

## Optimizing IT Support Operations with Web Development at PT Global Loyalty Indonesia

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### Abstract

IT Support at the company PT Global Loyalty Indonesia is considered to have less effective performance and often does repetitive work, such as several problems that have been resolved before that require a lot of experiments, when the same thing happens on a different day, the time-consuming experimental actions will be carried out again, so that the completion of the work takes a long time, this is because there is no recording of the steps that have previously been carried out. In addition, work requests to IT Support are only done verbally without detailed data collection, besides that ineffective standard operating procedures make IT Support employees confused when problems occur that have never been experienced before, so the work process takes a long time. To overcome these problems, a website system was created using HTML, CSS, React JS and Bootstrap with the Agile development method. After the website was completed and applied to the IT Support section, it was obtained from the results of interviews by the head of IT Support, that the work in the section became more organized, more recorded and easier to monitor by the head of IT Support, besides that it was also stated by the head of IT Support that the website created was very helpful and made IT Support work easier, with an average user acceptance of 86.4% which was calculated using the user acceptance test method

**Keywords:** IT Support; PT Global Loyalty Indonesia; Study case, Website System

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### INTRODUCTION

PT Global Loyalty Indonesia is a retail enterprise called "Alfa Gift" that is owned by the Alfa Group, a holding company. The divisions are categorised into IT operations, IT development, marketing, and customer service. The research focuses on the IT Support department of PT Global Loyalty Indonesia, which is considered to have less effective performance and frequently engages in repetitive tasks. This is attributed to the lack of accessible standard operating procedures for the IT Support staff, as evaluated by the company owner and head of IT Support. The less effective performance evaluation is hampered by recurrent problems that require significant testing and time-consuming resolutions. These conditions make it difficult to evaluate performance. A member of the IT Support staff will carry out the same experimental processes again in the event that the same problem occurs on a different day. This will ensure a speedy resolution because they already possess a solution by this point. When there were no records available, the resolution of problems that had been faced in the past took a longer amount of time. Additionally, personnel from other divisions just submit verbal requests to IT Support for problem-solving, and they do not provide any specific data in their requests. In addition, there are

problems with the efficiency of the standard operating procedures that are implemented in the IT Support division. [1], [2], leading to confusion among IT Support employees when problems arise. Unfamiliarity with the task leads to a prolonged labour process.

The objective of this study is to develop a website system that addresses the issues faced by the IT Support department at PT Global Loyalty Indonesia. The system aims to facilitate the recording of requests from other divisions, streamline the process of requesting problem resolution from the IT Support team, and provide easy access to problem-solving records, as well as notes and standard operational procedures that have been collaboratively developed and agreed upon by the IT Support team. The construction of this website system employs HTML, CSS, React JS, and Bootstrap. Additionally, the development of this website system also adheres to the agile methodology. The Agile technique was selected due to its inherent advantages over alternative development methodologies [3], [4]. One of the main benefits of this is its adaptability and ability to quickly respond to changes. This enables teams to readily modify plans and tasks according to evolving requirements or priorities [5], [6], [7]. The iterative loop in the Agile methodology enables ongoing

enhancement through the incorporation of input obtained during the development process. Another benefit is the extensive user engagement and clear visibility of the process. [8], [9], The active participation of users throughout the development process guarantees that the final product fulfills their requirements and expectations. Incremental delivery is a defining feature of Agile methodology that facilitates iterative release of functional components of a product during the initial phases of development [10], [11], [12]. The utilization of this strategy fosters efficient communication and cooperative issue resolution, hence promoting team engagement and strong collaboration as additional benefits. Moreover, prioritizing ongoing and reflective testing contributes to enhancing the overall quality of the product [13], [14].

## RESEARCH METHODOLOGY

### 2.1. Methodology

The process of developing an IT Support system website using the Agile approach commences with product planning. During this phase, the objectives and vision for the website are established, and the primary features and functionality are defined. Additionally, a Product Backlog is generated, which serves as a prioritized list of features. In the sprint planning step, the process entails choosing features from the Product Backlog, establishing sprint objectives, and generating a Sprint Backlog that encompasses the necessary tasks to be accomplished. [15], [16]. In the subsequent phase, known as the development stage, the design and execution of features are executed, employing integrated development processes and continuous testing.

Following that, a comprehensive testing process is conducted to assess the functionality and quality of each feature, encompassing user testing. In this particular scenario, the IT Support team and the head of IT Support are involved to verify the applicability of the features for the specified requirements. The review and retrospective stages encompass the presentation of findings to stakeholders, assessment of team performance, and identification of potential areas for enhancement through retrospective sessions. Sprint completion encompasses the culmination of all intended features, including comprehensive testing and finalization, whereas product delivery entails providing consumers with a fully working version and ensuring that all relevant papers are current.

Following the delivery of the product, the evaluation and update phase involves assessing the performance and user satisfaction, as well as incorporating input and addressing emerging needs

by upgrading or adding features. The entire process follows a repetitive iterative cycle, where each sprint brings gradual enhancements to the product, guaranteeing adaptability and flexibility to evolving requirements in website creation. Furthermore, a strong partnership between the development team and stakeholders is incorporated at every level to guarantee the creation of a product that fulfills the requirements and desired objectives [8], [17], [18].

### 2.2 Overview and Examination of Requirements

The mission carried out at PT Global Loyalty Indonesia was to construct an intranet website, namely an IT Support assessment form website based on the ReactJs framework. The inception of this website involved creating a sitemap and flowchart under the guidance of Mr. Irfan Ahmad. Using the sitemap and flowchart as references, there are multiple design components involved in developing an evaluation form website using the ReactJs framework. The pages that have been designed include the sitemap, flowchart, user homepage, admin homepage, user form page, and admin details page.

The development of the IT Support assessment form website is segmented into multiple sections. The initial phase is designing the user interface and constructing web pages using the ReactJs framework in accordance with predetermined specifications. Presently, there exist two distinct categories of users: Users and Admins, each with varying levels of access. The "User" refers to an individual who accesses the assessment form website, whereas the "Admin" is a developer who has authorized access to the evaluation form website. The Admin's purpose is to perform actions such as deleting, downloading, and filling in content on the evaluation form website page. Utilize the pages or features that are available to each user type, as indicated in Table 1.

**Tabel 1** Access rights for IT Support system website users

Page or Feature	User	Admin
Homepage	Available	Available
Contact	Available	Not Available
Input Form	Available	Not Available
Delete Form	Not Available	Available
Download Content	Not Available	Available

### 2.3 Sitemap

Figure 1 illustrates the layout of the user section of the website. Here are few key pages on the website. The Homepage is the main page of the website that includes all the information. Furthermore, the Contact page provides comprehensive details about a roster of individuals who can be reached through means such as email and telephone. Furthermore, the form page

comprises multiple input fields that facilitate the transmission of data to the Administrator.

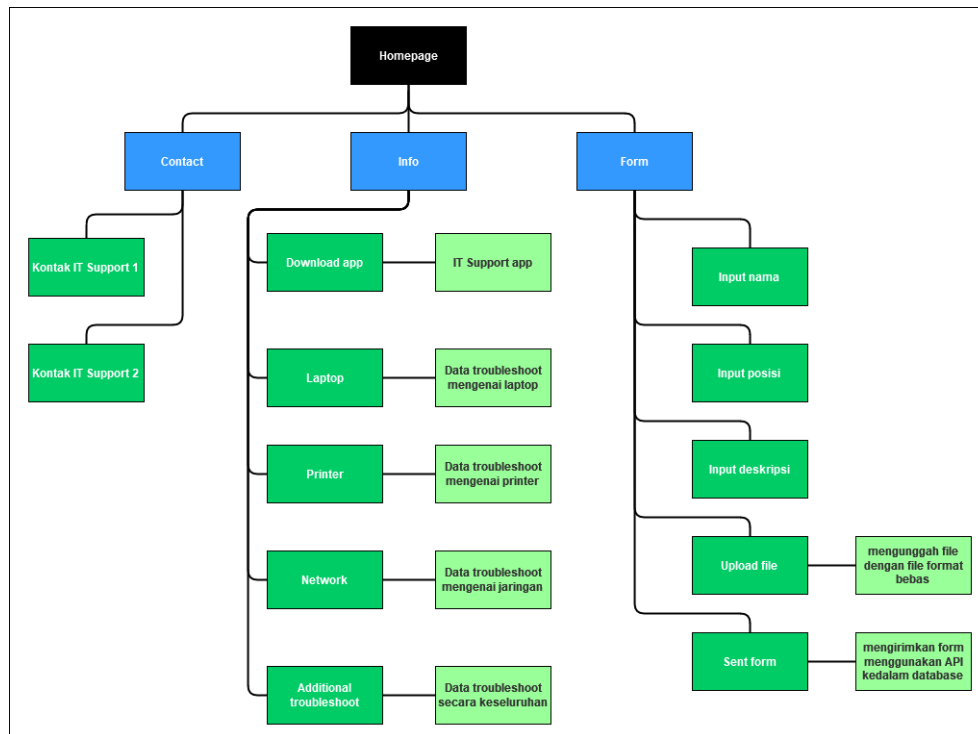


Figure 1. Sitemap User Website Sistem IT Support

Figure 1 demonstrates the utility of the contact module in delivering information about accessible IT Support contacts on the day the application is accessed. The information form on the system website is valuable for retrieving programs distributed by IT Support or for submitting completion requests. Issues pertaining to hardware or software malfunctions should be sent to IT assistance. The input form serves as a valuable tool

for submitting information pertaining to normal operational processes or documenting the steps taken to address various IT-related issues.

Figure 2 depicts the comprehensive flowchart of the website assessment form for the user. The flowchart commences with the display of the homepage, followed by the process of completing the form and accessing information pertaining to different types of enhancements.

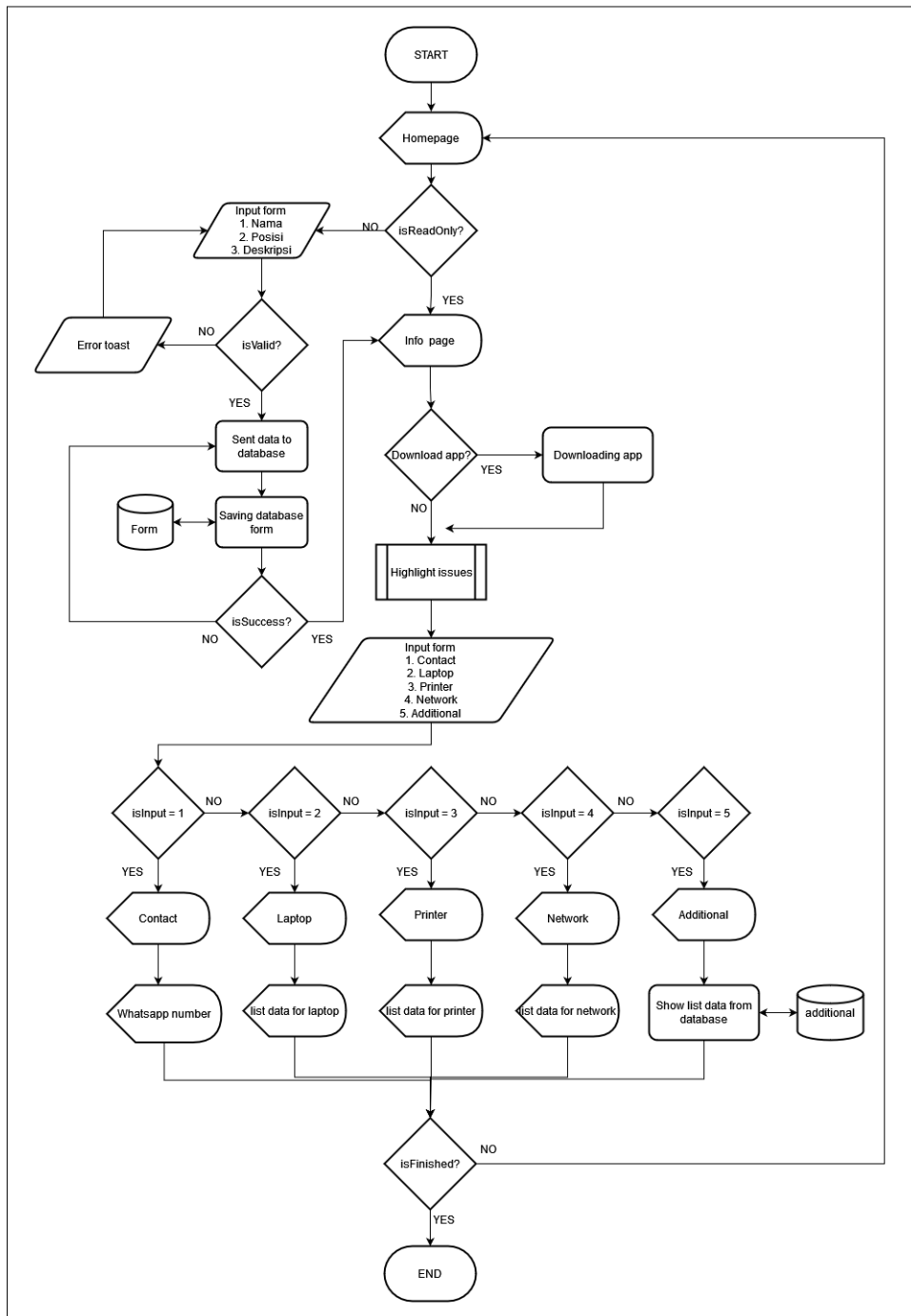


Figure 2. Flowchart User website form IT Support system website

Figure 3 illustrates the hierarchical structure of the administrative part on the website. Here are few key pages on the website. The Homepage page displays the data that has been submitted from the input form. The Details page displays comprehensive information extracted from the

description part of the input form. Utilize the "Download" function to retrieve and save files that have been transmitted through the form. Utilize the "Delete" function to remove input forms that have been entered.

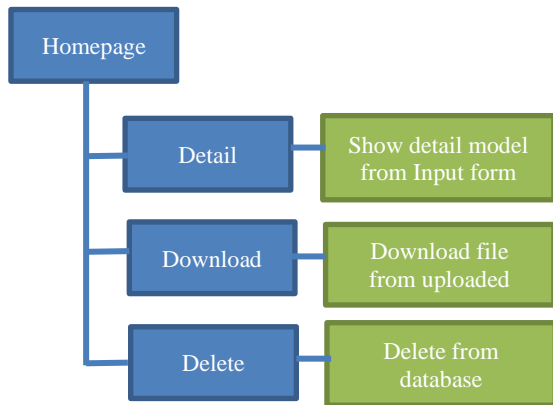


Figure 3. Sitemap IT Support system website admin

Figure 4 illustrates the website flowchart of the evaluation form in the admin section. The flowchart depicts the sequence of actions, beginning with the display of the homepage. From there, users can proceed to read the details page, utilize the download function to download the form, or utilize the delete feature to remove the form.

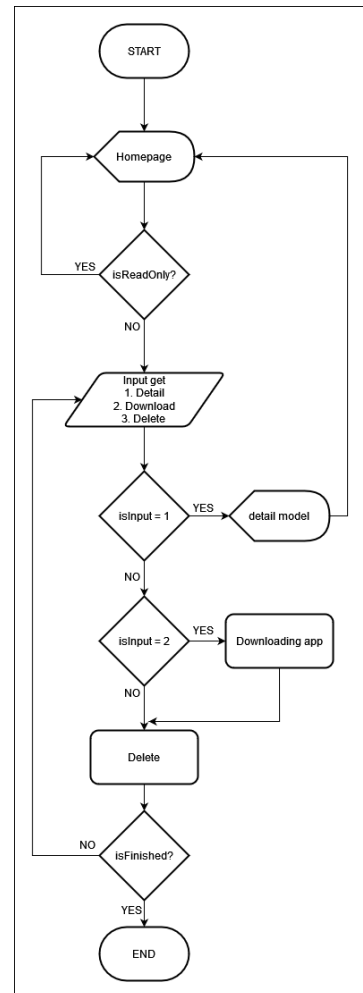


Figure 4. IT Support system website admin flowchart

Figure 5 exhibits the database schema and entity relationship diagram of the IT support evaluation form online. A table is utilized to hold many inputs from a form. The table consists of columns such as ID (primary key), userId, position name, description, and generated (foreign key).

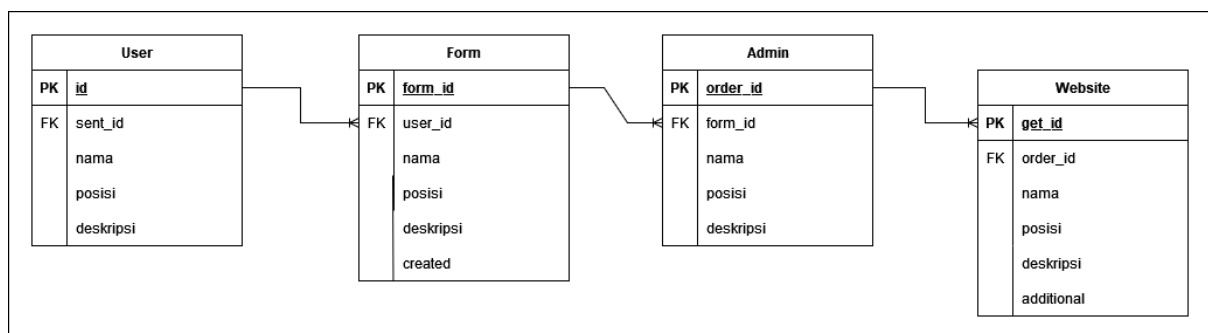


Figure 5. IT Support system website schema database

## RESULT AND DISCUSSION

Following the completion of the design, a website system is developed based on the user's requirements and the previously generated design. Figure 6 depicts the User Homepage page, which serves as the primary interface of the IT Support

assessment form website. This page provides forms and contact information for each IT Support personnel. This page also contains standard operational processes for IT Support and guidelines for handling common IT issues that frequently arise at PT Global Loyalty Indonesia.

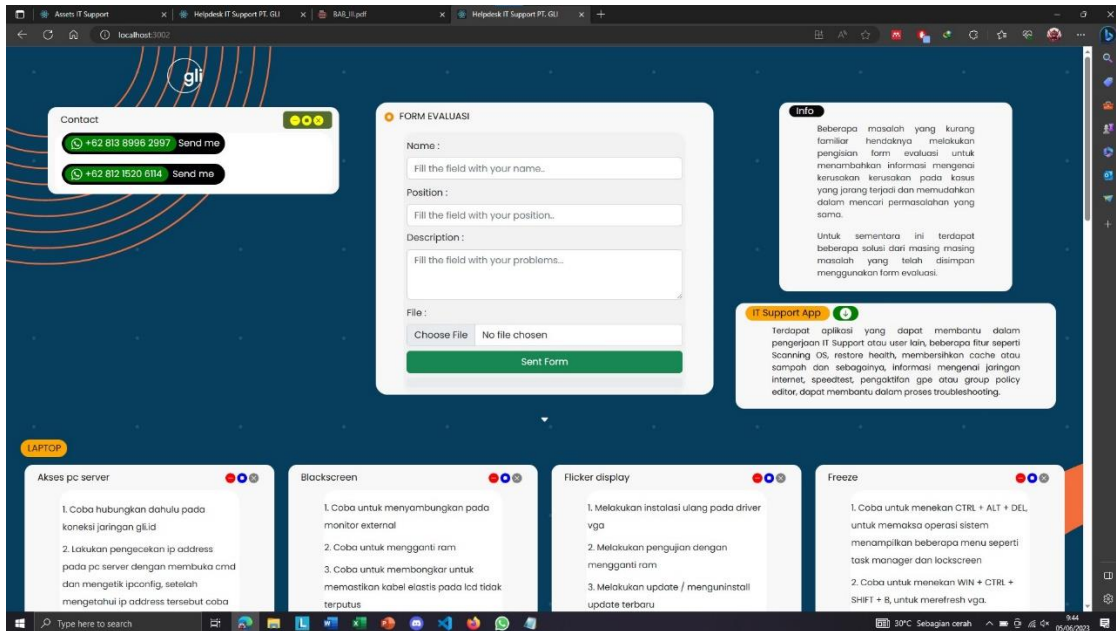


Figure 6. Homepage User

Figure 7 displays the User Info page, which is a continuation of the previous homepage. It provides a detailed list of problem resolution requests to IT Support. This list includes information about the date and time each request was made, allowing for prioritization of work based on the order of user

requests. This page also provides the current status of the problem, indicating whether it is pending, waiting, or being actively addressed. This allows users to easily determine the progress of the problem they have reported to IT Support.

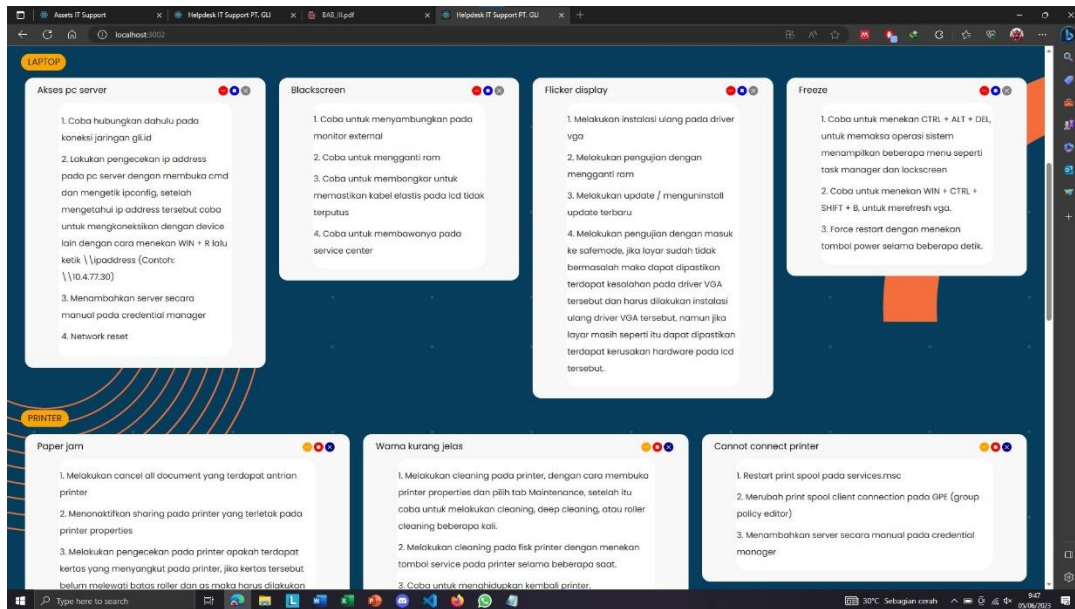


Figure 7. Homepage User

Figure 8 displays the Admin Homepage page, showcasing various inputs that have been submitted through the form. There are three buttons: Detail, Download, and Delete, each with its distinct functionality. Access to this website is restricted to

IT Support personnel. The page serves as a platform for IT Support staff to input and modify standard operational processes, steps for resolving common issues, and to track the progress of their work.

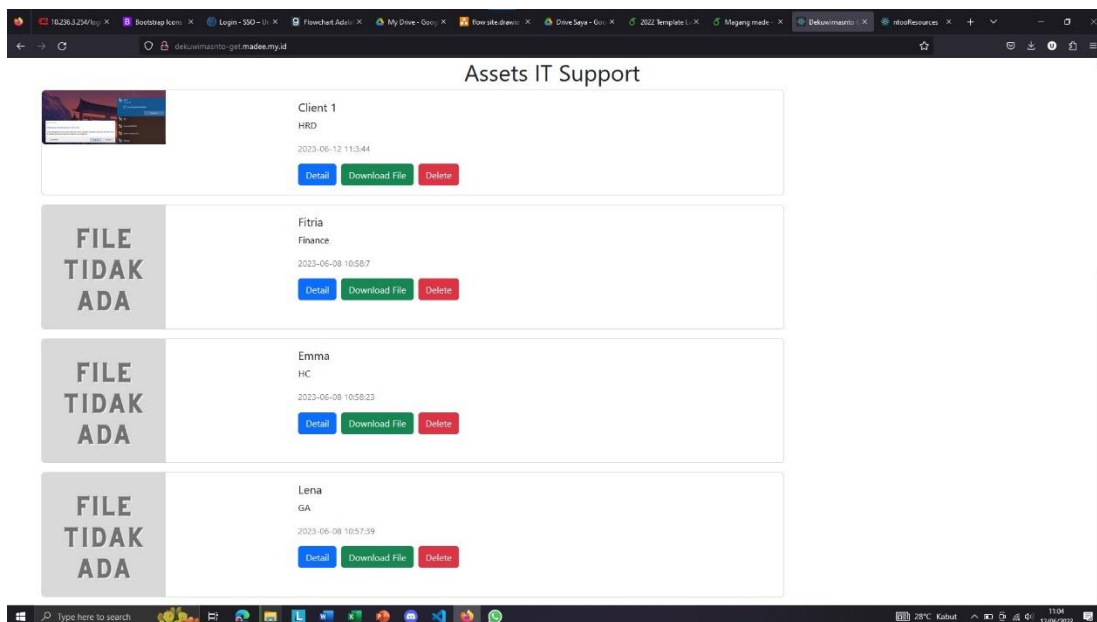


Figure 8. Homepage Admin

Once the IT Support system website has been designed and constructed, the subsequent phase involves evaluating user acceptability of the website under development. The respondents in this questionnaire comprised five individuals, including

four IT Support personnel and one head of IT Support at PT Global Loyalty Indonesia. The results of the Questionnaire utilizing the user acceptance test method [19], [20] are presented in Table 2.

**Table 2.** User acceptance test table results from the IT Support division

No	Question	Answer					Percentage				
		A	B	C	D	E	A	B	C	D	E
1	Does the IT support system website have an attractive appearance?	2	2	1	0	0	40%	40%	20%	0%	0%
2	Is the information presented on this website easy to understand?	2	3	0	0	0	40%	60%	0%	0%	0%
3	Can this system help you monitor work requests to IT Support?	2	2	1	0	0	40%	40%	20%	0%	0%
4	Are the existing information menus good enough to help IT Support work?	3	2	0	0	0	60%	40%	0%	0%	0%
5	Do you receive notifications when new information comes in?	2	2	1	0	0	40%	40%	20%	0%	0%

From the results of the questionnaire conducted on staff in the IT division of the company PT Loyalty Global Indonesia which is shown in Table

2, the next step to obtain the average user acceptance was calculated using a Likert scale, where the calculation results can be seen in Table 3.

**Table 3.** Results of calculating the average user acceptance test

No	Question	Grade					Total	Analysis (Total/10)	Percentage (Analysis/5) * 100
		5	4	3	2	1			
1	Does the IT support system website have an attractive appearance?	10	8	3	0	0	21	4,20	84
2	Is the information presented on this website easy to understand?	10	12	0	0	0	22	4,40	88
3	Can this system help you monitor work requests to IT Support?	10	8	3	0	0	21	4,20	84
4	Are the existing information menus good enough to help IT Support work?	15	8	0	0	0	23	4,60	92
5	Do you receive notifications when new information comes in?	10	8	3	0	0	21	4,20	84

Based on the calculations presented in Table 2, the average user acceptance of the website system being developed is determined to be 86.4%. This conclusion is drawn from the analysis of responses to five questions posed to five users. It can be inferred that users strongly agree that the website system is designed to facilitate work in the IT Support division of PT Global Loyalty Indonesia

## CONCLUSION

The website system at PT Global Loyalty Indonesia has successfully developed an IT Support system website utilizing the ReactJS framework. The issues encountered in IT Support were effectively rectified as per the request of the IT Support manager, and in alignment with the pre-established plans, including sitemap designs, flowcharts, and feature descriptions for individual users. Based on interviews conducted with the head and staff of IT Support, it was determined that the level of user satisfaction reached 86.4%.

This indicates that IT Support PT Global Loyalty Indonesia strongly affirms that the website produced significantly aids the work performed by IT support.

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