

# **Software Requirements and Design Document**

**for**

## **Stellar Stays - Hotel Management System**

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# 1. Introduction

## 1.1 Purpose

The purpose of this document is to define the software requirements for the Hotel Management System (HMS) which has a global scope. This system is designed to streamline and manage various operations in a hotel, including room bookings, food orders, housekeeping, and inventory management. The document serves as a reference for the development team and stakeholders to ensure a common understanding of the system's functionalities. This SRS covers the entire system functionality as outlined in the provided use case and class diagrams.

## 1.2 Product Scope

The Hotel Management System is a comprehensive software solution designed to automate and manage the day-to-day operations of a hotel and associated services. Its primary objectives are to enhance customer experience, improve staff efficiency, and reduce manual errors.

Key features of the system include:

- Customer services such as booking rooms and tables, ordering food, and providing feedback.
- Staff management tasks like managing rooms, generating bills, and handling inventory.
- Administrative capabilities to facilitate gym usage, and handle housekeeping requests.

Our Hotel Management System aligns with modern business strategies by integrating technology to improve efficiency, customer satisfaction, and profitability. It addresses the need for a centralized and automated solution, replacing traditional manual processes.

## 1.3 Title

**Stellar Stays Hotel Management System: Enhancing Operational Efficiency and Customer Experience**

## 1.4 Objectives

The main objectives of the Hotel Management System are:

1. To automate and streamline hotel operations such as bookings, orders, and housekeeping.
2. To provide an intuitive and user-friendly interface for customers and staff.
3. To maintain accurate records for inventory, customer feedback, and financial transactions.
4. To enhance customer satisfaction by ensuring quick and efficient service.

## 1.5 Problem Statement

In traditional hotel operations, a significant amount of time and effort is spent on manual tasks such as booking management, order processing, and inventory tracking. These manual processes are prone to errors, inefficiencies, and delays, leading to reduced customer satisfaction and operational challenges.

This project addresses these issues by introducing an automated hotel Management System that integrates various operations into a single platform. By digitizing these tasks, this hotel Management system eliminates manual errors, speeds up service delivery, and provides valuable insights through reporting features (bill history, feedback etc). The system is not only cost-effective but also scalable, making it feasible for implementation in hotels of varying sizes and types.

# 2. Overall Description

## 2.1 Product Perspective

The Hotel Management System (HMS) is a **new, self-contained product** designed to integrate and streamline hotel operations. It consolidates various functionalities into a single software platform, replacing traditional manual processes and outdated, fragmented systems.

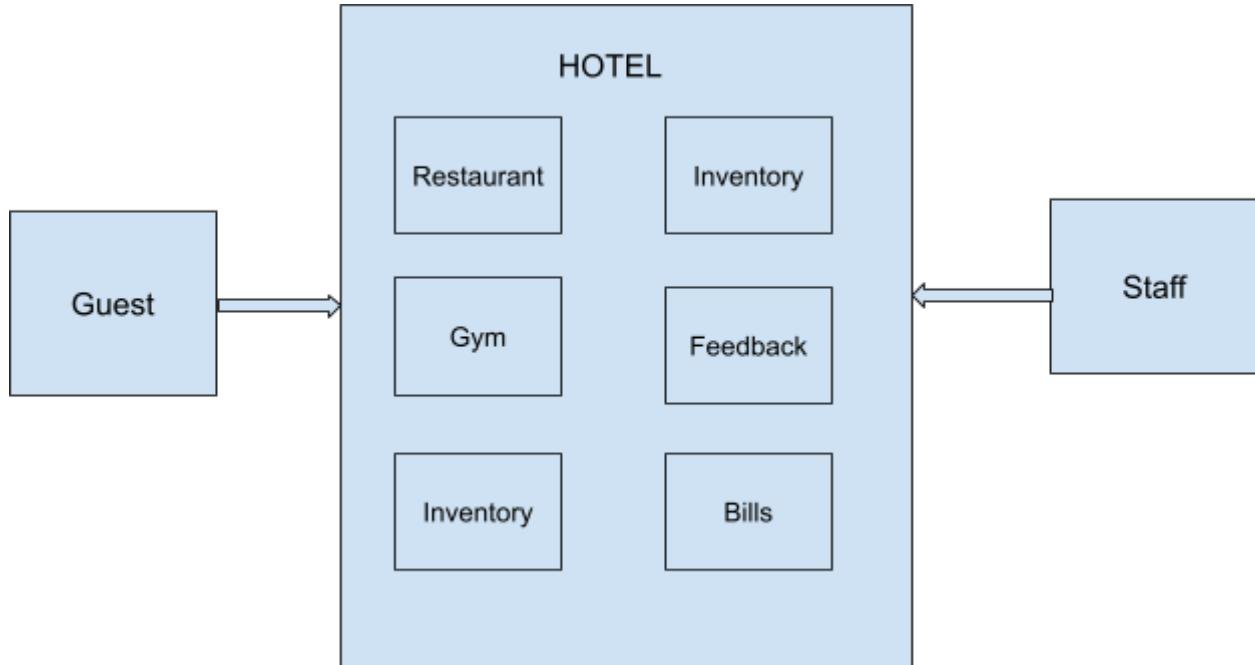
The HMS is intended to function as the core operational system for the hotel, providing seamless interaction between staff, customers, and administrative tasks. It can operate independently or interface with external systems such as payment gateways, reservation platforms, and customer feedback tools.

### **Context of the System**

The HMS is part of a broader restaurant management ecosystem. It interacts with the following components:

- **Customer Interface:** Handles reservations, orders, and feedback via a web or mobile application.
- **Staff Interface:** Manages bookings, housekeeping, inventory, and reporting.
- **External Systems:** Integrates with payment processors.

### **DIAGRAM:**



## 2.2 Product Functions

The HMS provides the following key functionalities:

### For Customers

- **Room Booking / Table Booking:** Allows customers to book rooms or tables based on availability.
- **Food Ordering:** Facilitates menu selection and order placement, both in-room and at tables.
- **Request Housekeeping Services:** Enables Customers to request any service required in their rooms while they are checked in.
- **Cancel Booking:** Allows customers to cancel the booking they have made for any room or table.
- **Feedback:** Collects customer reviews and stores them for management insights.

### For Staff

- **Housekeeping Management:** Enables staff to manage room conditions and stock complementary items.
- **Restaurant Management:** Enables staff to manage and restock Restaurant items.
- **Gym Management:** Enables staff to manage and restock Gym inventory.
- **Inventory Tracking:** Monitors stock levels for kitchen and housekeeping supplies.

### Administrative Functions

- **User Management:** Allows administrators to manage staff and user roles.
- **Billing and Payments:** Manages invoices and integrates with payment gateways.

## 2.3 List of Use Cases

For Guests:

- Check In/ Check Out
- Book Room
- Book Table

- Cancel Booking
- Request Housekeeping services
- Order Food
- Give Feedback
- Make payment

For Staff:

- Manage Rooms
- Handle Restaurant Services
- Handle Gym Services
- Update Inventory
- View Feedback
- Generate / View Bills

## 2.4 Extended Use Cases

### Fully Dressed Use Cases

#### Use-cases by Fiza

**★Name:** Request housekeeping service

**Scope:** Hotel Management System

**Level:** User goal

**Primary actors:** Guest

**Stakeholders and Interests:**

**Guests:** Want to request cleaning/other services for their room.

**Housekeeping staff:** Needs to be alerted for cleaning or maintenance.

**Hotel management:** Ensure that customer requests are fulfilled to uphold service standards.

**Pre-conditions:**

1. Guests are checked into the hotel.
2. Guest's room number is correctly registered.
3. Housekeeping services are available.
4. Housekeeping staff is available.

**Post-Conditions:**

1. Housekeeping request is successfully submitted.
2. Housekeeping staff are notified and requests are provided based on availability.
3. Guests received confirmation message of their request being submitted.
4. System logs housekeeping visits and marks the room serviced.

**Main Success Scenario:**

<b>Actor</b>	<b>System</b>
1. Guest access system to request housekeeping service	
	2. System displays housekeeping options (cleaning, restocking)
3. Guest selects a service	
	4. System records request and sends request to the housekeeping staff
5. Guest receives confirmation message	
6. Housekeeping staff complete request	
	7. System updates status of request.

**Extensions:**

**4a. Request already been submitted by the same guest.**

4a1. Guests are notified to be patient while their service is being handled

**★Name:** Handle Gym Services

**Scope:** Hotel Management System

**Level:** User goal

**Primary actors:** Gym Manager

**Stakeholders and Interests:**

**Gym Manager:** Oversees the gym's operation, reports missing or required stock, ensures equipment maintenance, and manages the gym schedule.

**Guests:** Expect well-maintained equipment, adequate stock, and operational gym facilities during designated hours.

**Hotel Manager:** Aims to maintain gym facilities as part of a superior guest experience and ensure smooth operations.

**Pre-conditions:**

1. The gym is operational and stocked with basic amenities and equipment.
2. Gym staff are available during working hours.
3. The system allows the Gym Manager to log and report stock levels and equipment status.

**Post-Conditions:**

1. Stock reports are successfully updated in the system, and requests for replenishment or maintenance are sent to the respective teams.
2. Equipment needing maintenance is flagged, and the maintenance schedule is updated.
3. Guests continue to have access to fully functional gym services.

**Main Success Scenario:**

Actor	System
1.Gym manager logs into the system to report equipment	
	2.System allows updates for missing stock
3.Gym manager reports missing stock	
	4.System logs the report and notifies the Main manager.
	4.System updates equipment status and stock levels once resolved.
5.Gym Manager reviews updates.	
	6.System confirms all services are operational and reports are closed.

**Extensions:**

**1a. System Login Failure:**

- **1a1.** Gym Manager is unable to log into the system due to incorrect credentials.
- **1a2.** System prompts the Gym Manager to reset their password or contact technical support.

**8a. Duplicate stock report submitted by Gym Manager:**

- **8a1.** Gym Manager unintentionally submits a stock replenishment report for items already requested.
- **8a2.** System detects the duplication and prompts the Gym Manager for clarification.
- **8a3.** If confirmed as redundant, the system cancels the duplicate request.

**★Name:** Give Feedback

**Scope:** Hotel Management System

**Level:** User goal

**Primary actors:** Guest

**Stakeholders and Interests:**

**Guests:** Wants to provide an overall feedback to the restaurant.

**Manager:** Interested in gathering feedback to improve quality and customer satisfaction.

**Staff:** Interested in knowing how their service was perceived to improve their performance.

**Pre-conditions:**

1. Guests has finished dining/staying and have access to the feedback form
2. Restaurant system for feedback is operational.
3. Guests have not provided the feedback previously for the same experience.

**Post-Conditions:**

1. Feedback successfully recorded and stored.
2. Feedback is available for management to review.
3. System confirms feedback submission with a confirmation message.

**Main Success Scenario:**

Actor	System
1. Guests request feedback form	
	2. System provides access to form
	3. System displays fields for rating/comment
4. Guests fill in the form	
	5. System verifies if all fields are complete and valid
6. Guests submit the feedback form	
	7. System stored feedback form for future view
	8. System shows a confirmation dialogue

**Extensions:**

**4a. Guests submits empty form**

4a1. Guests are asked to fill out the form.

**6a. System fails to store feedback due to network error/ system down**

6a1. System alert guests that feedback could not be submitted and are asked to resubmit the form

**★Name:** View Feedback

**Scope:** Hotel Management System

**Level:** User goal

**Primary actors:** Staff

**Stakeholders and Interests:**

**Supervisor:** Interested in reviewing customer feedback to identify areas for improvement.

**Guest:** Want their feedback to be acknowledged and considered for improvement.

**Staff:** Want to analyze feedback for improving business performance

**Pre-conditions:**

1. Staff is logged into the system.
2. Feedback entries are submitted by the guests and stored by the system.
3. System is operational and able to retrieve feedback.

**Post-Conditions:**

1. Staff successfully views feedback
2. Feedback displayed clearly, including ratings and comments.

**3. Main Success Scenario:**

Actor	System
1. Staff logs into the system	
	2. System verifies login credentials and grant access
3. Staff navigates to feedback section	
	4. System provides access to feedback section
5. Staff requests to view feedback	
	6. System retrieves stored feedback

	7. System shows list of feedback(sorted)
	8. System ensures feedback is displayed properly
9. Staff reviews the feedback	

**Extensions:**

**1a.** Staff enters the incorrect credentials

**1a1.** Staff is denied access and asked to enter the credentials again

**6a.** retrieval error from system

**6a1.** Staff is asked to try again.

**7a.** no feedback available

**7a1.** System displays the message of no feedback available

**8a.** Feedback displayed in unreadable format/missing data

**★ Name:** Manage rooms

**Scope:** Hotel Management System

**Level:** User goal

**Primary actors:** Staff

**Stakeholders and Interests:**

**Staff:** Needs to ensure that requested housekeeping services are provided.

**Guests:** expects a well-maintained room with necessary amenities.

**Management:** wants the room to be prepared efficiently to maintain high guest satisfaction.

**Pre-conditions:**

1. Staff is logged into the system with appropriate permissions.
2. Room exists in the system's database.
3. The system is operational

**Post-Conditions:**

The housekeeping service requested by a guest from a room is provided and deleted for requested housekeeping services.

**Main Success Scenario:**

Actor	System
1. Staff logs into the system/	
	2. System authenticates staff credentials

	and grants access to the room management.
3. Staff selects manage rooms option.	
	4. system displays requested housekeeping services.
5. Staff provides service to the guest.	
	6. System updates the service and deletes it from requested services.

**Extensions:**

**1a. Invalid staff credentials:**

1a1. System denies access and prompts the staff to re-enter credentials.

1a2. Staff re-enters valid credentials.

**10a. System fails to update the room status:**

10a1. System notifies the staff of a technical issue in updating the room status.

10a2. Staff is asked to retry.

## Use-Cases by Ambreen

**★Name:** Handle Restaurant Services

**Scope:** Hotel Management System

**Level:** User Goal

**Primary Actor:** Restaurant staff, guests

**Stakeholders and interests:**

- **Guests:** Want to order food conveniently.
- **Restaurant staff:** Need to be notified of orders serve them promptly.
- **Hotel Management:** Ensures quality service and a good guest experience.

**Preconditions:**

- The guest is checked into the hotel.

- The restaurant services are available.
- The restaurant staff are logged into the system.

**Postconditions:**

- The guest's order is recorded.
- Restaurant staff are notified of the order.
- The guest receives confirmation of their order.
- The restaurant service is completed.

**Main success scenario:**

Actor	System
1.The guest accesses the system to order food.	
	2.The system displays the restaurant menu and price.
3.The guest selects items to order.	
	4.The system records the order and sends it to the restaurant staff.
5.The guest receives confirmation of the booking.	
6.The restaurant staff fulfill the order or booking request and the guest is served.	
	7.The system updates the order table.

**Extensions:**

- 3a. The guest orders items in a negative number
  - 3a1. The guest is notified to enter valid quantity.

★Name:Update inventory

Scope:Hotel management system

**Level:** Supporting process

**Primary actor:** Hotel staff (Inventory manager)

**Stakeholders and Interests:**

- **Inventory Manager:** Ensures that inventory records are up to date.
- **Restaurant and Housekeeping Staff:** Need access to accurate inventory information.
- **Hotel Management:** Requires inventory data for efficient operations and cost control.

**Preconditions:**

- The inventory system is operational.
- The inventory manager is logged into the system.

**Postconditions:**

- Inventory levels are updated.
- The system logs the update.
- Staff members are notified of any significant changes (e.g., low stock).

Actor	System
1. The inventory manager logs into the system.	
	2. The system displays current inventory levels.
3. The inventory manager selects an item to update.	
4. The inventory manager enters the new quantity.	
	5. The system updates the inventory record.
	6. The system notifies relevant staff members of the update.
	7. The system logs the inventory update.

**Extensions:**

- 1a. Inventory manager enters invalid credentials:
  - 1a1. The manager is prompted to re-enter the credentials.
- 3a. The inventory manager selects an item that doesn't exist.

- **3a1.** The system prompts the manager to verify the item or add a new one.
- **4a.** The system fails to update the inventory.
  - **4a1.** The manager is prompted to retry or contact technical support.

**★Name:**Make payment

**Scope:** Hotel Management System

**Level:** User goal

**Primary Actor:** Guest

**Stakeholders and Interests:**

- **Guests:** Want to settle bills for services or room stays smoothly.
- **Hotel Management:** Ensures payments are processed efficiently to maintain revenue flow.
- **Accounting Staff:** Need access to accurate payment records for financial reporting.

**Preconditions:**

- The guest has ordered food or completed a stay.
- The payment system is operational.
- The guest has sufficient funds for payment.

**Postconditions:**

- The payment is successfully processed.
- The system logs the transaction.
- A receipt is issued to the guest.

Actor	System
1.The guest accesses the system to make a payment.	
	2.The system displays the guest's outstanding balance.
3.The guest selects a payment method.	
	4.The system processes the payment.

5.The guest receives confirmation and a receipt.	
	6.The system updates the payment status.

#### Extensions:

- **4a.** The payment fails due to insufficient funds.
  - **4a1.** The system notifies the guest of the failure and allows them to retry with another method.

★ **Name:**Check in/out

**Scope:** Hotel Management System

**Level:** User goal

**Primary Actor:** Guest

**Stakeholders and Interests:**

- **Guests:** Want to check in and check out quickly and efficiently.
- **Hotel Staff:** Need to manage room availability and guest records efficiently.
- **Hotel Management:** Ensures guest satisfaction and room utilization.

**Preconditions:**

- Rooms are available for check-in.
- The guest has a valid reservation (for check-in) or an existing record (for check-out).

**Postconditions:**

- The guest is successfully checked in or out.
- Room availability is updated.
- The system logs the transaction.

Actor	System
1.The guest accesses the system to check in or out.	
	2.The system verifies the guest's reservation or stay details.
3.The guest confirms their check-in or out request.	

	4.The system updates the guest record and room availability.
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#### Extensions:

- **2a.** The system cannot verify the guest's reservation.
  - **2a1.** The guest is shown an error that he is not verified.
- **4a.** The system fails to update room availability.
  - **4a1.** The guest is notified of the error.

**★Name:** Book/Reserve room

**Scope:** Hotel Management System

**Level:** User goal

**Primary Actor:** Guest

#### Stakeholders and Interests:

- **Guests:** Want to book rooms according to their preferences.
- **Hotel Staff:** Need to manage room availability efficiently.
- **Hotel Management:** Ensures that rooms are booked optimally for revenue.

#### Preconditions:

- Rooms are available for booking.
- The guest has valid personal information.

#### Postconditions:

- The room is successfully reserved.
- The system logs the booking.
- The guest receives a confirmation.

Actor	System
1.The guest accesses the system to book a room.	
	2.The system displays available rooms.
3.The guest selects a room and enters their	

details.	
	4.The system confirms the reservation.
5.The guest receives confirmation and booking details.	
	6.The system logs the reservation.

#### Extensions:

- **2a.** No rooms are available.
  - **2a1.** The guest is notified and offered alternative dates.
- **4a.** The system fails to reserve the room.
  - **4a1.** The guest is prompted to retry or contact the hotel for assistance.

### Use-cases by Athaar

#### ★ Name: Order Food

**Scope:** Hotel Management System

**Level:** User goal

**Primary Actor:** Guest

**Stakeholders and Interests:**

- **Guests:** Want to order food quickly and conveniently from their rooms.
- **Hotel Staff:** Need to manage food orders and ensure timely delivery.
- **Restaurant Management:** Ensures that food orders are processed efficiently to maintain customer satisfaction and optimize resources.

#### Preconditions:

- The guest is checked-in into the system.
- The menu is available and up-to-date.
- The kitchen is operational and has the ordered items in stock.

#### Postconditions:

- The food order is successfully placed.
- The system logs the order.
- The guest receives confirmation of their order.

Actor	System
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1.The guest accesses the food ordering system.	
	2.The system displays the menu options.
3.The guest selects items and specifies the quantity.	
4.The guest confirms the order and provides delivery details (if necessary).	
	5.The system processes the order and sends it to the restaurant staff.
	6. The guest receives a confirmation of the order with estimated delivery time.
	7.The system logs the order for record-keeping and billing.

### **Extensions:**

**4a.** Some selected items id or quantity is invalid.

- **4a1.** The system notifies the guest to enter valid quantity and id.

**6a.** The system fails to process the order due to a technical issue.

- **6a1.** The guest is prompted to retry or contact the hotel staff for assistance.

## **★ Name: Book Table**

**Scope:** Hotel Management System

**Level:** User goal

**Primary Actor:** Guest

**Stakeholders and Interests:**

- **Guests:** Want to book tables for dining at preferred times.
- **Restaurant Staff:** Need to manage table availability and reservations efficiently.
- **Restaurant Management:** Ensures that tables are booked optimally to maximize customer satisfaction and revenue.

### **Preconditions:**

- The guest is logged into the system.
- Tables are available for booking.

- The guest has valid personal information.

**Postconditions:**

- The table is successfully reserved.
- The system logs the booking.
- The guest receives a confirmation of the reservation.

Actor	System
1.The guest accesses the table booking system.	
	2.The system displays available dining times and table options.
3.The guest selects a preferred date, time, and table.	
	4.The system verifies the availability of the selected table and time.
5.The guest confirms the reservation and provides any additional details (e.g., number of guests, special requests).	
	6.The system processes the reservation.
	7.The guest receives confirmation of the table reservation with details.
	8.The system logs the reservation for record-keeping.

**Extensions:**

**2a.** No tables are available at the selected time.

- **2a1.** The system notifies the guest and offers alternative times or dates.

**4a.** The system fails to verify availability.

- **4a1.** The guest is prompted to retry or contact restaurant staff for assistance.

**5a.** The guest changes their mind about the reservation.

- **5a1.** The guest can modify their reservation before final confirmation.

## ★ Name: Cancel Booking

**Scope:** Hotel Management System

**Level:** User goal

**Primary Actor:** Guest

**Stakeholders and Interests:**

- **Guests:** Want to cancel their bookings when necessary without penalties if within the cancellation policy.
- **Hotel Staff:** Need to manage cancellations efficiently to maintain room availability.
- **Hotel Management:** Ensures that cancellation policies are enforced and that revenue is managed effectively.

**Preconditions:**

- The guest is logged into the system.
- The guest has an existing booking that is eligible for cancellation.

**Postconditions:**

- The booking is successfully canceled.
- The system logs the cancellation.
- The guest receives confirmation of the cancellation.

Actor	System
1.The guest accesses their booking details.	
	2.The system displays the guest's current bookings.
3.The guest selects the booking they wish to cancel.	
	4.The system verifies that the booking is eligible for cancellation (based on policy).
5.The guest confirms the cancellation request.	
	6.The system processes the cancellation.
	7.The guest receives confirmation of the booking cancellation.

## **Extensions:**

- 6a.** The system fails to process the cancellation due to a technical issue.
  - **6a1.** The guest is prompted to retry or contact hotel staff for assistance.
- 5a.** The guest changes their mind about canceling.
  - **5a1.** The guest can cancel the cancellation process before final confirmation.

## **★ Name: Generate Bills**

**Scope:** Hotel Management System

**Level:** User goal

**Primary Actor:** Hotel Staff

**Stakeholders and Interests:**

- **Hotel Staff:** Want to ensure accurate billing for guests based on their stay and additional services used.
- **Guests:** Expect clear and transparent bills reflecting their usage and charges.
- **Hotel Management:** Aims to maintain financial accuracy and optimize revenue collection.

### **Preconditions:**

- The guest has completed their stay or is checking out.
- All services used by the guest have been recorded in the system.

### **Postconditions:**

- The bill is successfully generated and presented to the guest.
- The system logs the billing information for record-keeping.

<b>Actor</b>	<b>System</b>
1.The hotel staff member accesses the billing system.	
	2.The system displays a list of checked-out guests or guests ready for billing.

3.The staff member selects a guest to generate the bill for.	
	4.The system retrieves the guest's stay details and additional services used.
5.The staff member reviews the charges and applies any discounts or adjustments.	
	6.The system calculates the total bill amount and generates the bill.
7.The staff member presents the bill to the guest for review.	
	8.The system allows the guest to review the bill and request clarifications if needed.
9.The staff member processes the payment for the bill.	
	10.The system confirms payment and issues a receipt.
	11.  The system logs the billing transaction for record-keeping.

### **Extensions:**

**2a.** No guests are available for billing.

- **2a1.** The system notifies the staff member that there are no guests ready for billing.

**6a.** The system fails to calculate the total bill.

- **6a1.** The staff member is prompted to check for errors in the recorded services.

**8a.** The guest disputes a charge on the bill.

- **8a1.** The staff member reviews the charge and provides clarification or adjusts the bill if necessary.

### **★ Name: Generate Reports**

**Scope:** Hotel Management System

**Level:** User goal

**Primary Actor:** Hotel Management

**Stakeholders and Interests:**

- **Hotel Management:** Wants to analyze performance metrics to make informed decisions.
- **Hotel Staff:** Requires access to reports for operational insights and improvements.
- **Investors/Stakeholders:** Expect regular reports on hotel performance and profitability.

**Preconditions:**

- The hotel management is logged into the system.
- Data for generating reports is available and up-to-date in the system.

**Postconditions:**

- The report is successfully generated and available for review.
- The system logs the report generation activity.

Actor	System
1.The hotel management accesses the reporting system.	
	2.The system displays available report templates (e.g., occupancy, revenue, customer feedback).
3.The management selects the type of report to generate.	
	4.The system prompts for any specific parameters (e.g., date range, room types).
5.The management enters the required parameters and confirms the request.	
	6.The system processes the request and compiles the report data.
	7.The system generates the report and displays it for review.
8.The management reviews the report and can choose to export or print it.	

	9.  The system logs the report generation activity for future reference
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### **Extensions:**

**2a.** No reports are available for the selected criteria.

- **2a1.** The system notifies the management and suggests adjusting the parameters.

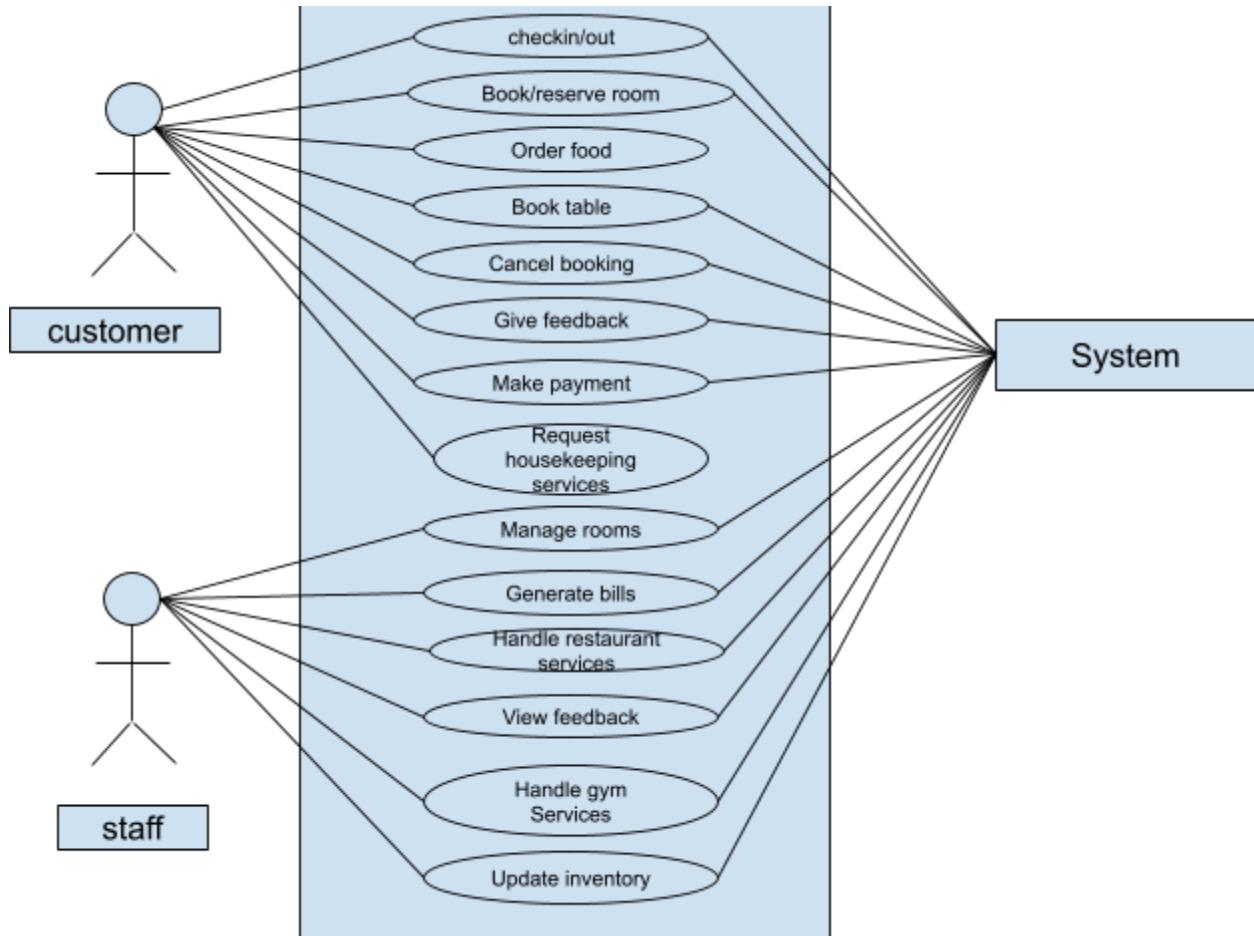
**6a.** The system fails to generate the report due to data errors.

- **6a1.** The management is prompted to verify data integrity or contact support for assistance.

**8a.** The management wants to save the report for future reference.

- **8a1.** The system provides options for exporting the report in various formats (e.g., PDF, Excel).

## 2.5 Use Case Diagram



## 3. Other Nonfunctional Requirements

### 3.1 Performance Requirements

- The system must respond to user actions (e.g., placing an order, booking a room, or generating a report) within **2 seconds** under normal load conditions.
- Inventory updates, report generation, and room availability status must be processed within **5 seconds**, even during peak system usage.
- The system's design should allow for future enhancements to handle multiple concurrent users. This may include database optimization, API enhancements, and load-balancing mechanisms.
- The system must maintain **99.9% availability**, excluding scheduled maintenance. This ensures the single user can rely on the system for uninterrupted operation during working hours.

## 3.2 Safety Requirements

### Safeguards:

1. **Data Backup and Recovery:**
  - HMS implements an automatic data backup system to securely store data at regular intervals.
2. **Input Validation:**
  - It uses input validation to ensure all data entered by users is within acceptable and safe parameters.
  - It displays meaningful error messages to guide users in case of invalid inputs.
3. **Transaction Logging:**
  - It records every significant action (e.g., data modifications, deletions) in the database implemented.
4. **Fail-Safe Mechanisms:**
  - If an error occurs, the system reverts to a safe state rather than attempting to continue operations in an unstable environment.
5. **Access Control:**
  - It implements multi-level user *authentication and restricts sensitive actions to authorized personnel.*

## 3.3 Security Requirements

**Authentication:** All users must be authenticated using **unique credentials** (e.g., username and password, with optional two-factor authentication for administrative roles).

**Role-Based Access Control:** System features must be restricted based on user roles (e.g., customer, staff, admin).

**Data Encryption:** Sensitive data, such as payment information and user credentials, must be encrypted.

## 3.4 Software Quality Attributes

**Reliability:** The system operates without failure under normal load.

**Usability:** The interface follows **intuitive design principles**, allowing new users to complete tasks without formal training within **15 minutes**.

**Maintainability:** The codebase follows **modular design principles** to allow updates and bug fixes with minimal impact on other components.

**Testability:** All features are tested, with a test coverage of at least **90%**.

**Portability:** The system must run on multiple operating systems, including **Windows, macOS, and Linux**.

## 3.5 Business Rules

### Role Restrictions:

- Only **staff** can access the management module.
- Customers can only modify or cancel their own bookings or request services.

**Payment Policy:** All bookings are paid at checkout if the user is an authenticated guest with a valid room / table booking.

**Feedback Visibility:** Feedback submitted by customers must only be visible to the staff.

## 3.6 Operating Environment

### Operating Environment

#### 1. Hardware Platform:

- **Device Name:** LAPTOP-JP9NMJD7
- **Processor:** AMD Ryzen 5 5500U with Radeon Graphics, 2.10 GHz
- **RAM:** 8.00 GB (7.33 GB usable)
- **System Type:** 64-bit operating system, x64-based processor

#### 2. Operating System:

- **Edition:** Windows 11 Home Single Language
- **Version:** 23H2
- **OS Build:** 22631.4317

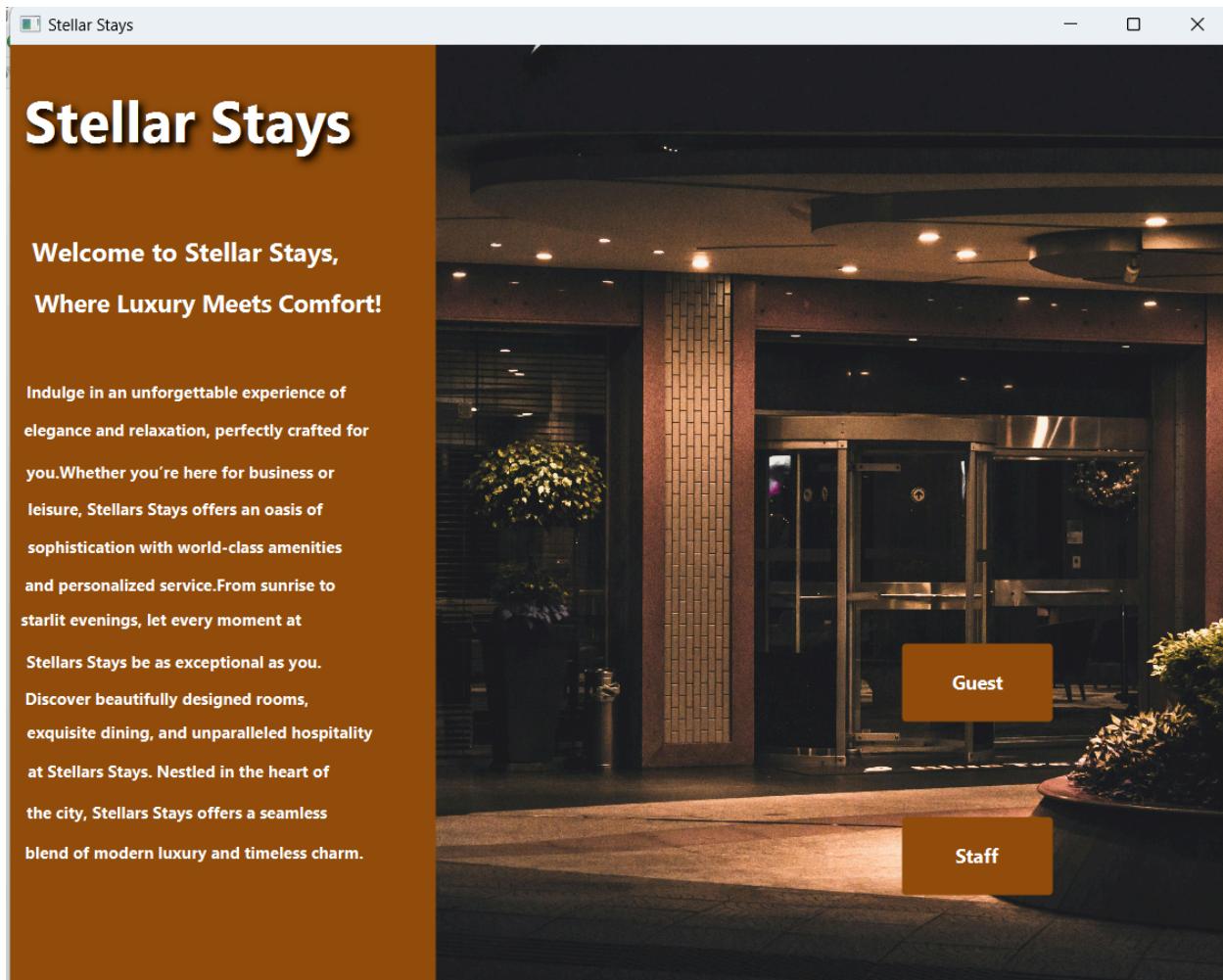
#### 3. Software Development Environment:

- **Programming Language:** Java
- **Integrated Development Environment (IDE):** Eclipse
- **Frameworks/Libraries:**
  - JavaFX (for building user interfaces)
  - Scene Builder (for designing JavaFX interfaces visually)
- **Database:** Microsoft SQL Server (for database management)

#### 4. Compatibility Considerations:

- The software must operate smoothly in the specified environment, ensuring compatibility with:
  - Windows, MacOS, Linux operating system.
  - JavaFX for GUI rendering.
  - Microsoft SQL Server for database connectivity.

### 3.7 User Interfaces



Solar Stays

## Available Rooms

Check In Date: 24/11/2024

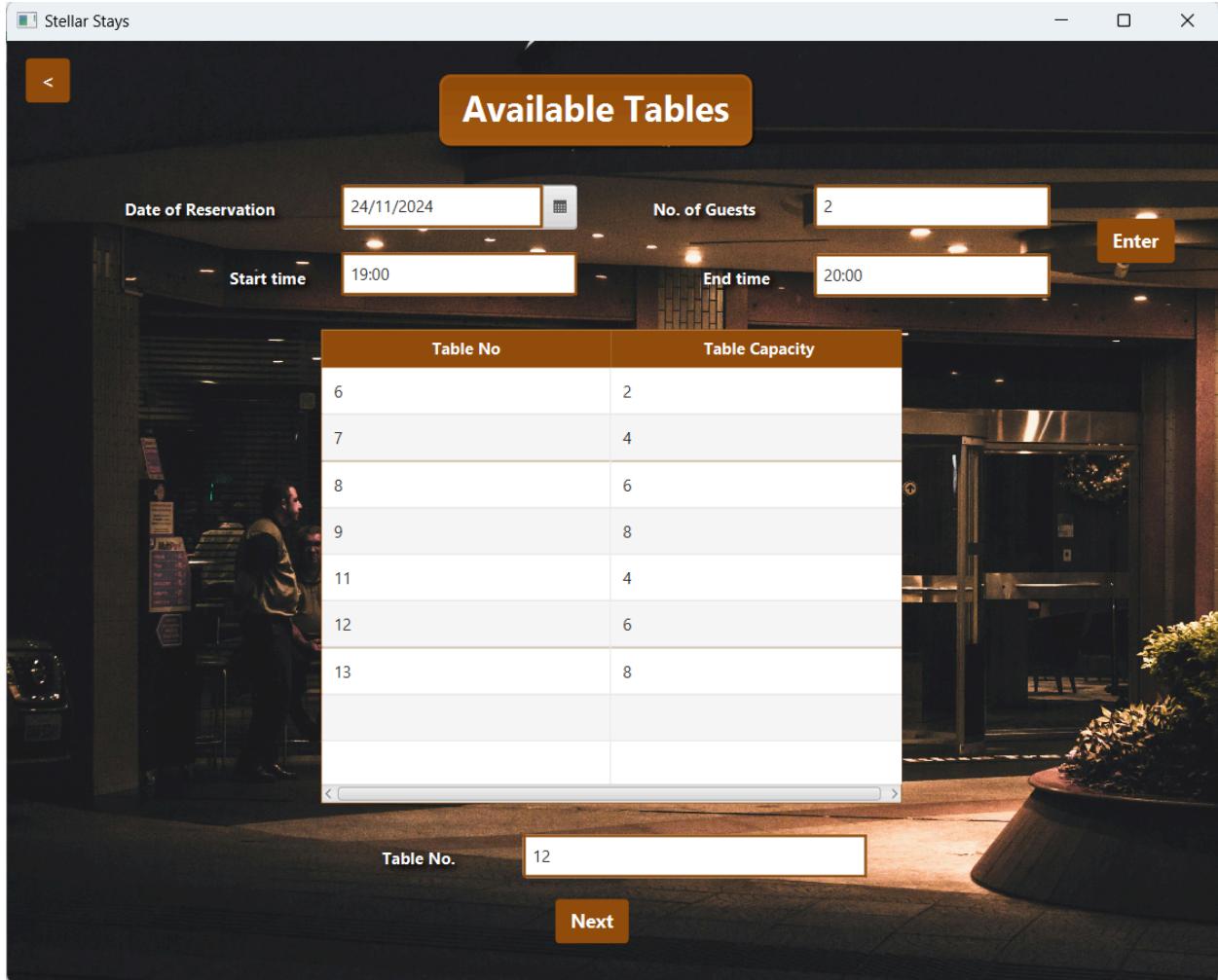
Check Out Date: 27/11/2024

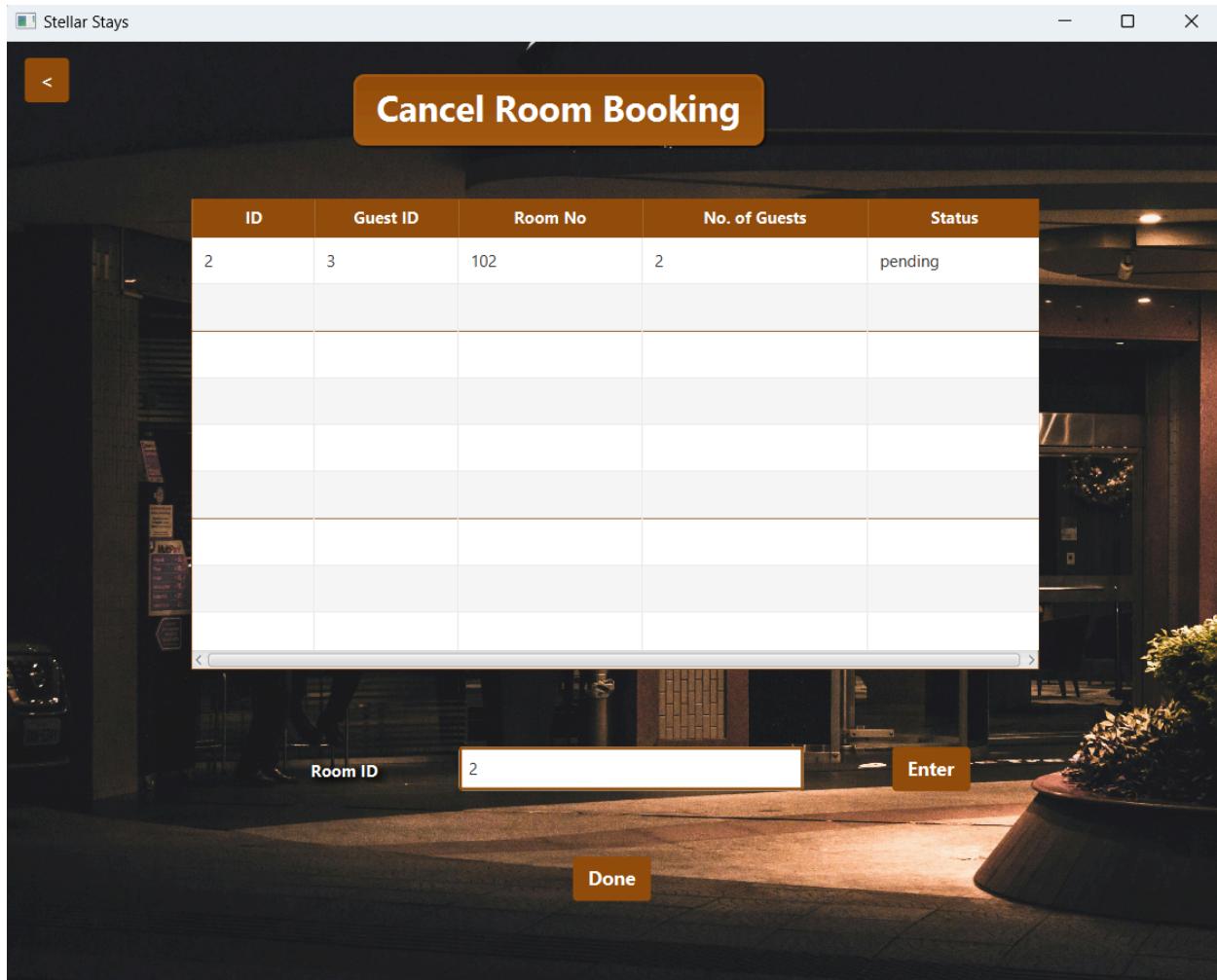
Enter

Room No.	Room Type	Price
101	Single room	6500.0
102	Standard double room	10000.0
103	Deluxe double room	17000.0
104	Junior suite	25000.0
105	Executive suite	32000.0
106	Single room	6500.0
107	Single room	6500.0
108	Single room	6500.0
109	Single room	6500.0

Room No.: 101

Next





Stellar Stays

## Order Food

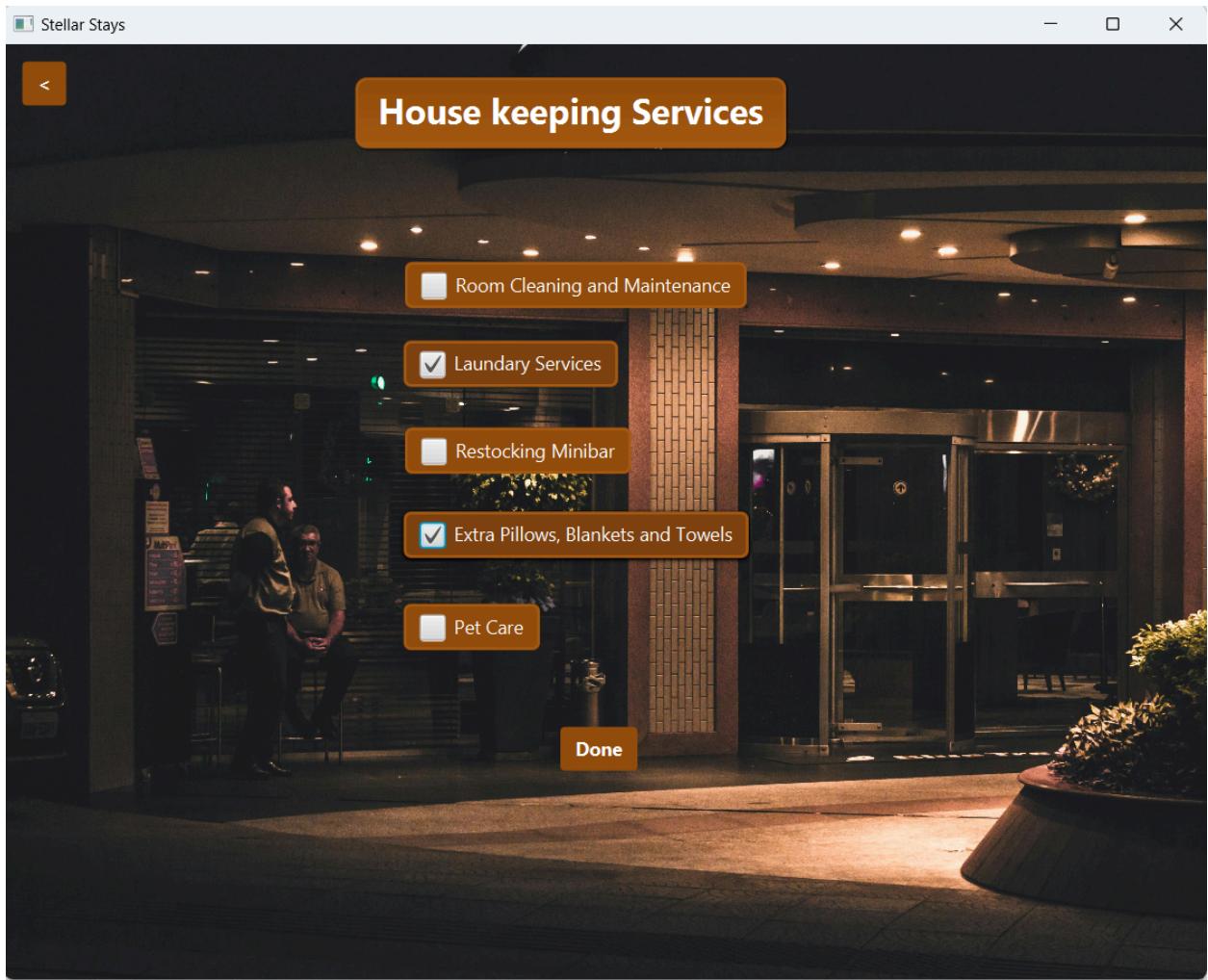
Item ID	Item Name	Price	Category
1	Mozzarella Sticks	300.0	appetizers
2	Spring Rolls	250.0	appetizers
3	Dumplings	350.0	appetizers
4	Wings	400.0	appetizers
5	Nuggets	280.0	appetizers
6	Garlic Bread	200.0	appetizers
7	Grilled Salmon	1200.0	main course
8	Chicken Handi	700.0	main course
9	Biryani	500.0	main course
10	Kabli Pulao	550.0	main course

Food ID: 10

Quantity: 2

Enter

Done



Solaris Stellar Stays

## Feedback

Food Quality (1-5)

Staff Attitude (1-5)

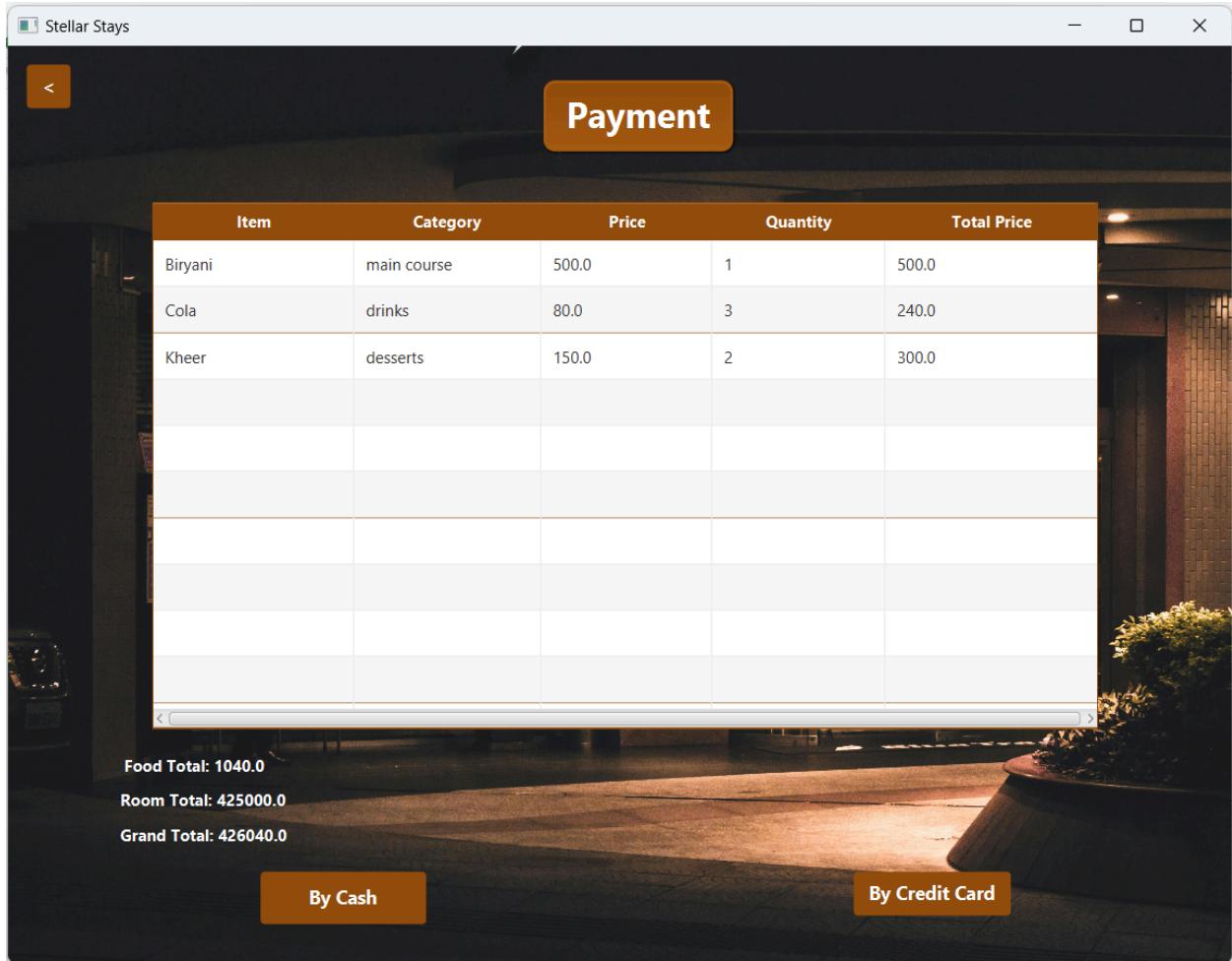
Room Service (1-5)

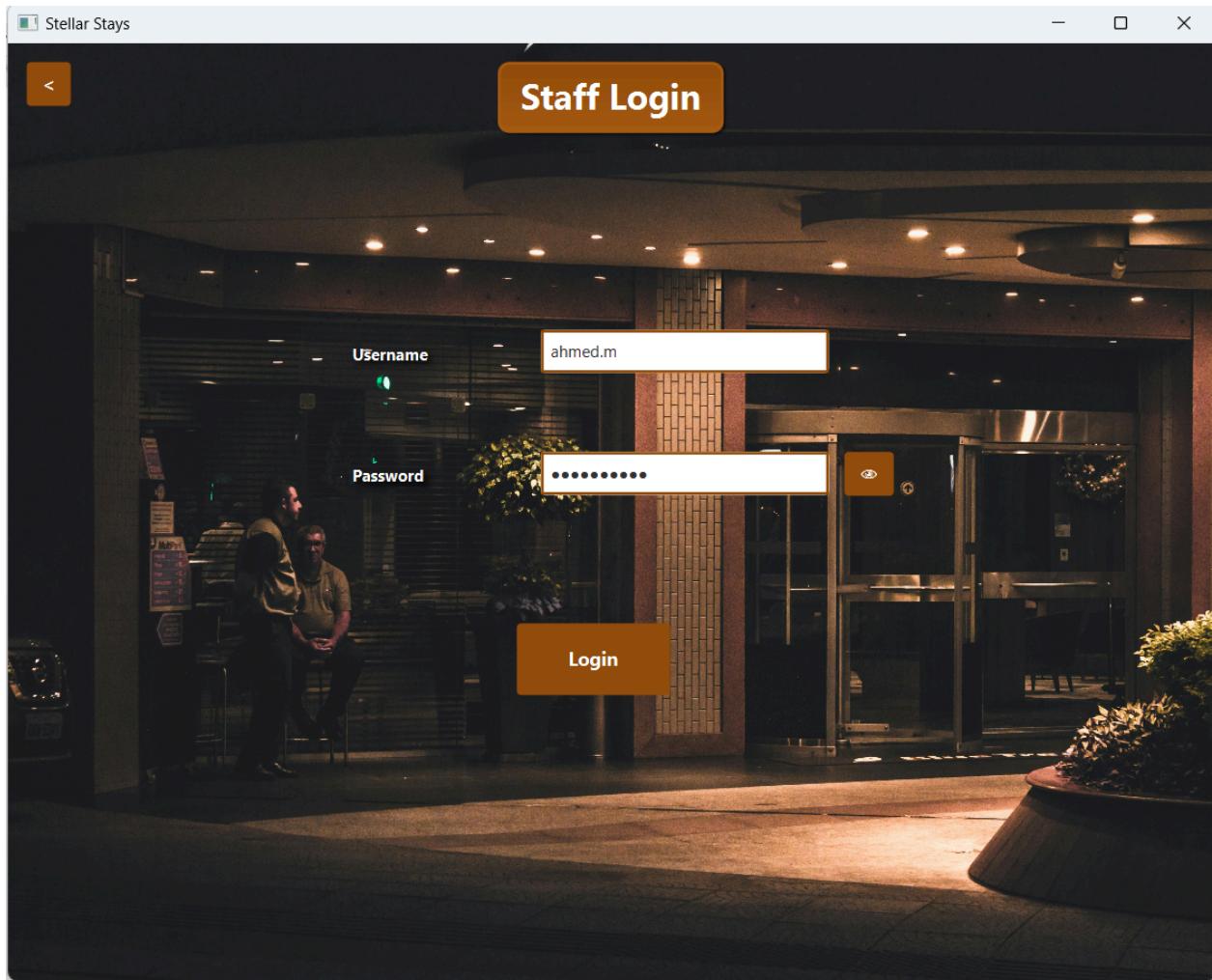
Cleanliness (1-5)

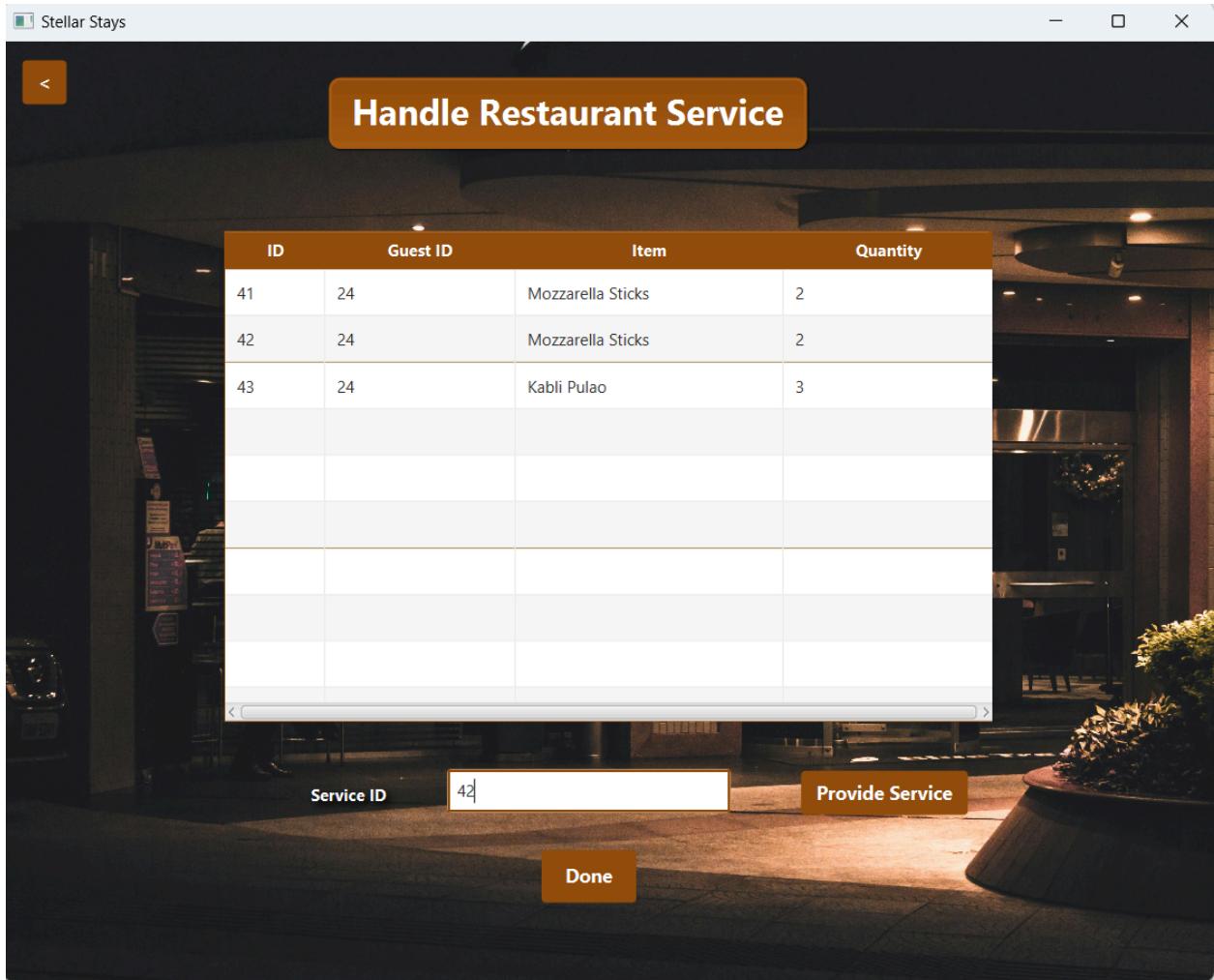
Overall Satisfaction (1-5)

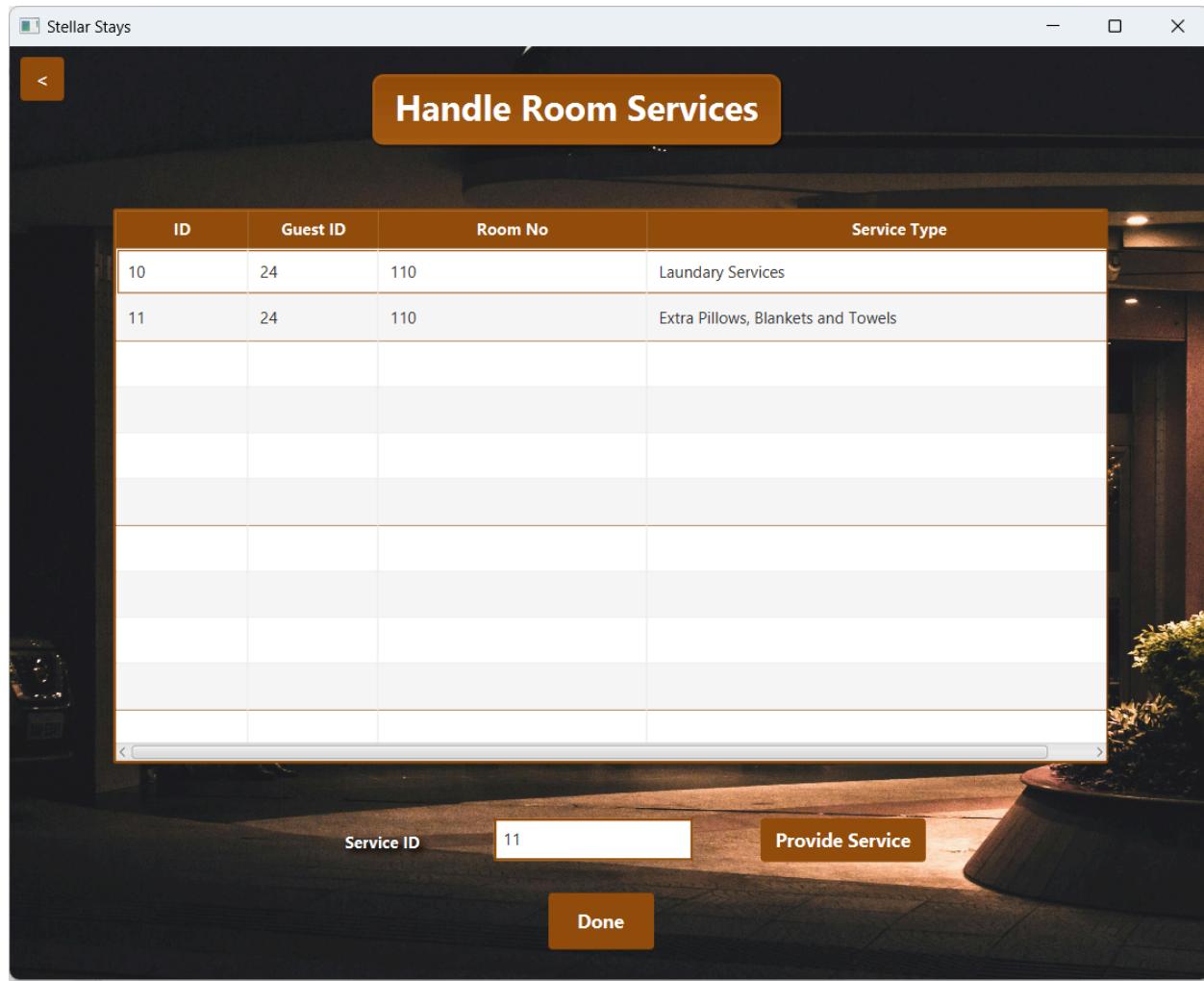
Gym Service (1-5)

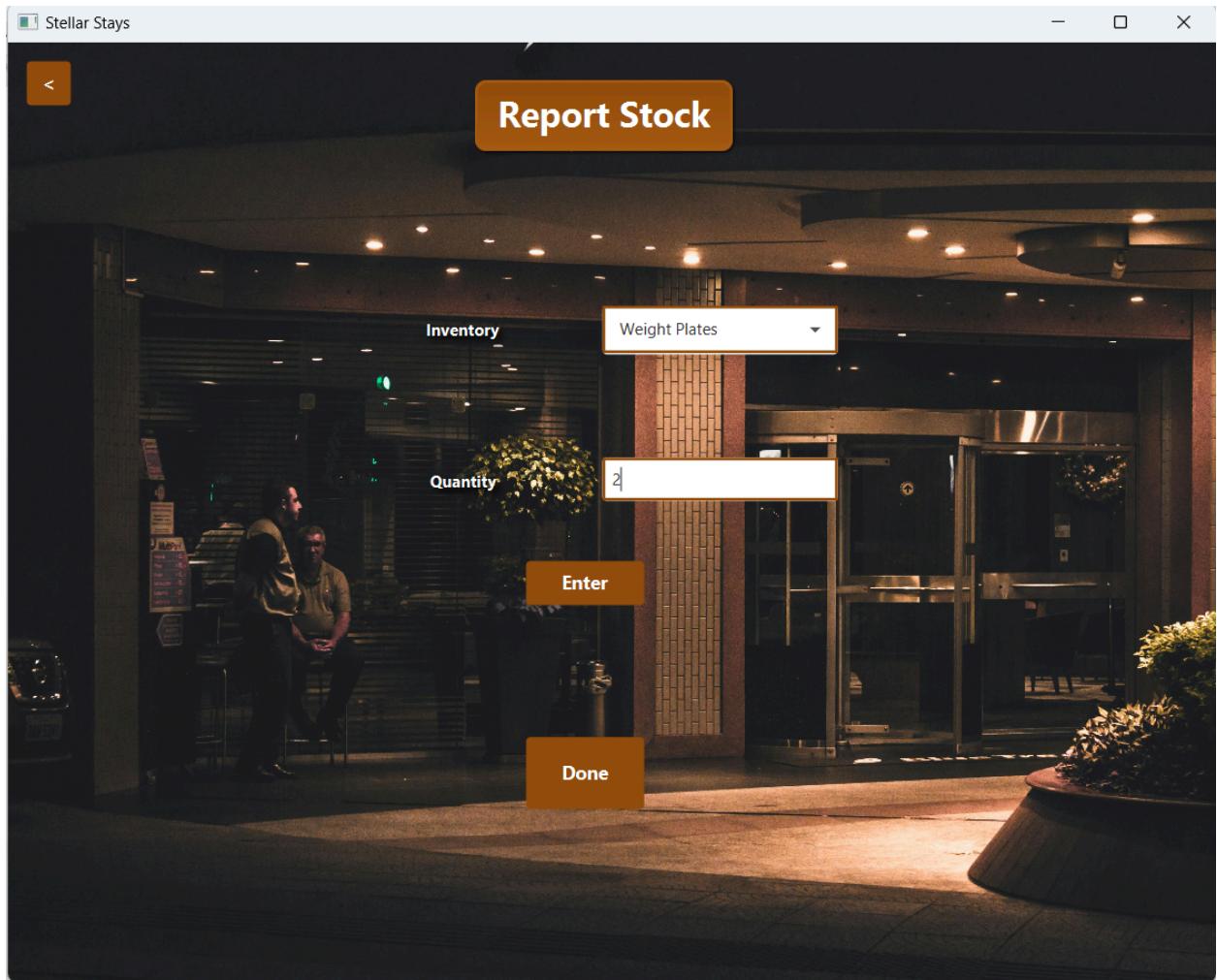
Submit

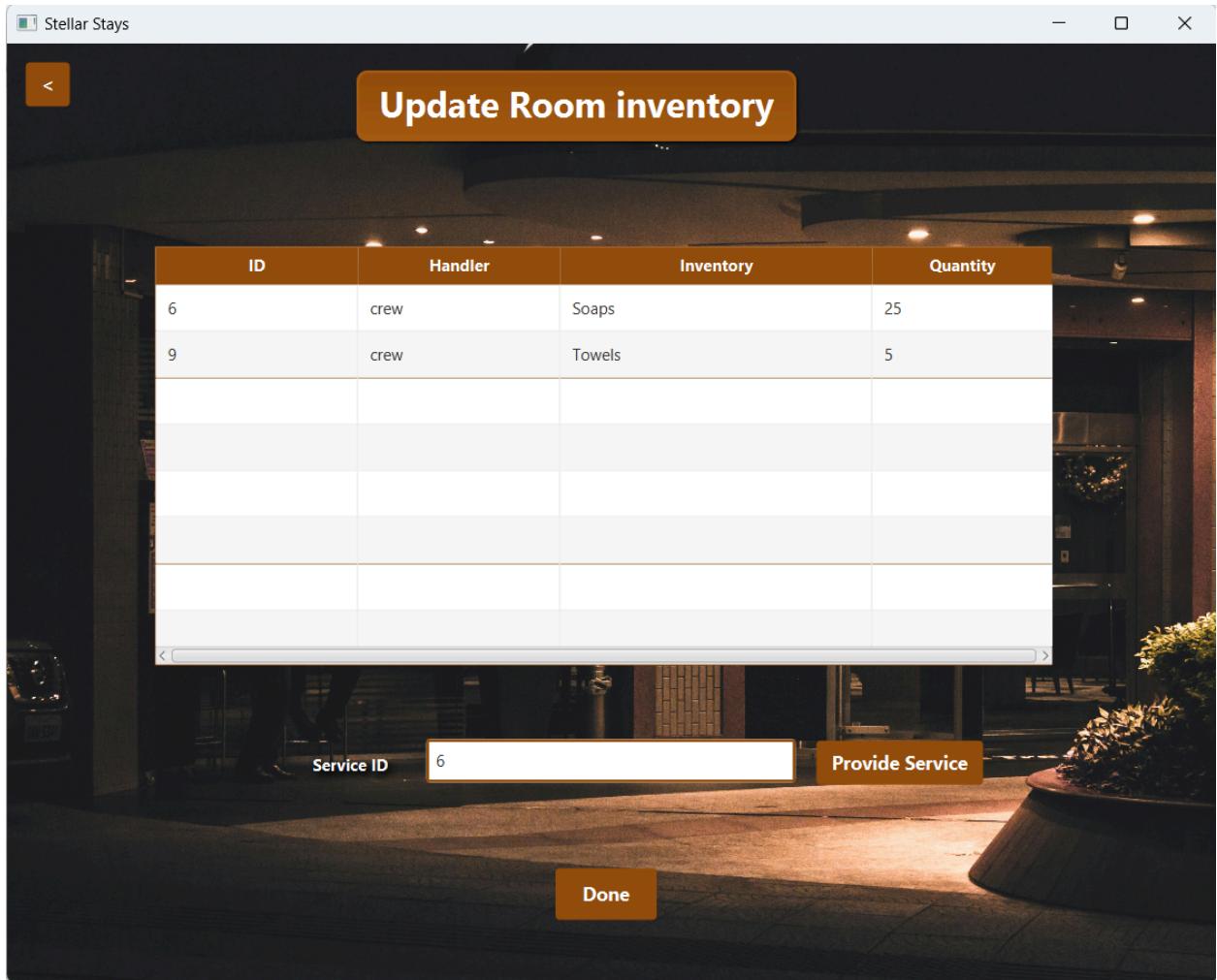












Stellar Stays

## Bills

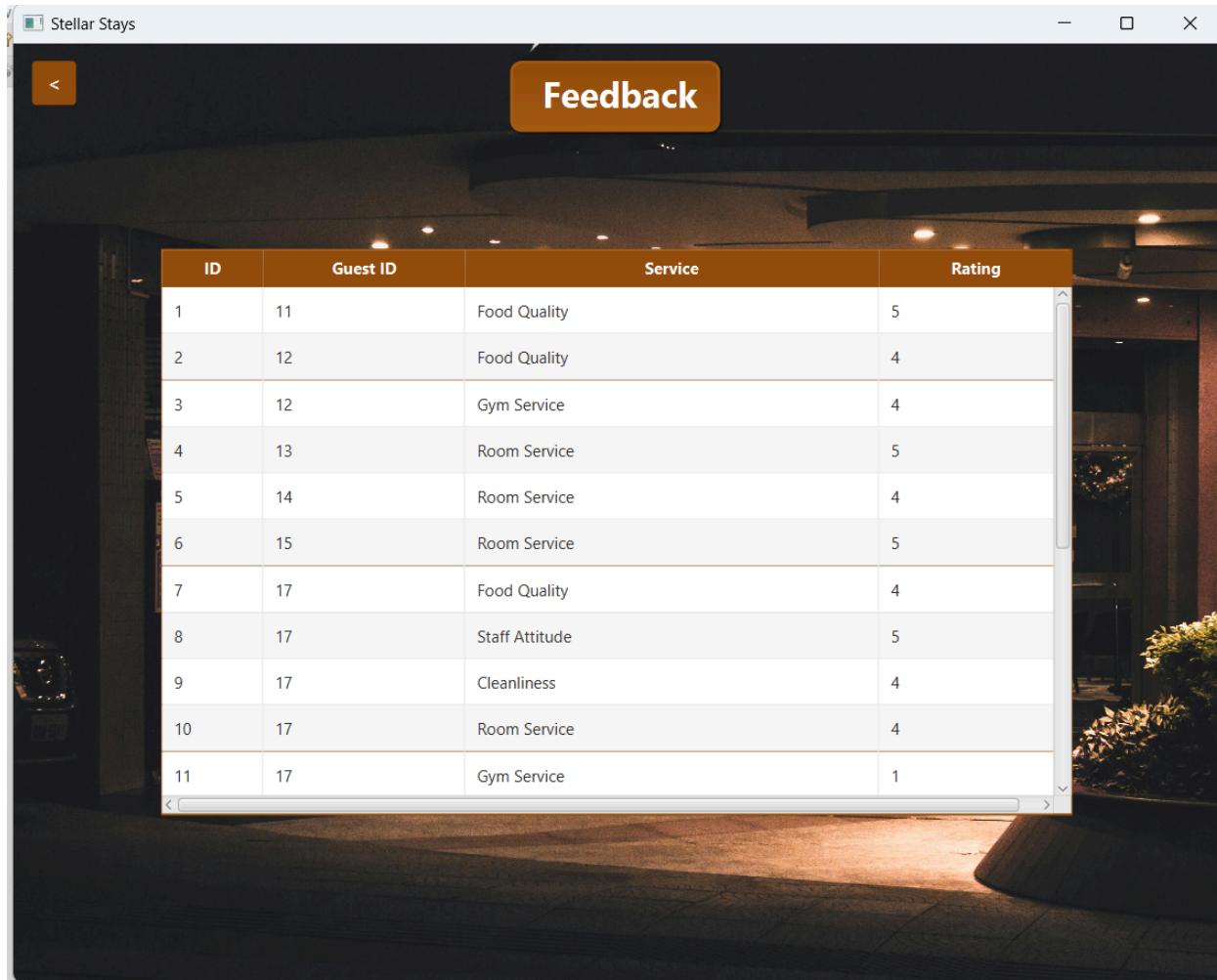
Room No	Amount	Guest ID	Room Price	Food Price	Payment Date	
104	26000	13	25000	1000	2024-11-05	
105	34450	14	32000	2450	2024-11-05	
106	6890	15	6500	390	2024-11-07	
101	33900	1	32500	1400	2024-11-15	
102	10000	18	10000	0	2024-11-23	
101	6500	17	6500	0	2024-11-23	
104	76320	25	75000	1320	2024-11-27	

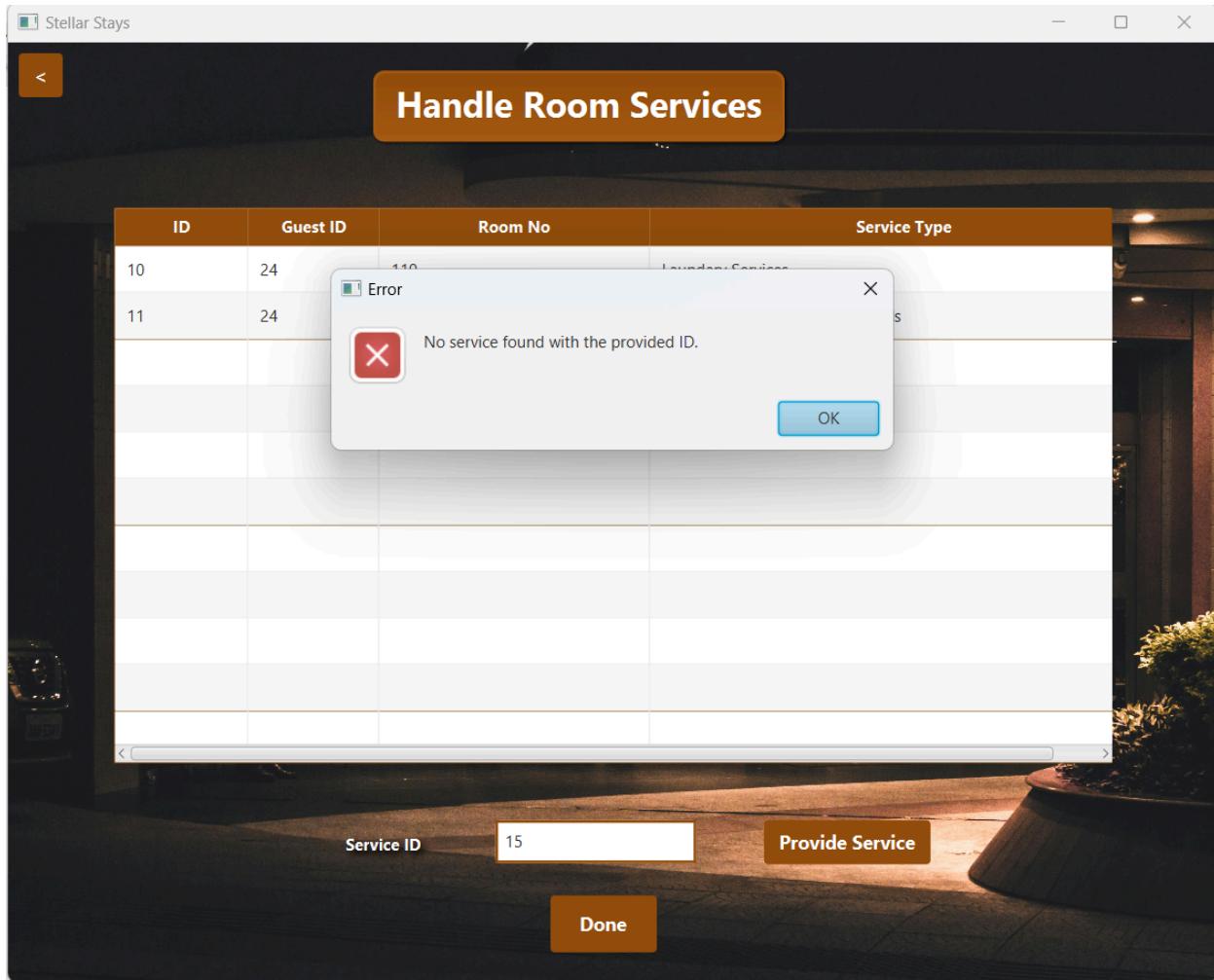
1/2

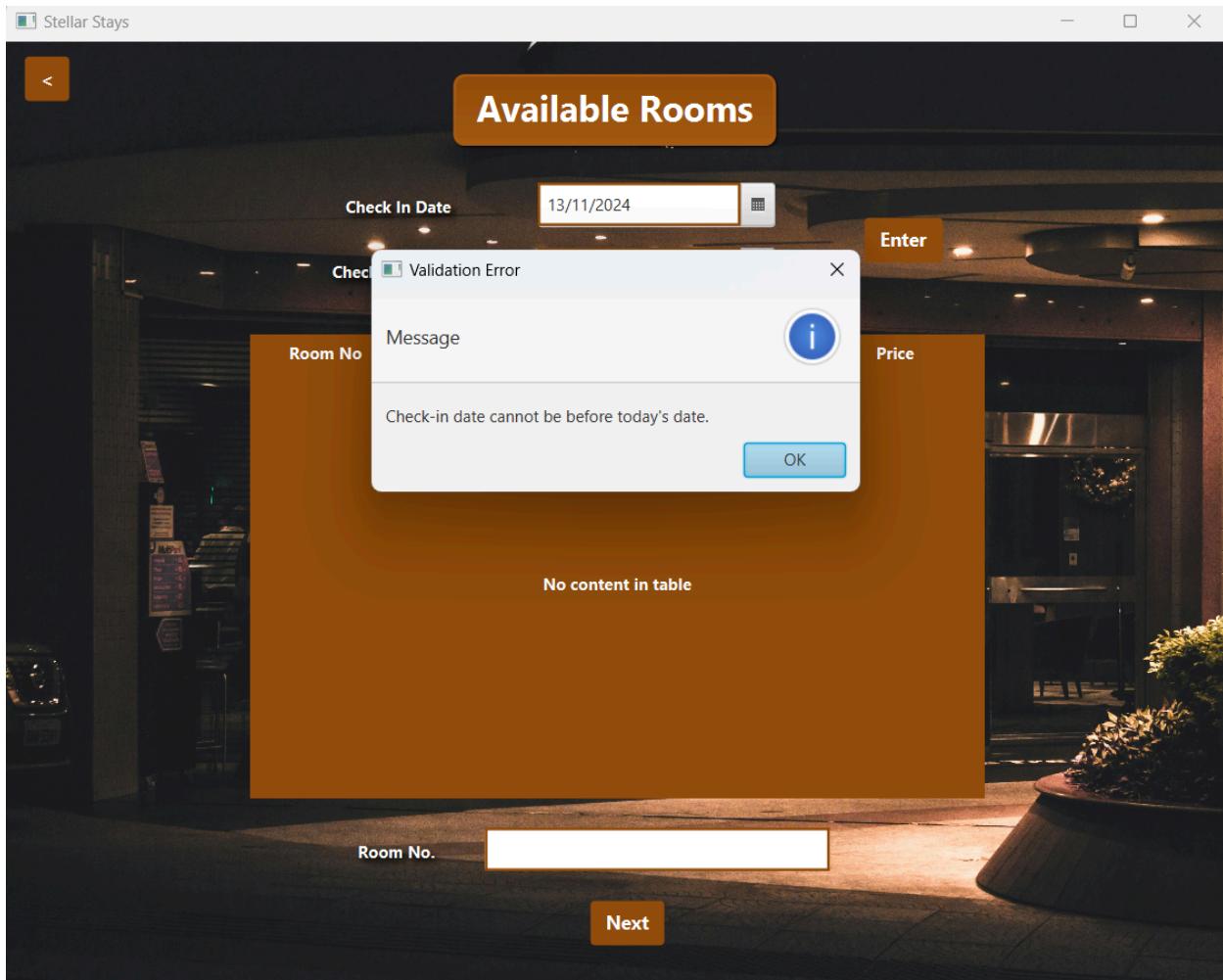
The screenshot displays a mobile application interface for managing guest bills. The title bar at the top reads "Stellar Stays". Below it, a large orange button labeled "Bills" is centered. The main content area is a table with the following data:

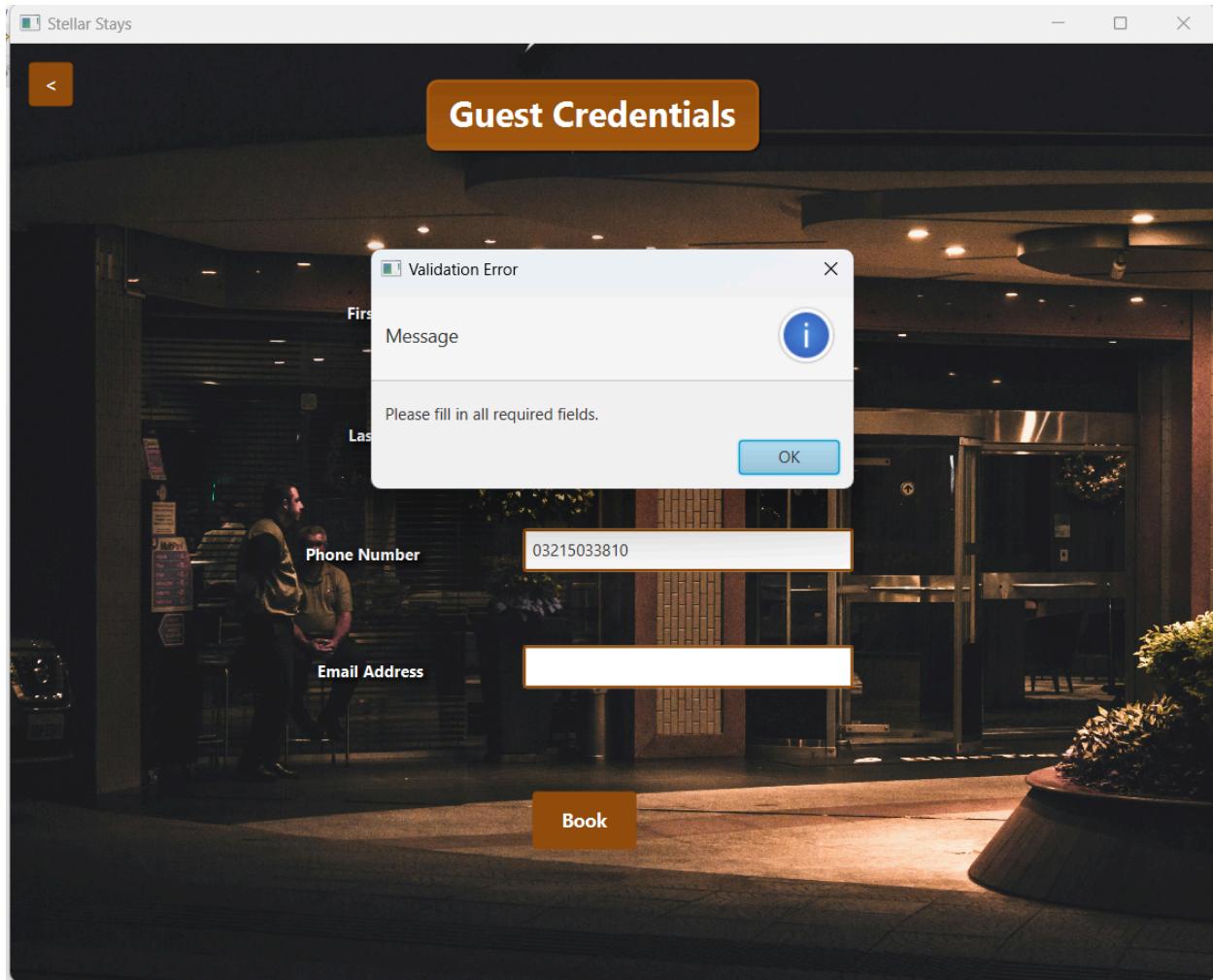
Room No	Amount	Guest ID	Room Price	Food Price	Payment Date	
104	26000	13	25000	1000	2024-11-05	
105	34450	14	32000	2450	2024-11-05	
106	6890	15	6500	390	2024-11-07	
101	33900	1	32500	1400	2024-11-15	
102	10000	18	10000	0	2024-11-23	
101	6500	17	6500	0	2024-11-23	
104	76320	25	75000	1320	2024-11-27	

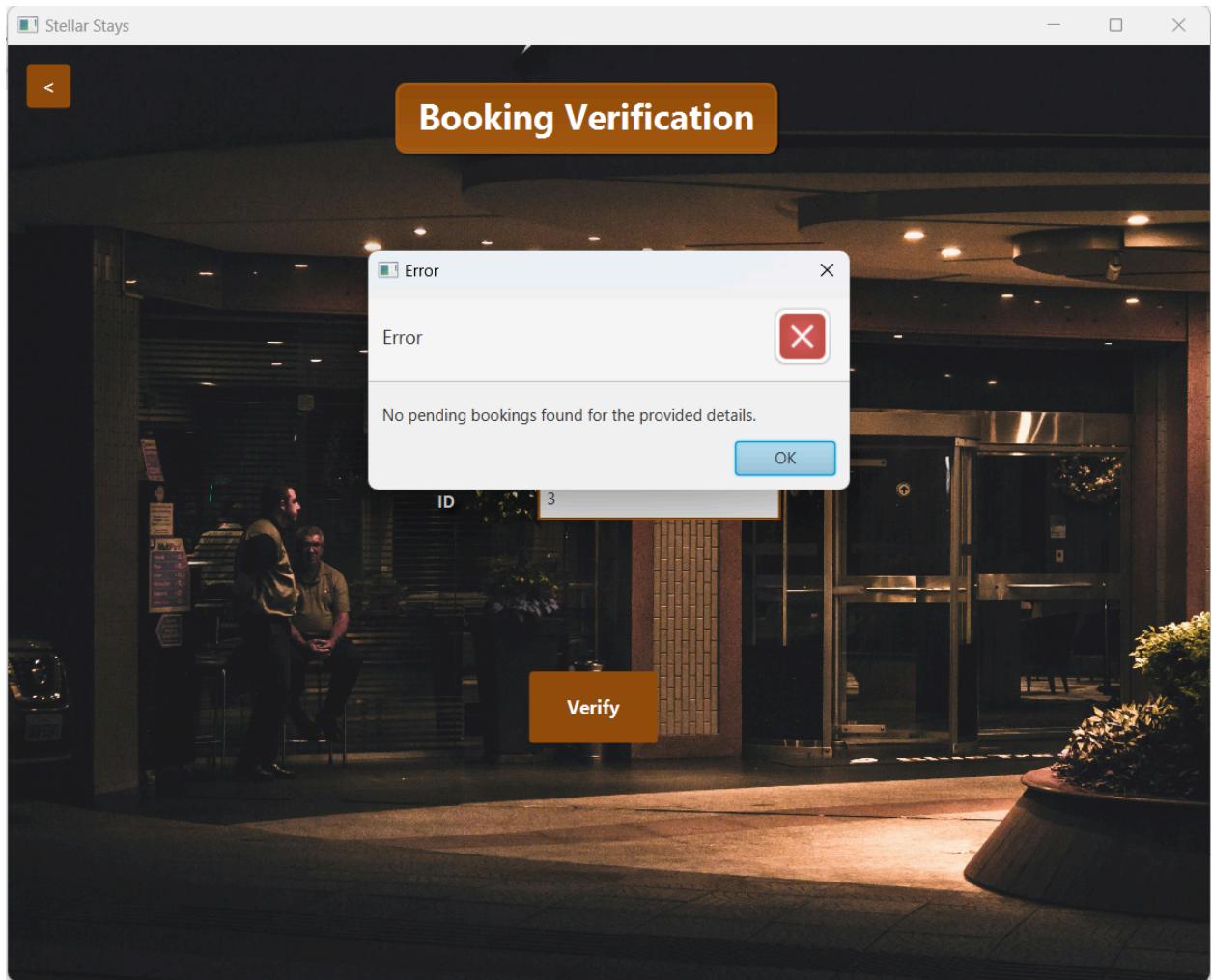
At the bottom of the table, there are navigation controls: a left arrow, a blue square containing the number "1", a white square containing the number "2", and a right arrow. Below these controls, the text "1/2" is displayed, indicating that this is the first page of two.

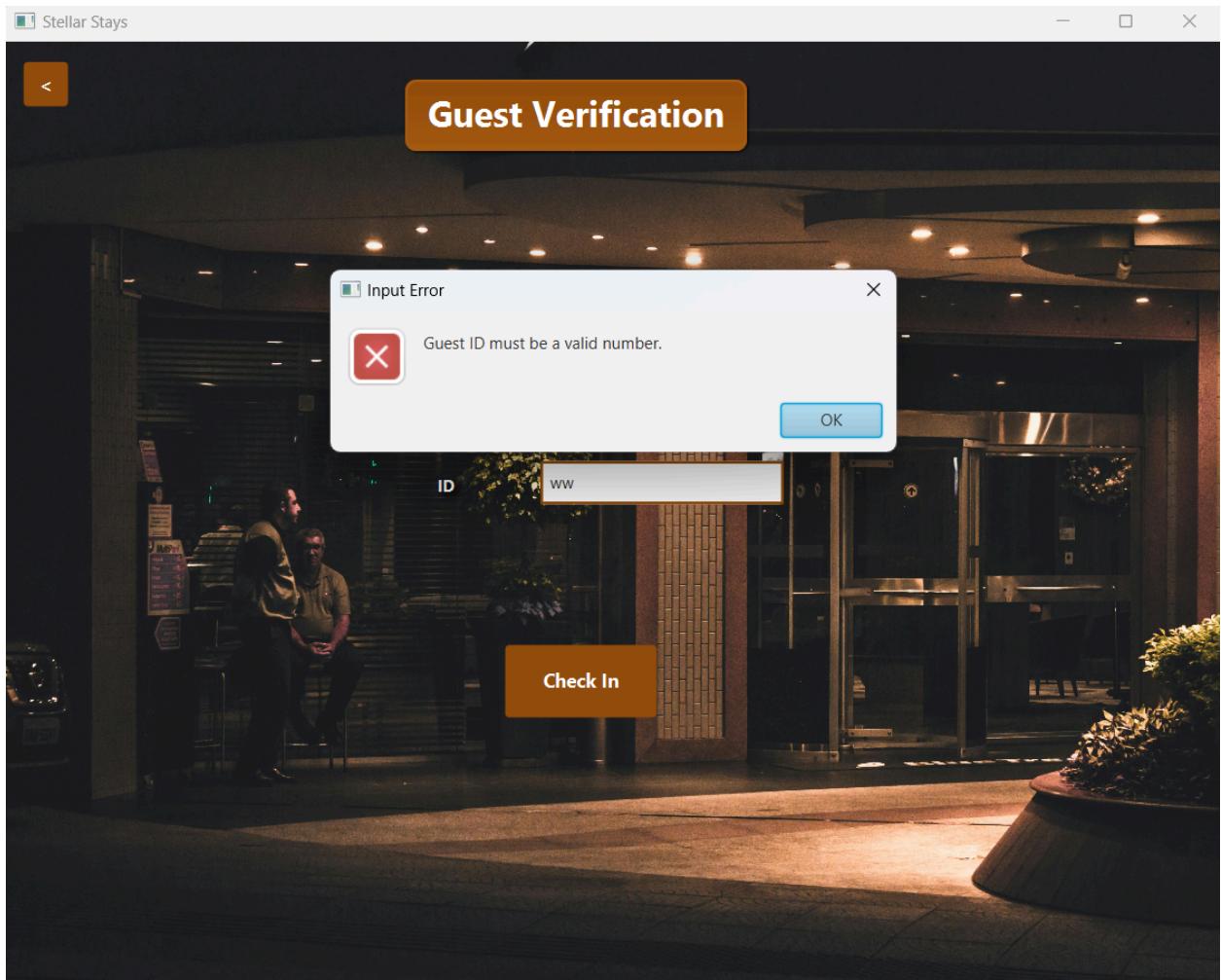




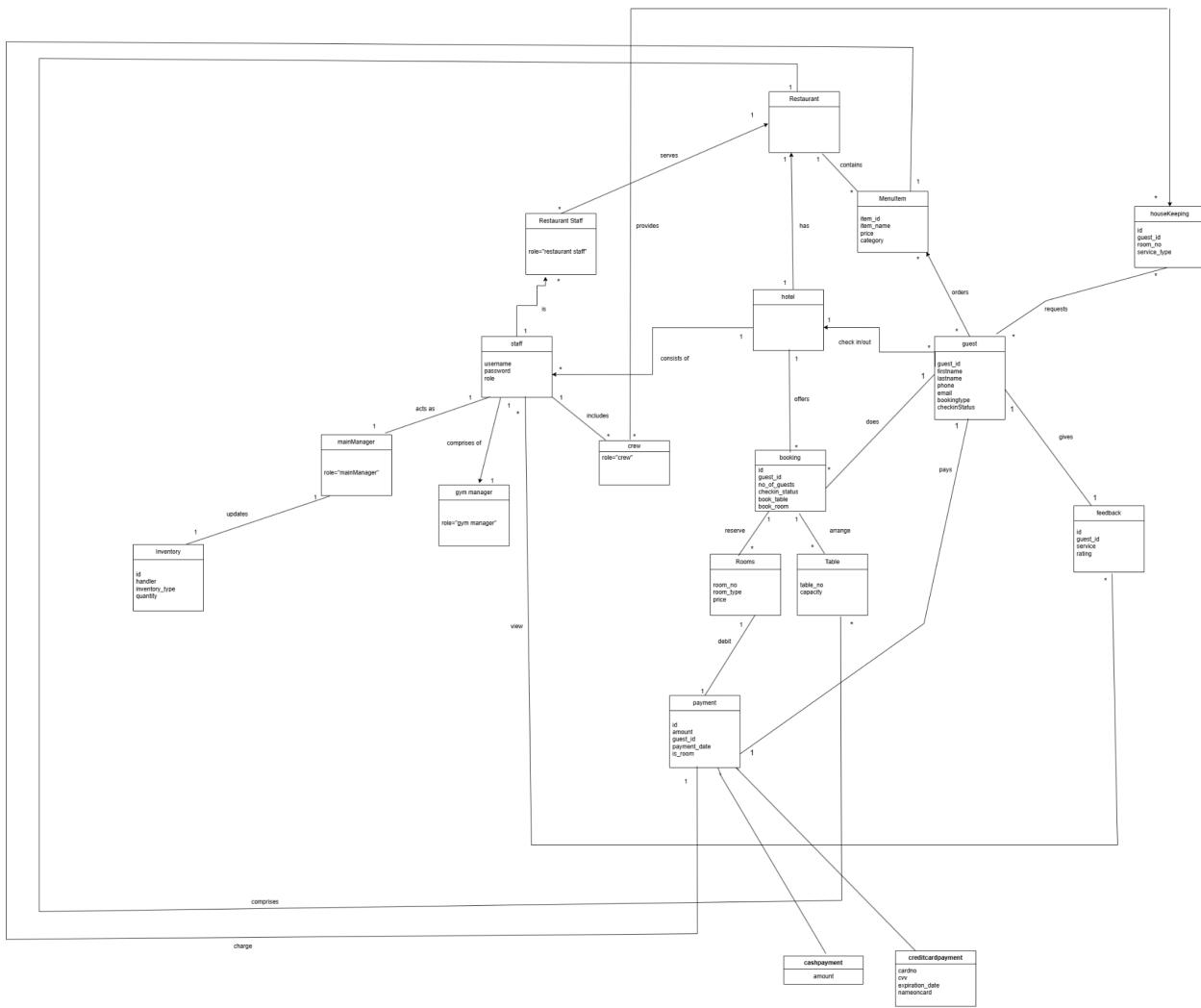




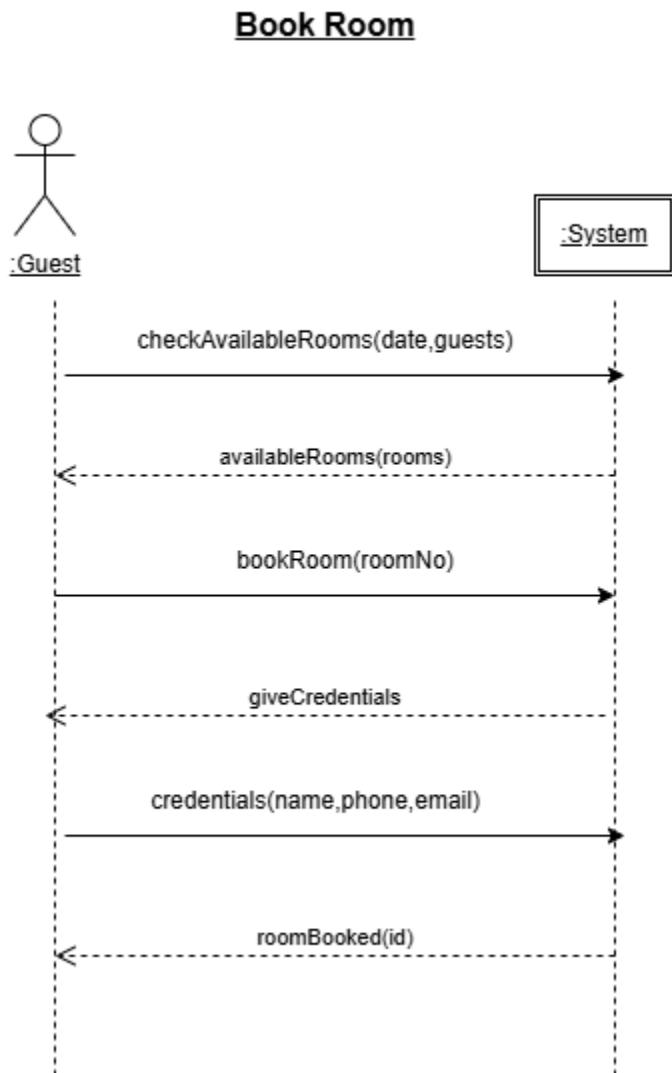




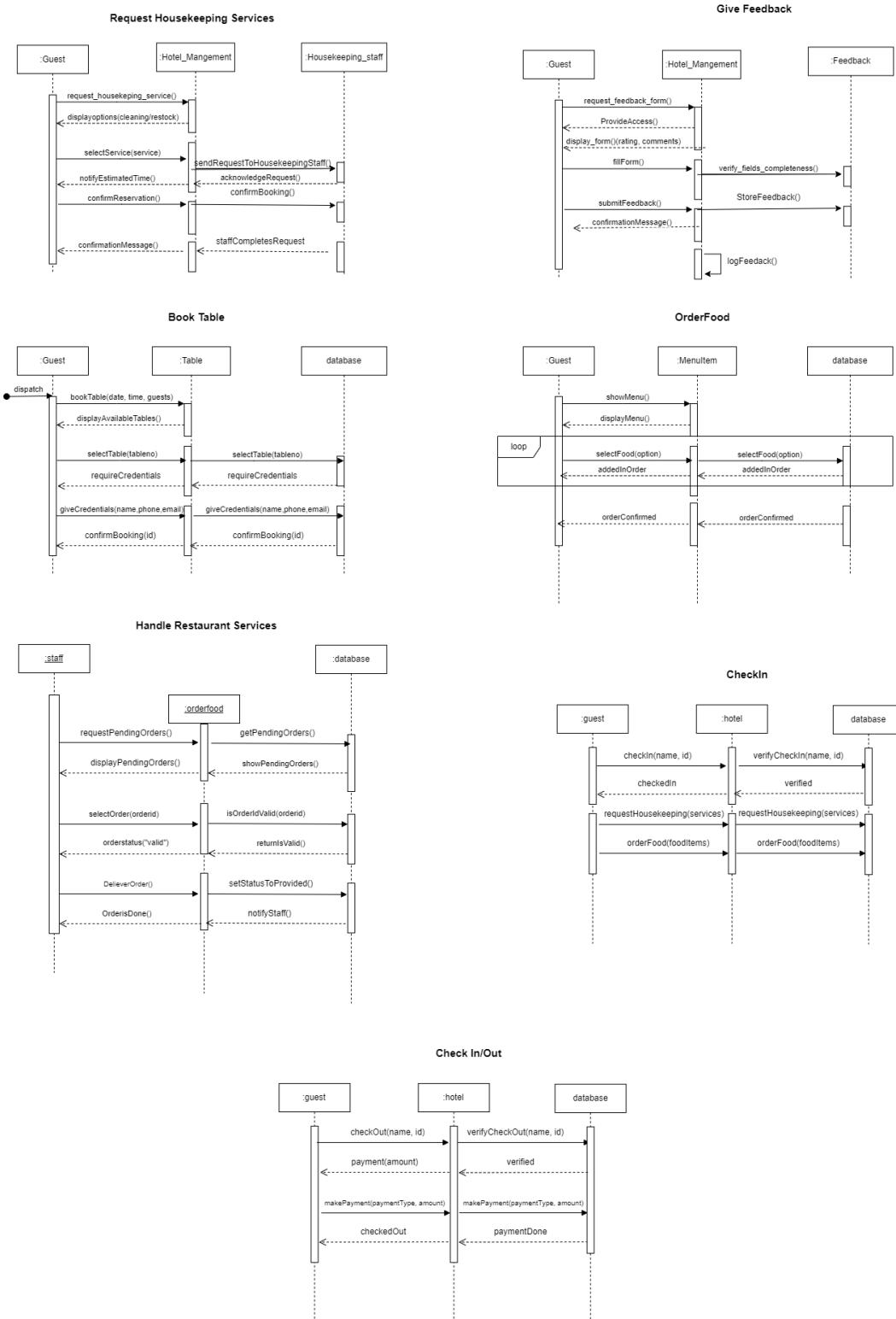
## 4. Domain Model

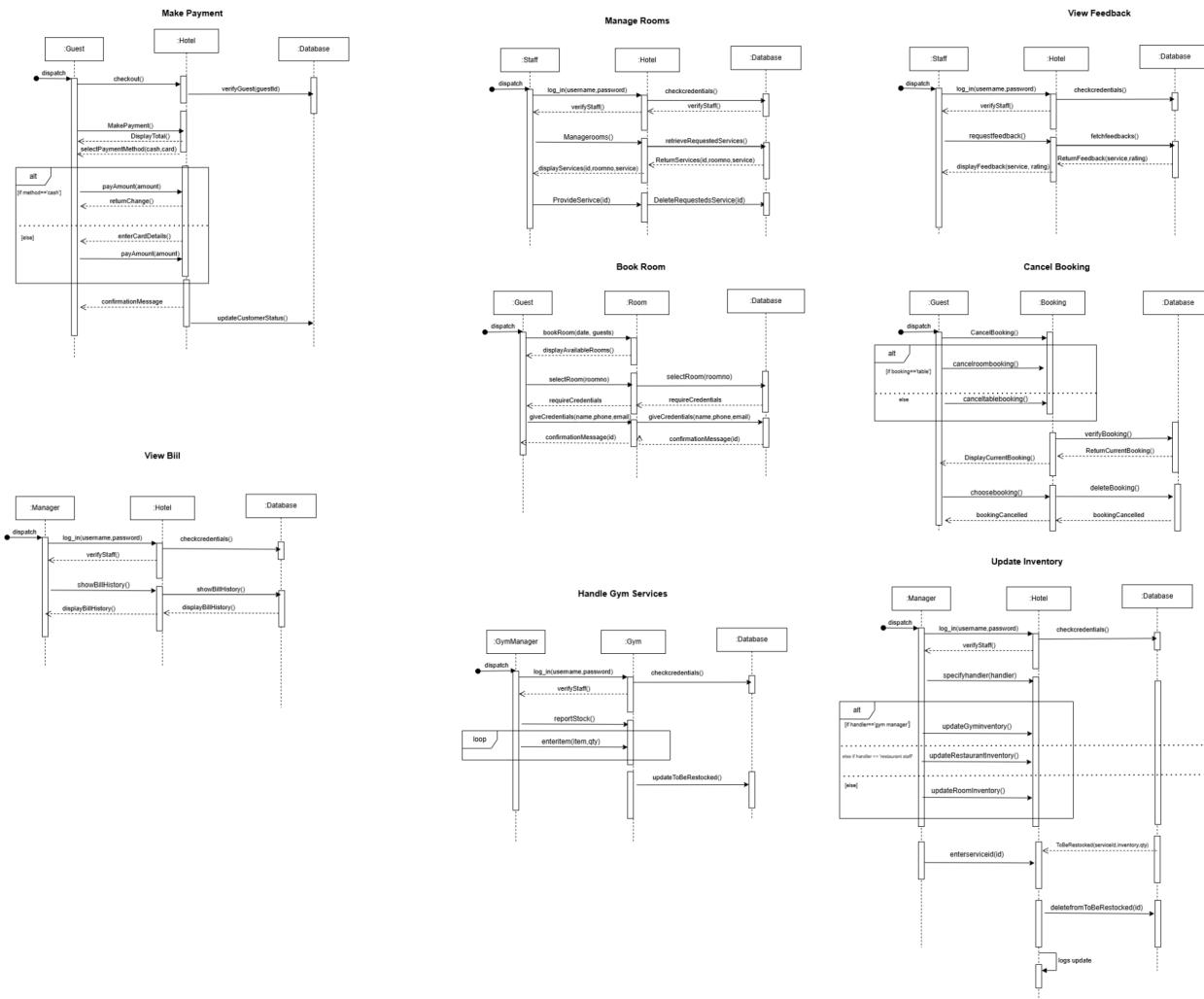


## 5. System Sequence Diagram

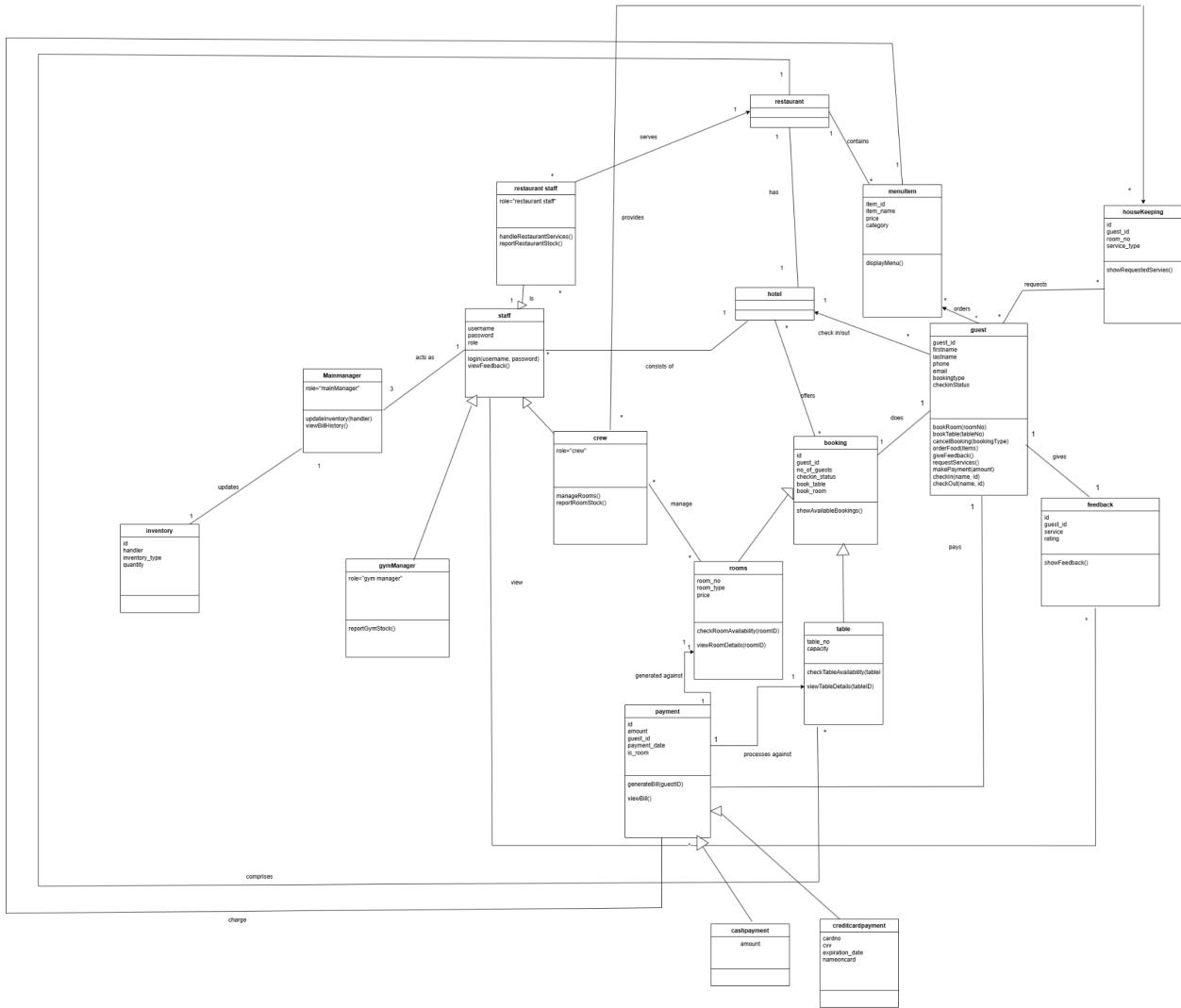


# 6. Sequence Diagram

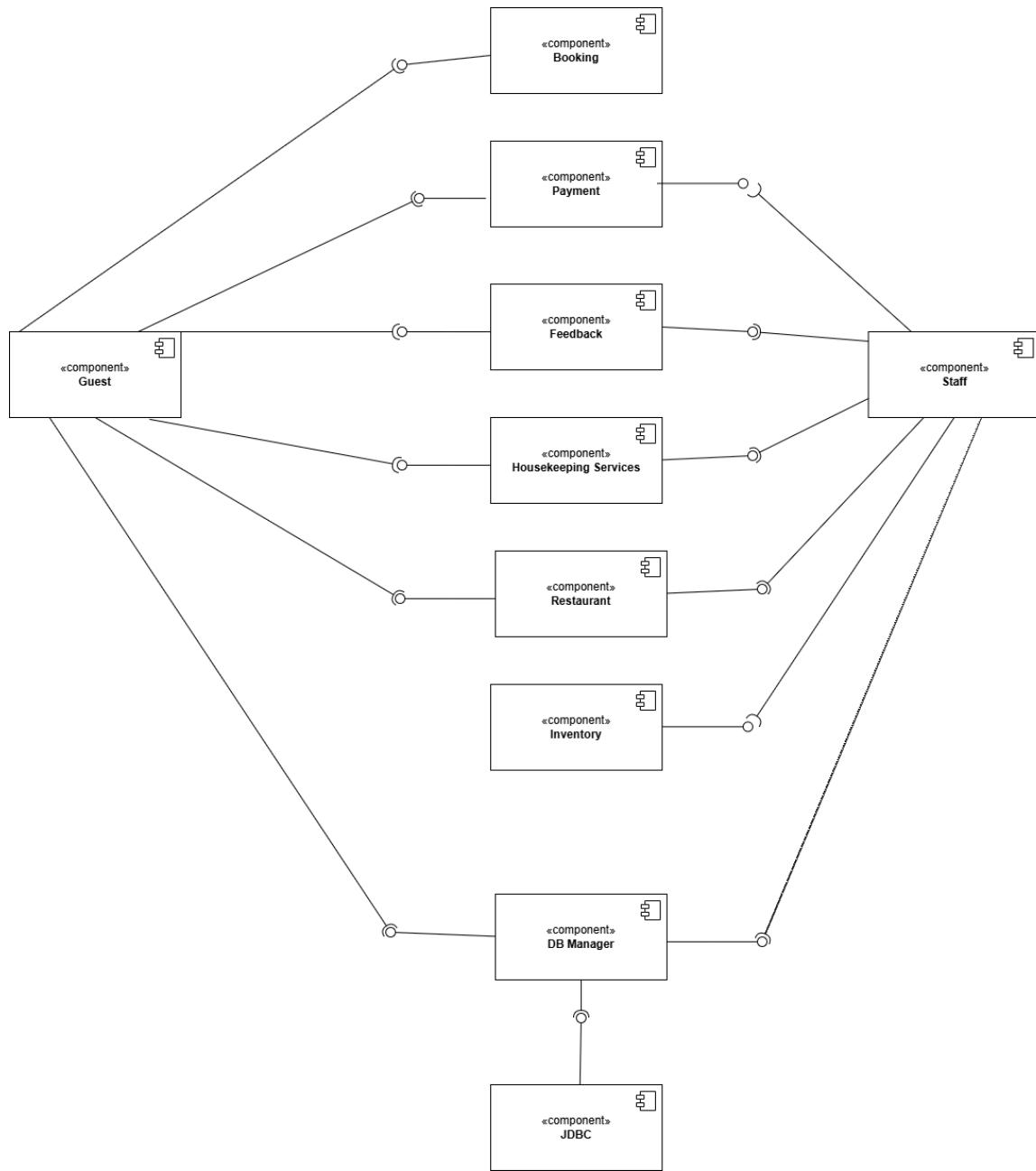




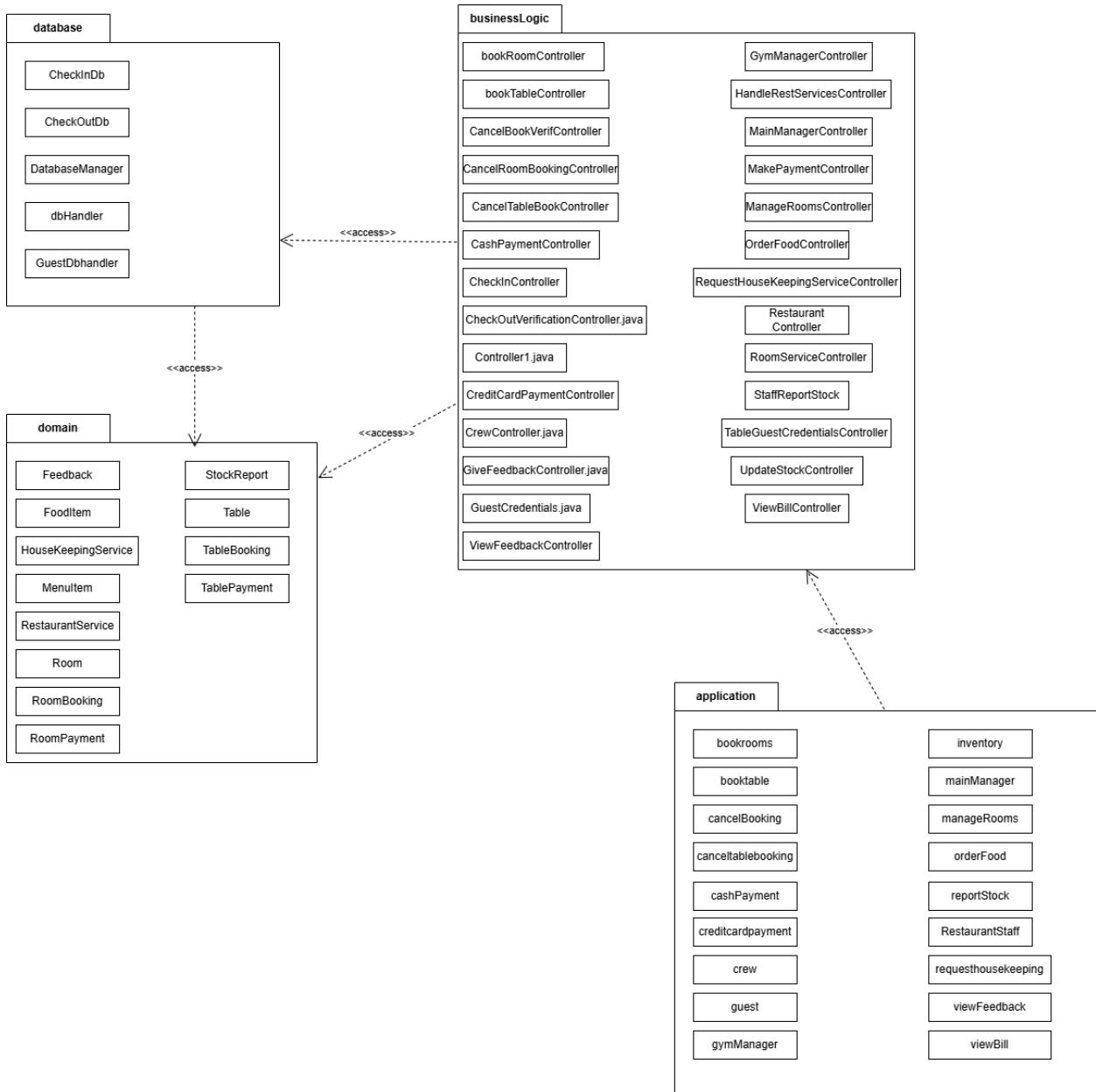
# 7. Class Diagram



# 8. Component Diagram



# 9. Package Diagram



# 10. Deployment Diagram

