UE19CS353 – Object Oriented Analysis and Design with Java

Theory ISA (Mini Project)

Presentation on

Hotel Management System

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6th Semester D

PES University, Bengaluru

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Department of Computer Science & Engineering

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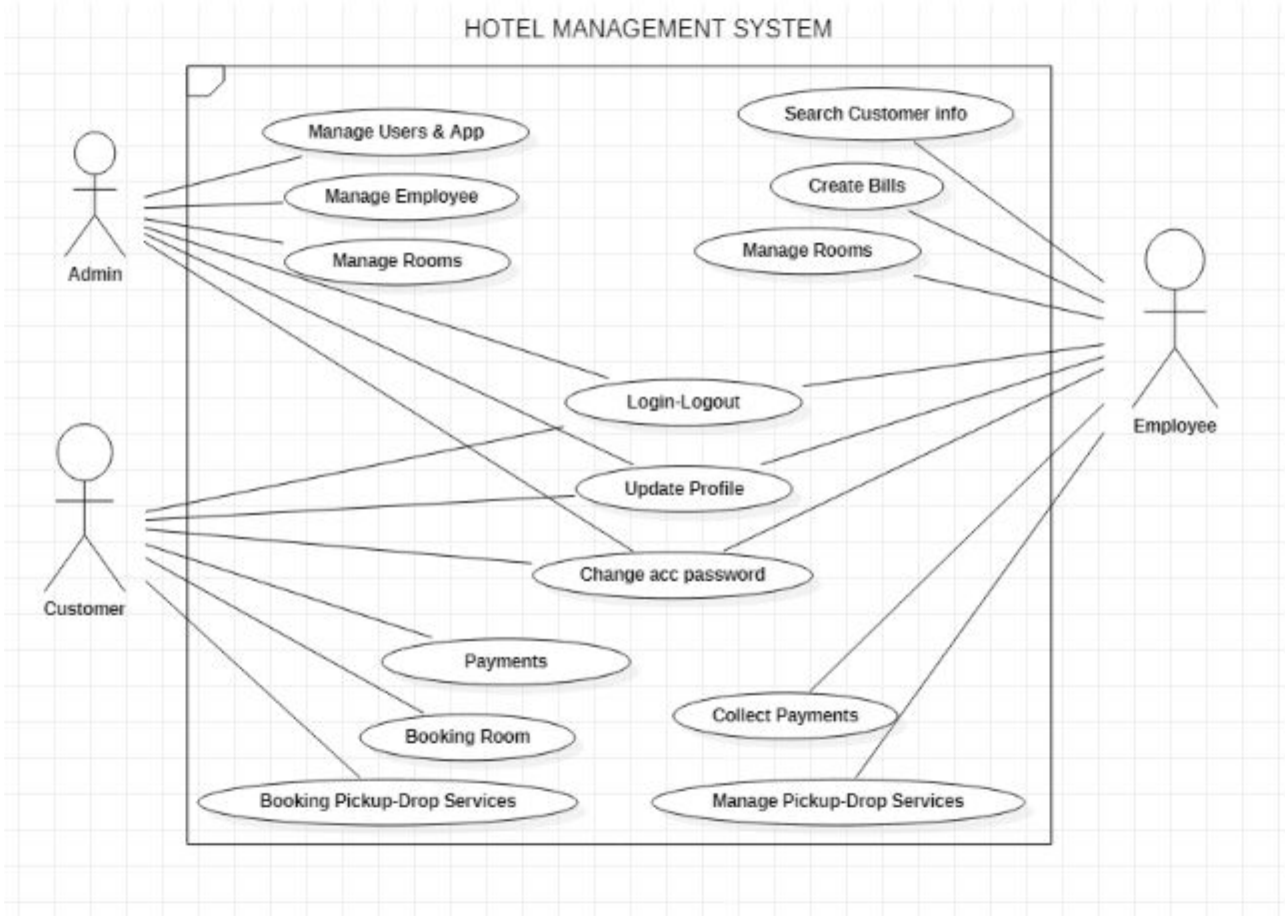
Project Description

Hotel Management System is a project that manages a typical hotel environment which includes room availability operations, customer friendly service, and maintains employee status. To make it more user friendly, we provide a simple UI which has features like allocation of rooms as per the customer need and interest, records such as checkout time and details, releasing or empty of room and to record the process in a computer system for future.

GitHub Link - https://github.com/NidhxGupta/Hotel-Management-System

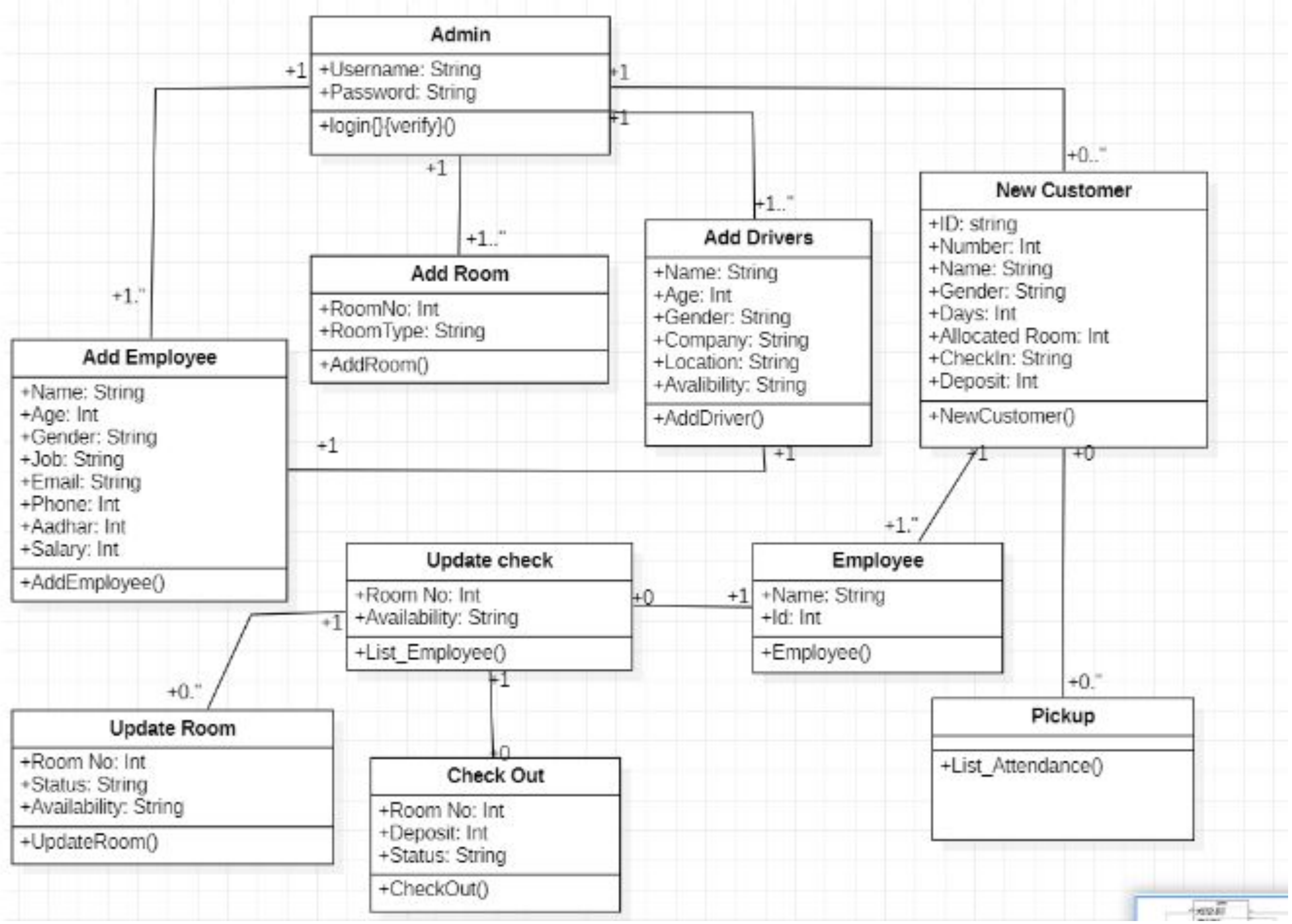
Analysis and Design Models

- Use Case Diagram



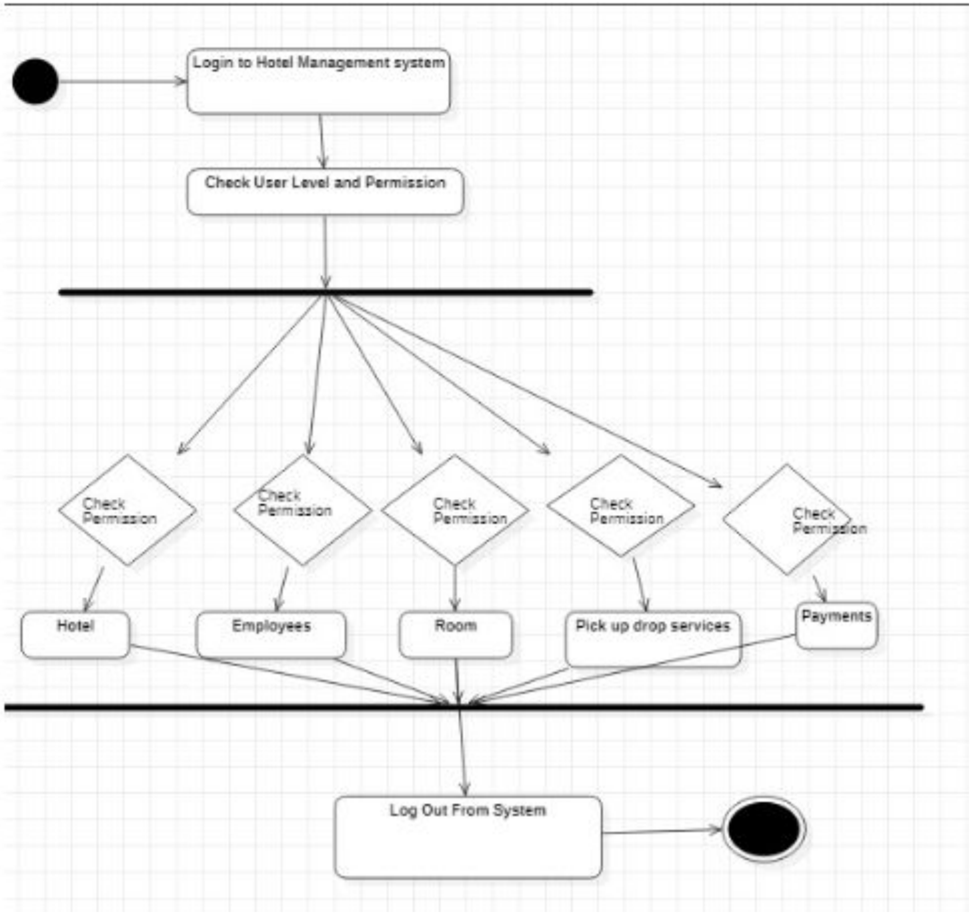
Analysis and Design Models

- Class Diagram



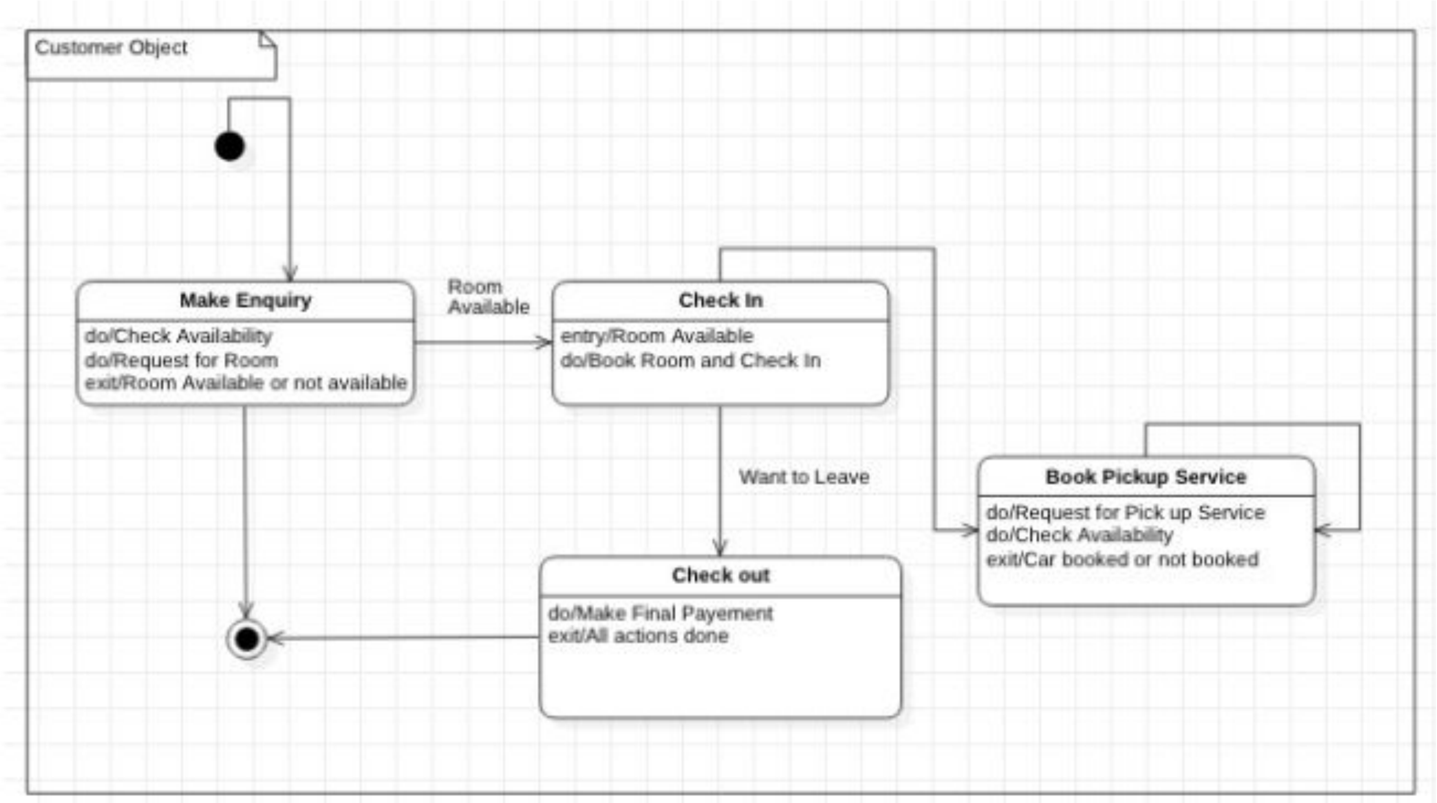
Analysis and Design Models

- Activity Diagram



Analysis and Design Models

- State Diagram - Customer



Customer Object

Make Enquiry
do/Check Availability
do/Request for Room
exit/Room Available or not available

Room Available

Check In
entry/Room Available
do/Book Room and Check In

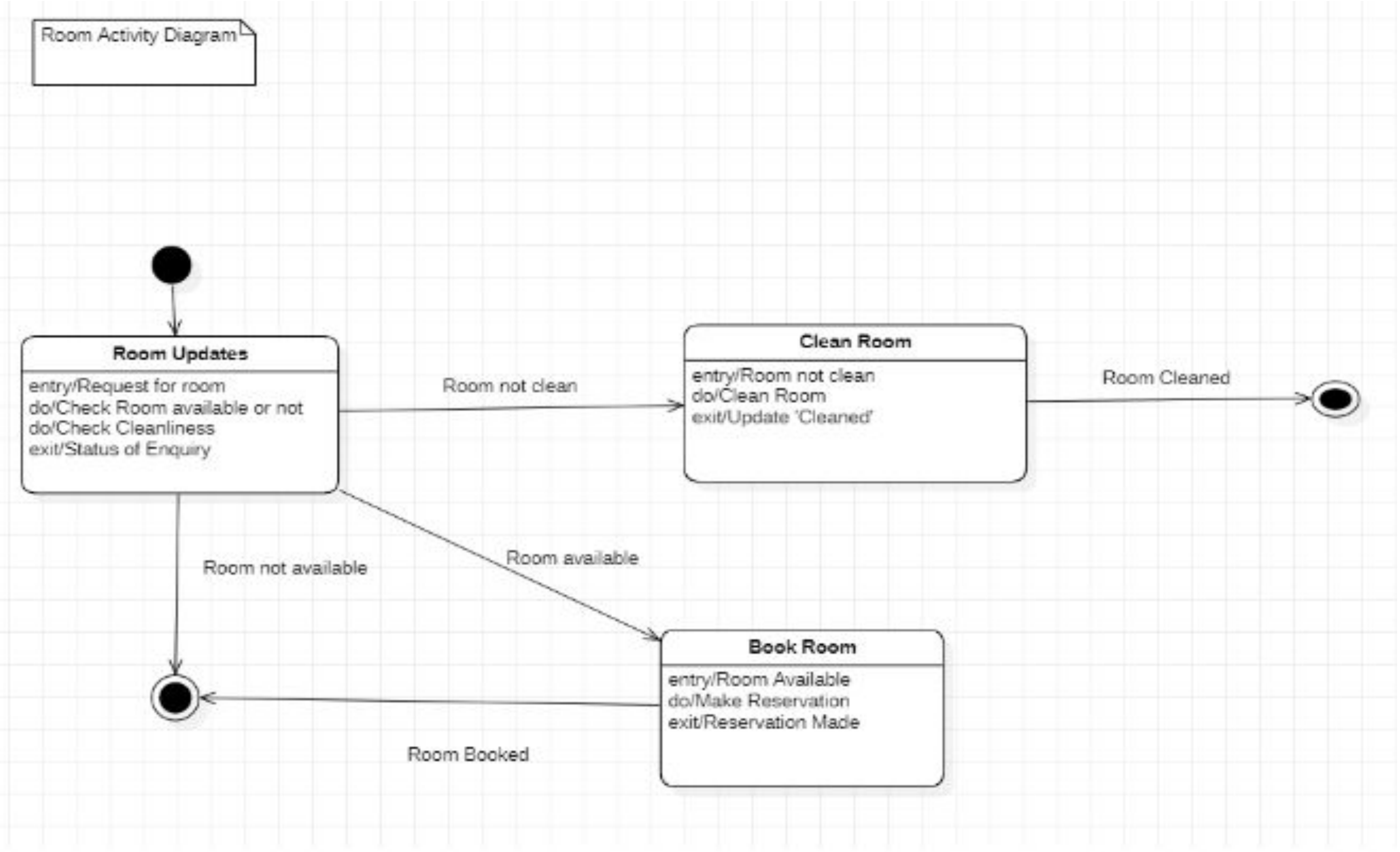
Want to Leave

Book Pickup Service
do/Request for Pick up Service
do/Check Availability
exit/Car booked or not booked

Check out
do/Make Final Payement
exit/All actions done

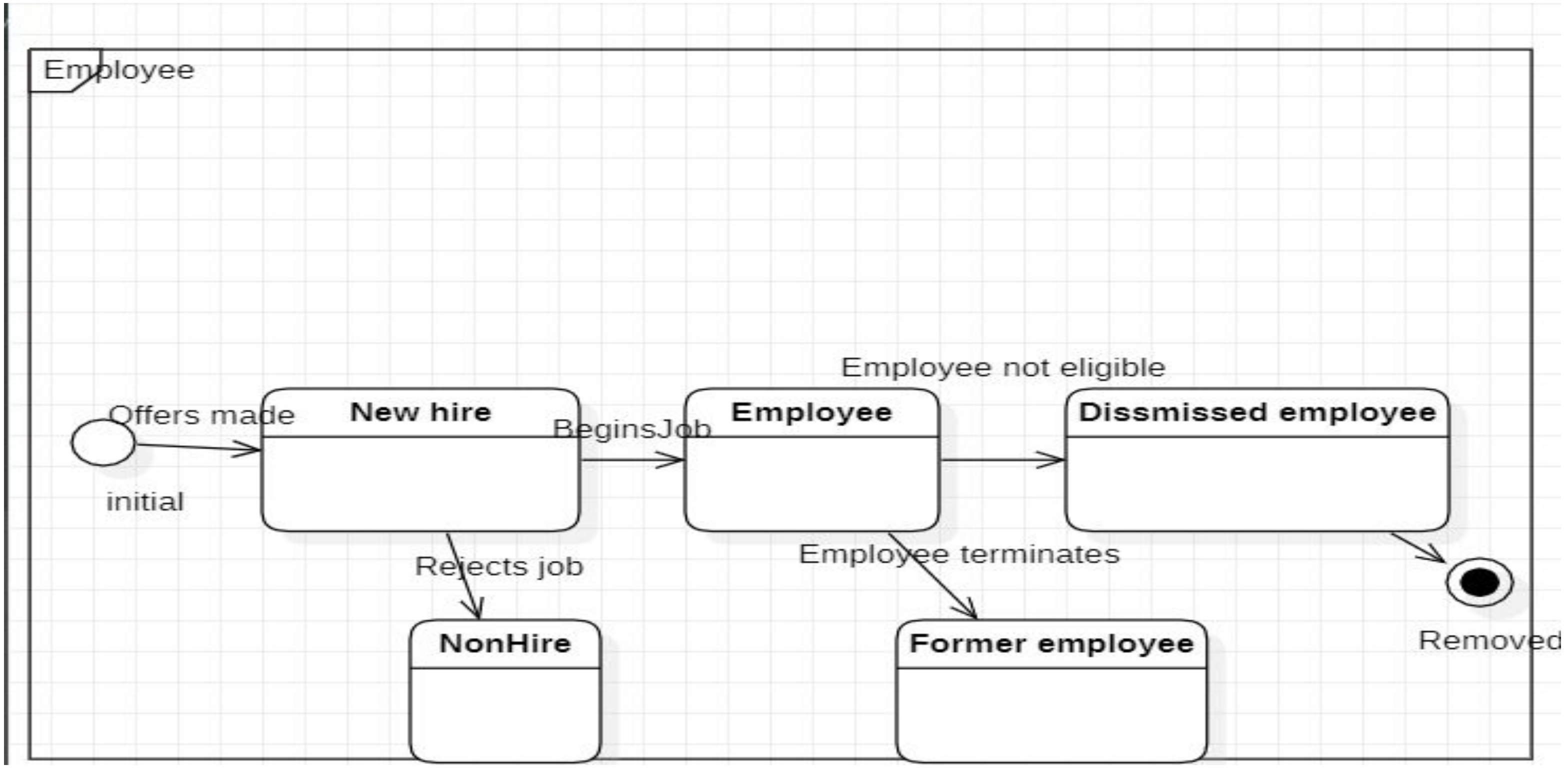
Analysis and Design Models

- State Diagram - Room



Analysis and Design Models

- State Diagram - Employee



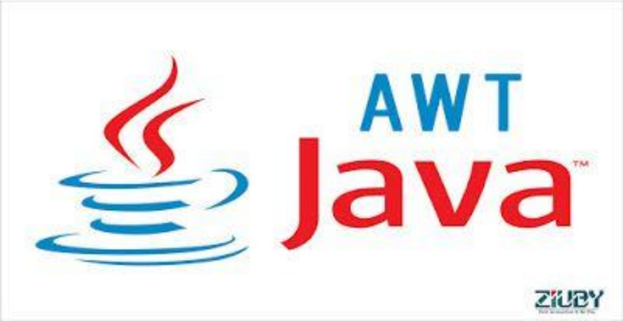
Tools and Frameworks Used

- MySQL for DataBase
  MySQL is an open-source relational database management system. Its name is a combination of "My", the name of co-founder Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query Language.

- Swing Framework -
  Swing is a GUI widget toolkit for Java. It is part of Oracle's Java Foundation Classes – an API for providing a graphical user interface for Java programs. Swing was developed to provide a more sophisticated set of GUI components than the earlier Abstract Window Toolkit.

Tools and Frameworks Used

- Java AWT
  Java AWT (Abstract Window Toolkit) is an API to develop Graphical User Interface (GUI) or windows-based applications in Java.



- Netbeans IDE
  NetBeans is an integrated development environment for Java. NetBeans allows applications to be developed from a set of modular software components called modules.

Tools and Frameworks Used

- Github
  GitHub, Inc. is a provider of Internet hosting for software development and version control using Git. It offers the distributed version control and source code management functionality of Git, plus its own features

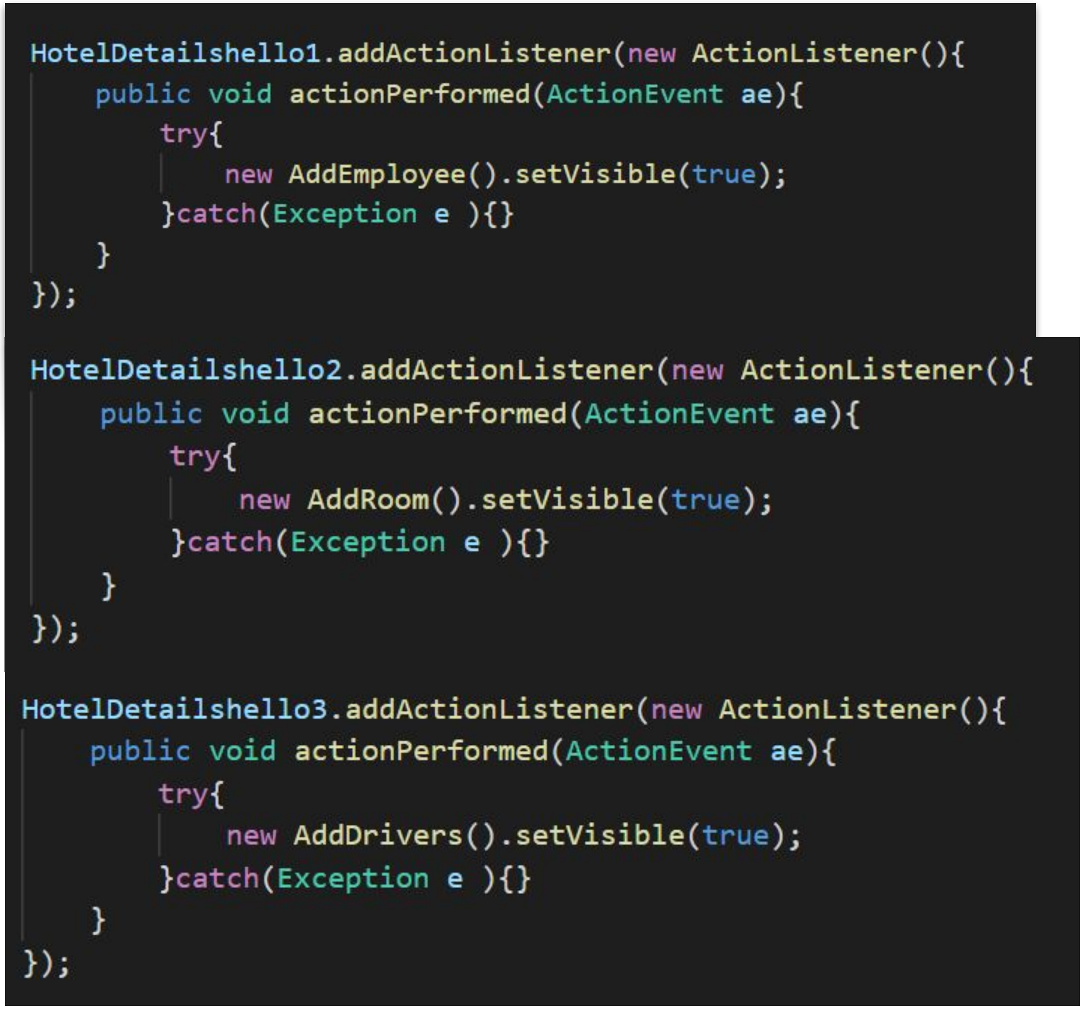
Design Principle and Design Patterns Applied

Facade Pattern

Facade pattern hides the complexities of the system and provides an interface to the client using which the client can access the system. This type of design pattern comes under structural pattern as this pattern adds an interface to existing systems to hide its complexities.

This pattern involves a single class which provides simplified methods required by the client and delegates calls to methods of existing system classes.

Design Principle and Design Patterns Applied



```
HotelDetailshello1.addActionListener(new ActionListener(){
    public void actionPerformed(ActionEvent ae){
        try{
            new AddEmployee().setVisible(true);
        }catch(Exception e ){}
    }
});
HotelDetailshello2.addActionListener(new ActionListener(){
    public void actionPerformed(ActionEvent ae){
        try{
            new AddRoom().setVisible(true);
        }catch(Exception e ){}
    }
});
HotelDetailshello3.addActionListener(new ActionListener(){
    public void actionPerformed(ActionEvent ae){
        try{
            new AddDrivers().setVisible(true);
        }catch(Exception e ){}
    }
});
```

Here, Dashboard.java uses a Facade design pattern where the internal implementation details are hidden from user view. Employees, Rooms and Drivers can be added by the click of a few buttons from user pov.

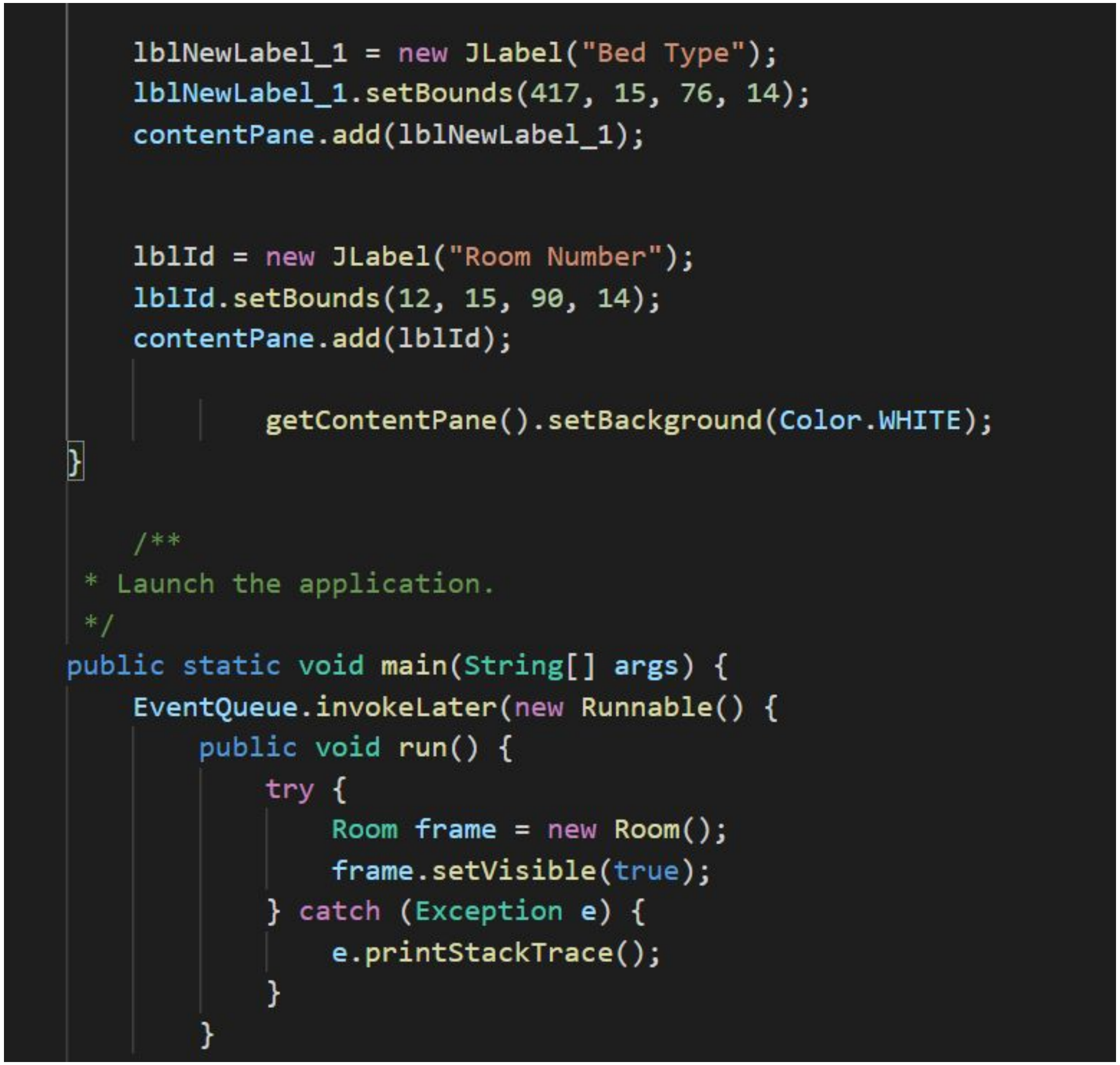
Design Principle and Design Patterns Applied

Single Responsibility Principle

The single responsibility principle states that every Java class must perform a single functionality. Implementation of multiple functionalities in a single class mashup the code and if any modification is required may affect the whole class. It is precise and the code can be easily maintained.

Object Oriented Analysis and Design with Java (Mini Project)

Design Principle and Design Patterns Applied



```
    lblNewLabel_1 = new JLabel("Bed Type");
    lblNewLabel_1.setBounds(417, 15, 76, 14);
    contentPane.add(lblNewLabel_1);


    lblId = new JLabel("Room Number");
    lblId.setBounds(12, 15, 90, 14);
    contentPane.add(lblId);

            getContentPane().setBackground(Color.WHITE);
}

    /**
 * Launch the application.
 */
public static void main(String[] args) {
    EventQueue.invokeLater(new Runnable() {
        public void run() {
            try {
                Room frame = new Room();
                frame.setVisible(true);
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
```

Here,room.java has only one responsibility, that is, to create rooms. It calls only that function.

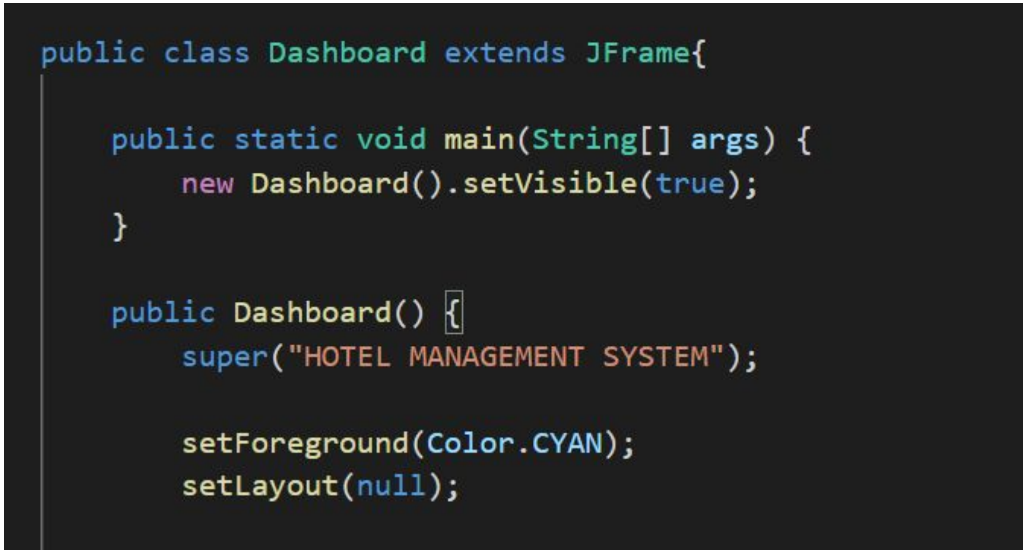
Design Principle and Design Patterns Applied

Open/Close Principle

The application or module entities the methods, functions, variables, etc. The open-closed principle states that according to new requirements the module should be open for extension but closed for modification. The extension allows us to implement new functionality to the module.

We can add from Jframes without affecting the existing application.

Design Principle and Design Patterns Applied

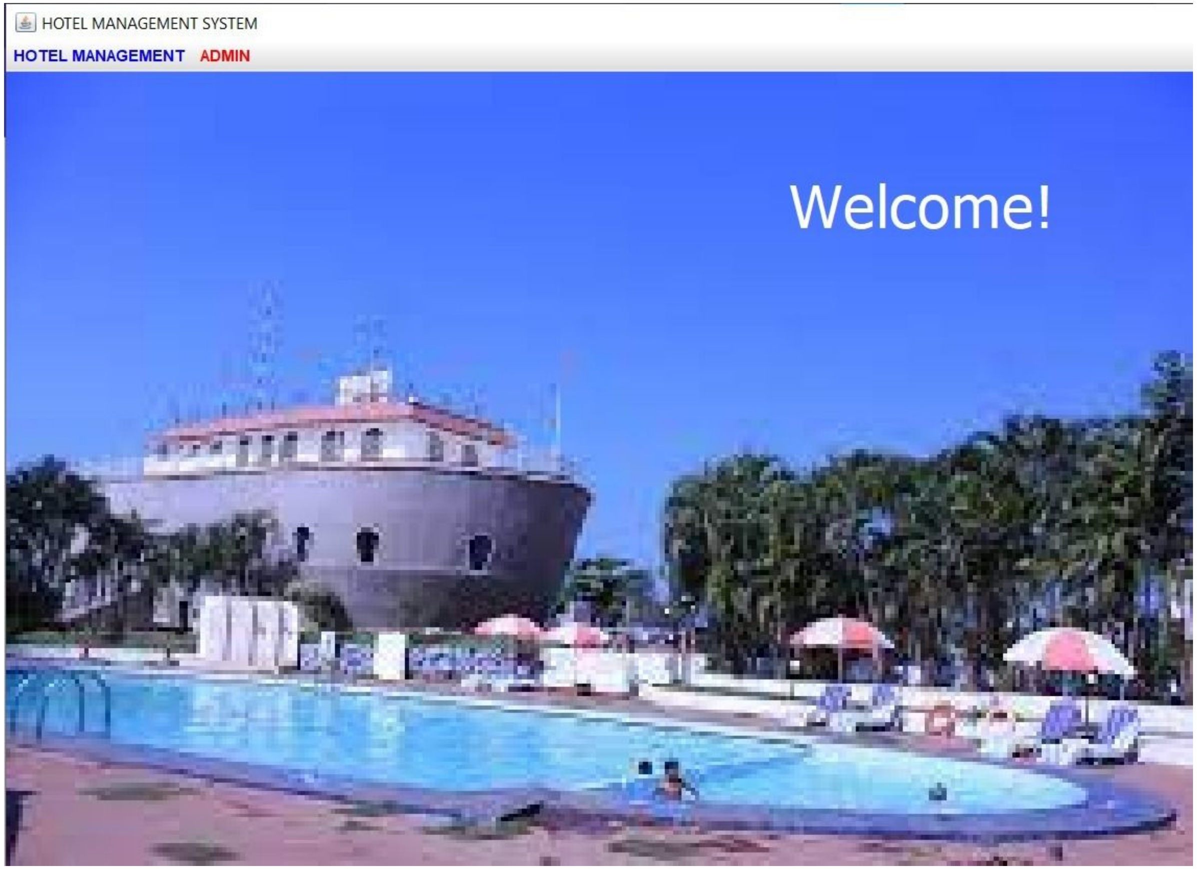


```
public class Dashboard extends JFrame{

    public static void main(String[] args) {
        new Dashboard().setVisible(true);
    }

    public Dashboard() {
        super("HOTEL MANAGEMENT SYSTEM");

        setForeground(Color.CYAN);
        setLayout(null);
```

Jframe is open for extension but closed for modification.

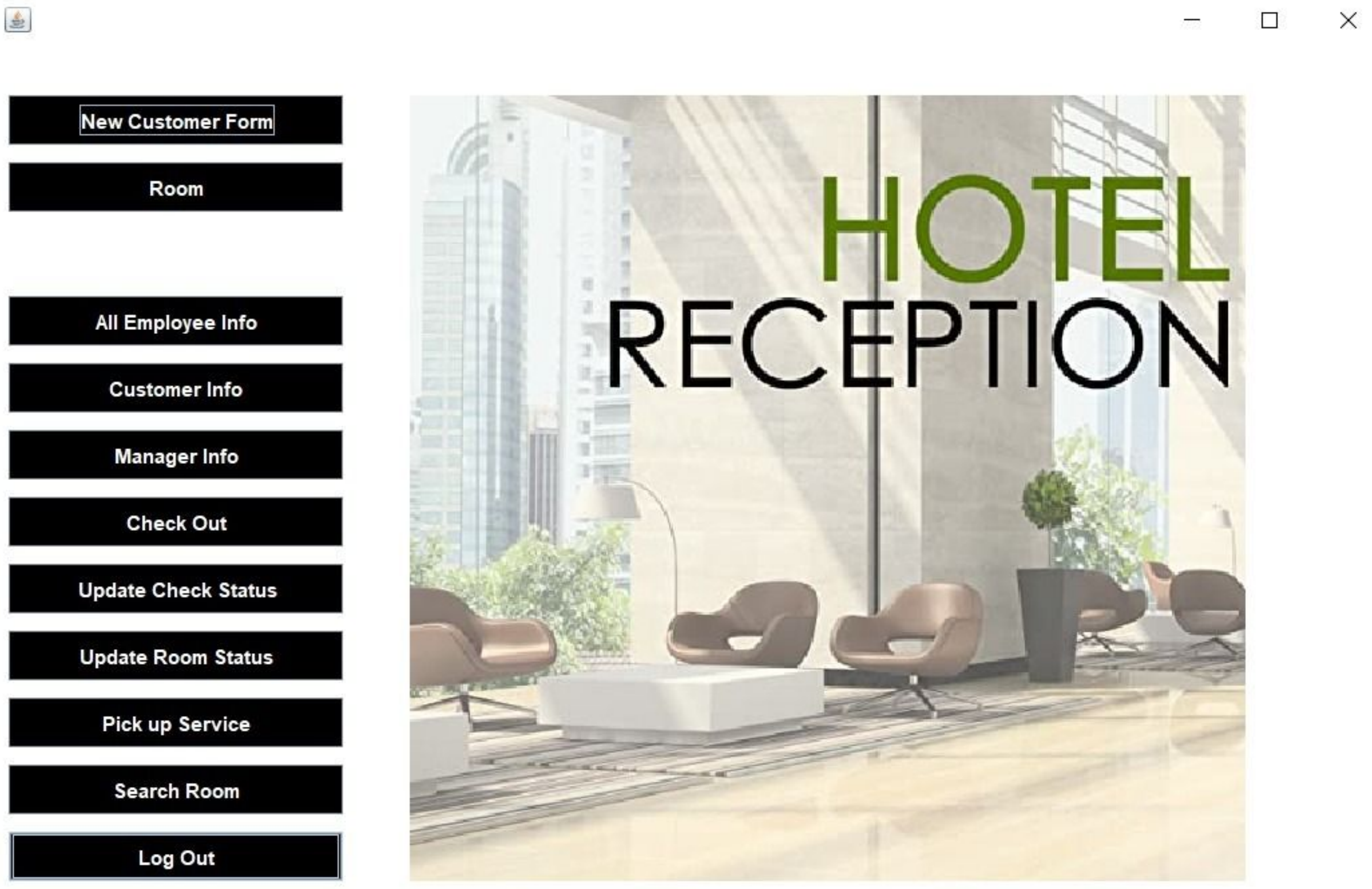
Screenshots

Main Homepage



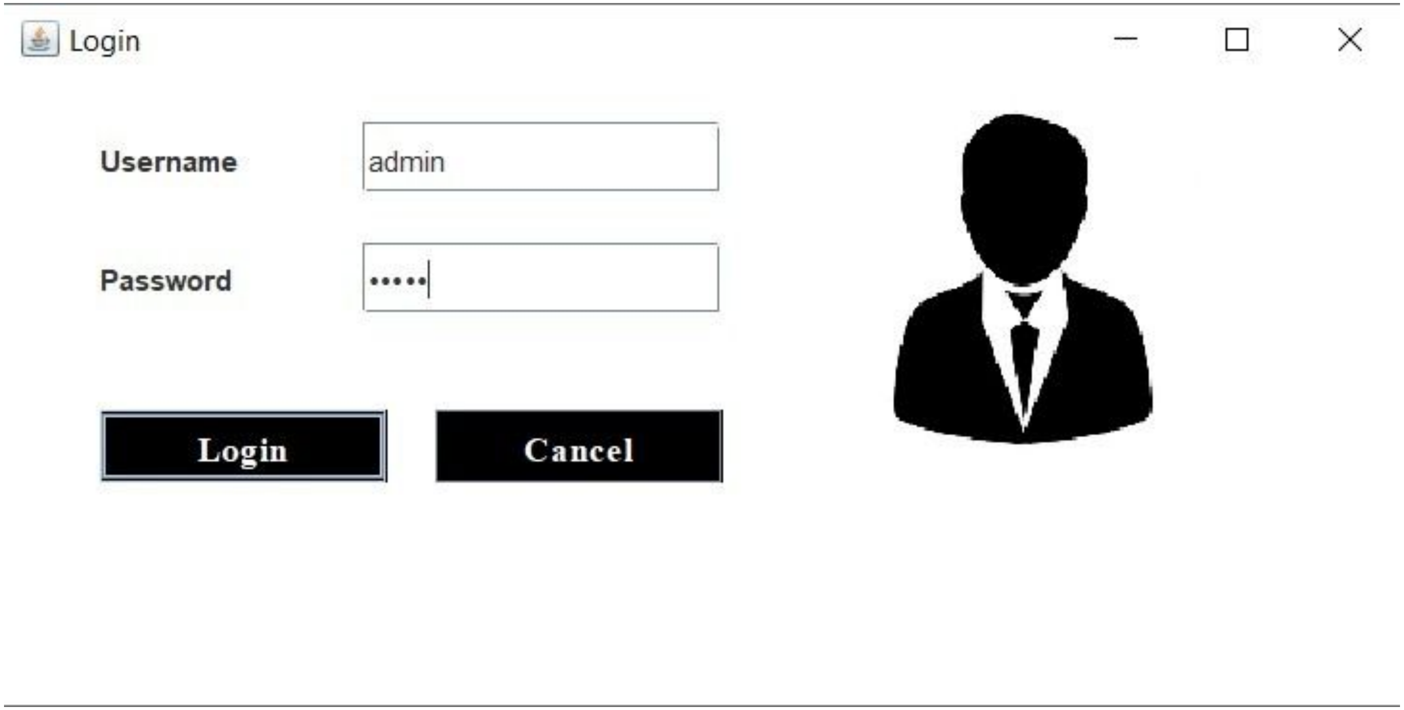
Screenshots

Main Homepage



Screenshots

Login page



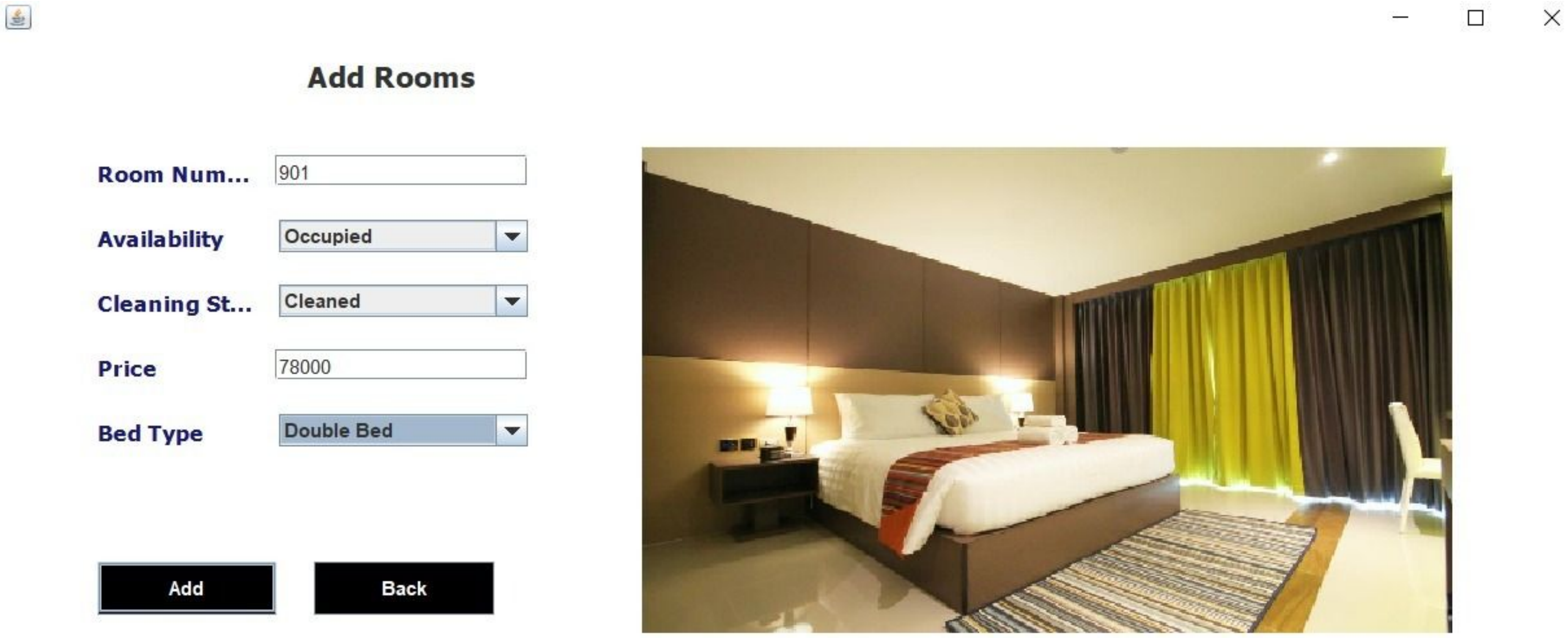
Login

Username admin

Password •••••

Screenshots

Room

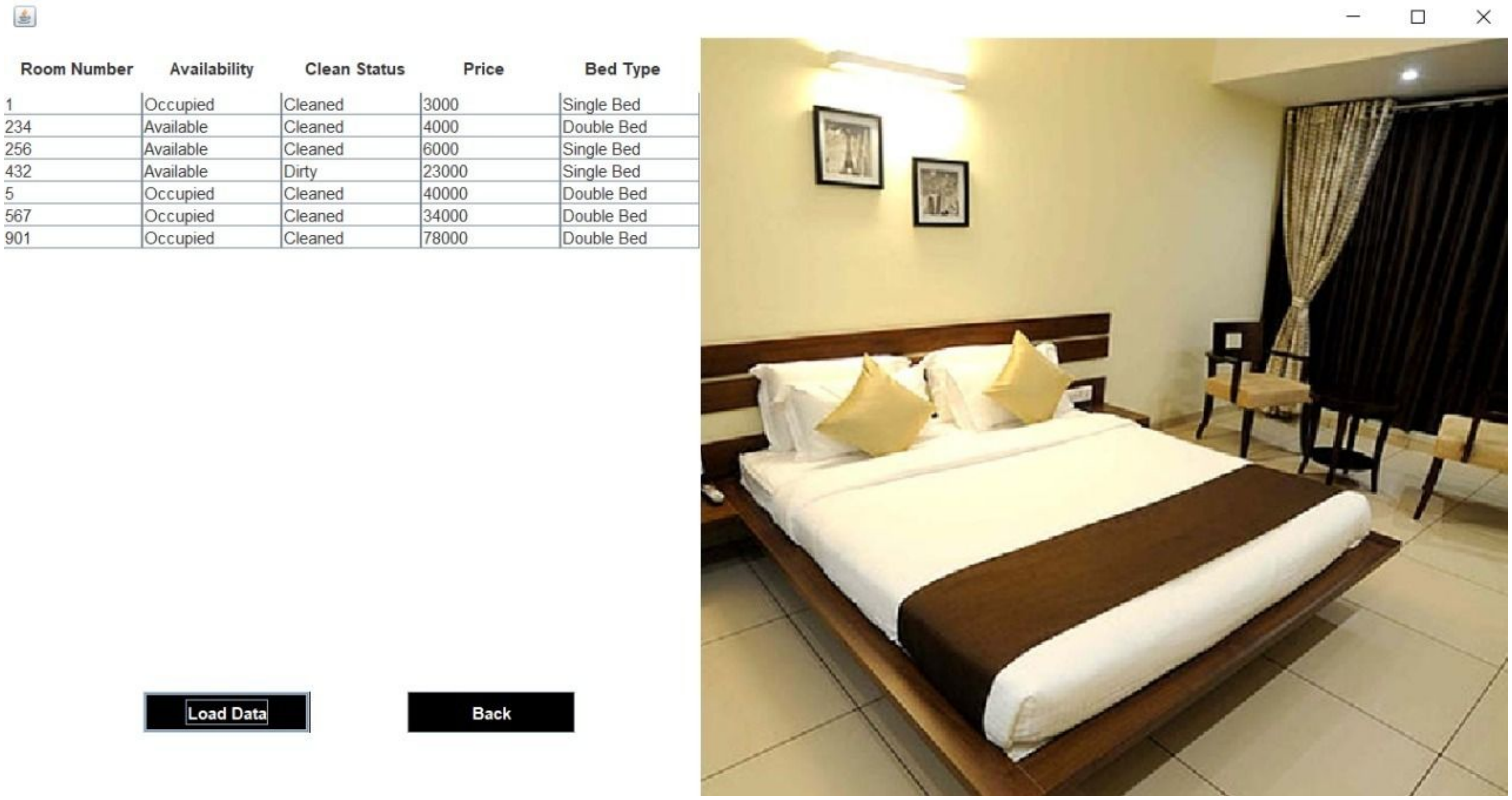


Add Rooms

Room Num...	901
Availability	Occupied
Cleaning St...	Cleaned
Price	78000
Bed Type	Double Bed

Screenshots

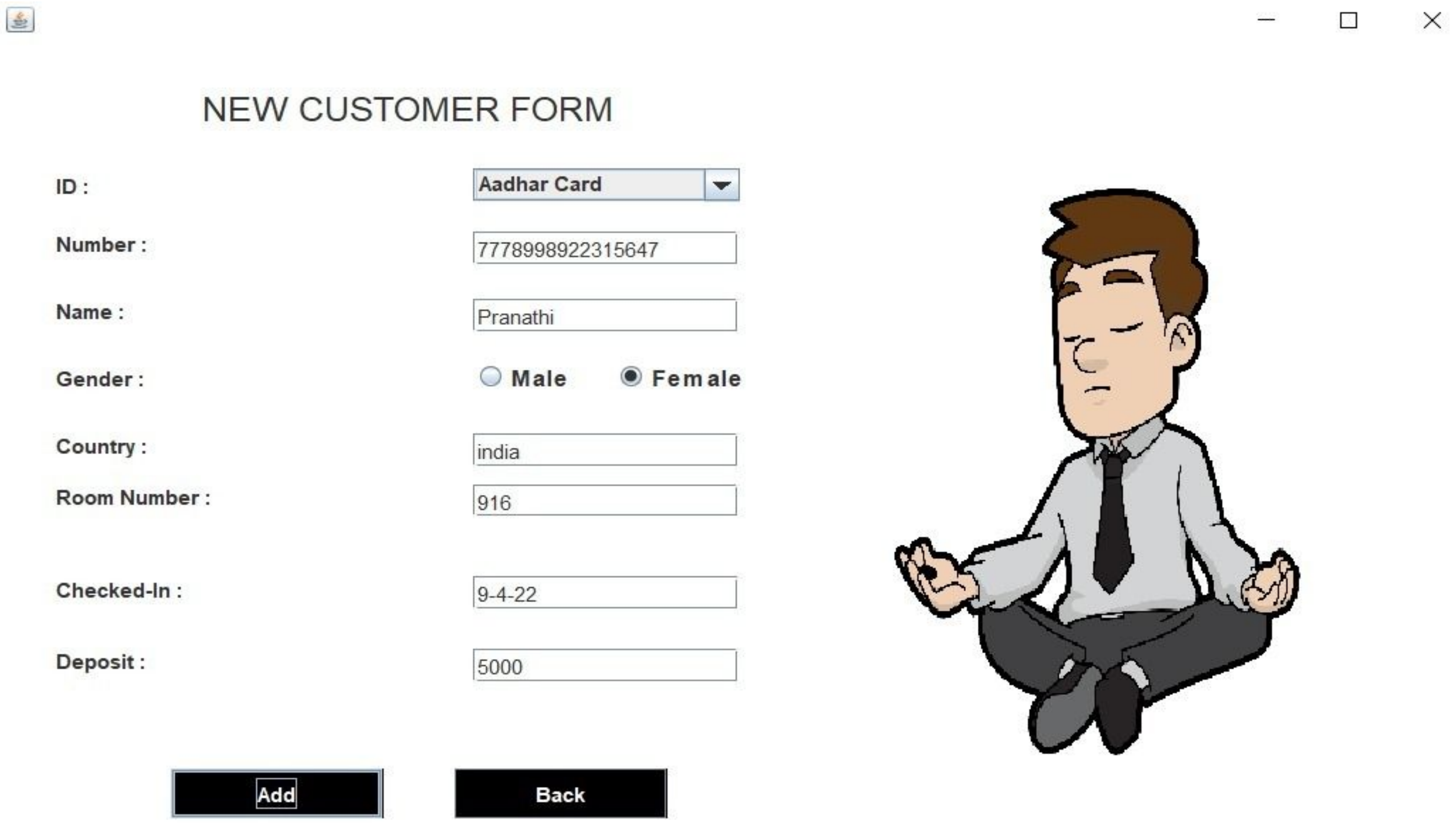
Room load data



Room Number	Availability	Clean Status	Price	Bed Type
1	Occupied	Cleaned	3000	Single Bed
234	Available	Cleaned	4000	Double Bed
256	Available	Cleaned	6000	Single Bed
432	Available	Dirty	23000	Single Bed
5	Occupied	Cleaned	40000	Double Bed
567	Occupied	Cleaned	34000	Double Bed
901	Occupied	Cleaned	78000	Double Bed

Screenshots

Customer

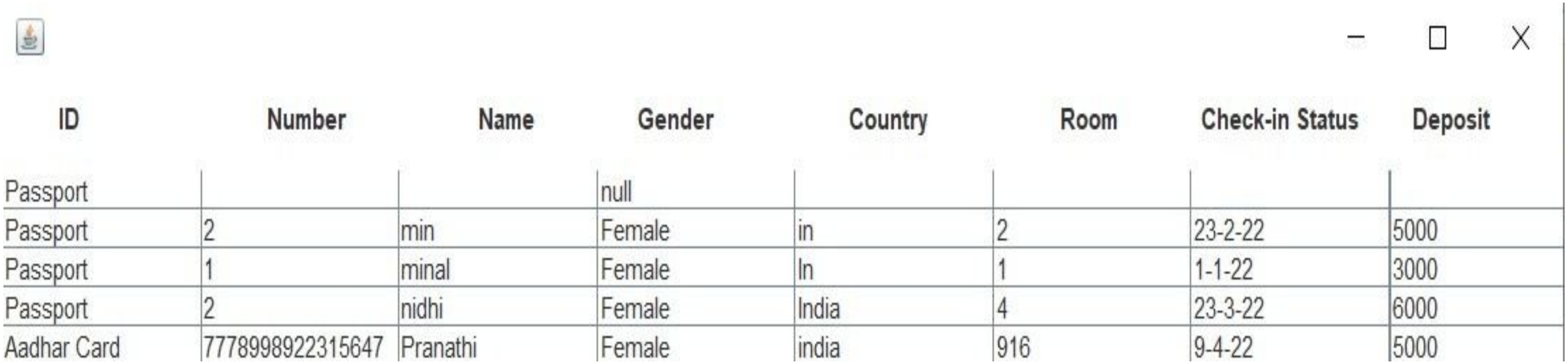


NEW CUSTOMER FORM

ID :	Aadhar Card
Number :	7778998922315647
Name :	Pranathi
Gender :	○ Male ● Female
Country :	india
Room Number :	916
Checked-In :	9-4-22
Deposit :	5000

Screenshots

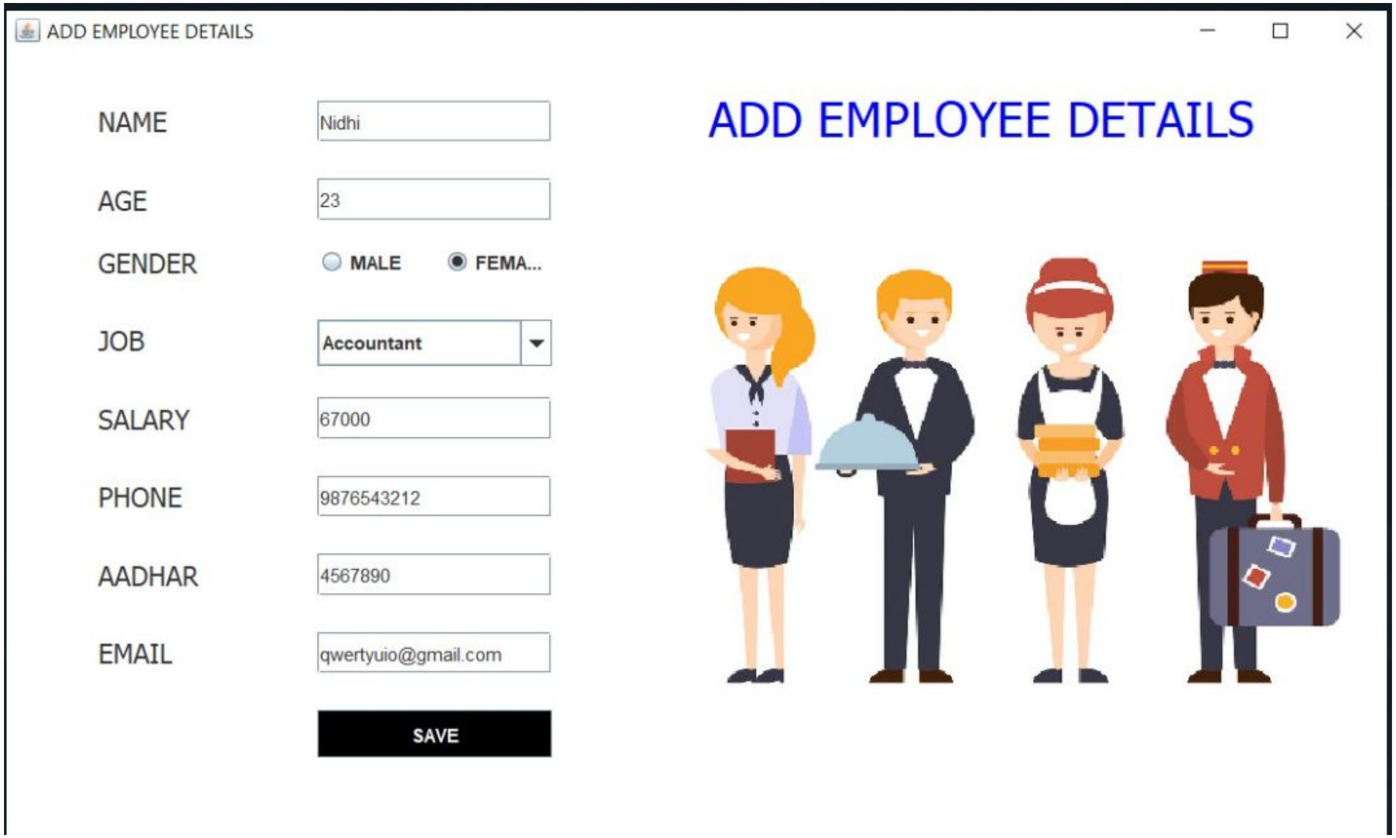
Customer load data



ID	Number	Name	Gender	Country	Room	Check-in Status	Deposit
Passport			null				
Passport	2	min	Female	in	2	23-2-22	5000
Passport	1	minal	Female	In	1	1-1-22	3000
Passport	2	nidhi	Female	India	4	23-3-22	6000
Aadhar Card	7778998922315647	Pranathi	Female	india	916	9-4-22	5000

Screenshots

Employee



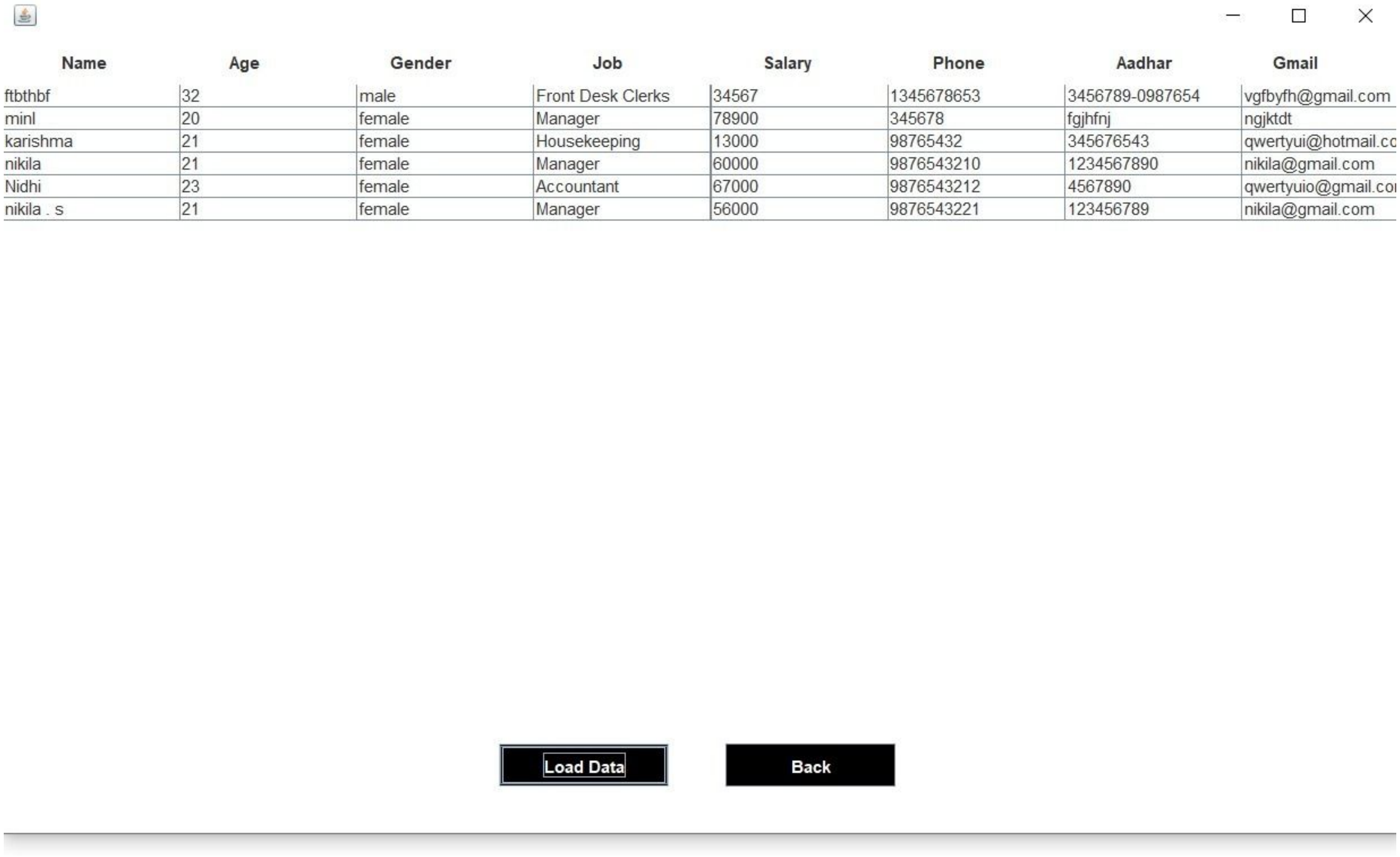
ADD EMPLOYEE DETAILS

ADD EMPLOYEE DETAILS

NAME	Nidhi
AGE	23
GENDER	○ MALE ● FEMA...
JOB	Accountant
SALARY	67000
PHONE	9876543212
AADHAR	4567890
EMAIL	qwertyuio@gmail.com

Screenshots

Employee load data



Name	Age	Gender	Job	Salary	Phone	Aadhar	Gmail
ftbthbf	32	male	Front Desk Clerks	34567	1345678653	3456789-0987654	vgfbyfh@gmail.com
minl	20	female	Manager	78900	345678	fgjhfnj	ngjktdt
karishma	21	female	Housekeeping	13000	98765432	345676543	qwertyui@hotmail.co
nikila	21	female	Manager	60000	9876543210	1234567890	nikila@gmail.com
Nidhi	23	female	Accountant	67000	9876543212	4567890	qwertyuio@gmail.co
nikila . s	21	female	Manager	56000	9876543221	123456789	nikila@gmail.com

Team member contributions

NAME	CONTRIBUTIONS
Minal H R	Room MVC
Nidhi Gupta	Customer MVC
Nikila S	Employee MVC