

DATABASE DESIGN AND IMPLEMENTATION OF AN APPLICATION SYSTEM

A) PROBLEM STATEMENT:

We will take the selection criteria from the user and display the hotels list for user based on criteria. User can book the room if there is availability of rooms in the hotel. There are two different types of roles they are administrator and customer (normal user). Following are the actions provided for each user.

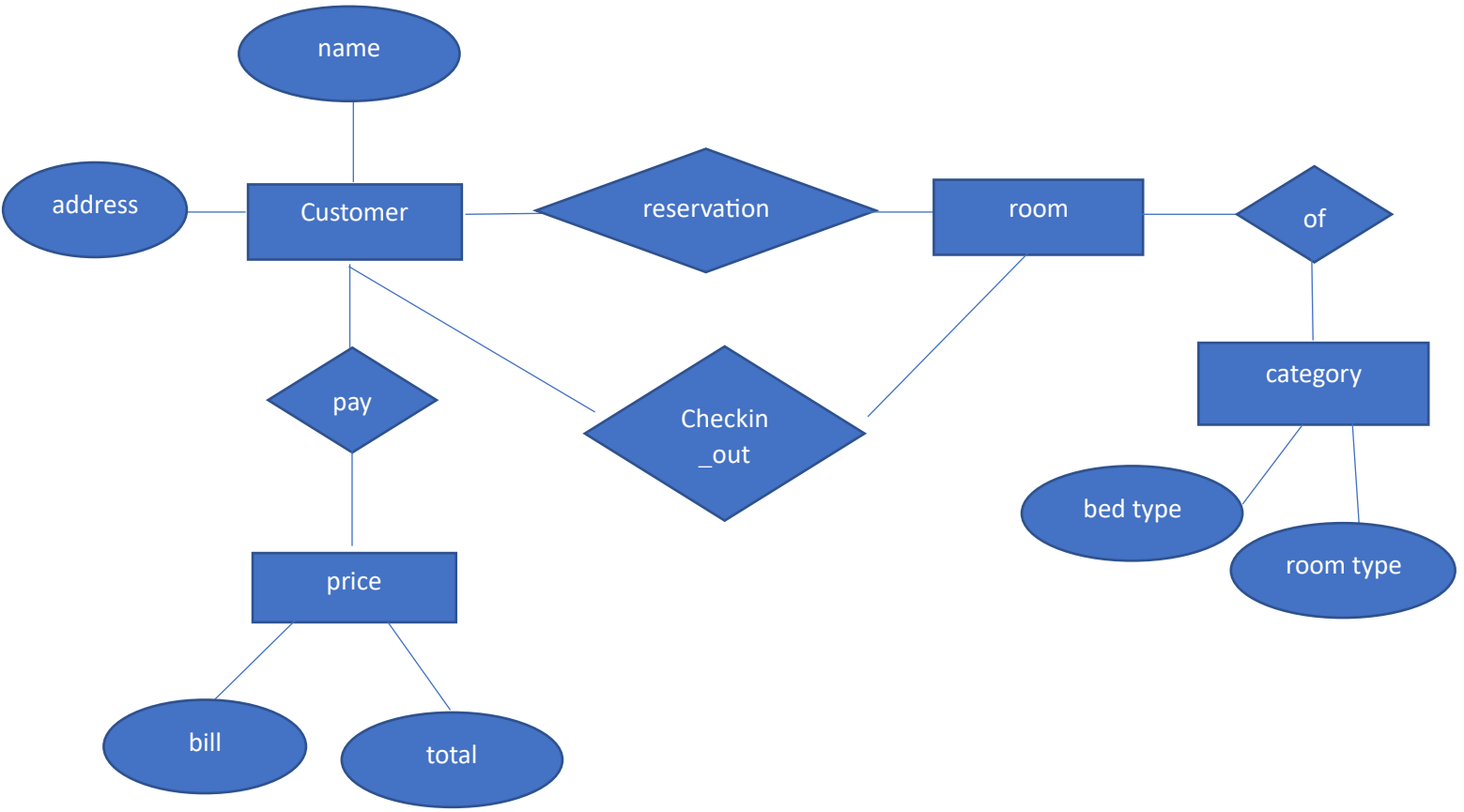
Administrator:

- Will approve and manage the rooms and dishes of the Hotel.
- Will add, delete, and update the rooms.

Customer:

- Will book the rooms.
- Can modify the self-details.

B) ER DIAGRAM:



C)USE OF FRONT-END TOOLS TO MANIPULATE DATABASE

We have used java swing as front-end tool for our project. Java swing is a choice for creating graphical user interface(GUI's) .Set up the database connectivity.

Design the GUI: This helps to design the components such as buttons, text fields, labels, and tables.

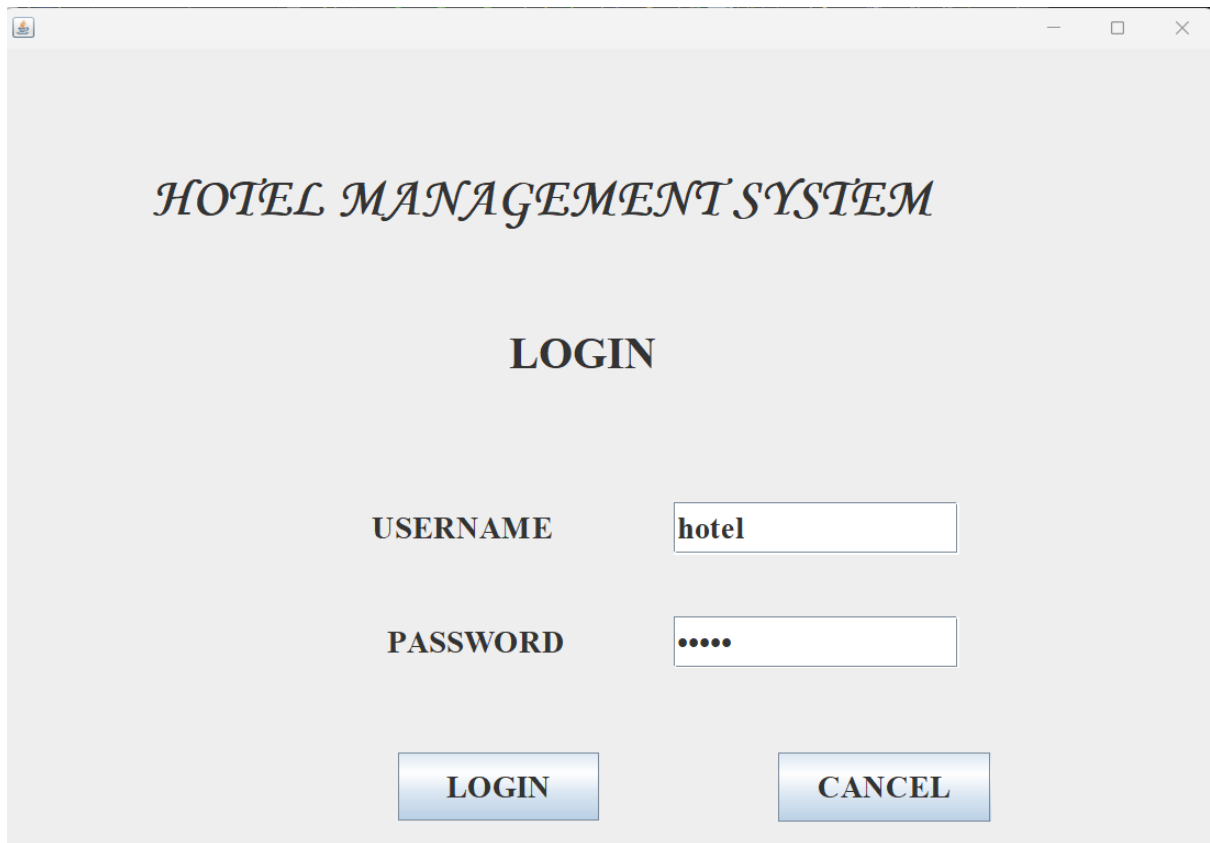
Java Swing handles to write Create, Read, Update, and Delete, enabling users to add, update or delete from the database. Retrieve data for the report by writing SQL queries to extract the required data from the database.

Use JDBC to execute these queries and retrieve the result data.

D)MENU DESIGN:

Login page:

The image shows a Java Swing window titled "HOTEL MANAGEMENT SYSTEM". Inside the window, there is a "LOGIN" section. It contains two text fields: "USERNAME" with the value "jfteexmo" and "PASSWORD" which is masked with dots. Below these fields are two buttons: "LOGIN" and "CANCEL". An error dialog box is overlaid on the password field. The dialog box has a title bar that says "Please check user name / password" and a red "X" icon. The text inside the dialog box says "Error". There is an "OK" button at the bottom right of the dialog box.



A screenshot of a web application window titled "HOTEL MANAGEMENT SYSTEM". The window has a light gray background and standard window controls (minimize, maximize, close) in the top right corner. The title "HOTEL MANAGEMENT SYSTEM" is centered at the top in a large, italicized, black serif font. Below the title, the word "LOGIN" is centered in a bold, black serif font. The login form consists of two rows. The first row has the label "USERNAME" in a bold, black serif font, followed by a text input field containing the text "hotel". The second row has the label "PASSWORD" in a bold, black serif font, followed by a password input field with five dots. At the bottom of the form, there are two buttons: "LOGIN" and "CANCEL", both with a blue gradient and a black border.

HOTEL MANAGEMENT SYSTEM

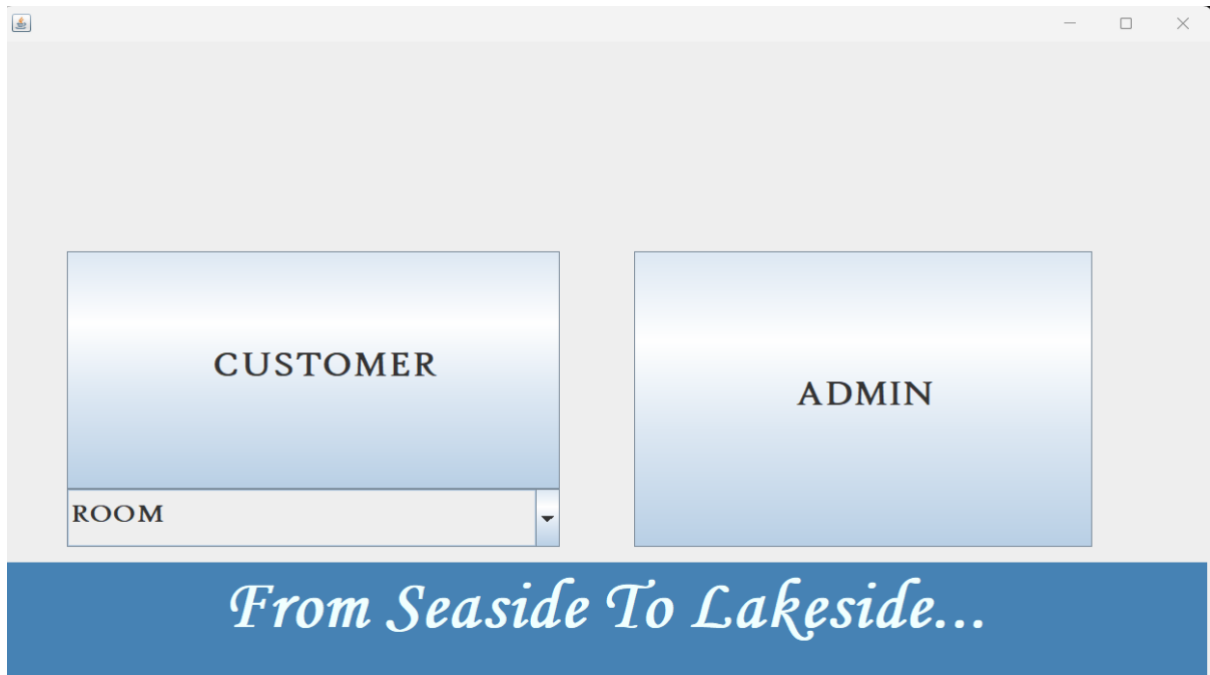
LOGIN

USERNAME

PASSWORD

LOGIN **CANCEL**

Login successful



A screenshot of the same web application window after a successful login. The window title remains "HOTEL MANAGEMENT SYSTEM". The main content area has a light gray background. On the left, there is a large blue button with a gradient and a black border, labeled "CUSTOMER". Below this button is a dropdown menu with the text "ROOM" and a downward arrow. On the right, there is another large blue button with a gradient and a black border, labeled "ADMIN". At the bottom of the window, there is a dark blue banner with the text "From Seaside To Lakeside..." in a white, italicized, serif font.

CUSTOMER

ROOM ▼

ADMIN

From Seaside To Lakeside...

Customer

1)Room:

NAME	Divya
ADDRESS	Erode
PHONE NUM	9842325648
ROOM NO	7006
Room Type (Ac,Non-Ac)	Non-Ac
BED TYPE (One,Two)	Two
PRICE	2000
NO OF DAYS	2
TOTAL	4000

ROOM NO	ROOM TYPE	BED TYPE	PRICE
4	ac	single	5000.00

TOTAL

GENERATE RECEIPT

BACK

CHECKOUT

Generate Receipt:

NAME	Divya
ADDRESS	Erode
PHONE NUM	9842325648
ROOM NO	7006
Room Type (Ac,Non-Ac)	Non-Ac
BED TYPE (One,Two)	Two
PRICE	2000
NO OF DAYS	2
TOTAL	4000

ROOM NO	ROOM TYPE	BED TYPE	PRICE
4	ac	single	5000.00

TOTAL

GENERATE RECEIPT

BACK

CHECKOUT

***** YOUR BILL RECEIPT *****
TIME : 23/08/05 12:57:51
NAME : Divya
ADDRESS : Erode
PHONE NUM: 9842325648
ROOM TYPE: Non-Ac
BED TYPE : Two
TOTAL AMOUNT: 4000

Checkout:

NAME

Divya

ADDRESS

Erode

PHONE NUM

9842325648

ROOM NO

7006

Room Type
(Ac,Non-Ac)

Non-Ac

BED TYPE
(One,Two)

Two

PRICE

2000

NO OF DAYS

2

TOTAL

4000

ROOM NO	ROOM TYPE	BED TYPE	PRICE
	ac	single	5000.00

Message

Checked out Successfully

OK

***** YOUR BILL RECEIPT *****

TIME : 23/06/05 12:57:51

NAME : Divya

ADDRESS : Erode

PHONE NUM: 9842325648

ROOM TYPE: Non-Ac

BED TYPE : Two

TOTAL AMOUNT: 4000

TOTAL

GENERATE RECEIPT

BACK

CHECKOUT

Admin:

1)Manage Rooms:

New label

ROOM TYPE

Non-Ac

BED TYPE

Two

PRICE

4000

ROOM NO	ROOM TYPE	BED TYPE	PRICE
4	ac	single	5000.00

ADD ROOMS

DELETE ROOMS

UPDATE ROOMS

BACK

Add Rooms:

New label

ROOM TYPE

BED TYPE

PRICE

ROOM NO	ROOM TYPE	BED TYPE	PRICE
4	ac	single	5000.00

Message

New Room Added

OK

ADD ROOMS DELETE ROOMS UPDATE ROOMS BACK

Delete Rooms:

New label

ROOM TYPE

BED TYPE

PRICE

ROOM NO	ROOM TYPE	BED TYPE	PRICE
4	ac	single	5000.00
5	Non-Ac	Two	4000.00
6	Non-Ac	one	2000.00
7	6	non ac	2000.00
8	6	non ac	2000.00
9	6	non ac	2000.00

ADD ROOMS DELETE ROOMS UPDATE ROOMS BACK

```
mysql> delete from room where roomNo=7;
Query OK, 1 row affected (0.02 sec)

mysql> delete from room where roomNo=8;
Query OK, 1 row affected (0.01 sec)

mysql> delete from room where roomNo=9;
Query OK, 1 row affected (0.01 sec)

mysql> select*from room;
+-----+-----+-----+-----+
| roomNo | roomType | bedType | Price  |
+-----+-----+-----+-----+
|      4 | ac       | single  | 5000.00 |
|      5 | Non-Ac   | Two     | 4000.00 |
|      6 | Non-Ac   | one     | 2000.00 |
+-----+-----+-----+-----+
```

Update:

The screenshot shows a Java Swing window titled "Hotel Management" with a light gray background. On the left, there is a form with labels and text input fields. The labels are: NAME, ADDRESS, PHONE NUM, ROOM NO, Room Type (Ac,Non-Ac), BED TYPE (One,Two), PRICE, NO OF DAYS, and TOTAL. The corresponding values entered in the fields are: Abi, Karur, 5826789, 7, ac, two, 400, 4, and 1600. Below the form are four buttons: TOTAL, GENERATE RECEIPT, BACK, and CHECKOUT. In the center of the window is a table with four columns: ROOM NO, ROOM TYPE, BED TYPE, and PRICE. The table contains three rows of data: (4, ac, single, 5000.00), (5, Non-Ac, Two, 4000.00), and (6, Non-Ac, one, 2000.00). To the right of the table is a receipt area titled "YOUR BILL RECEIPT" with a star border. The receipt contains the following information: TIME: 23/06/05 14:23:07, NAME: Abi, ADDRESS: Karur, PHONE NUM: 5826789, ROOM TYPE: ac, BED TYPE: two, and TOTAL AMOUNT: 1600.

ROOM NO	ROOM TYPE	BED TYPE	PRICE
4	ac	single	5000.00
5	Non-Ac	Two	4000.00
6	Non-Ac	one	2000.00

***** YOUR BILL RECEIPT *****

TIME : 23/06/05 14:23:07

NAME : Abi

ADDRESS : Karur

PHONE NUM: 5826789

ROOM TYPE: ac

BED TYPE: two

TOTAL AMOUNT: 1600

In the backend the above details are updated it is shown below

```
mysql> select *from roomcutomer;
```

id	name	address	phone	roomtype	bedtype	price	status
3	abc	saalem	545225	ac	single	500	0
4	abc	saalem	5466	ac	singel	400	0
5	abc	cbe	4534547	ac	single	8000	0
6	suji	hosur	37677837	non ac	double	20000	1
7	aaab	saalem	65616	ac	single	10800	0
8	surya	hgjk	86532	ac	one	4500	1
9	Divya	Erode	9842325648	Non-Ac	Two	4000	1
10	Abi	Karur	5826789	ac	two	1600	0

8 rows in set (0.01 sec)

2)Manage Dishes:

Add dish:

DISH NAME

DISH PRICE

DISH TYPE

Message

New Dish Added

OK

ADD DISH

DELETE DISH

UPDATE DISH

BACK

```
mysql> select *from restaurant;
```

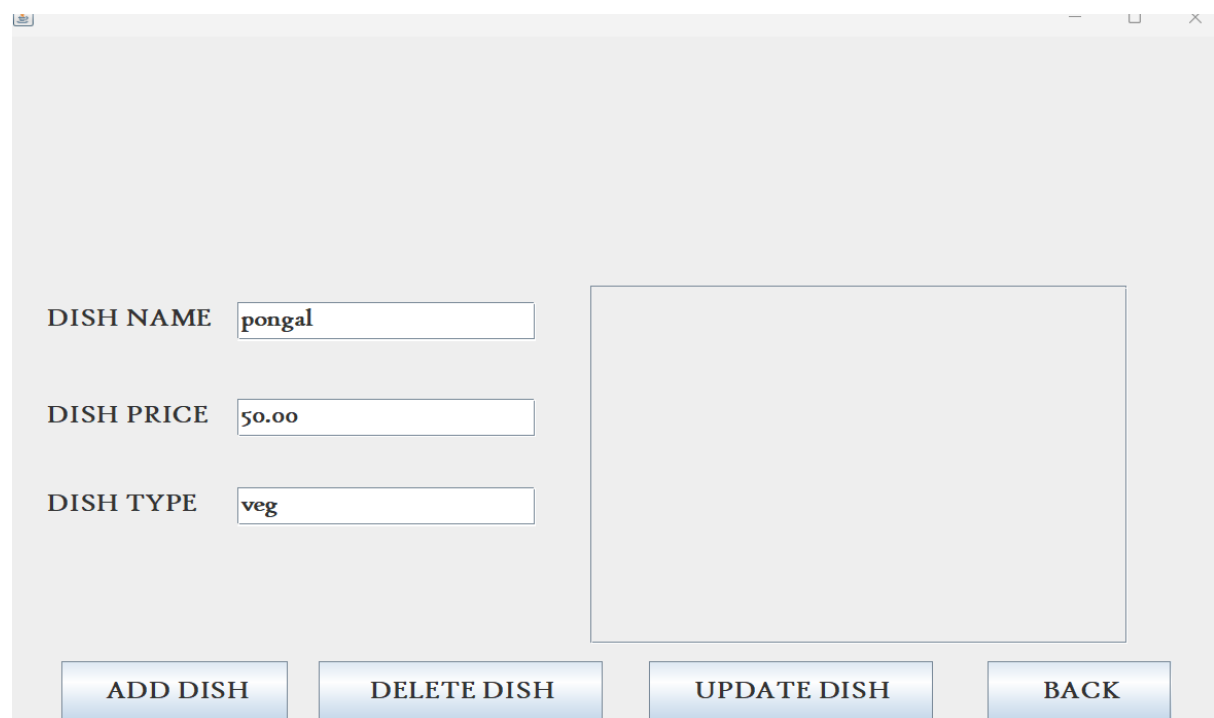
id	itemName	Price	Type
1	fish	4500.00	american
2	kothu parotha	50.00	fast food
3	poori	45.00	veg

3 rows in set (0.00 sec)

Delete dish:

```
mysql> select *from restaurant;
+----+-----+-----+-----+
| id | itemName | Price  | Type   |
+----+-----+-----+-----+
| 1  | fish     | 4500.00 | american |
| 3  | poori    | 45.00  | veg     |
+----+-----+-----+-----+
2 rows in set (0.00 sec)
```

Update dish:



DISH NAME

DISH PRICE

DISH TYPE

```
mysql> select *from restaurant;
+----+-----+-----+-----+
| id | itemName | Price  | Type   |
+----+-----+-----+-----+
| 1  | fish     | 4500.00 | american |
| 3  | poori    | 45.00  | veg     |
| 8  | fish     | 4500.00 | american |
| 9  | pongal   | 50.00  | veg     |
+----+-----+-----+-----+
4 rows in set (0.00 sec)
```

E) DATABASE CONNECTIVITY:

In this project we have used JDBC (Java Database Connectivity) for connecting to SQL database. It ensures seamless data interaction, platform independence, flexibility, and performance optimization.

Key features include the management, SQL execution. Establishing a connection involves driver registration, connection URL setup, authentication, and using `getConnection()`.

Best practices encompass connection pooling, prepared statements, resource management, error handling, and security measures. JDBC enhances application performance, security, and data management.

F) REPORT:

```
mysql> select * from roomcutomer;
```

id	name	address	phone	roomtype	bedtype	price	status
13	Abi	Assam	7894552158	Ac	One	2000	0
14	Bavi	Bengal	7894552648	Ac	Two	8000	0
15	Cary	Culcatta	76781552648	Non-Ac	Two	3000	0
16	Dinesh	Dharmapuri	98745452648	Non-Ac	One	2000	0
17	Emily	Chennai	8548155874	Ac	One	20000	0
18	Franklin	Chennai	8588469253	Ac	Two	10000	0
19	Gorgiea	Trippur	8523697415	Non-Ac	Two	2000	0
20	Harini	Salem	8521875415	Ac	One	5000	0
21	Sany	Karur	74721875415	Non-Ac	Two	8000	0
22	Jack	London	7472181585	Ac	One	4000	0
23	Jill	Hosur	7472478685	Ac	One	24000	0
24	Jungkook	Banglore	9562387415	Ac	One	40000	0
25	Jeon	Salem	985236715	Non-Ac	Two	2000	0
26	Lokesh	Asathambati	9855236874	Non-Ac	Two	6000	0
27	Fina	Hosur	9855236875	Ac	Two	12000	0
28	Kamla	Chennai	9489236875	Non-Ac	Two	12000	0
29	shaji	kerala	9489236345	Non-Ac	Two	6000	0
30	shahid kapoor	Bombay	948923789	Non-Ac	One	3000	0
31	Matheesha Pathirana	Srilanka	9842325684	Ac	One	40000	0
32	Subhman Gill	Maharashtra	8562348789	Ac	Two	14000	0
33	Timothe	Australia	8562348789	Ac	Two	20000	0
34	chaeunwoo	Korea	854484156	Ac	Two	30000	0
35	Adharvaa	Chennai	8544841458	Ac	Two	60000	0

23 rows in set (0.00 sec)

G) CONCLUSION:

In conclusion, the hotel management system project aims to streamline operations, enhance guest experiences, and optimize revenue generation. By improving reservation and booking management, implementing a centralized guest database, and enhancing communication channels.

The project's successful implementation will transform the hotel into a guest-centric and revenue-optimized establishment, leading to increased profitability. We have developed the project in an efficient manner and understandable way. The data schema and front-end development are user friendly ones.