

## INTRODUCTION :

The Hostel Reservation System is a Java application developed to streamline the process of managing hostel reservations. It provides a comprehensive set of features to facilitate reservation creation, viewing, updating, and deletion. The system leverages JDBC (Java Database Connectivity) to interact with a MySQL database, ensuring efficient data management and retrieval.

## SYSTEM ARCHITECTURE :

The system architecture follows a client-server model, where the Java application serves as the client interacting with the MySQL database server. It utilizes JDBC to establish a connection to the database and perform CRUD (Create, Read, Update, Delete) operations on reservation data.

## CLASS OVERVIEW :

The main class of the system is `HostelReservationSystem`, which contains the entry point `main` method and various utility methods for handling reservations. Other classes include `java.sql.DriverManager`, `java.sql.Connection`, `java.sql.Statement`, `java.sql.ResultSet`, and `java.util.Scanner`.

## METHOD DETAILS :

### **`reserveRoom(Connection connection , Scanner scanner)`**

- Allows users to reserve a room by entering guest details.
- Constructs an SQL INSERT statement to add reservation data to the database.

### **`viewReservations(Connection connection)`**

- Retrieves and displays all current reservations stored in the database.
- Executes an SQL SELECT statement to fetch reservation data and formats it for display.

### **getRoomNumber(Connection connection, Scanner scanner)**

- Prompts users to enter a reservation ID and guest name to retrieve the corresponding room number.
- Constructs an SQL SELECT statement with a WHERE clause to fetch the room number based on the provided reservation ID and guest name.

### **updateReservation(Connection connection , Scanner scanner)**

- Enables users to update an existing reservation by providing a reservation ID.
- Prompts users to enter new guest details and constructs an SQL UPDATE statement to modify the reservation.

### **deleteReservation(Connection connection, Scanner scanner)**

- Allows users to delete a reservation from the database by specifying the reservation ID.
- Constructs an SQL DELETE statement to remove the reservation based on the provided ID.

## **DATABASE CONNECTIVITY**

The application connects to a MySQL database named "hostel" running locally on port 3306. It utilizes the JDBC API to establish a connection to the database using the provided URL, username, and password.

## **ERROR HANDLING**

The application handles exceptions such as `ClassNotFoundException`, `SQLException`, and `InterruptedException`. It prints error messages to the console to inform the user about any database-related issues or unexpected errors.

## **USAGE :**

Users can interact with the application by selecting options from the menu displayed on the console. Each option corresponds to a specific operation related to hostel reservations, such as reserving rooms, viewing reservations, updating reservation details, and deleting reservations.

## **CONCLUSION :**

The Hostel Reservation System offers a convenient and efficient solution for managing hostel reservations. With its user-friendly interface and robust database connectivity, the system simplifies reservation management tasks and ensures smooth operation.

## **FUTURE ENHANCEMENTS**

Future enhancements to the system may include :

- Implementing user authentication and authorization features.
- Adding support for multi-threading operations to improve performance.
- Enhancing the user interface with graphical components for a more intuitive experience.

HOSTEL RESERVATION SYSTEM

Version control

HostelReservationSystem

HostelReservationSystem.java

Run HostelReservationSystem

```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.4\lib\idea_rt.jar=64166:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.4\bin" -Didea.config.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.4\conf -Didea.copyright.profiles=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.4\copyright -Didea.log=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.4\log -Didea.platform.prefix=JDK -Didea.vendor.id=jetbrains -Didea.version=2023.3.4 -jar C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.4\bin\idea_rt.jar=64166:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2023.3.4\bin
```

```
HOSTEL MANAGEMENT SYSTEM
1. Reserve a room 🟡
2. View Reservations 📄
3. Get Room Number 🏠
4. Update Reservations ✅
5. Delete Reservations ❌
0. Exit 🚪
Choose an option ➡️: 1
Enter guest name: V.T.BHARGAV
Enter room number: 07
Enter contact number: 8074588232
Reservation successful!

HOSTEL MANAGEMENT SYSTEM
1. Reserve a room 🟡
2. View Reservations 📄
3. Get Room Number 🏠
4. Update Reservations ✅
5. Delete Reservations ❌
0. Exit 🚪
Choose an option ➡️: 1
Enter guest name: RAVI TEJA
Enter room number: 07
Enter contact number: 8074588232
Reservation successful!

HOSTEL MANAGEMENT SYSTEM
```

HOSTEL RESERVATION SYSTEM > src > HostelReservationSystem > main

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Search

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HOSTEL RESERVATION SYSTEM

Version control

HostelReservationSystem

HostelReservationSystem.java

Run HostelReservationSystem

```
4. Update Reservations ✅
5. Delete Reservations ❌
0. Exit 🚪
Choose an option ➡️: 4
Enter reservation ID to update: 4
Enter new guest name: CAPTAIN BHARGAV
Enter new room number: 07
Enter new contact number: 8074588232
Reservation updated successfully!

HOSTEL MANAGEMENT SYSTEM
1. Reserve a room 🟡
2. View Reservations 📄
3. Get Room Number 🏠
4. Update Reservations ✅
5. Delete Reservations ❌
0. Exit 🚪
Choose an option ➡️: 2
Current Reservations:
+-----+-----+-----+-----+-----+
| Reservation ID | Guest           | Room Number | Contact Number | Reservation Date |
+-----+-----+-----+-----+-----+
| 4              | CAPTAIN BHARGAV | 7           | 8074588232     | 2024-03-09 19:44:59.0 |
| 5              | RAVI            | 7           | 8074588232     | 2024-03-09 19:45:32.0 |
+-----+-----+-----+-----+-----+

HOSTEL MANAGEMENT SYSTEM
1. Reserve a room 🟡
2. View Reservations 📄
3. Get Room Number 🏠
```

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HOSTEL RESERVATION SYSTEM

Version control

HostelReservationSystem

HostelReservationSystem

HostelReservationSystem.java

Run HostelReservationSystem

HOSTEL MANAGEMENT SYSTEM

1. Reserve a room 🏠

2. View Reservations 📄

3. Get Room Number 🏠

4. Update Reservations ✅

5. Delete Reservations ❌

0. Exit 🏠

Choose an option 🖱️: 2

Current Reservations:

Reservation ID	Guest	Room Number	Contact Number	Reservation Date
4	CAPTAIN BHARGAV	7	8074588232	2024-03-09 19:44:59.0

HOSTEL MANAGEMENT SYSTEM

1. Reserve a room 🏠

2. View Reservations 📄

3. Get Room Number 🏠

4. Update Reservations ✅

5. Delete Reservations ❌

0. Exit 🏠

Choose an option 🖱️: 0

Exiting System.....

ThankYou For Using Hotel Reservation System!!!

Process finished with exit code 0

HOSTEL RESERVATION SYSTEM > src > HostelReservationSystem > main

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