

Fusion ERP

Software Requirements Specification

For

SA-1- HOSTEL MANAGEMENT

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1. Introduction

Purpose HA-1-Hostel Management Module is software designed to manage different activities related to the hostels' activities of PDPM IIITDM Jabalpur. The software is designed to provide automated features to the Warden and Caretaker, to provide a platform to interact with the Students and Hostel Staff. The different activities under the HA-1- Hostel Management module are viewing staff information, checking & booking guest rooms, and viewing & editing guards' shifts, notices, and attendance to manage hostel-related activities.

Module Scope

The user of this module will be the Warden/Caretaker/Student. This software system will be a web-based system to be used by the users. The interface will enable the Warden to view staff's info, the Caretaker to create notices, check guest rooms, check attendance, view & edit guards' shift and Students to get noticed, and book guest rooms.

References

- Staff Member of Hostel
- Residents of the hostel

2. User/Actor characteristics

2.1 Student

Residents of some particular hostel.

Role: Can perform various tasks and formalities regarding his/her hostel.

Specific Functionalities:

- Can book the guest rooms
- View their allotted room from the list.
- Reports any issues or concerns related to hostel facilities, maintenance, or other grievances by creating new complaints
- Access and view important notices and announcements posted by the caretaker or warden.
- Check if any fines are imposed on them for rule violations or overdue payments.
- Can apply for leave.

2.2 Caretaker

Responsible for the overall management of the hostel, its staff and its residents.

Role: Can modify and view information of staff and residents of the hostel.

Specific Functionalities:

- Reviews and approves leave applications submitted by students.
- Manages the hostel's inventory, including tracking and updating stock levels of essential items.
- View staff information and manage attendance.
- Create, edit, and delete notices on the hostel's notice board.

- Add, edit, or remove student information from the hostel database.
- Student records are added, edited, or removed based on the caretaker's actions.
- Handles guest room requests, allocates rooms, and maintains records of guest stays.
- Oversees the allocation and management of regular hostel rooms.
- Can search and generate reports related to various hostel activities and records.
- Can add, edit, or remove fines imposed on students for rule violations.
- Can view information about hostel staff members.

2.3 Warden

Supervising the tasks given to the caretaker and having the information regarding staff and residents.

Role: Views and manages information regarding the staff and residents.

Specific Functionalities:

- Can create, edit, and delete notices on the hostel's notice board.
- Search and generate reports related to various hostel activities and records.
- View information about hostel staff members.
- View shifts of guards for duty.
- view students' room details of the hostel.
- view details of students of the hostel.

3. Functional Requirements

3.1 Use Case Diagram



SA1-Hostel Management

3.2 Use case Description

UC ID	UC#1
Use case Name	request_guest_room
Description	This use case shows that the students can book the guest rooms.
Actor	Students
Precondition	Student must be logged in and the room should be available to book
Main Flow	1) Students check the availability of room . 2) If available student will request for room.[A1]
Post Conditions	Notification to caretaker
Alternet Flow	[A1] Student can check the status of request
Sub Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#2
Use case Name	view_alloted_room
Description	Students can view their allotted room from the list.
Actor	Student

Precondition	Students must be logged in.
Main Flow	<ol style="list-style-type: none"> 1) Accesses the "View Allotted Room" section. 2) Students select the hostel and they can see their name in the list.
Post Conditions	NIL
Alternet Flow	NIL
Sub Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#3
Use case Name	register_complaint
Description	The student reports any issues or concerns related to hostel facilities, maintenance, or other grievances.
Actor	Students
Precondition	Students must be logged in.
Main Flow	<ol style="list-style-type: none"> 1. Navigate to the "Register Complaint" section. 2. Describe the complaint and submit it.
Post Conditions	NIL
Alternet Flow	NIL
Sub Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#4
Use case Name	view_notice_board
Description	The student can access and view important notices and announcements posted by the caretaker or warden.
Actor	Student
Precondition	Students must be logged in.
Main Flow	1.Visits the "View Notice Board" section.
Post Conditions	NIL
Alternet Flow	NIL
Sub Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#5
Use case Name	view_fines
Description	The student can check and view any fines imposed on them for rule violations or overdue payments.
Actor	Student
Precondition	Students must be logged in.
Main Flow	1. Navigate to the "View Fines" section. [A1]
Post Conditions	NIL
Alternet Flow	[A1] Students pay the fine.

Sub-Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#6
Use case Name	apply_for_leave
Description	Student can apply for leave
Actor	Student
Precondition	Students must be logged in.
Main Flow	1. Requests leave through the system[A1]
Post Conditions	NIL
Alternet Flow	[A1] Student attach the required documents for leave
Sub Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#7
Use case Name	approve_leave
Description	The caretaker reviews and approves leave applications submitted by students.
Actor	Caretaker
Precondition	Caretaker must login first.
Main Flow	Accesses the "Approve Leave" section. Reviews leave applications and takes

	appropriate action.
Post Conditions	Caretaker will either approve or reject the leave According to that student will get notification
Alternate Flow	If the caretaker needs additional information to approve the leave, the system prompts the caretaker to request more details.
Sub Flow	The caretaker can leave comments when approving or denying leave.
Global Alternate Flow	NIL

UC ID	UC#8
Use case Name	manage_inventory
Description	The caretaker manages the hostel's inventory, including tracking and updating stock levels of essential items.
Actor	Caretaker
Precondition	The caretaker is logged into the system.
Main Flow	Navigates to the "Manage Inventory" section. Updates inventory records as needed.
Post Conditions	The leave application is approved or denied, and the student is notified.
Alternate Flow	If an item is out of stock, the system notifies the caretaker to reorder or update the inventory status.
Sub Flow	Nil
Global Alternate Flow	Nil

UC ID	UC#9
Use case Name	manage_notice_board
Description	Can create, edit, and delete notices on the hostel's notice board.
Actor	Caretaker, Warden
Precondition	The caretaker is logged into the system.
Main Flow	Accesses the "Manage Notice Board" section. Creates, edits, or deletes notices.
Post Conditions	Notices on the notice board are created, edited, or deleted as per caretaker's actions.
Alternate Flow	If there is an issue saving the notice, the system prompts the caretaker to try again.
Sub Flow	Nil
Global Alternate Flow	Nil

UC ID	UC#10
Use case Name	manage_student
Description	The caretaker can add, edit, or remove student information from the hostel database.
Actor	Caretaker
Precondition	The caretaker is logged into the system.
Main Flow	Navigates to the "Manage Student" section. Adds, edits, or removes student records.
Post Conditions	Student records are added, edited, or removed

	based on the caretaker's actions.
Alternate Flow	If there is an error in updating student records, the system notifies the caretaker and suggests corrective actions.
Sub Flow	Nil
Global Alternate Flow	Nil

UC ID	UC#11
Use case Name	manage_guest_room
Description	The caretaker handles guest room requests, allocates rooms, and maintains records of guest stays.
Actor	Caretaker
Precondition	The caretaker is logged into the system.
Main Flow	Accesses the "Manage Guest Room" section. Allocates rooms and manages guest stay records.
Post Conditions	Guest room allocation and related records are updated.
Alternate Flow	If there is a conflict in guest room allocation, the system prompts the caretaker to resolve the conflict manually.
Sub Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#12
Use case Name	manage_rooms
Description	The caretaker oversees the allocation and management of regular hostel rooms.
Actor	Caretaker
Precondition	The caretaker is logged into the system.
Main Flow	Navigates to the "Manage Rooms" section. Allocates rooms and manages room-related information.
Post Conditions	Regular room allocations and related information are updated.
Alternate Flow	If there is an error in updating room information, the system notifies the caretaker and suggests corrective actions.
Sub Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#13
Use case Name	search/generate_report
Description	Can search and generate reports related to various hostel activities and records.
Actor	Caretaker, Warden
Precondition	The caretaker is logged into the system.
Main Flow	Accesses the "Search/Generate Report" section.

	Specifies search criteria and generates reports.
Post Conditions	Reports are generated based on the specified search criteria.
Alternate Flow	If there are no results for the specified search criteria, the system displays a message indicating no data found.
Sub Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#14
Use case Name	manage_fines
Description	The caretaker can add, edit, or remove fines imposed on students for rule violations.
Actor	Caretaker
Precondition	The caretaker is logged into the system.
Main Flow	Navigates to the "Manage Fines" section. Manages fines for rule violations.
Post Conditions	Fines for rule violations are added, edited, or removed.
Alternate Flow	If there is an error in adding or updating fines, the system notifies the caretaker and suggests corrective actions.
Sub Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#15
Use case Name	view_staff_info
Description	Can view information about hostel staff members.
Actor	Caretaker, Warden
Precondition	The caretaker is logged into the system.
Main Flow	Accesses the "View Staff Info" section.[A1]
Post Conditions	NIL
Alternate Flow	[A1] Manage staff attendance
Sub Flow	NIL
Global Alternate Flow	NIL

UC ID	UC#16
Use case Name	view_guard_shift
Description	The warden can view shifts of guards for duty.
Actor	Warden
Precondition	The warden is logged into the system.
Main Flow	1. Warden goes to view guard shift section. [GA1]
Post Conditions	Nil
Alternate Flow	Nil
Sub Flow	Nil
Global Alternate Flow	GA1 : Warden can return to dashboard.

UC ID	UC#17
Use case Name	view_rooms
Description	The warden can view room details of students of his hostel.
Actor	Warden
Precondition	The warden is logged into the system.
Main Flow	1. Warden goes to view rooms section. [GA1]
Post Conditions	Nil
Alternate Flow	Nil
Sub Flow	Nil
Global Alternate Flow	GA1 : Warden can return to dashboard.

UC ID	UC#18
Use case Name	view_student
Description	The warden can view details of students of his hostel.
Actor	Warden
Precondition	The warden is logged into the system.
Main Flow	1. Warden goes to view guard shift section. [GA1]
Post Conditions	Nil
Alternate Flow	Nil

Sub Flow	Nil
Global Alternate Flow	GA1 : Warden can return to dashboard.

3.3. Other Functional Requirements

- This module will make use of the communication module for sending notifications and alerts to various actors involved in the module suitably for complaint management, guest room booking, or leave application etc.

3.4 Other constraints

3.4.1 User Interfaces

The user interface should comply with the color scheming and dashboard design of the FUSIONIIT. Users should be able to navigate from one functionality to other. Inter module navigation should be smooth. All the functionalities should be easy to use and no specific training should be required for the usage of the module.

3.4.2 Tech Stack Used

Django, Postgresql DB

4. Non-Functional Requirements

4.1 Performance:

The system should respond to user interactions quickly. Response time for booking actions, inventory updates, and notifications should be less.

4.2 Scalability:

The system should handle a mass of concurrent users. System performance should be evaluated under increasing load conditions.

4.3 Availability:

The system should be available 99.9% of the time.

4.4 Security:

Ensure data confidentiality and integrity. Role-based authorisation ensures that users can only perform actions relevant to their designated roles.

5. Module dependencies with other fusion modules

5.1 Module Level Dependencies

Hostel Management module depends on following other modules.

- Globals
- Academic_info

5.2 DB level dependencies

DB tables that Hostel Management module depends upon:

From Globals module :

- ExtraInfo
- Faculty
- Staff

From Academic_info module :

- Student

