

**IIIT GUWAHATI**

**CSE**

**SOFTWARE ENGINEERING PROJECT**

**HOSTEL MANAGEMENT SYSTEM**

**PROJECT REPORT**



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## **Problem Statement**

Hostel Management is very demanding job which requires you to be on your toes 24\*7. The deadlines and checking up every facility to keep up with the demands of the students. It requires constant learning and keeping yourself up to date with the latest tools and facilities in the market. The work schedule is not fixed in such job profiles and requires you to be flexible in terms of timings. Managing each entry of complaints on a notebook is taxing and takes lots of time and needs to manage multiple notebooks to deal with different kinds of complaints.

## **Purpose**

The purpose of developing this software is to manage various activities in the hostel. The project deals with the problem of managing a hostel. It avoids the problems that occurred manually, thereby reducing the warden's workloads in the smooth running.

## **Scope**

The proposed project hostel management is a computerised system. This project in the hostel can reduce all the problems faced in the current manual hostel management system. The main objective of developing the hostel management system is to save money, time and paper.

## **Software requirement specification**

This system provides an easy solution for students to lodge the complaints / applications without going anywhere at any time and also to warden to view the complaints / applications from anywhere and anytime. This proposed system can be used by any naïve user and it does not require any educational level, experience or technical expertise in the computer field but of good use if the user has some knowledge of how to operate a computer.

### **Overall Description**

The Hostel Management system is a web application that enables students to lodge their request for room cleaning, food quality complaint, apply for waiver, can view monthly mess fees and provide any suggestion needed online. Also the warden can accept the application of the students, view the application forms, reject the fake applications, view the complaints in the hostel, accept the fee and medical waiver application and update mess fees.

### **Product Function**

The web-app would have the the following basic functions:

- Student Registration: Administrator can register a student
- Login System: Users and administrators have to log in using webmail only.
- Mess bill: Automated mess bill will be generated at the end of the month.
- Medical: Contains necessary information regarding a medical emergency, services and medicines
- Student profile: Students can submit a request for a mess bill exception and apply for a refund of a hospital bill.

- Complain Management: Lodge a complaint regarding cleaning, food etc.

## **Advantages**

### **For Administrator**

- Less human error
- Time and Cost saving: Reduces the burden of admin through the automated system.
- Data redundancy can be avoided to some extent.
- Reduces paperwork

### **For Students**

- Time-saving: Reduces the time spent in getting leave applications approved or in mess bill exemption.
- Complaint: Lodging a complaint will be confidential and easy.
- Refund: Apply for a refund of hospital bills etc.

## **User Characteristics**

The users of the hostel management system, based on their roles, are Students(users) and Administrator(faculty).

- **Administrator module:**

In the administrator module, the administrator manages the master datas like server details and student details. Accept the application of the students, view the application forms, reject the fake applications, view the complaints in the hostel, accept the fee and medical waiver application and update mess fees.

- **Student Module:**

In the student module, they can request for room cleaning, food quality complaints, apply for waiver, can view monthly mess fees and provide any suggestion needed.

## **Functional Requirements**

- Users must have webmail and password to log in.
- The administrator can register new students.
- Students can check their mess bill.
- Students can check the status of their application.
- The administrator can update the hostel details.
- The administrator can post news and make changes in other sections.

## **Non Functional Requirements**

- Secure access to confidential user's details.
- Maximum time availability.
- Flexible service based architecture will be highly desirable for future expansion.
- Teacher registration facility is accessible by the administrator only.

## **Design constraints**

### **Hardware Requirements**

Processor: Intel Core i5

Ram: Minimum 4GB

Hard Disk: 500GB +

Technology Used

Scripting Language: HTML, CSS, Bootstrap, JavaScript

Frontend Framework: React.js

Database: MongoDB

Backend: Node.js

### Software Requirements

Database Server: MongoDB

Client: Any web browser

Development Tools: Atom text editor

Programming Language: Javascript

Deployment

Operating System: Windows, Linux

### **Risk Management**

#### Large number of users than planned

The number of users that will be estimated as the number of users cannot be greater than the sum of the number of students and faculty.

#### Server breaks down

Due to the breakdown of the server, our customers will not be able to connect to our website.

#### Data loss

Sometimes, the computer may crash due to which all our data will be lost and this is a major issue.

#### Security issues

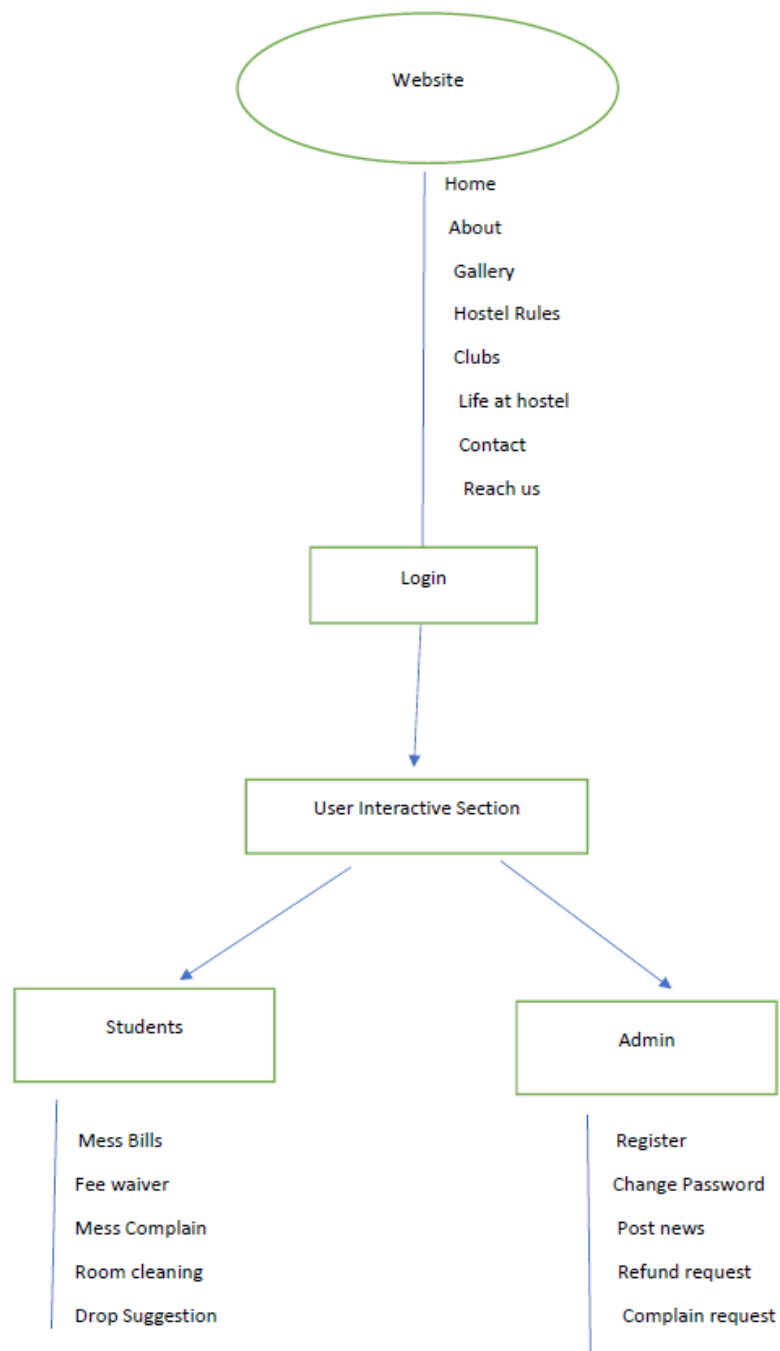
The website may get hacked intentionally by some students to cause trouble and this will lead to huge loss in terms of both time and data.

#### Users resist system

It is possible that users are more adaptive to existing manual systems and hence, it will reduce our users. And it is quite difficult to convince people to opt for a new system because of the existing system.

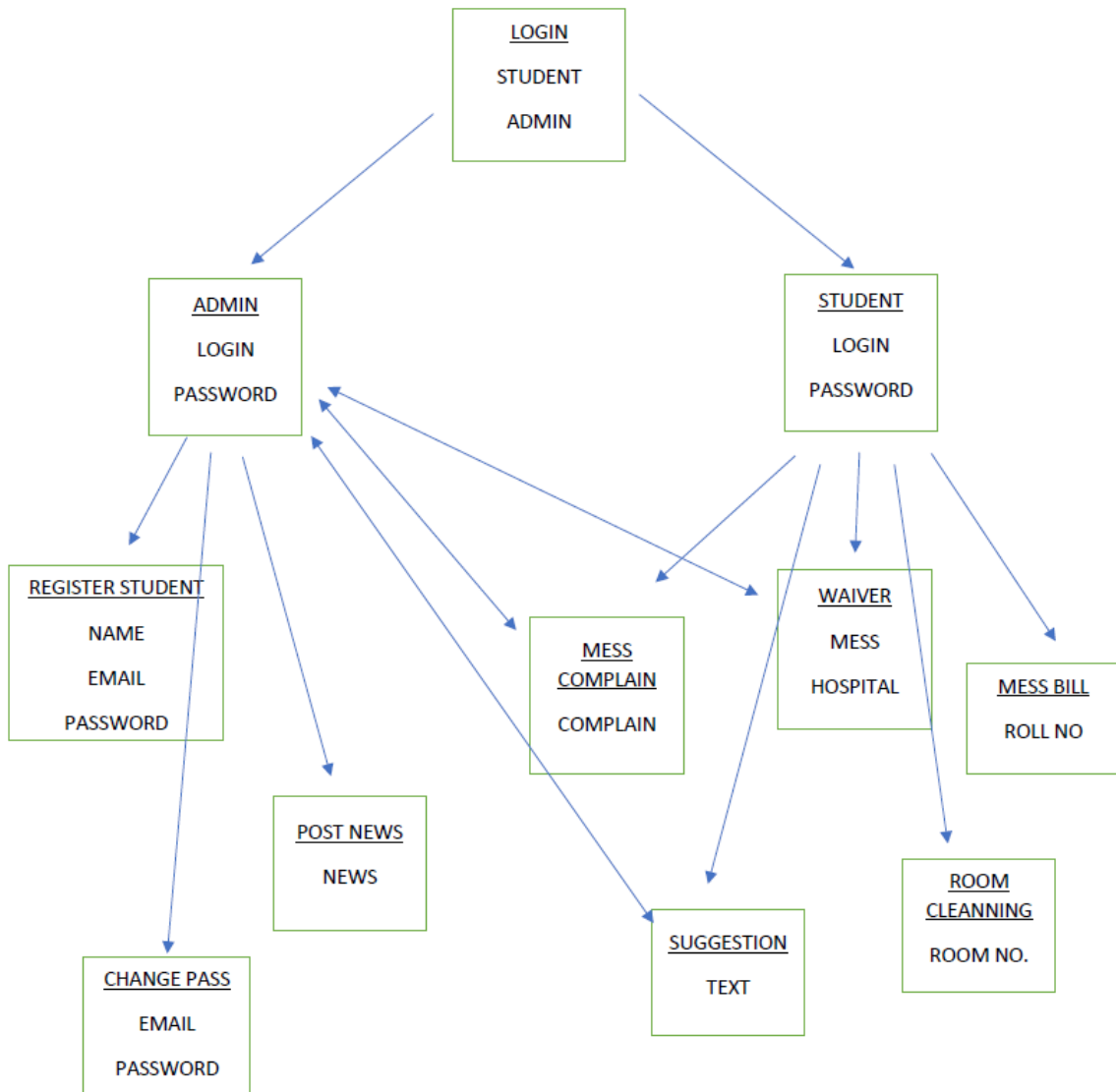
# Design

## Architectural Design





## ER MODEL



## DATA FLOW DIAGRAM

### 0<sup>th</sup> Level DFD



### 1<sup>st</sup> Level DFD





## Use case Diagram



## **Testing**

- In login page:

If login id is webmail

accept

else

print "Please match the request format"

## **Conclusion**

- HOSTEL MANAGEMENT SYSTEM is very useful for complaint management and mess fee calculation. This hostel management software is designed for people who will manage various activities in the hostel. The number of hostels in the campus will increase in the future for the accommodation of students studying in the institute. And hence there is and will be a lot of strain on the person who is running the hostel and any software is not used in this context. This particular project deals with the problems of managing a hostel and avoids the problems which occur when carried manually.
- Identification of the drawbacks of the existing system leads to the designing of a computerised system which is more user friendly and more GUI oriented.