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H-MAIN – HOSTEL MAINTENANCE SYSTEM

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Abstract

Traditional maintenance management techniques at Karunya Institute of Technology and Sciences (KITS) had a number of challenges, including bad maintenance plan with repair backlogs. The goal of this research and the Project is to improve the ineffective traditional approach methods and make it Convenient for the Students and Faculty. This study's overall findings revealed poor service delivery, poor maintenance planning, and repair backlogs. In addition, there is a need to overcome the lack of manpower competencies.

The project was built to manage the hostel's maintenance activities. With the use of the web and Android application to hostel, complaint registration, and so on, this project is projected to reduce human effort and make hostel allocation easier for students and hostel administration. The number of educational institutions has been rapidly increasing in recent years. As a result, the number of hostels available for students considering attending this college is increasing. Furthermore, the person in charge of the hostel is now under a great deal of stress, and websites are rarely used in this situation.

Through the use of PHP computer programming language and MySQL database application, a hostel maintenance system was built to give a computerized procedure that is stress free, dependable, and rapid to both students and personnel in charge of the hostel maintenance processes. The front-end would be HTML, which would offer the user with a graphical user interface, and the back-end would be MySQL, which would manage the data storage. When accepted, the porter and student affairs employees will be able to easily access and generate student records, and the regular updating of student profiles will be improved.

The efficiency, economics, and time management of the standard practice of filing and procedures involved in students' complaint registration at university were evaluated. The existing technique was designed to be carried out by hand. This is linked to shortcomings since more people is frequently required, and a significant amount of time is squandered during the semester with lectures and other activities.

Keywords: Hostel Maintenance, MySQL, PHP, Compliant Registration, Time Management

1. Introduction

Around the last four decades, there has been a massive increase in the number of people in the educational sector all over the world. Individuals now have access to education because of this advancement. As a result, it has increased access to information and aided in the development of a population of educated citizens who can easily adhere to civilised society's values. A considerable number of newly founded educational institutions are still using the old standard processes for handling all records and, in particular, for administering dormitory facilities. As a result, the institution's efficiency is harmed by this outdated manner of document management. The suggested framework overcomes the drawbacks of existing hostel management systems by being easy to use and graphical UI centred. The scope of this project is to Managing all the issues in Hostel Room ‘s been a great issue. Even though we report complaints regarding the necessary issues in hostel, it takes time for them to collect all the complaints to manage and work on them.

- Creating a user-friendly platform for students to record their queries as well as for the faculties too.
- Make it easy for students to communicate the proper authorities for managing all the hostel requirements.
- Maintaining a clean sheet about the work done in the hostel premises.

2. Literature Review

KITS transition raises maintenance development and the demand for a complex management system in an indirect way. KITS has a department that oversees the upkeep and repair of equipment, buildings, infrastructure, and facilities, as well as supporting services. However, the management structure put in place by this department had issues with defect reporting. All reports about facility defects, where students and employees must complete out a paper-based form and submit it to the appropriate department unit. Due to the numerous forms required for this task, students and staff are not encouraged to report defects. They must also accept the risk of losing reports before they reach the appropriate department. Furthermore, in the event that the form is rejected due to incorrect information or other factors, the student and staff must complete the form again. As a complainant, staff and students have the challenge of determining their complaint status, which necessitates calling or sending an email to check on the status of their complaint. Furthermore, the teaching and learning process is inefficient, which disrupts the lectures sessions of this haphazard complaint system. The lack of a maintenance management system also makes it difficult for department workers to completely record facility defects on a regular basis, resulting in increased postponed maintenance. To provide an efficient maintenance management process at KITS, the existing system must be enhanced. At KITS, the traditional method has an impact on the quality and efficiency of maintenance management procedures.

In this KITS, maintenance management practises included using traditional methods such as paper-based forms to handle building upkeep. The planning, surveying, procurement, supervision, and handover activities were all part of the maintenance process. This college had a number of issues, which were as follows:

i. **Nonspecific complaint:**
The complainant used his broad sense to analyse the defect information. The report, for example, said that a pipe valve at Block A was damaged. During the technician's inspection, however, the actual defect was referred to as a leaky pipe.

ii. **Time Gap of Building Repairs:**
The technician was unable to identify the building issues in the customer's complaint and was required to inspect the defect on-site. This had an impact on the time it took to carry out maintenance planning.

iii. **Less Competent manpower:**
The manpower for the building inspection at the college was made up of technicians. The engineer and assistant engineer were unable to obtain the particular defect explanation described in the general perspective. Simultaneously, the defect was repeated due to the technician's failure to detect the true defect at the job site.

1. Methodology

In order to identify the maintenance management problems, the current approaches to address the problems, the implementation and the maintenance management system to obtain information relating to the maintenance identification, assessment, planning and execution processes. Hostel which manages the maintenance operation with fully equipped new amenities and facilities. The justification for the selected case studies is according to the main criteria; exposed to the conventional method use and major problems, attempted to implement computerized technology and the willingness of staff to share their experiences in improving the maintenance management processes. The professional staffs were interviewed which either the engineer or assistant engineer and had the experiences in the maintenance management practices.

Login Module:
Only authorized user is allowed to access the information to the website once he/she verifies themselves by providing user account and password. Homepage: Homepage contains all the necessary link for the students, Faculties and the maintenance department.

Student's Desk:
This page allows the student to register their complaints. That 'll be categorized by the students itself. The registered complaints will be sent to maintenance department.

Faculty's Desk:
This page allows the faculty to see all the complaints that have been registered by the students, from which the faculty will filter the appropriate complaints and send them to the maintenance department.

Maintenance Department:
Here the maintenance Department can able to see the student's complaints that are approved by the faculty. They will assign the works to the appropriate workers by the categorization the students have given. Then, after completing the work, the maintenance department can update that the work is done. Faculty and students can track the work flow, whether the work is completed or not.

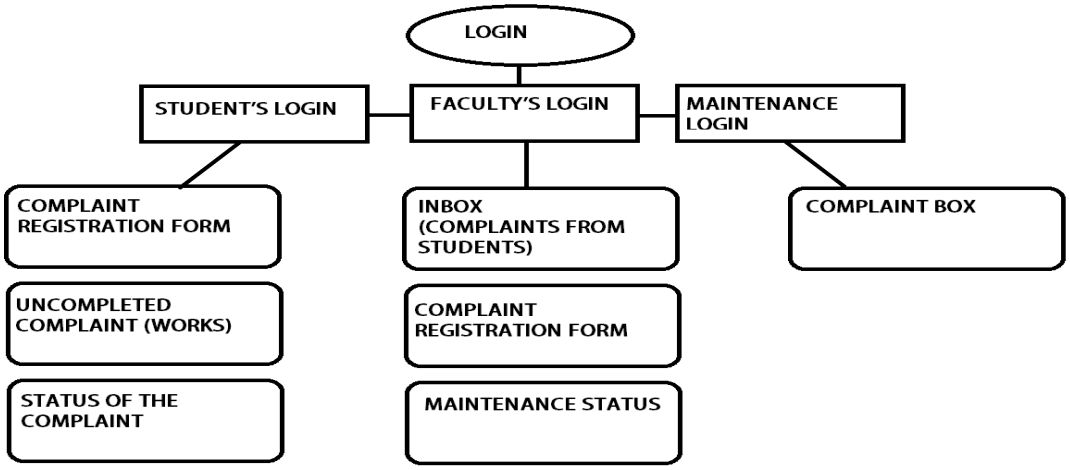

Figure 1 workflow Process Flowchart

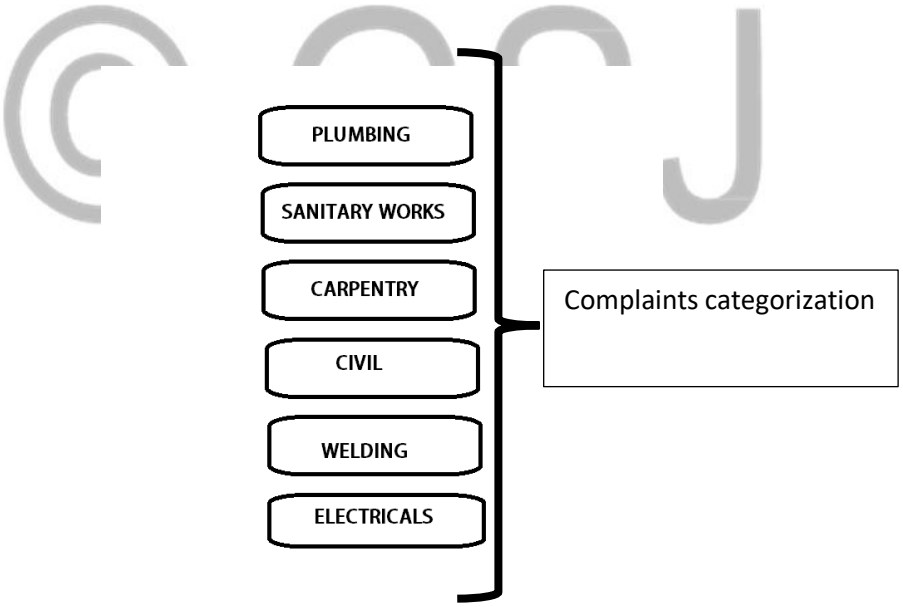

Figure 2 classification of works

2. Internal Working

In the above diagram, we can see that all the users can given access for that portal with different index. The users are student, faculty, and maintenance.

In the student login, the student can raise a complaint for the maintenance department in a computerized form. That'll be sent to the faculty/ warden. The student can also view the uncompleted complaints, the complaints that have been given but not rectified and also the complaints that are rectified.

In the Faculty login, the warden/ faculty can see the registered complaints that have been sent from the student. Here he can see the complaints that have been registered, and he has the authority to reject the complaint and send it to the maintenance department. He can filter the complaints base on the necessity.

After filtering, the complaint 'll be sent to the maintenance department.

In the maintenance login, The maintenance department engineer can see all the complaints and have to assign them to the worker based on the categorization that the student has given. And he can update the complaints when the work gets done.

3. Existing System

Today the case of Managing the complaints in hostel is been a great thing to do. Traditional maintenance management techniques at Karunya Institute of Technology and Sciences (KITS) had a number of challenges, including bad maintenance plan with repair backlogs. The goal of this research and the Project is to improve the ineffective traditional approach methods and make it Convenient for the Students and Faculty. This study's overall findings revealed poor service delivery, poor maintenance planning, and repair backlogs. In addition, there is a need to overcome the lack of manpower competencies.

Disadvantages

- Difficulty in Maintenance of Records.
- Time Consuming.
- Editing of data becomes a tedious job.
- No Security of Data.
- No Proper Generation of Reports (i.e. Fees, etc.)
- Lack of Efficiency and Man Power.

Lot of time and effort is wasted by the users because all the work is manual.

3. Proposed System

To overcome all the limitations of the existing system, a framework called hostel management is proposed. This framework automates all the Maintenance activities occurring in the hostel. The proposed system provides smooth operation in retrieving data in a more systematic way hence saving a lot of human effort and time. This framework allows students and employee to manage all the maintenance activities in a computerized manner.

This project allows both students and the wardens to access a web app which make it easy for them to manage all the hostel maintenance work. The students can complaint their requirements to the warden without any human power, it saves more tie and all the fake complaints can be easily neglected since it was done through online. The complaint will be registered by students to the warden. Then the warden through his portal will analyse all the complaints and send the message to the maintenance department, that'll b mailed to a specific mail that we have created for the maintenance department, where all the complaints 'll be mailed. Then it's the maintenance department responsibility to take care of all the complaints

- The complaint is registered and sent to hostel staffs by students.
- The complaint is segregated into different categories by the student itself.
- The categorized complaints 'll be sent to the faculty/ warden.
- The complaints after being analysed by the warden it 'll be sent to maintenance department via mail.
- The maintenance department collects the mail and assign them to the workers.

Database Table From Student's Complaint Registration Form:

Name	Reg.no	Hostel	Room.No	Complaint Type	Complaint
Aden	URK18CS101	JVR	360	Carpentry	The door latch is not available
Kevin	URK18CS063	JVR	351	Civil	There is a crack on the wall
Reegun	URK18CS088	FDR	362	Housekeeping	Room needs cleaning
Andson	URK18CS275	EGR	275	Plumbing	Water Geyser is not working Properly
Joel	URK18CS070	Hepzibah	260	Electrical	Tube light is not Working

Table1

Database Table From Faculty's Complaint Registration Form:

Hostel	Reg.no	Room.no	Complaint Type	Complaint
JVR	URK18CS101	360	Carpentary	The door latch is not available
JVR	URK18CS063	351	Civil	There is a crack on the wall
FDR	URK18CS088	362	Housekeeping	Room needs cleaning
EGR	URK18CS275	275	Plumbing	Water Geyser is not working Properly
Hepzibah	URK18CS070	260	Electrical	Tube light is not Working

Table 2

Database Table From Maintenance department:

Hostel	Room.no	Complaint Type/ Worker	Complaint
JVR	360	Carpentary	The door latch is not available
JVR	351	Civil	There is a crack on the wall
FDR	362	Housekeeping	Room needs cleaning
EGR	275	Plumbing	Water Geyser is not working Properly
Hepzibah	260	Electrical	Tube light is not Working

Table 3

Section 1 – Context

1. This protocol explains how current, former, and prospective students can get complaints about their experience or engagement with KITS resolved. The procedure's goal is to guarantee that student and student-related issues are handled in a consistent, coordinated, and supportive manner.

Section 2 - Authority

2. The Student and Student-Related Complaint Policy establishes the authority for this text.

Section 3 - Scope

3. This procedure applies to staff, affiliates, students, and visitors who are involved in a student or student-related complaint lodged in accordance with the Student and Student-Related Complaint Policy.
4. This approach also applies if the complaint is about a decision-making process that is governed by another policy that has an alternative appeal, review, or complaint mechanism.

Section 4 - Procedure

Feedback, Enquiries and Complaints

5. Current, former, and prospective students can give comments, inquire about, or file a complaint regarding their RMIT experience or involvement.
6. General feedback and questions can be directed to the responsible area or submitted through Student Connect.

- Matters and concerns requiring a formal response may be submitted in the following ways:
    a. an inquiry or feedback relating to a decision, action, process, or service offered b.
    b. a complaint expressing displeasure with: a decision, action or failure to act
- a delay in providing a service or taking action
- a pause in the delivery of a service or in taking action

7. Feedback and inquiries can be formalised into a complaint, which will be investigated and resolved by ARG Integrity.

    a. The person providing comments or making an inquiry is dissatisfied with the response provided by the local area or Student Connect.
    b. the local area or Student Connect considers the situation to be complicated, high-risk, or unresolvable at their level.

Lodging a Complaint

10. Complaints must be made using the Student Connect site to ARG Integrity, Complaints.
11. Former and prospective students can also file complaints through the following channels, which will be logged on the Student Connect portal on behalf of the complainant by ARG Integrity, Complaints staff:

a. in hard copy by person to Student Connect

b. via email to info@karunya.edu

12. Complainants must provide:

a. full name, contact details and student ID (where applicable)

b. a comprehensive description of the complaint

c. the outcome sought

d. all relevant information and documentation to support the complainant's claims.

13. Information and documentation may also be shared by Safer Community and other places within the University with the complainant's approval in specific instances.
14. To ensure legitimacy and participation in complaint resolution processes, parties to a group complaint must provide individual complainant submissions.
15. The complainant will obtain a system-generated receipt after submitting the complaint through the Student Connect site.
16. Although a complaint can be withdrawn at any time, RMIT reserves the right to commence or continue an inquiry.

Timelines

17. Within 12 months after the event or incident, complaints must be filed. In extreme instances, KITS may enable submissions to be made outside of this window.
18. The investigation will begin within 10 days of the complaint being filed.
19. Within 20 working days of the complainant providing the essential information to resolve the complaint, the complainant will receive a resolution and outcome guidance. Every attempt will be made to resolve things as soon and effectively as possible; but, if the complaint is especially complex, a longer length of time may be required.
20. If a complaint outcome cannot be achieved within the specified timeframes, the case manager will provide the following to the complainant:

a. frequent updates on the investigation's progress (with no more than 10 working days between contact)

b. When a complaint is projected to take more than 60 calendar days to settle, a prompt written notification, including reasons, is required.

Complaint Records, Analysis and Reporting

68. Complaints, outcomes and reviews are recorded in a central complaints database as follows:

a. complainant's details
b. how the complaint was received
c. description of the complaint or review request
d. the complainant's desired outcome (if known)
e. the case manager responsible for handling the complaint or review
f. any action taken, including contact with the complainant, response times and the outcome
g. when the complaint or review was finalised, and
h. any recommendations for improvement, and who is responsible for implementing them.

69. Complaint data will be analysed and reported to relevant areas to prevent reoccurrence as follows:

a. investigation findings
b. performance against timelines i.e. average time to respond
c. number of complaint outcomes overturned on internal review, and
d. complaints escalated to the Victorian Ombudsman's office and their outcomes

4. Materials Required

Hardware Specifications	Software Specification	
Hardware Requirements	**Hardware Requirements**	**Software Requirements**
GPS module(GY-GPS6MV2) GSM (SIM9OO) Bluetooth Microphone Voice recorder	Processor: Pentium IV RAM: 512 MB HDD: 80 GB	Platform: Windows XP Front End: Java JDK1.5 Back End: MS SQL server Embedded Kit, Android Phone

8. Conclusion

The implementation of an electronic registration system focuses on cost savings, enhancing the efficiency of processes involved in both hostel registration and management, and making the entire process stress-free. The hostel management system is designed to make the registration and maintenance of hostels easier for both students and the people in charge of the operations. Its goal is to remove redundant administrative procedures and reduce, if not eliminate, paper work. This solution will help to increase the efficiency and productivity of the hostel registration and management process.

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