STUDENTS' COMPLAINT MANAGEMENT SYSTEM : CASE STUDY BBUC FACULTY OF ENGINEERING, DESIGN AND TECHNOLOGY

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A DISSERTATION SUBMITTED TO THE FACULTY OF ENGINEERING, DESIGN AND TECHNOLOGY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE AWARD OF A DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY OF UGANDA CHRISTIAN UNIVERSITY

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UGANDA CHRISTIAN UNIVERSITY

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Declaration

I Arikyo collins, a student of Uganda Christian University declare that the project titled "Students' Complaint Management System" is my original work and has never been submitted to any institution of higher learning for an academic award.

Signature.....

Approval

This is to certify that project titled "Students'Complaint Management System", submitted by Arikyo Collins in partial fulfillment of the requirement for the award of Bachelor of Science in Information Technology at Uganda Christian University, is a record of the candidate's work carried out by him under my supervision.

Signature…… Date 29/04/2024

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Acknowledgment
I take this opportunity to express my sincere thanks and deep gratitude to all those who extended their wholehearted cooperation and helped me complete this Project proposal successfully.

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I thank all my colleagues, friends, and classmates for helping me directly or indirectly throughout.

Finally, I would like to thank all the Lecturers of the "Faculty of Engineering Design and Technology" (FoEDT) for their help and valuable suggestions during the project.

List Of Abbreviations / Terms / Symbols

SCMS	:	Students Complaint Management System
BBUC	:	Bishop Barham University College
DoCT	:	Department of Computing and Technology
FoEDT	:	Faculty of Engineering Design and Technology
SDLC	:	System Development Life Cycle
UML	:	Unified Manpulated Language
CRM	:	Customer Relationship Management

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Abstract

Students complaint management system(SCMS) is a web-based platform that allows students to submit complaints and get feedback regarding various aspects of their educational experience, such as course content, faculty behavior, issues with semester results, or administrative issues. The system may also allow students to track the status of their complaints and receive updates on any actions taken. The goal of a web-based student complaint system is to provide students with a convenient and efficient way to voice their concerns and ensure that their complaints are addressed in a timely and appropriate manner. It can also help educational institutions to identify and address areas for improvement and enhance the overall student experience.

Complaints are important drivers for improvement in service delivery for any enterprise. Like other types of customers, students also complain. Students' complaints may result from actions of University/College management or government policy and regulations. However, to what extent all Universities/Colleges are effective or ineffective in managing these complaints is still a big challenge. The study implies that the Colleges should take complaints as an opportunity to improve their daily operations which will resolve hidden issues that were not known.

CHAPTER ONE: Introduction

This chapter comprises the background of the study, problem statement, objectives, research questions, the study's scope, and the study's significance.

1.0 Background of the study

Complaint management as aresearch theme gained pace after the year 1991, however it is mostly researched in developed countries in west such as USA, UK, Australia and Germany by analysing the distribution of articles across different paramenters and highlighting the agenda for future research-the current study will serve as avaluable tool for researchers to understand the current scenario of complaint management research in marketing discipline and take complaint management as aresearch area forward. (Kumar, 2024)

According to (Mapunda, 2018) Online Complaint Management System provides an online way of solving the problems faced by the public by saving time and eradicating corruption. The objective of the complaints management system is to make complaints easier to coordinate, monitor, track, and resolve, and to provide a company with an effective tool to identify and target problem areas, monitor complaints handling performance, and make business improvements. Online Complaint Management is a management technique for assessing, analyzing, and responding to customer complaints. Complaints management software is used to record resolve and respond to customer complaints, and requests and facilitate any other feedback.

A complaint monitoring system is an essential component of student service and University success. Not only gather valuable student insight and feedback, but it also helps the institution progress to improvements that lead to reduced costs, increased profitability, and increased student satisfaction. Currently, BBUC uses manual complaint handling to address grievances, concerns, or issues raised by students, faculty, staff, or other stakeholders within the institution.

1.1 problem statement

The existing paper-based system consists of multiple challenges, including inaccuracy leading to errors, long waits for feedback, inefficiency in monitoring, a surplus of hard copies, and insecurity in the complaint management process.

1.2 Research Objectives:

1.2.1 Main objective.

To develop students complaint management system with a convenient and efficient way to voice their concerns and ensure that their complaints are addressed in a timely and appropriate manner.

1.2.2 Specific Objectives.

- To design a Complaint Management System that influences organizational performance with timely feedback.
- To Implement the system and provide instant feedback on overall organizational performance.
- To test and validate the implemented system to Streamline complaint-handling processes to save time and improve efficiency.

1.3 Research Questions

1.3.1 Main question.

1. How does timely feedback delivery influence students' learning retention and academic performance?

1.3.2 Other questions

1. What is the current system used in other learning institutions to handle complaints?
2. What are the challenges faced in managing complaints?
3. what the importance of technology in enhancing complaint management?
4. What strategies should be implemented to improve the complaint management system?

1.4 Scope of the Study

1.4.1 Time scope

The project was to be completed in two months (from February to April 2024).

1.4.2 Content scope

The application was a web-based application accessed by users on the BBUC intranet and those who have internet access.

1.4.3 Geographical scope

The researcher used the Faculty of Engineering, Design, and Technology-BBUC as the case study.

1.5 Significance of the study

This research contributed to the existing literature by providing empirical evidence on the impact of SCMS on customer satisfaction and organizational performance. It offered insights into the challenges and best practices in SCMS implementation, which can guide businesses in optimizing their complaint-monitoring processes.

1.6 Conceptual/Theoretical Frame.

User interface: Students can submit complaints, view their status, and provide feedback on the resolution process**.**

Complaint database: All complaints filed by students are stored along with relevant details such as date,type of complaint and status.

Complaint handling: This module manages the complaint lifecycle, including complaints to appropriate staff or departments, investigating, resolving and closing them.

Analytics and reporting: Gathers data from the complaint database to generate reports and analytics, helping identify trends, areas for improvement and staff performance metrics.

Feedback loop: Allows students to provide feedback on the complaint resolution process, helping to improve the system and student satisfication.

Security and Acess Control: Ensures that only registered users with existing accounts access and modify complaint data, maintaining intergrity and confidentiality and protecting students privacy.

CHAPTER TWO

2.0 Introduction

This chapter covers the articles and document reviews done by different Scholars relevant to the topic.

2.0 Literature Review:

2.1 Complaint Management System in high institutions of learning.

(Mramba, 2018) Complaints are important drivers for improvement in service delivery for any enterprise. Like other types of customers, students also complain. Students' complaints may result from actions of University/College management or government policy and regulations. However, to what extent are all Universities/Colleges effective or ineffective in managing these complaints is still a big challenge.

2.2 Challenges in Managing Complaints.

(Causia, 2023) For large schools and universities, coordinating complaints across different departments and faculties can be a challenge. There are so many people involved, and it can be easy for complaints to get lost along the way. This is why you need a complaints management strategy that can centralize all your complaints in one place.

Students often do not receive adequate feedback on the resolution of their complaints in paper-based system, leaving them feeling ignored or dismissed

2.3 Use of technology in Complaint handling.

(Laxton, 2023) Technology can enable significant benefits in business performance, cost savings, and customer experience, especially in back-office processes, analytics, and routine transactions. However, there is a risk that organizations sometimes overestimate the capacity of digital technologies to deal effectively with a variety of customer experiences and personal situations. Technology deployment in a service context is usually most successful when it is underpinned by a clear customer service purpose and complements, rather than replaces, human intervention.

2.4 Strategies to Improve Complaint Management Systems

Since customer expectations and preferences will likely change, you should regularly review and update your complaint management system, exploring new solutions and implementing cutting-edge technologies to enhance your process and customer experience. (Williams, 2024)

2.2 Research gap

In apaper-based system complaint process,weaknesses stem from limited accessibility, delayed processing, and potential data loss or mismanagement. According to khan et al.(2015), paper-based systems are prone to human error and inefficiencies due to manual handling which can led to delays in addressing complaints.

Hefner and prinz(2018) suggests that paper-based systems lack scalability and real-time reporting capabilities, making it challenging to track analyse trends in complaints effectively.

3.0 CHAPTER THREE : METHODOLOGY

3.1 Introduction

This chapter covers the approach and methods that the researcher used during the different phases of system development to achieve the specific objectives of the Advanced complaint monitoring system.

3.2Approach for the Development of SCMS

The researcher used the Agile approach as a system development life cycle (SDLC). This methodology consists of six phases that include Concept, inception, iteration, Release, Maintenance, and retirement. it is a flexible and collaborative software development that emphasizes collaboration, student feedback, and rapid adaptation to change. It consists of several iterative phases, each focused on delivering small, incremental improvements to the software product.

3.3Research Design

The researcher used qualitative research design because it is appropriate for exploring and capturing the behavior, perspectives, experiences, and feelings of people and emphasizing the understanding of these elements concerning complaint monitoring in FoEDT. According to (Creswell, 2016) qualitative research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data. The research was qualitative in that opinions of the heads of departments, some lecturers, and some students are sought and the researcher contextualizes them according to their understanding to obtain proper requirements for the development of the DoCT complaint system.

3.4Sampling Procedure

Sampling is the process of selecting a group of subjects for a study in such a way that the individuals represent the larger group from which they were selected. According to (Siyasiya, 2024) Clearly, the problem with all of the other types of samples is that there is no evidence that they are representative of the population of interest. Purposive sampling was used to reach the researcher's targeted sample quickly hence getting the opinions of the target population. Using purposive sampling heads of department, students, and lecturers were selected from the general community of FoEDT for sampling. However purposive sampling makes it hard to get proper target samples in populations that cannot be found through screening the general population.

While collecting data from the students and lecturers the researcher will use convenience sampling by collecting data from students of FoEDT who are readily available at the time of the data collection in different class sessions and in the school compound. Though it has the lowest credibility and may yield poor information due to being prone to volunteer bias, Convenience sampling was used because it saves time, money, and effort since it would be much more expensive and almost impossible to organize a systematically selected group of FoEDT students' samples successfully.

3.5.1Target Population

A population is a group of individual persons, objects, or items from which samples are taken for measurement. The population target for the study was one head of department, 8 lecturers, and 110 students all from FOEDT.

3.5.2Sample Size

In a Simple Random, each member of the population has an equal chance of being selected for the sample. Example: A researcher can select 100 students from a list of all students enrolled in a particular university using a random number generator. (Babbie, 2016)

The researcher was aware that it is not logical to survey the whole population in FoEDT, so with a target population of 119 FoEDT members the researcher will manage to sample only 61 members. This was due to the homogeneous nature of the FoEDT population and due to the time and financial constraints associated with the exercise. By correctly drawing up different sample proportions from the FoEDT population, the researcher will be able to analyze different target population sample categories using multivariate data analysis (The eighth edition of Multivariate Data Analysis, 2019)

$$n_h = \left(\frac{N_h}{N}\right) \times n$$

Where:

nh = sample size for stratum *hh*

Nh = population size of stratum *hh*

N = total population size

n = total sample size

Sample Type	Population size	Target size	Sample size	Percentage samp
Head of Departments	1	1	1	100%
Lecturers	8	4	4	50%
Students	110	56	56	50.91%
Total sample	119	61	61	51.26%

Figure 1 Table showing sampling technique used in data collection.

3.6 Data Collection Tools:

3.6.1 Quantitative Data:

Quantitative data is numerical and measurable, allowing for statistical analysis and quantification of relationships between variables. Tools used to collect quantitative data include:

3.6.1.1 Survey: The researcher used Google Forms and Monkey surveys to collect data from a specific respondent to gather information, opinions, attitudes, or behaviors on a particular topic that helped to gauge users' satisfaction. Surveys was conducted through various means, such as questionnaires, , online forms, or telephone calls, social media platforms like whatsapp and telegram.

3.6.1.2 Document Analysis: the researcher used documents from different scholars to analyze complaint data and gather relevant documents that are related to their research question or topic of interest.

3.6.2 Qualitative Data:

Qualitative data is non-numerical and typically describes qualities or characteristics. It aims to understand the underlying reasons, opinions, or motivations behind a phenomenon. Examples:

3.6.2.1 Observation:
This involves the systematic and purposeful watching, listening to, and recording of behaviors, events, or phenomena as they naturally occur in real-life settings.

3.6.2.2 Interviews:
The researcher conducted face-to-face conversations between two or more students, lecturers, and the Head of the department, to gather information, exchange ideas, assess qualifications, or make decisions.

3.7 Expected Contributions:

This research contributed to the existing literature by providing empirical evidence on the impact of CMS on customer satisfaction and organizational performance. It will offer insights into the challenges and best practices in CMS implementation, which can guide businesses in optimizing their complaint management processes.

3.8 System Design

The researcher designed the DoCT dataflow and processes using unified model language(UML) dataflow diagrams, then designed the database and its entities using tables and entity relationship diagrams**.**

3.8.1 Main external entities of the system

Student: This is an external entity that interacts with the system by submitting complaints.

Complaint Management System: This is the main process within the system. It handles the submission, processing, and resolution of complaints.

Administrator: This entity represents higher-level administrative personnel who oversee the complaint management process and may intervene in complex cases.

3.8.2 Flow chart of the system.

Flowcharts of a system portray the flow of data and the decision-making process that controls events. The illustrations employ symbols to represent various elements as seen in figure 1. The individual login includes an admin or a student. a student, registration is required before the student can access the portal via the login button. Once logged in, the complaint can be logged, and the student proceeds to log out. From the point of the admin, the complaint lodged by the student is seen, the appropriate action is taken, and the issue is closed by the admin once the student has been responded to and issues resolved.

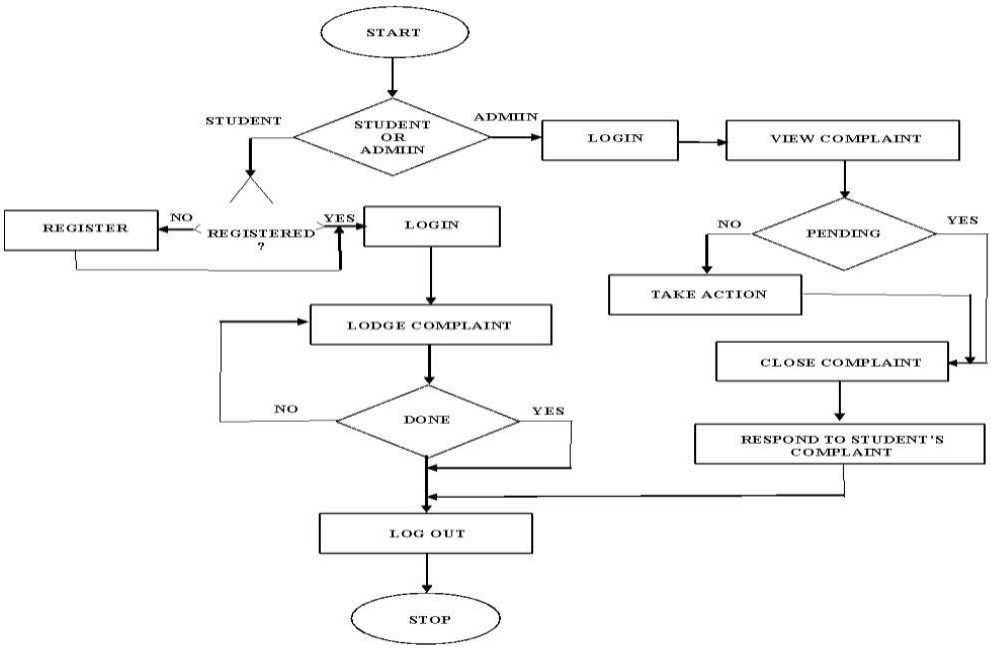

Figure 2 flow chart of the system

3.8.3 Database design

MySQL was selected as the database system for its ability to handle and organize vast quantities of data. To ensure uniformity throughout the system, data models were established to define the procedures for creating users and storing complaints.

FIELD NAME	DATA TYPE	SIZE	DESCRIPTION
ComplaintId	Integer	10	Complaint Id
UserId	Varchar	20	User Id
category	varchar	255	Complaint category
ComplaintType	varchar	255	Complaint Type
noc	varchar	255	Nature of complaint
complaintDetails	mediumtext		Complaint details
ComplaintFile	varchar	255	Files
regDate	timestamp		Dateof registration
status	Varchar	50	Status
lastUpdationDate	timestamp		Last update date

Figure 3 Database for complaints

3.10 System Implementation

A user-friendly web interface was built using HTML, CSS, and JavaScript. While MySQL and PHP were used to build the backend of the application. The following GU interfaces were developed to ease the capturing and resolving of students' complaints.

3.10.1 system software and hard requirements

For effective use of the new system, the minimum requirements for the hardware components are Pentium4 board with 1GHZ speed, 1GB RAM size. A Hard Disk of 40GB and Display Unit of at least 14'' Monitor (VGA) while the minimum operating system that must be used is Windows XP. Other software required includes Text editor like Visual Studio code, Notepad++, Sublime text, etc., A web browser and A database development tool like XAMPP.

3.10.2 Steps followed for system implementation.

Software Development**:** coding the software components necessary for handling complaints. It may involve creating user interfaces for submitting complaints, backend systems for processing them, and databases for storing complaint data.

Integration: Integrating the complaint handling system with existing systems within the organization, such as customer relationship management (CRM) systems or ticketing systems, to ensure seamless communication and data exchange.

Testing: validating the implemented system was administered to ensure it functions correctly and efficiently. This includes unit testing, integration testing, and system testing to identify and resolve any bugs or issues.

Training: users' workshop and training was done to ensure they understand how the system works and how to effectively use its features.

Documentation: comprehensive documentation for the complaint handling system was created and filed, including user manuals, technical documentation, and troubleshooting guides.

Deployment: The system was launched and available and accessible for use by students, lecturers, and administration authorities within the university.

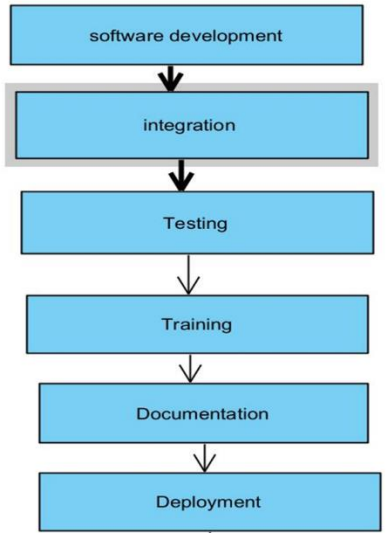

Figure 4 System implementation process

CHAPTER FOUR: Data analysis, Presentation, and Interpretation of Results.

4.0 Introduction:

This chapter contains data presentation and analysis, results and findings of data collected from chapter three.

4.1 Data Presentation and Analysis

The analysis was based on the primary data collected through administered questionnaires. Views and Opinions of the respondents were used for analysis. 61 respondents(total sample size) from 119 (population size) respondents were randomly selected from the Department of Design and Technology (Bishop Barham University) and questionnaires were administered to them. Data source link: https://docs.google.com/forms/d/e/1FAIpQLScV5_m-70UluraPVwzqvmqfkSZk_yxwyyyrA4K7h4KxlmrJA/viewform?usp=sf_link.

4.2 Data collected from respondent

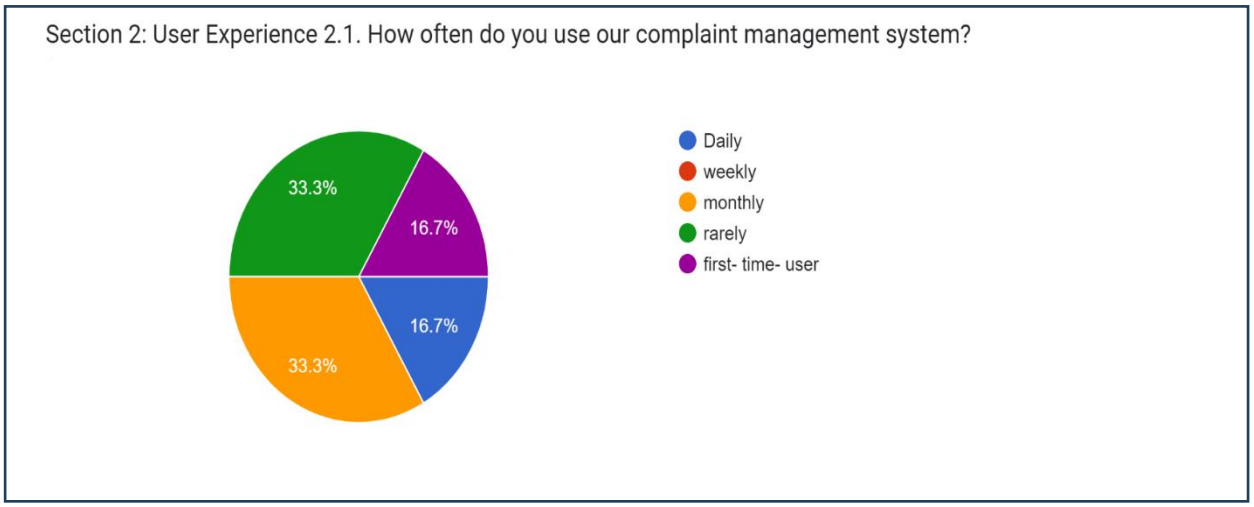

Figure 5 students' usability with the system

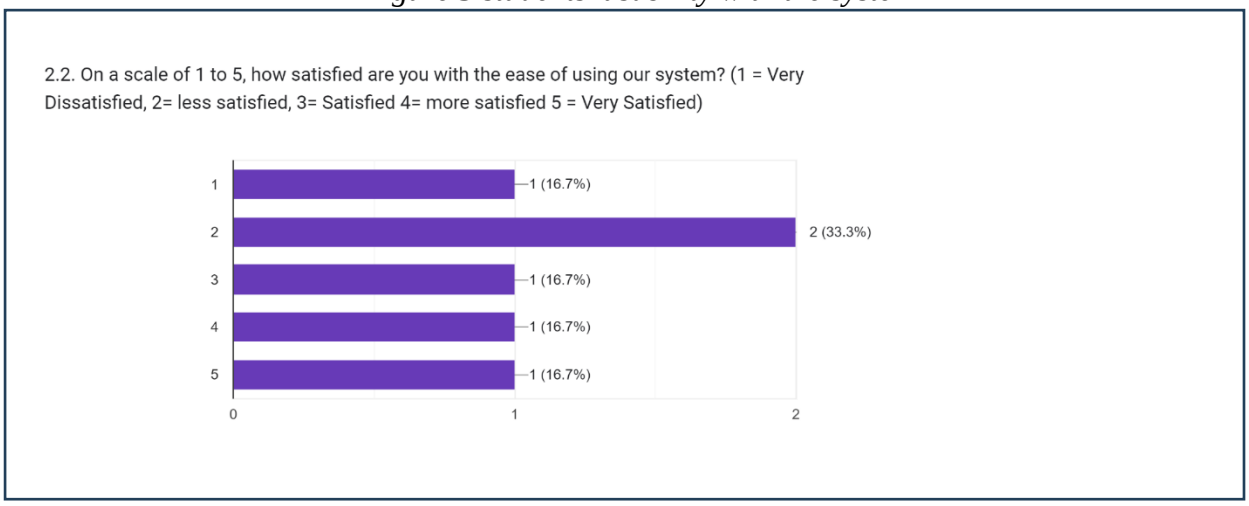

Figure 6 user satisfaction with the system

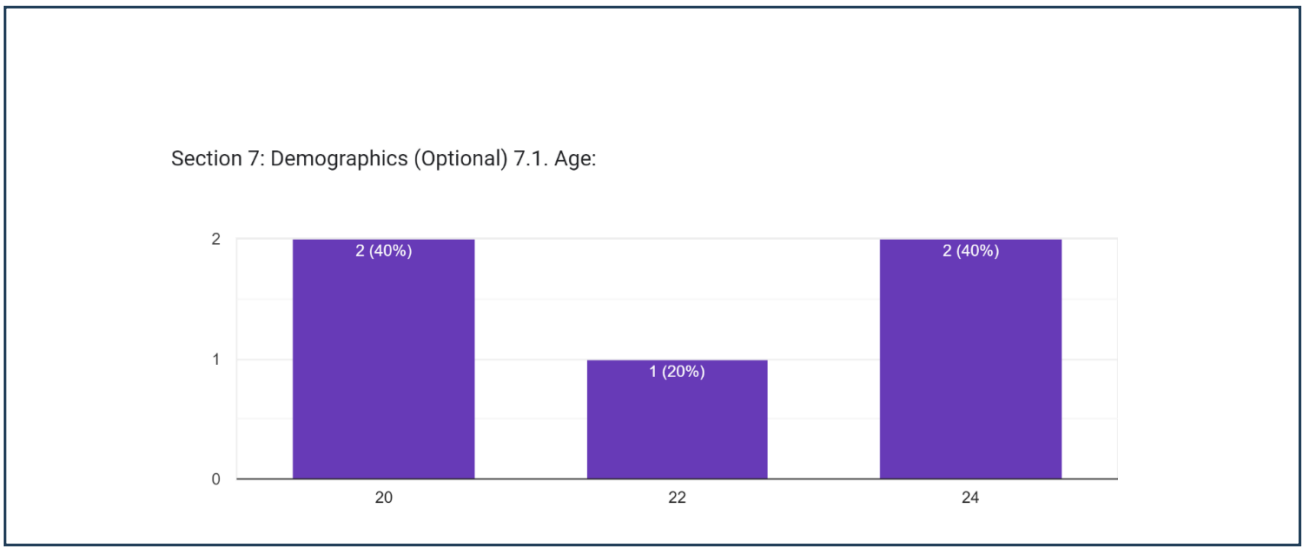

Figure 7 Age category of respondents.

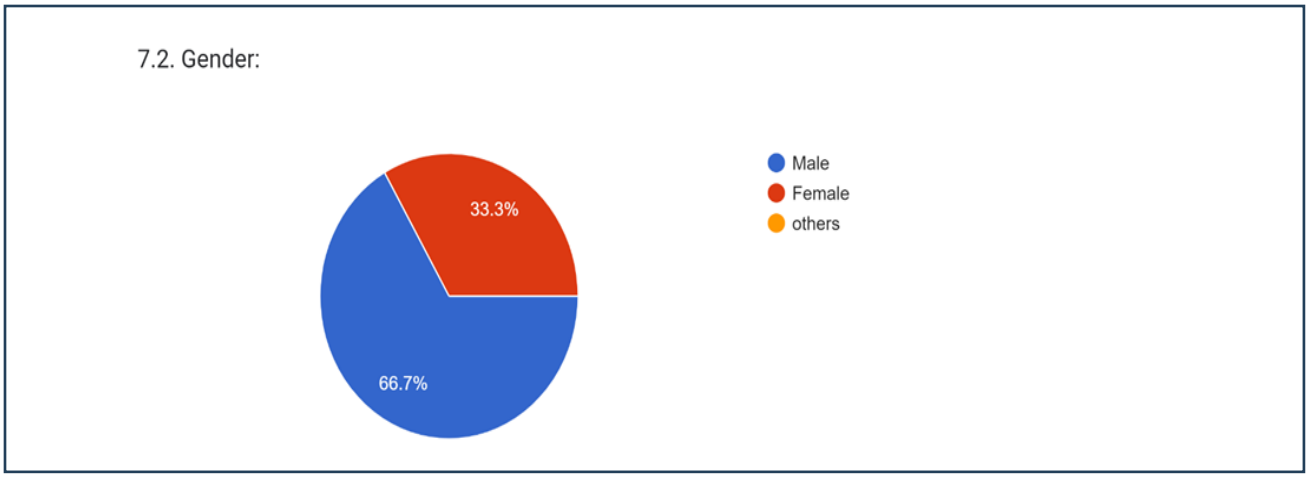

Figure 9 Gender of the respondents.

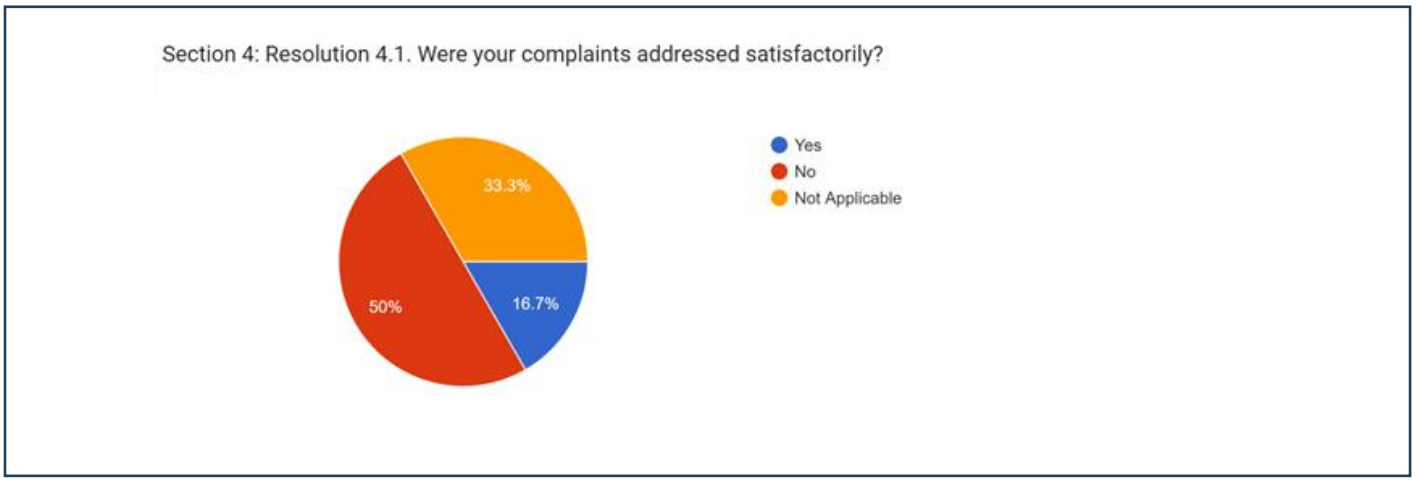

Figure 8 Students satisfication percentage rate with existing system

Chapter 5: Conclusion & Recommendation.

5.0 Introduction

This chapter consists of recommendations and conclusions.

5.1 recommendations

Clear policy: Develop a comprehensive policy outlining the procedure for submitting complaints, investigation processes, and resolution mechanisms. Ensure this policy is accessible to all stakeholders.

Training: train staff, faculty, and administrators on complaint-handling procedures, conflict-resolution techniques, and communication skills to handle complaints professionally.

Timely Resource: Establish timelines for acknowledging and addressing complaints promptly. Ensure there are designated personnel responsible for managing and responding to complaints promptly.

Confidentiality: guarantee confidentiality for both the complainant and the accused throughout the complaint process to encourage open communication and protect privacy.

Fair investigation: conduct fair and impartial investigations into complaints, involving relevant stakeholders as needed. Ensure transparency in the investigation process and keep all parties informed of the process.

Documentation: maintain detailed records of complaints, including the nature of the complaint, investigation findings, and actions taken for future reference and analysis.

Feedback mechanism: To gather input from complainants about their satisfaction with the resolution process and use this feedback to improve complaint handling procedures.

5.1.2 Conclusion

By implementing these recommendations, educational institutions can create a supportive and transparent environment where complaints are addressed promptly and fairly, contributing to a positive learning experience for students.

5.2 conclusions

A web-based student complaint system is a platform that allows students to submit complaints or feedback regarding various aspects of their educational experience, such as course content, faculty behavior, issues with semester results, or administrative issues. The system may also allow students to track the status of their complaints and receive updates on any actions taken. The goal of a web-based student complaint system is to provide students with a convenient and efficient way to voice their concerns and ensure that their complaints are addressed in a timely and appropriate manner. It can also help educational institutions to identify and address areas for improvement and enhance the overall student experience.

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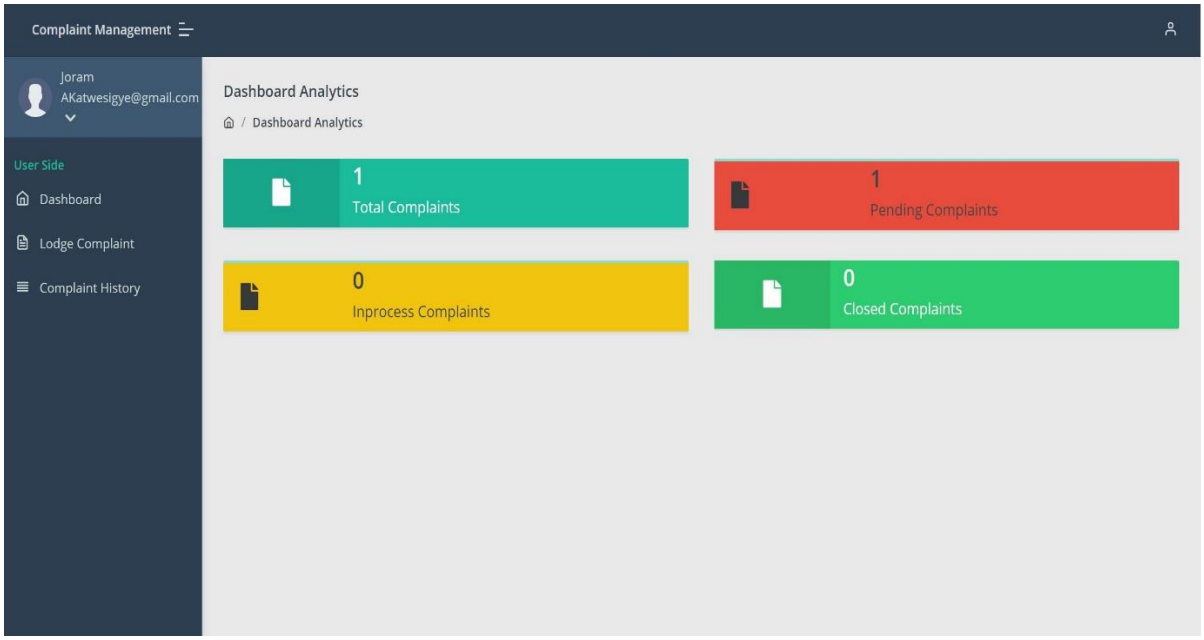
Chapter6: Appendix:

6.0 Introduction

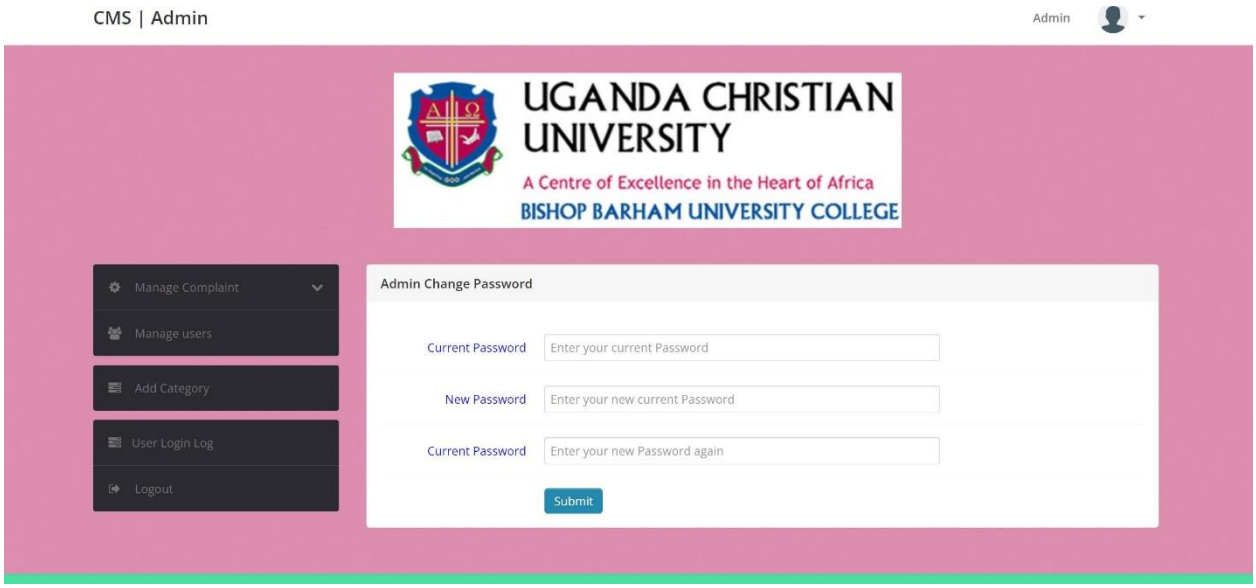
This chapter contains screen shoot images of fontend and backend interfaces of the students complaint management system.(SCMS)

6.1 user interface home page

6.2 user Dashboard



6.3 Administrator Dashboard



6.4 Complaint files in the database