



Hotel DataBase

(We Reserve)

Database class project 2022/2023

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Date/time

-----This section is intended for the Instructor-----

<u>Topic</u>	<u>Mark</u>
Project Requirements and Modeling	
Correctness of Database mapping	
Functional Dependency and Normalization	
Project Tools	
Project Discussion	
Project Completeness	
Project Output Results or reporting (JasperReport, charts, graphs, etc.)	
Project Administration and Management	
Project Report	
Project Idea	
Project Complexity	
Team work	

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Abstract

In the given report, we will explain about the application that we designed for Hotel Reservations. the Report contains the UML and the project requirement. We also explain the purpose of each screen in the program and followed by the state of the tables according to BCNF.

Introduction

Our project (We reserve) talks about a Hotel that reserves rooms. We searched about Hotel management systems and spoke with someone which field is in hotel management, and he explained to us the working process and the information that we should know about Employees and rooms to help us build our program.

We designed this program to help customers and employees to work and arrange their information in database management systems to make their work easier. This program aspires to be used by the largest number of users. We used java , and we used Oracle to store databases about Rooms, Customers, and employees.

Project Requirements

After requirements collection and analysis phase the following description is provided.

(Data Requirements for A Hotel that reserves Rooms for customers.)

- The Hotel is partition into **Rooms**. Each Room has a unique Room Number, Room Status , Activated status.
- A **customer** Reserves a room , we store each customer Mobile Number, name ,Email, Father name, mother name ,status, and Address. A customer lives in one room only.
- Each customer have an account which has a name, Email, Password,mobilenumber and an address.
- An **Employee** works in the hotel and many employees work in several roles such as Chef , Maintenance ,Clean Worker ,Purchasing and Inventory Control ,Accounting and Budgeting and Quality Control.

An employee has a Mobile Number, name, Father name , Mother name , Unique ID , Address , Status and an Email. We keep track of the current number of hours per week that an employee works in the hotel and manages his payment.

- we want to keep track of the **Payment** of each Employee, which includes each Employee payment ID, Mobile Number , Month ,Amount of payment.

Each Employee has a payment.

- Each customer has one **Bill** which has a unique Bill ID , Mobile Number , Month and an amount to pay.

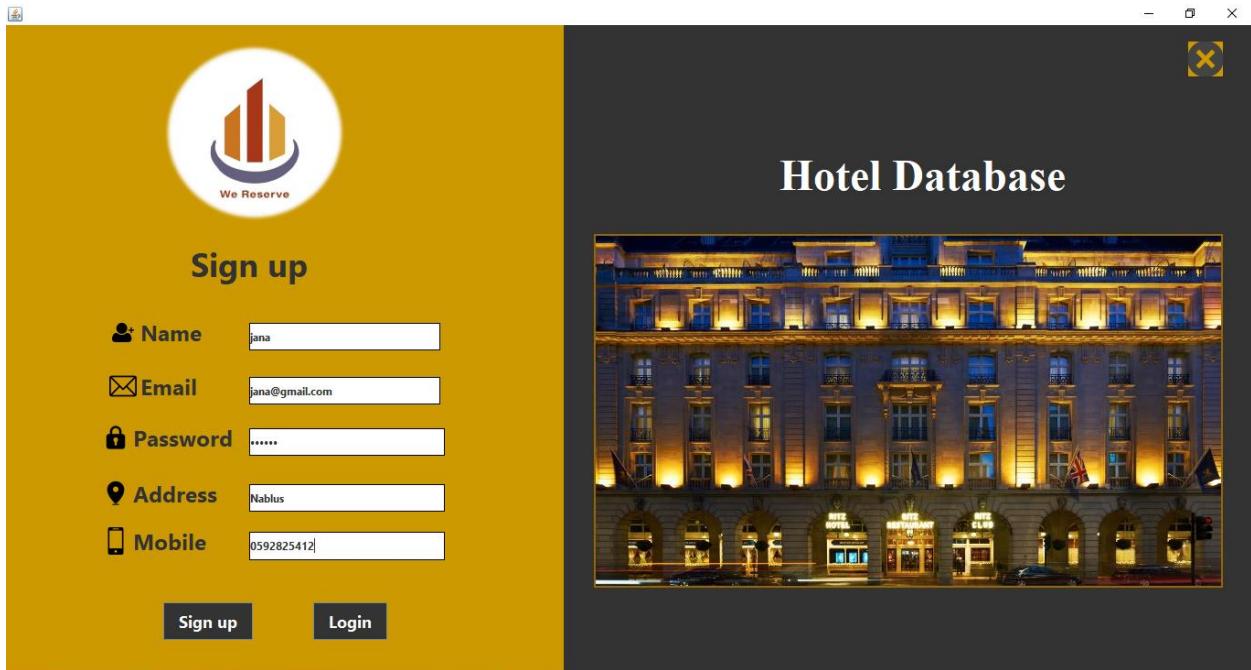
Tools used in this Project

- 1)Scene Builder
- 3)Oracle
- 4)SQL Developer
- 5)Google fonts and Icons
- 6)Jasper Report 6.2.0
- 7)Draw Io
- 8)SQL Plus

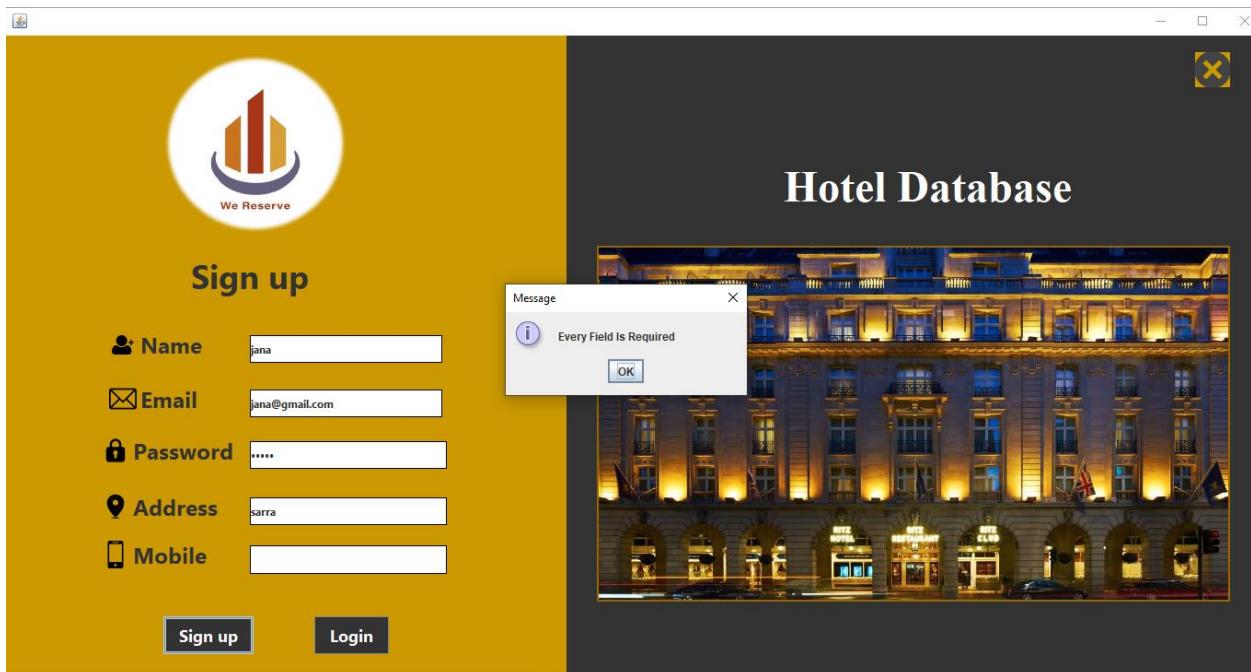
9)Java

GUI for the Program

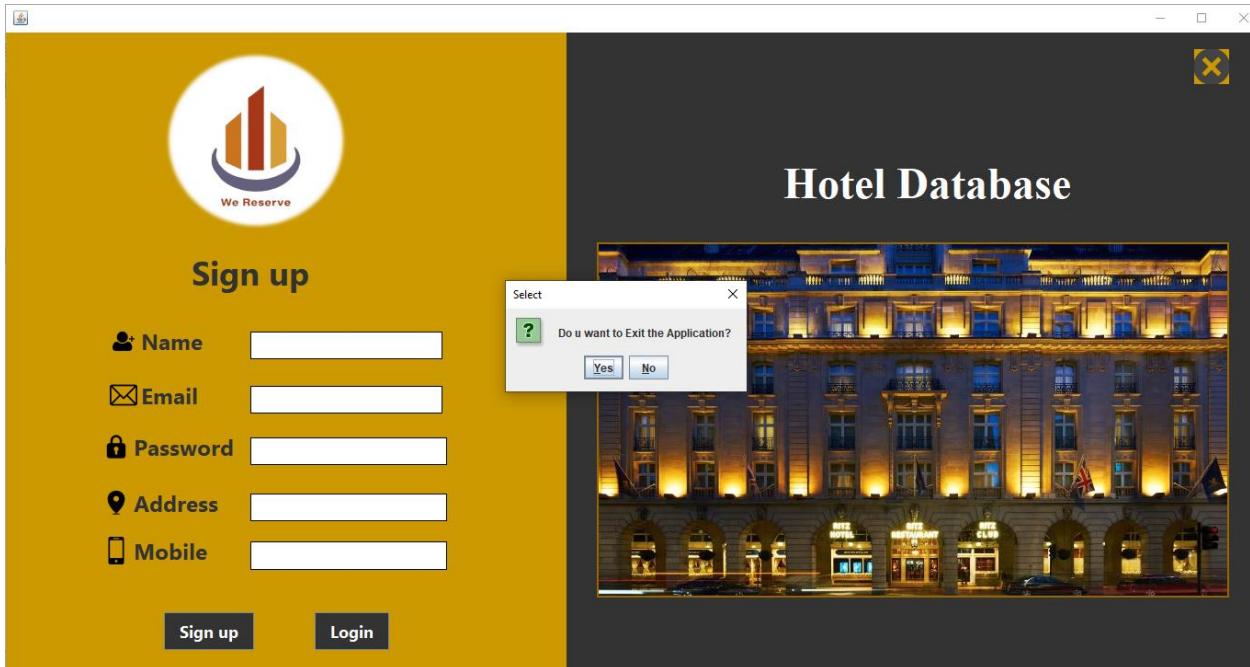
The user can sign up using the sign up page which includes our logo.



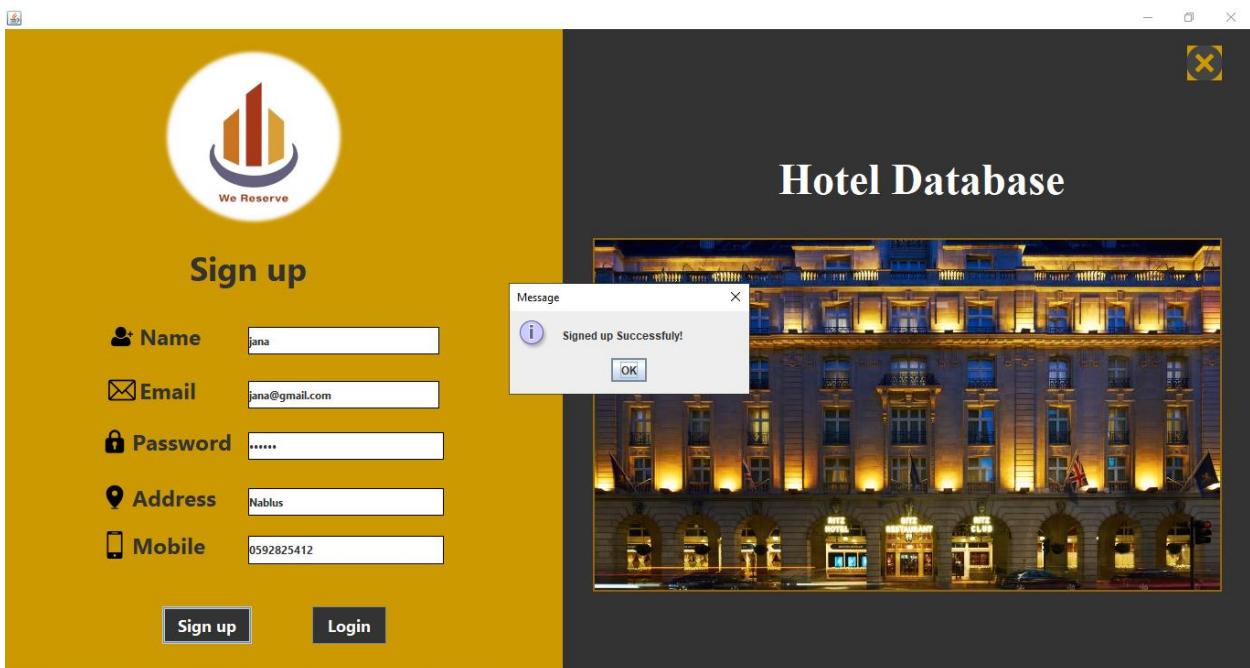
A message will appear if the user doesn't enter every field required



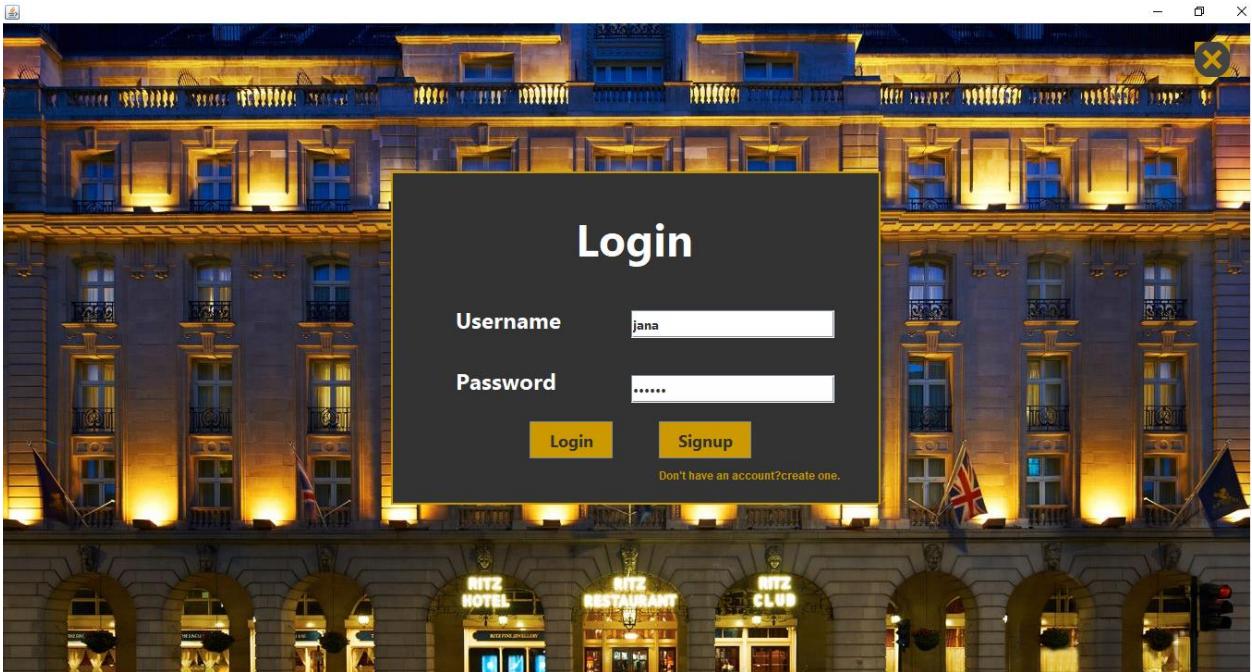
You can exit the application by pressing the exit button.



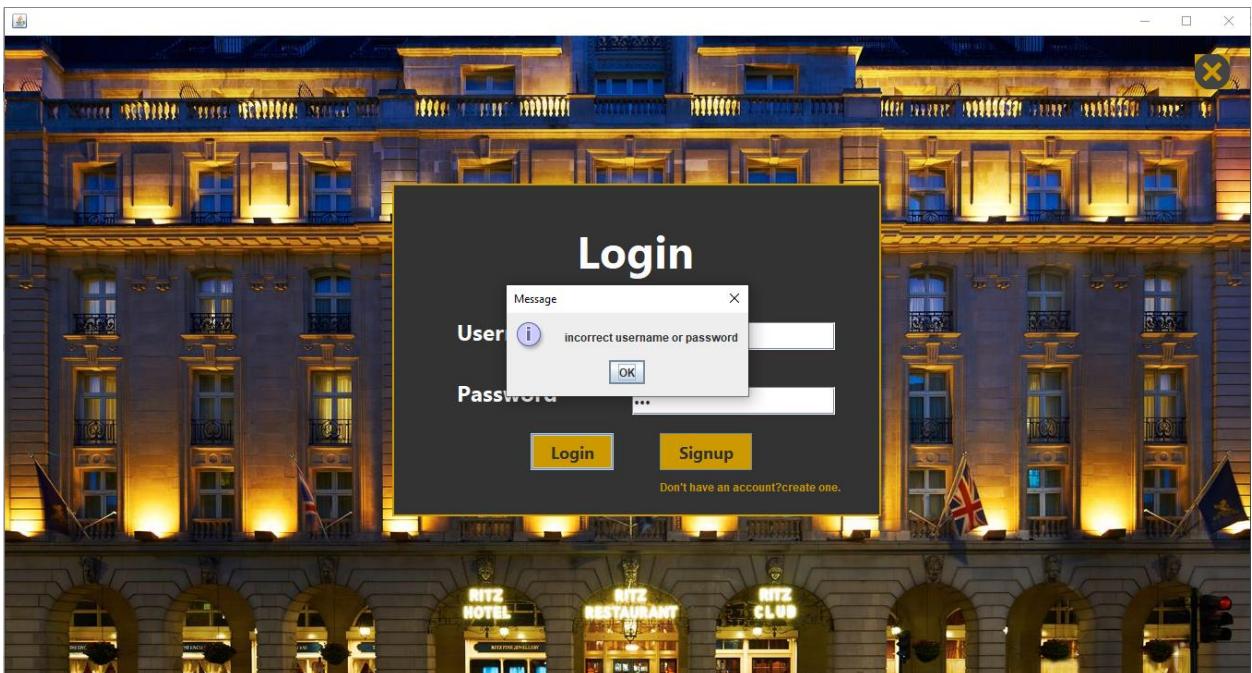
After filling all the required fields it gives u a message that u have signed up.



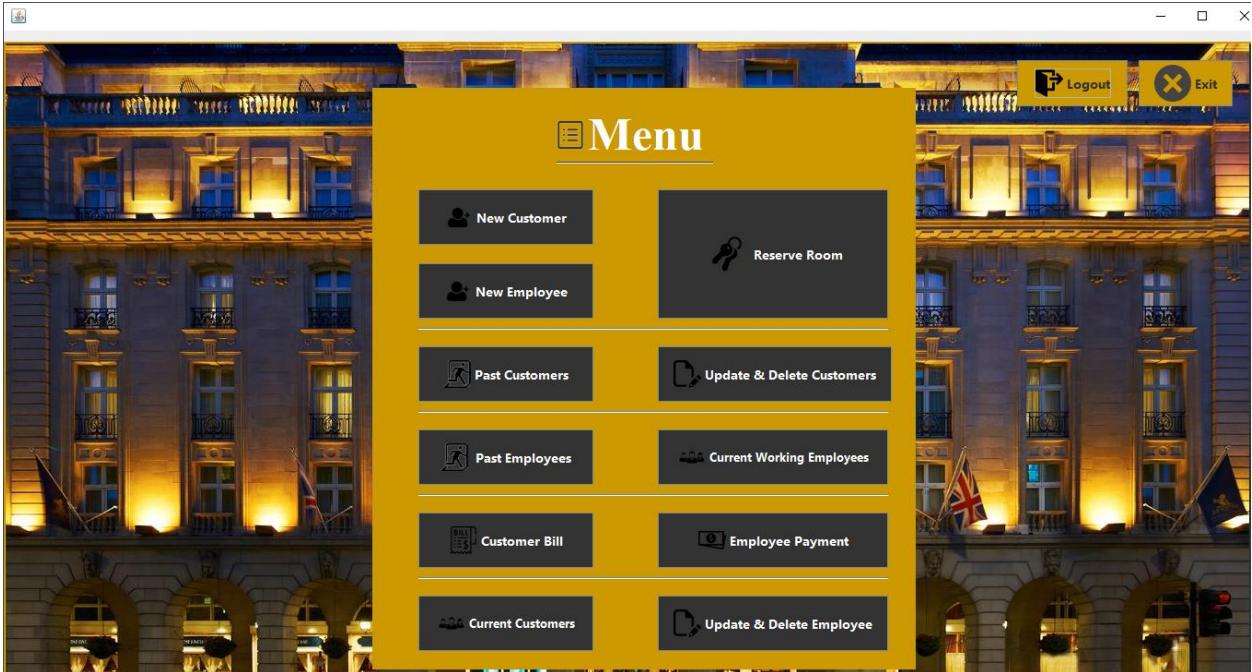
Then it guides the user to login page to login to his account after registering.



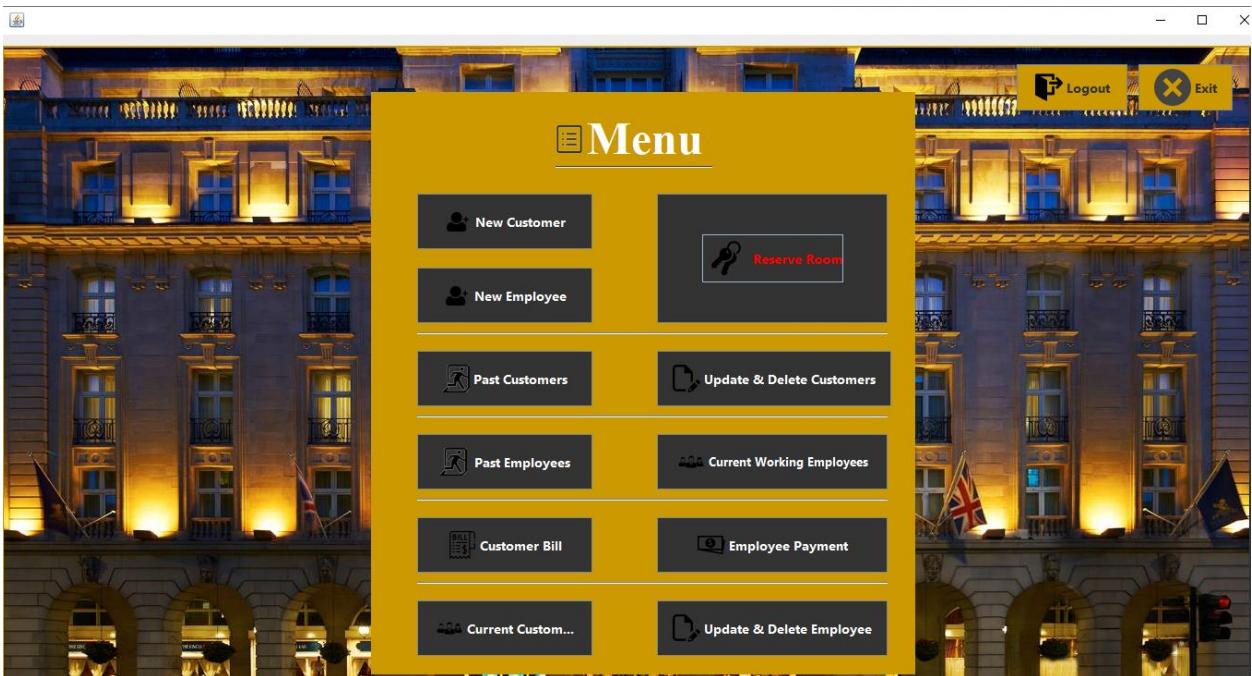
A message will appear if the user enters a wrong password or wrong user name.



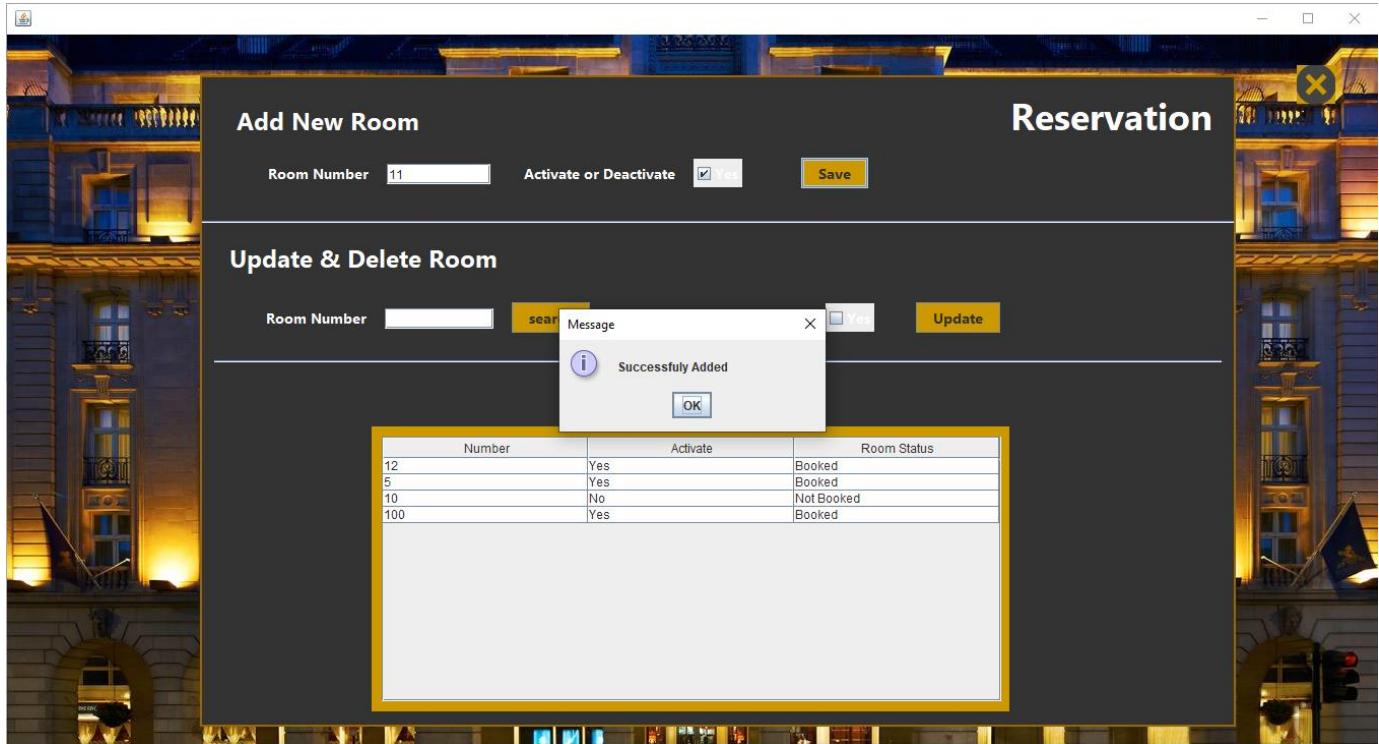
After logging in it will guide you to the Admin home.



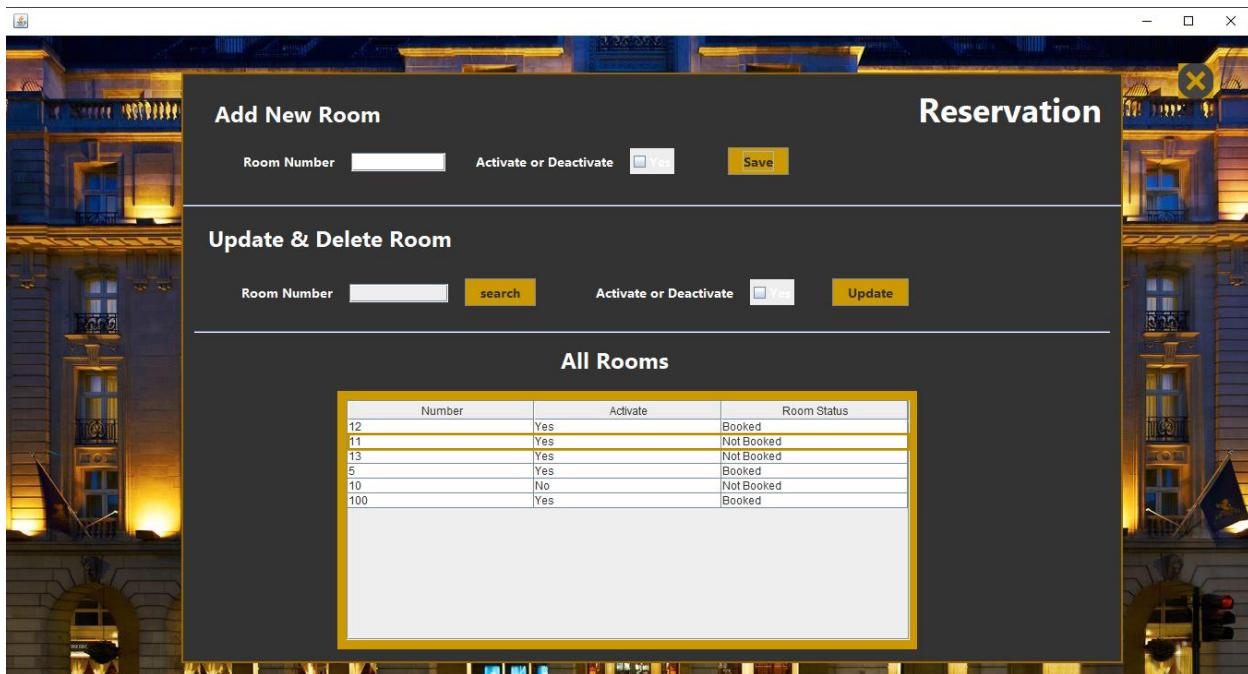
After pressing the reserve room button it will turn into red then open the reserve room screen.



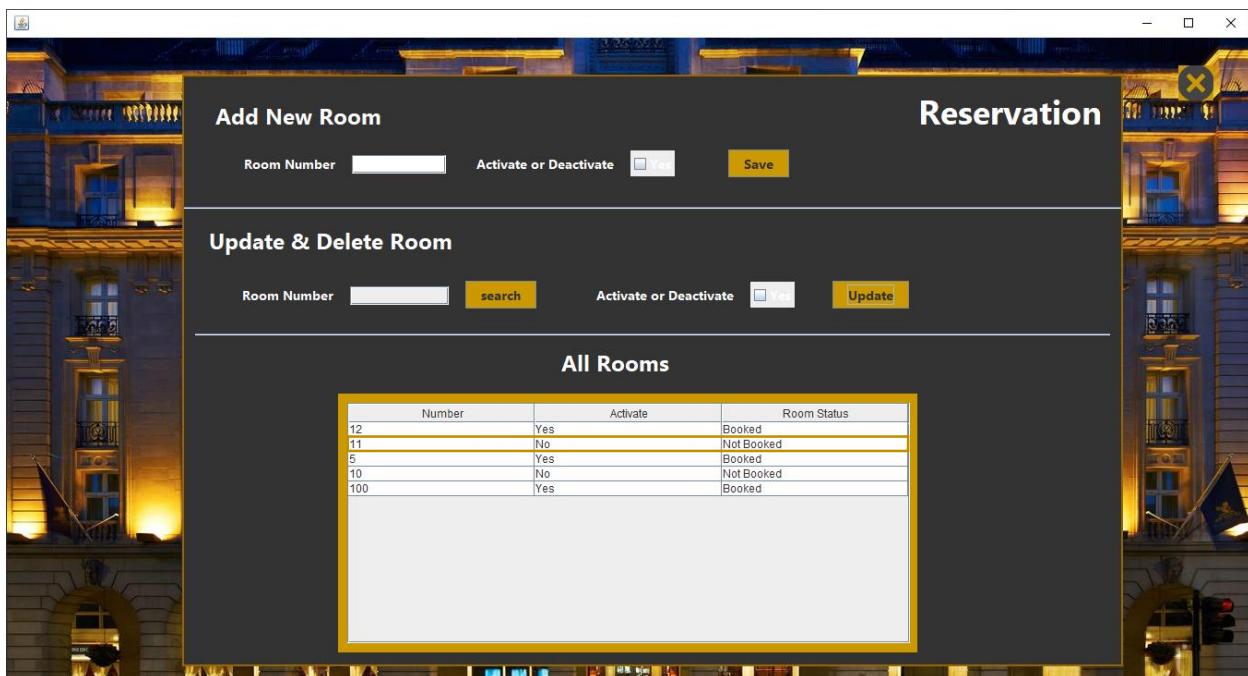
After adding a new room.



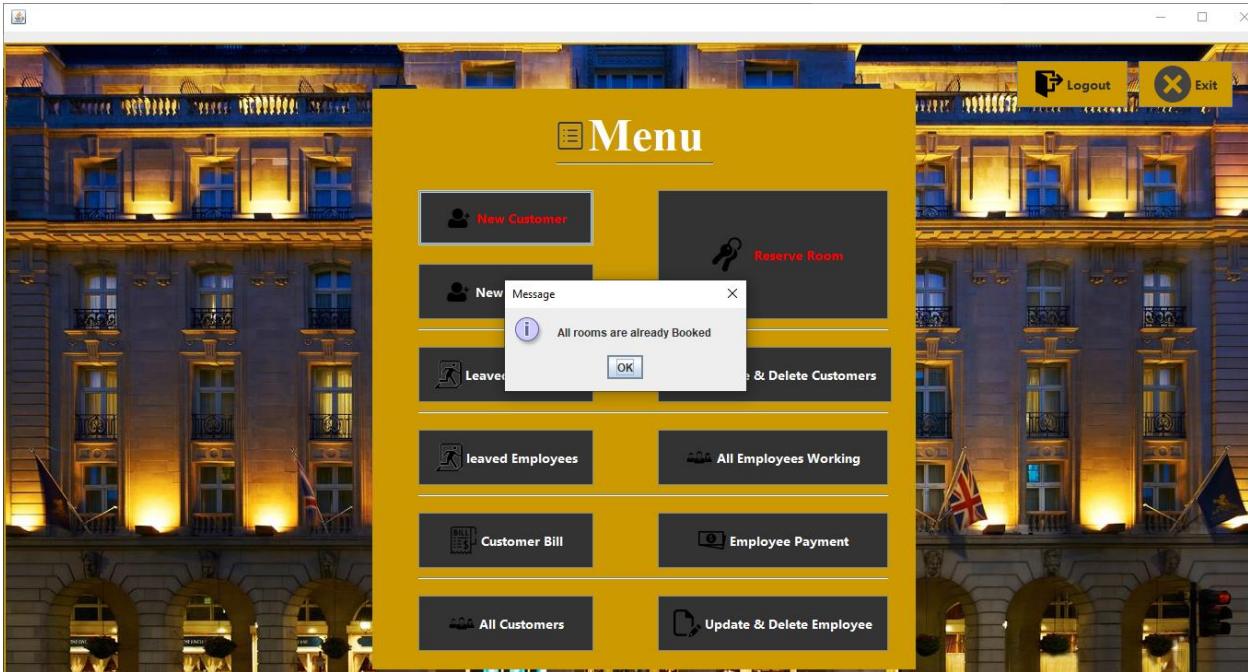
it will show the added room.



After updating the activated status it will get updated in our database.



If you want to reserve a room and all rooms are booked it will show you a message.



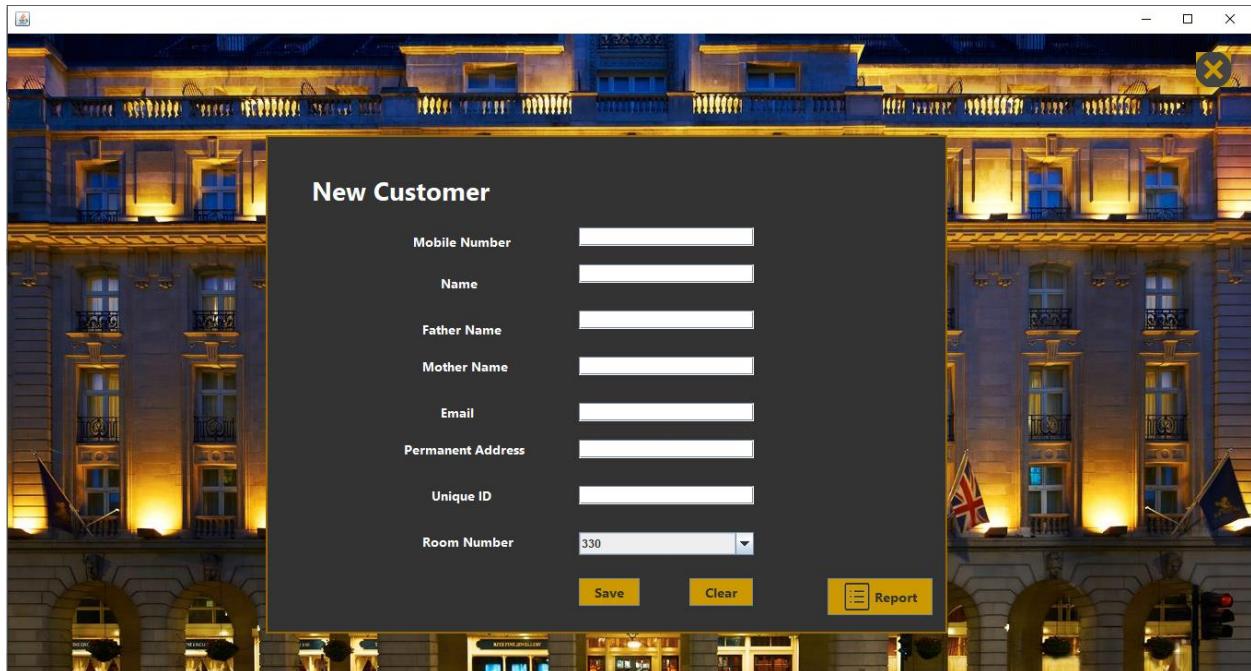
After pressing the report button it shows all the Data of the Rooms.

The screenshot shows a report titled "Room Data" from a "Hotel Database". The report displays a table of room data with three columns: ROOMNUMBER, A_CTTIVATE, and ROOMSTATUS. The data is as follows:

ROOMNUMBER	A_CTTIVATE	ROOMSTATUS
12	Yes	Booked
11	Yes	Booked
330	Yes	Not Booked
50	No	Not Booked
13	Yes	NOT Booked
5	Yes	Booked
10	No	Not Booked
100	Yes	Booked

The report also includes a date stamp "Tuesday 13 December" and a logo for "We Business". On the right side, there is a vertical toolbar with various icons for search, add, delete, and other database functions.

After pressing the new customer button.

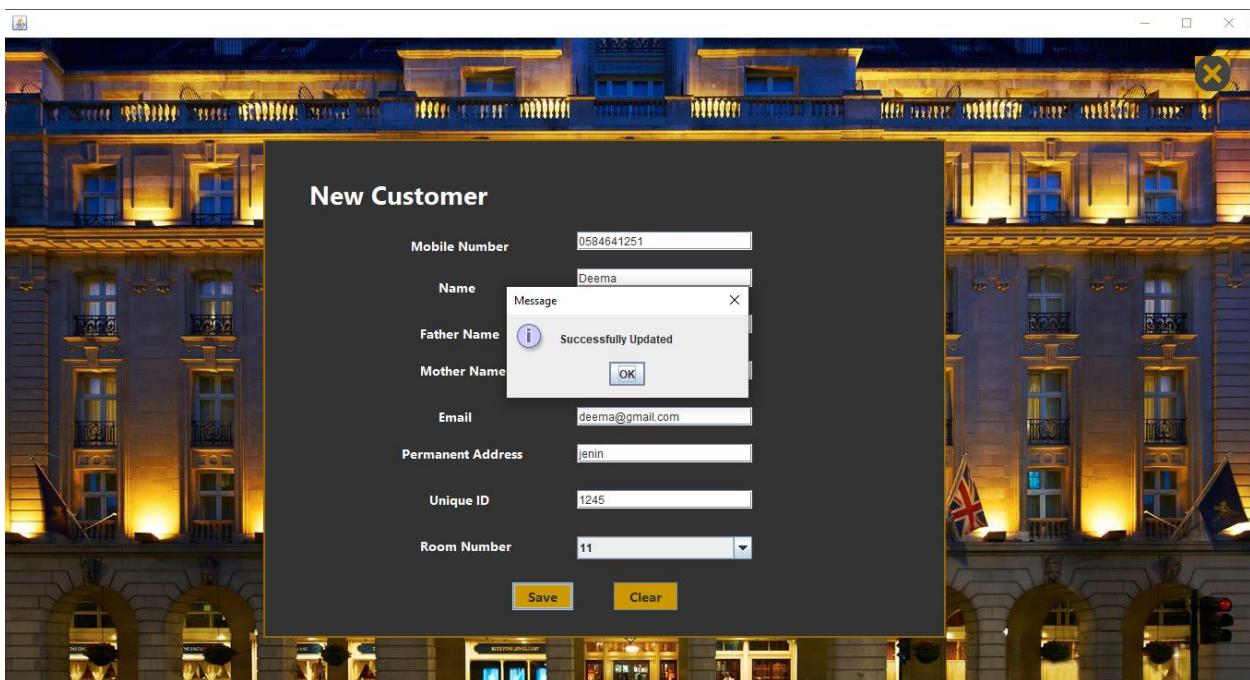
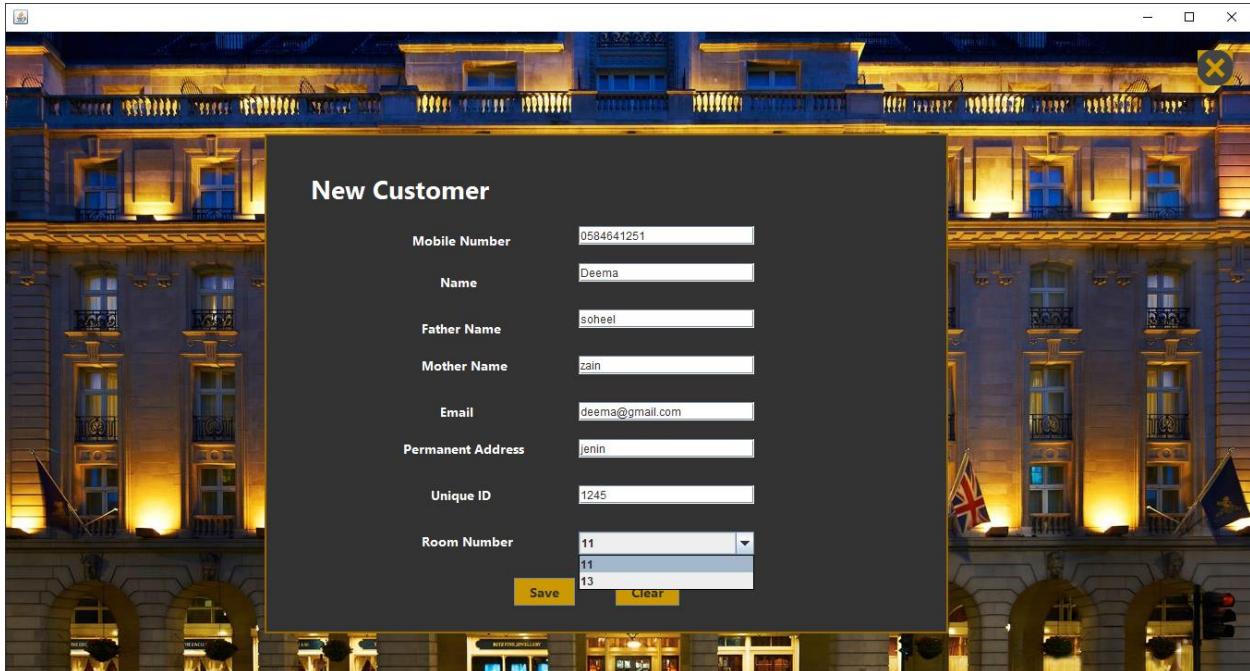


After pressing the report button it shows all the Data of the Customers.

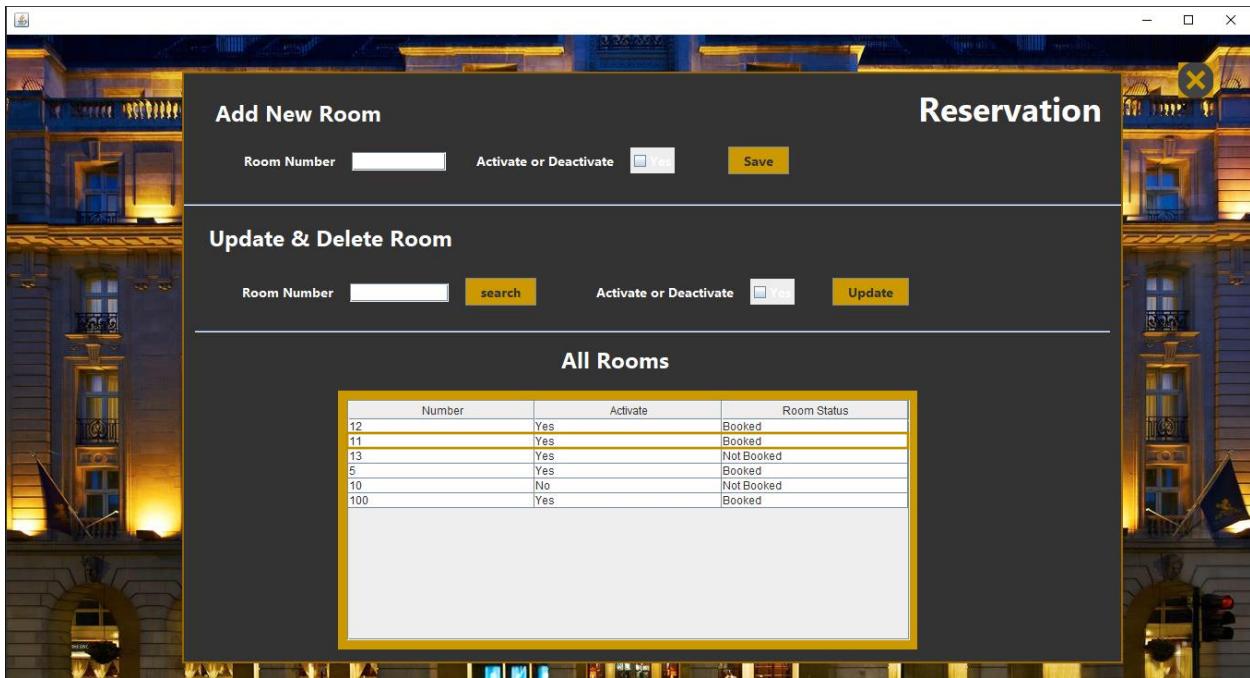
A screenshot of a Windows application window titled "Customer Data". The header includes "Hotel Database" and the date "Tuesday 13 December". The main area displays a table of customer data with columns: MOBILENUM, UNIQUE_ID, FNAME, EMAIL, ROOMNUMB, STATUS, FATHERNAME, MOTHERNAME, and ADDRESS. The data is as follows:

MOBILENUM	UNIQUE_ID	FNAME	EMAIL	ROOMNUMB	STATUS	FATHERNAME	MOTHERNAME	ADDRESS
596854721	1245	deema	deema@gmail.com	10	leaved	ahmad	suha	jenin
596824517	1236	maysoon	maysoon@gmail.com	12	leaved	ahmad	muna	Nablus
592546454	null	hala	hala@gmail.com	11	null	null	null	nablus
595325482	1254	Ahmad	Ahmad@gmail.com	13	leaved	mahdi	roaa	nablus
592825412	null	jana	jana@gmail.com	11	null	null	null	Nablus
592825419	154	jana	jana@gmail.com	12	living	maher	lina	sarra
599999999	null	yousef	yousef@gmail.com	11	null	null	null	sarra

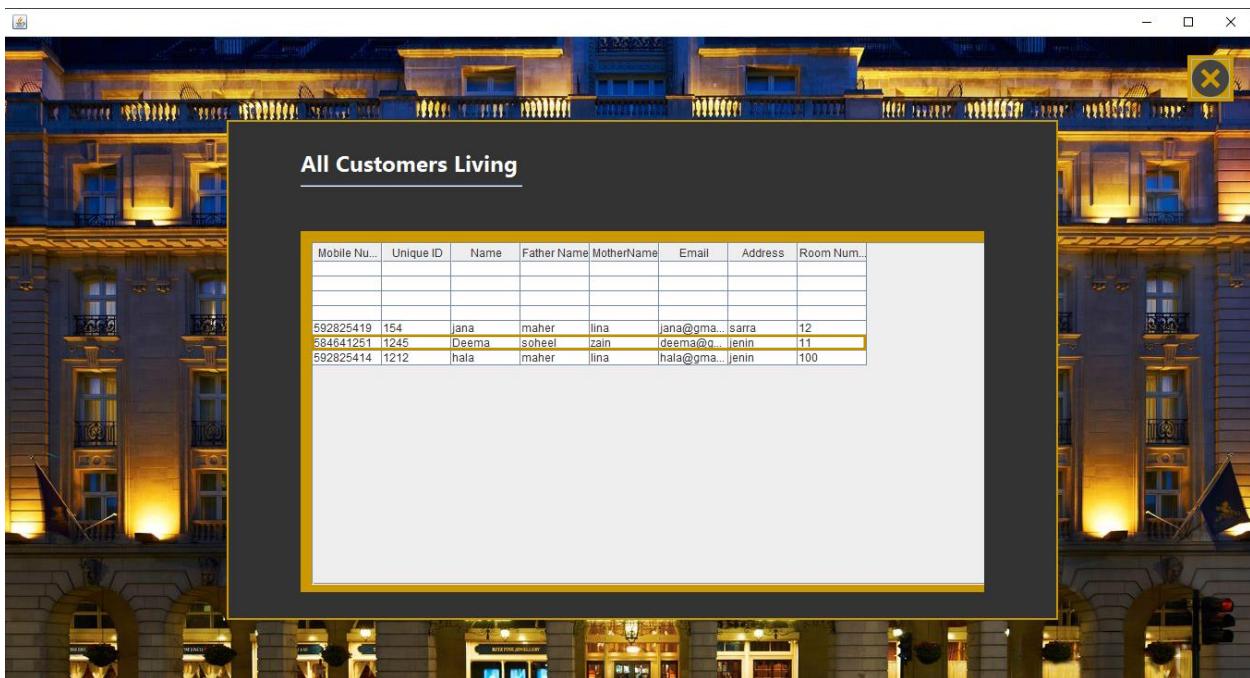
Inserting a new Customer to reserve a room from the available ones.



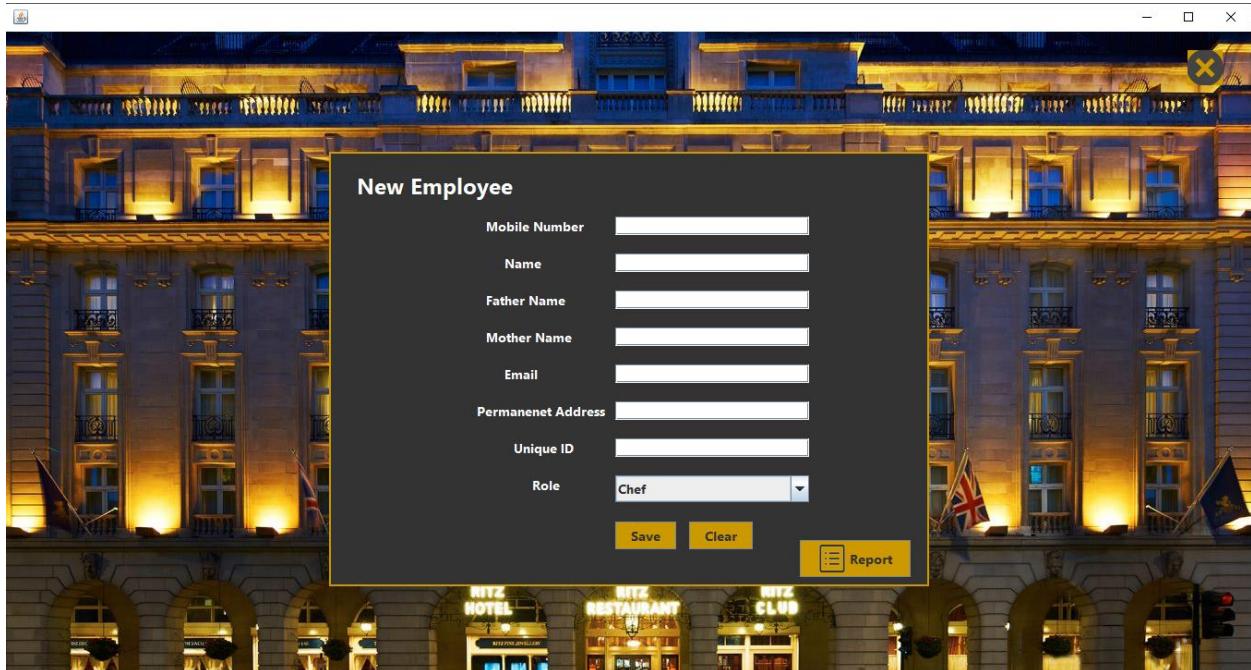
Room shows as “Booked” after the reservation.



New customer is created in our database.

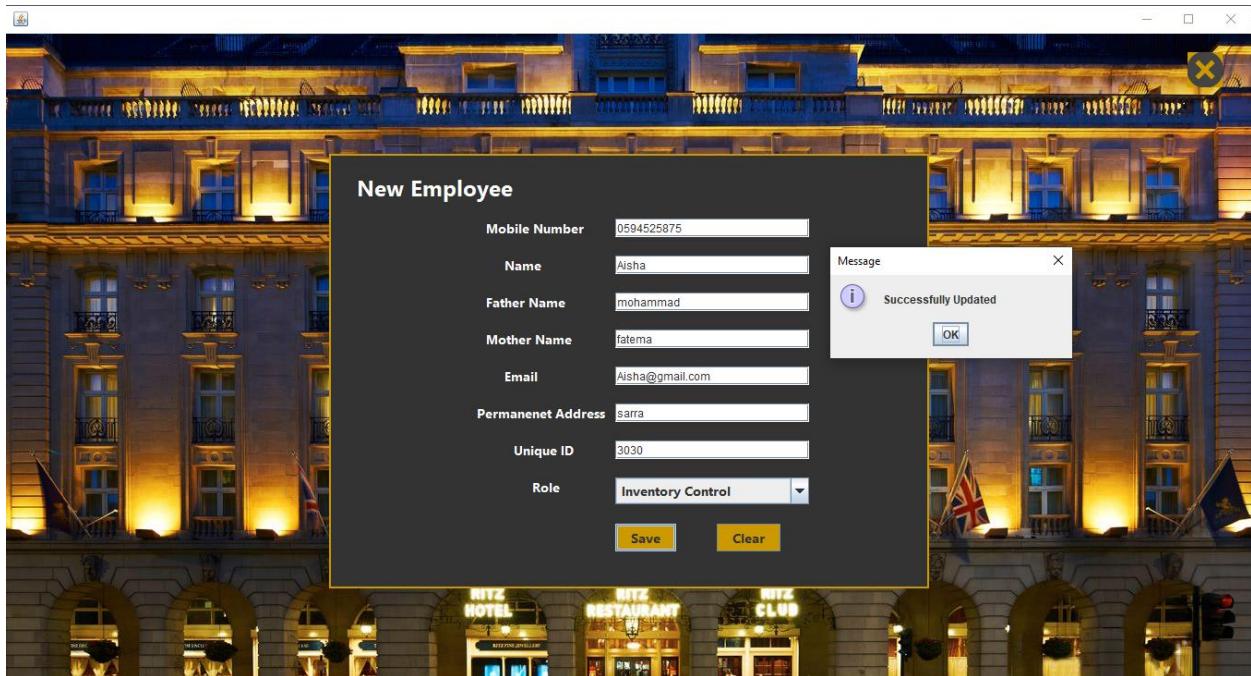


Add a new employee with specifying its role.

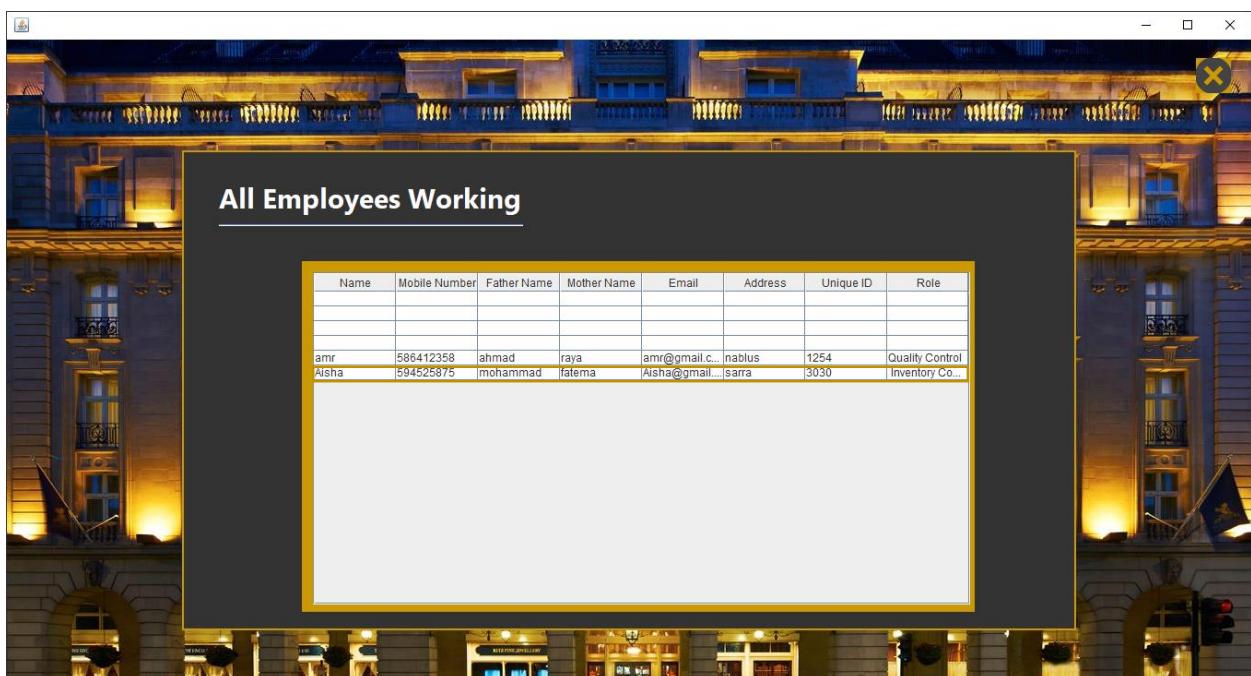


After pressing the report button it shows all the Data of the employees.

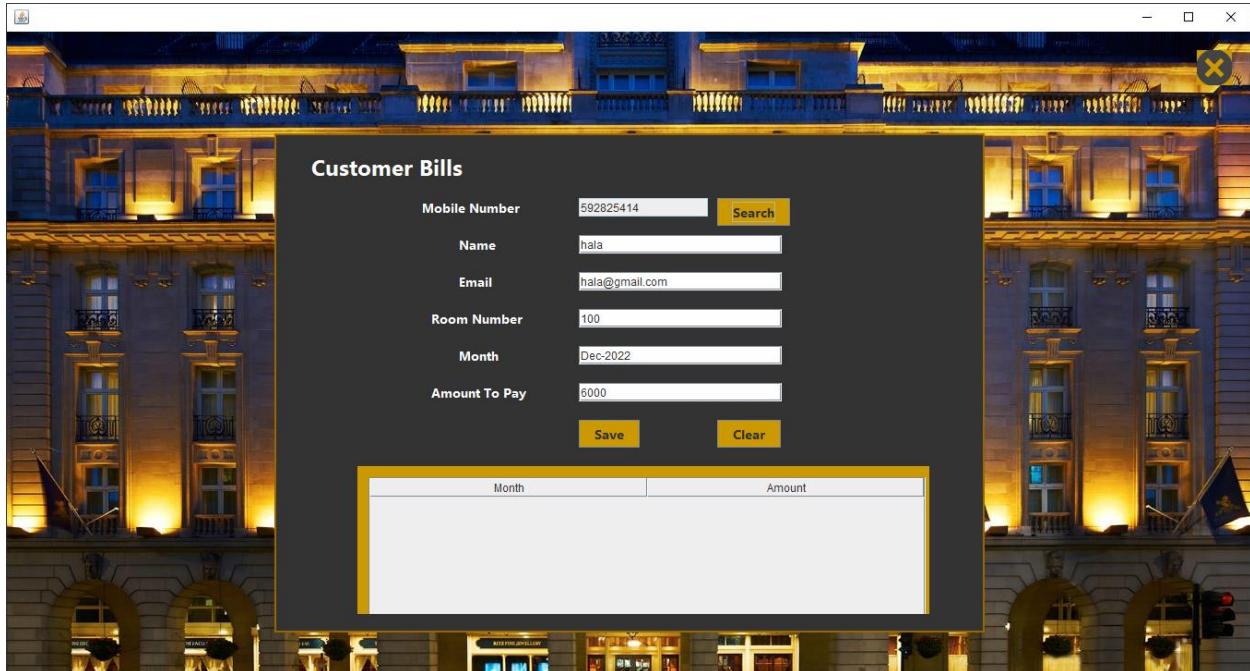
MOBILENUM	EMAIL	FNAME	FATHERNAME	MOTHERNAME	UNIQUE_ID	ADDRESS	STATUS	ROL_E
598624578	ahmad@gmaiahmadl.com	mohammad	sara		125	jenin	Not Working	Maintenance
586412358	amr@gmail.com	ahmad	raya		1254	nablus	Working	Quality Control
594525875	Aisha@gmail.Aisha.com	mohammad	fatema		3030	sarra	Not Working	Inventory Control
592645872	sarah@gmail.sarah.com	ahmad	mona		5685	jericho	Working	Chef
598657516	raya@gmail.craya.com	mohammad	rola		562	nablus	Not Working	Accounting and Maintenance
592825416	ali@gmail.co	mahdi	ola		2587	1254	Not Working	Maintenance
592825418	tala@gmail.com	ahmad	dana		2	jenin	Not Working	Clean Worker



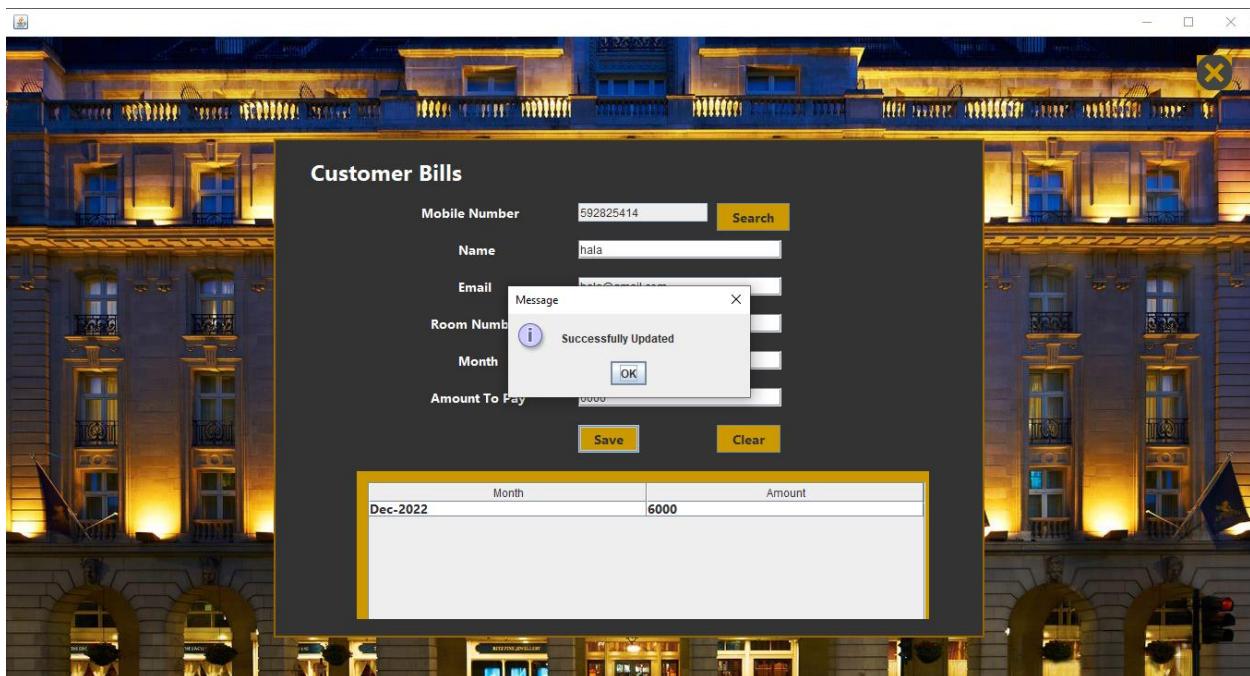
New Employee is created in our database.



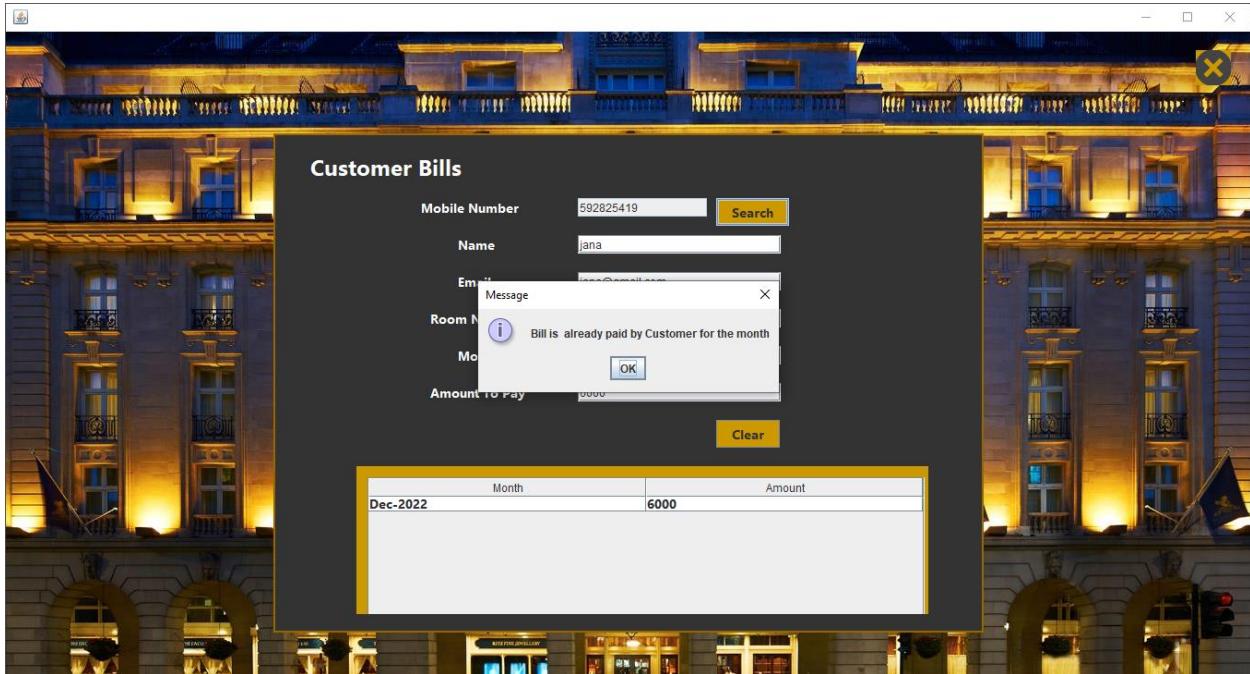
After pressing the Customer Bill Button from the home screen.



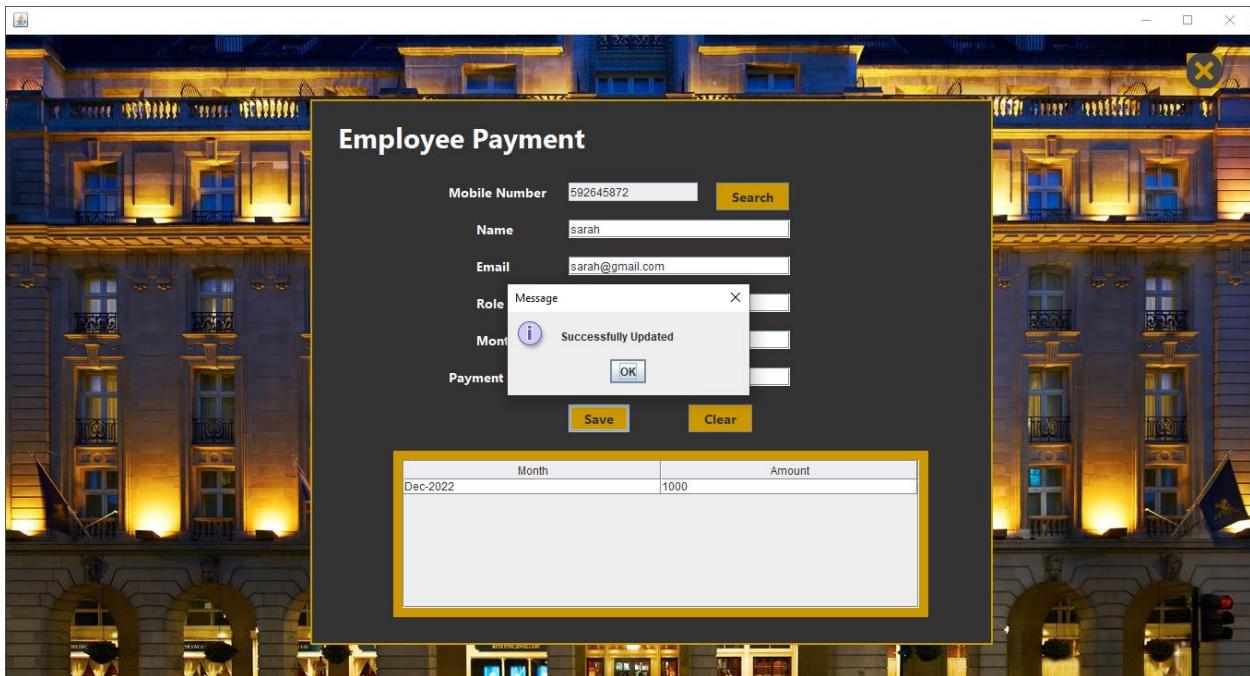
Searching the customer to add their bills.



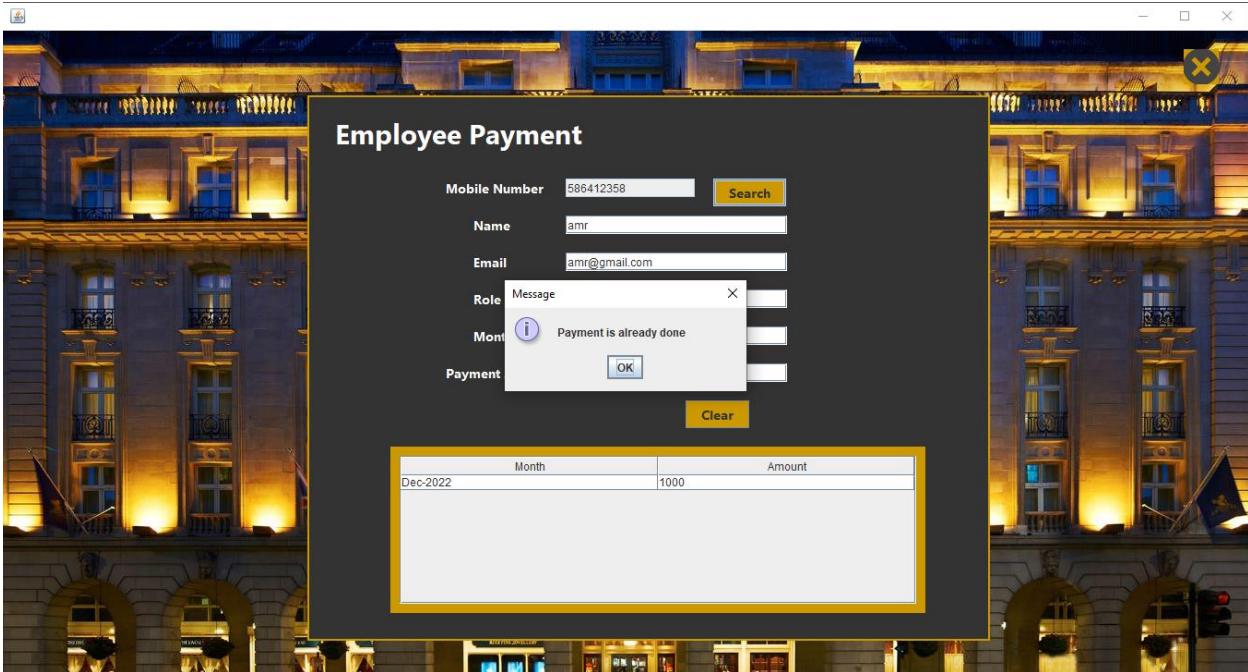
If the bill is already done it shows a message.



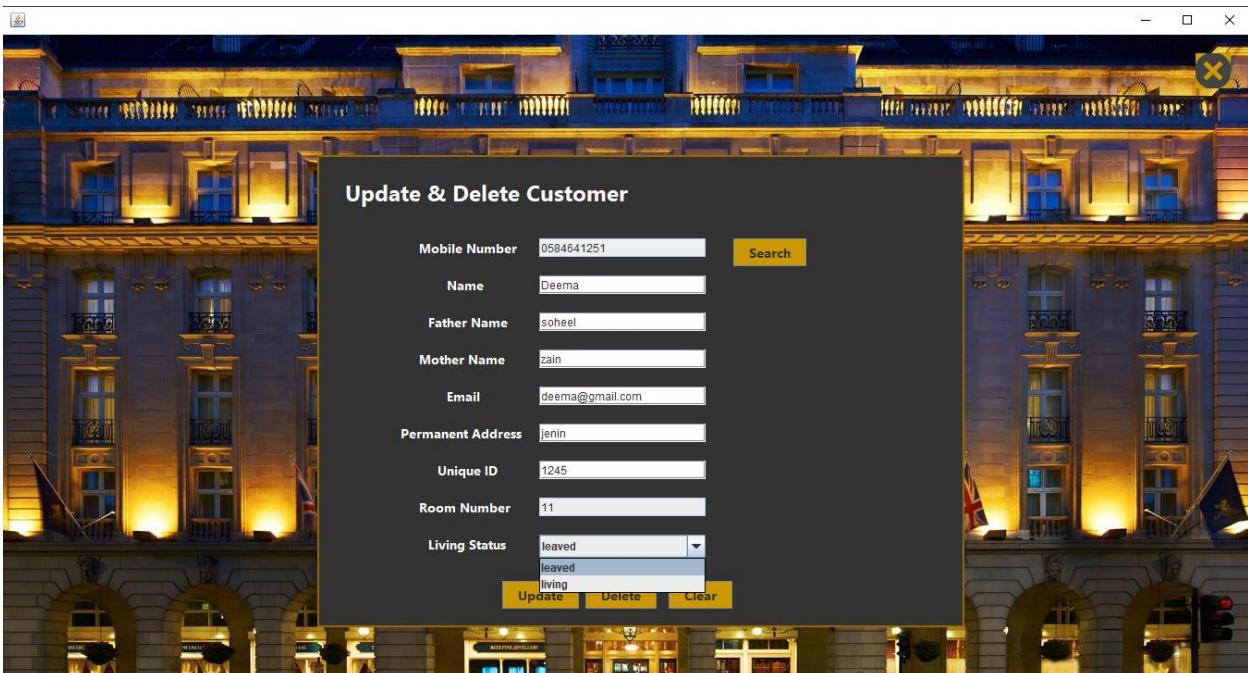
Searching the Employee payment to add its payment, after pressing the Employee payment Button from the home screen.



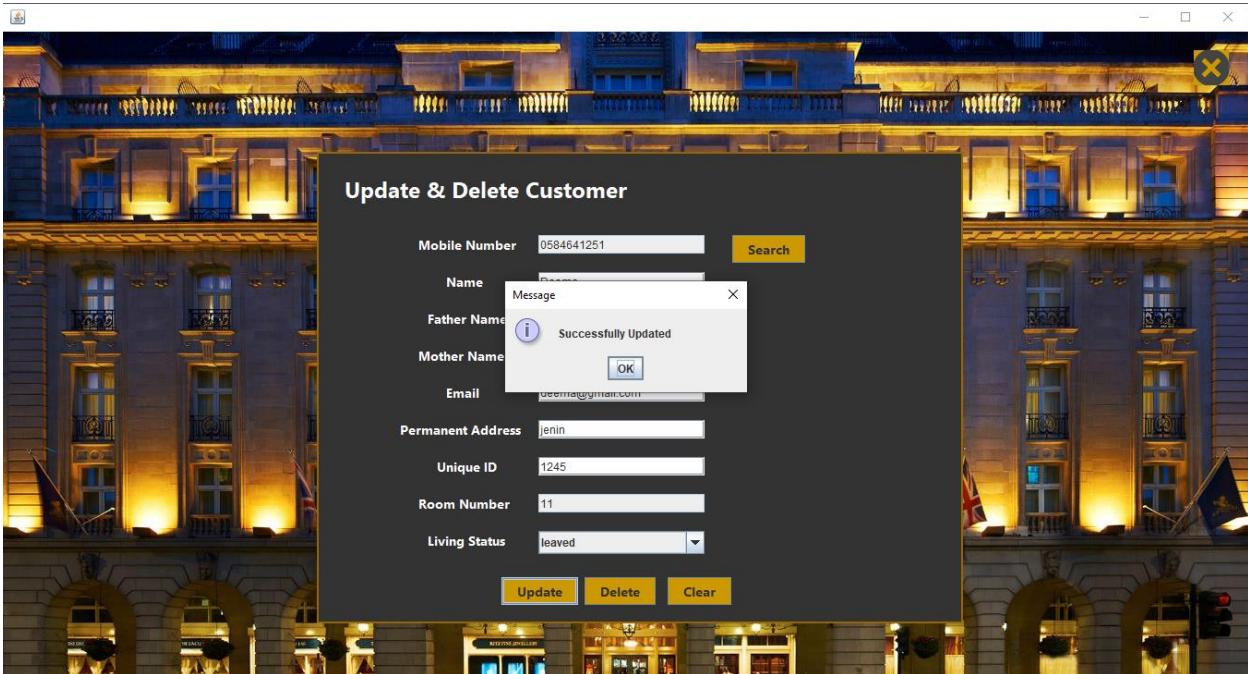
If the payment is already done it shows a message.



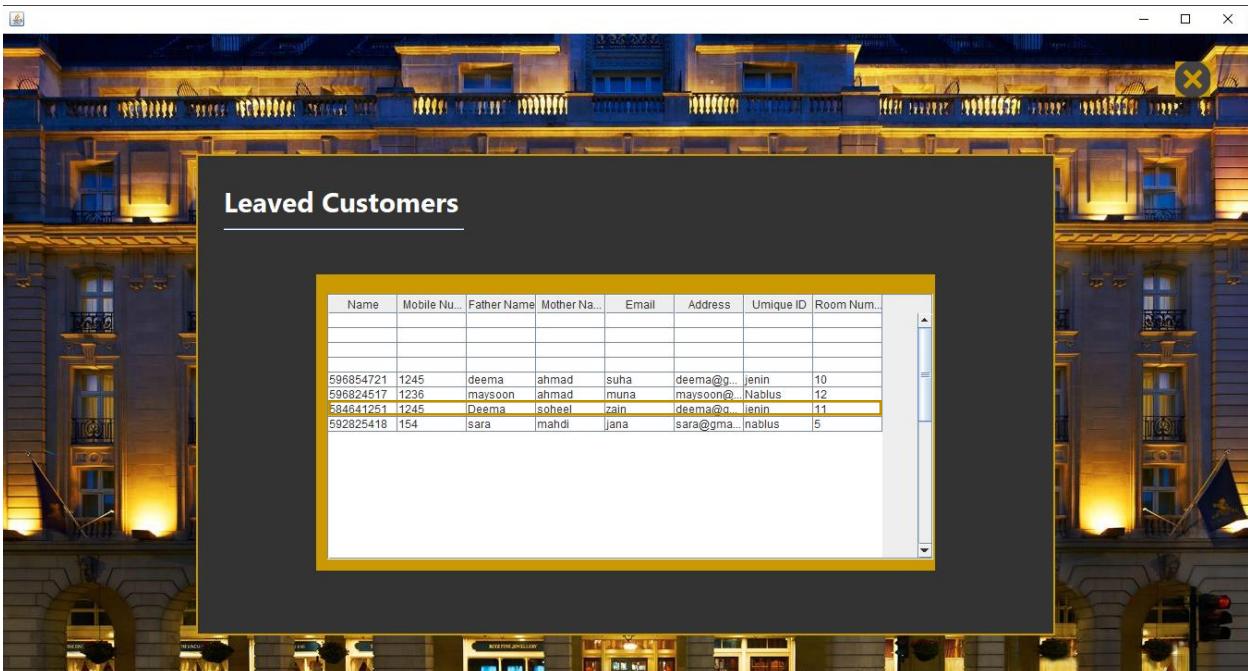
Searching the customer to Edit its data, Status(living,leaved).



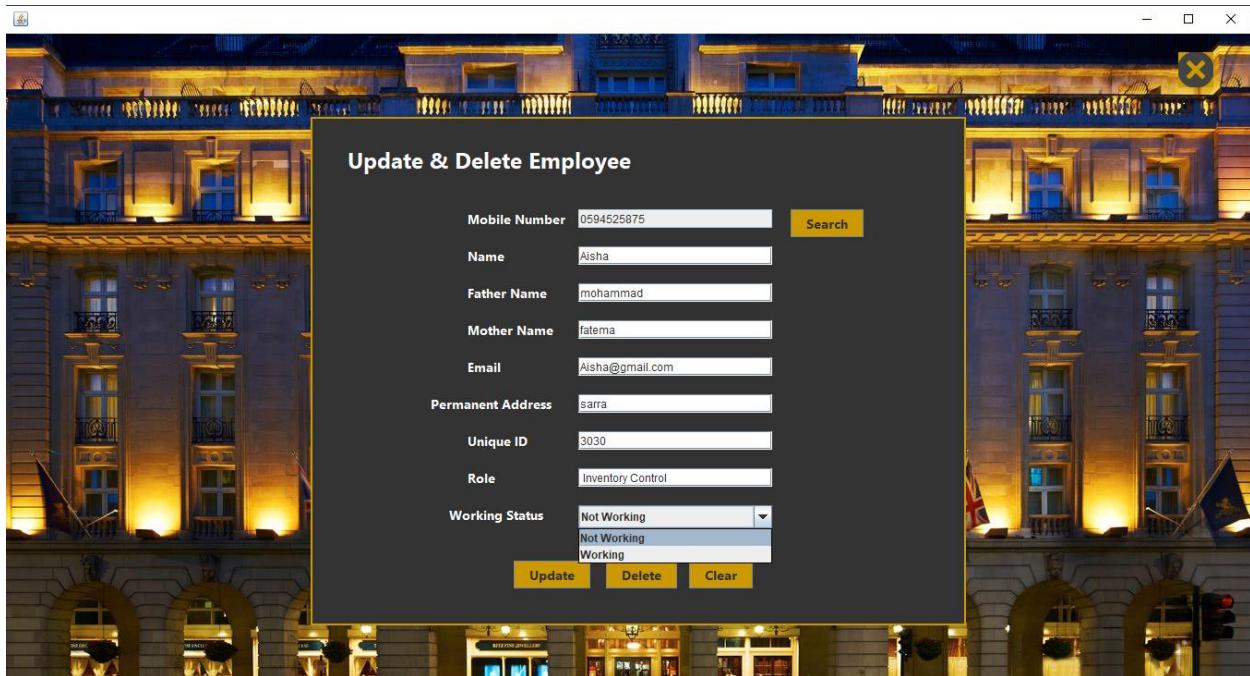
Leaved status.



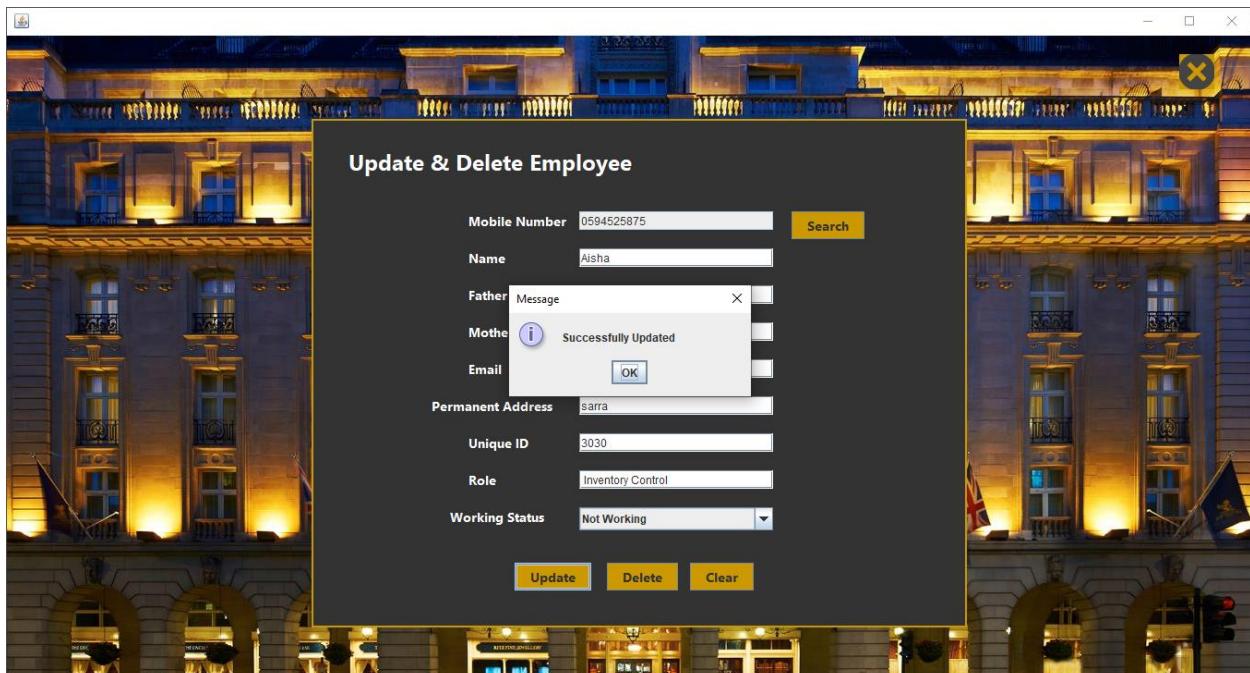
New Leaved customer will show in our database.



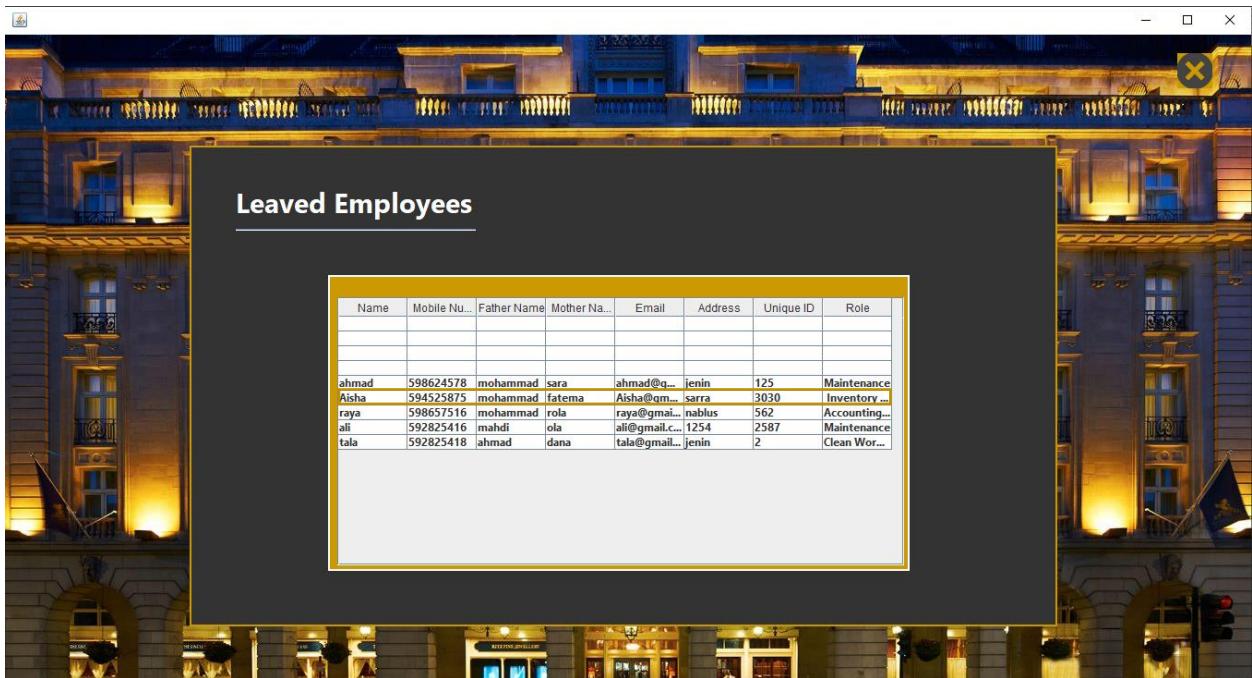
Searching the Employee to Edit its data, Status(Working,not working).



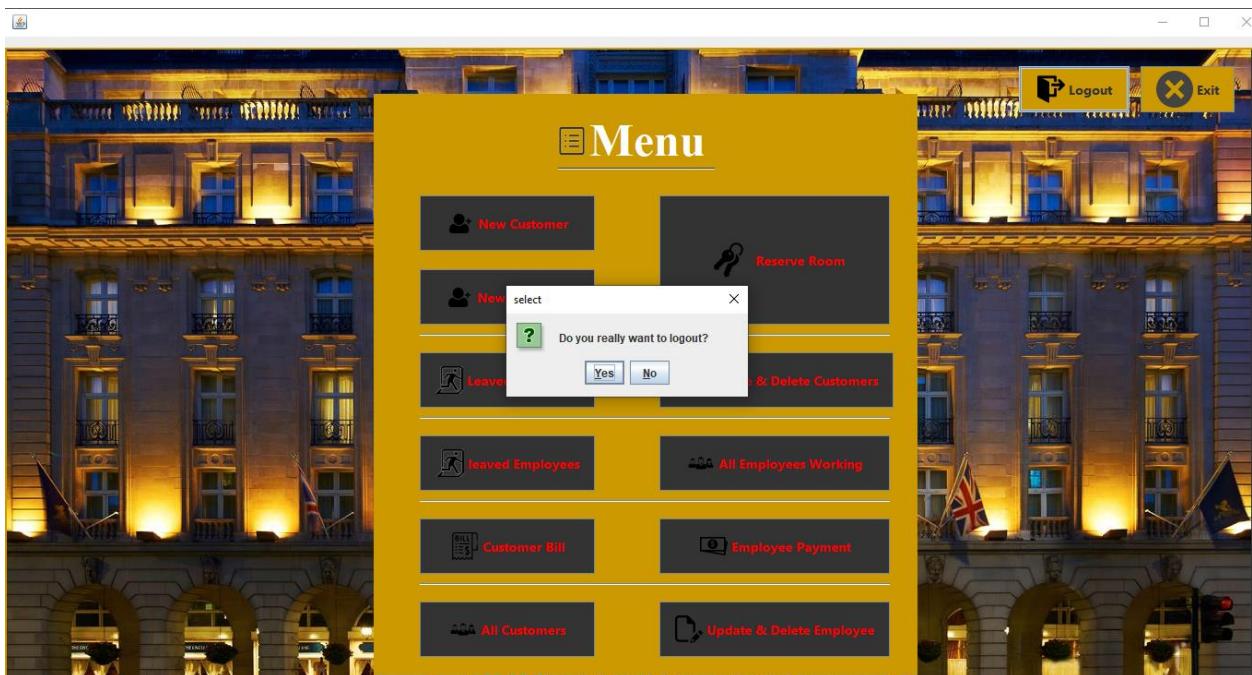
Not working status.



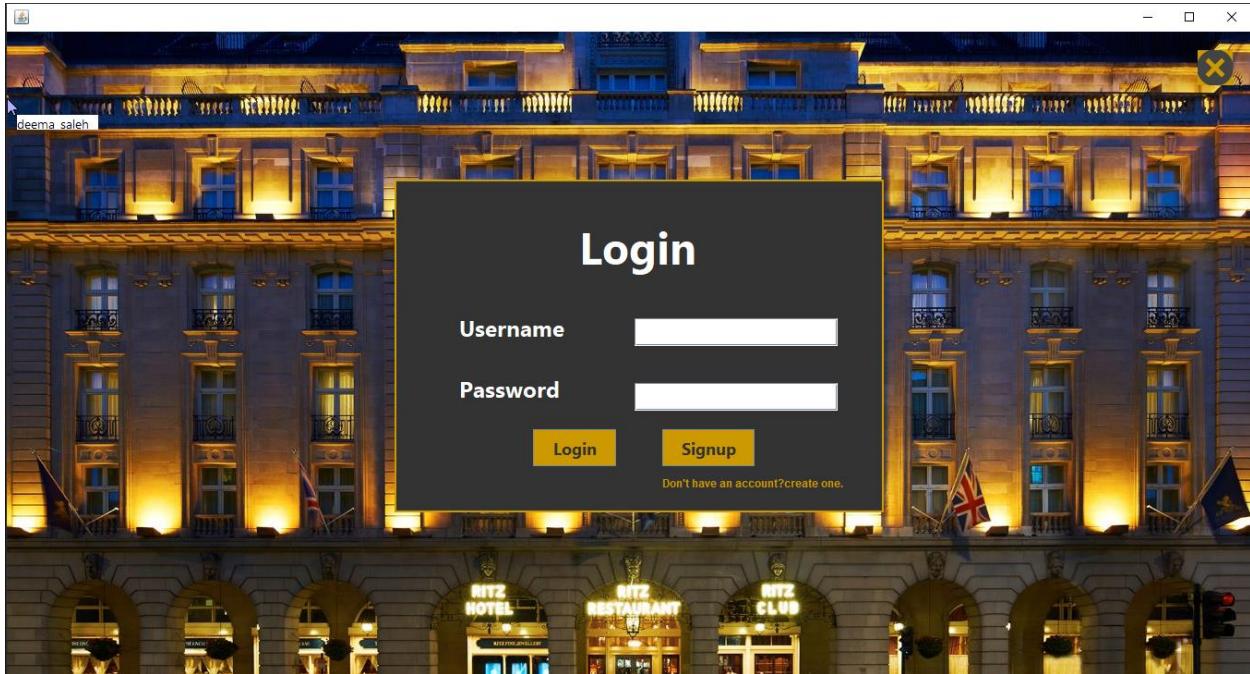
New Leaved Employee will show in our database for the not working employees.



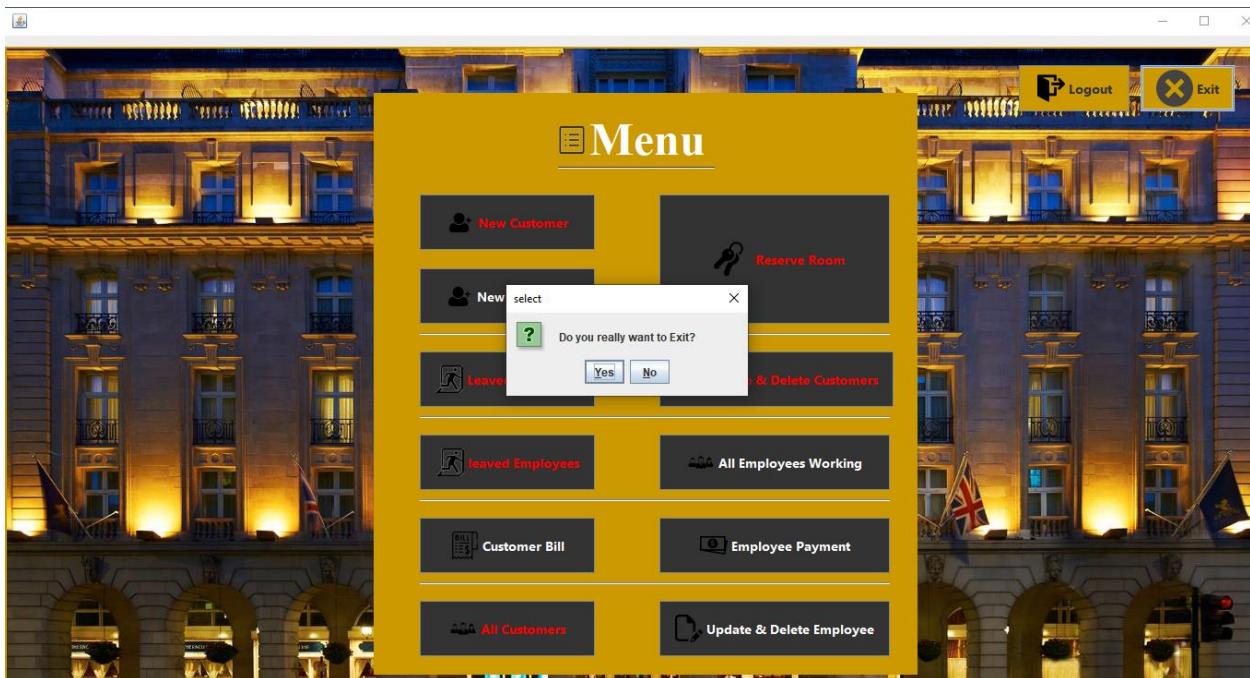
After pressing the right top logout button.



It will logout our account and leads us to the login screen.

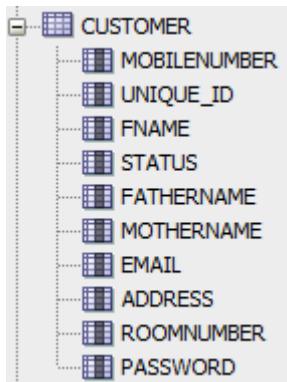


Or the other option is if we wanted to exit our application.



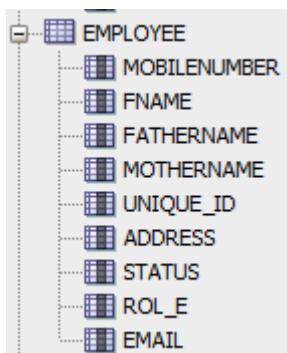
Functional Dependency

1. Customer table



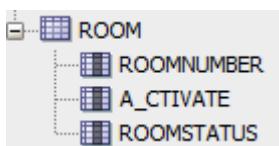
MOBILENUMBER → Unique_ID, Fname, Status, Email, pass, FatherName, Address, MotherName, RoomNumber.

2. Employee table



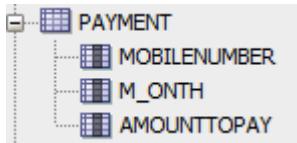
MOBILENUMBER → Unique_ID, Fname, Status, Email, FatherName, MotherName, Rol_e, Address.

3. Room Table



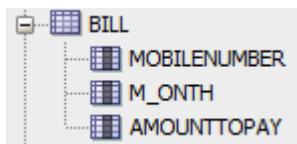
RoomNumber → A_activate, RoomStatus.

4. Payment Table



PaymentID → MOBILENUMBER, m_month, AmountToPay.

5. Bill Table



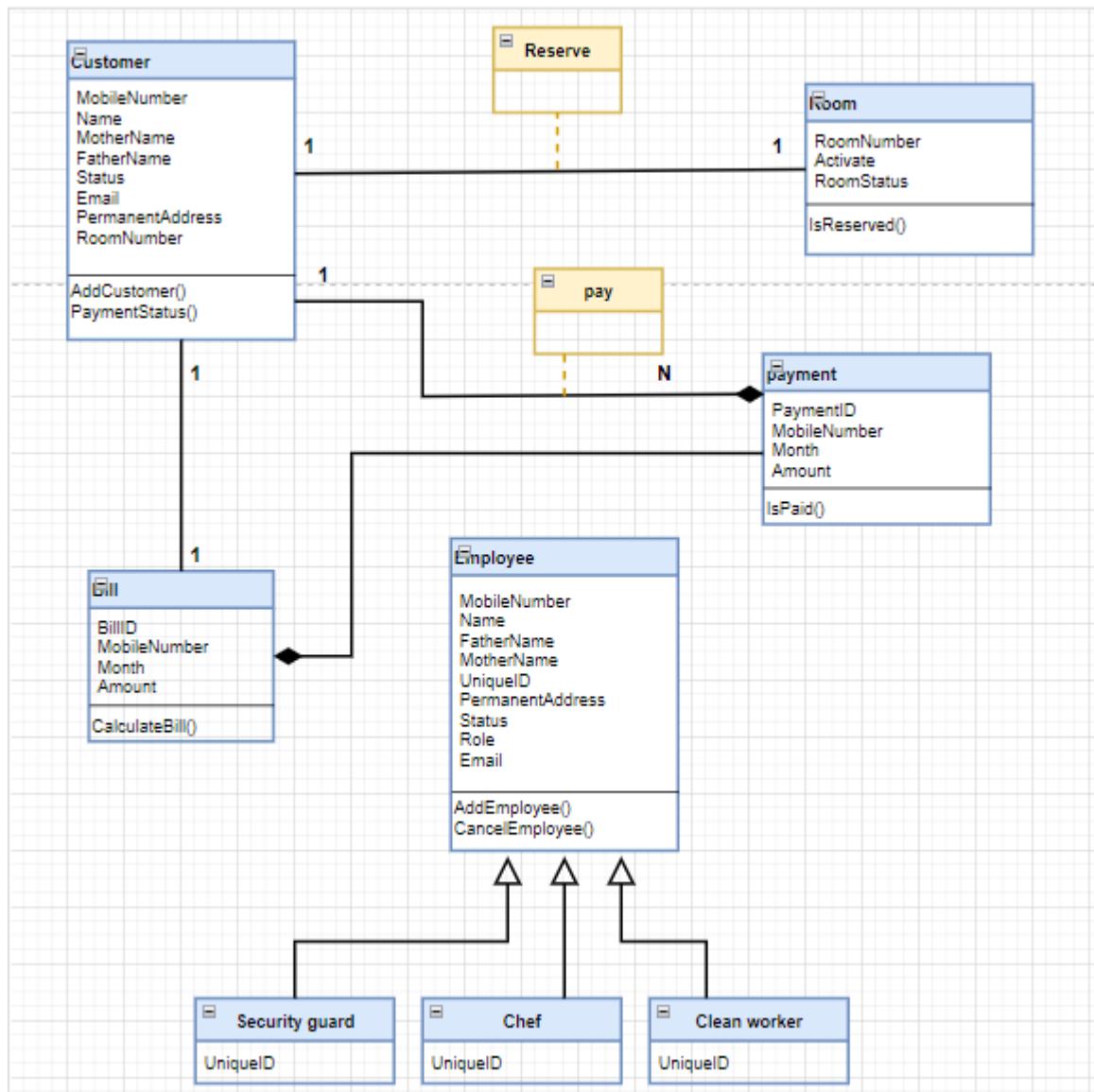
BillID → MOBILENUMBER, m_month, AmountToPay.

Normalization Process

All table in Boyce-Codd Normal Form (BCNF) because they satisfy: First normal form (1NF) because table in which the intersection of every column and record contains only one value, Second normal form (2NF) because every non-primary-key column is fully functional dependent on the primary key, Third normal form (3NF) because no non-primary-key column is transitively dependent on the primary key and all determinant is a candidate key.

First normal form The first step in normalization is putting all repeated fields in separate files and assigning appropriate keys to them. Second normal form: In this stage of normalization, all non-key elements that are fully specified by something other than the complete key are placed in a separate table. Normally, these non-key elements are dependent on only a part of a compound key. Third normal form This stage of normalization enables eliminating redundant data elements and tables that are subsets of other tables. The redundant elements are those non-key data elements that are placed in more than one table of the virtual data elements. Boyce and Codd Normal Form is a higher version of the Third Normal form. This form deals with certain type of anomaly that is not handled by 3NF. A 3NF table which does not have multiple overlapping candidate keys is said to be in BCNF.

UML



Conclusion:

We reserve application provides everything the customers need, they can make a room reservation in less than two minutes and provides them with many options. It is so productive and helpful.

References:

- Dr. Sufyan Samara Lectures
- Youtube
- StackOverFlow
- Geeks for geeks
- W3schools.