COMSATS University Islamabad Abbottabad Campus

Lab-Assignment # 1

Submitted by:

Sayyam Tahir (SP23-BSE-014)

Section: BSE-5A

Submitted to:

Name: Mukhtiar Zamin

Subject: Software Design and Architecture

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Use Case Name:

Leaved Student Management

Primary Actor:

Hostel Warden

Secondary Actors:

Admin

Stakeholders and Interests:

- **Student**: Wants their departure to be recorded properly and their room vacated.
- **Hostel Warden**: Needs to update records and ensure the vacated room is available for reallocation.
- **Admin**: Responsible for overseeing and ensuring the integrity of student data and hostel operations.

Preconditions:

1. The student has been registered in the hostel management system.
2. The student has notified the hostel about their intention to leave (voluntary departure, course completion, or other reasons).
3. The student's departure request has been reviewed and approved by the relevant authority (warden or admin).
4. The system contains accurate records of the student's room allocation and attendance.
5. The system is functional, and the user is logged in with proper permissions.

Postconditions:

1. The student's status is updated to **"Leaved"** in the system.
2. The student's **room** is marked as **vacant**.
3. The student's **attendance record** is updated with the departure date.
4. Any **pending dues** are flagged for payment or settled.
5. A **notification** is sent to the student, warden, and admin confirming the update.
6. The student's data is **archived** for historical records.
7. Reports are updated with **leaved student details** for further processing.

Main Success Scenario (Basic Flow):

1. **Trigger:** The student notifies the warden or admin about their departure (either through the system or verbally).

2. **Warden Action:**
   - o The hostel warden logs into the system and navigates to the **Student Management** section.
   - o The warden searches for the student's record using their **ID** or **name**.
   - o The system displays the student's profile, including their **room assignment**, **attendance history**, and **payment status**.
3. **Warden Updates Status:**
   - o The warden selects the **Leaved Student** option.
   - o The system prompts the warden to confirm the departure date and reason (e.g., course completion, personal reasons).
   - o The warden confirms and updates the student's status to **Leaved**.
4. **Room Update:**
   - o The system automatically marks the student's **room as vacant**.
   - o The system updates the room status in the **room allocation system**.
5. **Attendance Update:**
   - o The system updates the student's **attendance record** to reflect the departure date.
   - o If applicable, the system calculates the student's **stay duration** for historical reporting.
6. **Financial Settlement:**
   - o The system checks for any **outstanding dues**.
   - o If dues exist, the system notifies the warden to process the payment or flag it for pending settlement.
7. **Data Archiving:**
   - o The system archives the student's records (attendance, payment history, room allocation, etc.).
8. **Notification Sent:**
   - o The system sends a **confirmation notification** to the student, warden, and admin that the student's departure has been processed and their room is now available.

Alternative Flows (Extensions):

1. **Pending Dues or Unpaid Fees:**
   - o **Step 6A:** If the student has outstanding fees, the system prevents the status update and prompts the warden to settle dues before proceeding.
   - o **Step 6B:** The system provides an option to manually settle fees or mark them as pending.
2. **Room Assignment Error:**
   - o **Step 4A:** If there is an error when trying to mark the room as vacant (e.g., system mismatch), the system alerts the warden with an error message.
   - o **Step 4B:** The warden is prompted to resolve the issue by checking the room assignment or contacting the admin.
3. **Student Has Not Checked Out (Not Vacated the Room):**
   - o **Step 2A:** If the student has not physically vacated the room or returned the keys, the system alerts the warden.

- **Step 2B:** The warden is prompted to initiate a physical check-out process, or the student is reminded to complete the check-out before the status is updated.
4. **Student on Temporary Leave:**
   - **Step 3A:** If the student is leaving temporarily (e.g., a holiday or break), the warden can mark the status as **Temporary Leave** instead of "Leaved."
   - **Step 3B:** The system updates the records to reflect that the student is on leave and will return, keeping the room allocation intact.

Exception Flows:

1. **System Failure During Update:**
   - If the system encounters an error while updating the student's status, the process is halted, and an error message is displayed.
   - The system logs the error, and the warden can attempt to update the status again after troubleshooting.
2. **Student Record Not Found:**
   - If the system fails to find the student's record (e.g., due to data corruption), the warden is informed and prompted to verify the student's details.
   - The warden may need to manually resolve the issue or contact the admin for assistance.
3. **Missing Departure Reason or Date:**
   - If the warden does not enter a reason for departure or the departure date, the system will prompt the warden to enter the missing information before proceeding.
4. **User Permissions Error:**
   - If a user without appropriate permissions (e.g., a student or unauthorized staff) tries to mark a student as "Leaved," the system denies access and shows an **"Access Denied"** message.

Trigger:

- The trigger for this use case is the **notification of a student's departure**, which can either come from the student themselves (e.g., via a leave form) or the hostel management (e.g., through administrative action).

Special Requirements:

- **Data Security & Privacy:** All student records must be handled in accordance with applicable data privacy laws, ensuring only authorized personnel can access or modify the data.

- **Archiving Mechanism:** Leaved students' records should be archived for future reference, and the system must provide easy access to these archived records.
- **Notification System:** The system must automatically notify relevant parties (student, warden, admin) once a student's departure is processed.
- **Reports:** Generate a report of **leaved students** with details such as date of departure, room status, and outstanding payments.
- **System Availability:** The system must be accessible and functioning when the hostel warden needs to update student departure records, and it must handle exceptions effectively.

SSD for leaved Student: