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A Mini Project Report on

"HOTEL MANAGEMENT DATABASE"

Mini Project Report submitted in partial fulfilment of the requirement for the DBMS Laboratory with Mini Project [18CSL58]

Bachelor of Engineering in Computer Science and Engineering

Submitted by Rohit Joshi [1JT19CS074] Shravan K G [1JT19CS086]



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CERTIFICATE

Certified that the mini project work entitled "HOTEL MANAGEMENT DATABASE" carried out by Rohit Joshi [1JT19CS074] and Shravan K G [1JT19CS086] bonafide students of Jyothy Institute of Technology, in partial fulfilment for the award of Bachelor of Engineering in Computer Science and Engineering department of the Visvesvaraya Technological University, Belagavi during the year 2021-2022. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Degree.

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ACKNOWLEDGEMENT

Firstly, we are very grateful to this esteemed institution "Jyothy Institute of Technology" for providing us an opportunity to complete our project.

We express our sincere thanks to our **Principal Dr. Gopalakrishna K** for providing us with adequate facilities to undertake this project.

We would like to thank **Dr. Prabhanjan S, Professor and Head of Computer Science** and Engineering Department for providing for his valuable support.

We would like to thank our guides Mrs. Nikitha S, Assistant Professor for their keeninterest and guidance in preparing this work.

Finally, we would thank all our friends who have helped us directly or indirectly in thisproject.

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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 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 application is designed to make the existing system more reliable, fast and easy for all, provides a methodical way of managing large databases. For this application we used the backend as SQL to store the data which is used in the application and for the user interface we have used python.

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CHAPTER 1 INTRODUCTION

1. INTRODUCTION

1.1 Introduction to DBMS

A database is simply an organized collection of related data, typically stored on disk, and accessible by many concurrent users, it is a logically coherent collection of data with some inherent meaning, representing some aspect of real world and which is designed, built and populated with data for a specific purpose.

Databases are managed by a Database Management System(DBMS) which is a collection of programs that enables user to create and maintain a database.

Advantages of DBMS:

- 1. Redundancy is controlled.
- 2. Unauthorized access is restricted.
- 3. Providing multiple user interfaces.
- 4. Enforcing integrity constraints.
- 5. Providing backup and recovery.

1.2 Introduction to SQL

Structured Query Language (SQL), is a language used to request data from a databasewhich includes database creation, deletion, retrieval of required tables and even manipulation of data held in a relational database management system.

SQL is considered as a Non-Procedural or a High level language in which the expected result or operation is given without the specific details about how to accomplish the task. So,SQL is a declarative language.

Therefore, SQL is designed at a higher conceptual level of operation than procedural languages as procedural languages includes only the information about opening and closingtables, loading and searching indexes, or flushing buffers and writing data to file systems, but the lower level logical and physical operations are not specified in SQL.

1.3 Introduction to Hotel Management Database

The project, Hotel Management System is a desktop application that allows the hotel manager to handle all hotel activities. Interactive GUI and the ability to manage various hotel bookings and rooms make this system very flexible and convenient.

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. Receptionist can view and book room for customers. Other hotel services can also be viewed by the customers and can book them too. The system is hence useful for both customers and managers to portable manage the hotel activities.

CHAPTER 2 DESIGN

Theory of ER Diagram

The Entity–Relationship model (ER model) describes the structure of a database with thehelp of a diagram, which is known as **Entity Relationship Diagram (ER Diagram)**

An Entity Relationship Diagram (ERD) shows the relationships of entity sets stored in adatabase.

An entity in this context is an object, a component of data.

An entity set is a collection of similar entities. These entities can have attributes that defineits properties. By defining the entities, their attributes, and showing the relationships between them, an ER diagram illustrates the logical structure of database.

ER diagrams are used to sketch out the design of a database.

ENTITIES

An entity is an 'object' in the real world with an independent existence and an entity type defines a collection (or set) of entities that have the same attributes. Each entity type in the database is described by its name and attributes.

An entity type is represented in ER diagrams as a rectangular box enclosing the entity typename.

RELATIONSHIPS

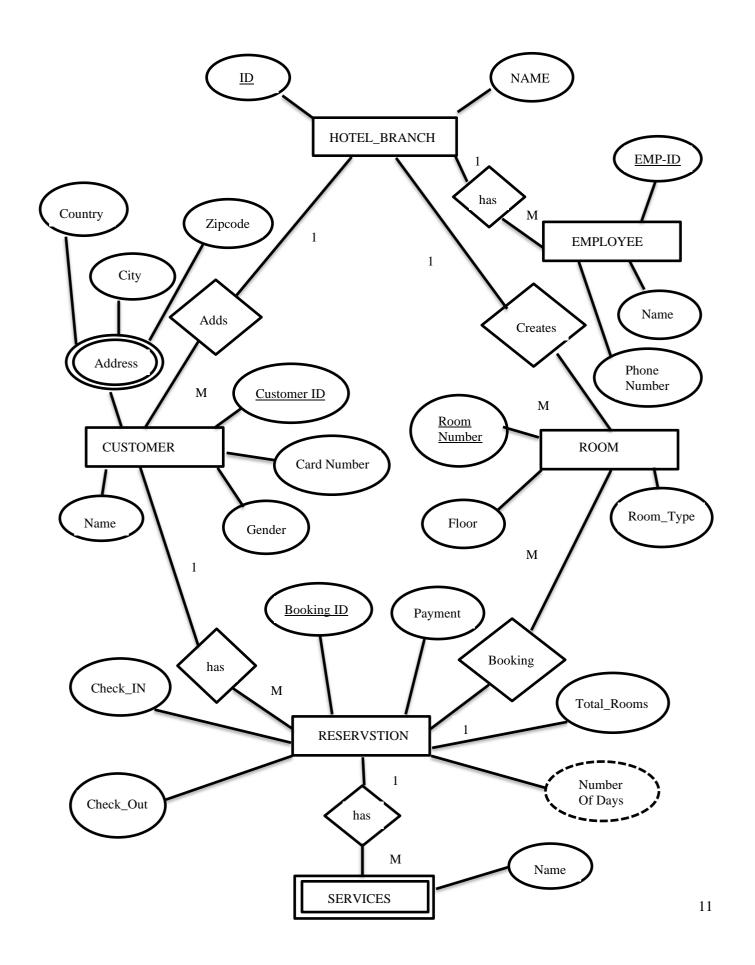
A relationship among two or more entities represents an association among the entities andwhenever an attribute of one entity refers to another entity, there exists a relationship between the two entities. In a relationship, a foreign key of one table refers the primary key of the other table and it is represented by diamond shape in ER diagram.

ATTRIBUTES

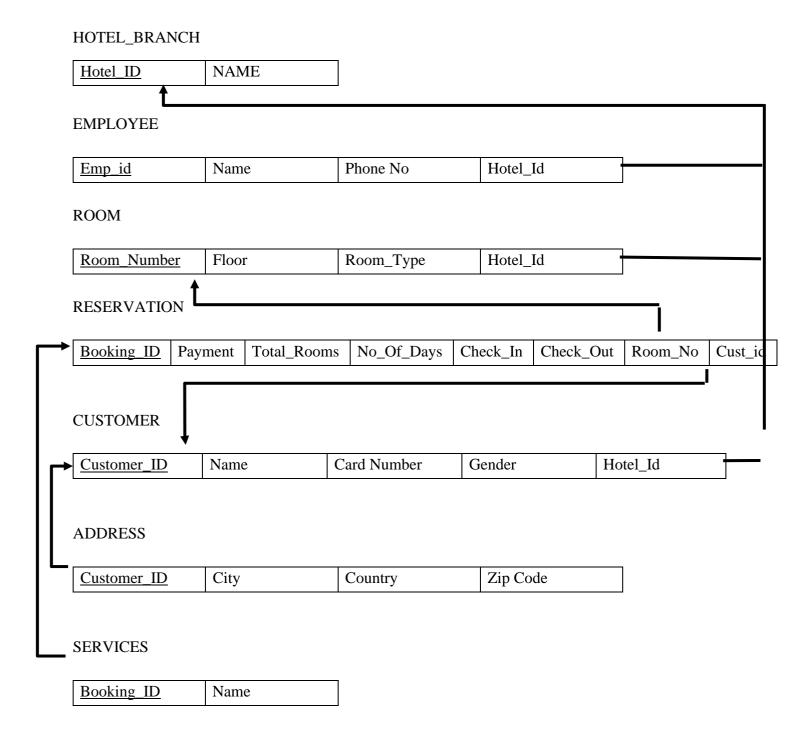
An attribute represents some property of interest that further describes an entity and thecolumn header of the table shows the attributes. Each attribute in a table has a certain domain which allows it to accept a certain 'set of values' only.

The attribute values, of each entity, will define its characteristics in the table and isrepresented by oval in the ER diagram.

ER DIAGRAM



SCHEMA DIAGRAM



List of Tables

- 1. HOTEL_BRANCH
- 2. EMPLOYEE
- 3. ROOM
- 4. RESERVATION
- 5. CUSTOMER
- 6. ADDRESS
- 7. SERVICES

CHAPTER 3 IMPLEMENTATION

Create Table Commands:

Hotel Branch Table

CREATE TABLE `hotel` (`ID` int(11) NOT NULL, `Name`varchar(45) DEFAULT
NULL, PRIMARY KEY (`ID`));

Customer Table

CREATE TABLE `customer` (`ID` int(11) NOT NULL, `Name` varchar(100)

DEFAULT NULL, `Card Number` varchar(100) DEFAULT NULL, `Gender`

varchar(10) DEFAULT NULL, `hotel_id` int(11) DEFAULT NULL, PRIMARY KEY

(`ID`), KEY `hotel_id` (`hotel_id`),CONSTRAINT `customer_ibfk_1` FOREIGN

KEY (`hotel_id`) REFERENCES `hotel` (`ID`) ON DELETE CASCADE);

Address Table

CREATE TABLE `address` (`Customer_ID` int(11) DEFAULT NULL,`Country` varchar(100) DEFAULT NULL, `City` varchar(100) DEFAULT NULL, `ZipCode` varchar(100) DEFAULT NULL, `hotel_id` int(11) DEFAULT NULL, KEY `hotel_id` (`hotel_id`), KEY `address_ibfk_2` (`Customer_ID`), CONSTRAINT `address_ibfk_1` FOREIGN KEY (`hotel_id`) REFERENCES `hotel` (`ID`) ON DELETE CASCADE, CONSTRAINT `address_ibfk_2` FOREIGN KEY (`Customer_ID`) REFERENCES `customer` (`ID`) ON DELETE CASCADE ON UPDATE NO ACTION)

Reservation Table

CREATE TABLE `booking` (`Booking_ID` int(11) NOT NULL, `Customer_ID` int(11) DEFAULT NULL, `hotel_id` int(11) DEFAULT NULL, `Check_in_date` varchar(100) DEFAULT NULL, `Check_out_date` varchar(100) DEFAULT NULL, `Total_Rooms` varchar(100) DEFAULT NULL, `Payment` varchar(100) DEFAULT NULL, `Room_Number` varchar(100) DEFAULT NULL, `No_of_Days` varchar(45) DEFAULT NULL, PRIMARY KEY (`Booking_ID`), KEY `Customer_ID` (`Customer_ID`),KEY `hotel_id` (`hotel_id`), CONSTRAINT `booking_ibfk_1` FOREIGN KEY (`Customer_ID`) REFERENCES `customer` (`ID`) ON DELETE CASCADE, CONSTRAINT `booking_ibfk_2` FOREIGN KEY (`hotel_id`) REFERENCES `hotel` (`ID`) ON DELETE CASCADE);

Room Details Table

```
CREATE TABLE `details` (`floor` int(11) DEFAULT NULL, `RoomNumber`
varchar(45) NOT NULL, `RoomType` varchar(45) NOT NULL, `Booked`
varchar(45) DEFAULT NULL, `hotel_id` varchar(45) DEFAULT NULL, PRIMARY
KEY (`RoomNumber`), UNIQUE KEY `RoomNumber` (`RoomNumber`));
```

Employee Table

```
CREATE TABLE `employee` ( `ID` int(11) NOT NULL, `Name` varchar(50)

DEFAULT NULL, `Gender` varchar(10) DEFAULT NULL, `Phone_Number`

varchar(45) DEFAULT NULL, `hotel_id` int(11) DEFAULT NULL, PRIMARY KEY

(`ID`), KEY `hotel_id` (`hotel_id`), CONSTRAINT `employee_ibfk_1`

FOREIGN KEY (`hotel_id`) REFERENCES `hotel` (`ID`) ON DELETE CASCADE);
```

Services Table

```
CREATE TABLE `services` (`Booking_ID` int(11) DEFAULT NULL,`Name`
varchar(100) DEFAULT NULL, KEY `services ibfk 1` (`Booking ID`));
```

INSERTING VALUES

ADDRESS TABLE:

```
INSERT INTO ADDRESS VALUES(3363, 'INDIA', 'BANGALORE', 560011,1);
INSERT INTO ADDRESS VALUES(2296, 'INDIA', 'BANGALORE', 560011,1);
INSERT INTO ADDRESS VALUES(1904, 'INDIA', 'SAGARA', 65200,3);
INSERT INTO ADDRESS VALUES(1565, 'USA', 'MANHATTAN', 560050,3);
INSERT INTO ADDRESS VALUES(6733, 'INDIA', 'KARKAL', 756015,3);
```

| Customer_ID | Country | City | ZipCode | hotel_id |
|-------------|---------|-----------|---------|----------|
| 3363 | India | Bangalore | 560011 | 1 |
| 2296 | India | Bangalore | 560011 | 1 |
| 1904 | India | Sagara | 65200 | 3 |
| 1565 | USA | Manhattan | 560050 | 3 |
| 6733 | India | Karkal | 756015 | 3 |

RESERVATIONS TABLE:

```
INSERT INTO BOOKING VALUES(1099,3363,1,26-JAN-2022,27-JAN-2022,4,2200.00,100,1);
INSERT INTO BOOKING VALUES(1120,6733,1,28-JAN-2022,29-JAN-2022,4,2750.00,105,1);
INSERT INTO BOOKING VALUES(6399,3363,1,12-DEC-2017,22-DEC-2017,15,22000.00,128,10);
INSERT INTO BOOKING VALUES(6601,6733,1,28-JAN-2022,30-JAN-2022,2,3300.00,208,2);
INSERT INTO BOOKING VALUES(8028,1565,1,27-JAN-2022,31-JAN-2022,1,11000.00,104,4);
INSERT INTO BOOKING VALUES(9137,1565,1,27-JAN-2022,28-FEB-2022,2,88000.00,200,32);
```

| Booking_ID | Customer_ID | hotel_id | Check_in_date | Check_out_date | Total_Rooms | Payment | Room_Number | No_of_Days |
|------------|-------------|----------|---------------|----------------|-------------|-------------|-------------|------------|
| 1099 | 3363 | 1 | 26/01/2022 | 27/01/2022 | 4 | Rs.2200.00 | 100 | 1 |
| 1120 | 6733 | 3 | 28/01/2022 | 29/01/2022 | 4 | Rs.2750.00 | 105 | 1 |
| 6399 | 3363 | 1 | 12/12/2017 | 22/12/2017 | 15 | Rs.22000.00 | 28 | 10 |
| 6601 | 6733 | 3 | 28/01/2022 | 30/01/2022 | 2 | Rs.3300.00 | 208 | 2 |
| 8028 | 1565 | 3 | 27/01/2022 | 31/01/2022 | 1 | Rs.11000.00 | 104 | 4 |
| 9137 | 1565 | 3 | 27/01/2022 | 28/02/2022 | 2 | Rs.88000.00 | 200 | 32 |

CUSTOMER TABLE:

```
INSERT INTO CUSTOMER VALUES(1565, 'RAKSHITH', 784512345, 'MALE', 3);
INSERT INTO CUSTOMER VALUES(1904, 'SHRAVAN', 4784, 'MALE', 3);
INSERT INTO CUSTOMER VALUES(2296, 'SHRAVAN', 789456123, 'MALE', 1);
INSERT INTO CUSTOMER VALUES(3363, 'ROHIT', 87945, 'MALE', 1);
INSERT INTO CUSTOMER VALUES(6733, 'KEERTHI, 123456789123, 'MALE', 3);
```

| ID | Name | Card Number | Gender | hotel_id |
|------|----------|--------------|--------|----------|
| 1565 | Rakshith | 784512345 | Male | 3 |
| 1904 | Shravan | 4784 | Male | 3 |
| 2296 | Shravan | 789456123 | Male | 1 |
| 3363 | Rohit | 87945 | Male | 1 |
| 6733 | Keerthi | 123456789123 | Male | 3 |

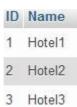
ROOM DETAILS TABLE:

```
INSERT INTO DETAILS TABLE(1,100,'LUXURY','TRUE',2);
INSERT INTO DETAILS TABLE(1,104,'DOUBLE','TRUE',1);
INSERT INTO DETAILS TABLE(1,105,'DOUBLE','TRUE',3);
INSERT INTO DETAILS TABLE(1,206,'SINGLE','FALSE',1);
INSERT INTO DETAILS TABLE(1,107,'SINGLE','FALSE',1);
INSERT INTO DETAILS TABLE(1,108,'SINGLE','TRUE',3);
INSERT INTO DETAILS TABLE(1,109,'LUXURY','FALSE',3);
INSERT INTO DETAILS TABLE(1,300,'SINGLE','FALSE',3);
```

| floor | RoomNumber | RoomType | Booked | hotel_id |
|-------|------------|----------|--------|----------|
| 1 | 100 | Luxury | True | 2 |
| 1 | 104 | Double | True | 1 |
| 1 | 105 | Double | True | 3 |
| 2 | 206 | Single | False | 1 |
| 2 | 207 | Single | False | 1 |
| 2 | 208 | Single | True | 3 |
| 2 | 209 | Luxury | False | 3 |
| 3 | 300 | Single | False | 3 |

HOTEL TABLE:

```
INSERT INTO HOTEL VALUES(1,'HOTEL1');
INSERT INTO HOTEL VALUES(2,'HOTEL2');
INSERT INTO HOTEL VALUES(3,'HOTEL3');
```



EMPLOYEE TABLE:

INSERT INTO EMPLOYEE VALUES(2427, 'MANOJ', 7845126578, 'MALE'1);

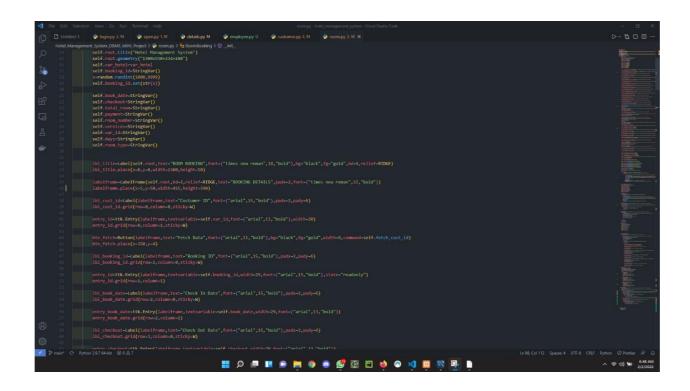
| ID | Name | Gender | Phone_Number | hotel_id |
|------|-------|------------|--------------|----------|
| 2427 | Manoj | 7845126578 | Male | 1 |

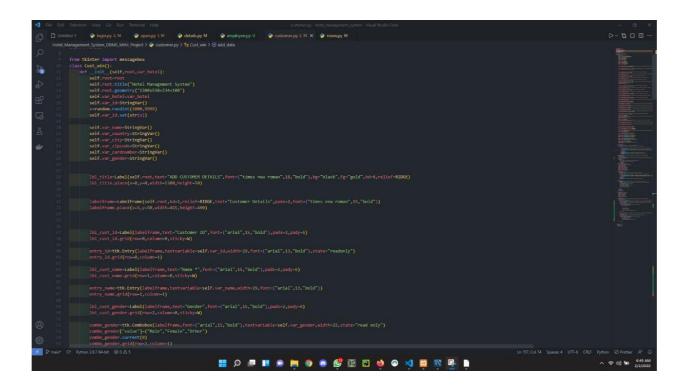
SERVICES TABLE:

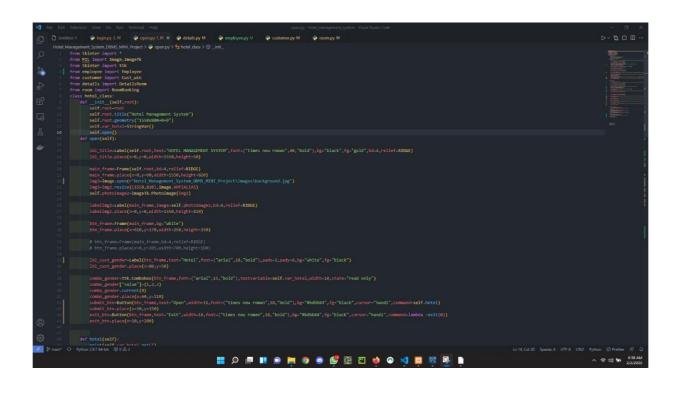
```
INSERT INTO SERVICES VALUES(6399,'BREAKFAST');
INSERT INTO SERVICES VALUES(1099,'BREAKFAST');
INSERT INTO SERVICES VALUES(8028,'DINNER');
INSERT INTO SERVICES VALUES(9137,'DINNER');
INSERT INTO SERVICES VALUES(1120,'DINNER');
INSERT INTO SERVICES VALUES(6601,'MEALS');
```

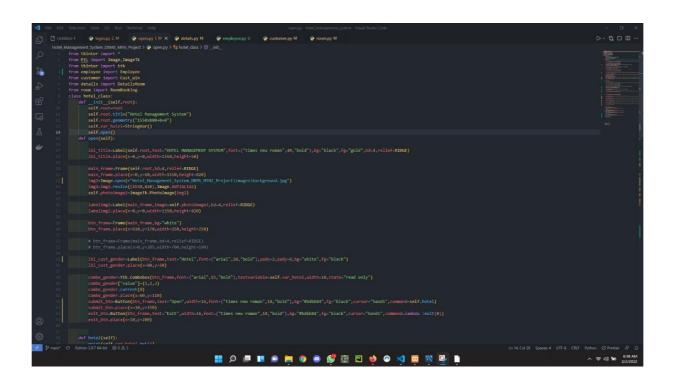
| Booking_ID | Name |
|------------|-----------|
| 6399 | Breakfast |
| 1099 | Breakfast |
| 8028 | Dinner |
| 9137 | Dinner |
| 1120 | Dinner |
| 6601 | Meals |

GUI Implementation



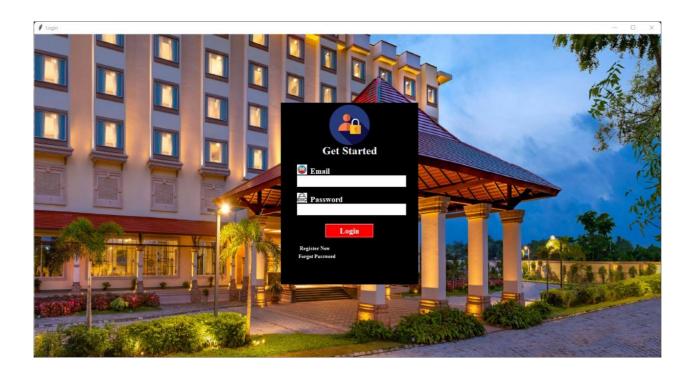






CHAPTER 4 RESULTS AND SNAPSHOTS

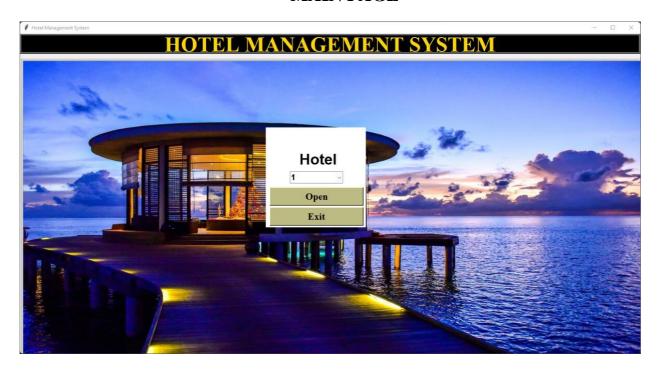
LOGIN PAGE



REGISTER PAGE

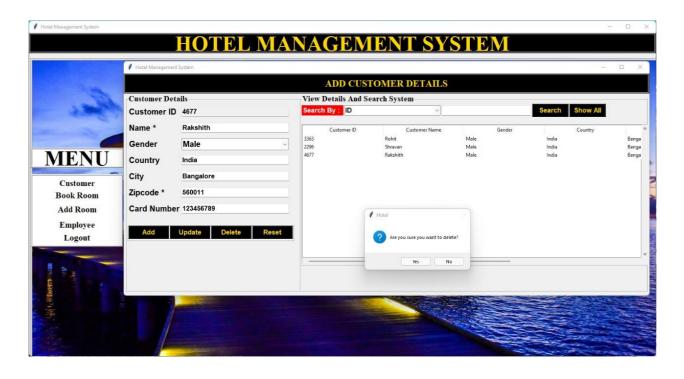


MAIN PAGE

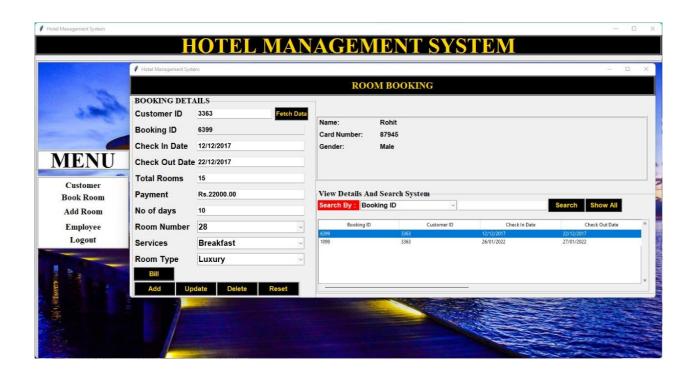




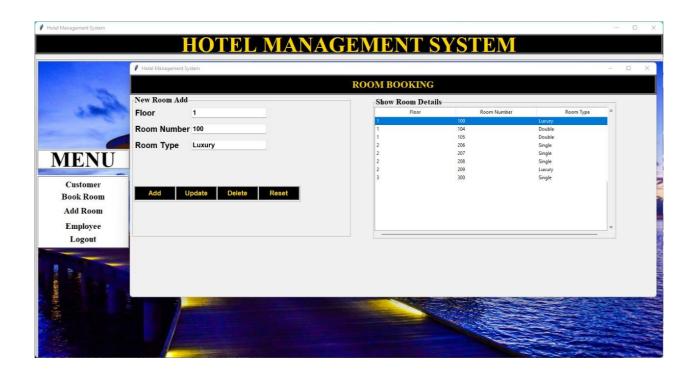
CUSTOMER DETAILS



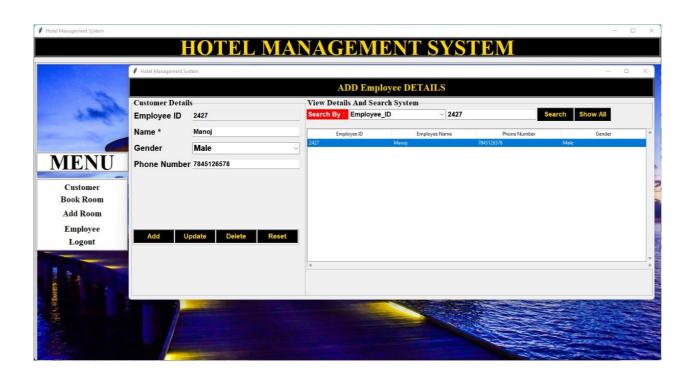
ROOM BOOKING DETAILS



ADDING ROOM



EMPLOYEE DETAILS



CONCLUSION

The project "Hotel Management System" is aimed to develop to maintain the day-to-day state of admission/Vacation of Residents, List of Workers, payment details etc. Main objective of this project is to provide solution for hotel to manage most there work using computerized process. This software application will help admin to handle customers information, room allocation details, payment details, billing information.etc

The existing system is a manually maintained system. All the Hotel records are to be maintained for the details of each customers, Fee details, Room Allocation, Attendance etc. All these details are entered and retrieved manually, because of this there are many disadvantages like Time Consuming , updating process, inaccuracy of data. For avoiding this we introduced or proposed a new system in proposed system the computerized version of the existing system. provides easy and quick access over the data.

References

Python

https://www.python.org/

Tkinter

https://docs.python.org/3/library/tkinter.html

 $MySQL\ Database\ \underline{https://www.mysql.com/downloads/}$