HOSTEL MANAGEMENT SYSTEM

All Diagrams & tables for SRS:

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# Use cases:

Add incident

Allocate room

Add feedback

Manage staff

Maintain mess

Submit fee

Register

Login/logout

# Event response table

|  |  |  |  |
| --- | --- | --- | --- |
| **id** | Event | **System State** | **System Response** |
| 1 | Room Reservation | Available rooms, Reservation records | - Checks room availability |
|  |  |  | - Updates reservation status |
| 2 | Check-in | Guest arrival, Room availability, Guest info | - Verifies guest information |
|  |  |  | - Assigns a room to the guest |
|  |  |  | - Updates room availability |
| 3 | Check-out | Guest check-out, Room status, Payment status | - Processes payment |
|  |  |  | - Updates room availability |
|  |  |  | - Issues a payment receipt |
| 4 | Payment Processing | Payment request, Guest account balance | - Confirms payment receipt |
|  |  |  | - Updates guest account balance |
| 5 | Room Maintenance | Reported issues, Room status | - Inspects and addresses reported issues |
|  |  |  | - Updates room status if maintenance is required |
| 6 | Guest Check-in Delay | Guest arrival time, Room availability | - Communicates delay to the guest |
|  |  |  | - Adjusts room availability if necessary |
| 7 | Reservation Cancellation | Reservation records, Room availability | - Cancels reservation |
|  |  |  | - Updates room availability |
| 8 | Guest Inquiry | Guest queries, Reservation records | - Provides information or assistance based on the guest's inquiry |
| 9 | Room Upgrade | Guest request, Room availability | - Checks availability of upgraded rooms |
|  |  |  | - Processes room upgrade if available and requested |
| 10 | Feedback Submission | Guest feedback, System performance | - Records guest feedback |
|  |  |  | - May trigger system improvements based on feedback |

# Dialogue Map

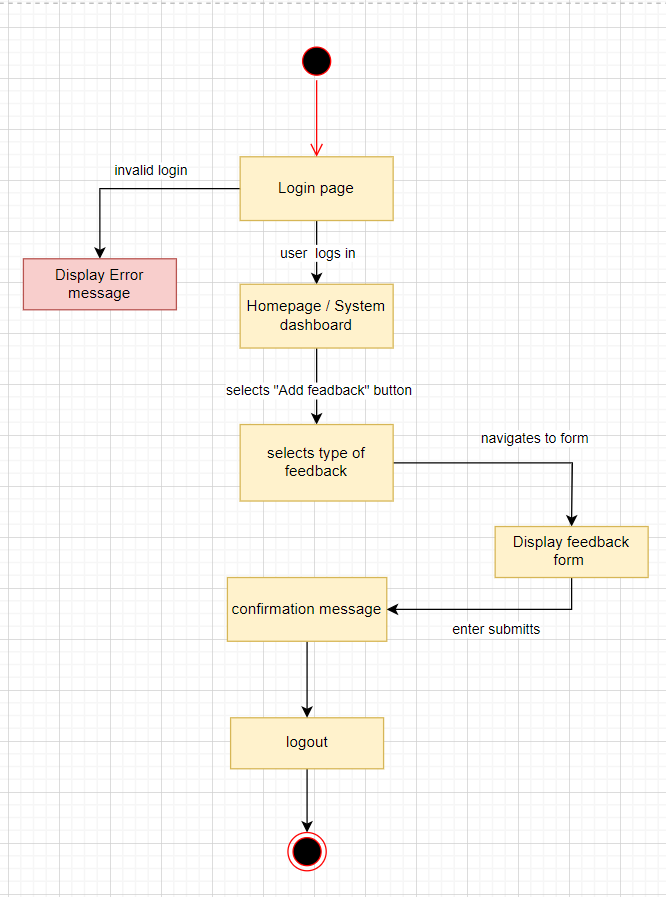


Figure 1 Dialogue map of ADD FEEDBACK

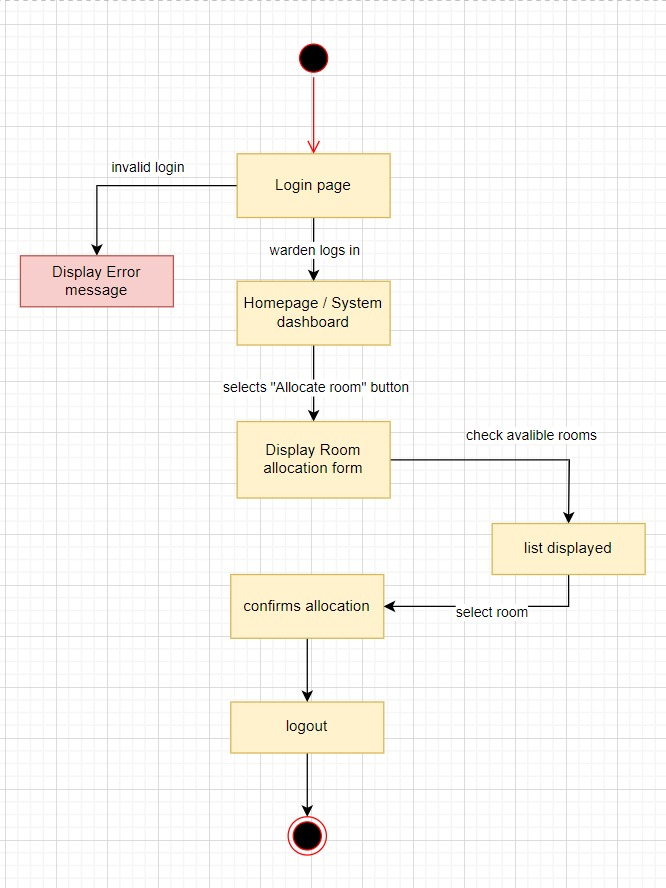


Figure 2 Dialogue map of ALLOCATE ROOM

# State Table:

|  |  |  |  |
| --- | --- | --- | --- |
| **Current State** | **Event** | **Next State** | **Action** |
| Idle | System Start | Idle | Initialize system |
| Idle | Student Applies | Pending Approval | Process student registration |
| Pending Approval | Approval Granted | Registered - Single or Shared | Approve registration and assign room |
| Pending Approval | Approval Denied | Not Registered | Deny registration |
| Registered - Single | Student Cancels Registration | Not Registered | Cancel registration and free up the room |
| Registered - Shared | Student Cancels Registration | Not Registered | Cancel registration and adjust occupancy |
| Idle | Limited Availability | Waiting List | Place student on waiting list |
| Waiting List | Room Allocated | Registered - Single or Shared | Assign room to waiting list student |
| Not Registered | Registration Requested | Pending Approval | Process new registration request |

# Decision table and tree

**Decision Table for Allocate Room**

|  |  |  |  |
| --- | --- | --- | --- |
| **Condition** | **Rule 1** | **Rule 2** | **Rule 3** |
| Student is registered | Y | Y | N |
| Request for room allocation made | Y | N | Y/N |
| Rooms available | Y | N | Y/N |
| **Actions** |  |  |  |
| Show available rooms | Y | N | N |
| Prompt login/register | N | N | Y |
| Inform no rooms available | N | Y | N |
| Allocate room | Y | N | N |

**Decision Table for Terminate Room Allocation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Condition** | **Rule 1** | **Rule 2** | **Rule 3** |
| Warden is logged in | Y | N | Y |
| Valid room allocation selected | Y | Y | N |
| Reason for termination provided | Y | N | Y/N |
| **Actions** |  |  |  |
| Terminate room allocation | Y | N | N |
| Prompt for valid room selection | N | Y | N |
| Prompt for termination reason | N | N | Y |
| Notify student about termination | Y | N | N |
| Return to allocation management | Y | Y | Y |

**Decision Table for Add Incident**

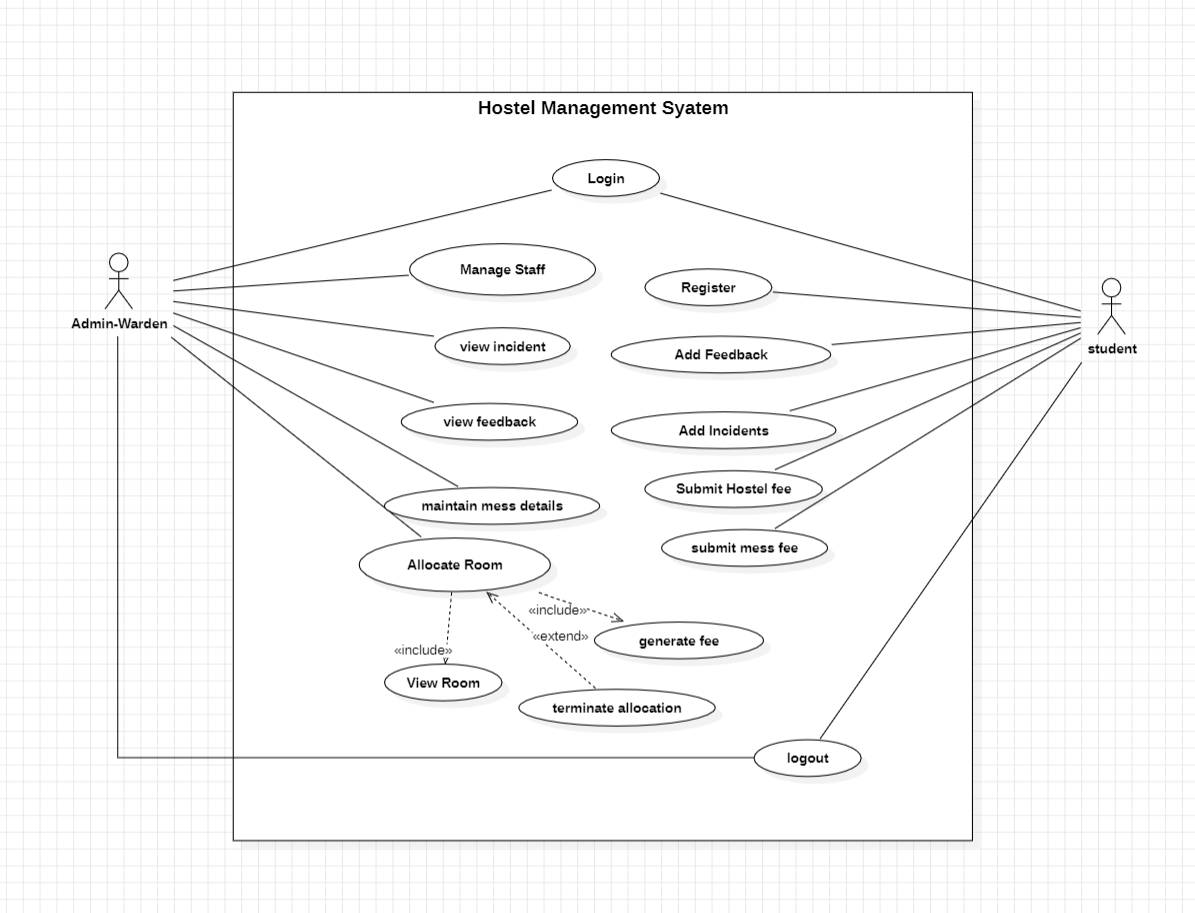
|  |  |  |  |
| --- | --- | --- | --- |
| **Condition** | **Rule 1** | **Rule 2** | **Rule 3** |
| Student is registered | Y | Y | N |
| Incident report form submitted | Y | N | Y/N |
| Incident details are valid | Y | N | Y/N |
| **Actions** |  |  |  |
| Record incident in system | Y | N | N |
| Prompt login/register | N | N | Y |
| Request incident detail correction | N | Y | N |
| Acknowledge incident submission | Y | N | N |

**Decision Table for Add Feedback**

|  |  |  |  |
| --- | --- | --- | --- |
| **Condition** | **Rule 1** | **Rule 2** | **Rule 3** |
| Student is registered | Y | Y | N |
| Feedback form submitted | Y | N | Y/N |
| Feedback details are valid | Y | N | Y/N |
| **Actions** |  |  |  |
| Save feedback in system | Y | N | N |
| Prompt login/register | N | N | Y |
| Request feedback detail correction | N | Y | N |
| Thank student for feedback | Y | N | N |

# State transition diagram

# Use case



# User stories

**US01: Room Allocation**

As a Warden, I want to efficiently allocate rooms to students, ensuring each student is assigned a room that aligns with their preferences and needs, while adhering to the hostel's capacity constraints. This process should involve displaying a comprehensive list of available rooms with details such as type, capacity, and current occupancy. It's essential for the system to update the room status to 'occupied' once a student is assigned and prevent double allocations.

**US04: Terminate Room Allocation**

As a Warden, I want to terminate room allocations for students when necessary. This feature should enable me to select and end a student's allocation, updating the room status to 'available' for reassignment. This process is crucial for managing room occupancy and addressing changes like student departures.

**US02: Add Incident**

As a Student, I aim to report incidents in the hostel, enabling the hostel management to take necessary actions to ensure a safe and secure living environment. The incident report form should capture critical details like the date, time, location, and a description of the incident. The system should allow anonymous submissions and timestamp these reports. Additionally, there should be an option to upload evidence.

**US03: Add Feedback**

As a Student, I want to submit feedback about the hostel facilities so that the management can address issues and improve living conditions. The feedback mechanism should encompass various aspects of hostel life, including cleanliness, maintenance, and food services, allowing for both structured and unstructured feedback. Anonymity in submission should be an option, and the collected feedback must be easily accessible to hostel management.

# Dialogue map

# Activity diagram

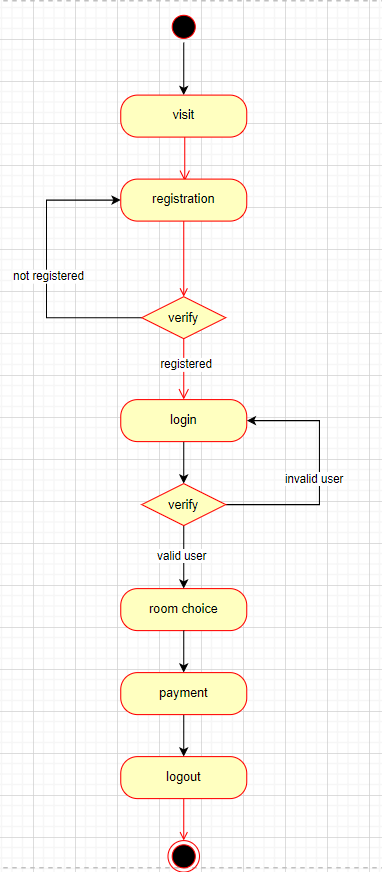


Figure 3 Activity diagram (for student)

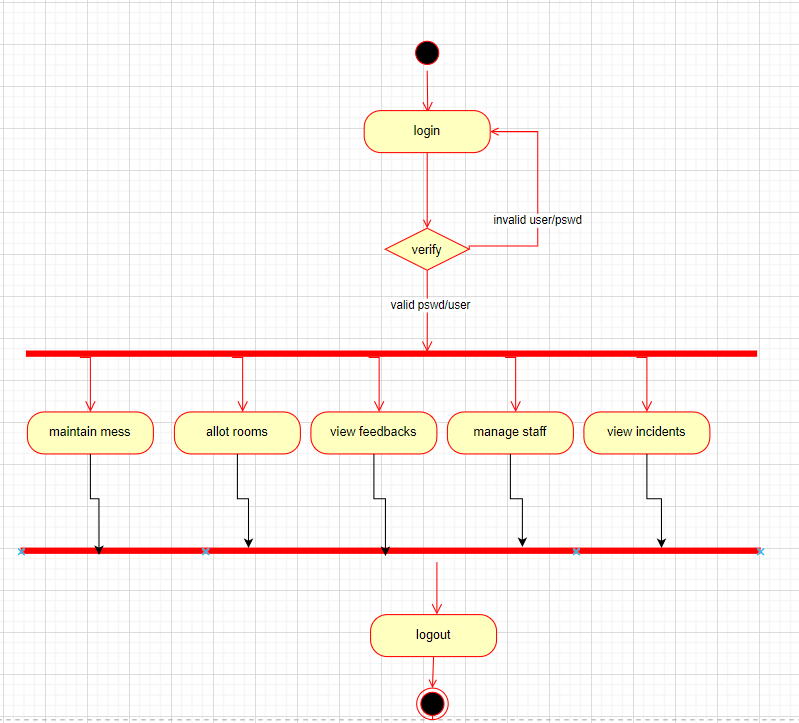


Figure 4 Activity diagram for admin

# DFD level 0 & 1

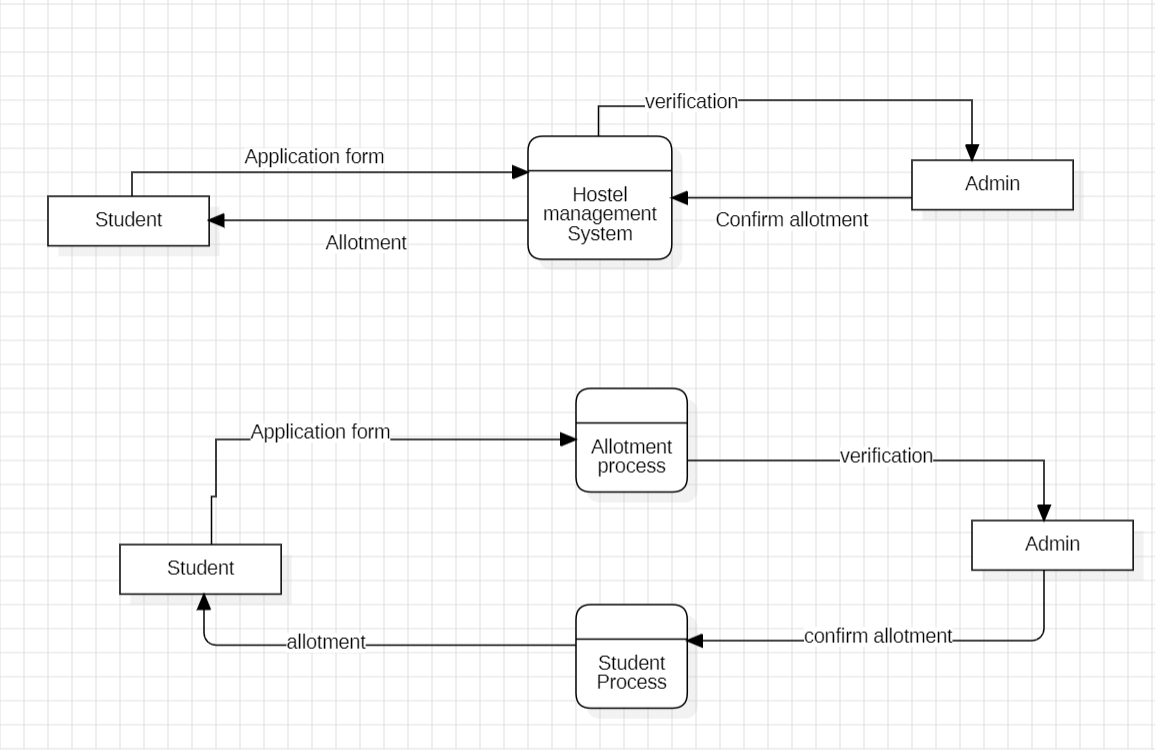


Figure 5 DFD Level 0 and 1

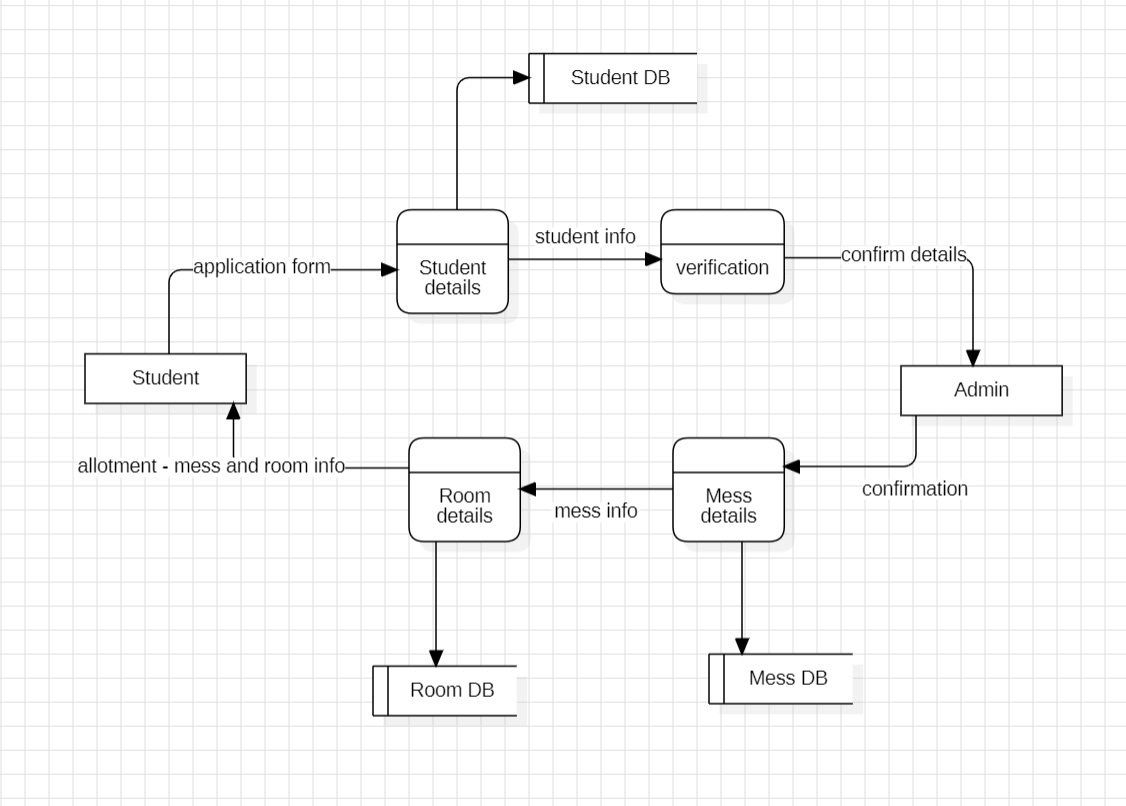


Figure 6 DFD Level 2

# QUESTIONARE

Multiple-choice questions (MCQs), yes/no questions, and some detailed open-ended questions:

**General Information:**

1. **Organization Details:**
   * Name of the Hostel/Institution:
   * Location:

**System Requirements:**

1. **User Roles:**
   * List the different user roles involved in hostel management (e.g., admin, staff, and residents).
     + Admin
     + Staff
     + Residents
2. **User Interactions:**
   * Describe typical interactions users have with the hostel management system.
   * What tasks do users commonly perform within the system?
3. **Functional Requirements:**
   * What are the essential functions the system should perform?
     + Room Allocation
     + Reservation
     + Check-in/Check-out
     + Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. **Security Requirements:**
   * What security measures should be implemented to protect user data and system integrity?
     + User Authentication
     + Access Controls
     + Encryption
     + Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. **Reporting and Analytics:**
   * Are there specific reports or analytics that stakeholders need from the system?
     + Occupancy Reports
     + Financial Reports
     + Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Room Management:**

1. **Room Allocation:**
   * How rooms are currently allocated to residents?
     + Manual Allocation
     + Automatic Allocation based on criteria
     + Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. **Room Maintenance:**
   * What kind of maintenance features are needed for rooms?
     + Maintenance Request System
     + Periodic Maintenance Scheduling
     + Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. **Room Availability:**
   * How should the system display room availability to users?
   * Real-time Availability
   * Daily/Weekly Availability Calendars
   * Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Reservation and Check-in/Check-out:**

1. **Reservation Process:**
   * Describe the current reservation process.
   * What information is collected during the reservation process?
2. **Check-in/Check-out Procedures:**
   * What are the current procedures for guest check-in and check-out?
   * Are there specific details that need to be captured during these processes?

**Payment and Billing:**

1. **Payment Processing:**
   * How payments currently are processed?
   * Online Payments
   * Manual Payments
   * Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. **Billing and Invoicing:**
   * What billing and invoicing features are required?
   * Automatic Billing
   * Invoicing System
   * Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Miscellaneous:**

1. **Guest Communication:**
   * How should the system handle communication with guests (e.g., notifications, updates)?
   * Automated Email Notifications
   * SMS Notifications
   * Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. **Integration Requirements:**
   * Are there other systems or tools that the hostel management system needs to integrate with?
   * Yes
   * No
   * If yes, please specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. **Regulatory Compliance:**
   * Are there specific regulations or compliance standards that the system must adhere to?
   * Yes
   * No
   * If yes, please specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Future Enhancements:**

1. **Future Features:**
   * Are there any features or functionalities you anticipate needing in the future?
   * If yes, please specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. **Scalability:**
   * How do you envision the system handling growth and an increasing number of users?
   * Easily Scalable
   * Limited Scalability
   * Not Sure