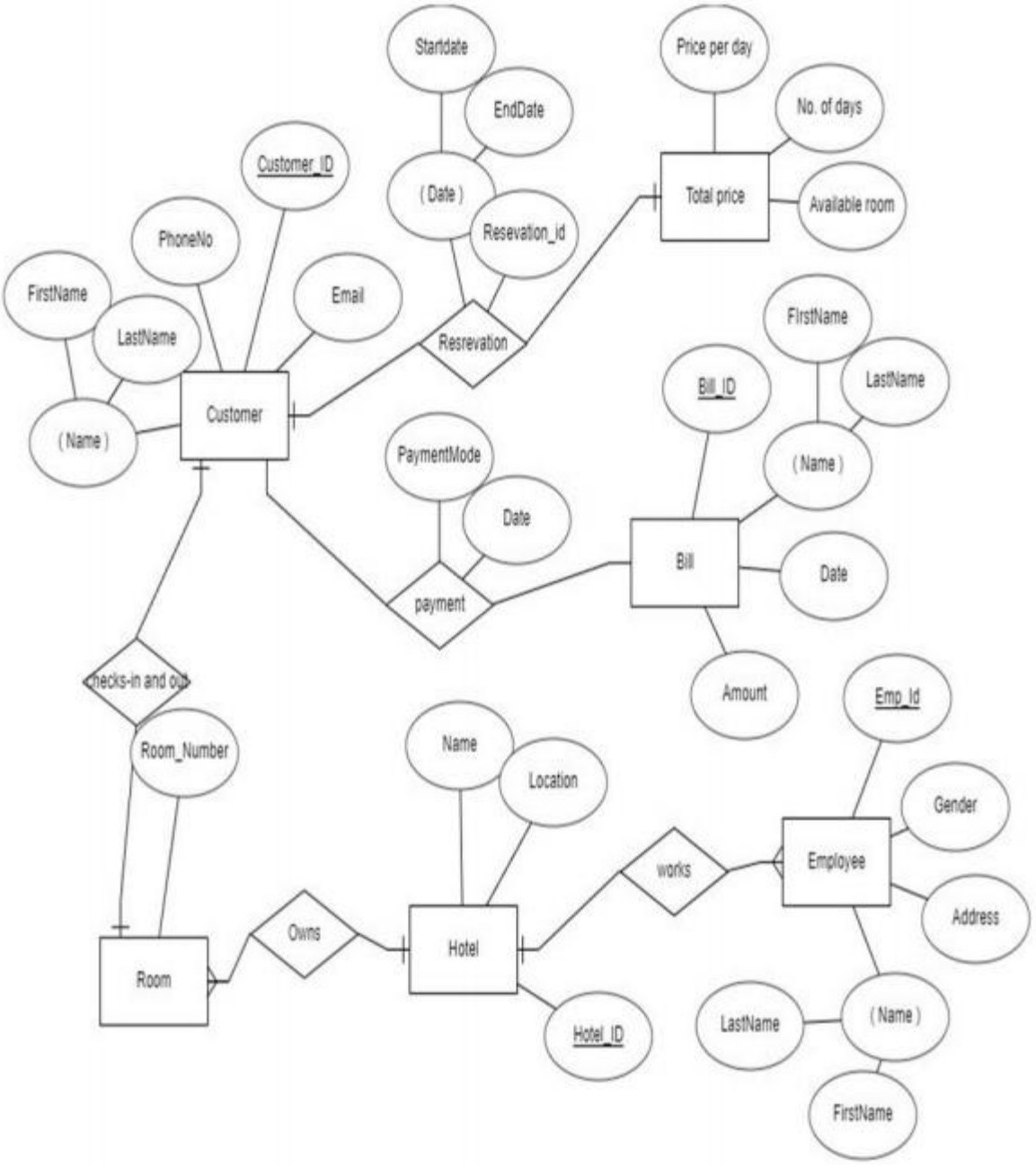
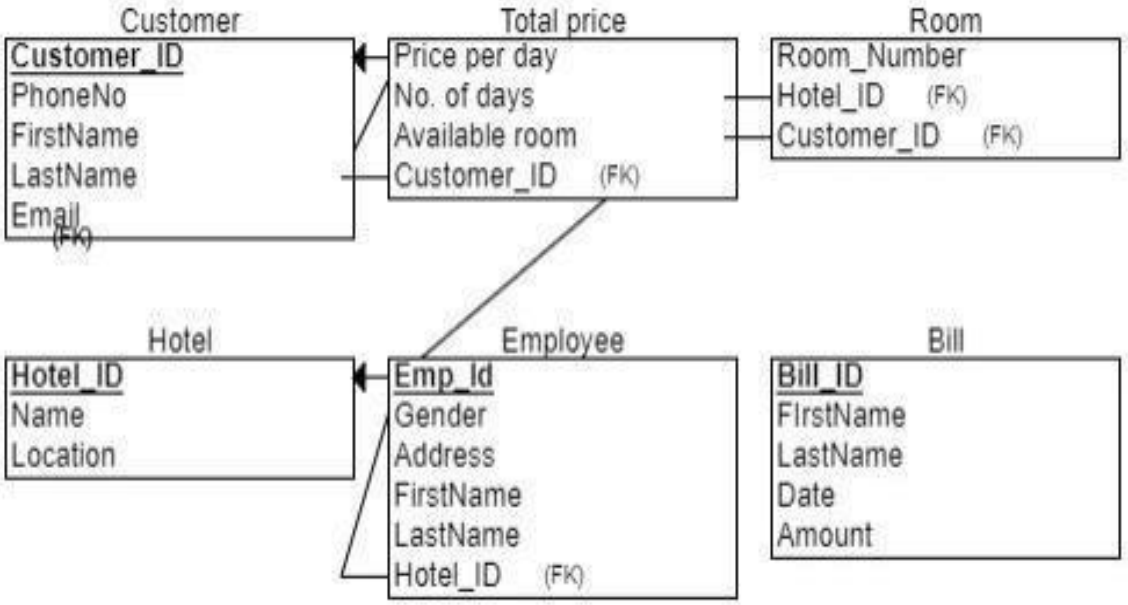
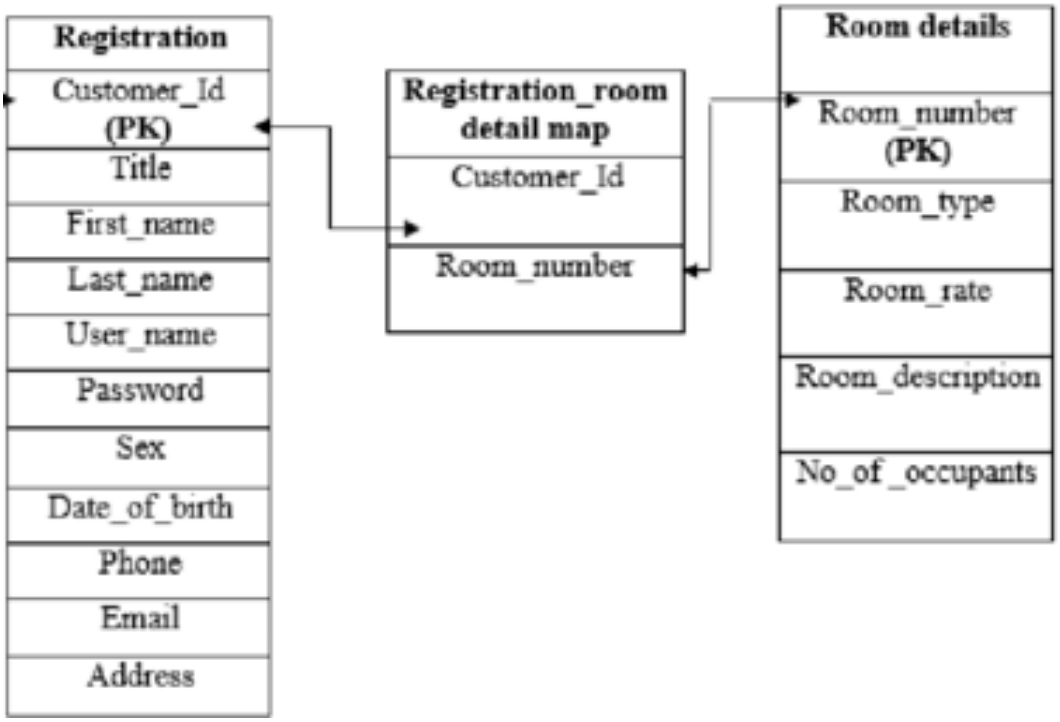


Fig. 05 – ER Diagram

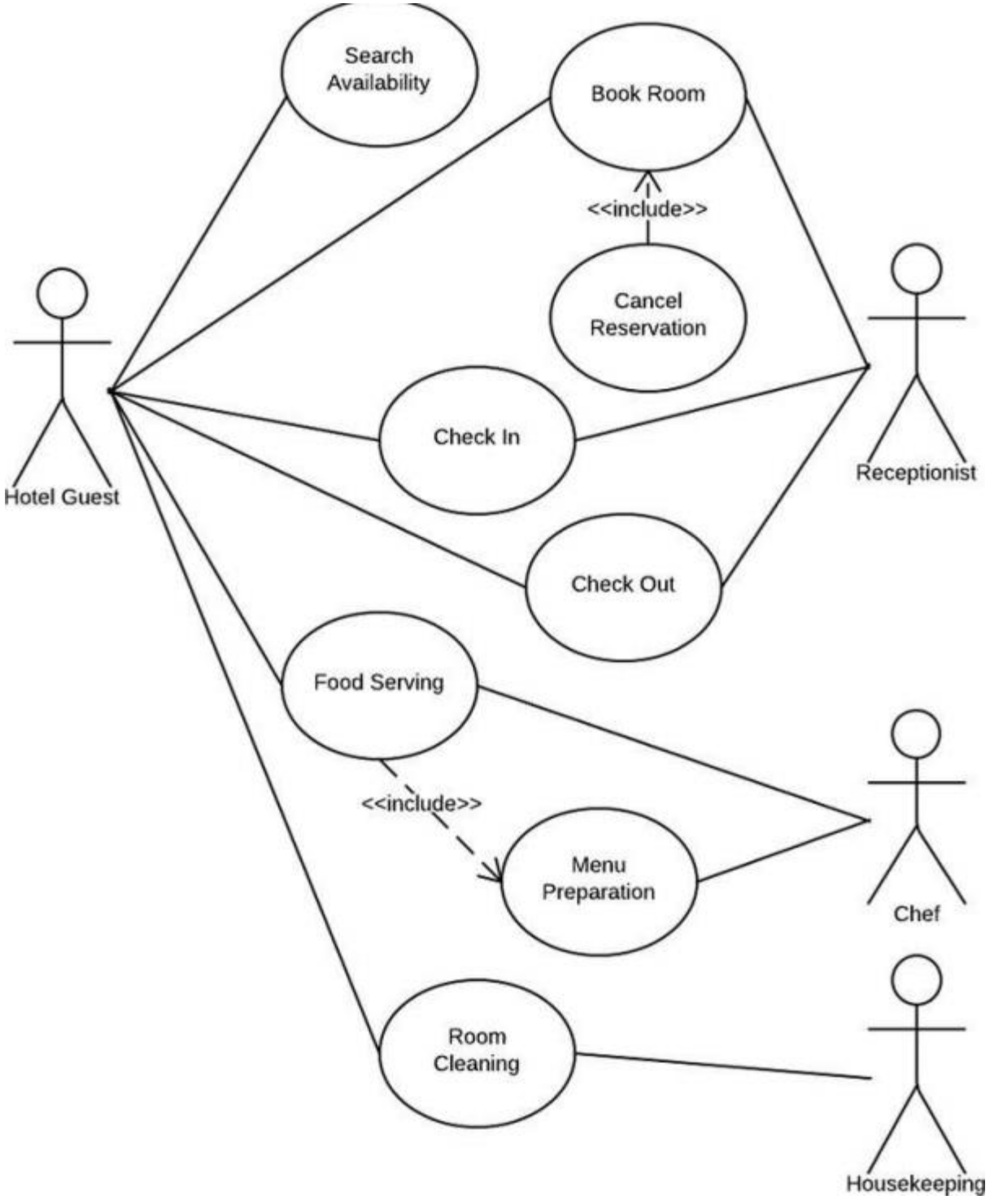
Relational Schema Diagram



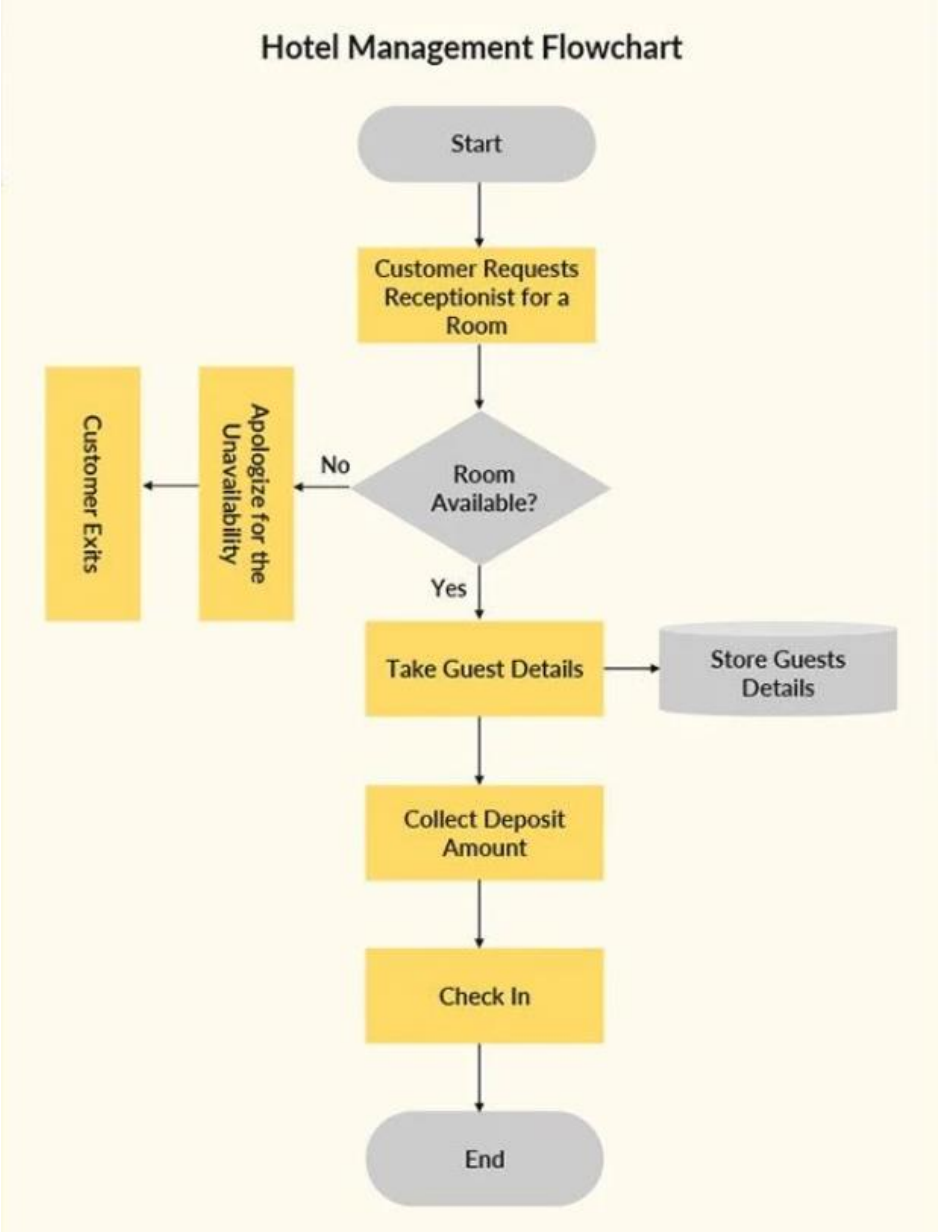
Relational Model in appropriate Normalize Form



Use Case Diagram



FLOWCHART


Hotel Management Flowchart
Start
Customer Requests Receptionist for a Room
Room Available?
No
Apologize for the Unavailability
Customer Exits
Yes
Take Guest Details
Store Guests Details
Collect Deposit Amount
Check In
End

ALGORITHM

1.Main Menu: Create a main menu interface for the hotel management system. Options might include:

- Check-in a guest
- Check-out a guest
- View guest information
- Generate bills
- Exit

2.Check-in a Guest:

- Collect guest information (name, contact, ID, etc.).
- Check room availability.
- Assign an available room to the guest.
- Update the database with guest and room information.

3.Check-out a Guest:

- Retrieve guest information by searching for their name or ID.
- Calculate the total bill.
- Update the room status as available.
- Remove the guest's record from the database.

4.View Guest Information:

- Search for guest information by name or ID.
- Display the guest's details and reservation history.

5.Generate Bills:

- Retrieve a guest's check-out date, room rate, and any additional charges.
- Calculate the total bill and display it.

6.Exit:

- Provide an option to safely exit the program, closing the database connection.

PROJECT DESCRIPTON

The Hotel Management System Project is a general software developed to simplify hotel operations by automating them. This project collects information about customers, room and other hotel services. you can add user and customers and delete them and search user as per there name phone number. The Hotel Management System is a comprehensive software solution designed to streamline the day-to-day operations of a hotel or hospitality establishment. This system, built using Python and MySQL, serves as an efficient tool to manage reservations, guest information, room availability, and billing. With a user-friendly interface, it simplifies the tasks of hotel staff and enhances the overall guest experience.

Key Features:

Guest Management:

Capture and store guest information, including name, contact details, and identification.

Check-in and check-out guests, managing their stays seamlessly.

Room Management:

Maintain a database of rooms, categorizing them by type and status (available/occupied).

Automate room assignment during check-ins and mark rooms as available upon check-out.

Reservation System:

Allow guests to make reservations, specifying room preferences and stay dates.

Ensure room availability and confirm reservations, storing reservation details for reference.

Real-time Room Availability:

Provide an up-to-date view of room availability to streamline check-in processes.

Billing and Invoicing:

Automatically calculate bills based on room rates and additional charges.

Generate invoices for guests during check-out.

Guest History:

Maintain a record of each guest's stay history and billing information for future reference.

Search and Reporting:

Enable easy search and retrieval of guest information by name or ID.

Generate reports for occupancy rates, revenue, and other key metrics.

User-Friendly Interface:

Create a user-friendly command-line or graphical user interface (GUI) for easy interaction with the system.

Security and Data Privacy:

Implement security measures to protect guest data and restrict access to authorized personnel.

Project Goals:

Streamline hotel operations by automating check-in, check-out, and reservation processes.

Improve room management by providing real-time room availability information.

Enhance the guest experience by simplifying billing and invoicing procedures.

Facilitate data retrieval and reporting for informed decision-making.

Ensure data security and privacy to comply with regulations and build trust with guests.

Project Implementation: The system will be developed using Python for the core logic and MySQL for database storage. It will provide a command-line or graphical user interface (optional) for users to interact with the system. Careful attention will be given to user input validation, error handling, and security measures to safeguard guest data.

Project Deliverables:

A fully functional Hotel Management System with source code.

Detailed documentation including setup instructions, usage guidelines, and database schema.

User and administrator guides.

MODULES OUTPUT

Hotel Management System

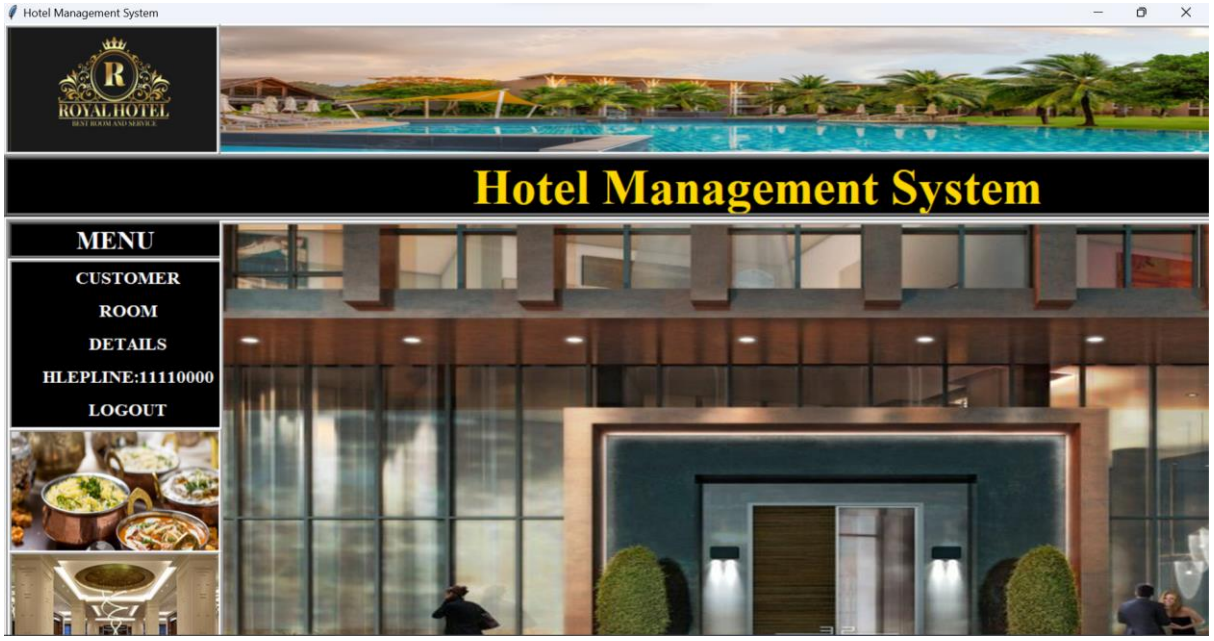


Figure 1: Home Page

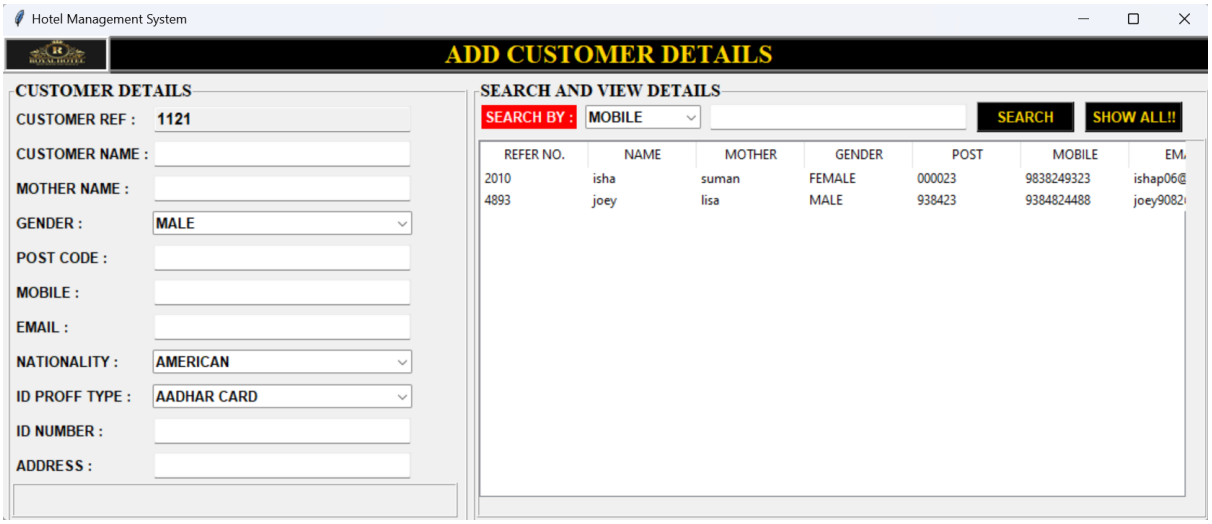


Figure 2: Customer Detail window

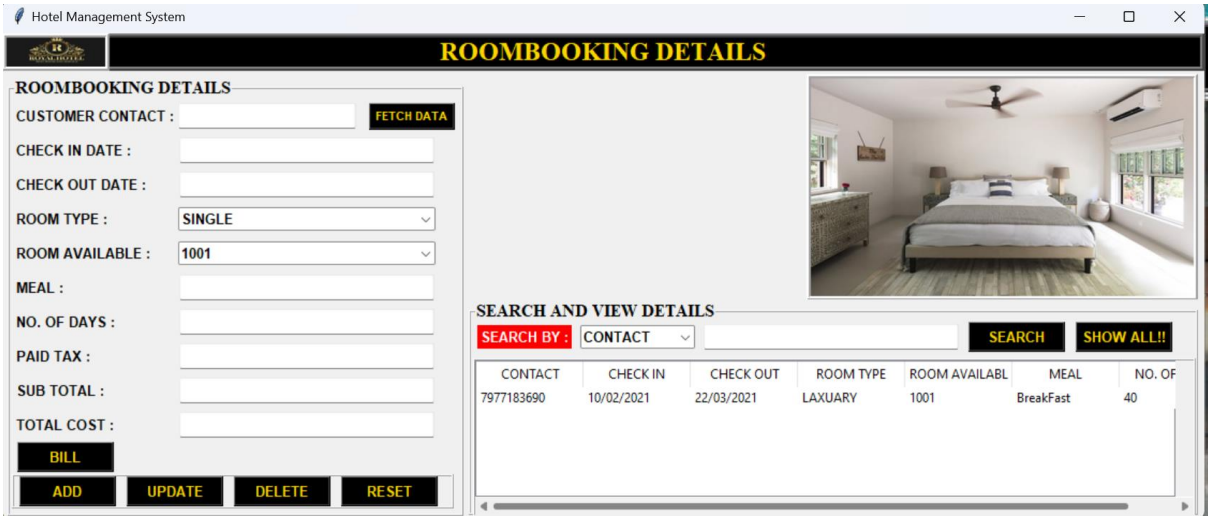


Figure 3: Room Booking Window

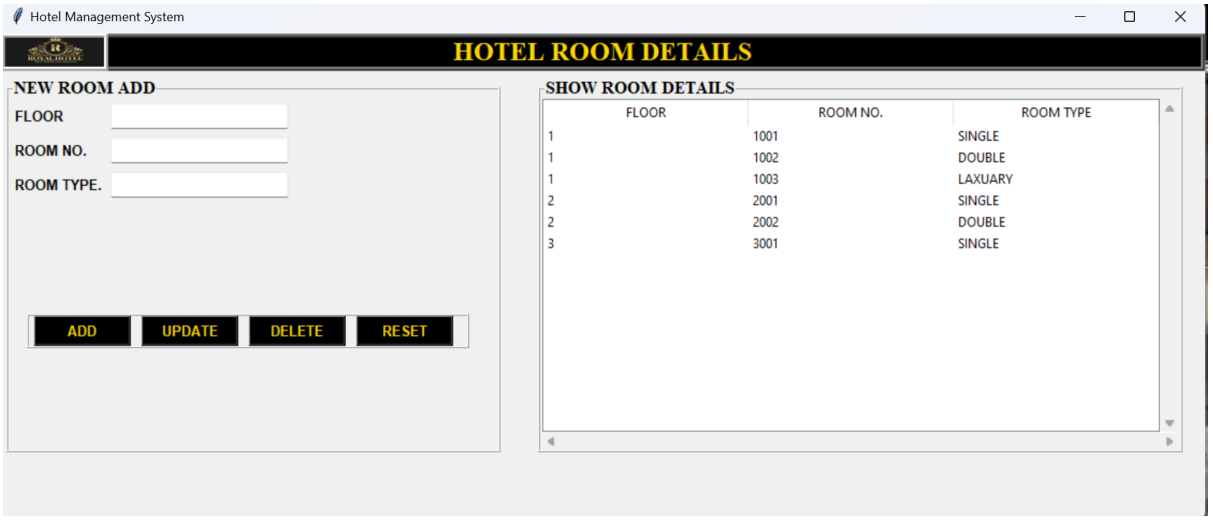


Figure 4: Hotel room Details

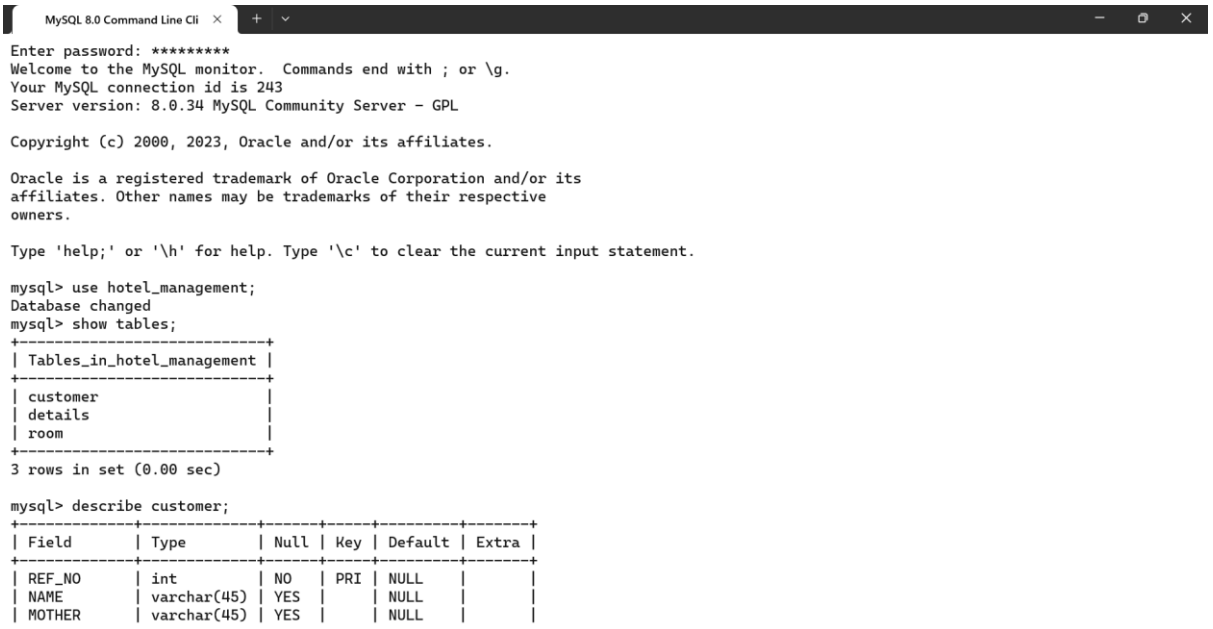


Figure 5: Database 1

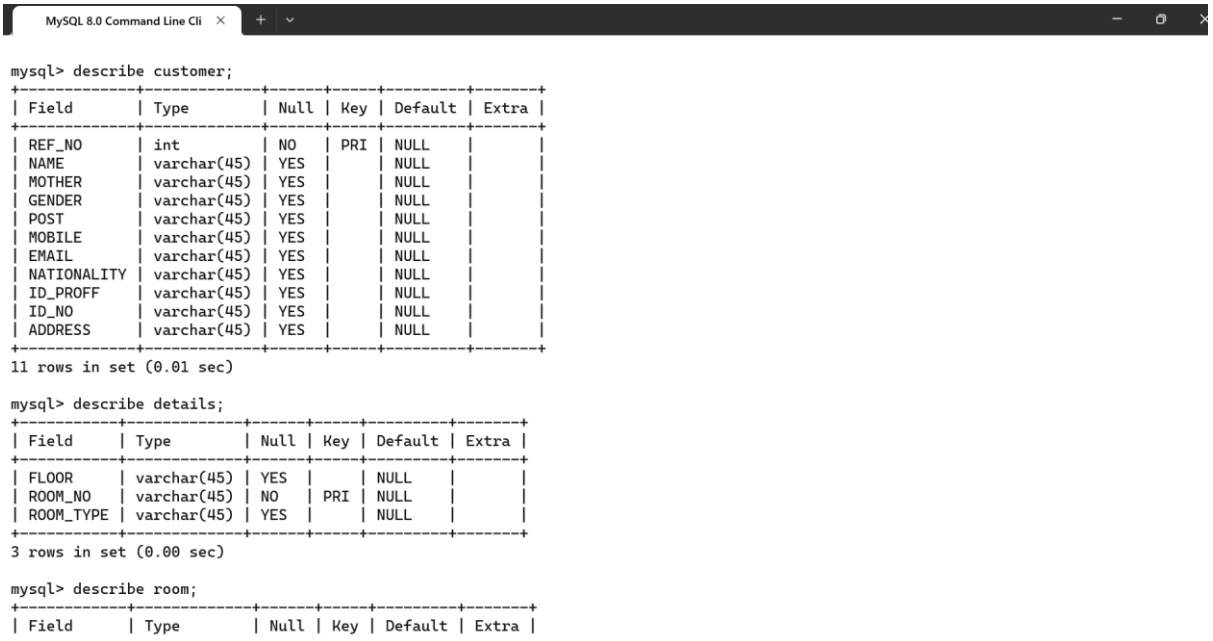


Figure 6: Database 2

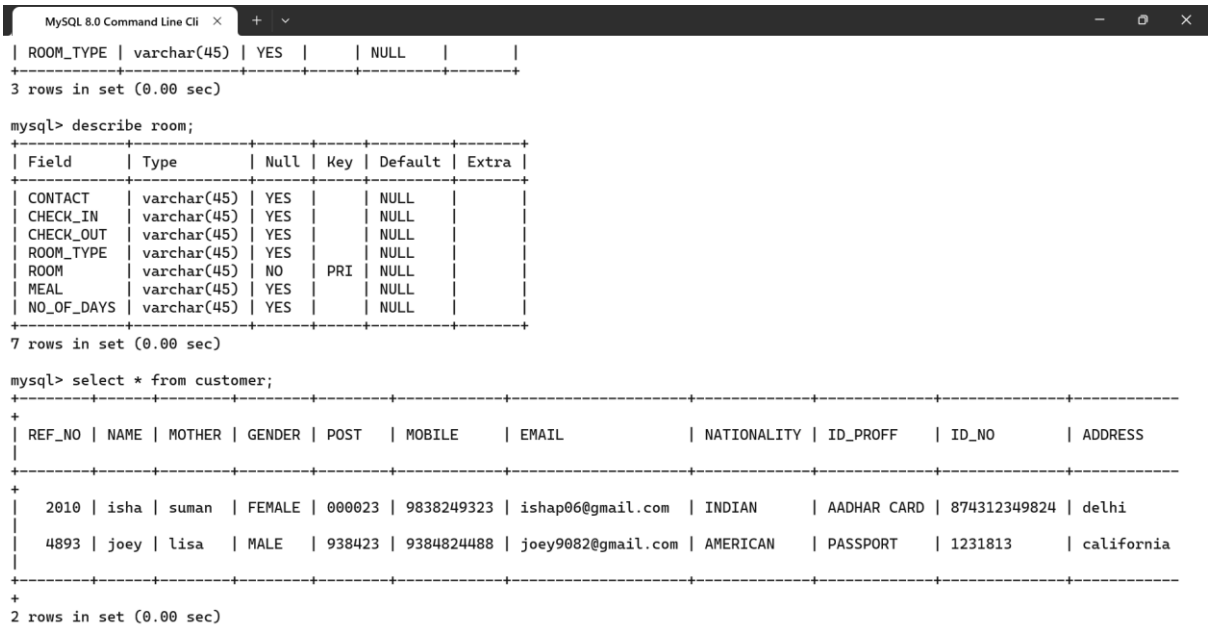


Figure 7: Database 3

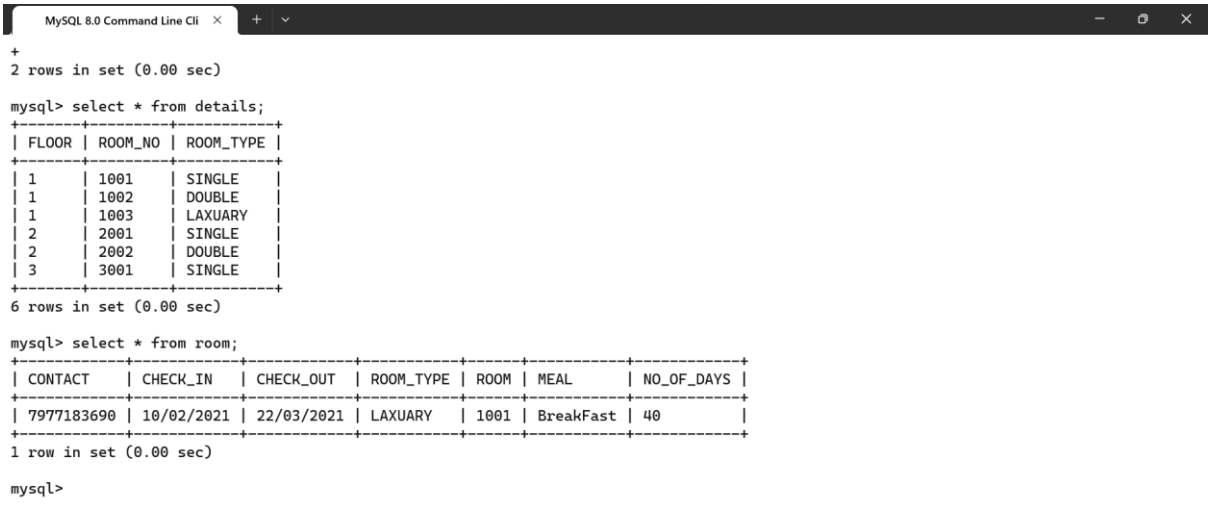


Figure 8: Database 4

SOURCE CODE

Python code:

```
from tkinter import*
from PIL import Image,ImageTk  #pip install pillow
from customer import Cust_Win, Cust_Win
from room import Roombooking
from details import Detailsroom

class HotelManagementSystem:
    def __init__(self, root):
        self.root = root
        self.root.title("Hotel Management System")
        self.root.geometry("1550x650+0+0")

        ################### First image ##############
        img1 = Image.open("hotel1.jpg")
        img1 = img1.resize((1600,140),Image.LANCZOS)
        self.photoimg1=ImageTk.PhotoImage(img1)

        lblimg = Label(self.root,image=self.photoimg1,bd=4,relief=RIDGE)
        lblimg.place(x=0,y=0,width=1600,height=140)

        ################### Logo ######################
        img2 = Image.open("logohotel.png")
        img2 = img2.resize((230,140),Image.LANCZOS)
        self.photoimg2=ImageTk.PhotoImage(img2)

        lblimg = Label(self.root,image=self.photoimg2,bd=4,relief=RIDGE)
        lblimg.place(x=0,y=0,width=230,height=140)


        ################ Title ##################
        lbl_title = Label(self.root,text="Hotel Management System",font=("times new
roman",40,"bold"),bg="black",fg="gold",bd=4,relief=RIDGE)
        lbl_title.place(x=0,y=140,width=1600,height=65)
        ################ MAIN FRAME ###############
        main_frame = Frame(self.root,bd=4,relief=RIDGE)
        main_frame.place(x=0,y=205,width=1600,height=620)

        ################ LABEL ################
        lbl_menu = Label(main_frame,text="MENU",font=("times new
roman",20,"bold"),bg="black",fg="white",bd=4,relief=RIDGE)
        lbl_menu.place(x=0,y=0,width=230)

        ################ BUTTON FRAME #############
        btn_frame = Frame(main_frame,bd=4,relief=RIDGE)
        btn_frame.place(x=0,y=40,width=229,height=190)

        cust_btn =
```

```
Button(btn_frame,text="CUSTOMER",command=self.Cust_details,width=22,font=("times new roman",14,"bold"),bg="black",fg="white",bd=0,cursor="hand1")
        cust_btn.grid(row=0,column=0)

        room_btn = Button(btn_frame,text="ROOM",command=self.roombooking,width=22,font=("times new roman",14,"bold"),bg="black",fg="white",bd=0,cursor="hand1")
        room_btn.grid(row=1,column=0)

        details_btn = Button(btn_frame,text="DETAILS",command=self.Details_room,width=22,font=("times new roman",14,"bold"),bg="black",fg="white",bd=0,cursor="hand1")
        details_btn.grid(row=2,column=0)

        reports_btn = Button(btn_frame,text="HLEPLINE:11110000",width=22,font=("times new roman",14,"bold"),bg="black",fg="white",bd=0,cursor="hand1")
        reports_btn.grid(row=3,column=0)

        logout_btn = Button(btn_frame,text="LOGOUT",command=self.logout,width=22,font=("times new roman",14,"bold"),bg="black",fg="white",bd=0,cursor="hand1")
        logout_btn.grid(row=4,column=0)


        ################ RIGHT SIDE IMAGE ####################
        img3 = Image.open("slide3.jpg")
        img3 = img3.resize((1310,590),Image.LANCZOS)
        self.photoimg3=ImageTk.PhotoImage(img3)

        lblimg1 = Label(main_frame,image=self.photoimg3,bd=4,relief=RIDGE)
        lblimg1.place(x=225,y=0,width=1310,height=590)

        ################ DOWN IMAGES ####################
        img4 = Image.open("food.jpeg")
        img4 = img4.resize((230,210),Image.LANCZOS)
        self.photoimg4=ImageTk.PhotoImage(img4)

        lblimg1 = Label(main_frame,image=self.photoimg4,bd=4,relief=RIDGE)
        lblimg1.place(x=0,y=220,width=228,height=150)

        img5 = Image.open("inside.jpg")
        img5 = img5.resize((230,190),Image.LANCZOS)
        self.photoimg5=ImageTk.PhotoImage(img5)

        lblimg1 = Label(main_frame,image=self.photoimg5,bd=4,relief=RIDGE)
        lblimg1.place(x=0,y=350,width=228,height=190)



    def Cust_details(self):
        self.new_window = Toplevel(self.root)
        self.app=Cust_Win(self.new_window)
```

```
    def roombooking(self):
        self.new_window = Toplevel(self.root)
        self.app=Roombooking(self.new_window)

    def Details_room(self):
        self.new_window = Toplevel(self.root)
        self.app=Detailsroom(self.new_window)

    def logout(self):
        self.root.destroy()

if __name__ == "__main__":
    root = Tk()
    Obj = HotelManagementSystem(root)
    root.mainloop()
```

Database code:

```
--
-- Table structure for table `customer`
--

DROP TABLE IF EXISTS `customer`;
CREATE TABLE `customer` (
  `REF_NO` int NOT NULL,
  `NAME` varchar(45) DEFAULT NULL,
  `MOTHER` varchar(45) DEFAULT NULL,
  `GENDER` varchar(45) DEFAULT NULL,
  `POST` varchar(45) DEFAULT NULL,
  `MOBILE` varchar(45) DEFAULT NULL,
  `EMAIL` varchar(45) DEFAULT NULL,
  `NATIONALITY` varchar(45) DEFAULT NULL,
  `ID_PROFF` varchar(45) DEFAULT NULL,
  `ID_NO` varchar(45) DEFAULT NULL,
  `ADDRESS` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`REF_NO`)
)
--
-- Table structure for table `details`
--
CREATE TABLE `details` (
  `FLOOR` varchar(45) DEFAULT NULL,
  `ROOM_NO` varchar(45) NOT NULL,
  `ROOM_TYPE` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`ROOM_NO`)
)
--
-- Table structure for table `room`
--

DROP TABLE IF EXISTS `room`;
CREATE TABLE `room` (
  `CONTACT` varchar(45) DEFAULT NULL,
  `CHECK_IN` varchar(45) DEFAULT NULL,
  `CHECK_OUT` varchar(45) DEFAULT NULL,
  `ROOM_TYPE` varchar(45) DEFAULT NULL,
  `ROOM` varchar(45) NOT NULL,
  `MEAL` varchar(45) DEFAULT NULL,
  `NO_OF_DAYS` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`ROOM`)
)
```

MERITS & DEMERITS

Advantages

1.Scalability: Python and MySQL are both highly scalable. As your hotel grows, you can easily expand the system to accommodate more rooms, guests, and features without significant performance issues. This ensures your hotel management system can grow with your business.

2. Open Source and Cost-Effective: Python and MySQL are open-source technologies, which means they are freely available and do not require expensive licenses. This reduces the overall cost of implementing and maintaining the hotel management system.

3. Customization: Python is a versatile programming language that allows for extensive customization. You can tailor the system to match your hotel's unique requirements, whether it's specific billing rules, room categorization, or reporting formats. This flexibility is especially valuable in the highly customizable hotel industry.

4. Data Integrity: MySQL, being a relational database management system, offers strong data integrity features. This ensures that guest information, reservations, and financial data are stored securely and can be easily maintained. Data consistency and reliability are critical for a hotel management system.

5. Integration and Reporting: Python allows for seamless integration with various other technologies and systems, enabling you to connect your hotel management system to third-party services such as online booking platforms or payment gateways. Additionally, Python's extensive library ecosystem supports data analysis and reporting, which can help in making data-driven decisions to improve hotel operations and guest experiences.

Disadvantages

Complexity and Development Time: Developing a comprehensive hotel management system can be a complex and time-consuming task. Python and MySQL may require more development effort compared to using pre-built software solutions, especially for larger hotels or chains.

Maintenance and Support: Custom-built systems often require ongoing maintenance and support. Updates to Python libraries, MySQL versions, and changes in the business requirements may necessitate continuous attention and resources.

Scalability Challenges: Adapting the system to accommodate a growing number of rooms, guests, or properties can be challenging. Scaling a custom system may require significant modifications and investments.

Security Concerns: Developing a secure system is crucial, and vulnerabilities in the code or database can expose sensitive guest data to potential breaches. Ensuring the security of a custom system may be more challenging than using well-established, commercially available solutions.

Lack of Features and Integrations: Commercial hotel management software often comes with a wide range of features and integrations with other systems (e.g., payment gateways, online booking platforms). Custom systems may lack these features or require additional development to implement them.

TESTING DOCUMENT

Testing is the process of running a system with the intention of finding errors. Testing enhances the integrity of a system by detecting deviations in design and errors in the system. Testing aims at detecting error-prone areas. This helps in the prevention of errors in a system. Testing also adds value to the product by conforming to the user requirements.

The main purpose of testing is to detect errors and error-prone areas in a system. Testing must be thorough and well-planned. A partially tested system is as bad as an untested system. And the price of an untested and under-tested system is high.

The implementation is the final and important phase. It involves user training, system testing in order to ensure successful running of the proposed system. The user tests the system and changes are made according to their needs.

The testing involves the testing of the developed system using various kinds of data. While testing, errors are noted and correctness is the mode. The objectives of testing are:

Testing is a process of executing a program with the intent of finding errors.

A Successful test case is one that uncovers an as-yet-undiscovered error.

Test Case: Customer Registration

Sr. No	Input Values	Test case	Conditional being checked	Result
1.	First Name	Empty	It must not be empty	Successful
2	Last Name	Empty	Last Name must not be empty	Successful
3	Email	Empty	Enter valid Email ID.	Successful
4	Password	Empty	Enter valid Password.	Successful
5	Password	Length	Minimum 8 characters required	Successful
6	Confirm Password	Empty	Password and confirmation password must be same	Successful
7	Date Of Birth	Select	Enter valid Username and Password.	Successful

CONCLUSIONS

The conclusion of this design is A Hotel management system is a motorized management system. This system keeps the reports of hardware means besides software of this association. The posed system will observe a trail of Workers, tenants, Accounts and genesis of report regarding the current status. This design has GUI grounded software that will help in storing, streamlining and reacquiring the information through colorful user-friendly menu- driven modules. The design "Hotel Management System" is aimed to develop to maintain the day- to- day state of admission/ holiday of resides, List of Workers, payment details etc. Main ideal of this design is to give result for hotel to manage utmost their work using motorized process. This software operation will help admin to handle guests' information, room allocation details, payment details, billing information, etc. Detailed explanation about modules and design are handed in design documentation. The existing system is a manually preserved system. All the Hotel records are to be maintained for the details of each guest, price details, Room Allocation, Attendance etc. All these details are entered and recaptured manually, because of this there are numerous disadvantages like Time Consuming, streamlining process, trip of data. For avoiding this we introduced or proposed a new system in proposed system the motorized interpretation of this system provides easy and fast access over the data.

FUTURE SCOPE

The possible improvements that can be made for the Online Hotel Booking System include: I can make the graphical user interface friendlier and more functional in the next development. The Online Hotel Booking System aims to provide a user-friendly interface and more functions for real world hotels. But there is still some room for improvements. For example, I can change the settings and functions of some options in the Web pages to make them more professional and artistic. I can also use more pop-up windows so that users can choose the value from them directly. This applies to "arrival date" and "departure date" options. In this way the users can avoid many possible mistakes caused by inappropriate input. - This online system only allows users to make a reservation that date is within one year and reserve up to four rooms per visit. These limitations can be removed in the future. In future improvements, the Online Hotel Booking System can offer more services such as car rental, flight ticket purchase, and the vacation package advising. These services have been offered already on some real-world online booking systems. More hotels will add these services on their online systems. In this way, people can make all their requests at once no matter they are business trip arrangement, shopping, travel, or vacation.

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