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## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

# E-Reklamo: A COMPLAINT MANAGEMENT SYSTEM USING NAÏVE BAYES ALGORITHM

A Research

Presented to the Faculty of Bachelor of Science in Information Technology Program  
Polytechnic University of the Philippines  
Quezon City Campus

In Partial Fulfillment of the Requirements for the Degree in  
Bachelor of Science in Information Technology

By:  
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April 2024



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### CERTIFICATION

This research, "**E-REKLAMO: A COMPLAINT MANAGEMENT SYSTEM USING NAÏVE BAYES ALGORITHM**" prepared and submitted by EDMARK R. GARIANDO, DOMINIQUE L. LAS, MARK CHRISTOFFER D. MARQUEZ, AND HIPOLITO V. YAMAT III in partial fulfilment of the requirements for the degree, BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY has been examined and recommended for Oral Examination.

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### ACKNOWLEDGEMENTS

The researchers would like to take this opportunity to express their deepest gratitude and regard to the people who contributed to this research entitled "*e-Reklamo: A Complaint Management System using Naïve Bayes Algorithm*".

First and foremost, they express their profound gratitude to Almighty God for granting the wisdom, knowledge, and protection throughout the entire research process. Without the blessings and divine guidance, this journey would not have been possible.

To their Parents for their unwavering financial support, encouragement, and invaluable advice. Their beliefs have been a driving force behind the researcher's determination to excel in this research.

To their esteemed Research Adviser, Prof. Demelyn E. Monzon, Ph.D., to whom they are immensely grateful for sharing her brilliant ideas, vast knowledge, and unyielding patience with them. Her guidance and mentorship have been instrumental in shaping the research's direction and outcomes.

Gratitude is also due to the students and faculty members of the Polytechnic University of the Philippines, Quezon City Campus, who graciously volunteered their time and effort as respondents during the experiment.

Together, they sincerely acknowledged and deeply appreciated the invaluable impact on every individual encountered on this voyage of knowledge exploration. Their contributions have indelibly shaped the narrative of this remarkable journey.



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### CERTIFICATION OF ORIGINALITY

This is to certify that the research work presented in this paper, **E-REKLAMO: A COMPLAINT MANAGEMENT SYSTEM USING NAÏVE BAYES ALGORITHM**, for the degree Bachelor of Science in Information Technology at the Polytechnic University of the Philippines Quezon City Campus embodies the result of original and scholarly work carried out by the undersigned. This research does not contain words or ideas taken from published sources or written works that have been accepted as basis for the award of a degree from any other higher education institution, except where proper referencing and acknowledgment were made.



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### ABSTRACT

**Title** : E-Reklamo: A Complaint Management System using Naïve Bayes Algorithm

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This research presents findings from a study conducted to explore the benefits and satisfaction levels related to the complaint management systems among the third-year students from various programs at Polytechnic University of the Philippines – Quezon City. The primary objective was to discern the advantages of a robust complaint management system using naïve bayes algorithm by determining the level of awareness and satisfaction among users. To achieve this, a survey employing a Likert scale was distributed to 50 respondents via an online platform, ensuring a statistically valid sample size with an acceptable margin of error. The findings underscore the significance of a complaint management system in effectively addressing diverse issues within the university setting. Statistical analysis further highlighted a significant difference between



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awareness and satisfaction level concerning the implemented system. Aligning from these insights, several recommendations emerge to enhance the university's complaint resolution process. These include refining the system's functionality based on user feedback, offering comprehensive training and support to users, and instituting regular updates and improvements to the system. Implementing these suggestions can foster greater awareness and satisfaction, ultimately leading to more effective complaint management within the university.

**Keywords:** e-Reklamo, Complaint, Naive Bayes, Algorithm, Research, Polytechnic University of the Philippines, PUPQC



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### Chapter 1

#### THE PROBLEM AND ITS SETTINGS

In this chapter, the background of the study is introduced within the context of the interpretation entitled "e-Reklamo: A COMPLAINT MANAGEMENT SYSTEM USING NAÏVE BAYES ALGORITHM."

#### Introduction

The rapid evolution of technology has fundamentally transformed our lives, offering unprecedented opportunities for communication, collaboration, and global interaction. In this digital age, characterized by the proliferation of websites, emails, and instant messaging platforms, individuals can effortlessly connect, share information, and collaborate on a global scale. This technological revolution has significantly impacted the academic landscape, empowering students to create an educational environment that is both socially relevant and practically oriented, even amidst various academic challenges. The importance of academic development within this dynamic educational landscape cannot be overstated. It not only fosters academic growth but also lays the foundation for holistic and practical learning systems.

Central to the realization of an effective educational system is the university's approach to complaint management. Effective complaint handling is crucial for maintaining a harmonious and inclusive environment within a university. It not only strengthens relationships between students, parents, and faculty but also positively influences overall academic excellence. Complaints serve as valuable feedback from stakeholders, highlighting areas of concern or discontent within the university. Therefore,



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the classification and management of these complaints are essential for streamlining and optimizing complaint resolution protocols. While universities typically provide platforms for stakeholders to voice their grievances, the effectiveness of the complaint management system can sometimes fall short. To bridge this gap and promote continuous improvement, there is a growing need to automate and enhance the classification process of complaint reports. In the context of organizational change, particularly within educational institutions, the swift and accurate resolution of complaints is paramount. Machine learning, with its diverse approaches and algorithms, offers promising solutions for automating complaint classification. Among these, the Naive Bayes Algorithm stands out for its simplicity, efficiency, and real-time processing capabilities. However, it's crucial to recognize the limitations of the Naive Bayes Algorithm, particularly its assumption of feature independence. Despite these limitations, the algorithm remains a preferred choice for complaint classification due to its ease of integration and capacity for real-time processing. Within a university setting, implementing an automated complaint classification methodology powered by machine learning techniques can yield significant benefits. The Naive Bayes Algorithm, with its inherent nature and commendable accuracy, can enhance overall customer satisfaction and streamline complaint management processes. In this research, we aim to explore the potential of the Naive Bayes Algorithm in automating the classification of complaints within the Polytechnic University of the Philippines – Quezon City. By evaluating its effectiveness, efficiency, and impact on complaint resolution, this study seeks to contribute valuable insights to the ongoing evolution of complaint management systems in educational institutions.

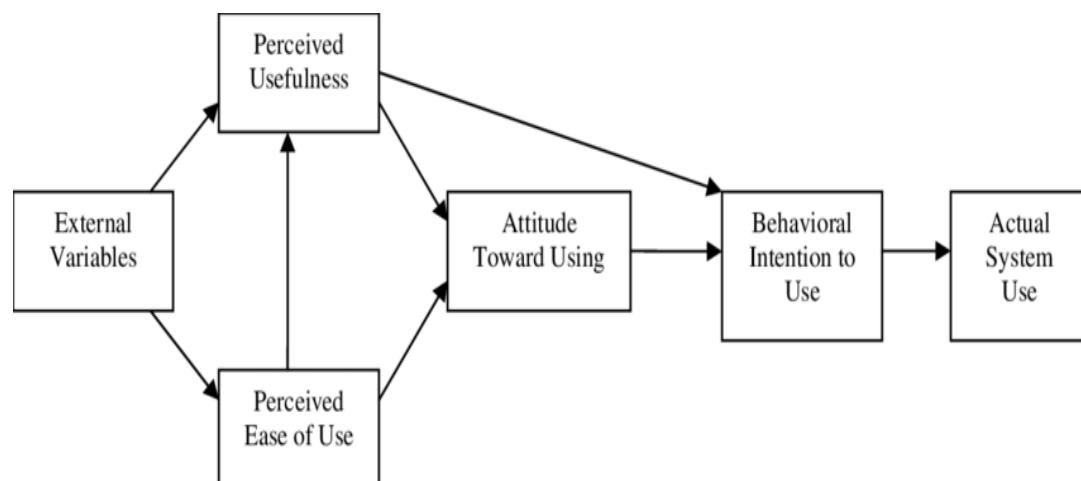


## Theoretical Framework

### Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), introduced by Fred Davis, transformed our understanding of how people adopt and incorporate new technologies into their daily lives. It has become a leading framework for examining user acceptance of new technologies as it focuses on two key concepts: perceived usefulness (PU) and perceived ease of use (PEOU). Perceived usefulness measures how much individuals believe that using a specific technology will improve their performance and help them achieve their goals. Meanwhile, perceived ease of use refers to individuals' perceptions of how straightforward and user-friendly a technology is to use. TAM has been updated and expanded to stay current. Despite these modifications, it continues to be a vital tool for studying technology adoption, influencing both academic research and practical applications. Its lasting importance underscores its effectiveness in exploring the relationship between humans and technology and guiding successful technology implementations.

Figure 1. Technology Acceptance Model (TAM)

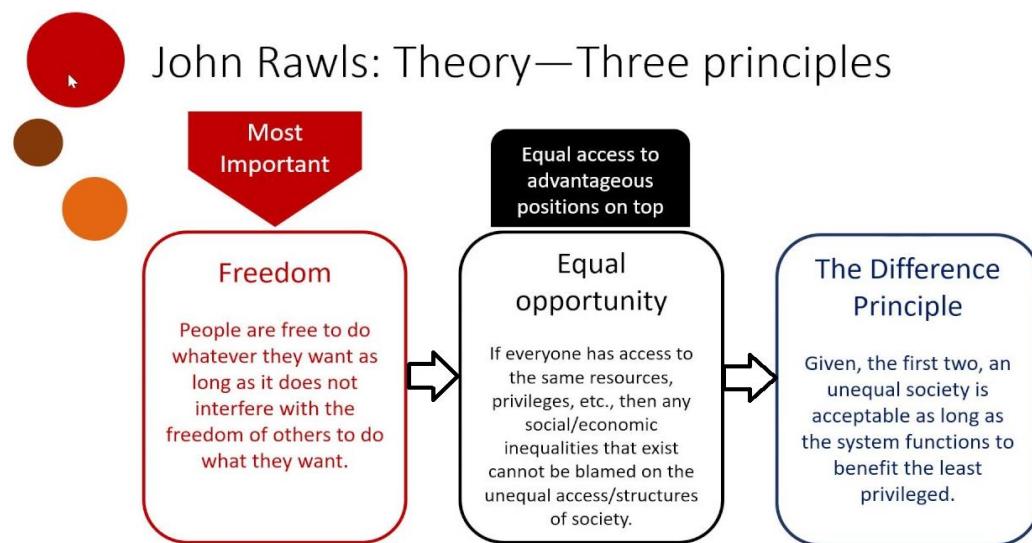




### Rawlsian Justice Theory

Rawlsian justice theory, often referred to as justice as fairness, is a foundational political philosophy developed by philosopher John Rawls. It advocates for a just society that prioritizes the protection of fundamental freedoms and rights for all individuals, while also addressing the distribution of economic and social resources to uplift marginalized communities. At its core, Rawls argues that a fair society is one where laws and institutions are established behind a "veil of ignorance." This hypothetical scenario requires individuals to make decisions without knowledge of their own class, race, gender, natural abilities, or other personal characteristics. The aim of this thought experiment is to ensure that principles of justice are selected impartially, without any biases or preferences. By employing the veil of ignorance, Rawls emphasizes the importance of fairness and equality in crafting a just social order. This approach seeks to mitigate inequalities and promote the well-being of all members of society, particularly those who are most vulnerable or disadvantaged.

Figure 2. Rawlsian Justice Theory

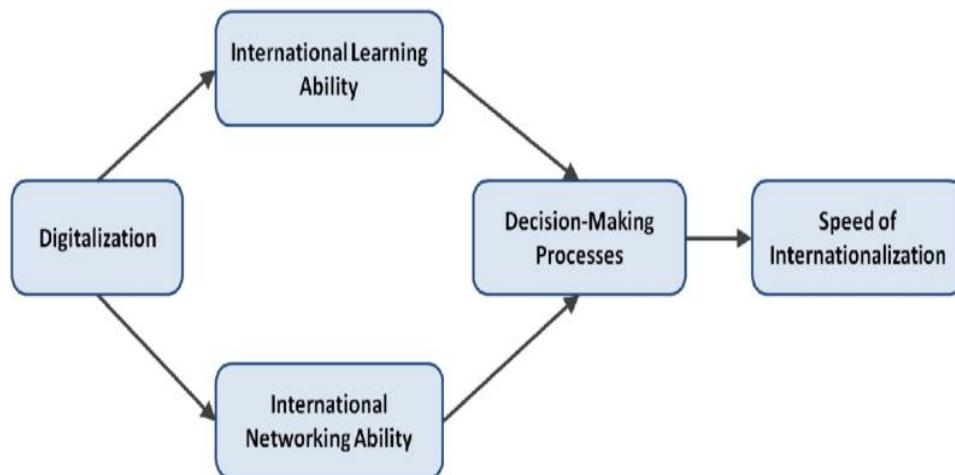




## Digitalization Theory

The concept of the "digitalization of complaint theory" encompasses the adaptation of principles of social justice and fairness to the digital domain, particularly within online interactions and technological usage. This broad framework addresses various issues, including privacy concerns, equitable access to information, and the fair distribution of digital resources and opportunities. Central to this theory is the notion of ensuring that all individuals, including marginalized communities, have affordable access to the internet and necessary digital devices. Furthermore, the digitalization of complaint theory extends to combating online harassment and hate speech. This involves the development of effective policies and tools for moderating online content and creating safe online environments where everyone can engage without fear of discrimination or harassment. By applying principles of social justice and fairness to the digital realm, the digitalization of complaint theory aims to promote equity, inclusion, and ethical conduct in online interactions and technological advancements.

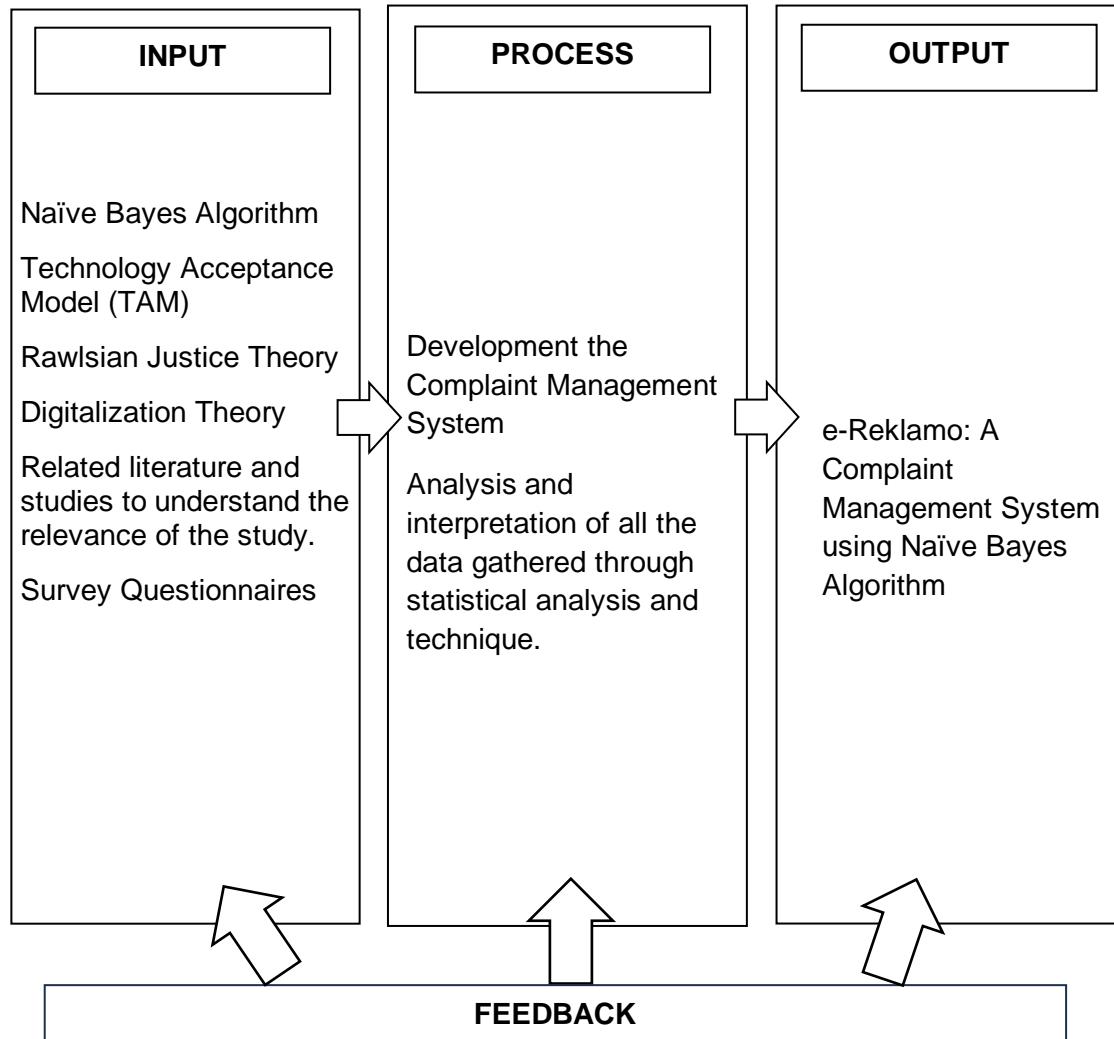
Figure 3. Digitalization Theory





### Conceptual Framework

Figure 2. Conceptual Framework



In the conceptual framework, the complaint management system used a naïve bayes algorithm. The Input comprises three key theories: Technology Acceptance Model, Rawlsian Justice Theory, and Digitalization Theory. The review of related literature also serves as a foundational element, guiding the study's approach and methodology. For the Process, researchers have developed a Web-based Complaint Management System utilizing the Naive Bayes Algorithm. Following its development, data from various respondents were gathered, and an evaluation was conducted to analyze the



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effectiveness and functionality of the system. These steps were essential in achieving the study's objectives. Finally, in the Output phase, the researchers implemented the newly developed system, known as eReklamo: A Complaint Management System using Naive Bayes Algorithm. This stage represents the tangible outcome of the study, demonstrating the practical application of the research findings in addressing complaints within the academic setting.

### **Statement of the Problem**

The research entitled “e-Reklamo: A Complaint Management System using Naive Bayes Algorithm” aimed to evaluate the main problems and challenges that are being experienced by students. The researchers sought answers on the following questions:

1. What are the benefits of using a complaint management system in a university?
2. What is the level of awareness among the respondents regarding the monitoring of complaints inside the university in terms of:
  - a. Incident Report;
  - b. Familiarity with the School Polices;
  - c. Immediate Reporting; and
  - d. Response Time?
3. Based on the benefits and the level of awareness of the respondents in complaint handling, what software can be developed?
4. What is the level of satisfaction among respondents in the newly developed app “Complaint Management System” in terms of:
  - a. Functionality;
  - b. Ease of Use;



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- c. Usefulness; and
  - d. Security?
5. Is there a significant difference between the level of awareness and the level of satisfaction in the newly developed app “Complaint Management System”?

### Hypothesis

The hypothesis derived from the study's findings proposed that there is a significant difference between users' awareness on the complaint management system and their satisfaction levels. This suggests a positive relationship between users regarding the complaint management systems and their satisfaction with the implemented complaint management system.

### Scope and Limitations of the Study

The study emphasizes the implementation of a newly developed Complaint Management System tailored to efficiently categorize complaints originating from university personnel, comprising both students and faculty members. The respondents involved in this research are individuals associated with the Polytechnic University of the Philippines - Quezon City Campus. To collect pertinent data, the researchers employed a Survey Questionnaire administered through Google Forms.

In terms of software development, the system's front end was constructed using HTML, CSS, and JavaScript, while MySQL and PHP were utilized for the back end. This comprehensive approach ensures a robust and user-friendly platform capable of effectively addressing the diverse needs of university stakeholders in managing and resolving complaints.



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### Significance of the Study

This study holds significant implications for various stakeholders within the educational ecosystem. Beyond students, school administrators, future developers, and researchers, it extends its impact to:

**Students**, who are empowered to contribute to improved problem-solving and issue resolution, play a pivotal role in creating a more positive and effective learning environment.

**Parents**, who entrust the school with their children's education, can greatly influence the school's reputation and community involvement through their confidence in the institution's ability to address issues effectively.

**Faculty Members**, who are integral to the educational process, benefit from having their concerns addressed, leading to increased job satisfaction and productivity.

**School Administrators**, who oversee the institution's operations, benefit from the early identification and resolution of problems, resulting in a more efficient and harmonious school environment.

**Future Researchers**, who rely on comprehensive data and insights, can utilize information gathered from the experiences of students, parents, and administrators to inform and guide future research, policy development, and educational practices.



### Definition of Terms

To comprehend the words easily which the researchers used in the study, below are the terms defined:

**Algorithm** – An approach used for solving a problem or performing a computation. It executes specific steps, whether in hardware or software.

**Cascading Style Sheet (CSS)** – A technology that enhances web page design and layout, enabling adjustments to font, color, and other aesthetic elements.

**Complaint** - An expression that a situation is unsatisfactory or unacceptable.

**Hypertext Markup Language (HTML)** – A markup text file used to achieve effects such as font changes, graphics, and hyperlinks on web pages.

**JavaScript** – A dynamic scripting language utilized in web development. It empowers the addition of interactive elements on web pages, beyond the capabilities of HTML and CSS alone.

**Likert Scale** - A psychometric tool often employed in questionnaire-based research. It stands as the principal method for scaling responses in surveys, although alternative variants exist.

**MySQL** – A vital database management system for processing vast data stores. It serves as a platform for efficiently storing and retrieving data.

**Naïve Bayes Algorithm** – An effective classification technique, capable of swift predictions and determines outcomes based on object probabilities.

**Hypertext Preprocessor (PHP)** - A server-side language for web development. it runs on the web servers, generating dynamic web content displayed in the client's browser.

**Theft** - The act or illegal activity of stealing.



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### CHAPTER 2

#### REVIEW OF RELATED LITERATURE AND STUDY

##### **Complaint Management**

A literature review summarizes and explains the whole body of knowledge that has been published in academic books and journal articles about a certain subject. A complaint is a negative statement made by a customer or consumer who is unhappy with the goods, services, or organization's behavior. based on Kumar and Kaur (2019). It is an action made by a person who is not pleased and entails saying anything unfavorable or unacceptable about a good or service. It describes complaints as a customer's attempt to have a negative purchasing experience changed. The method and process through which businesses consistently address client issues is known as complaint management. This issue is significant because businesses have never taken customer complaints seriously and have consistently discouraged them, which has led to additional hardship and dissatisfaction (Stauss & Seidel, 2019). Customer complaints have increased in recent years because of the influence of social media, and this has led to the development of a complicated system for filing complaints and resolving disgruntled clients. Lovely Singh Bhadouria, et. al. (2021), a Complaint Management System is a cutting-edge product development tool that is utilized by management and businesses alike. It provides a time-saving and illegal internet answer to the public's problems. The coordination, supervision, tracking, and handling of complaints are intended to be made simpler by the complaint management system.



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According to Advocacy Research (2021), it is essential to register complaints before they can be managed. When you have a complaint, it is necessary to obtain the specifics and produce evidence when possible. According to Kolsky's data, most complainants either keep their dissatisfaction issues bottled up or discuss them with other individuals who may become disappointed. Regardless of its kind and structure, management is a process of managing and supervising its function, according to Surbhi (2018). It is the act of fostering an environment where employees of a firm may work together and successfully accomplish business goals. Complaint management can be defined as the process of controlling complaints made by unhappy or dissatisfied complainants. The handling and control of complaints made by complainants are made possible by complaint management. A group of individuals working for an organization is guided by management, who directs their efforts toward a common goal (Surbhi, 2018). It might be really challenging to understand someone else's thoughts. It's likely that while most people are happy with your services, there are some who aren't. As a result, it is crucial to develop a complaint management system that works and provides effective communication with the public. The creation of procedures is necessary for complaint management, as is deciding that complaints should be accepted, how to respond in feedback, and which institution or people will receive the criticism (IONOS, 2019).

To provide good complainant service, a complaint management system must be functional. It aids in measuring complainant satisfaction and is a useful resource for information and criticism on how to improve services. When something isn't functioning properly, complainants are typically the first to realize (Ombudsman, 2020). It is also important to note that Complaint Management Systems are crucial in organizations



where prioritizing complainants occurs because they support understanding what complainants are thinking, foster closer relationships between administrators and complainants, and, most importantly, guarantee the highest level of complainant satisfaction. Complaint records and complaints are tracked in the complaint management system's database. This can be utilized to strengthen the bond between the administrator and the complainant. Poor service organizations are challenging to do business with, according to Stone (2019). They created a system for managing complaints that can reduce customer dissatisfaction and motivate clients to take part in regulating the caliber of the service rendered.

The system's objectives were to provide businesses with a useful tool and to make it simpler to organize, monitor, manage, and address concerns. Data from complaints are also kept track of, and data is used to pinpoint issues and enhance services. The system has two modules: one for the administrator and one for the user.

### **Student Complaint Behavior**

Higher education administrators are being forced to look within to improve student service standards as universities contend with increasing competitiveness and dwindling enrollments (Pavlov, 2020). Higher education institutions are reportedly contending with a new student culture, which is manifested in part of consumer-minded student, according to DeSeCo. A broad collection of students with wide interests and aspirations are generally drawn to institutions. Modern pupils are more proficient and knowledgeable when it comes to making complaints when these expectations are not met. Keeping track of student happiness has grown in importance due to the rising competitiveness for enrolment. Most in professional settings, unsatisfied students have a variety of alternatives and methods at some of which may be harmful to the institution.



The data obtained from student complaints should be treated as extremely useful information that can help the company (Collaborator, 2022). The emotions that students feel when disagreements emerge have received more attention in recent years (Valente & Lourenco, 2020). As per Heath, H., and R. Smith, G. (2019) Students may display a range of behaviors in the face of conflict or a general lack of communication. Students who are trying to resolve a negative student experience may turn to a third party for support or pursue additional legal options.

Not only must these behaviors be addressed, but their underlying causes must also be comprehended. For academic leaders, service failures can have a variety of managerial repercussions. Understanding how pupils respond to unpleasant experiences is urgently needed. In the end, this will contribute to giving students the greatest possible experience, which is more important in a service environment like education where students continuously assess intangible services (Sutherland, 2018). Yuke (2018) asserts that institutions frequently find it most challenging to resolve complaints involving outside issues. These actions may cause the student to avoid the school, engage in irate conversations with friends, or file grievances with outside organizations. The loss of students, as well as the income loss to the expense of sustaining the student and the personnel cost of handling the complaint itself, are all expenses incurred by the institution because of complaints (Garcia & Weiss, 2020).

These events can also provide crucial details, such as the causes of a decline in academic performance, the origins of conflicts, and the understanding of the actual costs with handling complaints (Garcia & Weiss, 2020). Academic leaders must be more up front about their desire to encourage student conflict resolution. This enables the organization to address issues and forge lasting connections (Keibel, 2021). Ratings of



student experience satisfaction draw attention and have been connected to students' post-consumption opinions on education in general. With a growing focus on the student experience, conflict and behavior has developed into a complex relationship component (Gamage, Dehideniya, Ekanayake, 2021).

### **Fairness and Loyalty as a Theory**

According to developmental and evolutionary perspectives on moral cognition, fairness and loyalty as a notion embody essential moral ideals. Both distributive and punitive justice are supported by infants. Carpenter & Bradley (2018) claim that how students perceive their level of service affects their communications, perspectives, and behavior. For instance, an institution can have a favorable impact on the outcome by appropriately communicating with a student about a subject. Students will make more self-serving decisions rather than being more amenable to compromise when they perceive a suggested settlement to be a forced procedure (Carpenter, Bradley, 2018; Khan et al., 2020).

The likelihood of the issue getting worse increases if the student thinks there are more alluring options available. The perspective of students as consumers of education, which is often meant to be maintained, is called into question in the eyes of the student by an unfair judgment (Khan et al., 2020). A perceived justification or excuse may be included in the explanation or solution given, which could have an impact on the entire process. The likelihood that a student will view conflict resolution as the only practical approach increases with the efficiency and effectiveness of the communication process (Carpenter, Bradley, 2018; Khan et al., 2020).

**Impact of Service Failure and Complaint Handling on Satisfaction**

Shams et al.'s (2020) study tries to comprehend how customer happiness, complaint processing, and service failure interact. The study used structural equation modeling to examine the correlations between these parameters using a sample of 384 respondents from Persian banks in Iran. The results show that customer satisfaction with the handling of complaints is negatively impacted by the severity of service failure. Effective complaint management, however, has a favorable impact on this satisfaction. Furthermore, a significant factor that positively influences brand credibility and overall pleasure is consumer satisfaction with complaint management. The study emphasizes the detrimental effect of poor service on client satisfaction with complaint processing. This is consistent with the complaint management system's main objective, which is to efficiently handle and manage consumer complaints resulting from service failures. A CMS tries to lessen the negative effects of service lapses and customer dissatisfaction by immediately resolving the complaints.

**Influence of CRM Indicators on Customer of Sharia Based Banking System**

In the context of Sharia-based banking systems, the study by Lubis, Dalimunthe, Absah, and Fawzeea (2020) explores the effect of Customer Relationship Management (CRM) indicators on customer loyalty. According to the research's findings, specific CRM indicators, such as how complaints are handled, how customers are treated, how empowered they are, and how knowledgeable they are, have a big impact on how loyal customers are in North Sumatra's Islamic banking industry. The study lends weight to the idea that greater customer loyalty results from Islamic banks in the region implementing CRM methods more successfully. Additionally, the study demonstrates that when taken as a whole, these CRM indicators have a significant impact on customer



loyalty in the same setting. The results of this study highlight the value of efficient complaint handling within the broader context of customer relationship management.

### **Understanding between the Appraisal Structure and Appraisal Complaints**

In addition to examining the relationship between performance evaluation systems and discrimination complaints, Rubin and Edwards' study also sheds light on the importance of addressing employees' perceptions of fairness in performance reviews. By highlighting the correlation between perceived fairness and the success of performance appraisal systems, the research underscores the significance of implementing fair and transparent evaluation procedures. The study contributes to the broader conversation surrounding prejudice in performance management by providing empirical data on the link between formal discrimination complaints and evaluation procedures. This empirical evidence offers valuable insights into potential areas of improvement within organizations' performance evaluation systems, emphasizing the need for proactive measures to prevent discrimination and ensure fairness in the workplace.

The findings of Rubin and Edwards' study underscore the critical role of complaint management systems in promoting fairness and equity within organizations. By prioritizing the fair handling of discrimination complaints, organizations can cultivate a more inclusive and supportive work environment, ultimately enhancing employee satisfaction and organizational effectiveness.

### **Synthesis of the Reviewed Literature and Studies**

A complaint serves as a powerful expression of a client's dissatisfaction with the service they received from an organization, acting as a tangible manifestation of their discontent. It succinctly articulates and emphasizes the unsatisfactory or undesirable



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aspects of a specific circumstance, providing valuable insight into areas requiring improvement. In response to the growing emphasis on effective complaint handling, the Complaint Management System has emerged as an indispensable tool in modern enterprises. Its primary objective is to streamline the intricate process of organizing, monitoring, and addressing complaints. By leveraging cutting-edge technology, this multifunctional solution establishes a comprehensive framework to ensure that complaints are not only acknowledged but also systematically managed and promptly resolved. The adoption of such a system holds significant potential to enhance organizational performance and client satisfaction. By facilitating swift resolution, organizations can effectively mitigate potential negative impacts and transform client complaints into opportunities for improvement. Moreover, a well-implemented Complaint Management System fosters a culture of responsiveness and client-centricity within the organization, driving continuous enhancement of services and processes.

This synthesis underscores the critical role of innovative technical solutions in fostering responsive and client-centric business practices. Additionally, it highlights the imperative of prioritizing the implementation of Complaint Management Systems to effectively manage and address client feedback in today's rapidly evolving business landscape. By embracing these systems, organizations can not only address immediate concerns but also proactively identify and address underlying issues, ultimately fostering long-term customer loyalty and organizational success.

**Research Matrix**

Table 1

**Research Matrix**

Features	Zendesk	HappyFox	e:Reklamo
Allow user to create complaints	✓	✓	✓
File Attachment	✓	✓	✓
Complaint prioritization	✓	✗	✓
Naïve Bayes Classifier	✗	✗	✓
Analytical Dashboard	✗	✗	✓
Recovery of Deleted Complaints	✓	✓	✓
Role Permission	✓	✓	✓
Allow feedback from user	✓	✓	✗

Table 1 presents a comprehensive research matrix that compares various software solutions to streamline the complaint management process, each with its unique features and capabilities. This essay provides a comparative analysis of three



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such systems: Zendesk, HappyFox, and e:Reklamo, highlighting their respective strengths and weaknesses.

Zendesk facilitates user feedback collection, fostering a culture of continuous improvement. However, its drawback lies in the absence of advanced analytical tools like the Naïve Bayes Classifier and an Analytical Dashboard, which could provide deeper insights into complaint trends and patterns.

HappyFox, another commercial solution, shares several fundamental functionalities with Zendesk, including complaint creation and user feedback collection. Despite its robust feature set, HappyFox lacks complaint prioritization and advanced analytical capabilities, potentially impeding organizations' ability to manage and analyze complaint data efficiently.

In contrast, e:Reklamo emerges as a promising solution, offering a unique blend of comprehensive features and advanced analytics. With the incorporation of the Naïve Bayes Classifier and an Analytical Dashboard, e:Reklamo enables organizations to gain deeper insights into complaint trends, thus empowering informed decision-making. However, it falls short in features such as complaint prioritization and user feedback collection, which are present in Zendesk and HappyFox. In summary, the table effectively showcases e:Reklamo's comparative advantages over the other two systems, particularly in essential features for complaint analysis and classification.



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### CHAPTER 3

### METHODOLOGY

#### Research Method

The research method employed in this study adopts a developmental and descriptive sampling approach, encompassing both quantitative and qualitative methodologies. Moreover, the study integrates the system development process to offer a comprehensive analysis. Focusing on students and faculty members of the Polytechnic University of the Philippines - Quezon City Campus, these individuals are selected to evaluate the proposed system, providing valuable feedback on its effectiveness and usability. The assessment of participants' perceptions will be conducted through a combination of surveys and interviews, with particular emphasis placed on evaluating the algorithm's utility, usability, and overall user experience. In line with the ethical guidelines, informed consent will be obtained from all participants prior to their involvement in the study.

#### Sources of Data

The population for this study consists of an estimated 47 Students and 3 Faculty Members. To determine the sample size, the researcher utilized the population size, resulting in a total of 50 respondents. For participant selection, the researcher will employ a simple random sampling technique. This method ensures that each member of the population has an equal chance of being selected, thereby enhancing the study's representativeness, and minimizing bias.



Table 2

**List of Respondents**

RESPONDENTS	SAMPLE	PERCENTAGE
STUDENTS	47	94%
FACULTY MEMBERS	3	6%
<b>TOTAL</b>	<b>50</b>	<b>100%</b>

The table provides an overview of the respondents participating in the study, categorizing them into Students and Faculty Members. Among the total of 50 respondents, the majority, comprising 94%, are Students, constituting 47 individuals. In contrast, Faculty Members represent a smaller segment, accounting for only 6% of the sample, with 3 individuals taking part in the study. This distribution emphasizes the important role of students in contributing to the research findings, reflecting their firsthand experiences and perspectives within the academic environment. Their insights will be useful in shaping the outcomes of the study and informing potential improvements to the complaint management system. While Faculty Members constitute a smaller portion of the sample, their participation remains valuable, offering insights from the perspective of educators and administrators within the university setting. Their perspectives can provide valuable input into the effectiveness of the complaint management system from an institutional standpoint.

Overall, the diverse representation of both students and faculty members in the study ensures a comprehensive assessment of the proposed system's efficacy and usability within the academic context.

**Research Instrument**

The Research Instrument used in this study was the Web-based Application that the researchers developed, together with the Survey Questionnaire through Google Forms that is aligned to the Statement of the Problem. The researchers used the Likert Scale Technique to give equivalent interpretations. The scoring range and Verbal Equivalents for interpreting the weighted mean in terms of level of frequency are shown in the table below. The mean is calculated using the interval between the highest (5) and lowest (1) scores.

Table 3

**Likert Scale for User's Satisfaction**

LIKERT SCALE	SCORING RANGE	VERBAL INTERPRETATION
5	4.21 – 5.00	Very Highly Satisfied
4	3.41 – 4.20	Highly Satisfied
3	2.61 – 3.40	Moderately Satisfied
2	1.81 – 2.60	Slightly Satisfied
1	1.00 – 1.80	Not Satisfied

Table 3 outlines a Likert Scale for assessing user's satisfaction levels, with scores ranging from 1 to 5 and corresponding verbal interpretations. Scores of 5 indicate "Very Highly Satisfied," reflecting exceptional satisfaction, while scores of 4 represent "Highly Satisfied.". Scores of 3 signify "Moderately Satisfied," suggesting a moderate level of satisfaction with room for improvement. A score of 2 corresponds to



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"Slightly Satisfied," indicating lower satisfaction levels, and a score of 1 represents "Not Satisfied," indicating dissatisfaction and significant areas for improvement.

Table 4

### Likert Scale for Awareness

LIKERT SCALE	SCORING RANGE	VERBAL INTERPRETATION
5	4.21 – 5.00	Very Highly Aware
4	3.41 – 4.20	Highly Aware
3	2.61 – 3.40	Moderately Aware
2	1.81 – 2.60	Slightly Aware
1	1.00 – 1.80	Not Aware

Table 4 outlines a Likert Scale for assessing the user's levels of awareness, with scores ranging from 1 to 5 and corresponding verbal interpretations. Scores of 5 indicate "Very Highly Aware," reflecting a high level of awareness, while scores of 4 represent "Highly Aware," indicating a strong level of awareness. Scores of 3 signify "Moderately Aware," suggesting a moderate level of awareness. A score of 2 corresponds to "Slightly Aware," indicating lower levels of awareness, and a score of 1 represents "Not Aware," indicating a lack of awareness. By providing a clear scale and corresponding verbal interpretations, it facilitates the systematic assessment of awareness levels, enabling researchers to gain insights into respondents' understanding and knowledge on specific topics.



Table 5

**Likert Scale for Recommendation**

LIKERT SCALE	SCORING RANGE	VERBAL INTERPRETATION
5	4.21 – 5.00	Very Highly Recommended
4	3.41 – 4.20	Highly Recommended
3	2.61 – 3.40	Moderately Recommended
2	1.81 – 2.60	Slightly Recommended
1	1.00 – 1.80	Not Recommended

Table 5 outlines a Likert scale for recommendation provides a structured method for assessing levels of endorsement or approval, with scores ranging from 1 to 5 and corresponding verbal interpretations. Scores of 5 indicate "Very Highly Recommended," reflecting strong endorsement or approval, while scores of 4 represent "Highly Recommended," indicating a positive recommendation. Scores of 3 signify "Moderately Recommended," suggesting a moderate level of endorsement. A score of 2 corresponds to "Slightly Recommended," indicating lower levels of endorsement, and a score of 1 represents "Not Recommended," indicating a lack of endorsement or disapproval.

**Data Gathering Procedure**

The researchers conducted a survey to the students and faculty Members. The survey questionnaire was distributed the link of Google Forms and explained the important matters before they answer the questionnaire. After gathering the needed data, the researchers interpreted the results of the survey with the use of tables.



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1. Formulation of Data Questionnaire and Survey Forms: The researcher evaluated the key problem to create a proper survey questionnaire which helped the respondents to answer it with ease.
2. Validation and Distribution of Data Questionnaire and Survey Forms: The questionnaire that the researchers prepared was reviewed and checked to ensure that the questionnaire is related to the study and produces the appropriate outcome. When the survey forms are approved, the researcher distributed the survey link to the respected respondents.

### Ethical Considerations

1. Obtaining consent from participants to participate in a study by providing sufficient information, including its aim, methods, potential risks and benefits, and participants' rights.
2. Preventing illegal access, use, or disclosure of participants' personal information and data.
3. Assuring the study's scientific validity and that data is collected and processed in a thorough and unbiased manner.
4. Making certain that participants are treated with dignity and that their autonomy is respected throughout the study.
5. Ensuring that participants have the option to withdraw from the study at any point without facing any negative consequences and their decision to participate is entirely voluntary.



## Statistical Treatment of Data

The analysis and interpretation of data utilized several statistical tools, including percentage calculations, weighted mean calculations, and t-tests. These tools were instrumental in examining the data from various perspectives, determining trends, and drawing meaningful conclusions.

### 1. Percentage

The percentage statistical approach is utilized to determine what portion of the total distribution relates to the respondents. This is calculated using the following formula:

$$P = f/N \times 100 \quad \text{Where: } P = \text{Percentage}$$

f = Frequency

N = No. of Respondents

### 2. Weighted Mean

A Weighted Mean is utilized to characterize the perception of the respondents on each indicator by assigning specific values to different responses. The calculation of the weighted mean is as follows:

$$\text{Mean} = \frac{\sum fx}{n} \quad \text{Where: } \text{Mean} = \text{Population Mean}$$

n = Total Respondents

f = Frequency

x = Corresponding Remarks



### 3. The Paired T-test

The T-test will determine whether there are any significant differences between the level of awareness and the level of satisfaction in the newly developed app “Complaint Management System”.

$$t = \frac{\Sigma d}{\sqrt{\frac{(n(\Sigma d^2) - (\Sigma d)^2)}{(n - 1)}}}$$

Where: d = Difference per paired value  
n = Number of samples

### Software Development

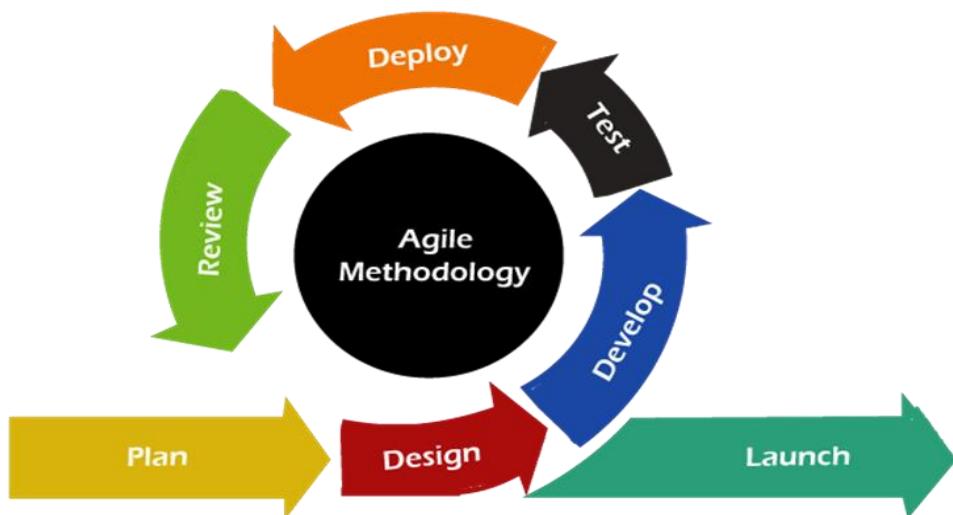
The researchers employed a web-based system, utilizing common mark-up and programming languages such as HTML, CSS, JavaScript, and PHP, with MySQL for the database. The Agile Software Development Life Cycle (SDLC) methodology was adopted to ensure the effectiveness and quality improvement of the system for users. The Agile SDLC methodology facilitates the creation, development, and rigorous testing of high-quality software. Its primary goal is to deliver exceptional software that meets client requirements while falling to budgetary and time constraints. Drawing from the study conducted by Naga Malleswari et al. (2018), the Agile SDLC methodology offers several significant benefits, including flexibility, advanced collaboration, continuous improvement, user-friendly interfaces, and adaptability to changing processes.

These advantages ensure that the developed system remains responsive to user needs and evolving technological landscapes. The iterative nature of Agile SDLC enables frequent feedback loops and continuous refinement, allowing for timely



adjustments and enhancements throughout the development process. This iterative approach fosters a dynamic and adaptive development environment, ultimately leading to the creation of a robust and user-centric web-based system. Overall, the adoption of the Agile SDLC methodology underscores the researchers' commitment to delivering a high-quality, user-friendly complaint management system that effectively meets the needs of both students and faculty members at the Polytechnic University of the Philippines - Quezon City Campus.

Figure 4. Agile Methodology



Planning – In this phase, the researchers must plan the requirements such as the steps in creating the system as well as the platform to be used to develop it.

Design – After the planning phase, the researchers started to identify the project, understand the system, and how it would be designed so that it would fit the user's requirements before it is implemented.

Develop – This is the process where the work begins, the researchers developed the system by using the mark-up and programming languages.



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Test – In this phase, the system underwent the test procedure, investigated for possible bugs, and examined the performance of the system.

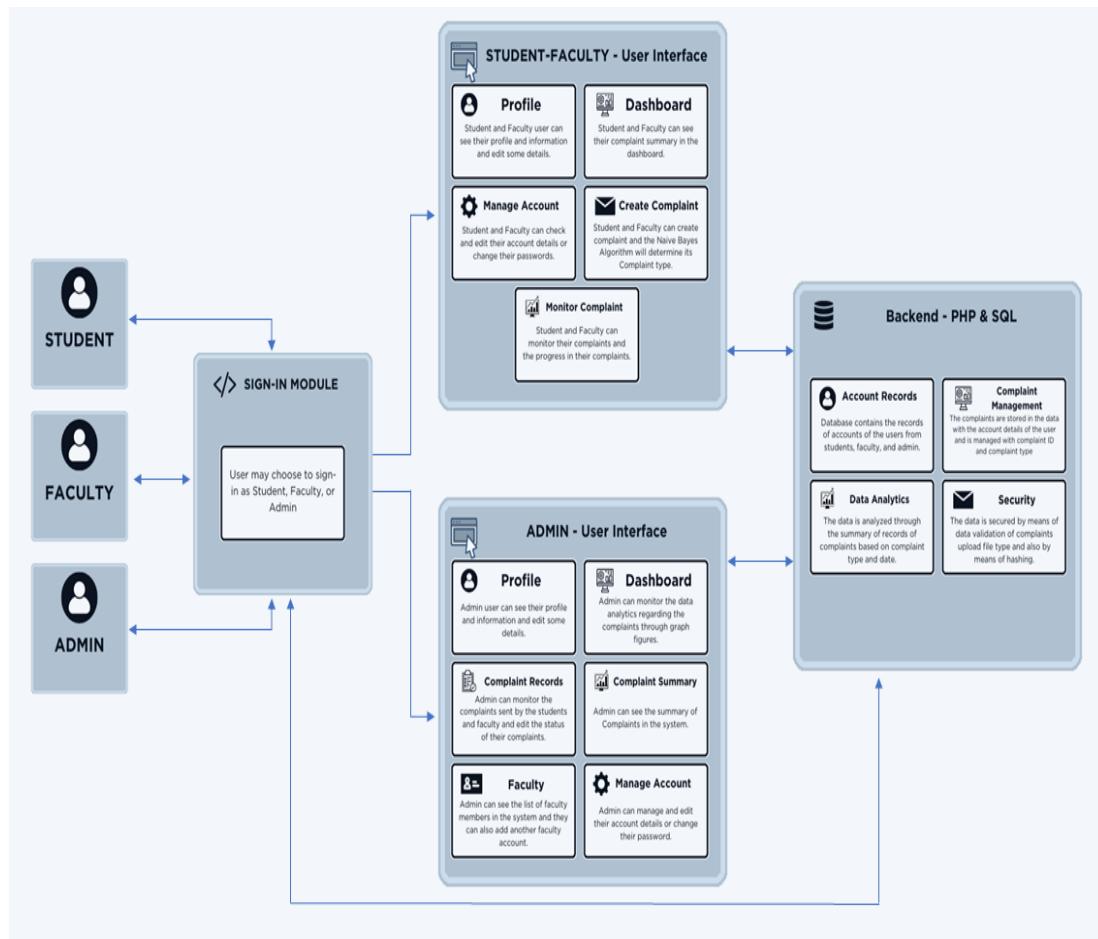
Deploy – This phase focused on how the application should be deployed to the respondents.

Review – The researchers reviewed the system by using the gathered information such as the feedback from different respondents and evaluated the results of the research.

Launch – It is the final step wherein it is fully investigated and there's no possible bugs on the system. It is ready to be used by different individuals.

## System Architecture

Figure 5. System Architecture of the Proposed System





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e:Reklamo, a comprehensive Complaint Management System, was meticulously designed to accommodate three distinct user types: students, teachers, and administrators. Administrators were granted special access privileges, empowering them to effectively address complaints from both teachers and students. Meanwhile, students enjoyed unrestricted access to all features of the system, ensuring seamless utilization. The architecture of e:Reklamo revolves around a web-based application system, facilitating ease of access and utilization across various devices and platforms. Leveraging a MySQL database for data storage and retrieval, the system boasts a robust foundation capable of handling large volumes of complaint-related data efficiently. Furthermore, for complaint classification, e:Reklamo employs a Naive Bayes Algorithm, renowned for its accuracy in categorizing complaints with precision. This ensures that complaints are systematically classified and addressed, enhancing the overall efficiency of the complaint resolution process.

Through this comprehensive architecture, e:Reklamo endeavors to meet the diverse needs of all stakeholders involved while offering a scalable and user-friendly platform. By providing administrators with specialized access, empowering students with full system functionality, and implementing cutting-edge algorithms for complaint classification, e:Reklamo aims to streamline the complaint management process and foster a responsive and efficient complaint resolution environment.



## CHAPTER 4

### RESULTS AND DISCUSSION

This chapter presents a comprehensive analysis and interpretation of the collected data to address the research questions posed in the problem statement. The study solved fifty (50) respondents from two distinct categories: Students and Faculty Members. The data has been organized according to specific research questions, and this chapter provides insights into the respondents' perspectives in having a complaint management system.

#### **1. Benefits of having a complaint management system in a university**

In the benefits of having a Complaint Management System in a University among respondents, it highlights its effectiveness in addressing different issues that might occur within the university. Respondents emphasize the system's role in streamlining communication channels, promoting transparency, and fostering a sense of accountability among stakeholders.

Additionally, the Complaint Management System is recognized for its role in promoting accountability and responsibility among university personnel. By documenting and tracking complaints, the system holds individuals accountable for their actions and decisions, thereby promoting a culture of accountability and responsibility within the institution. This contributes to the maintenance of high standards of professionalism and ethical conduct among all members of the university community.



Table 6

**Benefits of using a Complaint Management System**

STATEMENT	MEAN RESPONSE	INTERPRETATION
It promotes a culture of open communication, respect, and accountability by expressing their concerns and contributing to the university's overall success.	4.78	Very Highly Satisfied
Empowers individuals by assuring them that their concerns will be listened to and addressed promptly.	4.48	Very Highly Satisfied
By providing a structured platform to express their concerns, it helps individuals to prevent minor issues from getting worse that could disrupt the campus community.	4.6	Very Highly Satisfied
It encourages students to report safety concerns, unwanted behaviors, and incidents more frequently.	4.74	Very Highly Satisfied
Encourages a culture of learning and growth, as the university can use feedback from complaints to identify areas for improvement and implement necessary changes.	4.78	Very Highly Satisfied
Provides a supporting document for incident reports.	4.6	Very Highly Satisfied
Offers a convenient online complaint submission option for incident reports.	4.58	Very Highly Satisfied
Easier Communication.	4.66	Very Highly Satisfied
Enhances the management of safety incidents and behavioral issues.	4.7	Very Highly Satisfied
It builds trust and confidence in the university's ability to address issues.	4.7	Very Highly Satisfied
<b>TOTAL</b>	<b>4.662</b>	<b>Very Highly Satisfied</b>



The table presents observed benefits by faculty and students regarding the CMS that is interpreted with the Mean of the answers of total of fifty (50) respondents. The two highest means are that “It promotes a culture of open communication, respect, and accountability by expressing their concerns and contributing to the university’s overall success”, and “Encourages a culture of learning and growth, as the university can use feedback from complaints to identify areas for improvement and implement necessary changes” with the mean of 4.78 which is interpreted as Very Highly Satisfied. Other benefits come with a mean score around 4.50 above which is interpreted as Very Highly Satisfied, while “Empowers individuals by assuring them that their concerns will be listened to and addressed promptly” has a mean score of 4.48 that is interpreted as Very Highly Satisfied.

**2. Level of awareness among respondents regarding the university complaint management.**

In the level of awareness, it tackles the awareness of the respondents regarding monitoring a complaint inside the University. Insights into the level of awareness shed light on potential areas for improvement in communication and distribution of information regarding the complaint management system. Understanding the gaps in awareness allows for targeted measures to ensure that all members of the university community are well-informed and equipped to utilize the system effectively. University can also foster a culture of accountability and responsiveness. Moreover, it facilitates the effective utilization of the complaint management system, leading to more efficient resolution of issues and improved stakeholder satisfaction.



Table 7

**Awareness Level of the Respondents**

CATEGORY	MEAN RESPONSE	INTERPRETATION
Incident Report	3.77	Highly Aware
Familiarity with School Policies	3.77	Highly Aware
Immediate Reporting	3.91	Highly Aware
Response Time	3.9	Highly Aware
<b>TOTAL</b>	<b>3.83</b>	<b>Highly Aware</b>

The table presents the level of awareness of the respondents in monitoring complaints inside the University. The first category is for the level of awareness in "Incident Report" which has a mean score of 3.77 which is interpreted as Highly Aware. The second category is the level of awareness in "Familiarity with School Policies" which has a mean score of 3.77 which is interpreted as Highly Aware. The third category is the level of awareness regarding "Immediate Reporting" which has the total score of 3.91 that is the highest mean among the four categories which is also Highly Aware. The last category is the "Response Time" which is the second highest mean with the mean score of 3.9 which is Highly Aware. The overall mean of the four categories is 3.83 which is interpreted as Highly Aware regarding the Complaint Management System.



Table 8

**Incident Report**

STATEMENT	MEAN RESPONSE	INTERPRETATION
I am aware of the university's incident reporting system.	3.84	Highly Aware
I know how to initiate the process to report incidents within the university.	3.76	Highly Aware
The system effectively tracks and records the progress and status of complaints.	3.66	Highly Aware
The university provides all the necessary features to effectively address and manage complaints.	3.98	Highly Aware
<b>TOTAL</b>	<b>3.98</b>	<b>Highly Aware</b>

The table indicates the level of Awareness of the respondents when it comes to the Incident Report. It shows a total of 3.81 mean score which means that the respondents are Moderately Aware regarding their familiarity with the school policies. The highest is the statement with “The university provides all the necessary features to effectively address and manage complaints” with a mean score of 3.98, the second highest is the “I am aware of the university's incident reporting system” with a mean score of 3.84, followed by “I know how to initiate the process to report incidents within the university” for a mean score of 3.76 and “The system effectively tracks and records the progress and status of complaints” with a mean score of 3.66 which are all Highly Aware.



Table 9

**Familiarity with School Policies**

STATEMENT	MEAN RESPONSE	INTERPRETATION
I am familiar with the university's policies and guidelines related to handling complaints and incidents.	3.9	Highly Aware
I have received information regarding the university's policies and guidelines.	3.68	Highly Aware
The university provides easily accessible information about its complaint handling policies.	3.64	Highly Aware
The University actively encourages students and staff to be familiar with its policies and guidelines.	3.84	Highly Aware
<b>TOTAL</b>	<b>3.77</b>	<b>Highly Aware</b>

The table indicates the level of Awareness of the respondents when it comes to Familiarity with School Policies. It shows a total of 3.77 mean score which means that the respondents are Highly Aware. The highest is the first statement with "I am familiar with the university's policies and guidelines related to handling complaints and incidents" with a mean score of 3.9. The second highest is the "The University actively encourages students and staff to be familiar with its policies and guidelines" with a mean score of 3.84, followed by "I have received information regarding the university's policies and guidelines" for a mean score of 3.68 and "The university provides easily accessible information about its complaint handling policies" with a mean score of 3.64 which are all Highly Aware.



Table 10  
**Immediate Reporting**

STATEMENT	MEAN RESPONSE	INTERPRETATION
I am likely to report an incident or complaint immediately after it occurs.	4	Highly Aware
I feel confident that my report will be treated with confidentiality and without fear of retaliation.	3.8	Highly Aware
The university has effective communication channels that facilitate immediate reporting of complaints.	3.86	Highly Aware
I believe that immediate reporting of incidents and complaints can help prevent further escalation.	3.98	Highly Aware
<b>TOTAL</b>	<b>3.91</b>	<b>Highly Aware</b>

The table shows a total of 3.91 mean score which means that the respondents are Highly Aware regarding the Immediate Reporting. The highest is the first statement with “I am likely to report an incident or complaint immediately after it occurs” with a mean score of 4, the second highest is the “I believe that immediate reporting of incidents and complaints can help prevent further escalation” with a mean score of 3.98, followed by “The university has effective communication channels that facilitate immediate reporting of complaints” for a mean score of 3.88 and “I feel confident that my report will be treated with confidentiality and without fear of retaliation” with a mean score of 3.84 which are all Highly Aware.



Table 11  
**Response Time**

STATEMENT	MEAN RESPONSE	INTERPRETATION
The university promptly responds to reported incidents and complaints	3.98	Highly Aware
I am aware of the expected response time for different types of complaints within the university.	3.88	Highly Aware
The university ensures clear communication about the progress and resolution of reported complaints.	3.9	Highly Aware
I believe that a timely response from the university demonstrates its commitment to addressing complaints effectively.	3.84	Highly Aware
<b>TOTAL</b>	<b>3.9</b>	<b>Highly Aware</b>

The table indicates the level of Awareness of the respondents when it comes to the Response Time. It shows a total of 3.9 mean score which means the respondents are Highly Aware regarding the Response Time of the Complaint Management System. The highest is the first statement with “The university promptly responds to reported incidents and complaints” with a mean score of 3.98, the second highest is the “The university ensures clear communication about the progress and resolution of reported complaints” with a mean score of 3.9, followed by the second statement with “I am aware of the expected response time for different types of complaints within the university” for a mean score of 3.88 and the fourth statement with “I believe that a timely response from the



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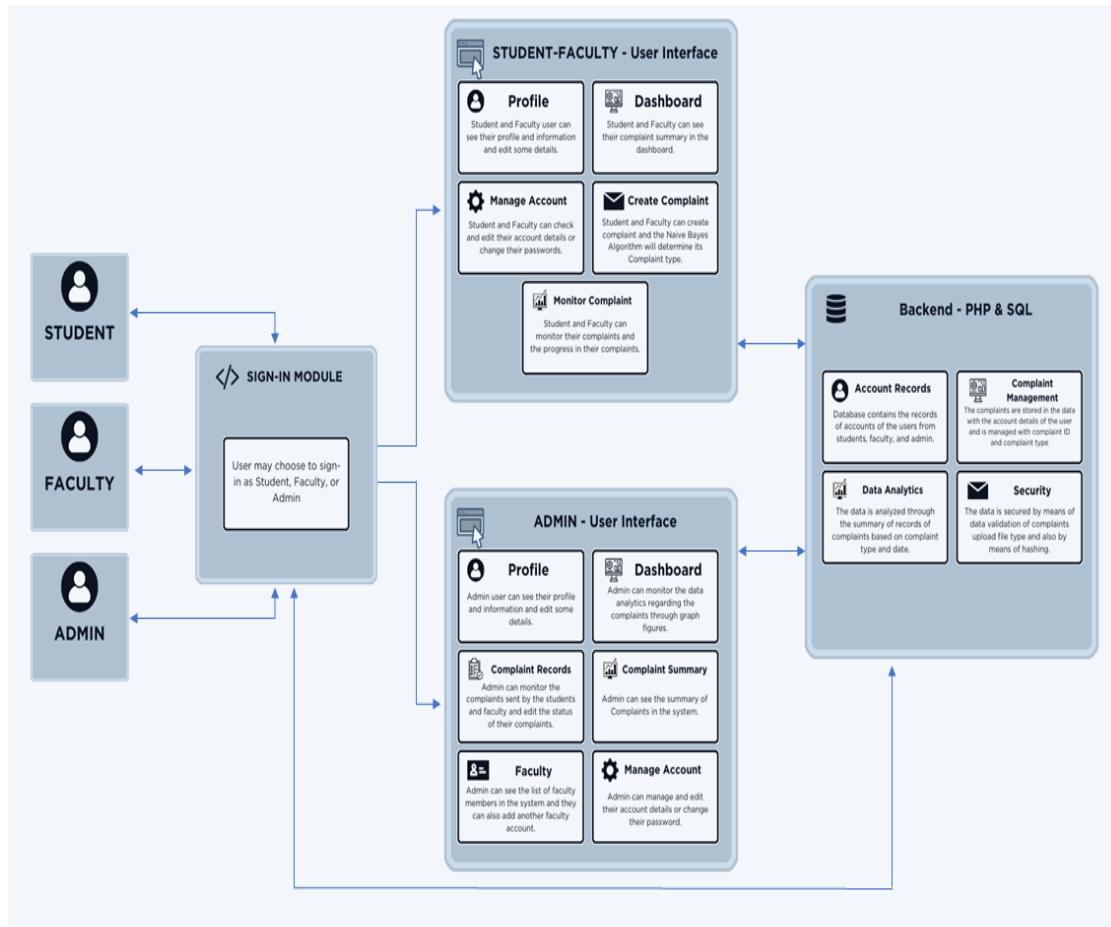
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university demonstrates its commitment to addressing complaints effectively" with a mean score of 3.84.

**3. The software system that can be developed based on the benefits and the level of awareness of the respondents about the complaint handling inside the university.**

The envisioned software system aims to change the complaint handling within the university by providing a user-friendly platform for students, faculty, and administrators to submit, track, and manage complaints effectively. Leveraging automated categorization algorithms and robust tracking features, the system ensures that each complaint is promptly routed to the appropriate department or individual for resolution. Transparent communication channels and regular updates keep stakeholders informed of the progress of their complaints in real-time. Additionally, analytics and reporting tools offer valuable insights into complaint trends, enabling administrators to make data-driven decisions to enhance overall complaint management processes. Ultimately, the software system promotes transparency, efficiency, and accountability, fostering a positive and supportive learning environment within the university community. Furthermore, the software system facilitates seamless communication between stakeholders, allowing for efficient resolution of complaints and proactive identification of systemic issues. By centralizing complaint management processes and promoting transparency, the system instills confidence in students, faculty, and administrators, thereby strengthening the university's reputation and fostering a culture of trust and accountability.

Figure 6. System Architecture – e-Reklamo



The illustration above offers a comprehensive overview of the functionalities of the e-Reklamo System. From the user perspective, there are three distinct roles: students, faculty members, and administrators. For students and faculty members, the system provides a variety of capabilities, such as the ability to create a complaint. The Naïve Bayes algorithm then categorizes the complaint based on its content.

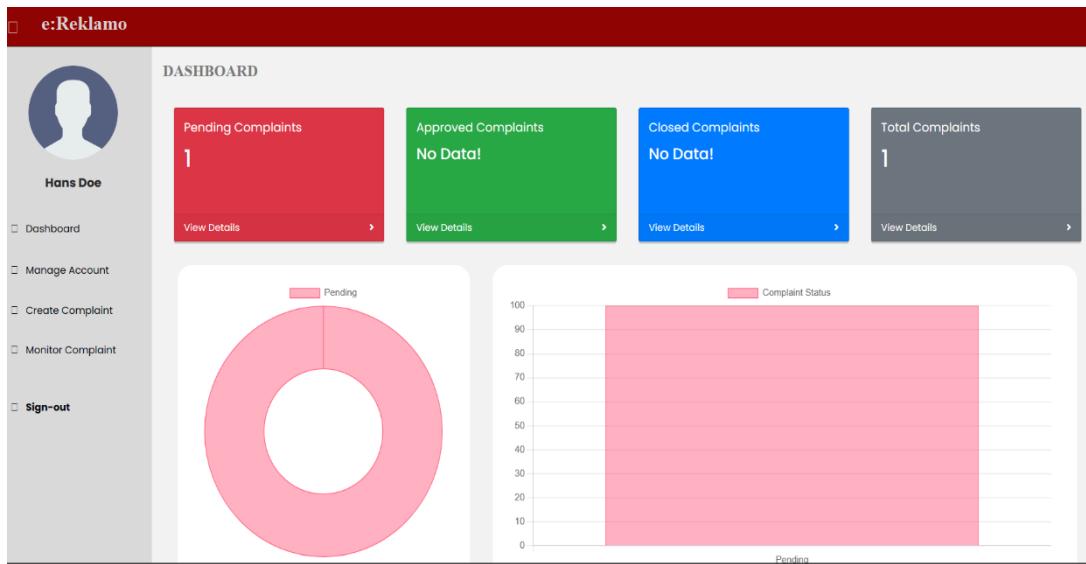
On the other hand, administrators play a crucial role in managing the complaints submitted to the system. They have access to view the complaints and their respective categories generated by the algorithm.



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Figure 7. User's Dashboard



This dashboard serves as a comprehensive hub displaying complaint statuses alongside the total count of submitted complaints, providing a real-time snapshot of the complaint management process. In addition to these key metrics, an analytical section offers an in-depth assessment of students' submitted complaints, enabling administrators to delve deeper into the nature and trends of the grievances.

Figure 8. Profile Section

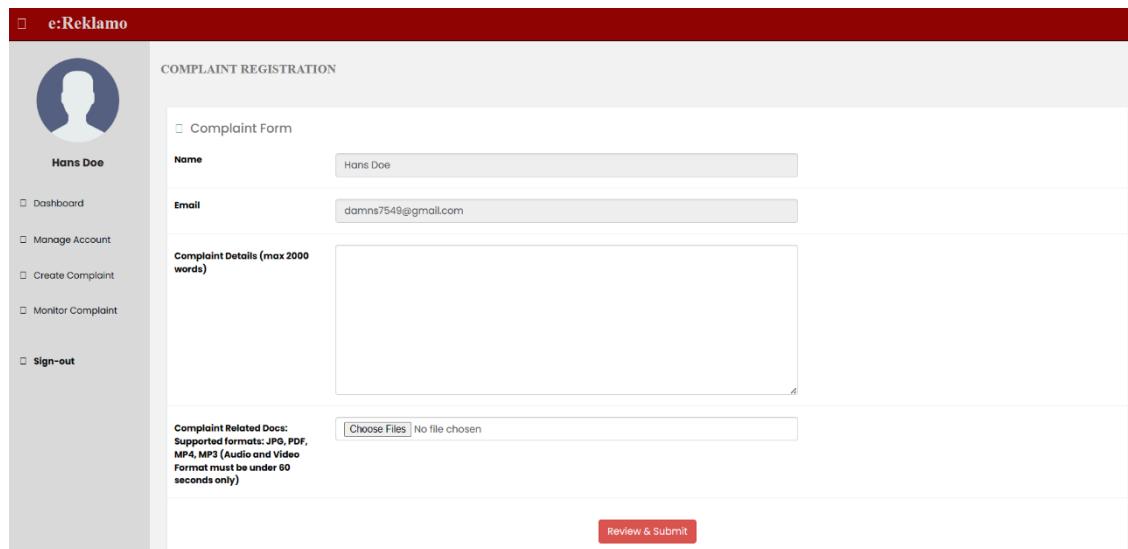
A screenshot of the profile section titled "e:Reklamo". The sidebar includes a profile picture of "Hans Doe" and navigation links: Dashboard, Manage Account, Create Complaint, Monitor Complaint, and Sign-out. The main area is titled "PERSONAL INFORMATION" and contains a form with fields for Student Number (1111-22222-CM-0), Date of Birth (January 1, 2023), Name (Hans Doe), Place of Birth (Quezon City), Gender (Female), Email Address (damns7549@gmail.com), Contact Number (09350795436), and Address (Caloocan City). At the bottom of the form is a statement: "I hereby Certify that all the information provided are true and correct to the best of my knowledge." followed by a "Save Profile" button.

Field	Value
Student Number	1111-22222-CM-0
Date of Birth	January 1, 2023
Name	Hans Doe
Place of Birth	Quezon City
Gender	Female
Email Address	damns7549@gmail.com
Contact Number	09350795436
Address	Caloocan City



In the user profile section, individuals can access and manage their personal information and account settings within the system. This includes details such as their name, contact information (email address, phone number), role or position within the organization, and any additional relevant information provided during registration.

Figure 9. Creating a Complaint



The screenshot shows a web-based application for 'COMPLAINT REGISTRATION'. On the left, there's a sidebar with a user profile picture of 'Hans Doe' and a menu with options: Dashboard, Manage Account, Create Complaint, Monitor Complaint, and Sign-out. The main area has a title 'COMPLAINT FORM' and fields for 'Name' (Hans Doe) and 'Email' (damns7649@gmail.com). Below these is a large text area labeled 'Complaint Details (max 2000 words)'. At the bottom, there's a file upload field for 'Complaint Related Docs' with instructions: 'Supported formats: JPG, PDF, MP4, MP3 (Audio and Video Format must be under 60 seconds only)' and a 'Choose Files' button. A red 'Review & Submit' button is at the very bottom right.

This section features a complaint form where users can write down their complaints and optionally attach relevant files to provide additional context. The Naïve Bayes Algorithm is then employed to analyze the content of the complaint and categorize it based on the information provided by the user. This intelligent system streamlines the process of organizing and addressing complaints, ensuring that issues are promptly identified and routed to the appropriate channels for resolution. Additionally, the system may incorporate features such as real-time validation and error checking to ensure that users provide complete and accurate information when submitting complaints. This helps to minimize delays and discrepancies in the complaint resolution process, enhancing overall efficiency and user satisfaction.



Figure 10. Complaint Preview

A screenshot of a web application interface titled "e:Reklamo". On the left, there's a sidebar with a user profile picture of "Hans Doe" and a list of navigation items: Dashboard, Manage Account, Create Complaint, Monitor Complaint, and Sign-out. The main area has a title "COMPLAINT REQUEST" and a sub-section "Complaint Preview". Inside the preview, the following information is displayed:

- Name: Hans Doe
- Email: damns7549@gmail.com
- Complaint Details: I was sick yesterday and I need medical certificate.
- Complaint Related Docs: No file chosen

A checkbox agreement is present: "By submitting this complaint, you agree that your personal data will be used in accordance with our privacy policy." Below the preview is a "Choose Files" input field with "No file chosen" and a "Review & Submit" button. At the bottom left, there's a note about supported file formats: "Supported formats: JPG, PDF, MP4, MP3 ( Audio and Video Format must be under 60 seconds only)".

Once students have completed filling out a complaint, they are given the opportunity to review it thoroughly before final submission. This allows them to ensure that all relevant details have been included and that the complaint accurately reflects their concerns. Additionally, before proceeding with submission, students are presented with a system agreement that outlines how their personal data will be managed and protected within the system. This agreement serves to enhance transparency and instill confidence in students regarding the handling of their sensitive information, ensuring that their privacy rights are respected and upheld throughout the complaint resolution process. Additionally, the system agreement may specify that once a complaint is submitted, administrators will promptly address the issue and initiate the necessary steps towards resolution. This commitment to swift action underscores the institution's dedication to resolving complaints in a timely and efficient manner, further instilling trust and confidence in the complaint management process.



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Figure 11. Complaint Monitoring

A screenshot of a web application titled "e:Reklamo". The left sidebar shows a user profile for "Hans Doe" and navigation links for Dashboard, Manage Account, Create Complaint, Monitor Complaint, and Sign-out. The main content area is titled "MONITOR COMPLAINT" and displays a table of complaints. The table has columns for Complaint Number, Status, Complaint Type, Date Submitted, and Action. There are two entries: one with Complaint Number 21, Status Pending, Type Medical Report, and Date 2024-04-27 01:36:17; another with Complaint Number 20, Status Pending, Type Discrimination, and Date 2024-04-27 01:23:37. Each row has a blue "View" button and a red "Delete" button in the Action column. A search bar is at the top right, and a pagination bar at the bottom right shows "Showing 1 to 2 of 2 entries".

Complaint Number	Status	Complaint Type	Date Submitted	Action
21	Pending	Medical Report	2024-04-27 01:36:17	<span>View</span> <span>Delete</span>
20	Pending	Discrimination	2024-04-27 01:23:37	<span>View</span> <span>Delete</span>

After a student has submitted a complaint, they can track its progress. The monitoring feature gives important information like the complaint number, status (whether it's pending, being processed, or closed), type of complaint, submission date, and available actions such as viewing the complaint details or deleting it if necessary. This feature helps students stay informed and involved as their complaint is being addressed.

Figure 12. Complaint Details

A screenshot of the "e:Reklamo" application showing the details of a complaint. The left sidebar is identical to Figure 11. The main content area is titled "COMPLAINT DETAILS" and lists the following information:

- Name: Hans Doe
- Email: damns7549@gmail.com
- Complaint Number: 21
- Complaint Type: Medical Report
- Complaint Details: I was sick yesterday and I need medical certificate.
- Complaint File: None
- Status: Pending

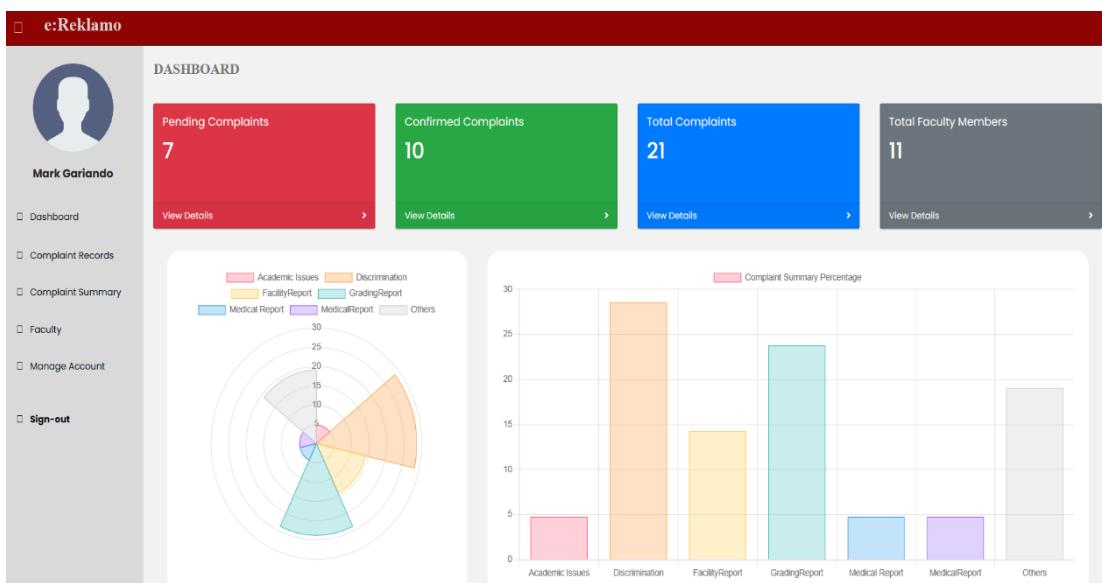


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The complaint details section offers a snapshot of the problem reported by the student, outlining the key points or concerns raised. It provides administrators with a quick overview of the issue without the need to delve into lengthy explanations. Additionally, this section may include relevant metadata such as the details and file of related complaints, enabling administrators to prioritize and address complaints efficiently.

Figure 13. Admin's Dashboard



The admin dashboard in the complaint management system serves as a control center for administrators, offering a centralized platform to oversee and manage all aspects of the complaint resolution process. It provides a comprehensive overview of complaint details, including information such as complaint status, type, submission date, and actions taken. Additionally, the dashboard includes a list of faculty members involved in the complaint management process, facilitating communication and collaboration among staff members.



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Figure 14. Complaint Records

Complaint Number	Status	Name	Email	Complaint Type	Date and Time of Complaints	Complaint Update	Action
21	Pending	Hans Doe	damns7549@gmail.com	Medical Report	2024-04-27 01:36:17	2024-04-27 01:38:17	
20	Pending	Hans Doe	damns7549@gmail.com	Discrimination	2024-04-27 01:23:37	2024-04-27 01:23:37	
19	Pending	Key Williams	keywilliams@gmail.com	Academic Issues	2023-07-23 19:20:42	2023-07-23 19:20:42	
14	Pending	Lorem Ipsum	loremipsum@gmail.com	FacilityReport	2023-07-22 10:32:13	2023-07-22 10:32:13	
3	Pending	Lorem Ipsum	loremipsum@gmail.com	Others - test	2023-07-21 08:58:17	2023-07-21 08:58:17	
2	Pending	Lorem Ipsum	loremipsum@gmail.com	GradingReport	2023-07-21 08:56:01	2023-07-21 08:56:01	
8	In Process	Key Williams	keywilliams@gmail.com	GradingReport	2023-07-22 10:27:57	2023-07-23 19:20:20	
17	In Process	Key Williams	egarlando619@gmail.com	Discrimination	2023-07-22 12:08:06	2023-07-23 19:20:01	
9	In Process	Key Williams	keywilliams@gmail.com	Others - Testing	2023-07-22 10:28:26	2023-07-22 10:38:10	
6	In Process	Lorem Ipsum	loremipsum@gmail.com	GradingReport	2023-07-22 05:01:40	2023-07-22 10:35:48	

In the complaint records section, administrators have access to a comprehensive database containing detailed information about each complaint submitted through the system. This includes essential details such as the complaint number, date of submission, status (whether it's pending, in progress, or resolved), type of complaint, and any relevant comments or notes added during the resolution process.

Figure 15. Complaint Summary

Complaint Number	Name	Email	Complaint Type	Date and Time of Complaints	Complaint Update
21	Hans Doe	damns7549@gmail.com	Medical Report	2024-04-27 01:36:17	2024-04-27 01:36:17
20	Hans Doe	damns7549@gmail.com	Discrimination	2024-04-27 01:23:37	2024-04-27 01:23:37
19	Key Williams	keywilliams@gmail.com	Academic Issues	2023-07-23 19:20:42	2023-07-23 19:20:42
8	Key Williams	keywilliams@gmail.com	GradingReport	2023-07-22 10:27:57	2023-07-23 19:20:20
17	Key Williams	egarlando619@gmail.com	Discrimination	2023-07-22 12:08:06	2023-07-23 19:20:01
18	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-22 12:13:18	2023-07-22 12:15:57
10	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-22 10:28:44	2023-07-22 12:14:14
5	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-22 04:58:46	2023-07-22 12:13:53
16	Lorem Ipsum	loremipsum@gmail.com	Others - test	2023-07-22 10:32:45	2023-07-22 10:38:58
11	Key Williams	keywilliams@gmail.com	FacilityReport	2023-07-22 10:28:59	2023-07-22 10:38:46



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The Complaint Summary section offers a comprehensive overview of all complaints submitted by both students and faculty members. Administrators have access to detailed information, which can be conveniently copied, downloaded in various formats such as Excel, PDF, and CSV files, or printed for reference. This versatile feature enhances accessibility and facilitates efficient analysis of the complaint data, empowering administrators to make informed decisions and take appropriate actions to address issues effectively.

Figure 16. Faculty Members

A screenshot of a web-based application interface titled "e:Reklamo". On the left is a sidebar with a user profile picture and the name "Mark Gariando". Below the profile are several menu items: "Dashboard", "Complaint Records", "Complaint Summary", "Faculty", "Manage Account", and "Sign-out". The main content area is titled "FACULTY MEMBER". At the top of this area are buttons for "Show 10 entries", "Copy", "Excel", "PDF", "CSV", and "Print". To the right is a search bar. Below these controls is a table with columns: Name, Email, Contact Number, Date of Birth, Department, and Updated Time. The table contains 11 rows of data. At the bottom of the table, it says "Showing 1 to 10 of 11 entries" and has "Previous" and "Next" buttons. The data in the table is as follows:

In the Faculty section, administrators have access to a comprehensive list of members across various faculties. This information is not only viewable but also conveniently copyable and downloadable in formats such as Excel, PDF, and CSV, and can be printed as needed. This multifunctional functionality ensures easy access and seamless utilization of faculty information, fostering efficient communication and collaboration within the institution.



#### 4. Level of Satisfaction among the respondents in the newly developed Complaint Management System

For the level of Satisfaction, the focus shifts to discussing the satisfaction of the respondents in newly developed app in terms of Functionality, Ease of Use, Usefulness, and Security. Their response provides better and helpful feedback on the system's feasibility and user-satisfaction.

Table 12

#### Satisfaction Level with the CMS

CATEGORY	MEAN RESPONSE	INTERPRETATION
Functionality	4.62	Very Highly Satisfied
Ease of Use	4.56	Very Highly Satisfied
Usefulness	4.55	Very Highly Satisfied
Security	4.65	Very Highly Satisfied
<b>TOTAL</b>	<b>4.60</b>	<b>Very Highly Satisfied</b>

The table presents the level of satisfaction of the respondents in monitoring complaints inside the University. Each statement was rated on a scale, and the mean response was calculated to scale the level of awareness. The fourth category namely, "Security" when it comes to the level of satisfaction has the highest mean score with the mean score of 4.65 which is Very Highly Satisfied, followed by "Functionality," "Ease of Use," and "Usefulness" with the mean score of 4.62, 4.56, and 4.55 respectively which are all Very Highly Satisfied with an overall mean of 4.6.



Table 13  
**Functionality**

STATEMENT	MEAN RESPONSE	INTERPRETATION
The buttons of the system are clickable allowing the correct path of navigation.	4.78	Very Highly Satisfied
The system is easy to navigate, allowing users to quickly access the required functions.	4.5	Very Highly Satisfied
The system effectively tracks and records the progress and status of complaints.	4.56	Very Highly Satisfied
The system provides all the necessary features and functions to effectively address and manage complaints.	4.64	Very Highly Satisfied
<b>TOTAL</b>	<b>4.62</b>	<b>Very Highly Satisfied</b>

The table presents the satisfaction level of the respondents in terms of Functionality. The first statement “The buttons of the system are clickable allowing the correct path of navigation” has the highest mean with a mean score of 4.78 which is interpreted as Very Highly Satisfied. The second highest is the “The system provides all the necessary features and functions to effectively address and manage complaints” with a mean score of 4.64, followed by “The system effectively tracks and records the progress and status of complaints” and “The system is easy to navigate, allowing users to quickly access the required functions” with mean score of 4.56 and 4.5, which are all Highly Satisfied. The Complaint Management System shows a Very highly satisfactory level of satisfaction with regards to the functionality of the system with an overall mean of 4.62.



Table 14

**Ease of Use**

STATEMENT	MEAN RESPONSE	INTERPRETATION
Navigating through the system and finding the necessary functions is easy.	4.68	Very Highly Satisfied
The instructions and prompts provided within the system are clear and understandable.	4.44	Very Highly Satisfied
The system is responsive and operates smoothly without any technical issues.	4.54	Very Highly Satisfied
The system provides convenient and accessible options for uploading supporting documents or evidence.	4.56	Very Highly Satisfied
<b>TOTAL</b>	<b>4.56</b>	<b>Very Highly Satisfied</b>

The statement “Navigating through the system and finding the necessary functions is easy” shows a mean score of 4.68 which is interpreted as Very Highly Satisfied. Followed by “The system provides convenient and accessible options for uploading supporting documents or evidence” and “The system is responsive and operates smoothly without any technical issues” with a mean score of 4.56 and 4.54, respectively. The lowest mean score is for the statement “The instructions and prompts provided within the system are clear and understandable” with a mean score of 4.44 which is interpreted as Moderately Satisfied. However, the system navigation gains the highest satisfactory level with 4.68. The overall mean for the level of satisfaction for the Ease of Use is 4.56, which is interpreted as Very Highly Satisfied.



Table 15

**Usefulness**

STATEMENT	MEAN RESPONSE	INTERPRETATION
The system supports the implementation of fair and consistent processes for resolving complaints.	4.72	Very Highly Satisfied
The system helps improve overall satisfaction and trust among users in the complaint resolution process.	4.42	Very Highly Satisfied
The system making it more efficient and timesaving.	4.48	Very Highly Satisfied
The system enhances user satisfaction and confidence in the complaint resolution process.	4.58	Very Highly Satisfied
<b>TOTAL</b>	<b>4.55</b>	<b>Very Highly Satisfied</b>

The statement with the highest mean score is “The system supports the implementation of fair and consistent processes for resolving complaints” with the mean score of 4.72 which is interpreted as Highly Satisfied. Followed by “The system enhances user satisfaction and confidence in the complaint resolution process” with a mean score of 4.58 which is also interpreted as Very Highly Satisfied, and the last two are “The system making it more efficient and timesaving” and “The system helps improve overall satisfaction and trust among users in the complaint resolution process” with a mean score of 4.48 and 4.42, respectively, which are both Very Highly Satisfied. The overall Mean of the Satisfaction Level of the users to the Complaint Management System with its Usefulness is 4.55 which is interpreted as Very Highly Satisfied.



Table 16

**Security**

STATEMENT	MEAN RESPONSE	INTERPRETATION
The system ensures the confidentiality of user data and complaint details.	4.74	Very Highly Satisfied
The system adheres to relevant data protection regulations and industry best practices.	4.62	Very Highly Satisfied
The system employs encryption and secure protocols to safeguard data during transmission.	4.66	Very Highly Satisfied
The system maintains backup and recovery procedures to protect against data loss or system failures.	4.58	Very Highly Satisfied
<b>TOTAL</b>	4.65	<b>Very Highly Satisfied</b>

The table presents the level of satisfaction of the respondents in monitoring complaints inside the University. Each statement was rated on a scale, and the mean response was calculated to scale the level of satisfaction. The statement with the highest mean score is “The system ensures the confidentiality of user data and complaint details” with a mean score of 4.74, followed by “The system employs encryption and secure protocols to safeguard data during transmission” with a mean score of 4.66, “The system adheres to relevant data protection regulations and industry best practices” with a mean score of 4.62, and “The system maintains backup and recovery procedures to protect against data loss or system failures” with a mean score of 4.58 which are all interpreted



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as Highly Satisfied with the overall mean of 4.65. This shows that the users are Very Highly Satisfied with the Security measures of Complaint Management System.

### 5. Significant difference between the level of awareness and the level of satisfaction among the respondents

This section illuminates the disparities between the respondents' levels of awareness and satisfaction within the Complaint Management System. Through a meticulous examination of these two metrics, the analysis aims to discern nuanced variations, thereby providing invaluable insights for the system's future refinement.

Table 16

#### Paired Sample Statistics

Paired Differences					
Variables	Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference	
Level of Awareness of the Users with the Complaint Management System	-				
Level of Satisfaction of the Respondents who used the Complaint Management System	0.011	0.1745	0.0246	-0.0385	0.0615
		t	df	Sig. (2-tailed)	
		0.4472	49	0.656	



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This table presents the paired differences between the respondents' levels of awareness and satisfaction with the e:Reklamo system. It includes the mean difference, standard deviation, standard error mean (SEM), and interval difference, with a significance level of 0.05 or 95% confidence. Based on data collected from 50 respondents, the mean difference between awareness and satisfaction is calculated as 0.011, indicating slightly higher satisfaction levels than awareness levels among respondents. The standard deviation of 0.1745 reflects the variability in respondents' differences in answers, while the standard error mean of 0.0246 indicates the precision of the estimate. The 95% confidence interval ranges from -0.0385 to 0.0615, suggesting that the true difference falls within this range. The t-value is 0.4472, and the associated p-value is 0.656, indicating insufficient evidence to reject the null hypothesis at the 0.05 significance level. Therefore, the difference in awareness and satisfaction levels is likely attributed to random variations.



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### CHAPTER 5

#### SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATION

This chapter presents the summary of the findings, conclusions and recommendations based on the data analyzed in the previous chapter.

##### **Summary of Findings**

The Complaint Management System (CMS) website is developed to provide a smooth, fast, and efficient way for the Students and Faculty to file complaints with regards to the issues in the school with regards to their personal or school related complaints relate to the school. The system is for the developers and administrators to easily manage and organize, take respective action, and pay attention to the complaints of the students. Through this management system, there is a systematic and effective way to express the complaints based on the severity of the problems and to easily analyze the data for the most problems regarding the school. The Complaint Management System provides a smooth and easily understandable User Interface with also protects the security of the students and faculty that are filing complaints. With this, the data and complaints are managed and organized on a simple website.

1. The two highest benefits of the Complaint Management System (CMS) according to the survey are “It promotes a culture of open communication, respect, and accountability by expressing their concerns and contributing to the university’s overall success”, and “Encourages a culture of learning and growth, as the university can use feedback from complaints to identify areas for improvement



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and implement necessary changes" with the mean of 4.78 which is interpreted as High. This part gathers the information and examines the thoughts of the user respondents regarding to the benefits of using the Complaint Management System, having "It promotes a culture of open communication, respect, and accountability by expressing their concerns and contributing to the university's overall success", and "Encourages a culture of learning and growth, as the university can use feedback from complaints to identify areas for improvement and implement necessary changes" as the two highest and mostly seen benefits by the user respondents.

2. The data regarding the awareness of the students and faculty when it comes to the system and how they are aware about Incident Reporting, Familiarization with School Policies, Immediate Reporting, and Response Time shows an overall mean in the survey with 3.83 which means Moderately Aware.
3. For the overall satisfaction of the user respondents when it comes to the functionality, Usefulness, Ease of Use, and the Security of the Complaint Management System. The study shows highly satisfactory level with the aspects of the system regarding to its Functionality, Usefulness, Ease of Use, and its Security with an overall mean score of 4.60 which is Highly Satisfactory with the Security providing the highest aspect of satisfactory. On possible recommendations on the newly developed app. Their insights also provide valuable feedback that helps the system with further improvement.
4. There is also no significant difference between the level of awareness and the level of satisfaction. The paired t-test provided results of the p-value having slightly higher than the significance level (0.05) or 95% confidence. The



conducted t-test showed a huge range of variation with the respondents with regards to the awareness level and the level of satisfaction. With the use of different means in the paired t-test such as the mean difference, standard deviation, and standard error mean, 95% Confidence or 0.05 significance level, t-test and the p-value is essential to identify the relationship and the significant difference between the level of awareness and the satisfaction varying per individual responses of the respondents. The result of the mean difference is 0.011, with the standard deviation of 0.1745, and standard error mean (SEM) of 0.0246, with the 95% confidence having a range of -0.0385 to 0.0615 as the lower and the upper level. The result of the t-test is 0.4472 with the degree of freedom of 49, resulting a p- value of 0.656 that is higher than the significance level of 0.05 which means there is no significant difference between the awareness and satisfaction level of the respondents with regards to the e:Reklamo Complaint Management System

## Conclusions

The researchers have come to the following conclusions based on the data supplied in the analysis of the findings and computed means for each group for each question:

1. Respondents emphasized some favorable acknowledgment of the advantages of a university's complaint management system. They concluded that creating a welcoming climate at universities depends more on having a system like this to handle concerns. They also acknowledged the fairness and transparency of putting this System in place for the benefit of future policy improvements of the University.



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2. Based on the awareness of the respondents regarding monitoring complaints within the University, it can be observed that their level of awareness is moderate in several areas. These areas include incident reporting, familiarity with school policies, immediate reporting, and response time. The University should focus on improving and developing such key instances to enhance a culture of effective complaint management.
3. For the level of satisfaction among the respondents, they are highly satisfied in having a Complaint Management System with various aspects of the system, including its functionality, ease of use, usefulness, and security. The high satisfaction levels can be attributed to the effectiveness of the Complaint Management System in efficiently addressing and resolving complaints. The system's functionality allows users to report and track complaints with ease, while its user-friendly interface ensures a smooth and hassle-free experience for both students and faculty members. The system's usefulness makes it more organized and transparent that leads to quicker response times and better. And lastly in terms of security, the System assures respondents that their personal information and concerns are handled securely.
4. The respondents' valuable feedback and suggestions for the improvement of the Complaint Management System are interesting. Their feedback indicates a strong level of satisfaction with the current system, and they are moderately to highly satisfied with the proposed recommendations for future enhancements. One important recommendation in the system is to have a mobile version of CMS that allows users to access and use it on different devices. Another important recommendation is to enhance the system's notification and communication



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features. Providing real-time updates on the status of complaints and resolution progress can instill confidence in users and keep them informed throughout the process.

### Recommendations

Based on the findings and analysis presented in the research, several valuable recommendations can be proposed to enhance the Complaint Management System (CMS) and improve its overall effectiveness in handling complaints. These recommendations aim to address challenges, optimize functionalities, and ensure user satisfaction and acceptance of the system.

1. Develop a Mobile-Friendly Version: Creating a responsive and mobile-friendly version of the CMS will enable users to access and utilize the system seamlessly on various devices, including smartphones and tablets. This enhancement can increase user accessibility and satisfaction.
2. Access real-time summaries of performance to gain immediate insights: This will ensure that the complaints are monitored correctly and provide suitable information for a better and immediate response.
3. Implement real-time notification: Enhancing the system's notification capabilities to provide real-time updates on the status of complaints and the progress of their resolution will keep users informed throughout the process. Implementing automated email alerts or in-app notifications can ensure timely communication and instill confidence in users about the complaint handling process.
4. Implement a function to notify incidents based on their severity: Implementing a function to notify incidents based on their severity is a highly valuable



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addition to Complaint Management System. This feature ensures that complaints are promptly identified and classified according to their severity levels.

5. Continuous update and enhancing the system's security: Having this kind of recommendation is very valuable, to safeguard those sensitive data and avoid instances such as data breaches and potential threats toward the system.

By implementing these recommendations, the e:Reklamo system can transform into a highly valuable and efficient tool for managing various complaints within the University and enhancing the system's capabilities, allowing for better and more immediate responses to complaints.



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POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

# APPENDICES



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

### Appendix 1: Survey Questionnaire

#### SURVEY QUESTIONNAIRE (e-Reklamo)

Research Title: "**e-Reklamo: A Complaint Management System using Naive Bayes Algorithm**"

#### PART I.

Name (**Optional**): \_\_\_\_\_

**Direction:** Please choose an appropriate category from the following information below.

Are you a:

- Student.
- Faculty Member.
- Others.

1. What are the benefits of using a complaint management system in a university?

**You can select more than 1 answer and rank it from (5) is the highest and (1) is the lowest.**

\_\_\_\_\_ 1. It promotes a culture of open communication, respect, and accountability by expressing their concerns and contributing to the university's overall success.

\_\_\_\_\_ 2. Empowers individuals by assuring them that their concerns will be listened to and addressed promptly.



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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- \_\_\_\_\_3. By providing a structured platform to express their concerns, it helps individuals to prevent minor issues from getting worse that could disrupt the campus community.
- \_\_\_\_\_4. It encourages students to report safety concerns, unwanted behaviors, and incidents more frequently.
- \_\_\_\_\_5. Encourages a culture of learning and growth, as the university can use feedback from complaints to identify areas for improvement and implement necessary changes.
- \_\_\_\_\_6. Provides a supporting document for incident reports.
- \_\_\_\_\_7. Offers a convenient online complaint submission option for incident reports.
- \_\_\_\_\_8. Easier Communication.
- \_\_\_\_\_9. Enhances the management of safety incidents and behavioral issues.
- \_\_\_\_\_10. It builds trust and confidence in the university's ability to address issues.

### PART II.

1. What is the level of awareness of the respondents in monitoring complaints inside the university in terms of:

1- Not Aware	2- Slightly Aware	3- Moderately Aware	4- Highly Aware	5- Very Highly Aware
--------------	-------------------	---------------------	-----------------	----------------------

INCIDENT REPORT	5	4	3	2	1
1. I am aware of the university's incident reporting system.					
2. I know how to initiate the process to report incidents within the university.					
3. The system effectively tracks and records the progress and status of complaints.					



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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4. The university provides all the necessary features to effectively address and manage complaints.					
<b>FAMILIARITY WITH SCHOOL POLICIES</b>					
1. I am familiar with the university's policies and guidelines related to handling complaints and incidents.					
2. I have received information regarding the university's policies and guidelines.					
3. The university provides easily accessible information about its complaint handling policies.					
4. The University actively encourages students and staff to be familiar with its policies and guidelines.					
<b>IMMEDIATE REPORTING</b>					
1. I am likely to report an incident or complaint immediately after it occurs.					
2. I feel confident that my report will be treated with confidentiality and without fear of retaliation.					
3. The university has effective communication channels that facilitate immediate reporting of complaints.					
4. I believe that immediate reporting of incidents and complaints can help prevent further escalation.					
<b>RESPONSE TIME</b>					
1. The university promptly responds to reported incidents and complaints					



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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2. I am aware of the expected response time for different types of complaints within the university.					
3. The university ensures clear communication about the progress and resolution of reported complaints.					
4. I believe that a timely response from the university demonstrates its commitment to addressing complaints effectively.					

2. What is the level of satisfaction of the respondents in the newly developed app “Complaint Management System” in terms of:

1- Not Satisfied	2- Slightly Satisfied	3- Moderately Satisfied	4- Highly Satisfied	5- Very Highly Satisfied
------------------	-----------------------	-------------------------	---------------------	--------------------------

FUNCTIONALITY	5	4	3	2	1
1. The buttons of the system are clickable allowing the correct path of navigation.					
2. The system is easy to navigate, allowing users to quickly access the required functions.					
3. The system effectively tracks and records the progress and status of complaints.					
4. The system provides all the necessary features and functions to effectively address and manage complaints.					
EASE OF USE					
1. Navigating through the system and finding the necessary functions is easy.					
2. The instructions and prompts provided within the system are clear and understandable.					



3. The system is responsive and operates smoothly without any technical issues.				
4. The system provides convenient and accessible options for uploading supporting documents or evidence.				
<b>USEFULNESS</b>				
1. The system supports the implementation of fair and consistent processes for resolving complaints.				
2. The system helps improve overall satisfaction and trust among users in the complaint resolution process.				
3. The system making it more efficient and timesaving.				
4. The system enhances user satisfaction and confidence in the complaint resolution process.				
<b>SECURITY</b>				
1. The system ensures the confidentiality of user data and complaint details.				
2. The system adheres to relevant data protection regulations and industry best practices.				
3. The system employs encryption and secure protocols to safeguard data during transmission.				
4. The system maintains backup and recovery procedures to protect against data loss or system failures.				

**PART III.**

1. What are the possible recommendations to further improve the Complaint Management System? **You can select more than 1 answer and rank it from (5) is the highest and (1) is the lowest.**
- \_\_\_\_\_ 1. Develop a mobile-responsive version of the system to allow users to access and use it on various devices.
- \_\_\_\_\_ 2. Enable incident recording using any device, allowing users to report incidents using their preferred technology.
- \_\_\_\_\_ 3. Implement a system to notify and escalate incidents based on their severity.
- \_\_\_\_\_ 4. Allow for anonymous reporting, ensuring individuals can submit reports without disclosing their identities.
- \_\_\_\_\_ 5. Enable offline functionality for the system, allowing it to operate without an internet connection on devices.
- \_\_\_\_\_ 6. Improve the reporting and analytics capabilities of the system to provide comprehensive insights into complaint trends, facilitating data-driven decision-making.
- \_\_\_\_\_ 7. Continuously update and enhance the system's security measures to safeguard sensitive data and protect against potential threats or breaches.
- \_\_\_\_\_ 8. Access real-time summaries of performance to gain immediate insights.
- \_\_\_\_\_ 9. Optimize the system's interface to be intuitive and user-friendly, ensuring ease of use for all users.
- \_\_\_\_\_ 10. Implement real-time notifications to keep users updated on the progress and status of their complaints.



## Appendix 2: Survey Questionnaire (Google Forms)



### e-Reklamo: A Complaint Management System using Naïve Bayes Algorithm - Survey Questionnaire

Dear Respondents,

The researchers are 3rd year BSIT students conducting a research study entitled: "**e:Reklamo: A Complaint Management System using Naïve Bayes Algorithm**". This survey is part of a thesis student project at the Polytechnic University of the Philippines (**Quezon City Branch**) under the guidance of **Prof. Demelyn E. Monzon PhD**. To ensure your anonymity, all your answers are kept in utmost confidentiality. Your completed survey answers will only be seen by the researchers and their adviser, regardless of the situation. No individual responses will be identified on any of the questionnaires.

The researchers are interested in your response regarding in having a Complaint Management System in Polytechnic University of the Philippines (**Quezon City Branch**). Please take your time but try not to linger on any one question, your first response to the question is usually your true belief. Please read each question carefully and indicate your answer by selecting the most appropriate choice.

**Thank you very much for your cooperation and God Bless!**

#### PARTICIPANT'S AGREEMENT

I am an adult (over 18) Filipino who is aware that my participation in this study is entirely voluntary. I am free to stop participating at any moment, for any reason, and without having to provide a justification. I have discussed the project's personal and societal advantages with the researchers, and I am aware of its goal. I am aware that the information collected for this study will be kept private and anonymous for the duration of the endeavor and regarding my own identification. I confirm that all my inquiries and concerns about the project's processes and other issues have received satisfactory responses. I have read everything in its entirety with the knowledge that I am free to leave the study at any moment and for any reason. I have read the warning above and hereby recognize it. I'm willing to take part and voluntarily give the researchers my personal information.

[Mag-sign in sa Google](#) para i-save ang iyong pag-usad. **Matuto pa**

\* Tumutukoy sa kinakailangang tanong

Email \*

Iyong email

#### REQUEST FOR DATA PRIVACY CONSENT \*

I have read this form, understood its contents and consent to the processing of my personal data. I understand that my consent does not preclude the existence of other criteria for lawful processing of personal data and does not waive any of my rights under the Data Privacy Act of 2012 and other applicable laws.



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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Name (Optional)

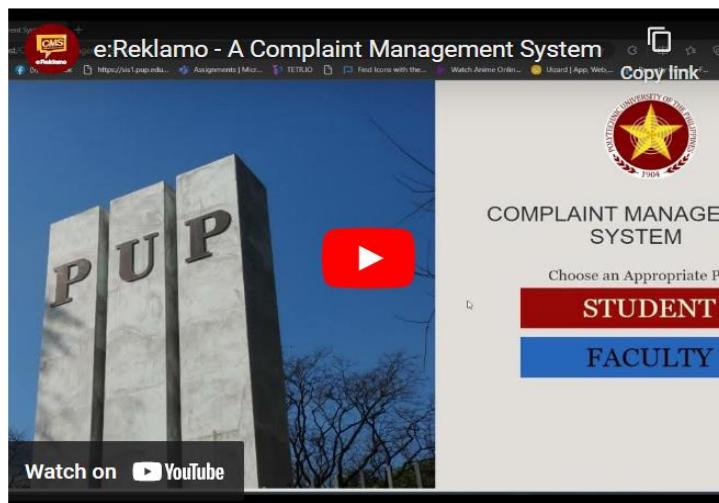
lyong sagot

I am a \*

- Student
- Faculty Member/Teacher
- Department Head/Admin
- Others

First, watch and see our system and familiarize it works.

Demo Video : [https://youtu.be/mSoW\\_2DYMHM](https://youtu.be/mSoW_2DYMHM)



Done watching? \*

Done



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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What are the benefits of using a complaint management system in a university? Rank it from (5) is the highest and (1) is the lowest.

\*

1                    2                    3                    4                    5

It promotes a culture of open communication, respect, and accountability by expressing their concerns and contributing to the university's overall success.	<input type="radio"/>				
Empowers individuals by assuring them that their concerns will be listened to and addressed promptly.	<input type="radio"/>				
By providing a structured platform to express their concerns, it helps individuals to prevent minor issues from getting worse that could disrupt the campus community.	<input type="radio"/>				
It encourages students to report safety concerns, unwanted behaviors, and incidents more frequently.	<input type="radio"/>				
Encourages a culture of learning and growth, as the university can use feedback from complaints to identify areas for improvement and implement necessary changes.	<input type="radio"/>				
Provides a supporting document for	<input type="radio"/>				



Provides a supporting document for incident reports.	<input type="radio"/>				
Offers a convenient online complaint submission option for incident reports.	<input type="radio"/>				
Easier Communication.	<input type="radio"/>				
Enhances the management of safety incidents and behavioral issues.	<input type="radio"/>				
It builds trust and confidence in the university's ability to address issues.	<input type="radio"/>				

INCIDENT REPORT \*

What is the level of awareness of the respondents in monitoring complaints inside the university in terms of: Rank it from (5) is the highest and (1) is the lowest.

1- Not Aware	2- Slightly Aware	3- Moderately Aware	4- Highly Aware	5- Very Highly Aware
--------------	-------------------	---------------------	-----------------	----------------------

1                    2                    3                    4                    5

I am aware of  
the university's  
incident  
reporting  
system.

I know how to  
initiate the  
process to  
report  
incidents  
within the  
university.

The system  
effectively  
tracks and  
records the  
progress and

status of  
complaints.

The university  
provides all the  
necessary  
features to  
effectively  
address and  
manage  
complaints.

FAMILIARITY WITH SCHOOL POLICIES \*

What is the level of awareness of the respondents in monitoring complaints inside the university in terms of: Rank it from (5) is the highest and (1) is the lowest.

1- Not Aware	2- Slightly Aware	3- Moderately Aware	4- Highly Aware	5- Very Highly Aware
--------------	-------------------	---------------------	-----------------	----------------------

1                    2                    3                    4                    5

I am familiar with the university's policies and guidelines related to handling complaints and incidents.	<input type="radio"/>				
I have received information regarding the university's policies and guidelines.	<input type="radio"/>				
The university provides easily accessible information about its complaint handling policies.	<input type="radio"/>				
The University actively encourages students and staff to be familiar with its policies and guidelines.	<input type="radio"/>				



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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### IMMEDIATE REPORTING \*

What is the level of awareness of the respondents in monitoring complaints inside the university in terms of: Rank it from (5) is the highest and (1) is the lowest.

1- Not Aware	2- Slightly Aware	3- Moderately Aware	4- Highly Aware	5- Very Highly Aware
--------------	-------------------	---------------------	-----------------	----------------------

1                    2                    3                    4                    5

I am likely to report an incident or complaint immediately after it occurs.

I feel confident that my report will be treated with confidentiality and without fear of retaliation.

The university has effective communication channels that facilitate

immediate reporting of complaints.

I believe that immediate reporting of incidents and complaints can help prevent further escalation.



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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### RESPONSE TIME

\*

What is the level of awareness of the respondents in monitoring complaints inside the university in terms of: Rank it from (5) is the highest and (1) is the lowest.

1- Not Aware	2- Slightly Aware	3- Moderately Aware	4- Highly Aware	5- Very Highly Aware
--------------	-------------------	---------------------	-----------------	----------------------

1                    2                    3                    4                    5

The university promptly responds to reported incidents and complaints	<input type="radio"/>				
I am aware of the expected response time for different types of complaints within the university.	<input type="radio"/>				
The university ensures clear communication about the progress and resolution of reported complaints.	<input type="radio"/>				
I believe that a timely response from the university demonstrates its commitment to addressing complaints effectively.	<input type="radio"/>				

**FUNCTIONALITY**

\*

What is the level of satisfaction of the respondents in the newly developed app "Complaint Management System" in terms of: Rank it from (5) is the highest and (1) is the lowest.

1- Not Satisfied	2- Slightly Satisfied	3- Moderately Satisfied	4- Highly Satisfied	5- Very Highly Satisfied
------------------	-----------------------	-------------------------	---------------------	--------------------------

1                    2                    3                    4                    5

The buttons of the system are clickable allowing the correct path of navigation.	<input type="radio"/>				
The system is easy to navigate, allowing users to quickly access the required functions.	<input type="radio"/>				
The system effectively tracks and records the progress and status of complaints.	<input type="radio"/>				
The system provides all the necessary features and functions to effectively address and manage complaints.	<input type="radio"/>				



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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### EASE OF USE

\*

What is the level of satisfaction of the respondents in the newly developed app "Complaint Management System" in terms of: Rank it from (5) is the highest and (1) is the lowest.

1- Not Satisfied	2- Slightly Satisfied	3- Moderately Satisfied	4- Highly Satisfied	5- Very Highly Satisfied
------------------	-----------------------	-------------------------	---------------------	--------------------------

1                    2                    3                    4                    5

Navigating through the system and finding the necessary functions is easy.

The instructions and prompts provided within the system are clear and understandable.

The system is responsive and operates smoothly without any technical issues.

The system provides convenient and accessible options for uploading supporting documents or evidence.



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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### USEFULNESS

\*

What is the level of satisfaction of the respondents in the newly developed app "Complaint Management System" in terms of: Rank it from (5) is the highest and (1) is the lowest.

1- Not Satisfied	2- Slightly Satisfied	3- Moderately Satisfied	4- Highly Satisfied	5- Very Highly Satisfied
------------------	-----------------------	-------------------------	---------------------	--------------------------

1                  2                  3                  4                  5

The system supports the implementation of fair and consistent processes for resolving complaints.	<input type="radio"/>				
The system helps improve overall satisfaction and trust among users in the complaint resolution process.	<input type="radio"/>				
The system making it more efficient and timesaving.	<input type="radio"/>				
The system enhances user satisfaction and confidence in the complaint resolution process.	<input type="radio"/>				



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

84

### SECURITY

\*

What is the level of satisfaction of the respondents in the newly developed app "Complaint Management System" in terms of: Rank it from (5) is the highest and (1) is the lowest.

1- Not Satisfied	2- Slightly Satisfied	3- Moderately Satisfied	4- Highly Satisfied	5- Very Highly Satisfied
------------------	-----------------------	-------------------------	---------------------	--------------------------

1                  2                  3                  4                  5

The system ensures the confidentiality of user data and complaint details.	<input type="radio"/>				
The system adheres to relevant data protection regulations and industry best practices.	<input type="radio"/>				
The system employs encryption and secure protocols to safeguard data during transmission.	<input type="radio"/>				
The system maintains backup and recovery procedures to protect against data loss or system failures.	<input type="radio"/>				



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

85

What are the possible recommendations to further improve the Complaint Management System? Rank it from (5) is the highest and (1) is the lowest.

1- Lowest Priority	2- Low Priority	3- Medium Priority	4- High Priority	5- Highest Priority
--------------------	-----------------	--------------------	------------------	---------------------

1                    2                    3                    4                    5

- Develop a mobile-responsive version of the system to allow users to access and use it on various devices.
- Enable incident recording using any device, allowing users to report incidents using their preferred technology.
- Implement a system to notify and escalate incidents based on their severity.
- Allow for anonymous reporting, ensuring individuals can submit reports without disclosing their identities.
- Enable offline functionality for the system, allowing it to operate without an internet connection on devices.
- Improve the reporting and analytics capabilities of the system to provide comprehensive insights into complaint trends, facilitating data-driven decision-making.



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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Continuously update and enhance the system's security measures to safeguard sensitive data and protect against potential threats or breaches.

Access real-time summaries of performance to gain immediate insights.

Optimize the system's interface to be intuitive and user-friendly, ensuring ease of use for all users.

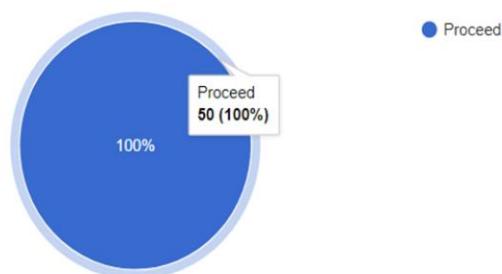
Implement real-time notifications to keep users updated on the progress and



## REQUEST FOR DATA PRIVACY CONSENT

50 responses

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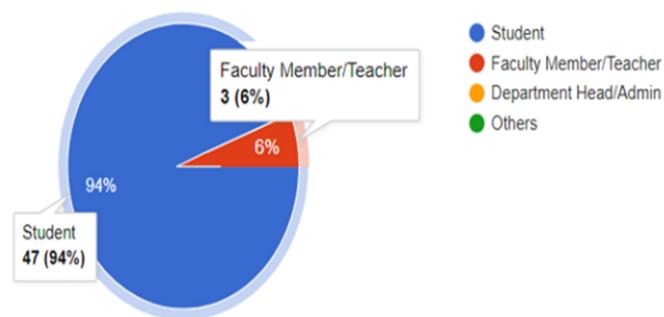


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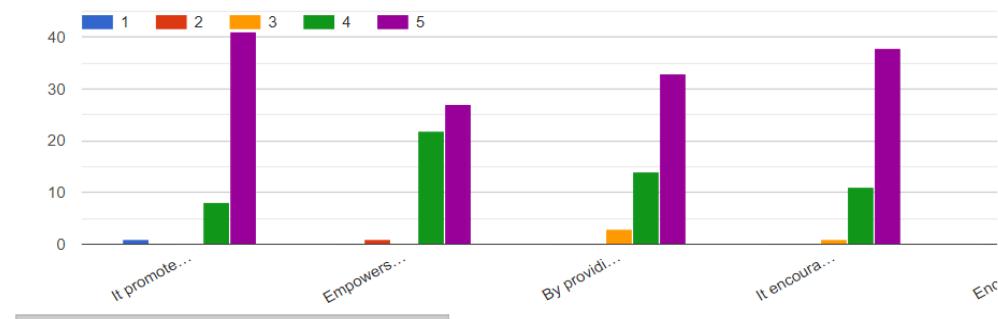


- Student
- Faculty Member/Teacher
- Department Head/Admin
- Others

## Part 1

What are the benefits of using a complaint management system in a university? Rank it from (5) is the highest and (1) is the lowest.

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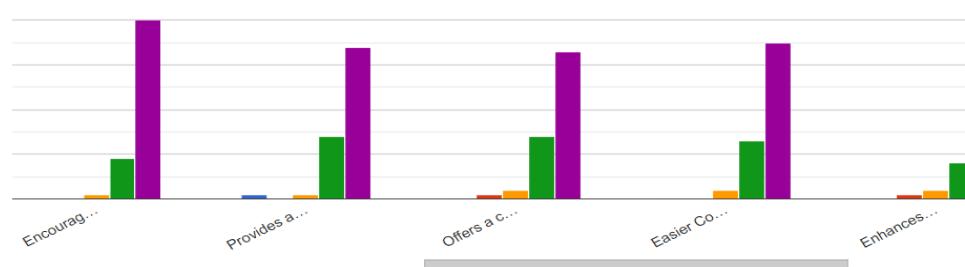


## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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### Part 1

What are the benefits of using a complaint management system in a university? Rank it from (5) is the highest and (1) is the lowest. [Copy](#)

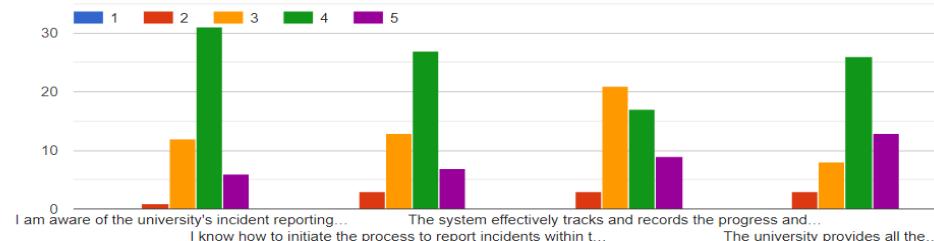


### Part 2

#### INCIDENT REPORT

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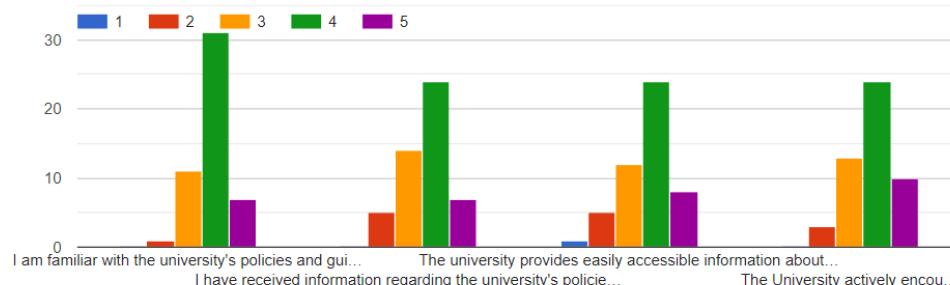
What is the level of awareness of the respondents in monitoring complaints inside the university in terms of: Rank it from (5) is the highest and (1) is the lowest.



#### FAMILIARITY WITH SCHOOL POLICIES

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What is the level of awareness of the respondents in monitoring complaints inside the university in terms of: Rank it from (5) is the highest and (1) is the lowest.

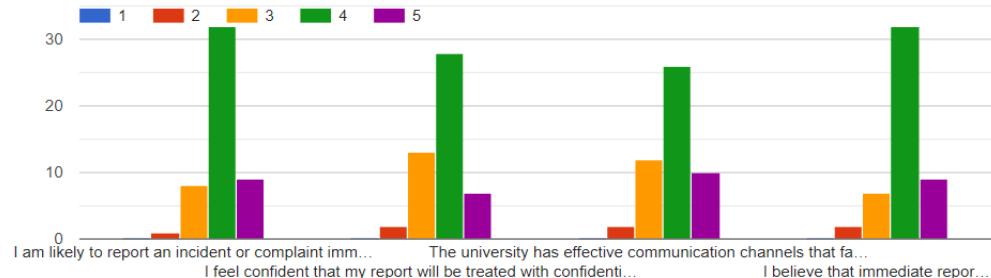




## IMMEDIATE REPORTING

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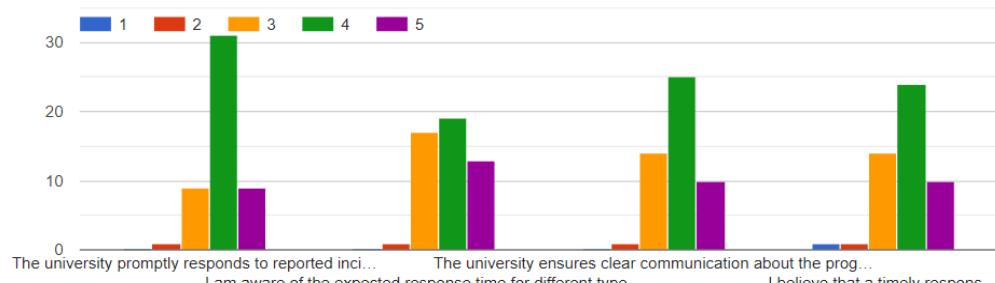
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## RESPONSE TIME

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What is the level of awareness of the respondents in monitoring complaints inside the university in terms of: Rank it from (5) is the highest and (1) is the lowest.

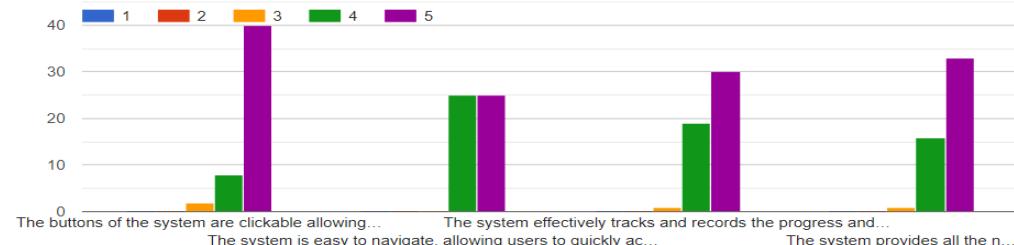


## Part 3

## FUNCTIONALITY

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What is the level of satisfaction of the respondents in the newly developed app "Complaint Management System" in terms of: Rank it from (5) is the highest and (1) is the lowest.





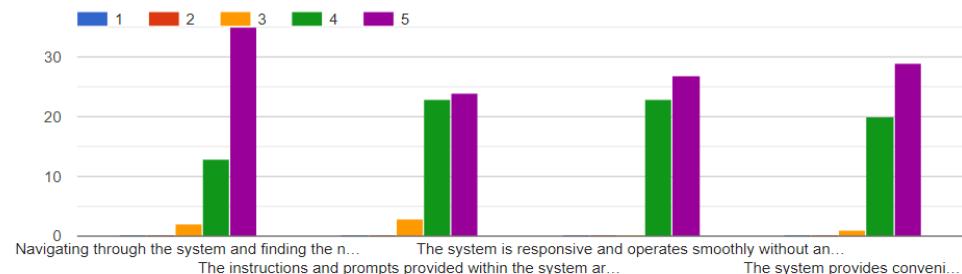
## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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### EASE OF USE

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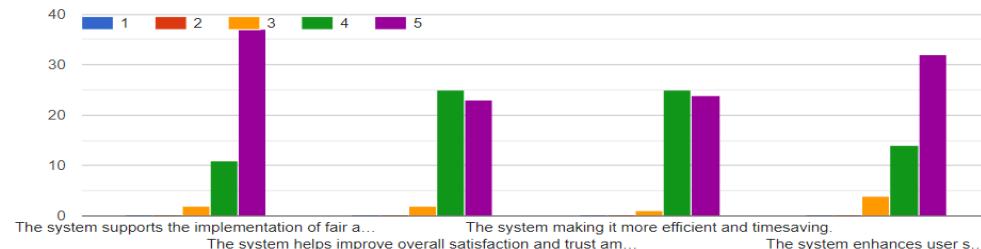
What is the level of satisfaction of the respondents in the newly developed app "Complaint Management System" in terms of: Rank it from (5) is the highest and (1) is the lowest.



### USEFULNESS

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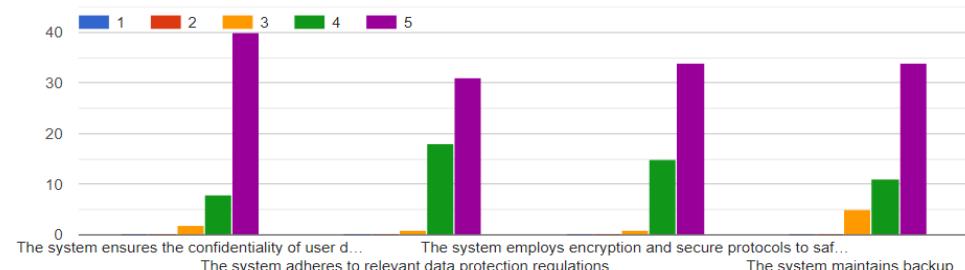
What is the level of satisfaction of the respondents in the newly developed app "Complaint Management System" in terms of: Rank it from (5) is the highest and (1) is the lowest.



### SECURITY

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What is the level of satisfaction of the respondents in the newly developed app "Complaint Management System" in terms of: Rank it from (5) is the highest and (1) is the lowest.





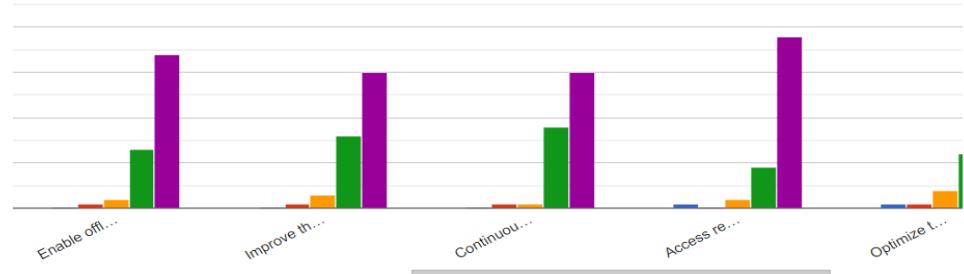
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### Part 4

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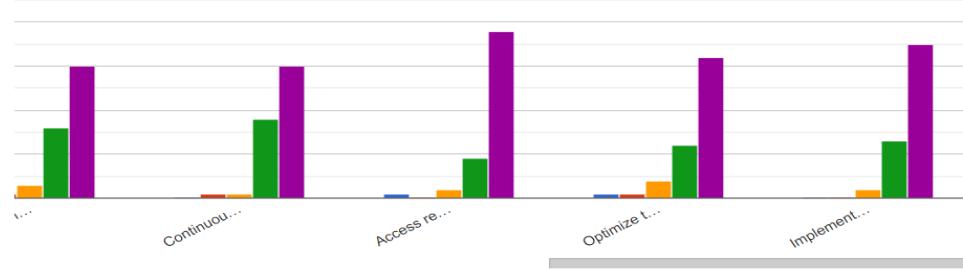
What are the possible recommendations to further improve the Complaint Management System? Rank it from (5) is the highest and (1) is the lowest.



### Part 4

Copy

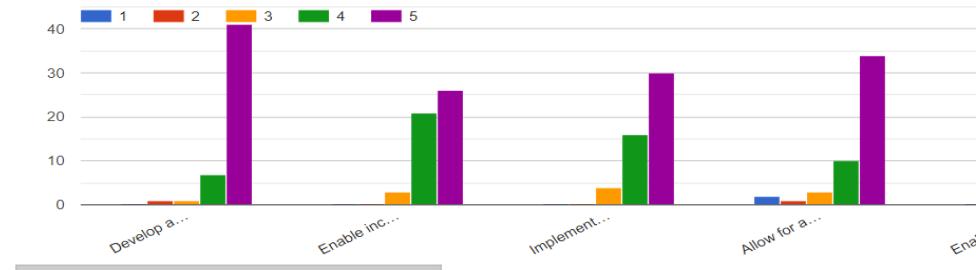
What are the possible recommendations to further improve the Complaint Management System? Rank it from (5) is the highest and (1) is the lowest.



### Part 4

Copy

What are the possible recommendations to further improve the Complaint Management System? Rank it from (5) is the highest and (1) is the lowest.





### Appendix 3: Operational Manual

#### Section 1: Home Page

The image shows the homepage of the Complaint Management System (CMS eReklamo). On the left is a photograph of three tall, rectangular concrete pillars with the letters "PUP" engraved on them. To the right is a light gray sidebar containing the CMS eReklamo logo, the text "COMPLAINT MANAGEMENT SYSTEM", and a call-to-action "Choose an Appropriate Portal." Below this are two buttons: a red one labeled "STUDENT" and a blue one labeled "FACULTY".

COMPLAINT MANAGEMENT SYSTEM

Choose an Appropriate Portal.

STUDENT

FACULTY

Greetings and welcome to Complaint Management System! the researchers will assist you in navigating through the system process seamlessly. Let's get started on this user-friendly journey!

#### Selecting your Login Type

- As you step onto the home page, you'll encounter a pair of login option: one dedicated to Students and the other are designated for Faculty Members/Admin.

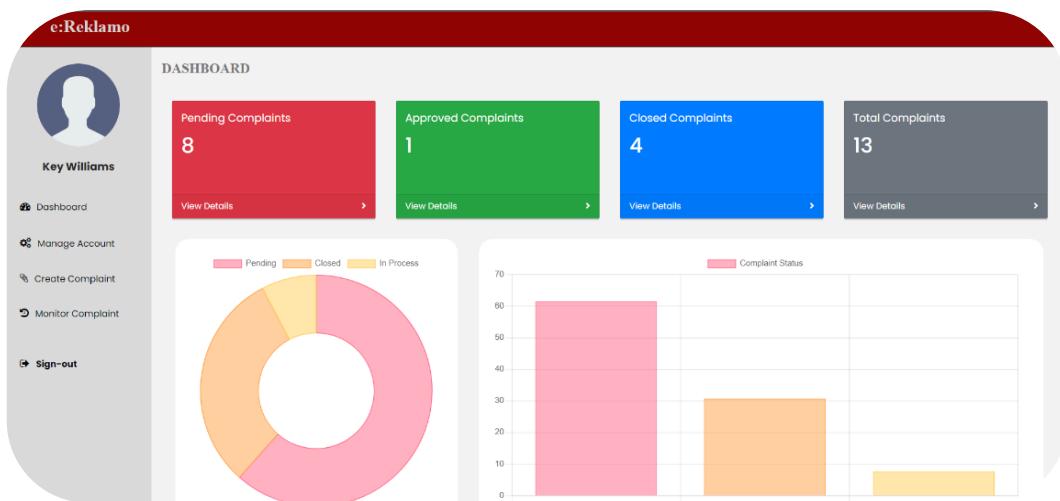
#### Section 2: Student Portal

The image displays the student portal login interface on the left and a promotional graphic on the right. The login screen features the CMS eReklamo logo, fields for "Enter your Student Number" and "Password", a "Forgot Password?" link, and a "Sign-in" button. Below the buttons is a small note about agreeing to terms and conditions. The promotional graphic on the right features a cartoon illustration of two students holding smartphones, with the text "e:Reklamo NA YAN!" and icons of a laptop and a smartphone.



- For the Student Portal, students are required to input their credentials, which include their assigned student number and the accompanying password issued by the university. This information serves as the key to gain access.

### Section 3: Student's Dashboard



- Once credentials are successfully authenticated, students will be seamlessly directed to their personalized dashboard. This dashboard consists of complaint statuses as well as the total count of submitted complaints. Additionally, an analytical section is provided for an in-depth assessment of the student's submitted complaints.

### Section 4: Student's Profile

A screenshot of the e:Reklamo Student Profile page. The profile picture is "Key Williams". The sidebar includes links for "Dashboard", "Manage Account", "Create Complaint", "Monitor Complaint", and "Sign-out". The main section is titled "PERSONAL INFORMATION" and displays the following fields:

Student Number	2020-11111-CM-0	Date of Birth	February 25, 2002
Name	Key Williams	Place of Birth	Cainta City
Gender	Male	Email Address	egariando619@gmail.com
Contact Number	0945353535	Address	Quezon City

*I hereby Certify that all the information provided are true and correct to the best of my knowledge.*



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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- The Student's Profile section provides a comprehensive view of the student's credentials, including:
  - Student Number
  - Name
  - Gender
  - Contact Number
  - Date and Place of Birth
  - Address
  - Email Address

### Section 5: Creating a Complaint

A screenshot of the e:Reklamo application interface showing the "Complaint Form" screen. On the left is a sidebar with a user profile for "Key Williams" and navigation links for Dashboard, Manage Account, Create Complaint, Monitor Complaint, and Sign-out. The main form area has fields for Name (Key Williams), Email (egarlando619@gmail.com), and a large text area for Complaint Details (max 2000 words) containing the text "I was discriminated at the University.". Below these is a "Complaint Related Docs:" section with a "Choose Files" button and a preview for "prototype.pdf". At the bottom are "Review & Submit" and "Cancel" buttons.

- In this section, it shows a complaint form wherein a student can create a complaint as well as the attachment of file. The Naïve Bayes Algorithm helps figure out the type of complaint based on the details provided. This smart system makes it easier and faster to sort the complaints efficiently.

### Section 6: Complaint Preview

A screenshot of the e:Reklamo application interface showing the "Complaint Preview" dialog box. The dialog displays the same information as the previous form: Name (Key Williams), Email (egarlando619@gmail.com), Complaint Details ("I was discriminated at the University."), and a preview of the attached file "prototype.pdf". It also includes a checkbox for accepting the privacy policy and "Close" and "Submit" buttons. The background of the main window is dimmed.



## POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

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- Once a complaint is filled out, students can review it before submitting it. Additionally, there's also a system agreement in place that outlines the policy regarding the handling of their personal data.

### Section 7: Complaint Monitoring

The screenshot shows a user profile for "Key Williams" on the left. The main area is titled "MONITOR COMPLAINT" and displays a table of complaints. The columns are: Complaint Number, Status, Complaint Type, Date Submitted, and Action. The table contains 13 entries, with the first 10 shown. The status column includes "Pending", "In Process", and "Closed". The date submitted ranges from 2023-07-28 to 2023-08-08. Action buttons for each row include a magnifying glass and a trash bin.

Complaint Number	Status	Complaint Type	Date Submitted	Action
191	Pending	Discrimination	2023-08-08 03:08:57	[View] [Delete]
182	Pending	Facility Issue	2023-07-30 12:34:17	[View] [Delete]
57	Pending	Discrimination	2023-07-29 17:38:29	[View] [Delete]
49	Pending	Discrimination	2023-07-28 01:36:44	[View] [Delete]
39	Pending	Discrimination	2023-07-28 01:17:04	[View] [Delete]
38	Pending	Discrimination	2023-07-28 01:16:05	[View] [Delete]
35	Pending	Academic Issues	2023-07-28 01:15:38	[View] [Delete]
31	Pending	Academic Issues	2023-07-28 01:08:14	[View] [Delete]
189	In Process	Discrimination	2023-07-30 13:39:56	[View] [Delete]
190	Closed	Discrimination	2023-07-30 15:57:41	[View] [Delete]

- Once a student has successfully lodged a complaint, they gain the ability to track its progress. The monitoring feature provides essential details, including the complaint number, status (whether it's pending, in process, or closed), complaint type, date submission, and available actions such as viewing the complaint details or deleting it if needed. This functionality empowers students to stay informed and engaged throughout the complaint resolution process.

### Section 8: Complaint Details

The screenshot shows a user profile for "Key Williams" on the left. The main area is titled "COMPLAINT DETAILS" and displays a single complaint entry. The fields are: Name (Key Williams), Email (egoriando619@gmail.com), Complaint Number (191), Complaint Type (Discrimination), Complaint Details (I was discriminated at the University), Complaint File (View File), and Status (Pending).

Name:	Key Williams
Email:	egoriando619@gmail.com
Complaint Number:	191
Complaint Type:	Discrimination
Complaint Details:	I was discriminated at the University.
Complaint File:	<a href="#">View File</a>
Status:	Pending

- Clicking on the "View" button will lead students to a detailed view of their complaints, where they can access the responses and updates associated with



their submitted concerns.

### Section 9: Deletion of Complaint

The screenshot shows a user interface for managing complaints. On the left is a sidebar with a profile picture of 'Key Williams' and links for Dashboard, Manage Account, Create Complaint, Monitor Complaint, and Sign-out. The main area is titled 'MONITOR COMPLAINT' and contains a table of complaints. A modal window titled 'Delete Complaint' is open, asking 'Are you sure you want to Delete this complaint?' with 'Cancel' and 'Delete' buttons. The table data is as follows:

Complaint Number	Status	Type	Date Submitted	Action
191	Pending	Discrimination	2023-08-08 03:08:57	[View, Delete]
182	Pending	Facility Issue	2023-07-30 12:34:37	[View, Delete]
57	Pending	Discrimination	2023-07-29 17:38:29	[View, Delete]
49	Pending	Discrimination	2023-07-28 01:36:44	[View, Delete]
39	Pending	Discrimination	2023-07-28 01:17:04	[View, Delete]
36	Pending	Discrimination	2023-07-28 01:16:05	[View, Delete]
35	Pending	Academic Issues	2023-07-28 01:15:38	[View, Delete]
31	Pending	Academic Issues	2023-07-28 01:08:14	[View, Delete]
189	In Process	Discrimination	2023-07-30 13:39:56	[View, Delete]
190	Closed	Discrimination	2023-07-30 15:57:41	[View, Delete]

Showing 1 to 10 of 13 entries

This screenshot shows the same interface as above, but with a different modal. The 'Delete Complaint' modal now says 'Deletion for your complaints is not allowed because it is now In Process' with 'Cancel' and 'Delete' buttons. The table data is as follows:

Complaint Number	Status	Type	Date Submitted	Action
49	Pending	Discrimination	2023-07-28 01:36:44	[View, Delete]
39	Pending	Discrimination	2023-07-28 01:17:04	[View, Delete]
36	Pending	Discrimination	2023-07-29 01:18:05	[View, Delete]
35	Pending	Academic Issues	2023-07-28 01:16:38	[View, Delete]
31	Pending	Academic Issues	2023-07-28 01:08:14	[View, Delete]
42	In Process	Facility And Infrastructure	2023-07-28 01:18:47	[View, Delete]
40	In Process	Facility And Infrastructure	2023-07-28 01:17:29	[View, Delete]
48	Closed	Others - lorem test	2023-07-28 01:27:58	[View, Delete]
41	Closed	Discrimination	2023-07-28 01:18:29	[View, Delete]
38	Closed	Others - test	2023-07-28 01:16:42	[View, Delete]

Showing 1 to 10 of 12 entries

- When student attempts to delete a specific complaint, a validation process is in place. If the complaint status is either "pending" or "closed," students have the option to proceed with deletion. However, if the status indicates that the complaint is "in process," the system prevents further deletion by the student. This safeguard ensures that ongoing processes are not disrupted and maintains the integrity of the system.
- Both students and faculty members share the same capabilities when it comes to creating a complaint.



## Section 10: Faculty and Admin Portal



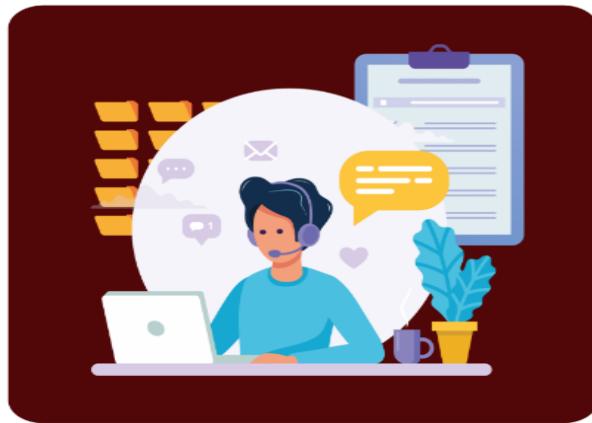
Enter your Username

Password

[Forgot Password?](#)

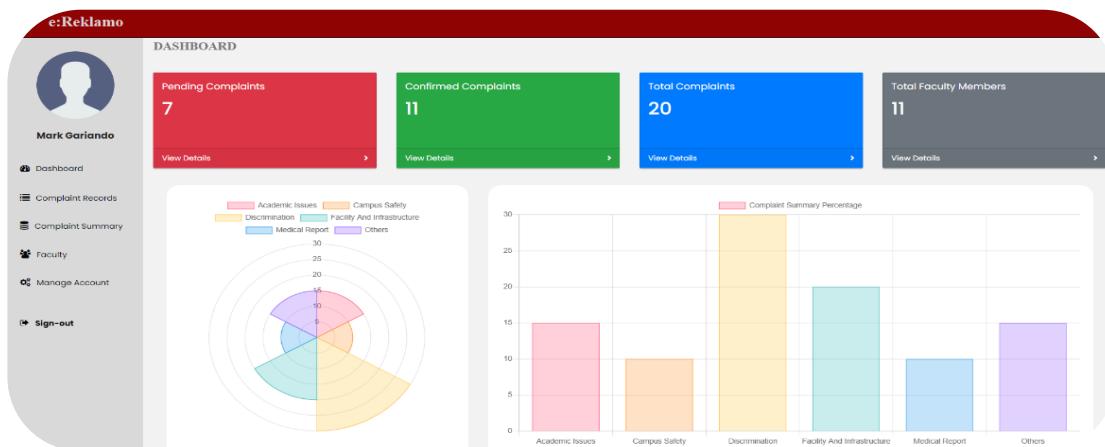
[Sign-in](#)

By signing up, I agree to the PUP Online Services [Terms of Services](#) and [Privacy Statement](#)



- This section introduces the unified login portal accessible to both faculty members and administrators. While sharing the same entry point, each user group has different access to the system based on their roles. Faculty members are only allowed to create a complaint while the admin wield enhanced privileges, enabling them to seamlessly view the complaints and perform updates to their statuses.

## Section 11: Admin's Dashboard



- Upon successful login by the admin, they are seamlessly directed to their dashboard. This dashboard provides a comprehensive overview of all complaint details and list of faculty members. Additionally, it features an analytics section that computes and displays the percentage of overall complaints.



- **Section 12: Complaint Records**

The screenshot shows a user interface for managing complaint records. On the left is a sidebar with a profile picture of 'Mark Garlando' and navigation links: Dashboard, Complaint Records, Complaint Summary, Faculty, Manage Account, and Sign-out. The main area is titled 'COMPLAINT RECORDS' and contains a table of complaints. The table columns are: Complaint Number, Status, Name, Email, Complaint Type, Date and Time of Complaints, Complaint Update, and Action. There are 18 entries listed, with the first few rows shown below:

Complaint Number	Status	Name	Email	Complaint Type	Date and Time of Complaints	Complaint Update	Action
51	Pending	Lorem Ipsum	loremipsum@gmail.com	Discrimination	2023-07-28 13:44:57	2023-07-28 13:44:57	
49	Pending	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-28 01:36:44	2023-07-28 01:36:44	
43	Pending	Lorem Ipsum	loremipsum@gmail.com	Discrimination	2023-07-28 01:19:46	2023-07-28 01:19:46	
39	Pending	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-28 01:17:04	2023-07-28 01:17:04	
36	Pending	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-28 01:16:05	2023-07-28 01:16:05	
35	Pending	Key Williams	keywilliams@gmail.com	Academic Issues	2023-07-28 01:15:38	2023-07-28 01:15:38	
31	Pending	Key Williams	keywilliams@gmail.com	Academic Issues	2023-07-28 01:08:14	2023-07-28 01:08:14	
44	In Process	Lorem Ipsum	loremipsum@gmail.com	Academic Issues	2023-07-28 01:20:21	2023-07-28 01:34:29	
45	In Process	Lorem Ipsum	loremipsum@gmail.com	Medical Report	2023-07-28 01:20:50	2023-07-28 01:23:07	
47	In Process	Lorem Ipsum	loremipsum@gmail.com	Campus Safety	2023-07-28 01:21:50	2023-07-28 01:22:45	

Showing 1 to 10 of 18 entries

- In this section, a comprehensive record of all complaints is presented. The information displayed for each complaint providing administrators with a holistic view of the situation. This consolidated presentation empowers administrators to proficiently assess and address the diverse array of complaints within the system.

### Section 13: Complaint Update

The screenshot shows a modal dialog box titled 'Update Complaint' over a background of the 'Complaint Records' page. The dialog box fields include: Complaint Number (49), Name (Key Williams), Email (keywilliams@gmail.com), Complaint Type (Discrimination), and Complaint Details (a large text area with placeholder text). Below these are sections for Complaint Related Docs (Status: Pending) and Complaint Status (Status: Pending, In Process). The background shows a list of complaints with their status, last updated time, and action buttons.

- When the admin clicks the "Update" button, they gain the ability to modify only the status of the complaint. For instance, if the status is marked as "Pending," only the option to set it to "In Process" will be available. Similarly, if the status is "In Process," only the option to set it to "Closed" will be presented. Once a complaint is in the "Closed" status, no further updates can be made. This carefully designed validation process maintains the integrity of the complaint management system.



- **Section 14: Deletion of Complaint**

Complaint Number	Status	Name	Email	Complaint Type	Date and Time of Complaints	Complaint Update	Action
51	Pending	Lorem Ipsum	loremipsum@gmail.com	Discrimination	2023-07-28 13:45:57	2023-07-28 13:44:57	
49	Pending	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-28 01:36:44	2023-07-28 01:36:44	
43	Pending	Lorem Ipsum	loremipsum@gmail.com	Discrimination	2023-07-28 01:19:46	2023-07-28 01:19:46	
39	Pending	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-28 01:07:04	2023-07-28 01:07:04	
38	Pending	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-28 01:18:05	2023-07-28 01:18:05	
35	Pending	Key Williams	keywilliams@gmail.com	Academic Issues	2023-07-28 01:15:38	2023-07-28 01:15:38	
31	Pending	Key Williams	keywilliams@gmail.com	Academic Issues	2023-07-28 01:09:14	2023-07-28 01:09:14	
44	In Process	Lorem Ipsum	loremipsum@gmail.com	Academic Issues	2023-07-28 01:20:21	2023-07-28 01:34:29	
45	In Process	Lorem Ipsum	loremipsum@gmail.com	Medical Report	2023-07-28 01:20:50	2023-07-28 01:23:07	
47	In Process	Lorem Ipsum	loremipsum@gmail.com	Campus Safety	2023-07-28 01:21:50	2023-07-28 01:22:45	

- When deleting complaints, a validation system is in place. Administrators can't delete "Pending" or "In Process" complaints that need attention. However, for "Closed" complaints, deletion is allowed. Deletions follow a "soft deletion" approach, where a complaint is removed from immediate view but kept in the system for future reference and backup. This process maintains the system's integrity and ensures proper actions align with complaint statuses.

## Section 15: Complaint Summary

Complaint Number	Name	Email	Complaint Type	Date and Time of Complaints	Complaint Update
52	Lorem Ipsum	loremipsum@gmail.com	Others - test	2023-07-28 13:45:13	2023-07-28 13:51:29
38	Key Williams	keywilliams@gmail.com	Others - test	2023-07-28 01:16:42	2023-07-28 13:49:58
51	Lorem Ipsum	loremipsum@gmail.com	Discrimination	2023-07-28 13:45:57	2023-07-28 13:44:57
49	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-28 01:36:44	2023-07-28 01:36:44
41	Key Williams	keywilliams@gmail.com	Discrimination	2023-07-28 01:18:29	2023-07-28 01:34:53
44	Lorem Ipsum	loremipsum@gmail.com	Academic Issues	2023-07-28 01:20:21	2023-07-28 01:34:29
37	Key Williams	keywilliams@gmail.com	Facility And Infrastructure	2023-07-28 01:16:28	2023-07-28 01:31:28
48	Key Williams	keywilliams@gmail.com	Others - lorem test	2023-07-28 01:27:58	2023-07-28 01:29:59
45	Lorem Ipsum	loremipsum@gmail.com	Medical Report	2023-07-28 01:20:50	2023-07-28 01:23:07
47	Lorem Ipsum	loremipsum@gmail.com	Campus Safety	2023-07-28 01:21:50	2023-07-28 01:22:45

- The Complaint Summary section provides an overview of all complaints submitted by both students and faculty members. Detailed information is available and can be copied, downloaded in various formats such as Excel, PDF, and CSV files. Additionally, the information can be printed for convenience. This feature enhances accessibility and facilitates efficient analysis of the complaint data.



## Section 16: List of Faculty Members

e:Reklamo

**Mark Garlando**

**Dashboard**

**Complaint Records**

**Complaint Summary**

**Faculty**

**Manage Account**

**Sign-out**

FACULTY MEMBER

Name	Email	Contact Number	Date of Birth	Department	Updated Time
Mark Garlando	egarlando619@gmail.com	9366350081	January 1, 2002	Administrator	2023-07-24 10:55:20
John Doe	johndoe@gmail.com	9332332457	January 25, 1988	BBTLEDHE	2023-07-24 11:37:04
Hans Christian Grey	hanschristian@gmail.com	9452345681	February 10, 1990	BBTLEDHE	2023-07-24 11:37:07
Emma Johnson	emmajohnson@gmail.com	95843467543	December 16, 1990	BSBA-MM	2023-07-24 11:37:19
John Smith	johnsmith@gmail.com	9134673857	November 3, 1999	BSBA-HRM	2023-07-24 11:37:31
Michael Brown	michaelbrown29@gmail.com	9345673857	January 1, 1989	BSIT	2023-07-24 11:37:34
Sarah Davis	sarah251@gmail.com	9350795436	March 28, 1994	BSENTREP	2023-07-24 11:37:45
Jennifer Lee	jenniferleelis26@gmail.com	9650762385	April 19, 1994	BPAPFM	2023-07-24 11:38:02
David Anderson	davidanderson@gmail.com	9350795437	August 16, 1988	BPAPFM	2023-07-24 11:38:04

Show 10 entries Copy Excel PDF CSV Print Search:

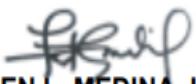
Showing 1 to 10 of 11 entries Previous 1 2 Next

- In the Faculty section, you'll find a comprehensive list of members across various faculties. These details are not only viewable but also conveniently copyable, downloadable in formats like Excel, PDF, and CSV, and can be printed as needed. This functionality ensures easy access and seamless utilization of faculty information, fostering efficient communication and collaboration within the institution.



#### Appendix 4: Grammarian's Certification

This is to certify that the undersigned has reviewed and went through all the pages of the research paper entitled **e:Reklamo: A COMPLAINT MANAGEMENT SYSTEM USING NAÏVE BAYES ALGORITHM** developed by **Dominique L. Las, Edmark R. Gariando, Mark Christoffer D. Marquez, and Hipolito V. Yamat III** A/Y 2022-2023 and aligned the set of structural rules that govern the composition of sentences, phrases, and words in the English language. Also, all corrections and recommendations made have been done and/or incorporated in the final research paper.

  
**KATHLEEN L. MEDINA, LPT MaEd**  
Lic. No. 1334214  
Grammarian

August 10, 2023

Date Signed



## Appendix 5: Research Ethics Clearance



Republic of the Philippines  
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES  
OFFICE of the VICE PRESIDENT for RESEARCH, EXTENSION, PLANNING, and DEVELOPMENT  
RESEARCH MANAGEMENT OFFICE  
**UNIVERSITY RESEARCH ETHICS CENTER**

Date: July 27, 2023  
To/For: Dominique Las  
Edmark Gariando  
Mark Christoffer Marquez  
Hipolito Yamat  
Subject: Ethical Clearance  
From:   
Prof. Hazel DR. Samala  
Chief, Research Ethics Center

This is to inform you that your submitted documentary requirements for your research project titled "E-Reklamo: A complaint management system using Naïve Bayes Algorithm" passed the evaluation of the PUP Research Ethics Committee (REC) in accordance with the requirements set by the Philippine Health Research Ethics Board (PHREB).

UREC Code	UREC-2023-0852
Type of Review	EXPEDITED
Approval Date	July 27, 2023
Expiry Date	July 26, 2024
PUP-UREC Decision	Approved

The standard conditions of this approval are as follows:

1. Conduct the project strictly in accordance with the submitted and approved research protocol and other documentary requirements.
2. If changes will be done in the conduct of the research project/study that will affect the research participants, an amendment of the research protocol must be submitted to [urec@pup.edu.ph](mailto:urec@pup.edu.ph) before implementing such changes.
3. For ethical clearance that is about to expire, researcher/s must apply for resubmission of the research protocol.
4. A final report/terminal report must be submitted when the research project/study is complete.
5. Researchers must advise in writing the PUP-UREC (email: [urec@pup.edu.ph](mailto:urec@pup.edu.ph)) if the research project/study has been discontinued.

You may now commence on your research project/study. Good luck.

S423, 4<sup>th</sup> Floor South Wing, PUP A. Mabini Campus, Anonas Street, Sta. Mesa, Manila 1016  
Trunk Line: 335-1787 or 335-1777 local 235/357  
Website: [www.pup.edu.ph](http://www.pup.edu.ph) | Email: [vpredl@pup.edu.ph](mailto:vpredl@pup.edu.ph)

THE COUNTRY'S 1<sup>st</sup> POLYTECHNIC



ISO 9001:2015 CERTIFIED  
CERTIFICATE NUMBER: SCP0004130



## Appendix 6: Correspondence



Republic of the Philippines  
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES  
Office of the Vice President for Branches and Satellite Campuses  
Quezon City Branch

0 2023 02 29 273

July 20, 2023

Dr. ANNA RUBY P. GAPASIN  
Vice President for Research, Extension, Planning, and Development

Dear Dr. Gapasin,

Good Day!

We, the researchers of the study titled "**e-Reklamo: A Complaint Management System using Naive Bayes Algorithm**" would like to apply for research ethics certification to administer the survey questionnaire online to selected PUPQC student and employees within the university.

Participation in the study is completely voluntary, and individuals have the choice to engage or decline. The participants are provided with a clear explanation of the study's purpose, potential risks, privacy measures, confidentiality protocols, and research objectives. This follows the relevant statutory requirements, including the Data Privacy Act of 2012, and the institutions of research ethics.

Hoping for your kind consideration. Thank you!

Respectfully,

Dominique L. Las  
Lead Researcher

Noted by:

Demelyn E. Monzon PhD.  
Adviser

Endorsed by:

Jaime P. Gutierrez Jr.  
Branch Director

2<sup>nd</sup> Floor South Wing, PUP A. Mabini Campus, Anonas Street, Sta. Mesa, Manila 1016  
Trunk Line: 335-1787 or 335-1777 local 233/712  
Website: [www.pup.edu.ph](http://www.pup.edu.ph) | Email: [vpredl@pup.edu.ph](mailto:vpredl@pup.edu.ph)

THE COUNTRY'S 1<sup>ST</sup> POLYTECHNICU



ISO 9001:2015 CERTIFIED  
CERTIFICATE NUMBER: SCP000413Q



## **Appendix 7: Turnitin Plagiarism Checker Result**

Turnitin Originality Report		Document Viewer								
Processed on: 18-Aug-2023 2:14 AM AEST ID: 2147125231 Word Count: 9688 Submitted: 1 e:Reklamo - CMS By Azi3176 Prems		Similarity Index <b>5%</b>								
<table border="1"> <thead> <tr> <th colspan="2">Similarity by Source</th></tr> <tr> <td>Internet Sources:</td><td>2%</td></tr> <tr> <td>Publications:</td><td>2%</td></tr> <tr> <td>Student Papers:</td><td>3%</td></tr> </thead> </table>			Similarity by Source		Internet Sources:	2%	Publications:	2%	Student Papers:	3%
Similarity by Source										
Internet Sources:	2%									
Publications:	2%									
Student Papers:	3%									
<input type="checkbox"/> include quoted <input type="checkbox"/> include bibliography <input type="checkbox"/> exclude small matches										
mode: <input type="button" value="quickview"/> <input type="button" value="classic"/> <input type="button" value="report"/> <input type="button" value="print"/> <input type="button" value="download"/>										
1% match (Diane Christine L. Chua, Benilda Eleonor V. Comendador, "Blue Sentinels: An IT Project Management Tool towards Productive Projects", <i>Journal of Software</i> , 2017) <a href="#">Diane Christine L. Chua, Benilda Eleonor V. Comendador, "Blue Sentinels: An IT Project Management Tool towards Productive Projects", <i>Journal of Software</i>, 2017</a>										
<1% match (student papers from 27-Jun-2018) <a href="#">Submitted to Group on 2018-06-27</a>										
<1% match (student papers from 04-Sep-2020) <a href="#">Submitted to Group on 2020-09-04</a>										
<1% match (student papers from 02-Feb-2018) <a href="#">Submitted to University of Mindanao on 2018-02-02</a>										
<1% match (Internet from 28-Sep-2022) <a href="http://www.ieomsociety.org">http://www.ieomsociety.org</a>										
<1% match (Steve O. Michael, Michael Schwartz, Dawn M. Cook, Portia L. Winston, "Trustees' Level of Satisfaction and Strategies for Improving Satisfaction: a comparative analysis of higher education sectors", <i>Journal of Higher Education Policy and Management</i> , 1999) <a href="#">Steve O. Michael, Michael Schwartz, Dawn M. Cook, Portia L. Winston, "Trustees' Level of Satisfaction and Strategies for Improving Satisfaction: a comparative analysis of higher education sectors", <i>Journal of Higher Education Policy and Management</i>, 1999</a>										
<1% match (Internet from 09-Dec-2022) <a href="https://www.researchgate.net/publication/357233191_Tuketicilerin ISO_10002_Musteri Sikayet Yonetim Performans Algilarinin Yeniden Satin Alma Niyetine Etkisi">https://www.researchgate.net/publication/357233191_Tuketicilerin ISO_10002_Musteri Sikayet Yonetim Performans Algilarinin Yeniden Satin Alma Niyetine Etkisi</a>										
<1% match (Internet from 06-Aug-2023) <a href="https://www.coursehero.com/file/c53d9/Table-24-Level-of-awareness-of-the-respondents-according-to-the-Word-of/">https://www.coursehero.com/file/c53d9/Table-24-Level-of-awareness-of-the-respondents-according-to-the-Word-of/</a>										
<1% match (Internet from 03-Apr-2023) <a href="https://www.coursehero.com/file/158702400_KALYAN-Technology-based-leadership-in-the-digital-age/eddeddoc/">https://www.coursehero.com/file/158702400_KALYAN-Technology-based-leadership-in-the-digital-age/eddeddoc/</a>										
<1% match (Internet from 07-May-2023) <a href="https://www.coursehero.com/file/c7511b/5/Table_11-shows-the-calculated-values-for-the-corresponding-mean-variance-and/">https://www.coursehero.com/file/c7511b/5/Table_11-shows-the-calculated-values-for-the-corresponding-mean-variance-and/</a>										
<1% match (Internet from 01-Aug-2019) <a href="https://www.scribd.com/document/372416185/Impact-of-Terror-Professors">https://www.scribd.com/document/372416185/Impact-of-Terror-Professors</a>										
<1% match (student papers from 22-May-2023) <a href="#">Submitted to Rankria Park International High School on 2023-05-22</a>										
<1% match (student papers from 22-Apr-2019) <a href="#">Submitted to Southville International School and Colleges on 2019-04-22</a>										
<1% match (student papers from 04-May-2023) <a href="#">Submitted to University of Newcastle upon Tyne on 2023-05-04</a>										
<1% match (student papers from 05-Mar-2022) <a href="#">Submitted to UC_San Diego on 2022-03-05</a>										
<1% match (student papers from 06-Jun-2023) <a href="#">Submitted to University of Perpetual Help System JONELTA on 2023-06-06</a>										
<1% match (student papers from 10-May-2021) <a href="#">Submitted to NorthWest Samar State University on 2021-05-10</a>										
<1% match (student papers from 22-Jun-2023) <a href="#">Submitted to Universiti Teknologi Malaysia on 2023-06-22</a>										
<1% match (student papers from 07-Jun-2023) <a href="#">Submitted to University of Greenwich on 2023-06-07</a>										
<1% match (Internet from 02-Feb-2023) <a href="http://qrinternational.org">http://qrinternational.org</a>										
<1% match (Internet from 29-Oct-2021) <a href="https://www.slideshare.net/MuhammadJaved11/20231629-consumerbehaviour">https://www.slideshare.net/MuhammadJaved11/20231629-consumerbehaviour</a>										
<1% match (Internet from 20-Nov-2022) <a href="https://dadsopdf.com/download/personalized-message-passing-as-email-5a44f21fb7d7bc891935c31.pdf">https://dadsopdf.com/download/personalized-message-passing-as-email-5a44f21fb7d7bc891935c31.pdf</a>										
<1% match (Internet from 24-Nov-2016) <a href="http://www.omicsonline.com">http://www.omicsonline.com</a>										
<1% match (Steve O. Michael, Michael Schwartz, Leela Balraj, "Indicators of presidential effectiveness: a study of trustees of higher education institutions", <i>International Journal of Educational Management</i> , 2001) <a href="#">Steve O. Michael, Michael Schwartz, Leela Balraj, "Indicators of presidential effectiveness: a study of trustees of higher education institutions", <i>International Journal of Educational Management</i>, 2001</a>										
<1% match (student papers from 30-May-2019) <a href="#">Submitted to University of Perpetual Help Las Pinas System Dalta on 2019-05-30</a>										



### Appendix 8: Certification of Validation



Republic of the Philippines  
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES  
Vice President for Branches and Satellite Campuses  
Quezon City Branch

#### Certificate of Validation

This certifies that the survey questionnaire of this study titled: "*e:Reklamo: A Complaint Management System using Naïve Bayes Algorithm*" was prepared by Las Dominique L., Gariando, Edmark R., Marquez Christoffer D., Yamat III, Hipolito V., has undergone validation.

Signed this 20<sup>th</sup> of July, 2023 at Polytechnic University of the Philippines – Quezon City Branch.

  
Rosicar E. Escobar, PhD

Enterprise Solutions Manager  
National Grid Corporation of the Philippines  
I.T Professor



**Republic of the Philippines**  
**POLYTECHNIC UNIVERSITY OF THE PHILIPPINES**  
**Office of the Vice President for Branches and Satellite Campuses**  
**Branch Research Ethics**  
**Quezon City Branch**

## Certificate of Validation

This certifies that the survey questionnaire of this study titled: *e-Reklamo: A Complaint Management System using Naive Bayes Algorithm* was prepared by Gariando, Edmark R., Las, Dominique L., Marquez, Mark Christoffer D. Yamat III, Hipolito V. has undergone validation.

Signed this 20<sup>th</sup> of July 2023 at Polytechnic University of the Philippines – Quezon City Branch.

*Alma C. Fernandez* 7/20/2023  
Alma C. Fernandez, MIT

## Head Student Affairs and Services IT Professor

## Certificate of Validation

2<sup>nd</sup> Floor South Wing, PUP A. Mabini Campus, Anonas Street, Sta. Mesa, Manila 1016  
Trunk Line 335-1787 or 335-1777 local 233/712  
Website: [www.pup.edu.ph](http://www.pup.edu.ph) | Email: [vpredl@pup.edu.ph](mailto:vpredl@pup.edu.ph)

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ISO 9001:2015 CERTIFIED  
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107



Republic of the Philippines  
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES  
Office of the Vice President for Branches and Satellite Campuses  
Branch Research Ethics  
Quezon City Branch

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Signed this 20<sup>th</sup> of July 2023 at Polytechnic University of the Philippines – Quezon City Branch.

  
Keziah M. Cruz, MSIT  
IT Professor

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ISO 9001:2015  
CERTIFICATE NUMBER: GEPG001

**Appendix 9: Biographical Statements****Edmark R. Gariando****Bachelor of Science in Information Technology**

Edmark R. Gariando was born on February 25, 2002, in Caloocan City, Philippines. He is a third-year student pursuing a Bachelor of Science in Information Technology (BSIT) at the Polytechnic University of the Philippines - Quezon City Branch. Apart from his academic pursuits, he has shown an interest in music, often finding comfort and inspiration while immersed in melodies. Playing instruments, particularly the guitar, is a cherished hobby during his leisure hours. Additionally, he also demonstrates his skills in Web Development, utilizing programming languages like HTML, CSS, JavaScript, PHP, and MYSQL. While he acknowledges that he is continuously developing his skills, his unwavering dedication in learning will bring him toward success.

**Dominique L. Las****Bachelor of Science in Information Technology**

Dominique L. Las was born on January 30, 2002, in Quezon City, Philippines. He is currently a third-year student, diligently working towards a Bachelor of Science in Information Technology (BSIT) at the Polytechnic University of the Philippines - Quezon City Branch. Dominique's remarkable dedication shines through his role as a Scrum Master, where he takes on the responsibility of guiding and leading his team towards achieving their sprint goals. With a commitment to excellence, he ensures that project requirements are met precisely. His skill in facilitating effective communication contributes to the smooth execution of projects. Beyond his academic pursuits, Dominique's leadership qualities and proactive approach represent his passion for continuous improvement and success.



**Mark Christoffer D. Marquez**

**Bachelor of Science in Information Technology**

Mark Christoffer D. Marquez was born on March 1, 2002, in Quezon City, Philippines. He is currently in his third year, pursuing a Bachelor of Science in Information Technology (BSIT) at the Polytechnic University of the Philippines - Quezon City Branch. In his leisure hours, Mark finds delight in watching anime, immersing himself in video games, and exploring light novels and manga. His creative side thrives through his passion for multimedia and production-related activities, including video and photo editing, graphics designing, and broadcasting. He's also an avid artist and storyteller, nurturing his hobbies of drawing and writing short stories. Continuously fueling his enthusiasm, Mark remains dedicated to enhancing his programming skills, aligning with his diverse interests.

**Hipolito V. Yamat III****Bachelor of Science in Information Technology**

Hipolito V. Yamat III was born on April 1, 2002, in Oriental Mindoro, Philippines. He is currently a third-year student pursuing a Bachelor of Science in Information Technology (BSIT) at the Polytechnic University of the Philippines - Quezon City Branch. Hipolito shows his interest in Software Quality Assurance (SQA) and possesses a genuine passion for delivering perfect software solutions. His expertise shines in implementing quality test plans, ensuring consistent software functionality across a variety of platforms. He diligently identifies and reports defects that contribute to the refinement of software performance. His collaborative nature is evident as he engages with cross-functional teams, fostering effective communication and synergy to ensure successful system launches.