MINI PROJECT-I

REPORT ON

A Hotel Management System

Submitted by

Rajat Khanna,181500546

Department of Computer Engineering & Applications

Institute of Engineering & Technology

GLA University

Mathura- 281406, INDIA

2020-2021

Department of computer Engineering and Applications
GLA University, Mathura
17 km. Stone NH#2, Mathura-Delhi Road, P.O. – Chaumuha,
Mathura – 281406

Declaration

I hereby declare that the work which is being presented in the ***Mini project -I "A Hotel Management System",*** in partial fulfillment of the requirements for Mini Project-I viva voce, is an authentic record of my own work carried under the supervision of

Mr. Vaibhav Diwan, Technical Trainer, GLAU.

Name of Candidate: Rajat Khanna

Course: BTech

(CSE)

Year: III

Semester: V

CERTIFICATE

This is to certify that the mini project report entitled "A Hotel Management System" submitted by Rajat Khanna (181500546) has been carried out under the guidance of Mr. Vaibhav Diwan, Technical Trainer, Department of Computer Engineering & Applications, GLA University, Mathura.

Signature:

Date:

TRAINING CERTIFICATE

ACKNOWLEDGEMENT

The project work in this report is an outcome of continuous work over a period and drew intellectual support from various sources. I would like to articulate our profound gratitude to all those people who extended their wholehearted co-operation and have helped me in completing this project successfully.

I am thankful to Mr. Vaibhav Diwan for teaching and assisting me in making the project successful.

RAJAT KHANNA (181500546)

ABSTRACT

The computer has brought revolution in every sphere of human life, whether it is business, education field, governance, medical science etc. The computer has reduced the human work load, businesses are going global and everything is available at the click of mouse.

The objective of the project is to design Hotel Management application which enables the manager to keep the record of the hotel and the customers. The project has been designed in JAVA technology and consists of a SQL server which acts as the database for the project.
My motivation for the project came from my enthusiasm and strong urge to learn JAVA and MySQL which is one of the fastest growing technologies in today's world.
The Hotel Management System project mainly consists of two types of users. The customers who access the information provided by the website and the administrator who modifies and updates the information.
All the data needed for the application is stored in the form of tables in the SQL server 2000.

Contents

Certificate 3
Training Certificate 4
Acknowledgements 5
Abstract 6

1. Introduction 9

1.1 Overview …… 9
1.2 Objective ……..... 10

2. Software Development Tools 11

2.1 Operating System…….. 11
2.2 NetBeans IDE ……..…….. 11
2.3 MySQL ……..…… 12

3. Introduction to JAVA 13

3.1 Introduction ……..…… 13
3.2 Installation and Basic Syntax……..……. 14

4. Introduction to SWING 18

4.1 Introduction…….…… 18
4.2 Hierarchy of classes ……..…… 18
4.3 Features…… 19
4.4 Classes of JAVA swing…… 19
4.5 Methods used…… 20

5. Introduction to MySQL 21

5.1 Introduction …… 21
5.2 Installation and basic syntax…… 22

6. Implementation and basic details **25**

6.1 Description of the project…… 25

6.2 Methodology …… 28

6.3 Database Design…… 30

6.4 Snapshots …… 33

7. References 42

Chapter 01

Introduction

1.1 Overview

The computer has brought revolution in every sphere of human life, whether it is business, education field, governance, medical science etc. The computer has reduced the human work load, businesses are going global and everything is available at the click of mouse.

Because of the numerous advantages and benefits. Now-a-days, more and more people prefer that every small to small task should be done online, if possible, rather than manually. The mindset of the people is approaching towards technology and every person wants that his/her data should be kept safe and secured. The benefits are as follows:

1. If in a hotel, the no of rooms are in a huge number and a customer comes for booking, then the receptionist can be confused about the room so a search room module can be made which tells about the availability of room.
2. Sometimes the manager asks for details of the employees but if the data is stored manually, it can be lost easily. So we can create the database for storing the data.
3. If suppose customer wants to go to some place from the hotel so pick up service module can be used to see if any driver is available and his location. This can't be remembered manually.

1.2 Objective

The objectives of the project are as follows →

1. To develop a system for the management of hotels so that hotel owners can use this facility to provide accurate information to the customers.
2. To develop a system that has a good management of data along with integrity and minimizing redundancy.
3. To develop a system that will be user friendly in all possible ways.

Chapter 02

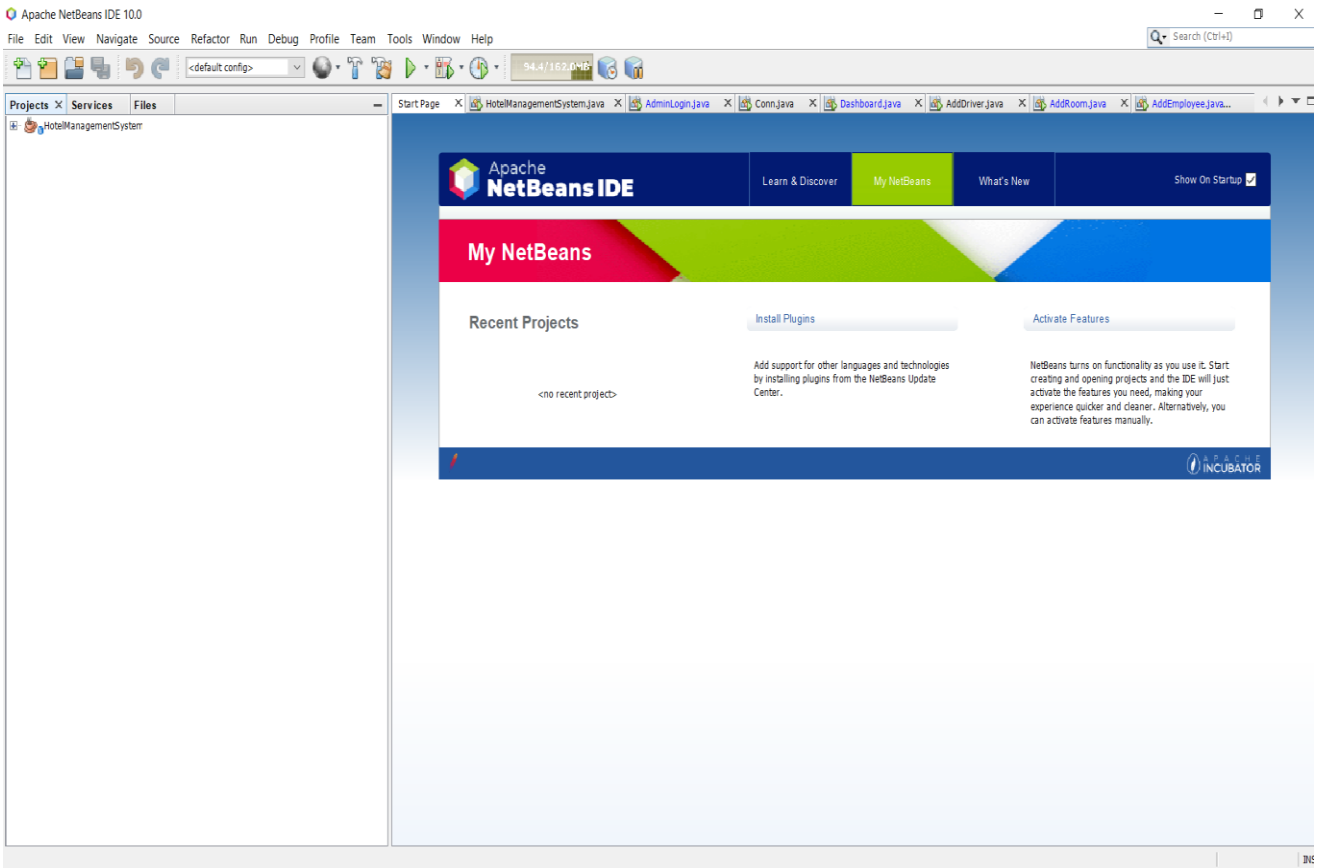
Software Development Tools

2.1 Operating System

The whole programming work was carried out on one computer with the windows 10 operating system.

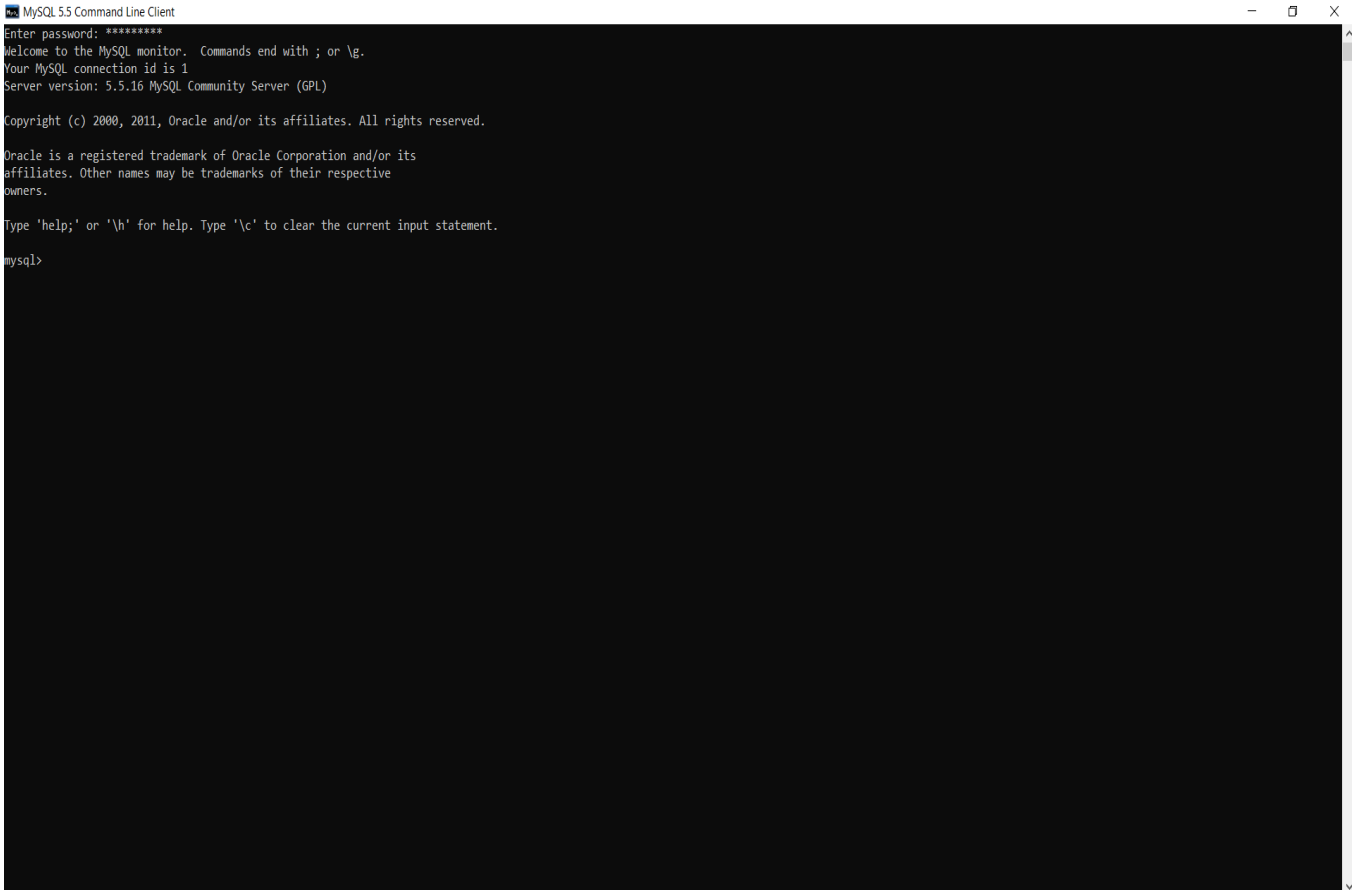
2.2 NetBeans IDE

In this project, the IDE (Integrated Development Environment) used is NetBeans. Its an environment for executing JAVA programs. It can run on any OS (windows, mac, linux and solaris). I have used NetBeans 10.0 version for my project.



2.3 MYSQL database

MySQL is an open- source relational database management system (RDBMS). I have used MySQL for storing details of various peoples and as database. The version of MySQL is MySQL 5.5 Command Line Client.



Chapter 03

Introduction

to JAVA

3.1 Introduction

Java is a class- based, object oriented programming language, that is designed to have as few implementation dependencies as possible. It is a general purpose programming language intended to let application developers write once, run anywhere(WORA), meaning that compiled Java code can run on all platforms that support Java without the need for recompilation. Java applications are typically compiled to bytecode that can run on any JVM (Java Virtual Machine).
The syntax of JAVA is similar to C and C++. The Java runtime provides dynamic capabilities (such as reflection and runtime code modification) that are typically not available in traditional compiled languages. As of 2019, Java was one of the most programming languages in use according to github, particularly for client-server web applications, with a reported 9 million developers.

Java was originally developed by James Gosling at Sun Microsystems and released in 1995 as a core component of Java Platform. The original and reference implementation Java compilers, virtual machines, and class libraries were originally released by Sun. As of May 2007, in compliance with the specifications of the JAVA community process, Sun had relicensed most of its Java technologies under the GNU general public license. Oracle offers its own Hotspot Java Virtual Machine, however the official reference implementation is the OpenJDK JVM which is free open source software and used by most developers including the Eclipse IDE and is the default JVM for almost all Linux distributions.

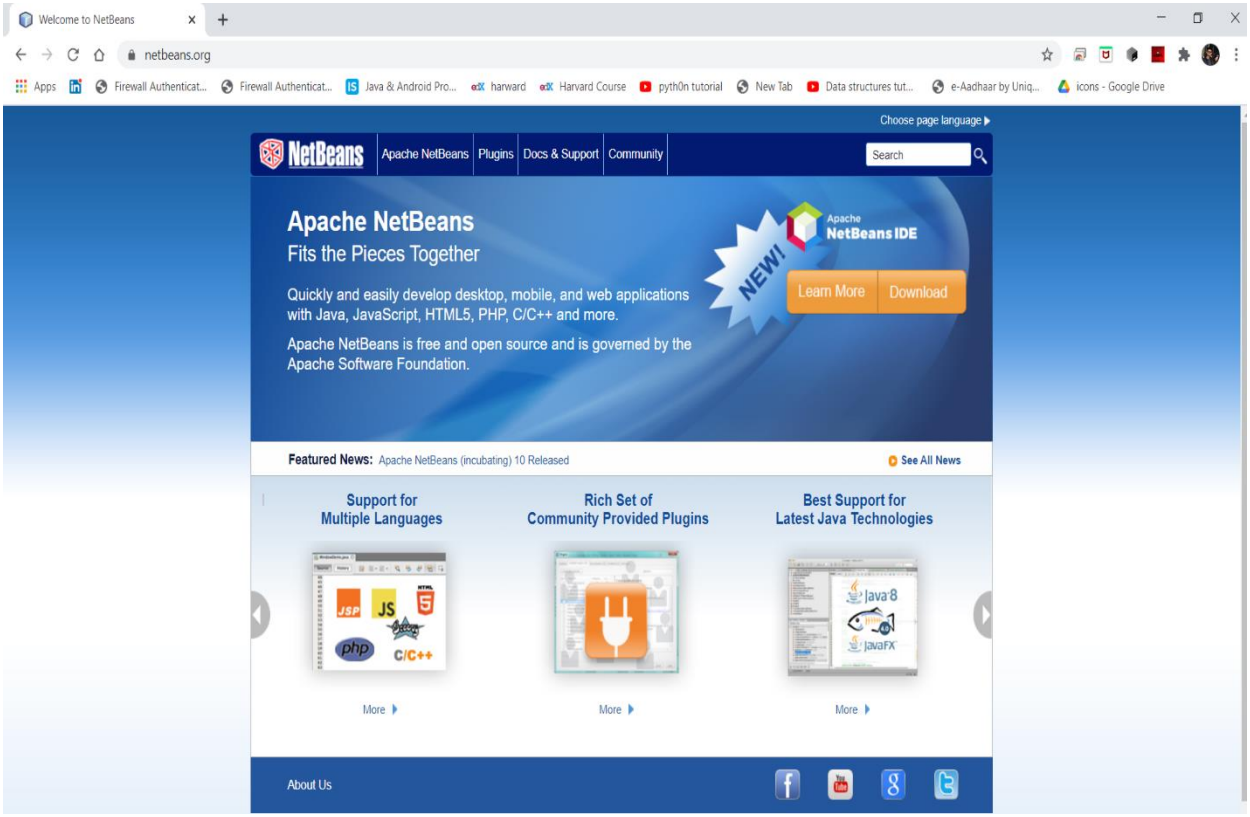
3.2 Installation and Basic Syntax

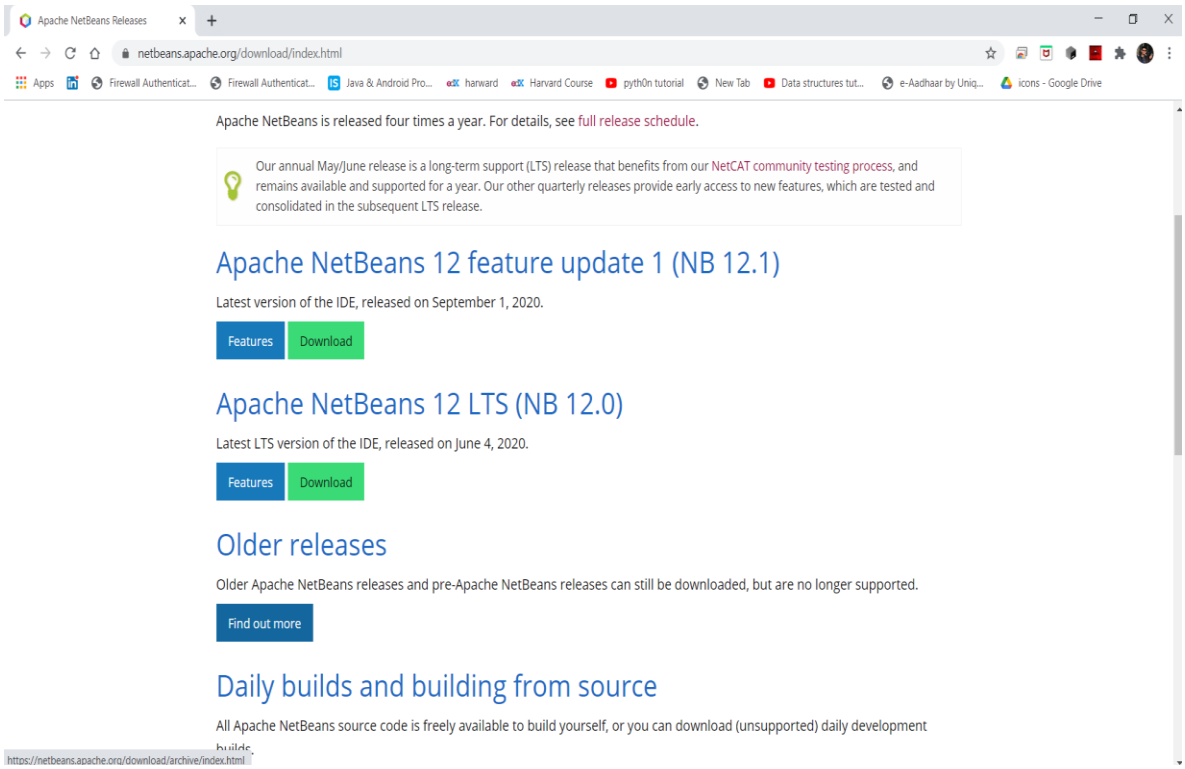
To execute a JAVA program, we need two things :

1. An IDE(Integrated Development Kit) → An **integrated development environment** (**IDE**) is a software application that provides comprehensive facilities to programmers or developers for developing the required software. An IDE normally consists of at least an editor(source code editor) and a debugger. Some IDEs for running JAVA programs are Intellij, NetBeans IDE , eclipse and more. Here I have used NetBeans.

   For installing Netbeans, refer to:

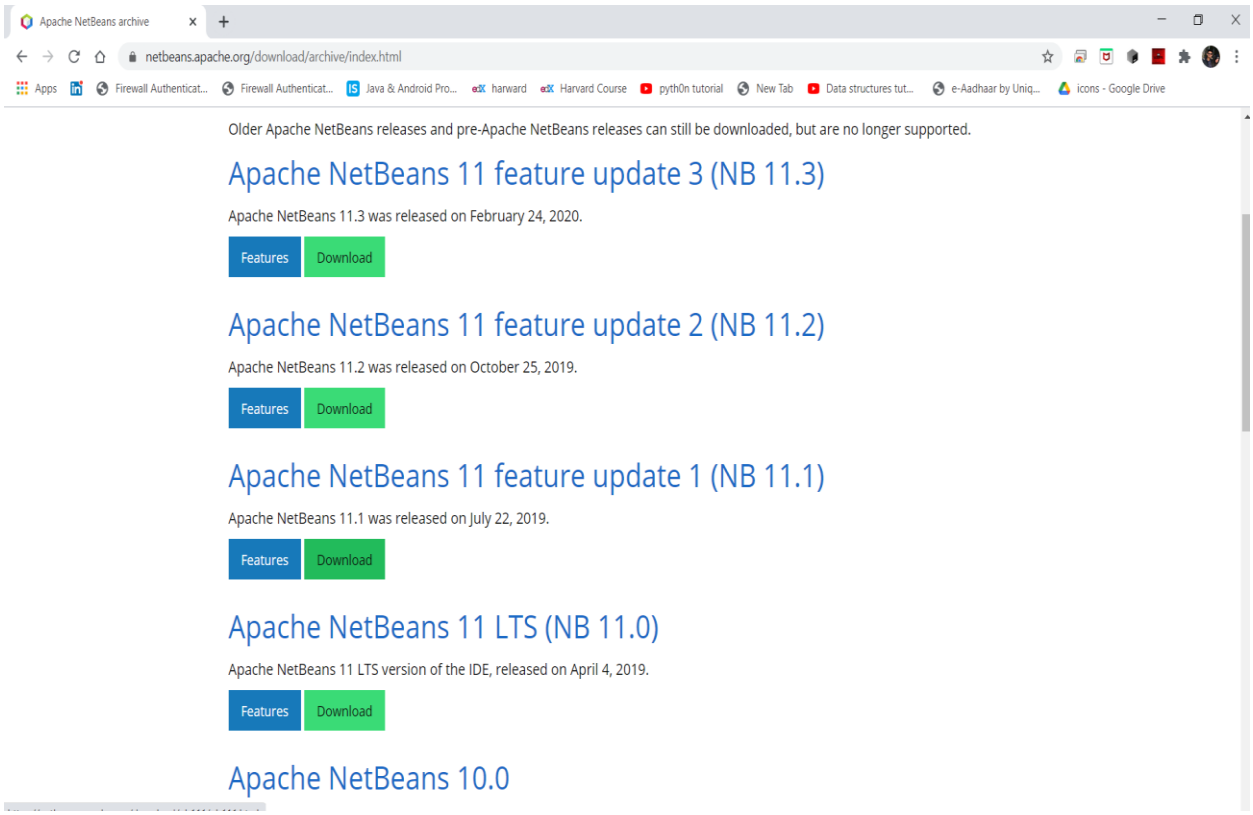
   https://netbeans.org/





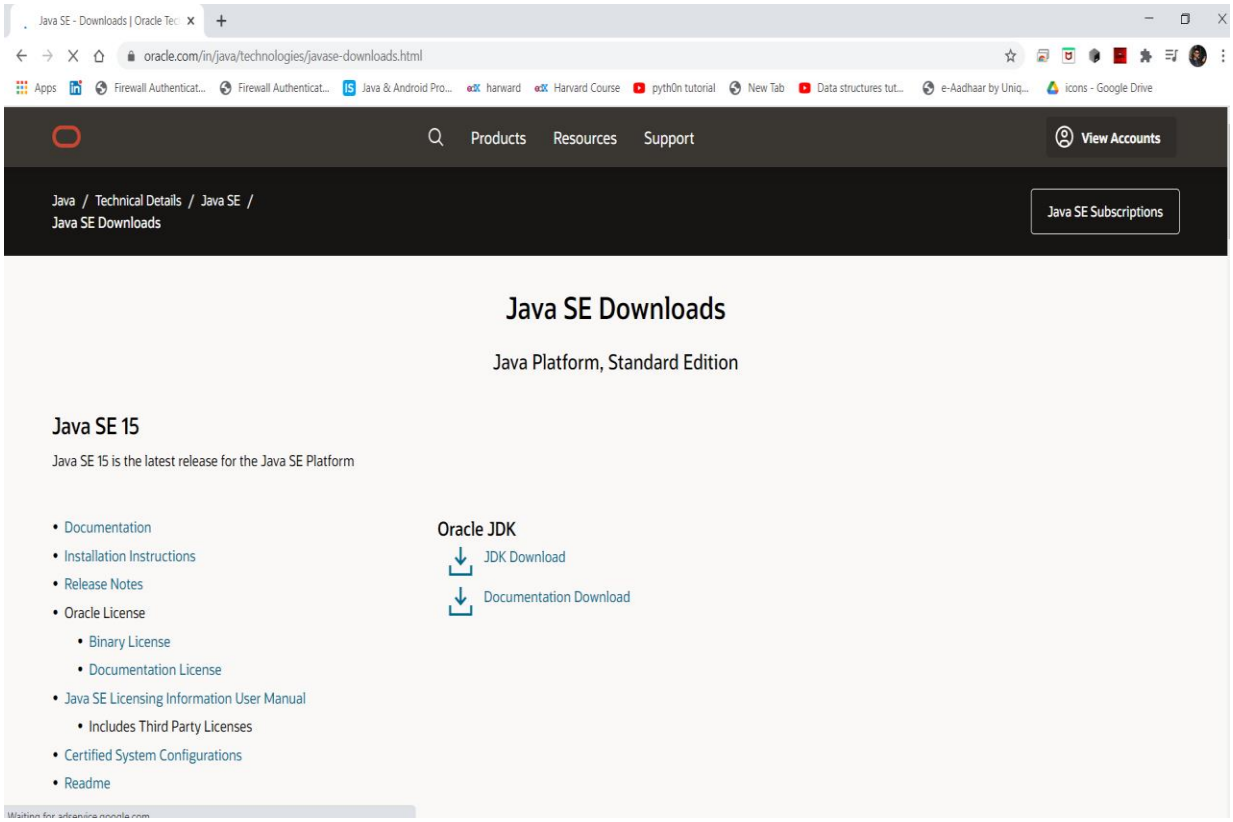
The latest version is Netbeans 12.1

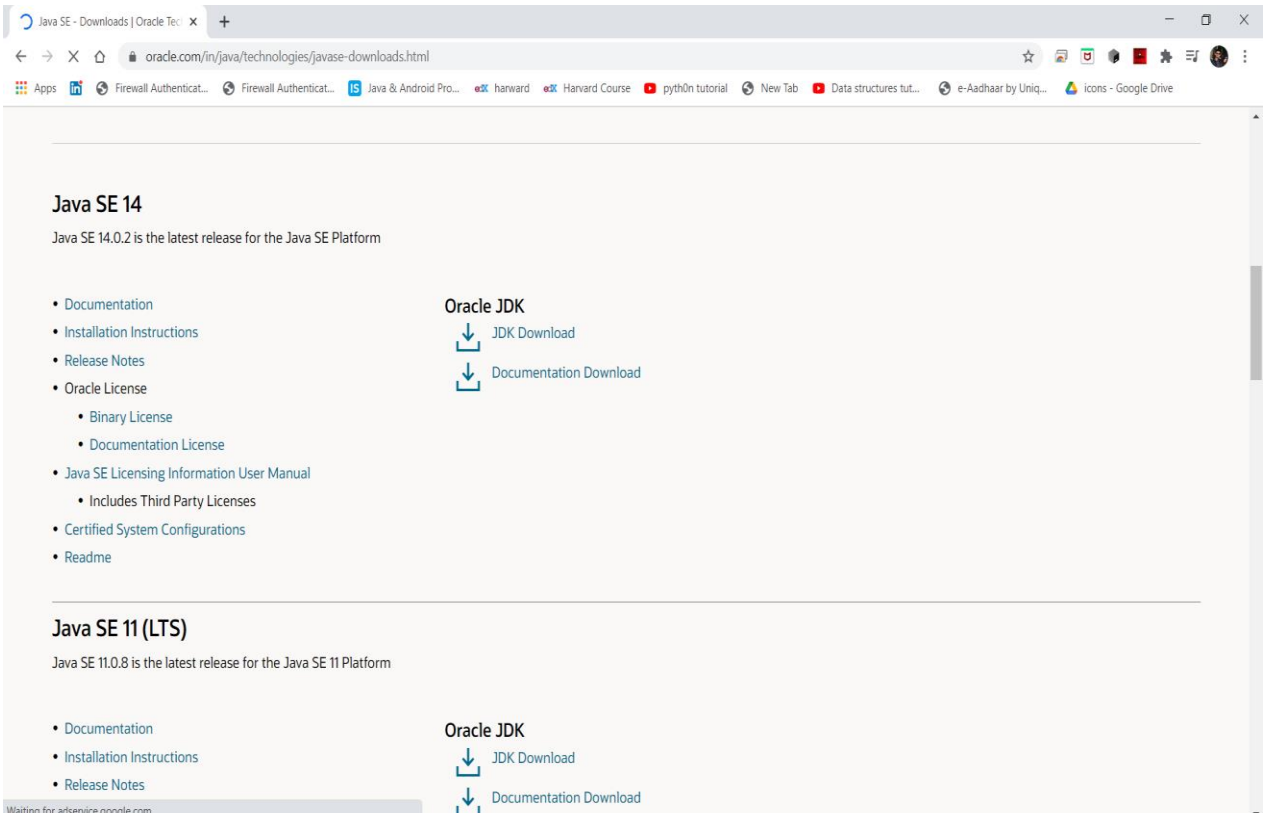
For older version : click on older releases.



2. A JDK(Java Development Kit) → The **Java Development Kit** (**JDK**) is an implementation of either one of the JAVA platforms[1] released by Oracle in the form of a binary product aimed at JAVA developers on Operating Systems(MacOS, windows, linux or solaris). The JDK includes a private JVM(Java Virtual Machine) and a few other resources to finish the development of a Java application. Since the introduction of the Java platform, it has been by far the most widely used Software Development Kit (SDK).

   For downloading JDK, refer to :
   https://www.oracle.com/in/java/technologies/javase-downloads.html





The latest version for JDK is JDK 15. It was released on September 15,2020.

Older versions can also be found on the site.

Basic JAVA syntax :

```
class Demo
{
	public static void main(String[] args)
	{
		System.out.println("Demo");
	}
}
```

Chapter 04

Introduction to JAVA SWING

4.1 Introduction

Java Swing is a part of Java Foundation Classes (JFC) that is *used to create window-based applications*.

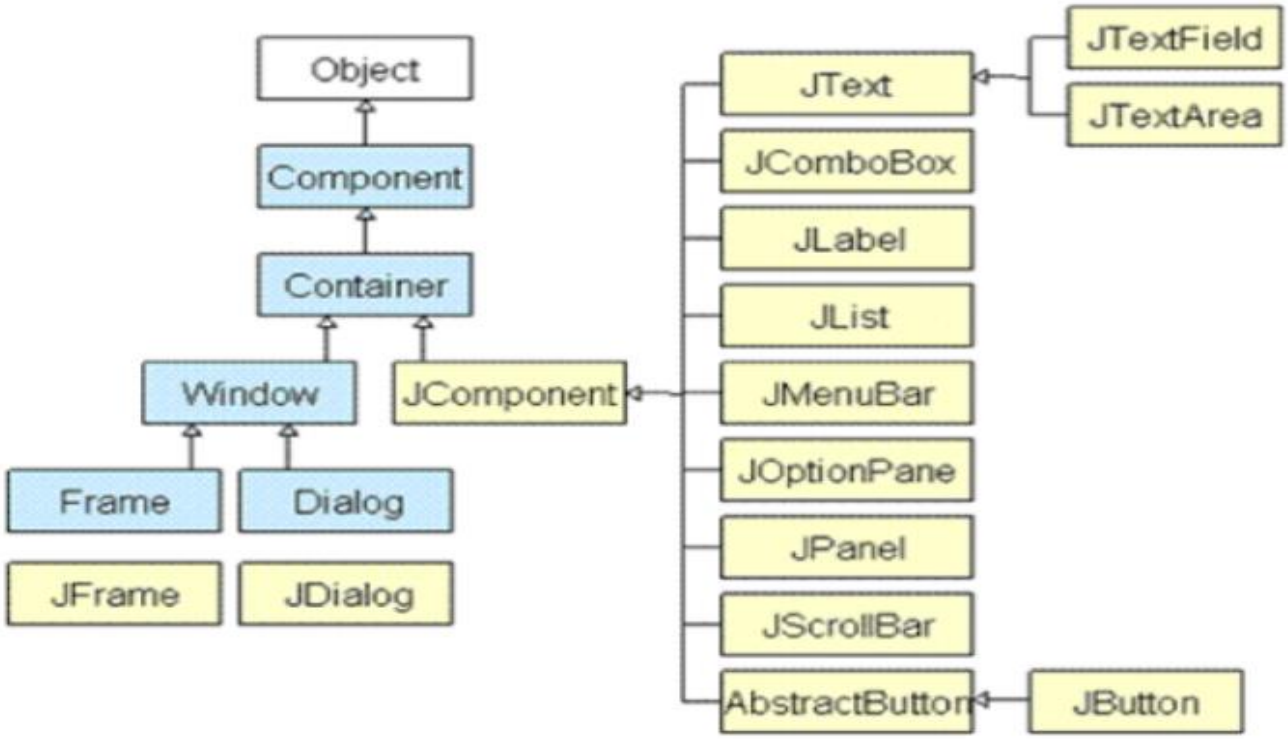
It is built on the top of AWT (Abstract Windowing Toolkit) API and entirely written in java.

Unlike AWT, Java Swing provides platform-independent and lightweight components.

The javax.swing package provides classes for java swing API such as JButton, JTextField,

JTextArea, JRadioButton, JCheckbox, JMenu, JColorChooser etc.

4.2 Hierarchy of JAVA SWING classes:



4.3 Features:

Some of the important features of SWING are listed below →

- Platform
- Independent
- Customizable
- Extensible Configurable
- Lightweight
- Rich Controls
- Pluggable Look and Feel

4.4 JAVA Swing Classes:

- **JPanel :** JPanel is Swing's version of AWT class Panel and uses the same default layout, FlowLayout.

  JPanel is descended directly from JComponent.

- **JFrame :** JFrame is Swing's version of Frame and is descended directly from Frame class. The component which is added to the Frame, is referred to as its Content.
- **JWindow :** This is Swing's version of Window and has descended directly from Window class. Like Window it uses BorderLayout by default.
- **JLabel :** JLabel has descended from JComponent, and is used to create text labels.
- **JButton :** JButton class provides the functioning of push button. JButton allows an icon, string or both associated with a button.
- **JTextField :** JTextFields allow editing of a single line of text.

4.5 Some methods used in the project:

1. setLayout(null) : If we use this method, we can adjust the position of the frame according to our choice.
2. setVisible(Boolean b) : This method is used to display the frame on the screen (only if value of b is true). It is used as :
   setVisible(true)
3. setBounds(int x, int y, int width, int height): It is used for specifying the location and dimensions of frame. Here, x and y are breadth and height from origin(0,0) and width and height are the dimensions.
4. setBackground(Color color): Sets the background color of the frame.
5. setForeground(Color color): Sets the color of text.

Chapter 05

Introduction to MYSQL

5.1 Introduction to MySQL

MySQL is an open source relational database management system. Its name is a combination of "My", the name of co-founder Micheal Widenius's daughter, and "SQL", the abbreviation for Structured Query Language. A relational database organizes data into one or more data tables in which data types may be related to each other. These relations help structure the data. SQL is a language programmers use to create, modify and extract data from the relational database, as well as control user access to the database. In addition to relational databases and SQL, an RDBMS like MySQL works with an OS to implement a relational database in a computer's storage system, manages users, allows for network access and facilitates testing database integrity and creation of backups.

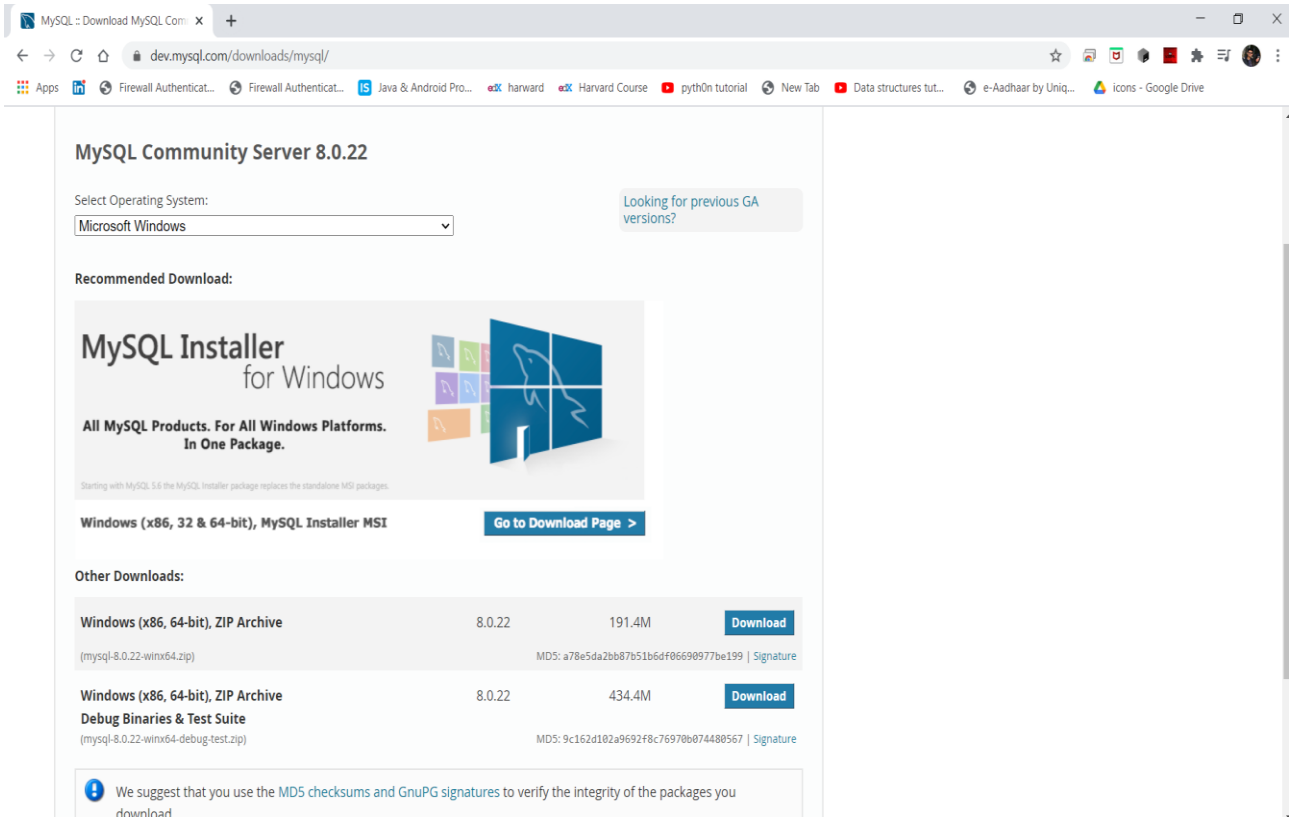
MySQL is free and open source software under the terms of the GNU general public license, and is also available under a variety of licenses.

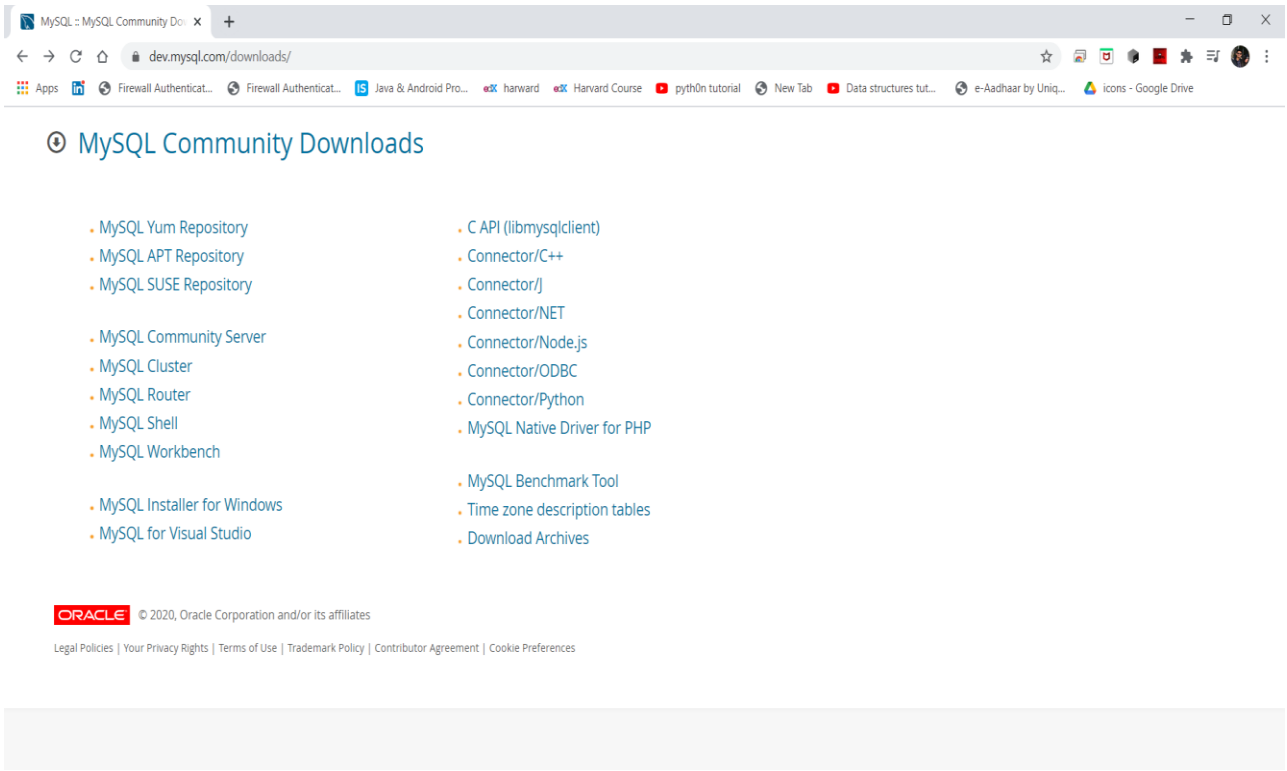
MySQL was owned and sponsored by the Swedish company MySQL AB, which was bought by Oracle. In 2010, when Oracle acquired Sun, Widenius forked the open-source MySQL project to create MariaDB.

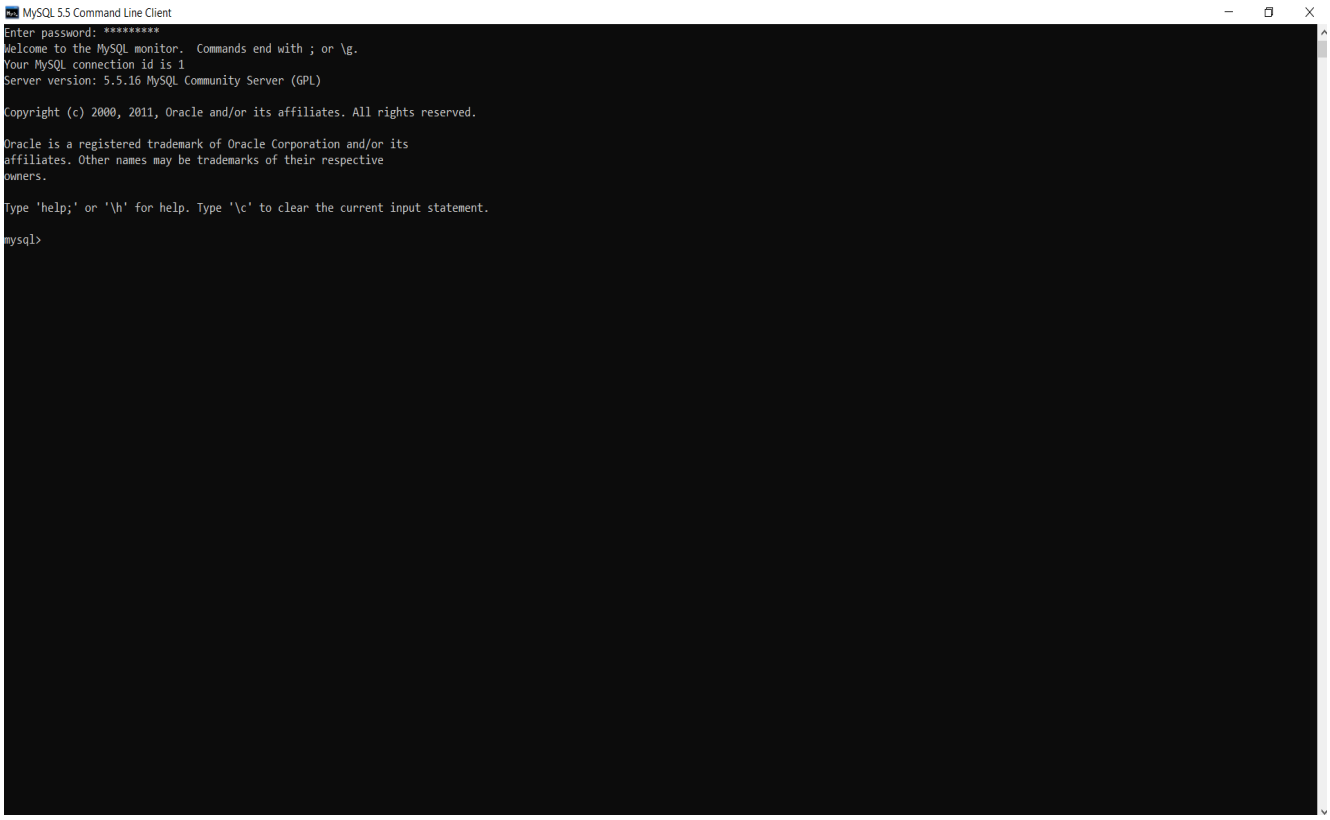
5.2 Installation and basic syntax :

For installing MySQL , refer to :

https://dev.mysql.com/downloads/




MySQL :: MySQL Community Do
dev.mysql.com/downloads/
Apps
Firewall Authenticat...
Firewall Authenticat...
Java & Android Pro...
harward
Harvard Course
pyth0n tutorial
New Tab
Data structures tut...
e-Aadhaar by Uniq...
icons - Google Drive
MySQL Community Downloads
MySQL Yum Repository
MySQL APT Repository
MySQL SUSE Repository
MySQL Community Server
MySQL Cluster
MySQL Router
MySQL Shell
MySQL Workbench
MySQL Installer for Windows
MySQL for Visual Studio
C API (libmysqlclient)
Connector/C++
Connector/J
Connector/NET
Connector/Node.js
Connector/ODBC
Connector/Python
MySQL Native Driver for PHP
MySQL Benchmark Tool
Time zone description tables
Download Archives
ORACLE
© 2020, Oracle Corporation and/or its affiliates
Legal Policies | Your Privacy Rights | Terms of Use | Trademark Policy | Contributor Agreement | Cookie Preferences


MySQL 5.5 Command Line Client
Enter password: ********
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 1
Server version: 5.5.16 MySQL Community Server (GPL)
Copyright (c) 2000, 2011, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql>

Basic commands used:

- create table tablename: It is used to create table.
- Insert into tablename values : inserting values in the table.
- Select * from tablename : to print the data of table.
- Drop table tablename: delete the table
- Delete from table where condition : delete a particular row or column based on condition

CHAPTER 06

IMPLEMENTATION AND BASIC DETAILS

6.1 Description of The Project

Topic → Hotel Management System
Programming Language used → Core JAVA
Concept used → Swing
IDE used → NetBeans
Database → MySql

I am making a project on ***hotel management system***. JAVA Swing helps us to work on different
frames. It helps to generate components, buttons and many more things. There are many classes
which are part of swing. For database, I am using MySql to store certain data like employee
details, customer details and much more. The database will get updated on any operation
performed.
The result will be a desktop application which will run locally on IDE used. When we run
our program, a frame will be opened which will act as login page for the receptionist
or for manager who would be logging in. The receptionist will be asked for credentials
and if the credentials enter will match exactly with those stored in the database,
then the receptionist will be logged in.
Then there are two options:
1. Management
2. Admin

Now when we click on Management button, and then on reception button, then we have the following sub- options:

1. New customer form: If a new customer comes in hotel for staying, then we will have some details stored in the database such as id(Passport, Aadhaar, driving licence), id no, Name, gender, country, room no, checked-in status, deposited amount. When the customer give the details, then there will be a message “data entered successfully” and data will be stored in the data base.

2. Room: We can view all the rooms in the hotel with the details as room no, availability status(free or occupied), clean status(dirty or clean), Cost per night and bed type (single or double).

3. Department: We can view how many department are there in the hotel such as house keeping, front office, food and beverages, and more and their funding from the company.

4. Employee info: We can see the information of all the employees currently working in the hotel with the details as their phone no, aadhaar no, mail id, age, post(chef, waiter, manager), salary and so on.

5. Manager info: We can see the information of only the managers currently working in the hotel.

6. Checkout: If a customer is checking out, then this option may be used to delete his information.

7. Customer info: We can see the details of all the customers currently staying in the hotel.

8. Pickup Service: Suppose if the customer is at airport and wants to come to hotel, then
   pickup service option will be used which will search if any driver is available to take
   him to the hotel.
9. Room Search: Suppose if a hotel has higher no of rooms and its difficult for the receptionist
   to remember all the information about the particular room, so this option can be used
   to search for a room(along with bed type which acts as a filter as per the customer's choice).

10. Log out: If receptionist wants to logout from the server, then this option can be used.

Now, if the receptionist goes for the admin option, then it has the following sub-options:

1. Add Employee: If a person comes to work in the hotel, then this option can be used to store the
   details of the person such as phone no, age, gender, job(chef, kitchen staff), salary per month,
   aadhaar no .

2. Add Room: Suppose if the hotel undergoes some new construction and new rooms are built,
   then to add the rooms in the database, this option can be used.

3. Add drivers: If some new person has come for the driver's job in the hotel for pickup service,
   then this option can be used. The drivers data will be stored in the database such as name, age,
   gender, car company, brand, availability, location.

6.2 Methodology:

I am using core JAVA programming language to implement this project. The concept used
is Swing which is used to show the framework. The resultant will be the desktop application. I am using MySql to create the database and use it for further purposes.
JDBC is a concept used to connect MySQL with JAVA.
The modules used in this app are listed as follows:

- Admin
- Management

The sub-modules in the Admin module are:

- Add Employee
- Add rooms
- Add drivers

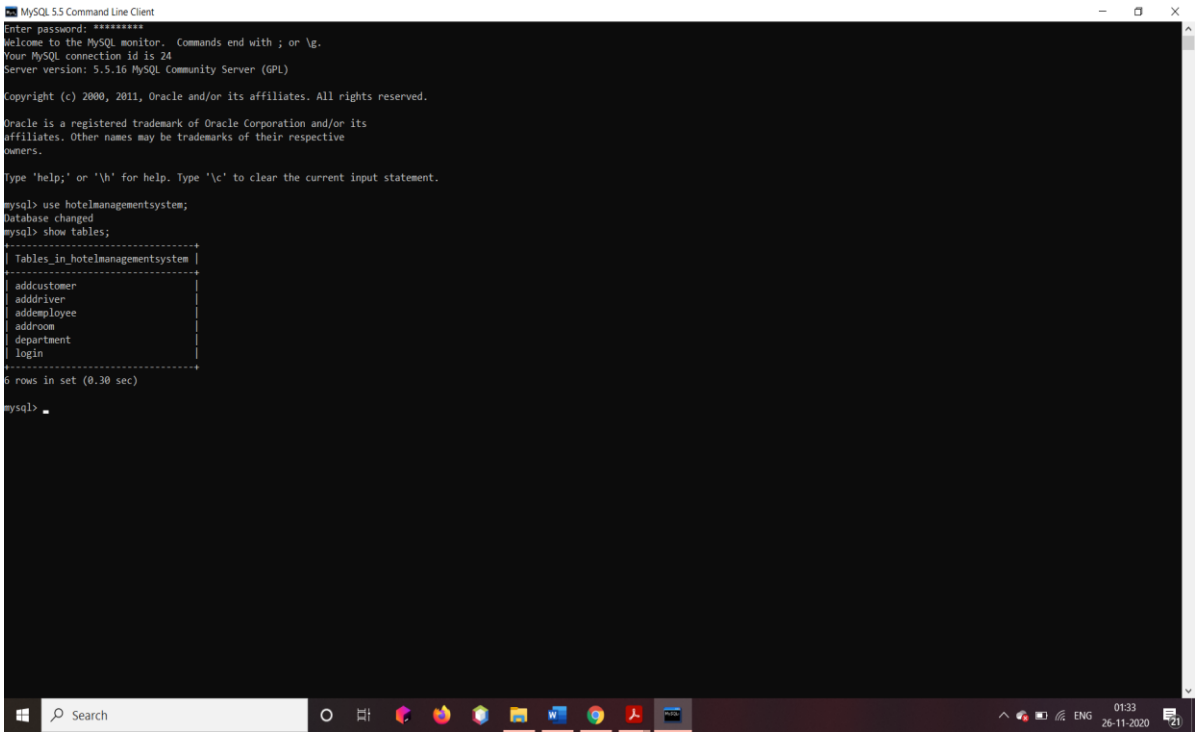
The sub-modules in the Management module are :

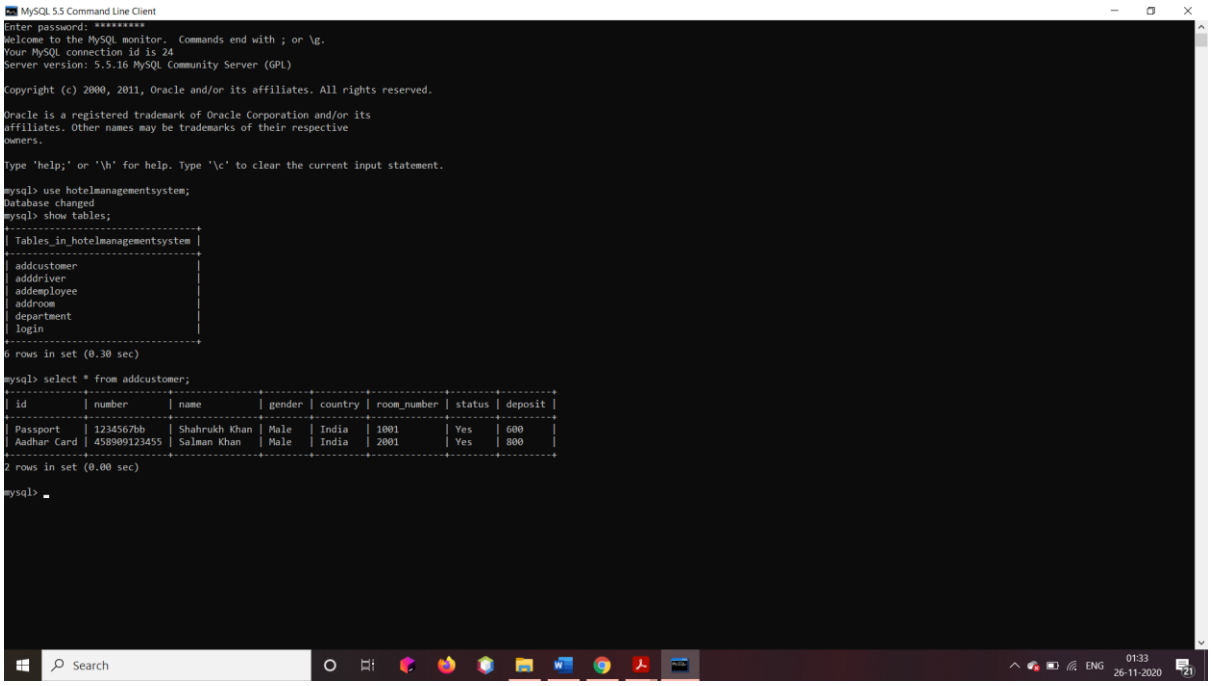
- New Customer
- Rooms
- Department
- All Employees Info
- Customer Info
- Manager Info
- CheckOut
- Update Check Status
- Update Room Status
- PickUp Service
- Search Room
- Logout

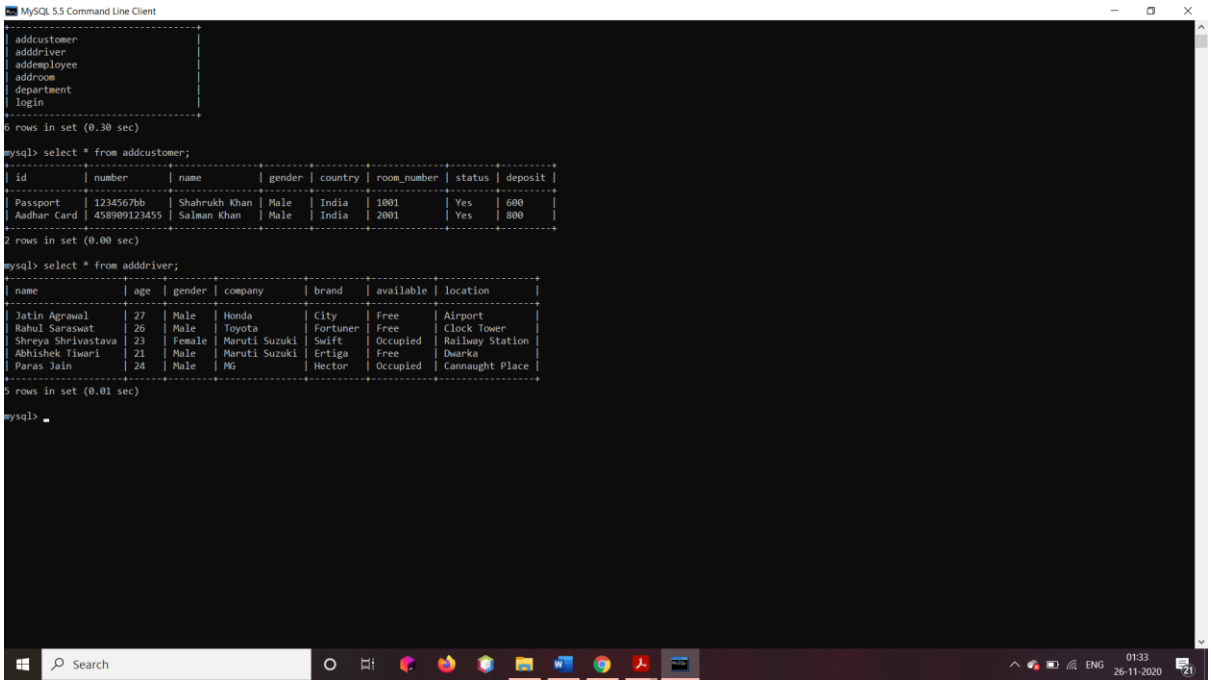
6.3 Database Design:

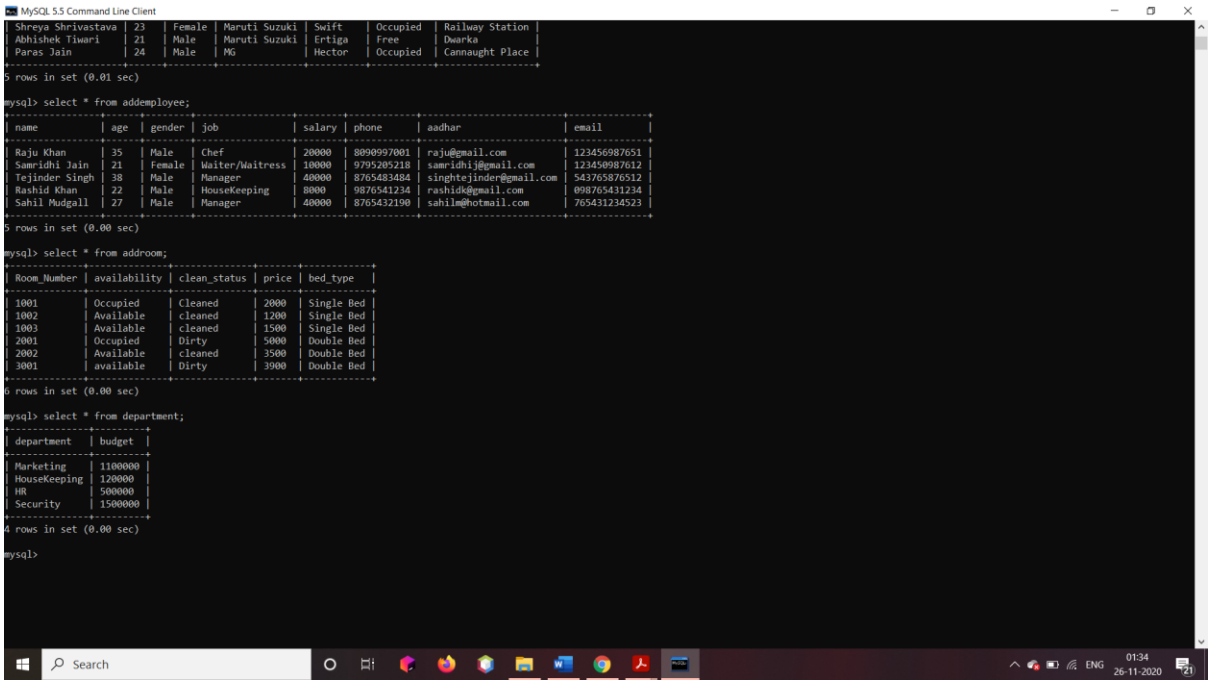
I have used many tables in the database. Their queries are as follows:

```
create database hotelmanagementsystem;
use hotelmanagementsystem;


create table login(username varchar(40), password varchar(40));
insert into login values('admin','12345');


create table addCustomer(id varchar(30), number varchar(30), name varchar(30), gender varchar(30), country varchar(30), room_number varchar(30), status varchar(30), deposit varchar(30));


create table addroom(Room_Number varchar(20), availability varchar(20), clean_status varchar(20), price varchar(20), bed_type varchar(30));


create table addEmployee(name varchar(30), age varchar(10), gender varchar(30), job varchar(30), salary varchar(30), phone varchar(30), aadhar varchar(30), email varchar(40));

create table addDriver(name varchar(30), age varchar(10), gender varchar(20), company varchar(30), brand varchar(30), available varchar(10), location varchar(50));


create table department(department varchar(30), budget varchar(30));
```

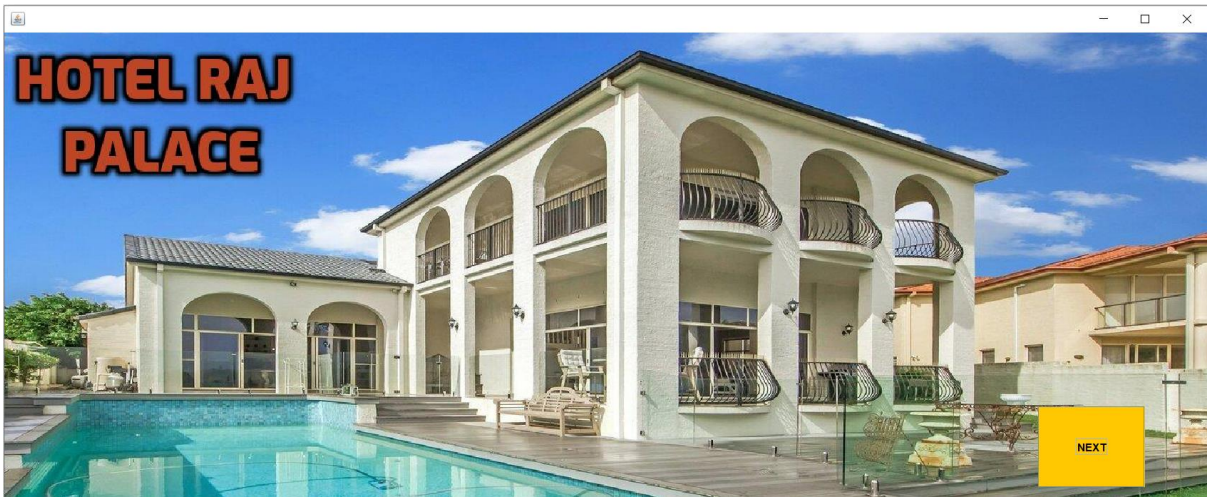

MySQL 5.5 Command Line Client
Enter password: *********
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 24
Server version: 5.5.16 MySQL Community Server (GPL)
Copyright (c) 2000, 2011, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> use hotelmanagementsystem;
Database changed
mysql> show tables;
| Tables_in_hotelmanagementsystem |
| addcustomer |
| adddriver |
| addemployee |
| addroom |
| department |
| login |
6 rows in set (0.30 sec)
mysql>
Search
ENG
01:33
26-11-2020


MySQL 5.5 Command Line Client
Enter password: *********
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 24
Server version: 5.5.16 MySQL Community Server (GPL)
Copyright (c) 2000, 2011, Oracle and/or its affiliates. All rights reserved.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> use hotelmanagementsystem;
Database changed
mysql> show tables;
| Tables_in_hotelmanagementsystem |
| addcustomer |
| adddriver |
| addemployee |
| addroom |
| department |
| login |
6 rows in set (0.30 sec)
mysql> select * from addcustomer;
id	number	name	gender	country	room_number	status	deposit
Passport	1234567bb	Shahrukh Khan	Male	India	1001	Yes	600
Aadhar Card	458909123455	Salman Khan	Male	India	2001	Yes	800
2 rows in set (0.00 sec)
mysql>
Search
ENG
01:33
26-11-2020

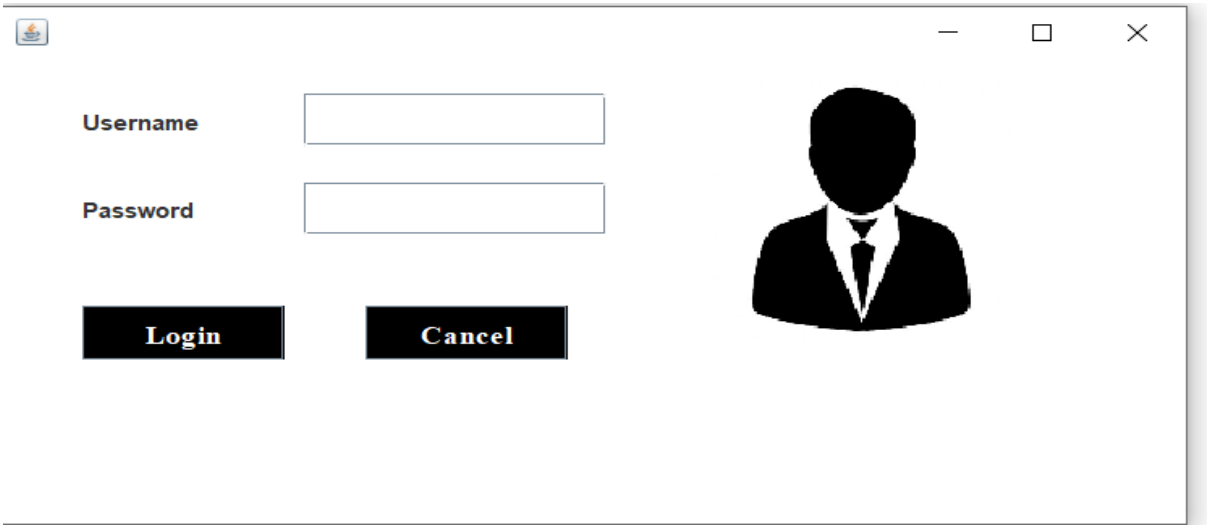

MySQL 5.5 Command Line Client
addcustomer
adddriver
addemployee
addroom
department
login
6 rows in set (0.30 sec)
mysql> select * from addcustomer;
id	number	name	gender	country	room_number	status	deposit
Passport	1234567bb	Shahrukh Khan	Male	India	1001	Yes	600
Aadhar Card	458909123455	Salman Khan	Male	India	2001	Yes	800
2 rows in set (0.00 sec)
mysql> select * from adddriver;
name	age	gender	company	brand	available	location
Jatin Agrawal	27	Male	Honda	City	Free	Airport
Rahul Saraswat	26	Male	Toyota	Fortuner	Free	Clock Tower
Shreya Shrivastava	23	Female	Maruti Suzuki	Swift	Occupied	Railway Station
Abhishek Tiwari	21	Male	Maruti Suzuki	Ertiga	Free	Dwarka
Paras Jain	24	Male	MG	Hector	Occupied	Cannaught Place
5 rows in set (0.01 sec)
mysql>
Search
ENG
01:33
26-11-2020


MySQL 5.5 Command Line Client
Shreya Shrivastava	23	Female	Maruti Suzuki	Swift	Occupied	Railway Station
Abhishek Tiwari	21	Male	Maruti Suzuki	Ertiga	Free	Dwarka
Paras Jain	24	Male	MG	Hector	Occupied	Cannaught Place
5 rows in set (0.01 sec)
mysql> select * from addemployee;
name	age	gender	job	salary	phone	aadhar	email
Raju Khan	35	Male	Chef	20000	8090997001	raju@gmail.com	123456987651
Samridhi Jain	21	Female	Waiter/Waitress	10000	9795205218	samridhij@gmail.com	123450987612
Tejinder Singh	38	Male	Manager	40000	8765483484	singhtejinder@gmail.com	543765876512
Rashid Khan	22	Male	HouseKeeping	8000	9876541234	rashidk@gmail.com	098765431234
Sahil Mudgall	27	Male	Manager	40000	8765432190	sahilm@hotmail.com	765431234523
5 rows in set (0.00 sec)
mysql> select * from addroom;
Room_Number	availability	clean_status	price	bed_type
1001	Occupied	Cleaned	2000	Single Bed
1002	Available	cleaned	1200	Single Bed
1003	Available	cleaned	1500	Single Bed
2001	Occupied	Dirty	5000	Double Bed
2002	Available	cleaned	3500	Double Bed
3001	available	Dirty	3900	Double Bed
6 rows in set (0.00 sec)
mysql> select * from department;
department	budget
Marketing	1100000
HouseKeeping	120000
HR	500000
Security	1500000
4 rows in set (0.00 sec)
mysql>
Search
ENG
01:34
26-11-2020

6.4 SnapShots :



Whenever we execute the code, this is the very first frame that opens. When we click on next button, the following frame opens :



Now, we have to login with the credentials (username and password). If they matches with those in the database, then the person is logged in.

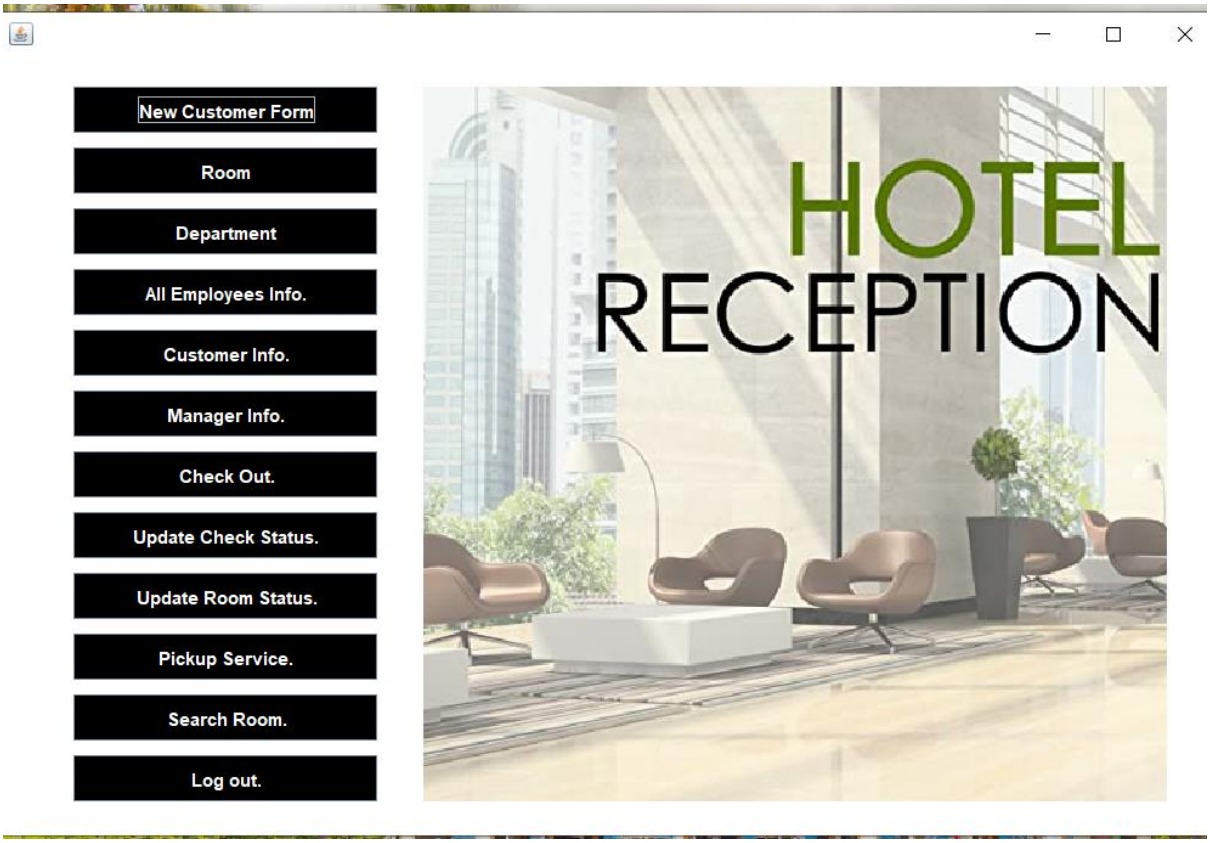
After logging in, the following frame opens :

As we can see, this frame has a menu bar consisting of two buttons :

Management and Admin.

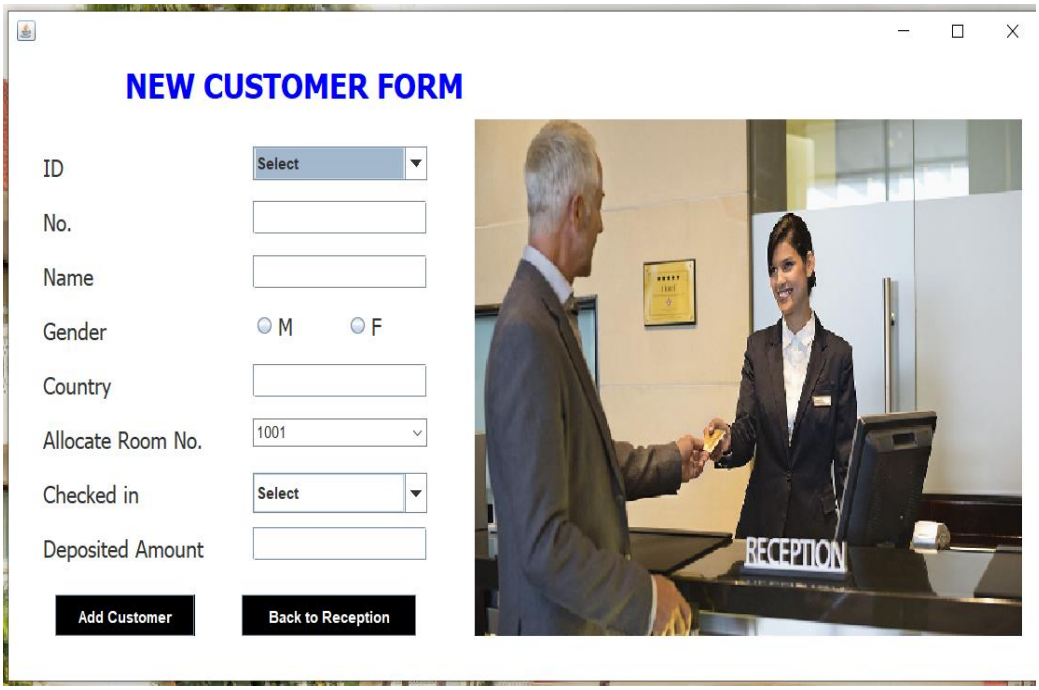
Now Management has a button : Reception.

After clicking on Reception, we get the following frame :

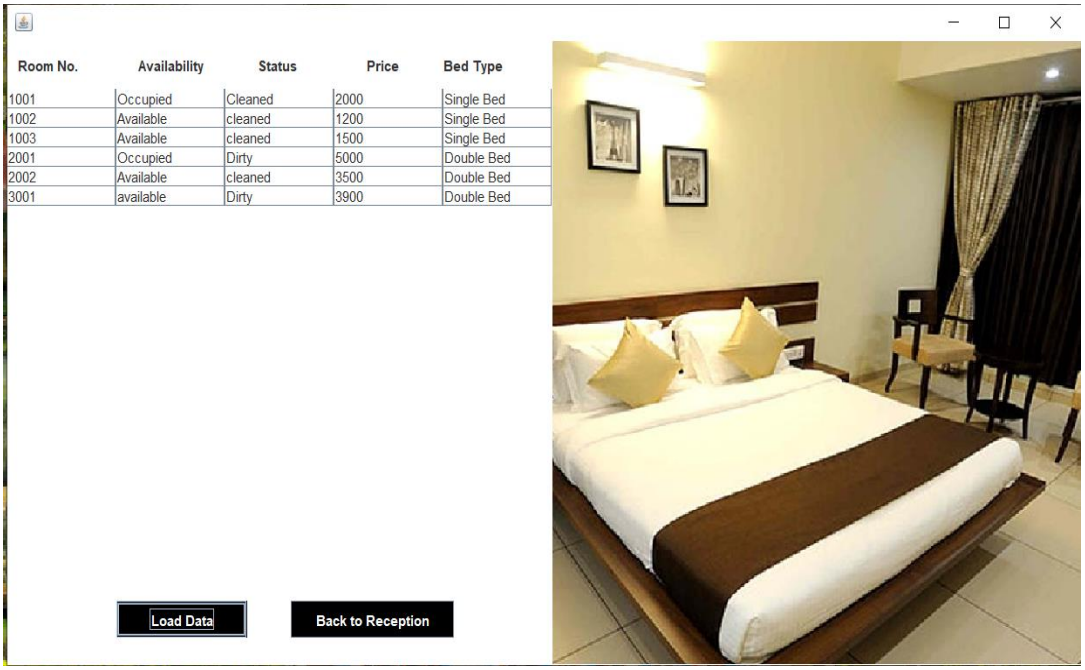


In this frame, there are many options such as New Customer Form, Room, Department, All Employees Info and so on. These are made as buttons so whenever we click on any one of these, we can jump to the required frame.

After clicking on new customer form button, this frame opens so now we can save the details of the new customer in the database.

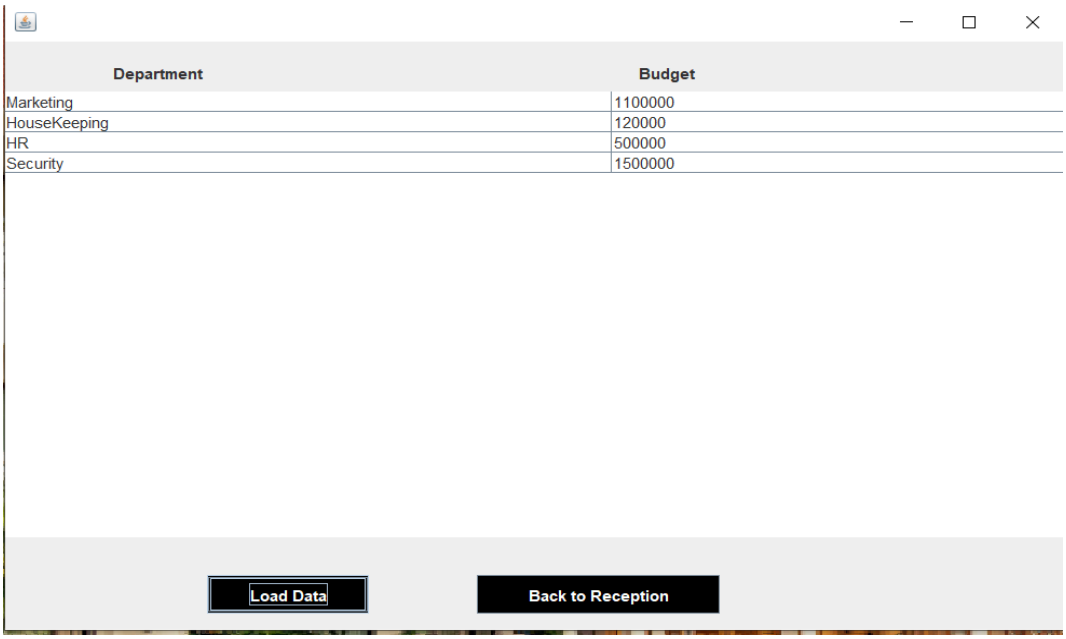


When we click on Room button, the following frame opens.



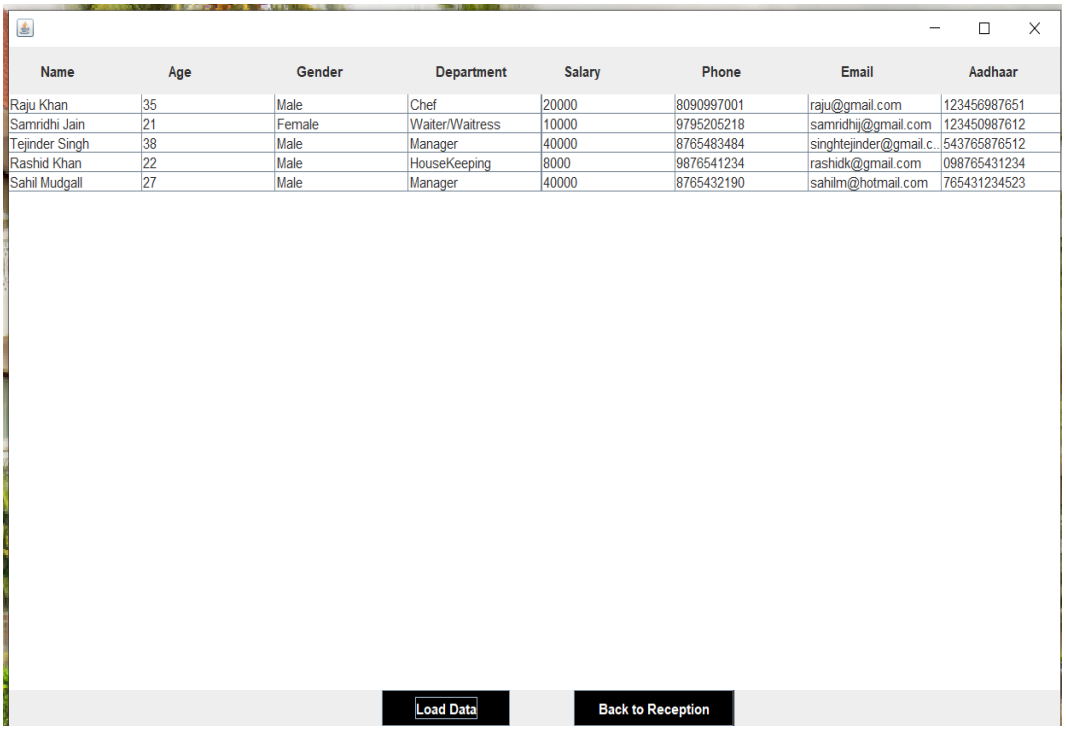
When we click on load data button, this data is displayed.

Whenever we click on Department button, the following frame opens:

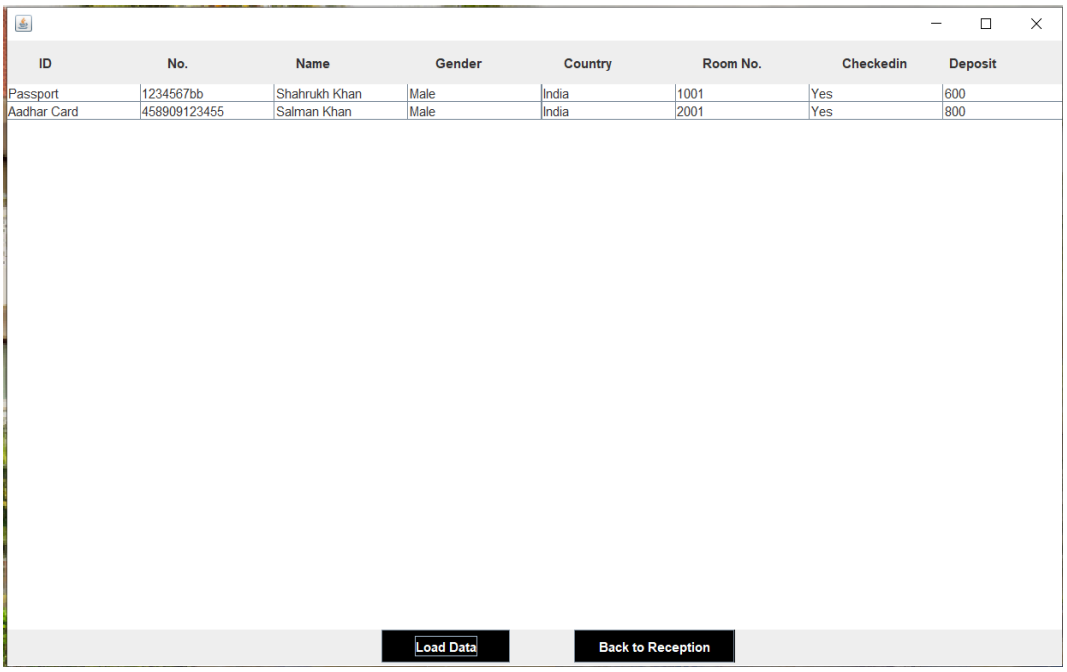


This displays the funding from different departments.

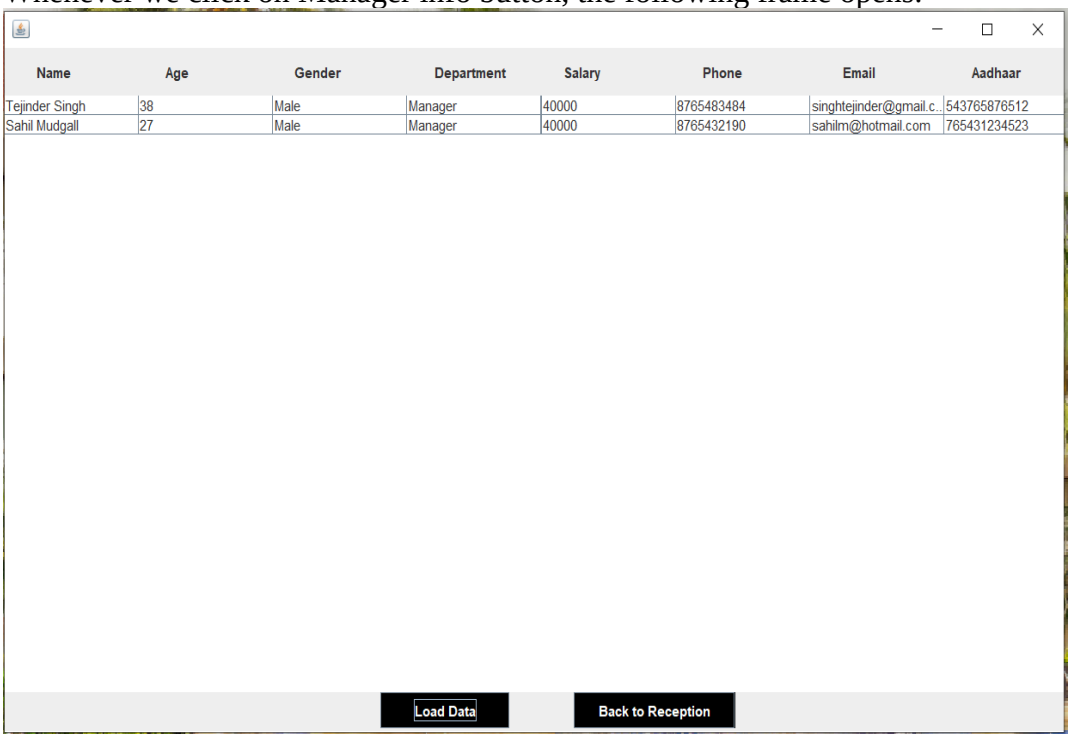
Whenever we click on All employee info button, the following frame opens:



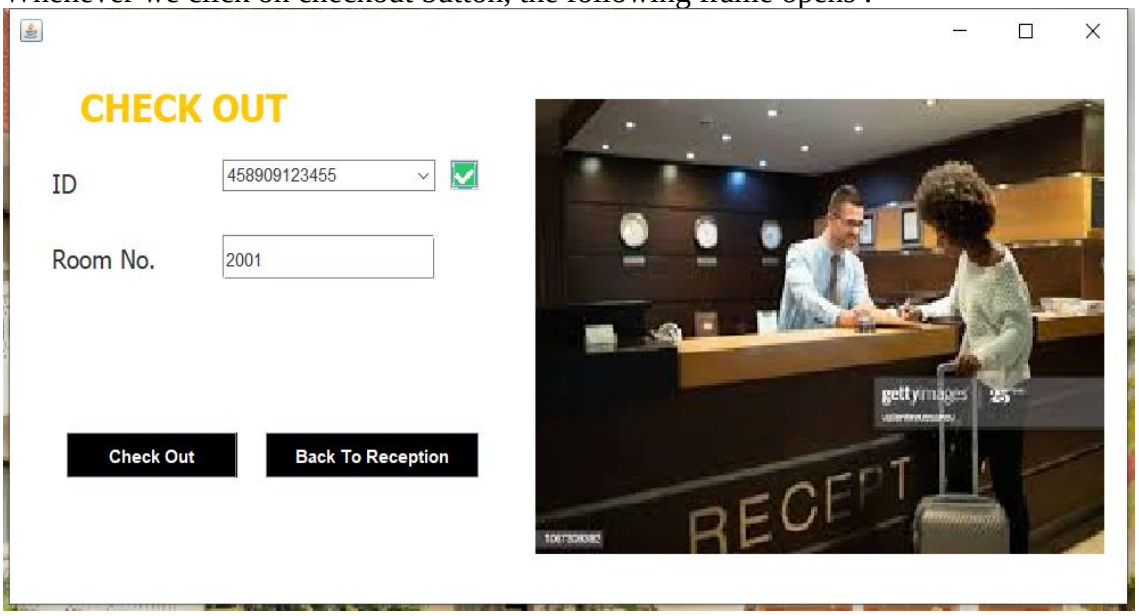
Whenever we click on All Customer info button, the following frame opens:



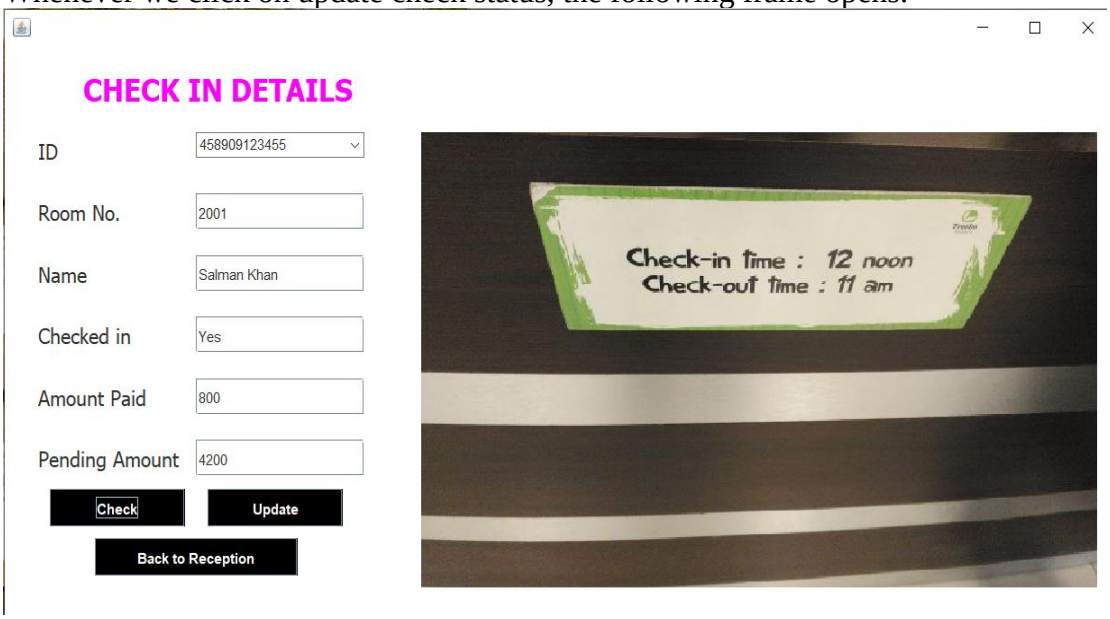
Whenever we click on Manager info button, the following frame opens:



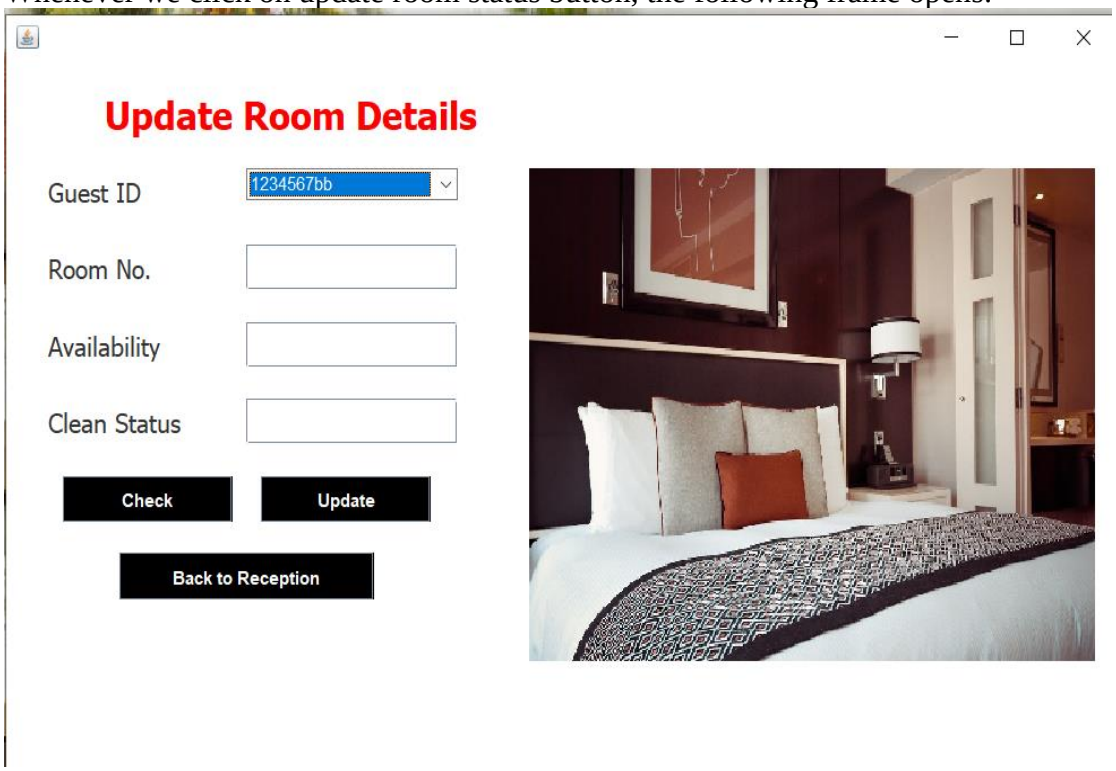
Whenever we click on checkout button, the following frame opens :



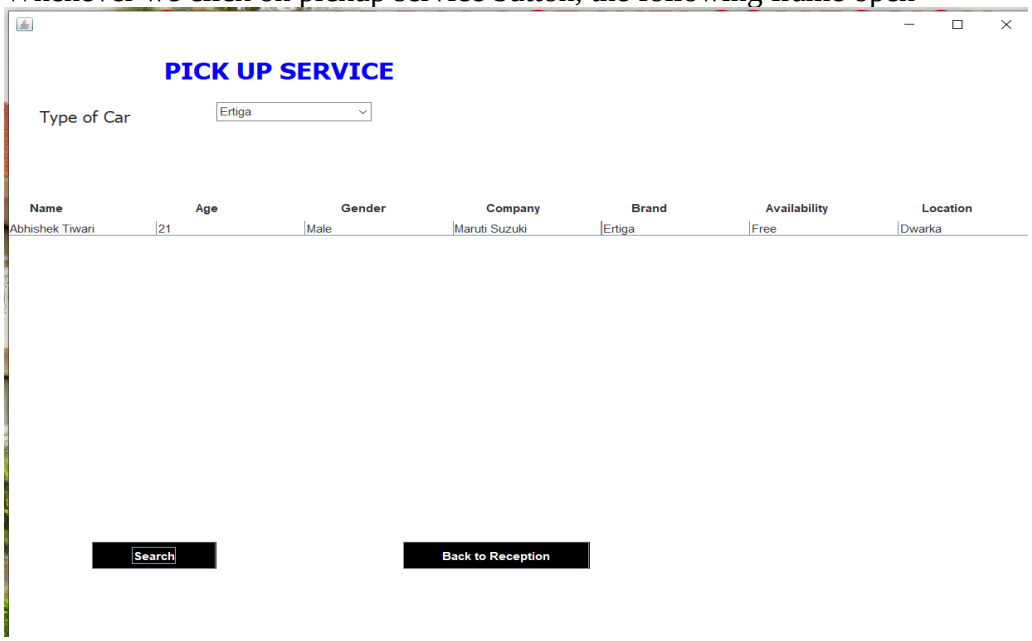
Whenever we click on update check status, the following frame opens:



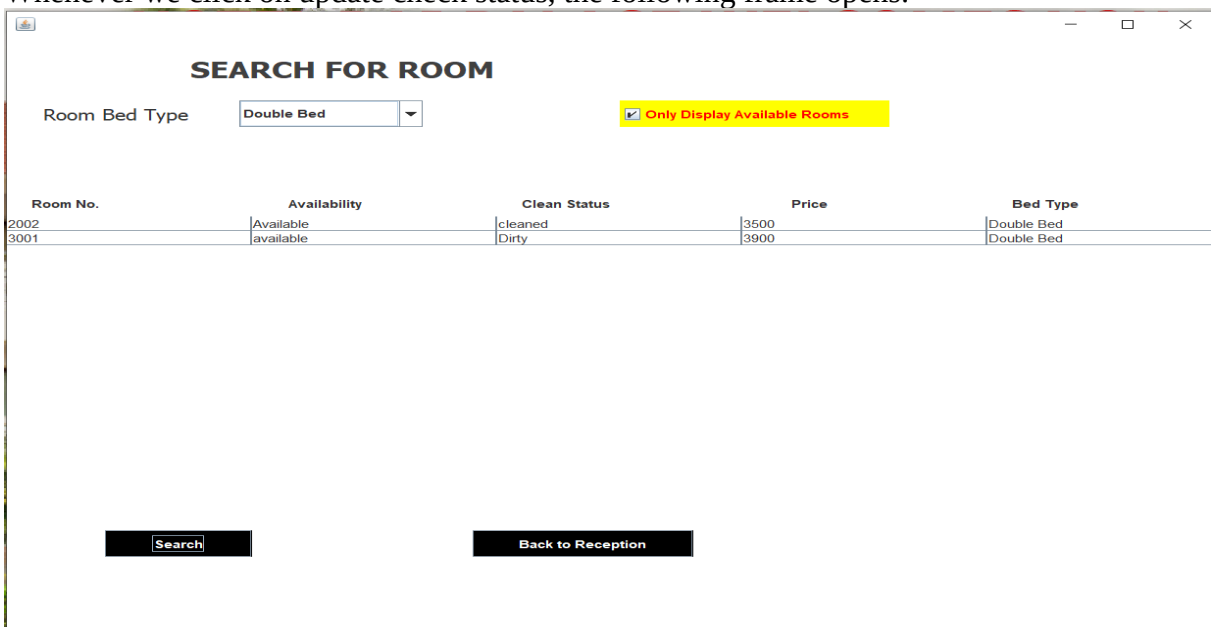
Whenever we click on update room status button, the following frame opens:



Whenever we click on pickup service button, the following frame open



Whenever we click on update check status, the following frame opens:



CHAPTER 07
REFERENCES

1. Java swing tutorials - https://www.javatpoint.com/java-swing
2. JDBC tutorials - https://www.javatpoint.com/java-jdbc
3. MySQL tutorials - https://www.w3schools.com/sql/
4. Udemy Course