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HOSTELnBUS - An Online Portal for Organising Hostels and Buses for Institutions

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Abstract: *Managing daily hostel activities and keeping records is very challenging task. Currently most of the hostels in India doesn't use any modern way to do such things. Things are managed in a pen paper way, also this becomes very hectic for the warden as well as student to co-operate with such system. Another problem that is faced by the institution is to track their buses and to manage the student using the facility. Also, students face issues regarding locating the bus and fee issues. Therefore, we decided to develop online hostel and bus managing application setup which certainly solves the problem in hostel attendance, student database, bus tracking etc. in an institution all together.*

Keywords: *Online daily attendance, Live bus locations, whole hostellers centralised database, separate modules for faculties and students, Leave applications, Room allotment.*

I. INTRODUCTION

The main purpose of this application is to provide Hostel and Bus facilities. It helps the admin to manage, Student record, Staff record, Allotting room, Complaint by the students. Student will no longer apply for their hostels manually and can track the location of the college bus. The warden can see and access the student's data. This also will reduce the manual work of the persons in admin panel. It helps the admin to know the number of students that can reside in a room and a block.

This Hostel and Bus Management System is developed in favour of the college management team which helps them to save the records of the students about their rooms, bus fees and other things. It helps them from the manual work from which it is very difficult to find the record of the students and the information about those ones who had left the college years before.

This solution is developed on the plight of the college management team, through this they don't require an efficient person to handle and manage the affairs of the students in the hostel, all you need to do is login as administrator and you can see the information of all the students who have obtained and registered their hostel form.

The college bus tracking system helps users to know the bus location so that the users don't get delayed or don't arrive at the stop too early. The aim of the bus tracking system is that the user can find their relevant bus's location according to their source (Bus stop) and the destination (College). In order to overcome increased waiting for bus and uncertainty in arrival, we have come with this project.

This application helps the driver to provide the exact location of the bus. He also didn't get distracted by the phone calls of the people who wants the current location of the bus and waiting for the bus for long time.

II. PROBLEM STATEMENT

The first problem is that there are loads of hard copied documents being generated. This brings us to the age-old discussion of keeping information in the form databases versus keeping the same on sheets of paper. Keeping the information in the form of hard-copied documents leads to the following problems:

- 1) *Lack of Space:* It becomes a problem in itself to find space to keep the sheets of paper being generated as a result of the ongoing discussion. The documents being generated are too important to be ill-treated.
- 2) *Filing Poses a Problem:* Filing the documents categorically is a time consuming and tedious exercise.
- 3) *Filtering is not Easy:* It becomes hard to filter relevant documents for the irrelevant ones if the count of the same crosses a certain manageable number.
- 4) *Reviewing becomes time-consuming:* All the process done manually at the college and all the records are maintained on the papers. So, the maintenance of the record is very difficult in the departments and as well as it's very difficult for the workers to check the record. The Existing system is paper based, time consuming, monotonous, less flexible and provides a very hectic working schedule. The chance of loss of records is high and also record searching is difficult. Maintenance of the system is also very difficult and takes lot of time.

Result Processing is slow due to paper work and requirement of staff.

To solve these problems, they required a computerized system to handle all the works. They required an application that will provide a working environment that will be flexible and will provide ease of work and will reduce the time for paper work.

A. Some Common Attributes Are

- 1) *Usability*: The user is facilitated to view and make entries in the forms. Validations are provided in each field to avoid inconsistent or invalid entry in the databases and drop-down lists. Application will allow only valid users to access the system.
- 2) *Security*: Access to any application resource will depend upon user's designation. There are two types of users namely Administrator and Student. Security is based upon the individual user ID and Password.
- 3) *Maintainability*: The installation and operation manual of hostel and bus management system will be provided to the user.
- 4) *Availability*: System will be available around the clock except for the time required for the backup of data.
- 5) *Portability*: This application is developed in Android Studio. This application is portable to Android.

This mobile Application provides facility for hostel and bus management in campus. It saves time as it allows number of students to register on the application, to track the bus location and allot the hostel and hostel room. Administrator has a privilege to create, modify and delete the student records. User can register, login and get the location of the bus with his specific id, and can see the allotted room and mark attendance. User interface is only in English i.e. no other language option is available.

III. OBJECTIVE AND SCOPE OF THE PROJECT

It is a system for managing the hostel activities. It helps the admin to manage, Student record, Staff record, Mess bill, allotting room, generating student report, Student will no longer apply for their hostels manually. The warden can see and access the student's data. This also will reduce the manual work of the persons in admin penal. It helps the admin to know the number of students that can leave in a room and a block.

This Hostel Management System is developed in favour of the hostel management team which helps them to save the records of the students about their rooms and other things. It helps them from the manual work from which it is very difficult to find the record of the students and the information about those ones who had left the hostel years before.

This solution is developed on the plight of the hostel management team, through this they cannot require so efficient person to handle and manage the affairs of the students in the hostel, all you need to do is to login as administrator and you can see the information of all the students who have obtained and registered their hostel form, click verify to ascertain their eligibility and allocate them to the available hostel.

The college bus tracking system helps users to know the bus location so that the users don't get delayed or don't arrive at the stop too early. In order to overcome increased waiting for time and uncertainty in arrival, we have come with this project.

The existing system is a manually maintained system. All the hostel records are to be maintained for the details of each student, Fees details, Room Allocation, Attendance etc. All these details are entered and retrieved manually (On Paper Work).

Location of the bus is not known; thus, we need to ask the bus information for respective persons, long time waiting for the bus, chances of missing bus.

IV. PROPOSED MODEL

To solve the issues that we have mentioned in this paper previously, we decided to develop a platform which provides all the required features built in a single application, which we named as HOSTELnBUS. HOSTELnBUS gives an efficient way of managing daily hostel attendance, hostel room vacancy, important notices, fee status in a centralised manner.

It also provides a good facility for students to get the live location of respective college busses. For safety purpose every user will be provided with a login credentials, each user has to login before using the rightful functionalities. The app checks for the category the user falls in with his user id and accordingly takes him to the respective module.

Hostelers can only mark the attendance during a specific allowed time period of the day and also will only be able to mark the attendance if the student is in the hostel area, this is provided by the location constraints. For the location of the busses the institution does not need any GPS setup in the busses. This app is convenient as the location will be updated by the bus driver's mobile using the same app.

Below is the working model of the proposed system which explains its working on a broad level.

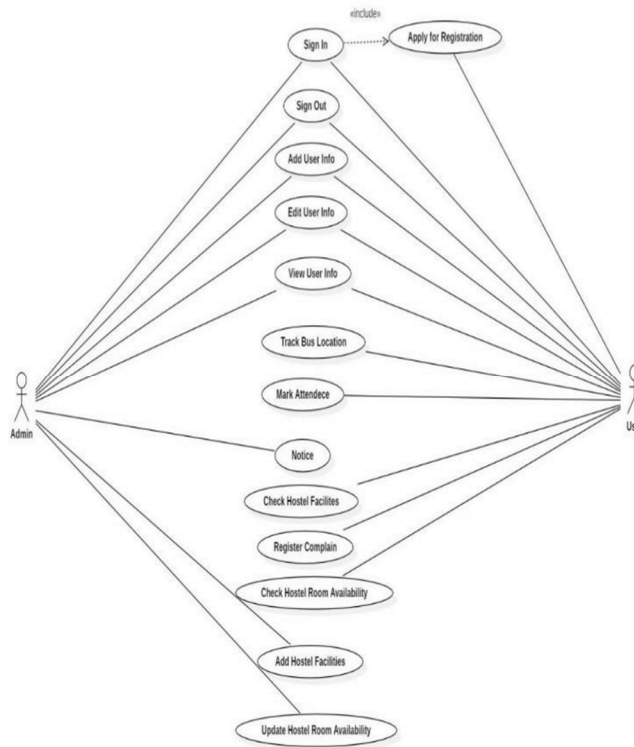


Figure 1. Use Case Diagram

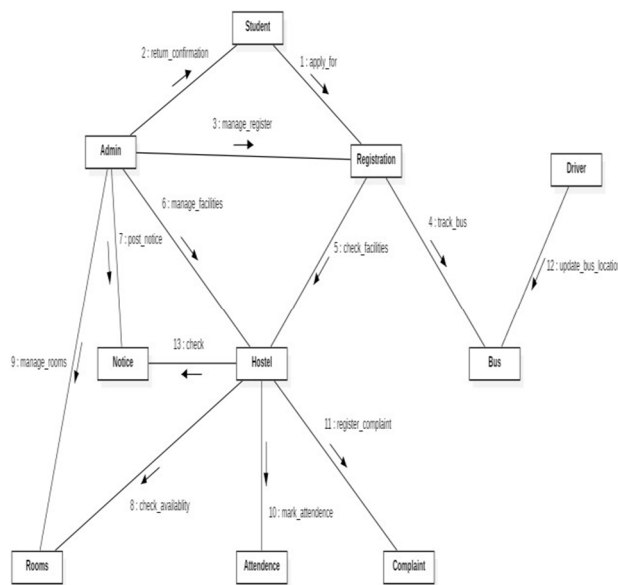


Figure 2. Collaboration Diagram

V. RESULTS

A. Basically *HOSTELnBUS* is a combination of 3 types of Apps

- 1) Hostel and Bus organising app
- 2) Hostel attendance app
- 3) Bus tracking app

Our app provides very simple user interaction. The login activity is same for all the users, the user has to enter the username and password to login. There are 4 types of users-

- a) Warden
- b) Bus Faculty
- c) Hostel student
- d) Bus student

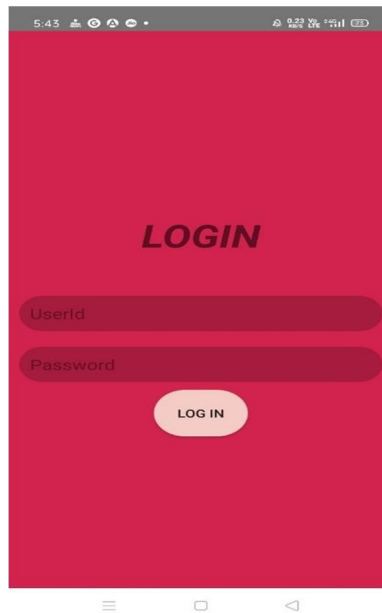


Fig 3. Login Screen

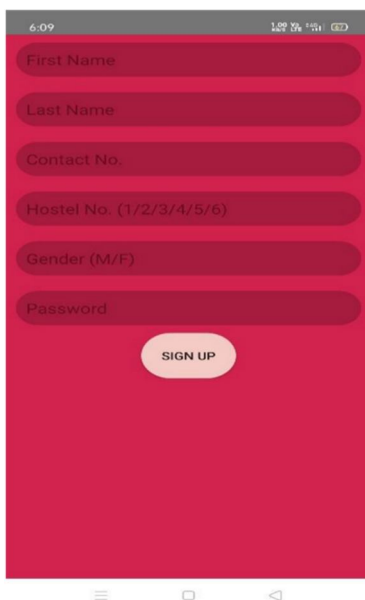


Fig 4. Student Registration Screen



Fig 5. Student Details for Faculties

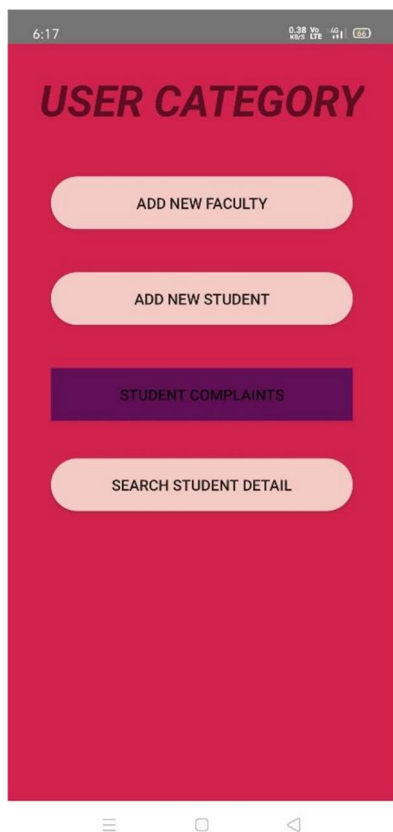


Fig 5. Faculty Screen

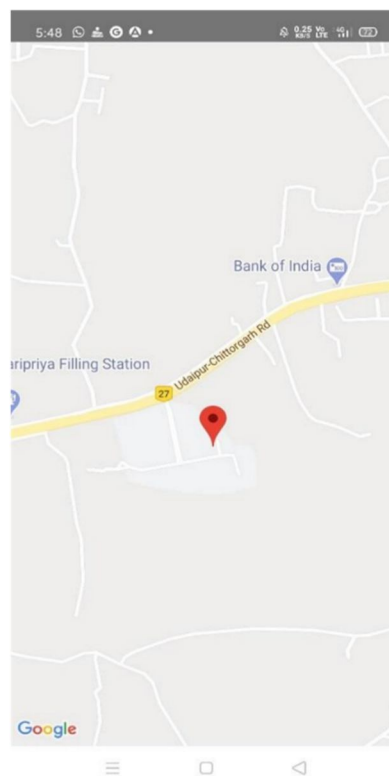


Fig 4. Bus Live Location

Warden and bus faculties have almost same functionalities available for them. They can add a new user, either a student or a faculty, he can see the attendance of the students of a specific date, can see the complaints of the students and can circulate a notice. He will have some special rights to reset credentials, delete a user etc. The Hostel student can use the app to mark the attendance at a specific time, he can add a complaint so that the warden can resolve it.

Bus-student can see the circulated notices and can get the live location of his bus on the map.

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