

An Android based Application on Hostel Management System

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Abstract

"Hostel Management System" is an online application developed for managing various activities of the hostel. This particular work deals with the problem of managing the hostel and avoiding the problems which occur when carried manually. The efficiency of the system can be improved with this application and it will be very useful for the students and as well as for the staff of the hostel to manage the system. Warden will have full authority to access the student queries. This application is completely digital based and is created through the open source platform Android studio. Firebase cloud storage is used to store the data related to student information, staff details and student queries.

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1. Introduction

Current work involves easing the admin work in maintaining hostel records such as room allocation and problems regarding a particular room. It helps hostel management from the manual work which is very difficult to find the record of the students and their reports. It helps the admin to manage student record, staff record, student room allotment, student queries. This software also reduces the manual work of the persons in the admin panel and the bundle of registers that were searched when to find the information of a student.

Students may face some problems while staying in the hostel and these complaints are registered in complaint records. With this application students can share their queries via the app and it will reach the warden and then warden will

forward the complaint to the concerned department. This way queries can be solved on a first come first serve basis and priority basis.

This application also provides students with an out pass when they want to go out from the premises. Currently even out pass requires paper work, through this application students can send the out pass request to the warden and incharge person can process the request immediately. This application will completely transform pen and paperwork into an online based application. Hence reducing the cost and time of maintaining the hostel details and queries in a register. Through this

application, retrieving old information and sorting any issues is easy and fast. As the world is moving in a digital era this application is a step towards it.

2. Literature Survey

A. Existing System

The existing system is pen and paper based and needs a lot of effort and consumes enough time. In the existing system we can apply for the hostels online but the allotment processes is manual. It may lead to human errors in the allocation process as well as hostel fee calculation. The existing system does not deal with meals expenses calculation and complaint registration. In the existing system the complaints of students are recorded in a complaint register which takes time and is a slow process.

It takes time to search old records and maintaining it is time consuming process. It takes time to process the complaint and sort it in different categories.

Disadvantages of the Existing System

1. More Human Effort
2. Low Security
3. Data Redundancy
4. Difficult to update the data
5. Records maintaining is difficult
6. Routine and repeated process

B. Proposed System

The current work is aimed at developing a system for maintaining records and retrieving information about the students, rooms and the like regarding hostel. This system will help the hostel officer to be able to manage the affairs of the hostel in a streamlined manner. This system will provide full information about a student in the hostel. In the administrator module, admin will have the ability to delete, add and edit employee records.

C. Feasibility Study

1. Technical Feasibility

The technical feasibility in the proposed system deals with the technology used in the system. It deals with the hardware and software used in the system whether they are using the latest technology or not. Latest android studio software along with java programming language is used to develop the application which is easy to use and can be further modified in future.

2. Economic Feasibility

More commonly known as cost/benefit analysis. Android studio tools and SQL databases are freely available in the internet. This application was made on android studio which is a free to use software to develop applications hence it is a cost efficient application developed free of cost.

3. Operational Feasibility

The application has been developed in such a way that it becomes very easy even for a person with little computer knowledge to operate it. This software is very user friendly and does not require any technical person to operate. Thus the application is even operationally feasible.

3. Objectives

All the details are entered on the paper, so with this application, the hostel management would improve their services for the students. The application would also reduce the manual work of the persons in the admin panel and the bundle of registers that were searched when to find the information of a student. Features of the application are as below

1. Application to maintain all hostel records
2. Smart hostel record management records
3. Simple way to record queries
4. First come first serve and priority system
5. Fast to find and sort old records
6. Reduce time and energy
7. Generating online out pass
8. Providing a fast and easy way of interaction between students and staff

4. Methodology

It involves careful planning, investigation of the current system and its constraints on implementation. The application development process begins with preparing a plan for the implementation of the system. The most critical stage in achieving a successful new system is giving the users confidence that the new system will work and be effective. The application can be deployed once testing is done and if it is found to be working according to the specification. Current implementation uses java programming language for interaction of the application and xml for the designing the layouts and User Interface. It will be completely working online as a Real-time application. Java programming used to implement a multi user application with different features for different users.

It has a login option for user and admin and uses a comparison logic so no 2 users have the same user id and inside the app we have different options for students and staff where it uses menu based user interface. The menu base user interface has different options to select which are linked to different menus as shown in the Fig 1. These options are used by the users according to their record which is stored in firebase cloud storage.

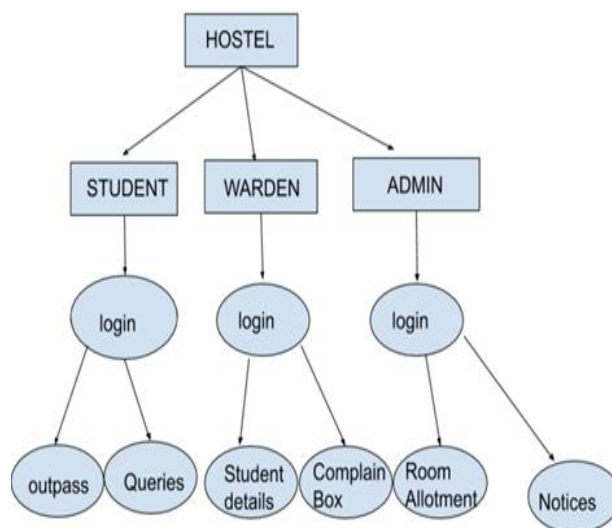


Figure 1: Different menu options in the application

5. Applications

Following are the applications of this app

1. Useful for Managing and maintaining the data of the Hostel. A user friendly interface for both student and staff
2. Helps in room allotment for the students via the application. So whenever a new student registers the application allots an available room based on his course and year.
3. Helps to solve the student queries as soon as possible. It uses a first come first serve approach to solve the student queries.
4. Helps in generating the out pass for the students.

Students can request an out pass via the app and the warden can process the request based on the details.

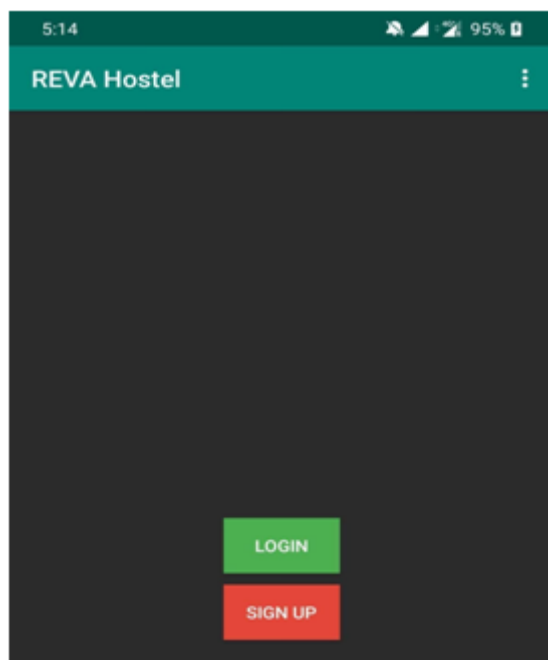


Figure 2: Login Page / Signup page

This main activity has a login option for both the user and admin if you are an existing user you can directly login if you are a new user you have to sign up providing your details and making a unique user id and password to login. The students can see the notices and read it via the application. Fees dues and problems solved by the warden can be notified.

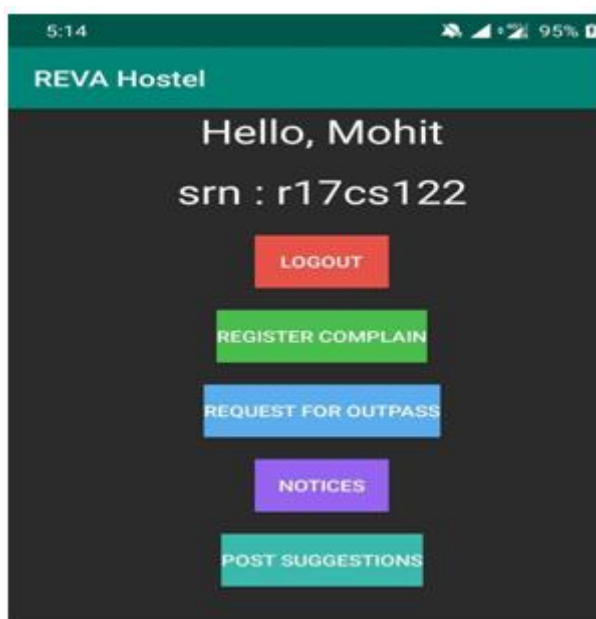


Figure 3: Student Interface

This is the student interface menu where we have different options for the student. Logout option to log out from the app. A Register complaint option is used to register the students' complaint regarding any issue they face in the hostel like electricity problem, water problem etc. hence these complaints can later be processed by the respective authority persons. The students can check if the complaint is being processed or not.

Requests for outpass option is used to generate out pass for the students. If any student wants to go out of the premises for any personal work he/she can apply for an out pass via the application and the warden can process the request and grant the out pass.

Notices tab provides important notifications to the students about the college, mess or hostel.

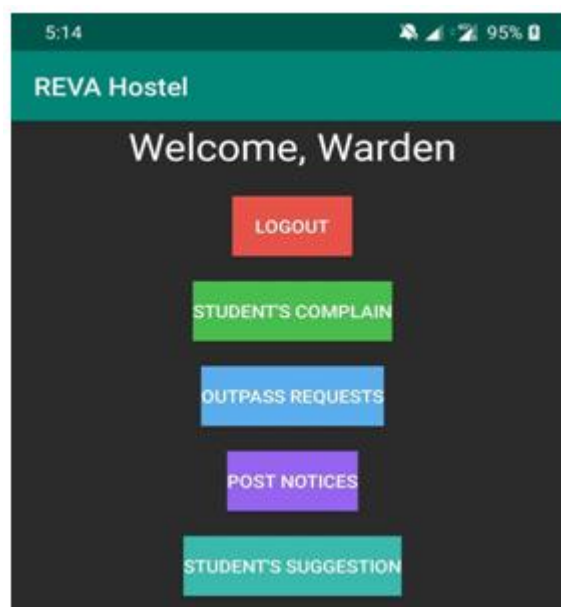


Figure 4: Warden Login Interface

Fig 4 is the interface for the warden who is the administrator of the hostel. Students suggestion option where the students give feedback about the hostel like suggestions on hostel food quality, cleanliness of rooms and hostel etc. This has a student complaint tab where the complaints of the students are listed and the warden can check all the complaints and process the request.

Out pass request is the tab where the out pass request of students is registered. The warden can process the requests and provide our pass to the students. Post notices is the tab where the warden can post notices for the students staying in the hostels. These notifications can be seen by the students in the applications.

6. Conclusion

By analyzing the existing systems in hostel maintenance, we have come up with an application which can effectively manage the hostel activities through the view of student, warden and administrator. Easy to use

interfaces for the students and warden are designed for a fast resolution of issues. In comparison to manual effort, the digital interfaces and cloud storage will help for retrieving old records fast and easy manner. All-important notices to the student will be circulated across through this application.

References

- [1] Shoewu, O., S. A. Braimah, and O. Duduyemi. "Design and Implementation of Hostel Management System (HOMASY): LASU as Case Study."
- [2] Illias, N., NH Abdul Hamid, and Z. A. Shaffiei. "PNSCares: The android based mobile application to manage student complaints." *Bulletin of Electrical Engineering and Informatics* 9.3 (2020): 1276-1283.
- [3] Soni, Chetan, et al. "Integrated Web Based Complaint Management System."
- [4] Kumar, M. Ashok, et al. "College Activity Management System." 2018 Second International Conference on Intelligent Computing and Control Systems (ICICCS). IEEE, 2018.
- [5] <http://www.kassoftindia.com/Product/GeniusAcademic/hostelmgmt.htm> [accessed September 24, 2012]
- [6] <http://www.educationmanagementsoftware.com> [accessed June 15, 2011]
- [7] Bansal, Ankit, et al. "Mobile Based Campus Information Retrieval Android Application." *IJCSMC* 4.3 (2015): 158-164.
- [8] Ahmad, S. R., A. K. Ghalib, and S. A. Mahmood. "GIS based hostel management system for Punjab univerisyt, QAID-EAZAM CAMPUS, LAHORE, PUNJAB PAKISTAN." *Pakistan Journal of Science* 65.1 (2013).
- [9] Changwony, Kiplimo. "Online Hostel Management System." (2015).
- [10] AZIZ, NURASBCH. "Hostel facility booking system using priority's algorithm." (2018).