*Research Article*

# Student Feedback Systems: Developing a Web-Based Solution for Efficient Complaint Processing at Faculty of Information Technology Tarumanagara University

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**Abstract:** The collection of student feedback, encompassing aspirations, and complaints, serves as a cornerstone in improving the quality of education and fostering institutional responsiveness in higher education. However, many universities, including Tarumanagara University, especially the Faculty of Information Technology still rely on manual processes for submitting these concerns, necessitating face-to-face interactions with faculty administrative personnel. This traditional approach often results in inefficiencies, including delayed responses and difficulty tracking complaints. This research addresses these issues by proposing the development of a web-based application designed to centralize and streamline the processing of student complaints and aspirations. Utilizing the waterfall model as the development methodology, the application is developed using ASP.NET with C# and SQL Server to ensure robust performance and data management. The outcomes of this initiative demonstrate significant improvements in both time efficiency and resource allocation for handling student feedback within the Faculty of Information Technology at Tarumanagara University. By implementing this web-based solution, the faculty aims to foster a more effective and responsive feedback mechanism that enhances student engagement and satisfaction.

**Keywords:** ASP.NET, Aspirations, Complaints, Web-Based Application, SQL Server

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## 1. Introduction

In the modern educational landscape, student feedback systems are pivotal for enhancing the quality of higher education [1]. These systems, particularly those capturing students' complaints and aspirations, ensure institutions remain responsive to their student populations' evolving needs and concerns [2]. Effective feedback mechanisms facilitate seamless communication between students and administrators, contributing to the continuous improvement of educational services and institutional processes [3].

At the Faculty of Information Technology, Tarumanagara University, the current feedback collection relies heavily on manual, face-to-face interactions. Students must meet faculty or administrative representatives to express their concerns, which, while encouraging direct communication, presents several limitations. These include inefficiencies like delayed responses, information loss, and barriers for students who may feel uncomfortable discussing complaints publicly [4] [5]. Furthermore, students often submit complaints using various communication channels such as email, response surveys, and social media, which makes it difficult for institutions to track and manage the information effectively [6]. This fragmented, rigid approach hampers the university's capacity to systematically analyze recurring issues, further complicating addressing student concerns.

Addressing these challenges necessitates a more dynamic, secure, and centralized feedback system [7]. This paper proposes the development of a flexible and secure web-based platform to enhance the efficiency of processing student complaints and aspirations [8]. By leveraging ASP.NET with C# and SQL Server, coupled with the waterfall development methodology, this system is designed to ensure robust performance, adaptability, and data security. Additionally, the platform incorporates features like customizable workflows to accommodate the evolving needs of the institution, user-specific functionality [9], and responsive design to ensure accessibility across devices, including desktops, tablets, and mobile phones. This responsiveness makes it easier for students to access the application anytime and anywhere, fostering greater engagement and usability.

The web-based system aims to achieve several objectives: improved accessibility, faster response times, dynamic tracking, and comprehensive analysis of student feedback. By providing a secure, adaptive, and centralized solution, the Faculty of Information Technology seeks to foster an environment of open communication and continuous improvement. This initiative will not only enhance the faculty's educational offerings but also redefine the campus experience, aligning with contemporary standards of institutional responsiveness and innovation.

The research underpinning the development of the web-based student feedback system for efficient complaint processing in higher education is informed by existing literature and prior studies in the field. These references are intended to highlight contributions made by earlier research, identify existing gaps in current practices, and establish a foundation for the proposed web-based solution. The following previous studies serve as a basis for this research:

The website LAPOR! (Layanan Pengaduan Online Rakyat) Launched by the Ministry of Administrative and Bureaucratic Reform of Indonesia serves as a vital platform for citizens to submit complaints and provide feedback regarding public services. This initiative aligns with the global trend of enhancing public service delivery through digital means, reflecting a commitment to transparency, accountability, and citizen engagement. *LAPOR!* Functions as a centralized system that facilitates the lodging of complaints across various government sectors, enabling users to report issues ranging from public health and education to infrastructure and law enforcement. The existence of systems like *LAPOR*! has been notably beneficial in bridging the gap between the government and the citizens, as evidenced by several studies highlighting the importance of digital feedback mechanisms in improving governance. For instance, research has shown that online complaint systems not only empower citizens to voice their concerns but also prompt governmental responses that can lead to policy changes and improved service delivery. Studies suggest that such platforms have the potential to enhance public trust in government institutions by demonstrating responsiveness and a willingness to address public grievances. Moreover, the digitalization of complaint processing significantly reduces the inefficiencies associated with traditional methods. By streamlining communication and feedback processes, these platforms enable faster response times and more effective resolution of complaints. Various studies emphasize that centralized complaint mechanisms can enhance data collection, allowing for better analysis of trends and recurring issues, which can be instrumental in informing policy decisions and service enhancements [10].

Oghenekaro and Ibitomisin present an innovative approach to managing student complaints through a comprehensive web-based platform. This research aligns with the growing recognition of the importance of efficient feedback mechanisms in enhancing the educational experience and assuring institutional accountability. By implementing an integrated system, the study illustrates how digital solutions can streamline the process of lodging complaints, facilitating better communication between students and administrative bodies. In particular, the research highlights several key benefits of a web-based complaint system. First, it emphasizes the accessibility of the platform for students, allowing them to submit complaints at their convenience without the barriers typically associated with traditional methods, such as in-person visits or paper-based submissions. The digital nature of the system enhances responsiveness, as complaints can be tracked

and managed in real time, leading to faster resolutions and improved student satisfaction [11].

Okokpujie et al. propose an innovative approach to managing student complaints through a comprehensive web-based platform. This research reflects the growing recognition of the importance of efficient feedback mechanisms in enhancing the educational experience and ensuring institutional accountability. By implementing an integrated digital system, the study demonstrates how technology can streamline the process of lodging complaints, thereby fostering more effective communication between students and administrative bodies. The research highlights several significant advantages of a web-based complaint management system. Foremost among these is the accessibility it provides, allowing students to submit complaints conveniently without encountering the challenges associated with traditional methods, such as in-person visits or paper-based submissions. Additionally, the digital nature of the platform facilitates real-time tracking and management of complaints, enabling faster resolutions and significantly improving student satisfaction. These features underscore the potential of web-based systems to create a more responsive and student-centered educational environment [12].

Mohammed et al. examine the development and implementation of an online platform specifically designed to manage student complaints within educational institutions. This research highlights the critical role of efficient feedback mechanisms in improving student satisfaction and promoting institutional accountability. A significant finding from the study is the effectiveness of web-based systems in streamlining the complaint process. By offering a digital platform for students to submit their concerns, the system eliminates barriers associated with traditional methods, such as in-person meetings or paper-based submissions. This increased accessibility not only encourages students to voice their concerns but also ensures that their feedback is systematically recorded, enabling institutions to respond more efficiently to student needs.

The study underscores the importance of transparency and real-time tracking in complaints management systems. Providing students with the ability to monitor the status of their complaints fosters a sense of ownership and trust in the process, as they can view updates on the actions being taken to address their concerns. These features are vital in cultivating a responsive educational environment that values and prioritizes student input [13].

## 2. Literature Review

### *2.1 Website*

The concept of a website is rooted in the idea of a collection of interconnected pages that can be accessed via the internet through web browsers. A website serves as a versatile platform for distributing various forms of digital content, including text, audio, images, videos, and animations. This dynamic nature makes websites indispensable tools for communication, education, and commerce in today's digital landscape.

In the development of websites, foundational programming languages play a pivotal role. Two of the most essential languages in web development are HTML (HyperText Markup Language) and CSS (Cascading Style Sheets). HTML is responsible for structuring the content of web pages, enabling developers to create elements such as headings, paragraphs, lists, links, and other components necessary for organizing information effectively. CSS, on the other hand, is used to enhance the visual presentation of the website, allowing developers to define layouts, colors, fonts, and overall design aesthetics. Together, these languages form the foundation of modern web development, enabling the creation of websites that are not only functional but also visually engaging.

The significance of a well-structured and visually appealing website cannot be overstated, as it directly influences user experience and engagement. A website that seamlessly integrates HTML and CSS is more likely to enhance user satisfaction, encouraging visitors to explore its content further and interact with its features effectively [14].

Websites can be categorized into several types based on their nature and functionality, including static websites and dynamic websites.

2.1.1 *Static Websites*: Static websites are characterized by content that remains constant and does not change automatically. Any updates to the content must be performed manually by a programmer. These websites are typically built using HTML and CSS, providing a fixed layout and unidirectional communication, meaning the content is only displayed without interactive elements. Static websites are often used for simple purposes, such as personal portfolios or corporate profiles. Because of their simplicity, static websites are suitable for situations where content updates are infrequent or unnecessary [13].

2.1.2 *Dynamic Websites*: Dynamic websites, on the other hand, are designed to deliver content that can change automatically based on user interactions. These websites enable bidirectional communication between the user and the website owner. Dynamic websites often utilize databases to manage and present diverse and adaptable content. The web-based student feedback system for efficient complaint processing in higher education is an example of a dynamic website. This system allows students to submit complaints and suggestions, which are then processed and analyzed by the administrators, demonstrating the flexibility and responsiveness of dynamic websites [13].

### *2.2 Aspiration*

Aspirations refer to the hopes and ambitions of individuals or groups aimed at achieving specific objectives. These aspirations are often shaped by social influences and the underlying motivations that drive individuals or groups toward their goals. Understanding the concept of aspirations is particularly important in various contexts, especially within educational settings, where students strive to improve their experiences and outcomes. [15].

Within the framework of a web-based information system for student aspirations and complaints at the Faculty of Information Technology, Tarumanagara University, aspirations represent the desires and expectations of students to improve educational quality and the high education environment. Studies have highlighted the critical role of student aspirations in influencing educational policies and institutional practices. By expressing their needs and expectations, students can actively engage in discussions about educational reform and contribute to creating a more supportive and effective learning environment.

### *2.3 Complaint*

Complaints are defined as formal reports or grievances submitted by individuals or groups to relevant authorities regarding dissatisfaction with services, products, or specific conditions [16]. The complaint process is a critical component of any organization or institution, as it plays a pivotal role in driving quality improvement and enhancing service delivery through the resolution of reported issues. Effective complaint management systems enable organizations to identify areas requiring improvement, fostering a responsive and proactive approach to meeting the needs of students and the public [17].

The importance of managing complaints lies in the ability of organizations and institutions to collect and address them in a structured manner. Such a structured approach not only ensures that issues are resolved effectively but also contributes to the continuous improvement of organizational processes and services. By systematically managing complaints, organizations can enhance their accountability and responsiveness, ultimately fostering higher levels of satisfaction among stakeholders.

Moreover, the concept of complaints is formalized within regulatory frameworks, such as Presidential Regulation (Perpres) No. 76 of 2013 on the Management of Public Service Complaints. Article 1, Paragraph 8 of this regulation defines a complaint as a grievance submitted by a complainant to the public service complaint manager regarding the execution of services that fail to meet established standards or involve negligence and/or violations by the service provider. This legal framework underscores the necessity of formal processes for managing complaints, ensuring that grievances are taken seriously and addressed appropriately [18].

### *2.4 Unified Modelling Language*

The Unified Modeling Language (UML) is a standardized modeling language designed to specify, visualize, develop, and document software systems. By providing a set of graphic notation techniques, UML enables the creation of visual models for object-oriented software systems. It plays an integral role in the software development process, fostering effective communication among stakeholders such as developers, designers, and business analysts. This ensures that all parties involved share a clear understanding of the system's design and functionality [19].

UML encompasses a variety of diagrams, each serving distinct purposes and addressing different aspects of system modeling. These diagrams can be broadly categorized into two primary types: structural diagrams and behavioral diagrams.

2.4.1 *Structural Diagrams*: Structural diagrams capture the static aspects of a system, focusing on the organization and interrelationships of its components. Key diagrams in this category include:

2.4.2 *Class Diagram*: This diagram represents the classes within a system, along with their attributes, methods, and the relationships among them. It serves as a blueprint for the system's architecture, providing a detailed view of its structure [20].

2.4.3 *Behavioral Diagrams*: Contrarily, behavioral diagrams represent the dynamic aspects of the system, capturing the interactions and behaviors of objects. Notable diagrams in this category include:

2.4.4 *Use Case Diagram*: This diagram provides a high-level view of the system's functionality by illustrating the interactions between users (actors) and the system. It helps identify the system's key functionalities from the user's perspective [21].

2.4.5 *Sequence Diagram*: Sequence diagrams detail the order of interactions between objects over time, providing valuable insights into the flow of control and data within the system.

2.4.6 *Activity Diagram*: This diagram represents the flow of control and data within a system, depicting the dynamic nature of the processes involved. It is particularly useful for modeling workflows and business processes.

UML supports the integration of diverse perspectives in the analysis and design of software systems, promoting a comprehensive understanding of both structural and behavioral components. UML's standardized notation functions as a universal language, minimizing ambiguity and enhancing collaboration among team members. This leads to more efficient and effective software development practices, ultimately improving the quality of the resulting systems.

## 3. Method

### *3.1 Waterfall Method*

The Waterfall method is a traditional software development approach characterized by its linear and sequential phases, allowing each stage of the project to be completed before moving on to the next [22]. This methodology provides a structured framework for developing information systems, particularly in situations where requirements are well understood from the outset and unlikely to change during the development process [23]. In this research, the Waterfall methodology was adopted with enhancements to address the specific needs of a robust, responsive, and efficient web-based student feedback system. The Waterfall method consists of several key phases:

3.1.1 *Requirement Analysis*: This initial phase involves gathering and documenting the requirements of stakeholders. It is crucial to clearly define what the system should accomplish to prevent any ambiguities later in the process. This phase focuses on creating a platform that allows students to submit complaints or share aspirations with the faculty, ensuring transparency and an organized system for communication and response.

Figure 1 illustrates the operational process of a web-based student feedback and complaint system designed for students at the Faculty of Information Technology, Tarumanagara University. The process begins with students logging into the platform. Once logged in, they are presented with the option to choose between aspirations or complaints. For aspirations, students can fill out the aspiration form to provide constructive suggestions or criticisms. Upon submission, the system records the input without requiring further action from the faculty, as aspirations serve solely to gather input from students.

For complaints, students must complete a detailed complaint form. After submission, the complaint is reviewed by the faculty. At this stage, the faculty decides whether to reject or process the complaint. If the complaint is rejected, students are notified, along with the reason for rejection. This ensures transparency and provides constructive feedback to the student. If the complaint is approved for processing, the faculty addresses the issue and attaches any supporting evidence or response documentation. Once the faculty has resolved the complaint, its status is updated to "Completed." At this point, students have the opportunity to provide a satisfaction rating, ranging from one to five stars, along with comments or feedback on the handling of their complaints.

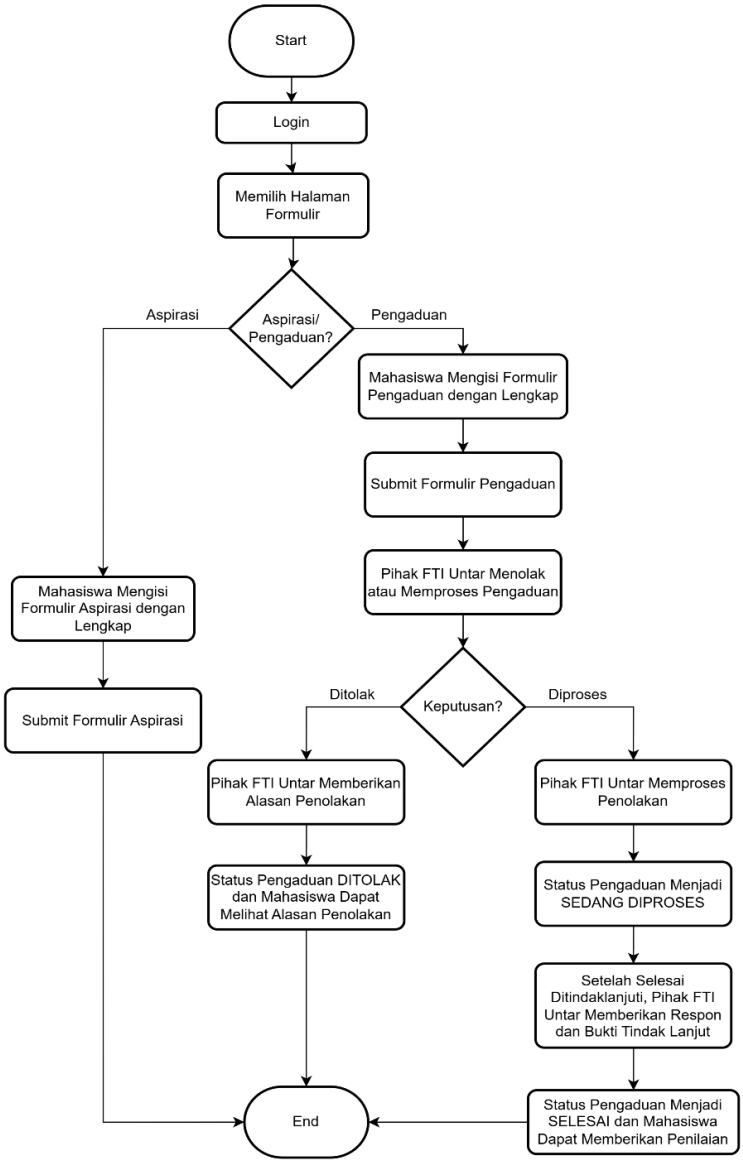


**Figure 1.** Flowchart System

3.1.2 *System Design*: In this phase, the system architecture is designed based on the requirements identified in the previous step. This includes defining hardware and system requirements, as well as establishing system models that outline how the software will function.

3.1.3 *Implementation*: During the implementation phase, actual coding takes place. The developer creates the software components according to the specifications outlined in the design document. This is where the theoretical designs are turned into a working product. The system was developed using ASP.NET with C# for back-end functionality and SQL Server for secure and reliable data management. Mobile responsiveness was achieved through modern web design techniques, ensuring that the platform delivered an optimal user experience on both web and mobile interfaces.

3.1.4 *Integration*: Once the implementation phase is complete, the system components are integrated into a unified platform. This phase ensures that all modules work together seamlessly, with a focus on proper communication between different parts of the system and compatibility with existing infrastructure.

3.1.5 *Testing*: After integration, the system undergoes rigorous testing to identify and rectify any defects. This phase ensures that the system meets the predefined requirements and functions correctly in all expected scenarios.

3.1.6 *Maintenance*: The final phase of the Waterfall model is maintenance, where the system is monitored and updated as needed. This includes fixing any arising issues and making minor enhancements to improve functionality over time.

While the Waterfall method provides a clear and structured approach to software development, it may not be suitable for all projects, particularly those where requirements are likely to evolve [23].

### *3.2 System Design*

The Unified Modeling Language (UML) diagrams presented offer a detailed and comprehensive blueprint of the Web-Based Student Aspiration and Complaint Information System, effectively illustrating its functionality and underlying data architecture. These diagrams are critical for ensuring that the system operates as intended, while also addressing key considerations such as web security and data protection.

The first diagram, depicted in Figure 2, is a Use Case Diagram that highlights the primary interactions between the system and its users. Key actors, such as students and administrative staff, are represented, emphasizing their respective roles and responsibilities within the system. The diagram outlines various use cases, including user authentication (login and logout), submission of complaints and aspirations, viewing histories of previous submissions, and accessing complaints provided by others. For administrative staff, functionalities like managing user accounts and evaluating complaints are also depicted. This use case diagram underscores the system's role in streamlining the submission and management of student concerns, thereby fostering a more responsive and efficient process.

The second diagram, shown in Figure 3, is a Class Diagram that provides a detailed representation of the system's data structure and the relationships between its components. Key classes, including User, Aspiration and Complaint, Feedback Response, and Status, are depicted with their essential attributes, such as user IDs, feedback content, timestamps, and complaint statuses. The relationships between these classes illustrate how the system enables users to submit multiple complaints and aspirations, while also allowing administrators to respond effectively. This structured approach ensures accurate tracking of complaint progress and facilitates efficient management of user feedback.

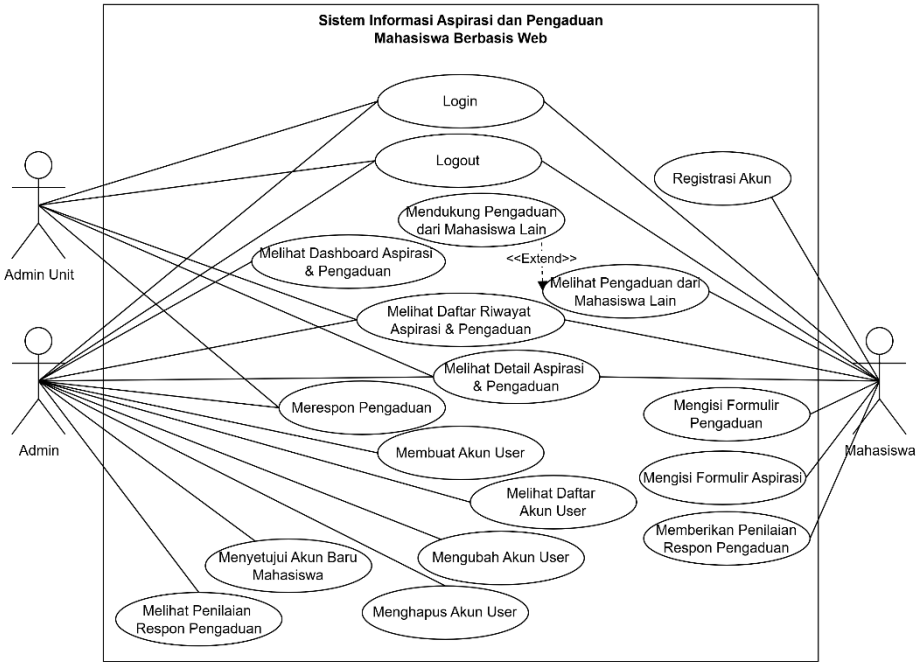


**Figure 2.** Use Case Diagram

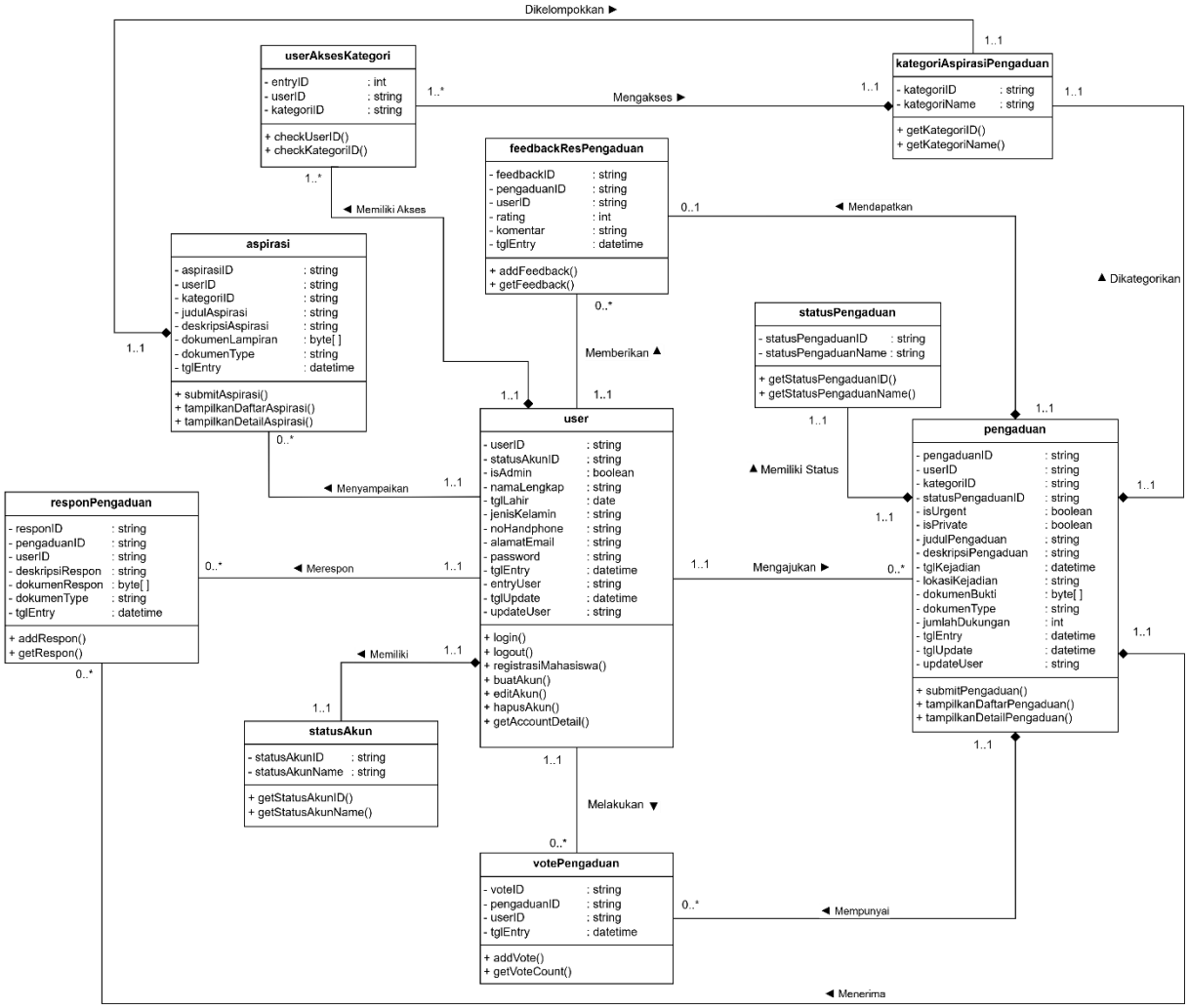


**Figure 3.** Class Diagram

The provided logical database design outlines the architecture of the Web-Based Student Aspiration and Complaint Information System shown in Figure 4, highlighting the relationships and organizational structure of the data used within the system. At the core of the database is the User table, which stores essential information about individuals interacting with the system, such as user ID, password, and user type (isAdmin). This table serves as the main anchor for user authentication and role management, ensuring that only authorized users can access specific functionalities.

The *StatusPengaduan* table plays a crucial role in tracking the progress and current state of complaints. By including fields to denote the complaint's status, this table ensures transparency and enhances the ability of both users and administrators to monitor complaint resolution. Proper indexing of the status_id field ensures faster query performance for large datasets.

The *Pengaduan* table contains critical details regarding each complaint lodged by users, including a unique complaint ID, category ID, user ID, complaint details, and associated status. The establishment of a foreign key relationship between the Complaint table and the User table ensures that every complaint is linked to the respective user, facilitating efficient tracking and management of user complaints.

The *ResponPengaduan* table complements the Complaint table by enabling administrators to provide structured responses to each submitted complaint. This table links each response to its corresponding complaint via the complaint_id foreign key, ensuring that all user submissions are systematically addressed. Implementing logging mechanisms for administrative actions helps maintain transparency and accountability, allowing institutions to trace responses.

Additionally, the *Aspiration* table is included in the design, capturing user aspirations regarding improvements in the educational environment. Similar to the Complaint table, it includes fields such as aspiration ID, user ID, and aspiration details, facilitating a comprehensive approach to managing both complaints and aspirations within the same system. The *KategoriAspirasiPengaduan* table organizes different types of complaints and aspirations, ensuring that users can classify their submissions appropriately. This classification not only aids in data analysis but also helps the administration identify trends in the types of issues raised by students.

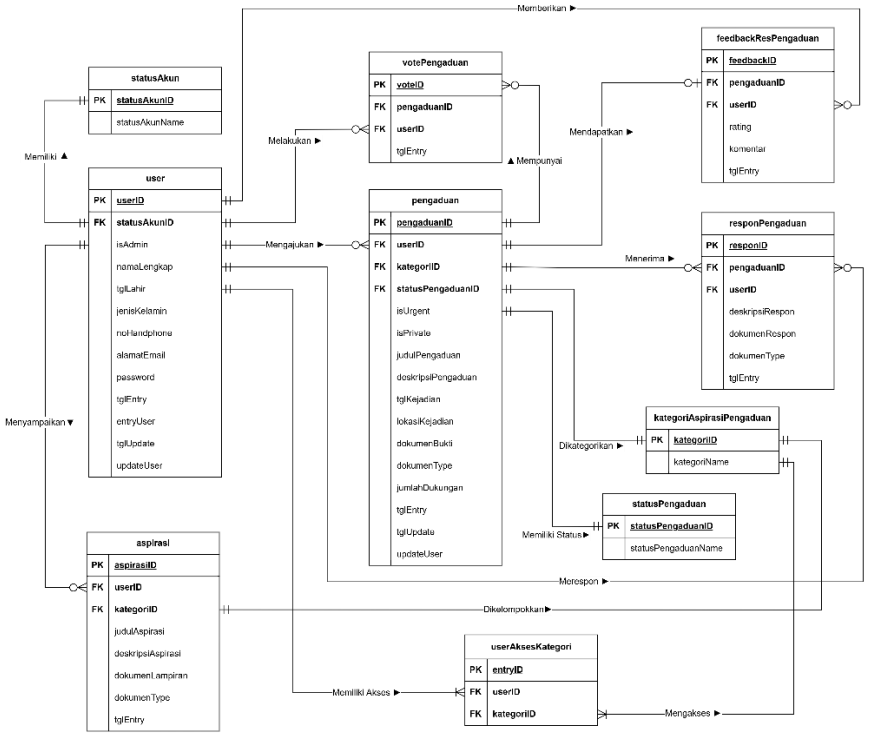


**Figure 4.** Logical Database Design

## 4. Result and Discussion

### *4.1 Implementation*

The implementation of the Web-Based Student Aspiration and Complaint Information System is effectively demonstrated through the administrative and student-facing interfaces, showcasing functionalities designed to streamline complaint management, response evaluation, and user engagement. Screenshots of these interfaces highlight essential features that ensure both usability and security in handling sensitive student feedback.

Figure 5 presents the *Daftar Aspirasi & Pengaduan* (List of Aspirations & Complaints) view, which provides a comprehensive summary of all submitted complaints in a tabular format. The table includes essential details such as the Title of the Complaint, Student Name, Category, Submission Date, and the Actions available to the administrator. The inclusion of filtering options enhances the platform's usability by allowing administrators to efficiently manage and sort complaints based on categories or status. This functionality ensures that administrators can quickly locate and address complaints promptly. This page enables administrators to view the details of each complaint submission based on their level of urgency. The system highlights submissions with higher urgency, allowing administrators to prioritize their responses effectively. By integrating this prioritization feature, the platform ensures that critical issues are addressed promptly while maintaining an organized approach to managing all complaints.

Figure 6 presents the Detail Aspiration/Complaint view, where administrators can review individual complaints submitted by students. Key elements displayed include the Complaint ID, Title of the Complaint, Status, Student Name, and details related to the Category and Date Submitted. This organized layout enables administrators to efficiently track the status of each complaint, ensuring that no submission is overlooked and that responses are timely and relevant. In addition to reviewing the details, this page also allows administrators to take specific actions on each submission. They can either reject the complaint, provide a reason for the rejection, or process the complaint, initiating the resolution process. These actions ensure that every complaint is addressed appropriately and transparently. The ability to track status changes and record decisions further enhances accountability and supports effective communication between students and the administration.

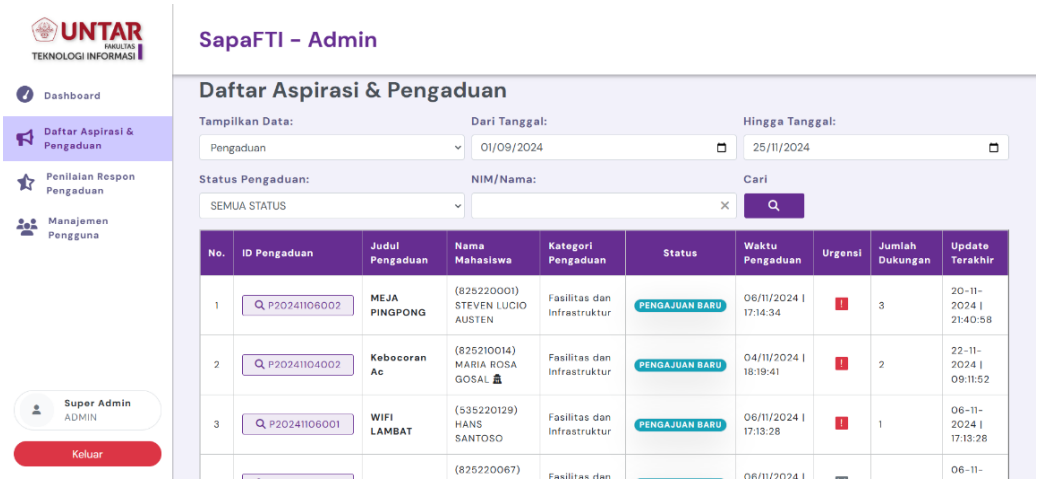


**Figure 5.** List of Aspiration and Complaint Page

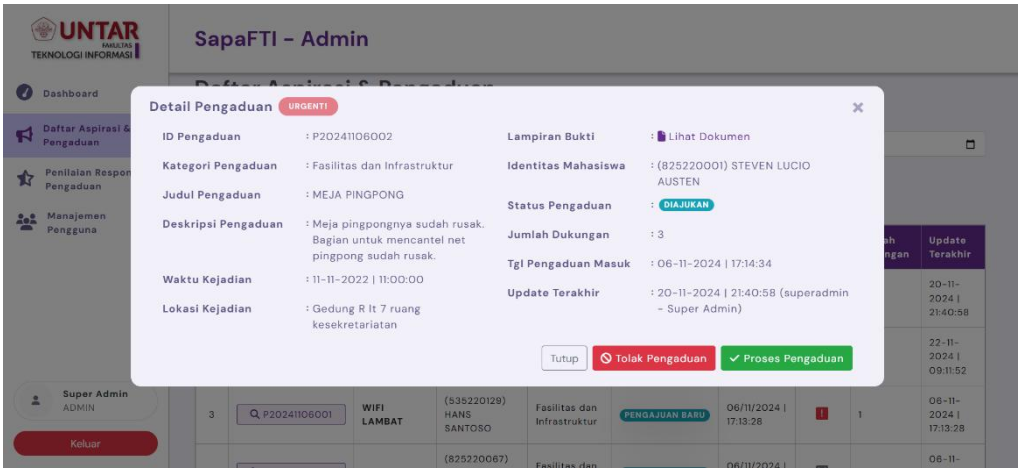


**Figure 6.** Detail of Aspiration/Complaint

Figure 7 displays the Feedback Rating List, a section of the administration panel designed to offer an organized view of feedback related to student complaints. This feature enhances the management and evaluation of responses, providing administrators with a clear and structured format to assess the quality of feedback delivered to students. A key feature of this section is the inclusion of Ratings and Comments, enabling students to provide feedback on the faculty's responses to their complaints. This allows administrators to review and evaluate the effectiveness of the responses based on the student's feedback.

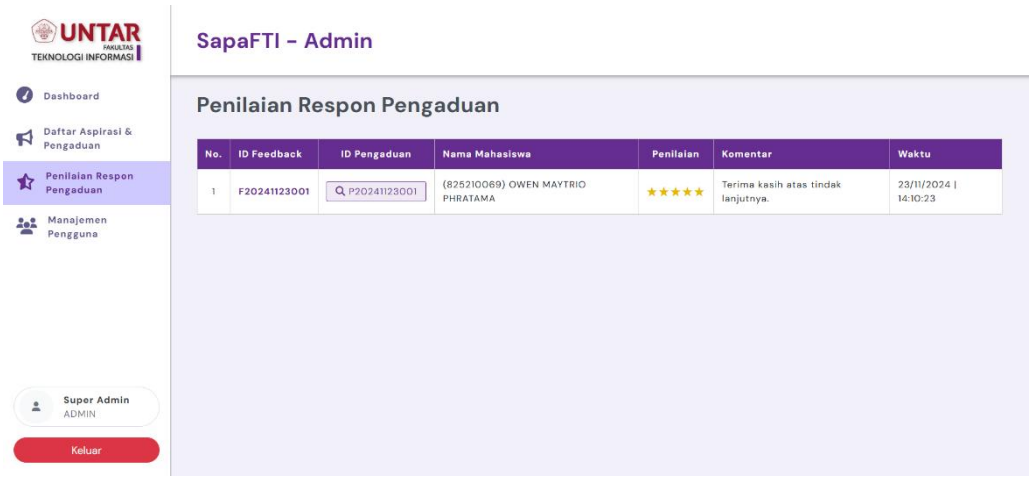


**Figure 7.** Feedback Rating List

The implementation of the Web-Based Student Aspiration and Complaint Information System is effectively demonstrated through the student-facing interface of the SapaFTI application, as shown in Figure 8. This part of the system is designed to enhance user engagement by providing a user-friendly platform for students to submit their complaints and aspirations, as well as review existing complaints.

The interface prominently features a section titled "Top Complaints," which highlights the most relevant or urgent complaints currently lodged. Each listed complaint includes a brief description, offering users insights into the nature of the issues being raised. This level of transparency is essential in fostering an open environment where students feel comfortable discussing their concerns. A key feature of the interface is the

Upvote system, which allows users to express support for specific complaints. This functionality empowers students to highlight issues they consider most important, thereby helping prioritize which complaints should receive immediate attention from the administration.

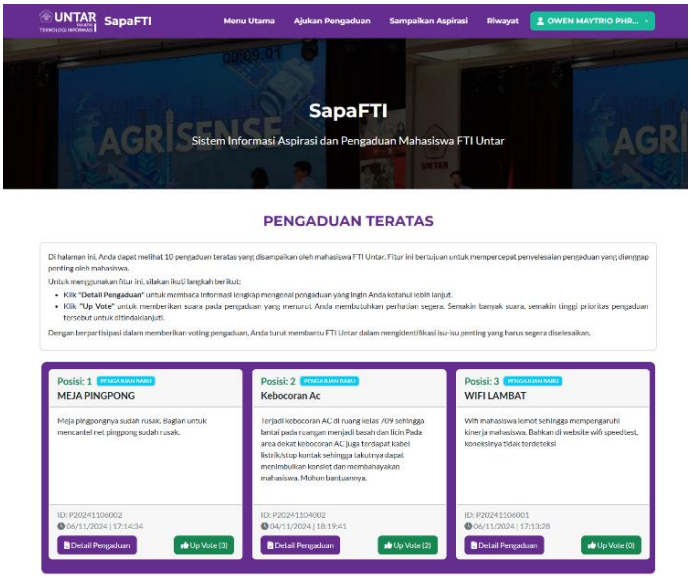


**Figure 8.** Homepage Student Interface

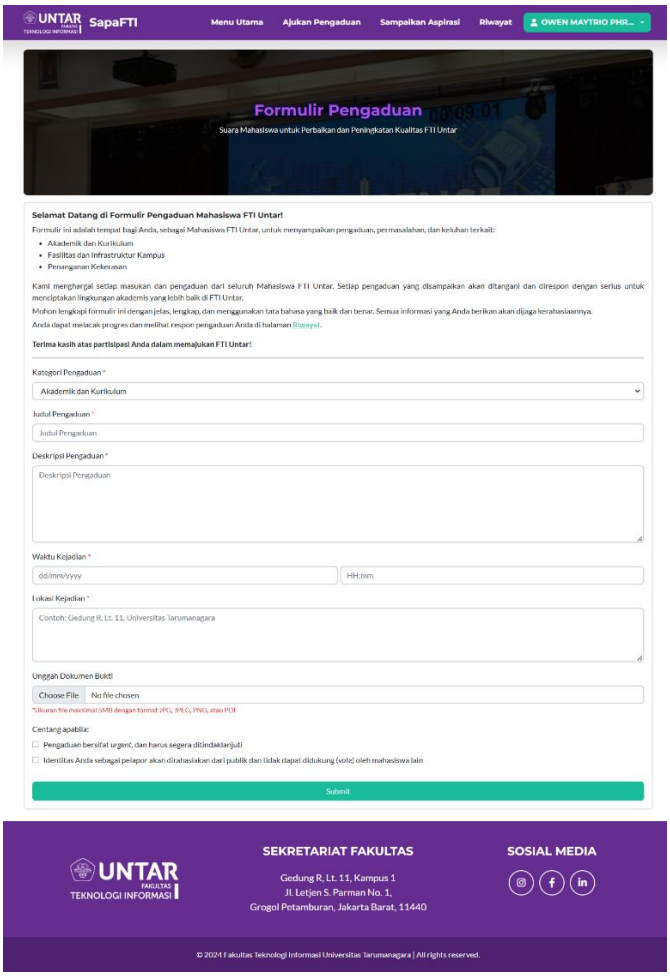


**Figure 9.** The Complaint Form

The Complaint Form in Figure 9 features several key input fields that guide students in providing detailed information about their complaints. This information enables administrators to understand the circumstances surrounding the issue, facilitating a more accurate and timely response.

Similarly, the Aspiration Form in Figure 10 mirrors the complaint form's structure, promoting consistency in user experience while submitting feedback. Users can provide an Aspiration Title and Aspiration Description, encouraging students to articulate their hopes and suggestions for improvement within the faculty.

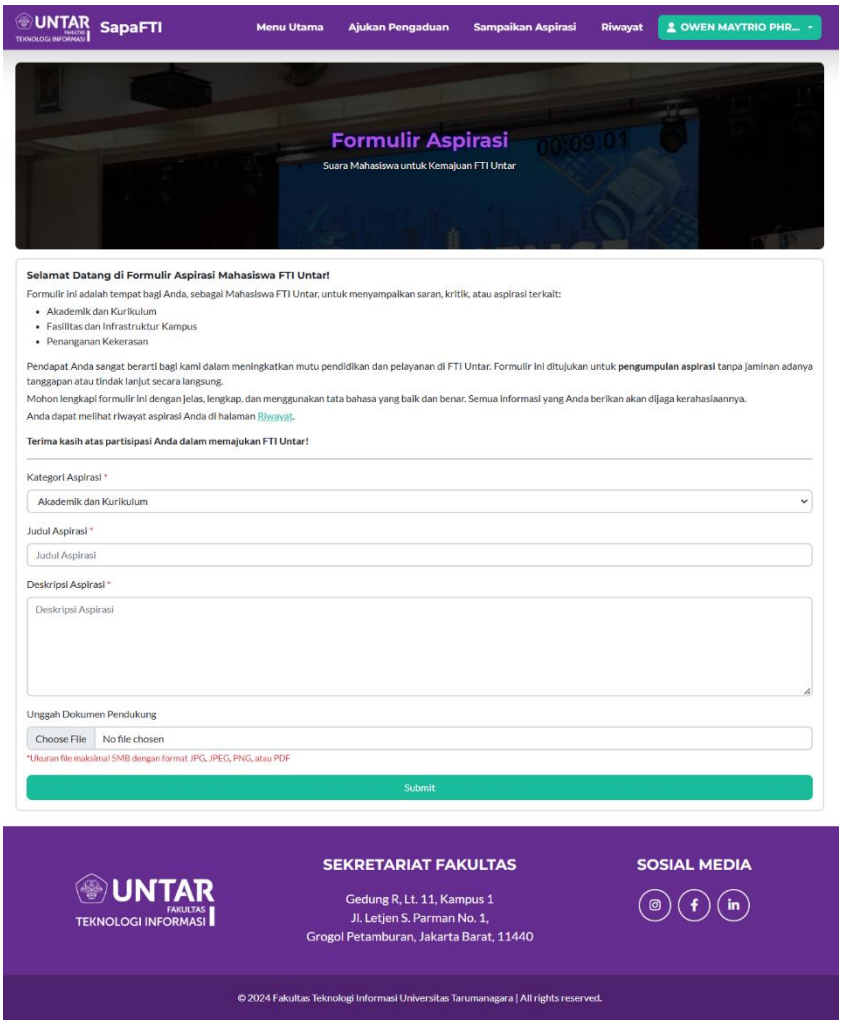


**Figure 10.** Aspiration Form

## *4.2 System Testing*

System testing in the development of the Web-Based Student Aspiration and Complaint Information System ensuring that the application functions correctly and meets user requirements. Two prominent methods used for system testing in this context are Black Box Testing and the System Usability Scale (SUS).

### *4.2.1 Black Box Testing*

Black Box Testing is a testing methodology that focuses on evaluating the functionality of the system without any knowledge of its internal workings or code structure. This approach is particularly useful for assessing whether the application behaves as expected from a user's perspective [24]. In the context of the *SapaFTI* application, Black Box Testing involved creating test cases based on the requirements and specifications outlined during the design phase.

This method helps identify both functional and non-functional defects, including issues related to usability, performance, and user interface errors, without delving into the system's internal logic. By conducting thorough Black Box Testing, it was ensured that all features were functioning correctly and that the system met the specified requirements as intended.

The results from the test case scenarios conducted using the Black Box Testing methodology indicate that all features of the Web-Based Student Aspiration and Complaint Information System have passed validation successfully, as shown in Table 1. This outcome demonstrates that the application functions as intended according to the specified requirements, ensuring effective performance in various operational areas. The results from the various interactions, including assessments of navigation and overall performance, were positive across all test cases. The validation of features through Black Box Testing confirms that the system meets the intended functionality and can handle expected user inputs seamlessly.

**Table 1.** The Blackbox Testing Result

| Page | Test Case | Expected Result | Result |
|---|---|---|---|
| **Login** | Filling in the login form with valid admin credentials | Successfully logs in and displays the Aspirations & Complaints Dashboard | Valid |
| | Filling in the login form with invalid admin credentials | The system displays the error message: "Username or Password is incorrect" | Valid |
| **Aspirations & Complaints Dashboard** | Opening the dashboard page and displaying aspiration and complaint statistics | Displays data on aspirations and complaints | Valid |
| **Aspirations and Complaints List** | Viewing detailed data of a complaint | Displays detailed data of the complaint | Valid |
| | Viewing the preview of the Supporting Document for the complaint | Displays a modal preview of the document | Valid |
| | Downloading the Supporting Document for the complaint | Successfully downloads the Supporting Document for the complaint | Valid |
| | Confirming the rejection of a complaint by filling in the reason for rejection | The complaint status successfully changes to REJECTED, and the reason for rejection is saved as Complaint Response. | Valid |
| | Confirming the processing of a complaint | The complaint status successfully changes to IN PROCESS | Valid |
| | Submitting a response to the complaint without filling in the response | The system displays the warning message: "Please provide a complete response!" | Valid |
| | Submitting a response to the complaint without attaching a Supporting Document | The system displays the warning message: "Please provide a complete response!" | Valid |
| | Viewing the preview of the Response Supporting Document uploaded | Displays a modal preview of the document | Valid |
| | Submitting a response by filling in the Complaint Response and the Response Supporting Document | Response and document are successfully saved, and the complaint status changes to Completed. | Valid |
| | Downloading the Supporting Document for Aspirations | Successfully downloads the Supporting Document for Aspirations | Valid |

| Page | Test Case | Expected Result | Result |
|---|---|---|---|
| **Feedback Evaluation of Complaints** | Opening the page and displaying response evaluation data | Displays the data for response evaluations of complaints | Valid |
| | Viewing detailed data of the complaint | Displays detailed data of the complaint | Valid |
| **User Management** | Opening the page and displaying user data | Displays user data | Valid |
| | Creating a new account without filling in the user form completely and correctly | The system displays the warning message: "Please fill out the form completely!" | Valid |
| | Creating a new account and filling in the user form completely and correctly | Displays a pop-up confirming the creation of a new account | Valid |
| | Confirming the creation of a new account | The new account is successfully created | Valid |
| | Viewing details of the user account | Displays a modal with user account details | Valid |
| | Confirming the edit of user data | User account data is successfully updated | Valid |
| | Pressing the "Deactivate Account" button | Displays a pop-up confirming the deactivation of the user account | Valid |
| | Confirming the deactivation of the user account | The user account is successfully deactivated | Valid |
| | Pressing the "Activate Account" button | Displays a pop-up confirming the activation of the user account | Valid |
| | Confirming the activation of the user account | The user account is successfully activated | Valid |
| | Pressing the "Delete Account" button | Displays a pop-up confirming the deletion of the user account | Valid |
| | Confirming the deletion of the user account | The user account is successfully deleted | Valid |
| **Side Navigation Bar** | Pressing the "Logout" button | Displays a pop-up confirming the logout | Valid |
| | Confirming logout | The user session is successfully ended, and the Login page is displayed | Valid |

### *4.3 System Usability Scale*

The System Usability Scale (SUS) testing conducted among students of the Faculty of Information Technology at Tarumanagara University involved the use of a questionnaire consisting of ten statements designed to assess the usability of the Web-Based Student Aspiration and Complaint Information System. This feedback mechanism aimed to evaluate how users perceive the system in terms of overall usability and effectiveness [25].

The questionnaire was distributed via Google Forms, resulting in a total of 21 respondents. Each respondent rated their agreement with the ten statements on a Likert scale from 1 to 5, where 1 indicated strong disagreement and 5 indicated strong agreement. The questions were carefully crafted to cover various aspects of usability, including ease of use, user confidence, and the overall user experience.

To calculate the SUS scores from the responses, specific scoring rules were applied. For odd-numbered questions, the score was adjusted by subtracting 1 from the raw score (n - 1), while for even-numbered questions, the score was derived by subtracting the raw score from 5 (5 - n). This adjustment ensures that higher scores reflect better usability perceptions. The total score from all ten questions was then multiplied by 2.5 to scale the results to a range from 0 to 100, providing a standardized measure of usability [26].

The results obtained from the calculations, presented in Table 2, show that the Web-Based Student Aspiration and Complaint Information System achieved a score of 81.43 based on feedback from 21 respondents. This score indicates a strong perception of

usability among users and is crucial for understanding the system's effectiveness in meeting user needs.

**Table 2.** System Usability Scale (SUS) Score

| **Respondents** | **Questions** | | | | | | | | | | **Score** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** | **Q6** | **Q7** | **Q8** | **Q9** | **Q10** | |
| R1 | 4 | 4 | 4 | 3 | 4 | 4 | 3 | 4 | 4 | 2 | 90 |
| R2 | 3 | 3 | 3 | 4 | 4 | 2 | 3 | 3 | 3 | 1 | 72.5 |
| R3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 100 |
| R4 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 4 | 3 | 4 | 90 |
| R5 | 3 | 3 | 3 | 2 | 3 | 4 | 3 | 3 | 3 | 1 | 70 |
| R6 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 3 | 95 |
| R7 | 4 | 1 | 3 | 0 | 3 | 1 | 3 | 4 | 3 | 3 | 62.5 |
| R8 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 70 |
| R9 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 72.5 |
| R10 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 92.5 |
| R11 | 3 | 4 | 4 | 4 | 3 | 1 | 4 | 4 | 3 | 4 | 85 |
| R12 | 3 | 3 | 3 | 4 | 4 | 2 | 3 | 3 | 1 | 3 | 72.5 |
| R13 | 4 | 1 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 92.5 |
| R14 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 67.5 |
| R15 | 4 | 3 | 3 | 1 | 4 | 4 | 3 | 3 | 3 | 2 | 75 |
| R16 | 4 | 1 | 3 | 3 | 4 | 4 | 4 | 1 | 4 | 2 | 75 |
| R17 | 4 | 3 | 3 | 1 | 4 | 4 | 3 | 3 | 3 | 2 | 75 |
| R18 | 4 | 1 | 3 | 3 | 4 | 4 | 4 | 1 | 4 | 2 | 75 |
| R19 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 95 |
| R20 | 3 | 3 | 3 | 4 | 3 | 3 | 4 | 4 | 4 | 3 | 85 |
| R21 | 4 | 2 | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 85 |
| | | | | | | | | | | **Avarage Score** | **81.43** |

In evaluating the SUS score, there are three critical perspectives to consider: acceptability ranges, grade scale, and adjective ratings. These perspectives offer a comprehensive framework for interpreting usability scores. As illustrated in Figure 11, the score of 81.43 categorizes the system within the Acceptable range, assigns a Grade B, and is rated as Good. This classification indicates that the web-based system functions well, providing a user-friendly experience that aligns with the expectations of its users.

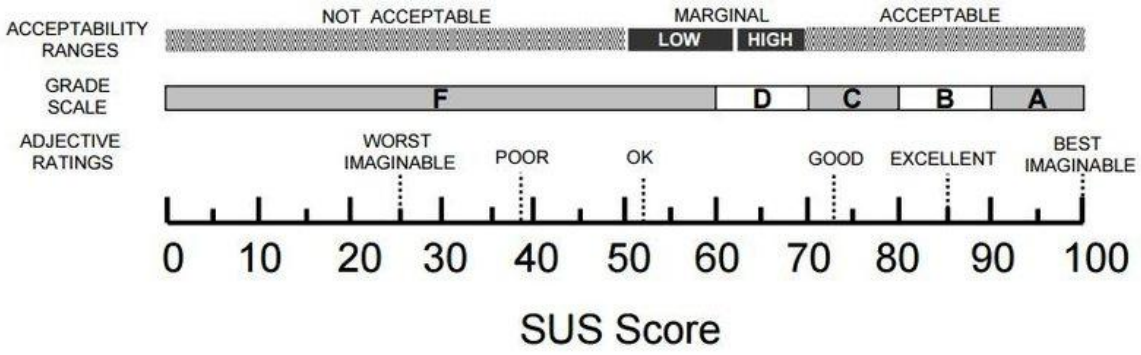


**Figure 11.** System Usability Scale (SUS) Score Measurement

## 5. Conclusion

The development and implementation of the web-based Student Feedback System for efficient complaint processing at the Faculty of Information Technology, Tarumanagara University, marks a significant advancement in the management of student complaints within higher education. This system effectively addresses the limitations of traditional manual processes, which often lead to inefficiencies, delays, and limited transparency. By offering a structured and user-friendly platform, the system enables students to seamlessly submit their complaints and aspirations, ensuring that their concerns are heard and acted upon.

Furthermore, the positive evaluation of the system through the System Usability Scale (SUS), with an impressive score of 81.43, reflects a high level of user satisfaction. This score categorizes the system's usability as "Acceptable" and "Good," demonstrating effective design and user engagement. Students have expressed confidence in using the system, which has enhanced their involvement in the feedback process.

This study highlights the potential for digital transformation in student administration, illustrating how technology can support a responsive and accountable feedback mechanism. The web-based Student Feedback System at the Faculty of Information Technology, Tarumanagara University, not only improves the efficiency of complaint processing but also fosters a more inclusive academic environment that prioritizes student needs. Future enhancements, guided by user feedback, will ensure that the system continues to evolve and remains a reliable tool for promoting effective communication between students and university administration, ultimately enriching the educational experience at the Faculty of Information Technology, Tarumanagara University.

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