**Software Requirements Specification**

**Visitors’ Hostel Management System**

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**version ??**

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**Table of Contents**

**VISITOR HOSTEL**

**1. Problem Description**

The Visitors’ Hostel Module focuses on online registration, booking, management and automatic data backup of the IIITDM Jabalpur Visitors’ Hostel. Here booking could also be done by both caretaker and incharge . This module manages Visitor Hostel’s inventory. Inventory items with different category consumable and non consumable. The VH Caretaker will set the threshold levels of stock items. The software is generic and platform independent. The web app would be running on all kinds of web browsers even with low speed internet connection*.*It is assumed that the user of this application would have prior experience of some online booking system.

**1.1 Product Scope**

The module will be generic to all kinds of guest houses, easy to use and flexible enough to be changed in accordance with the specifications and facilities of the guest house. All little specifications, facilities, rates and view of the guest house would be easily updated without much intervention of the administrative scrutiny. The application will provide safe online payment facility and quick view of the guest house. The product will also provide two methods of booking i.e. by the user and free booking by the institution itself and will have different levels of access rights.

**1.2 Product Perspective**

The product would be a part of the ‘Online Institution Management System’ and it will be linked to the main website of the institute. This module would make the process of checking availability, booking, payment and management of the guest house online and keep it from the complexities of lengthy and complicated paperwork.

**1.3 Product Functions**

The administration will have following options:

* Different levels of rights and access according to the post of the user.
* Free booking of the guest house for Institute guests.
* Access to information of the guests and rooms allotted to them.
* Update of rates and rules of the guest house.

The Intenders of the institute will have following options:

* Checking availability of the rooms in the guest house
* Book rooms for their visitors

**2. User (Actor) Characteristics**

**Actors in the USE CASE model:**

* VH In-charge
* VH Caretaker
* Intenders

**Functionalities provided:**

* Intender:
* Check availability of rooms: - Intender would be able to check the number of vacant rooms available for booking in the VH for a specific date.
* Book Room: - Intender would be able to request the booking of room by filling up the required information and it would require confirmation by the VH In-charge.
* Payment: - After receiving confirmation for booking of room(s) in VH, intender would be able to make payment online. Amount to be paid will be informed by the VH In-charge along with the confirmation. After confirmation of payment, the room will be booked.
* Cancel Reservation: - Intender would be able to cancel their booking of room(s) in the VH and return will be granted according to VH’s return policy which is set by VH In-charge.
* Visitors’ Hostel In-charge:
* Confirm booking: - VH in charge will grant the confirmation of the booking after verifying the information and checking the category provided by the intender. Along with confirmation, the lodging and boarding charges will also be informed to the intender trying to book.
* Manage Booking: - The VH In-charge will be able to make bookings from his own end as well as cancel them as deemed necessary.
* Caretaker of VH:
* Inventory Management: - The VH Caretaker will be able to manage the VH Inventory and keep a track of consumption of various items.
* Manage offline bookings: - The VH Caretaker will be able to book rooms according to the offline booking requests, thus avoiding any chance of distruption.
* Manage VH Account: - The VH Caretaker will be able to keep a track of the inflow and outflow of money from the VH as well as add details of grants received from the institute.

**3. External Interface Requirements**

**3.1 User Interfaces**

UI would be simple, interactive and welcoming.

Complete design is not ready yet.

**3.2 Hardware Interfaces**

The application would be supported by all the standard desktop and mobile devices.

**3.3 Software Interfaces**

Tools that would be used in the application are HTML, CSS, JavaScript and Django (A framework of Python).

Specific database of guests and rooms will be available.

**3.4 Communications Interfaces**

The communication interfaces being used are HTTP, HTTPS and FTP.

**3.5 Operating Environment**

The software is generic and platform independent. The web app would be running on all kinds of web browsers even with low speed internet connection*.*

**3.6 Design and Implementation Constraints**

Complete information of internal management and architecture of the guest house.

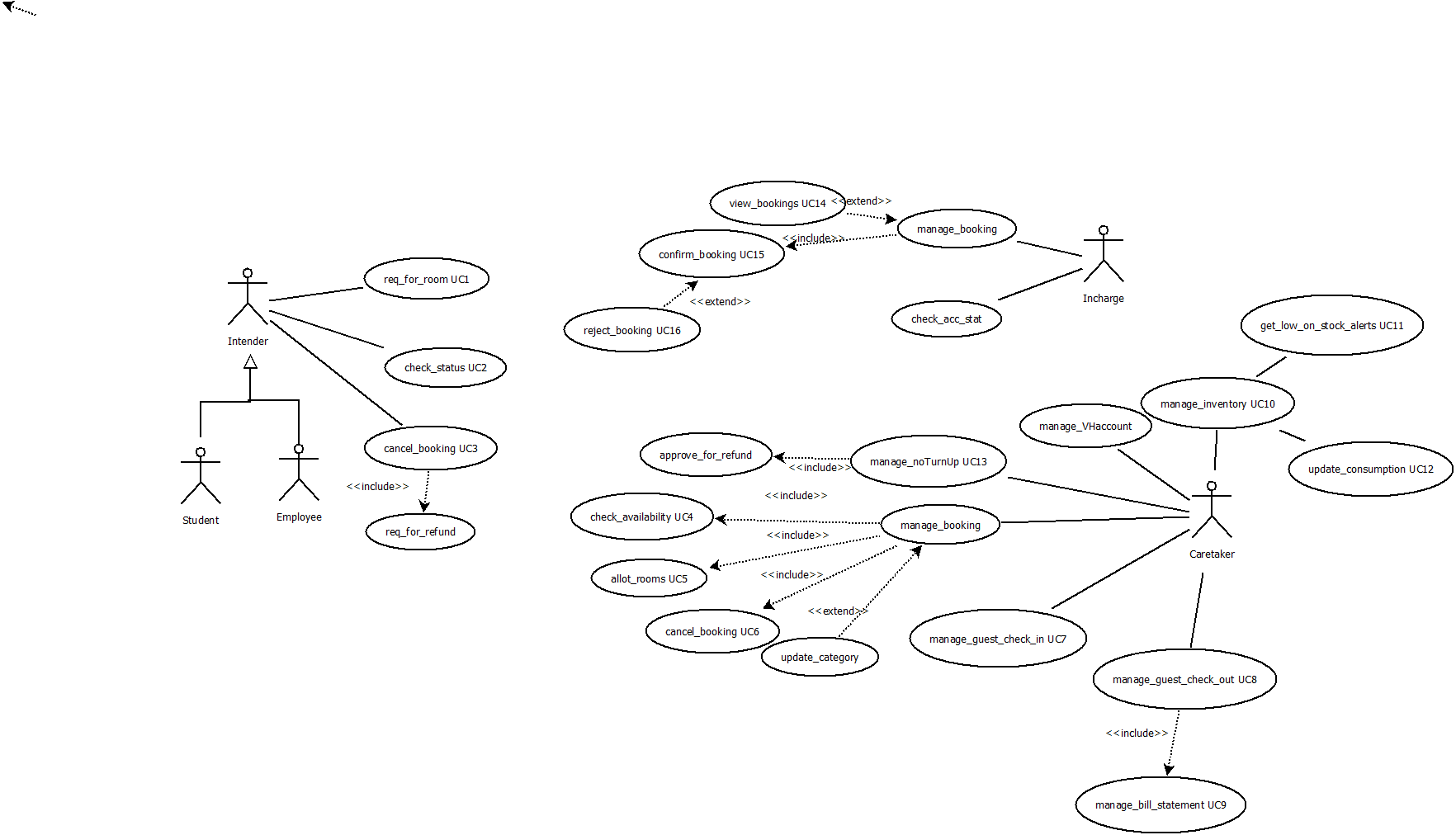
**3.7 User Documentation**

Help links would be available on the website.

**3.8 Assumptions and Dependencies**

It is assumed that the user of this application would have prior experience of some online booking system.

**4. Use Cases Diagram**

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**4.1 Use Case #1**

| **UC ID** | UC#1 |
| --- | --- |
| **Use case Name** | **req\_for\_booking** |
| **Description** | The Intender will be able to book room(s) in the VH. The Intender has to fill the form in the required format and submit for further processing. |
| **Actor** | Intender |
| **Precondition** | The Intender must be logged-in |
| **Main Flow** | The Intender selects option to request a booking. |
| The system generates a form to be filled with fields like start date, end date, type of room, number of guests, etc |
| The Intender fills the form in the given format. |
| The Intender submits the form by clicking a button. [A2] |
| **Post conditions** | The form is forwarded to VH Incharge. |
| **Alternate Flow** | **Post-condition –** The system returns to the Intender Dashboard. |
| **Sub Flow** | The employee is notified with the VH In-charge’s action as the status update of the application |
| **Global Alternate Flow** | The Intender can ‘cancel’ the procedure at any time by exercising such an option |
| **Post-condition –** The system returns to the Intender Dashboard. |

**4.2 Use Case #2**

| **UC ID** | UC#2 | |
| --- | --- | --- |
| **Use case Name** | **check\_status** | |
| **Description** | After submitting a booking request, the room Intender can check if the booking is confirmed/pending/canceled. | |
| **Actor** | Intender | |
| **Precondition** | Intender must be logged in.  Intender must have applied for booking a room. | |
| **Main Flow** | 1 | Intender clicks on my bookings button form his dashboard. |
| 2 | The system generates a list of Intender’s booking requests categorized by their status. |
| 3 | The Intender searches a booking request from the list. |
| 4 | The system shows the current status of the booking request. |
| **Post conditions** | NIL | |
| **Alternate Flow** | NIL | |
| **Sub Flow** |  | NIL |
| **Global Alternate Flow** | GA1 | The Intender can cancel the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the Intender Dashboard. |

**4.3 Use Case #3**

| **UC ID** | UC#3 | |
| --- | --- | --- |
| **Use case Name** | **cancel\_booking** | |
| **Description** | Intenders will be able to cancel their booking of room(s) in the VH with remarks. | |
| **Actor** | Intender | |
| **Precondition** | The Intender must be logged-in | |
| **Main Flow** | 1 | The Intender clicks on my bookings button from his dashboard. |
| 2 | The system generates a list of Intender’s booking requests. |
| 3 | The Intender selects a booking request form the list and clicks on cancel button |
| 4 | The Intender confirms by clicking on a confirm button. [A1] |
| **Post conditions** | Canceled booking will be reflected in the system and notification will be sent to the Intender. | |
| **Alternate Flow** | A1 | The Intender clicks on the cancel button and cancels the cancel booking process. |
|  | **Post-condition –** The system does not cancel the booking and returns to Intender’s bookings list. |
| **Sub Flow** | NIL | |
| **Global Alternate Flow** | GA1 | The Intender can cancel the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the Intender Dashboard. |

**4.4 Use Case #4**

| **UC ID** | UC#4 | |
| --- | --- | --- |
| **Use case Name** | **check\_availability** | |
| **Description** | The Vh caretaker will be able to check the current occupancy of VH. | |
| **Actor** | Vh caretaker | |
| **Precondition** | Vhcaretakere should be logged in. | |
| **Main Flow** | 1 | The Vh caretaker clicks on the room availability button from their dashboard. |
| 2 | The system generates a form showing the option start date and end date. |
| 3 | The Vh caretaker selects starting date and ending date for history occupancy viewing. |
| 4 | The Vh caretaker submits by clicking a button. |
| 5 | The required booking details are displayed. |
| **Post conditions** | The system returns to its initial condition. | |
| **Alternate Flow** | NIL | |
| **Sub Flow** | NIL | |
| **Global Alternate Flow** | GA1 | The Vh caretaker can ‘cancel’ the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the Vh caretaker Dashboard. |

**4.5 Use Case #5**

| **UC ID** | UC#5 | |
| --- | --- | --- |
| **Use case Name** | **allot\_rooms** | |
| **Description** | The caretaker will allot rooms according to the availability . | |
| **Actor** | Caretaker | |
| **Precondition** | The caretaker  must be logged in.  The Intender should have applied for booking.  Rooms should be available. | |
| **Main Flow** | 1 | The caretaker selects option booking to view booking requests. |
| 2 | The system generates a list displaying the pending booking requests. |
| 3 | The caretaker selects a booking request. |
| 4 | The caretaker allots rooms according to the request and availability from the list of available rooms. [A1] |
| 5 | The caretaker forwards the request to the incharge. |
| **Post conditions** | Room is alloted to the Intender. | |
| **Alternate Flow** | A1 | The VH In-charge cancels the application mentioning the remark. |
|  | **Post-Condition:** Intender will get notification about cancellation of application. |
| A2 | The caretaker does not confirm by clicking on cancel button. |
|  | **Post-condition:** The system does not allot rooms and returns to booking requests list. |
| **Sub Flow** | NIL | |
| **Global Alternate Flow** | GA1 | The VH In-charger can cancel the procedure at any time by exercising such an option |
|  | The Intender can cancel the procedure at any time by exercising such an option |

**4.6 Use Case #6**

| **UC ID** | UC#6 | |
| --- | --- | --- |
| **Use case Name** | **cancel\_booking** | |
| **Description** | VH Caretaker will be able to cancel any booking of room(s) in VH with remarks | |
| **Actor** | VH Caretaker | |
| **Precondition** | There should be a pre-booked room in VH. | |
| **Main Flow** | 1 | The VH Caretaker selects a booking to be canceled from the list of booked rooms. |
| 2 | Caretaker cancels the selected booking by clicking on a button. |
| **Post conditions** | Canceled booking will be reflected in the system and notification will be sent to the concerned Intender. | |
| **Alternate Flow** | NIL | |
| **Sub Flow** | NIL | |
| **Global Alternate Flow** | GA1 | The VH Caretaker can ‘cancel’ the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the VH In-charge’s Dashboard. |

**4.7 Use Case #7**

| **UC ID** | UC#7 | |
| --- | --- | --- |
| **Use case Name** | **manage\_guest\_check\_in** | |
| **Description** | VH Caretaker will be able to mark the check in status of a booked VH room. | |
| **Actor** | VH Caretaker | |
| **Precondition** | VH Caretaker must be logged in. | |
| **Main Flow** | 1 | VH Caretaker clicks on the check in button from his dashboard. |
| 2 | The system will generate the list of guests having current booking and not checked in yet. |
| 3 | The VH Caretaker selects the name of the guest and fills the check in time and date. |
| 4 | The system asks for confirmation. |
| 5 | The VH Caretaker clicks on the confirm button. [A1] |
| **Post conditions** | System reflects the modified details regarding room status. | |
| **Alternate Flow** | A1 | The VH Caretaker clicks cancel. |
| **Sub Flow** |  | The system updates the database and marks the room as occupied. |
| **Global Alternate Flow** | GA1 | The VH Caretaker can ‘cancel’ the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the VH Caretaker’s Dashboard. |

**4.8 Use Case #8**

| **UC ID** | UC#8 | |
| --- | --- | --- |
| **Use case Name** | **manage\_guest\_check\_out** | |
| **Description** | VH Caretaker will be able to initiate the process of checkout on the system regarding bill clearance and room status update. | |
| **Actor** | VH Caretaker | |
| **Precondition** | Guests have checked-in at VH.  VH Caretaker must be logged in. | |
| **Main Flow** | 1 | VH Caretaker clicks on the checkout button from his dashboard. |
| 2 | The system generates the lists of guests currently present at VH. |
| 3 | The VH Caretaker selects the Guest name and click on the checkout button. [A1] |
| 4 | UC#10 will be exercised. |
| **Post conditions** | System reflects the modified details regarding room status and account. | |
| **Alternate Flow** | A1 | VH Caretaker canceled the checkout request. |
|  | **Post-condition** – The system returns to the employee ‘Dashboard’ – initial screen. |
| A2 | The head chooses not to confirm. |
|  | **Post-condition –** The system displays the form with the data filled in so far. |
| **Sub Flow** | S1 | System marks the corresponding room empty. |
| **Global Alternate Flow** | GA1 | The VH Caretaker can ‘cancel’ the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the VH Caretaker’s Dashboard. |

**4.9 Use Case #9**

| **UC ID** | UC#9 | |
| --- | --- | --- |
| **Use case Name** | **manage\_bill\_settlement** | |
| **Description** | VH Caretaker sees if the bill is paid by intender/guest. He collects the money according to the bill and updates the system accordingly. | |
| **Actor** | VH Caretaker | |
| **Precondition** | Guest has checked-in at VH.  VH Caretaker must be logged in.  The VH Caretaker must be at the Check Out interface. | |
| **Main Flow** | 1 | VH Caretaker click on the Generate bill button. |
| 2 | System generates the bill containing meal charges, room charges. |
| 3 | VH Caretaker select the mode of payment(intender/guest/institute) from the checkbox. |
| 4 | VH Caretaker updates the system about the payment. [S1] |
| **Post conditions** | System reflects the payment details. | |
| **Alternate Flow** | NIL | |
| **Sub Flow** | S1 | System updates the VH Account. |
| **Global Alternate Flow** | GA1 | The VH Caretaker can ‘cancel’ the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the VH Caretaker’s Dashboard. |

**4.10 Use Case #10**

| **UC ID** | UC#10 | |
| --- | --- | --- |
| **Use case Name** | **manage\_inventory** | |
| **Description** | VH Caretaker will be able to manage the inventory of the VH. | |
| **Actor** | VH Caretaker | |
| **Precondition** | The VH Caretaker should be logged in. | |
| **Main Flow** | 1 | Screen will show the inventory items with different categories consumable and non consumable.. |
| 2 | The VH Caretaker will set the threshold levels of stock items. [A1] [A2] |
| 3 | System alerts will be generated for items below threshold. |
| **Post conditions** | The inventory will be in a consistent state. | |
| **Alternate Flow** | A1 | VH Caretaker will add items to inventory. |
|  | **Post-condition** – The inventory will be now updated and in a consistent state. |
| A2 | VH Caretaker selects for update\_consumption(UC#16). |
|  | **Post-condition –** The inventory will be now updated and in a consistent state. |
| **Sub Flow** |  | The employee is notified with the head’s action as the status update of the application |
| **Global Alternate Flow** | GA1 | The VH Caretaker can ‘cancel’ the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the VH Caretaker’s Dashboard. |

**4.11 Use Case #11**

| **UC ID** | UC#11 | |
| --- | --- | --- |
| **Use case Name** | **get\_low\_on\_stock\_alerts** | |
| **Description** | VH Caretaker will get alerts when any inventory item quantity falls below a pre-decided threshold. | |
| **Actor** | VH Caretaker | |
| **Precondition** | VH Caretaker has logged in. | |
| **Main Flow** | 1 | System generates an alert when there is a shortage of any inventory item. |
| **Post conditions** | The VH Caretaker is notified. | |
| **Alternate Flow** | NIL | |
| **Sub Flow** | NIL | |
| **Global Alternate Flow** | NIL | |

**4.12 Use Case #12**

| **UC ID** | UC#12 | |
| --- | --- | --- |
| **Use case Name** | **update\_consumption** | |
| **Description** | The VH Caretaker will periodically update the system with the quantity of items consumed. | |
| **Actor** | VH Caretaker | |
| **Precondition** | VH Caretaker must be logged in. | |
| **Main Flow** | 1 | The VH caretaker will select an item from the inventory list. |
| 2 | The VH Caretaker will update the quantity consumed. |
| **Post conditions** | The system is now updated and consistent. | |
| **Alternate Flow** | NIL | |
| **Sub Flow** | NIL | |
| **Global Alternate Flow** | GA1 | The VH Caretaker can ‘cancel’ the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the VH Caretaker’s Dashboard. |

**4.13 Use Case #13**

| **UC ID** | UC#13 | |
| --- | --- | --- |
| **Use case Name** | **manage\_noTurnUp** | |
| **Description** | The system will notify VH Caretaker/VH In-charge about guests who didn’t turn up. The VH Caretaker can take actions as deemed fit. | |
| **Actor** | VH Caretaker | |
| **Precondition** | VH Caretaker should be logged in. | |
| **Main Flow** | 1 | System will generate an alert for the VH Caretaker about no turn up of guests. |
| 2 | VH Caretaker will confirm such situations through the Intender. |
| 3 | VH Caretaker exercises UC#6. [A2] |
| **Post conditions** | System is now updated and consistent. | |
| **Alternate Flow** | A1 | VH In-charge will ask VH Caretaker to update (cancel or retain) the system accordingly. |
|  | **Post-Condition:** System is now updated and consistent. |
| A2 | The VH Caretaker does nothing. |
|  | **Post-condition –** The system does not cancel the booking. |
| **Sub Flow** | NIL | |
| **Global Alternate Flow** | NIL | |

**4.14 Use Case #14**

| **UC ID** | UC#13 | |
| --- | --- | --- |
| **Use case Name** | **view\_bookings** | |
| **Description** | The VH In-charge will be able to check the booking history and current occupancy of VH. | |
| **Actor** | VH In-charge | |
| **Precondition** | VH In-charge should be logged in. | |
| **Main Flow** | 1 | The VH in-charge click on view booking button from their dashboard. |
| 2 | The system generates a form showing the option start date and end date. |
| 3 | The VH In-charge selects starting date and ending date for history and occupancy viewing. |
| 5 | The required booking details are displayed. |
| **Post conditions** | NIL | |
| **Alternate Flow** | NIL | |
| **Sub Flow** | NIL | |
| **Global Alternate Flow** | GA1 | The VH In-charge can ‘cancel’ the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the VH In-charge’s Dashboard. |

**4.15 Use Case #15**

| **UC ID** | UC#14 | |
| --- | --- | --- |
| **Use case Name** | **confirm\_booking** | |
| **Description** | VH In-Charge will grant the confirmation of the booking after verifying the information provided in the application. | |
| **Actor** | VH In-Charge | |
| **Precondition** | VH In-Charge has logged in.  VH In-Charge has received application(s) to book rooms in VH. | |
| **Main Flow** | 1 | VH In-charge opens the application and verifies the details. |
| 2 | VH In-charge confirms the booking. [A1] |
| **Post conditions** | VH In-Charge has responded to the booking request by the stakeholder. | |
| **Alternate Flow** | A1 | VH In-charge finds discrepancies in the application and rejects it with remarks. |
|  | **Post-Condition:** Intender is notified about the cancellation of application. |
| **Sub Flow** | NIL | |
| **Global Alternate Flow** | GA1 | The VH In-charge can ‘cancel’ the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the VH In-charges’s Dashboard. |

**4.16 Use Case #16**

| **UC ID** | UC#16 | |
| --- | --- | --- |
| **Use case Name** | **reject\_booking** | |
| **Description** | VH In-charge will be able to reject any booking of room(s) in VH with remarks | |
| **Actor** | VH In-charge | |
| **Precondition** | There should be a pre-booked room in VH. | |
| **Main Flow** | 1 | The VH In-charge selects a booking to be canceled from the list of alloted rooms. |
| 2 | VH In-charge cancels the selected booking by clicking on a button. |
| **Post conditions** | Canceled booking will be reflected in the system and notification will be sent to the concerned Intender. | |
| **Alternate Flow** | NIL | |
| **Sub Flow** | NIL | |
| **Global Alternate Flow** | GA1 | The VH In-charge can ‘cancel’ the procedure at any time by exercising such an option |
|  | **Post-condition –** The system returns to the VH In-charge’s Dashboard. |

**5. Other Nonfunctional Requirements**

**5.1 Performance Requirements**

The system will be light and fast enough to be open even in low speed internet connection.

**5.2 Safety Requirements**

Online payment is a potential process prone to money loss so a safe and trusted online payment gateway is required. In case of any sudden damage to the server where the database is stored data might be lost so automatic data-backup is necessary.

**5.3 Security Requirements**

The booking will be done by the stakeholders of the institute only on providing their username and password. Thus, these credentials would prevent unauthorized access to the system.

**5.4 Software Quality Attributes**

The adaptability, correctness, flexibility, interoperability, maintainability, portability, reliability, robustness and usability would be ensured by defining fields for all the data that is liable to some changes in the future and also light weight for fast and operational condition even on low speed internet connection.

**6 List of open issues (unresolved issues) with the module**

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| **S. No** | **Issue details** | **Category** | **How can it be resolved?** | **Any other relevant information** |
| --- | --- | --- | --- | --- |
| 1. | Feedback from visitors | Ajax | Already tried much of the ways but didn’t find any solution | NA |
| 2. | Calendar Problems(Dates displaying in text format) | Ajax | Didn’t found any solution | NA |
| 3. | Notification | Unimplemented Functionality | NA | NA |
| 4. | Payment gateway | Unimplemented Functionality | By purchasing it from  sources | This module will be more convenient |
| 5. | Room selection | Ajax | NA | NA |

**7 Some of the issues, problems you faced, lessons you learned during the project, suggestions and your guanine feedback (for future).**

**Issues**

* More functionality could be added like payment gateway, room selection by visitor, individual visitor bill generation.

**Problem faced**

* Ajax
* Bill Generation

**Lessons learned**

* Team work
* Working under pressure

**Appendix C: To Be Determined List**

*References for the guest’s entries, staff and stock details.*