Informatics and Software Engineering
p-ISSN/e-ISSN: 2988-2818/2988-2222
Homepage: https://sanscientific.com/journal/index.php/ise
3**(1) 20-28 (2025)**
https://doi.org/10.58777/ise.v3i1.388

Research Article

Information System for the Development of Web-Based Fixed Asset Modules at PT. Prima Solusi Computindo

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Received: January 12, 2025; Revision: April 15, 2025;
Accepted: April 22, 2025; Available Online: May 24, 2025;

Abstract

PT. Prima Solusi Computindo (Radsoft) faces challenges in managing fixed assets, resulting in inefficiencies due to manual and non-integrated record-keeping processes. This study aims to design and implement a web-based information system for fixed asset management to enhance efficiency and accuracy. This system was developed using HTML, CSS, Javascript, SQL database, and the C# framework. The research utilizes the Waterfall development model, encompassing requirements analysis, system design, implementation, and testing phases. The results indicate that the developed system effectively integrates asset management processes, including record-keeping, depreciation tracking, and reporting. This integration simplifies the management team's decision-making regarding asset utilization. Additionally, the web-based system enables real-time access across departments, improving transparency and data accuracy. As a recommendation, the company should provide training for system users to maximize the features available. Future developments include integrating the system with other modules, such as accounting and inventory, to enhance its overall functionality.

Keywords: system information, fixed asset management, web-based application, waterfall.

How to cite: Firmansyah, FA., Nuriantoro, FR , Putra, AB & Haryono, W. Information System for the Development of Web-Based Fixed Asset Modules at PT. Prima Solusi Computindo. *Informatics and Software Engineering*, *3*(1). https://doi.org/10.58777/ise.v3i1.388

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1. Introduction

In today's digital era, companies highly require an information system for their operations. The use of information systems is implemented due to several advantages, including enhancing effectiveness, productivity, ease of accessing information, and adaptability for future development (Laksono et al., 2022). This application aims to increase effectiveness and efficiency in the management and development of employees in the company (Ramadan, Junaidi, & Azis, 2023).

PT Prima Solusi Computindo (RADSOFT) is an information technology company. In the current digital era, companies must update their systems to remain competitive in the market. A company's success in sustaining its business is closely tied to its ability to manage the inflow and outflow of goods or inventory, enabling it to fulfill customer demands as efficiently as possible (Prayogi et al., 2022).

One of the critical aspects of a company's operations is the management of Fixed Assets. Fixed assets are equipment or property owned by an organization or company used for operational purposes, which are tangible and have a long-term nature (useful life). The Asset Management Information System is one of the data processing activities at the Aceh Plantation Office to obtain information about assets (Sadharma, 2021). Examples of fixed assets include office equipment, machinery, land, factories, buildings, electronic devices, computers, vehicles, furniture, and more. Fixed assets are also subject to depreciation (Turnip et al., 2020).

2. Literature Review

The web-based information system is a platform within a computerized system that is equipped with features and designed specifically to meet the needs of inputting certain data. Its purpose is to facilitate, accelerate, and ensure the accuracy of the processed data. (Wahyudin & Rahayu, 2020).

Asset management refers to the management of wealth, including how assets are acquired, utilized, and eventually decommissioned. It plays a crucial role in supporting the continuity of asset inventory (Musoffa et al., 2022). This system is expected to increase accuracy and speed in recording, tracking and managing fixed assets (Sitio, 2024).

Database Management System (DBMS) is a software system that enables users to create, maintain, control, and access databases practically and efficiently (Siregar & Alfina, 2020). The database management process, which uses MySQL software for user management, data request, management, admin administration, and tool and data management, is used to handle huge amounts of data (Rawat & Purnama, 2021). Database management systems in terms of security, performance, and other aspects (Kumar, 2024).

Hypertext Markup Language, commonly known as HTML in computer science, is a markup language for files used on computer networks such as the World Wide Web. Cascading Style Sheets, abbreviated as CSS, are used to manage a website's appearance or layout. JavaScript is a web programming language executed on the client side. Therefore, JavaScript can only be used within a browser (Julia et al., 2023).

3. Design/Methods

The development of this Fixed Asset module employs the Waterfall method. The Waterfall Model is a classical approach to software development that illustrates a linear and sequential development method. (Hidayatullah & Ardiansah, 2022). This method consists of several stages: Analysis, Design, Implementation, Integration and Testing, and Maintenance.

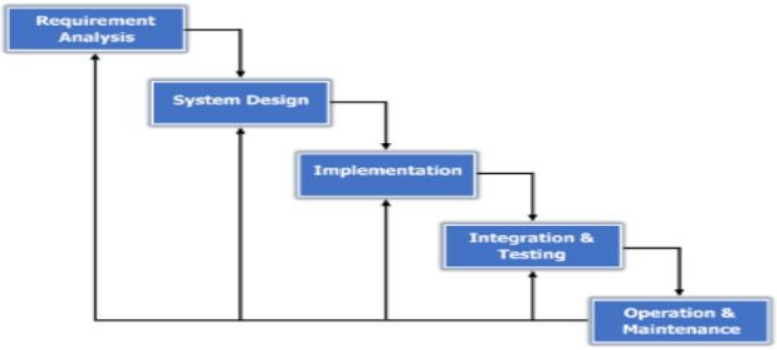

Figure 1. Waterfall Methods

In figure 1, the Analysis and Design stages in this research utilize UML (Unified Modeling Language) and UI/UX design frameworks. By employing various types of diagrams, UML facilitates the visualization of structure, behavior, and interactions between components, thereby enhancing communication and the management of software projects more effectively. Additionally, designing with UI/UX ensures that the system's interface aligns with user expectations.

4. Results

The purpose of this research is to develop a web-based application system to assist companies in managing their assets. Several stages are involved in this process. The stages are as follows:

System Analysis

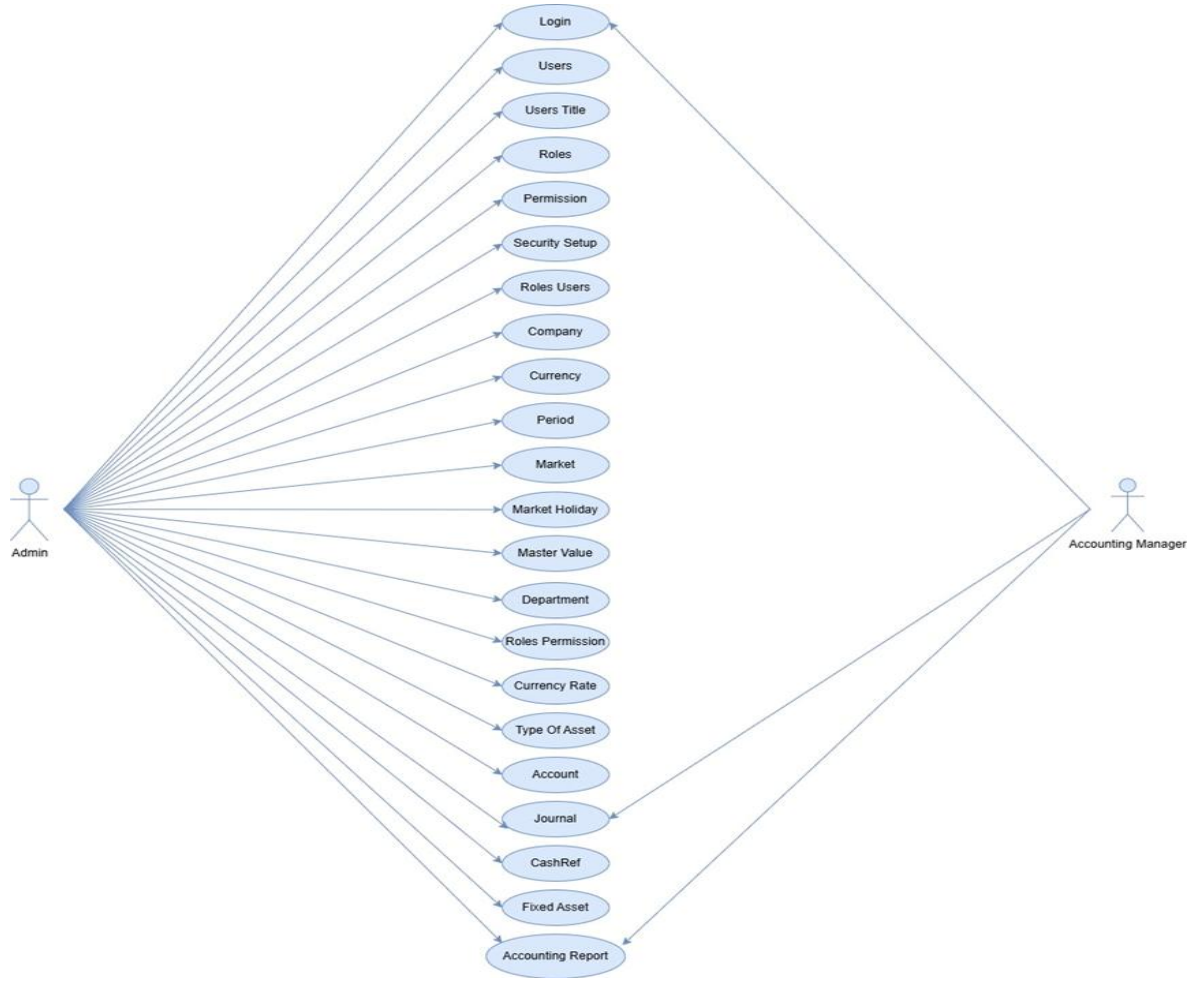

Figure 2. Use Case Diagram Fixed Aset

System Analysis is a crucial stage that significantly impacts the design and implementation processes. Therefore, at this stage, discussions are conducted with the company to ensure that the system aligns with user requirements. Figure 2 illustrates that this system involves two actors who can access the application: the Admin and the Accounting Manager. These two actors have different levels of access based on their respective job responsibilities.

Database Table Relationships

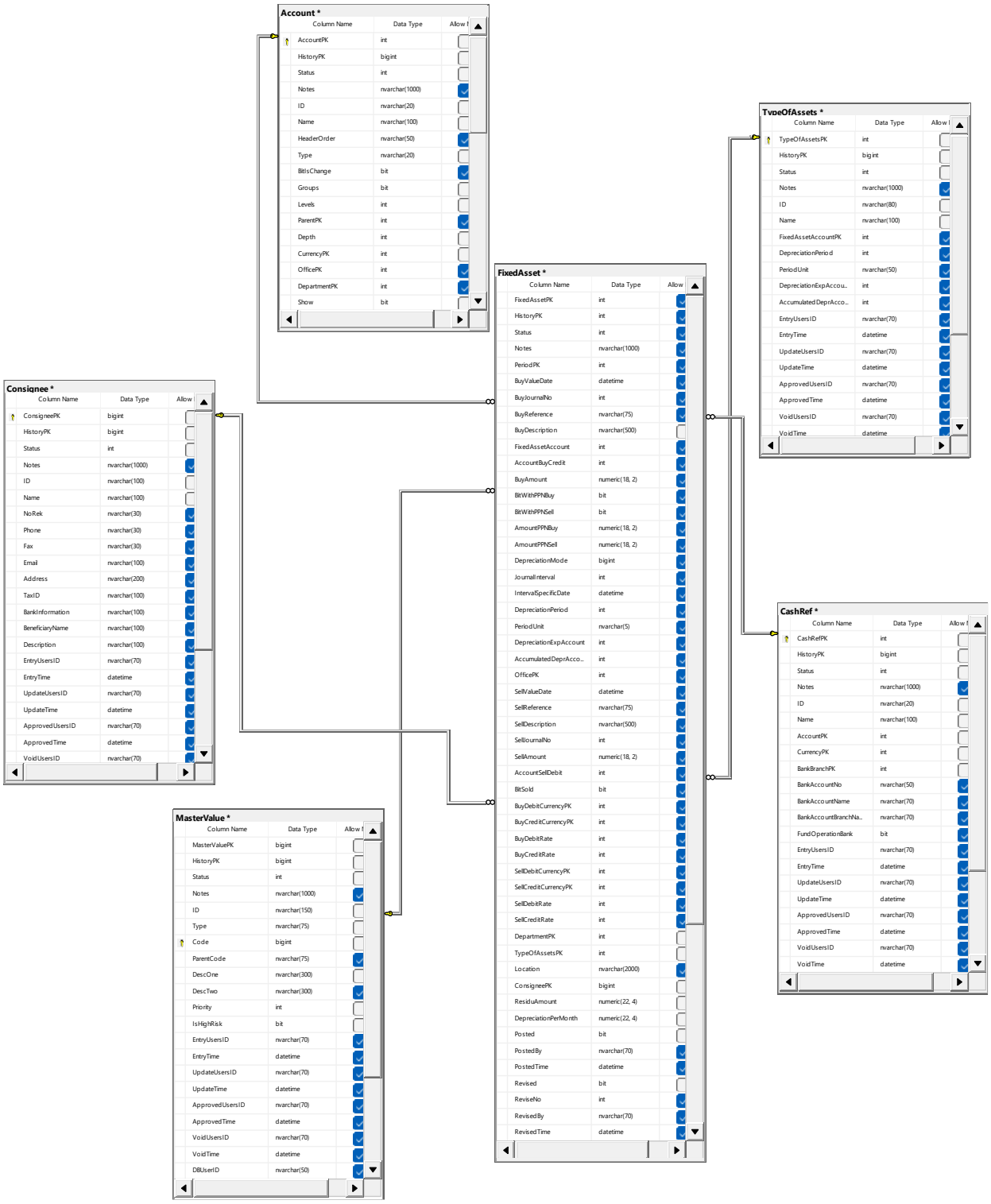

Figure 3. Database Relation Fixed Aset

Figure 3 illustrates the relationships between database entities in the fixed asset system, which include menu options, asset types, item descriptions, payments, history, and the data types used for each menu.

Design Architecture using Flowchart

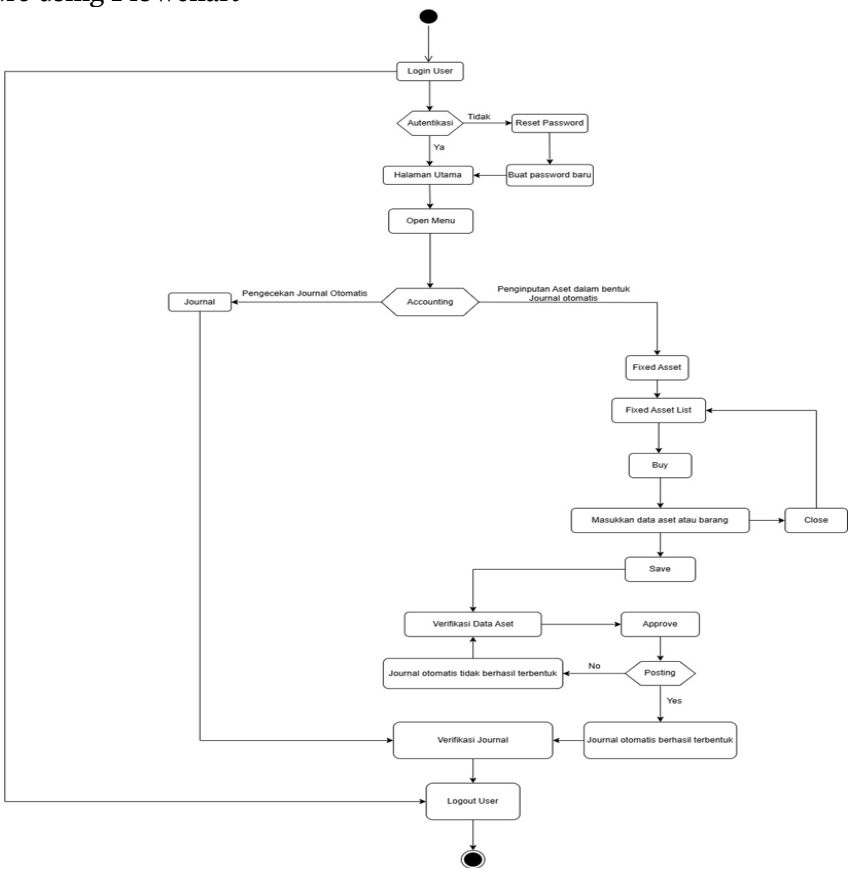

Figure 4. Flowchart Fixed Aset

Figure 4 represents the flow or logic of how the Fixed Asset system works in a structured manner, visualizing the software's operational steps.

Planning Design using UI/UX

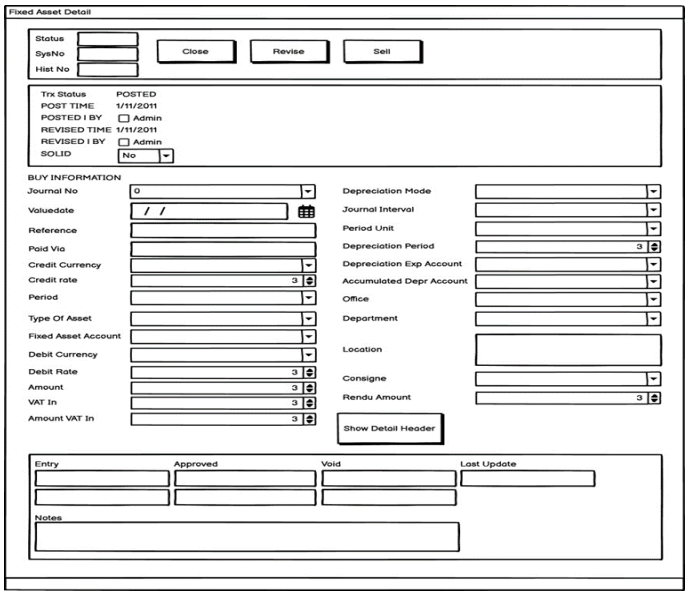

Figure 5. UI/UX Design

Figure 5 explains the UI/UX design, which includes the field descriptions for the Fixed Asset menu.
User Interface

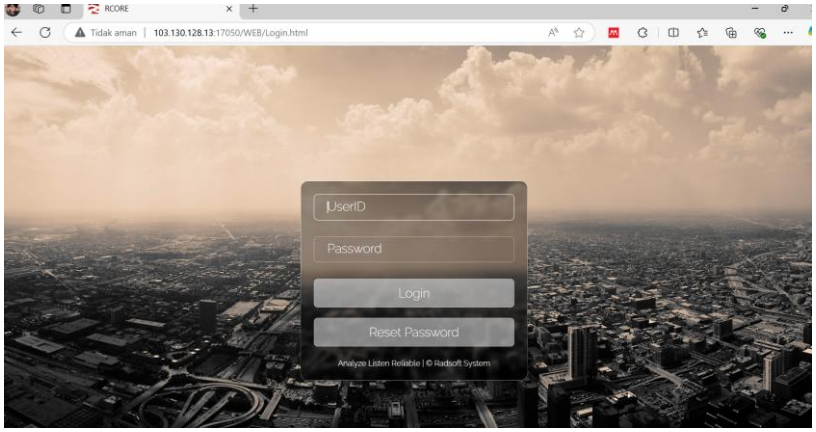

Figure 5. Login Page

Figure 5 merupakan tampilan halaman login yang berisikan UserID dan Password agar kita dapat masuk ke sistem aplikasi Fixed Aset.

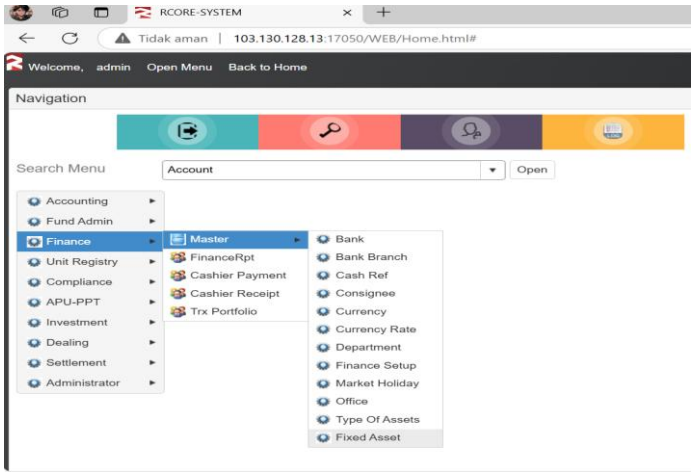

Figure 6. Main Menu Page

Figure 6 shows the main menu with multiple options, but this image explains how to access the Fixed Asset menu from the main menu. There are two ways to do so: through the Finance Menu and the Search Menu.

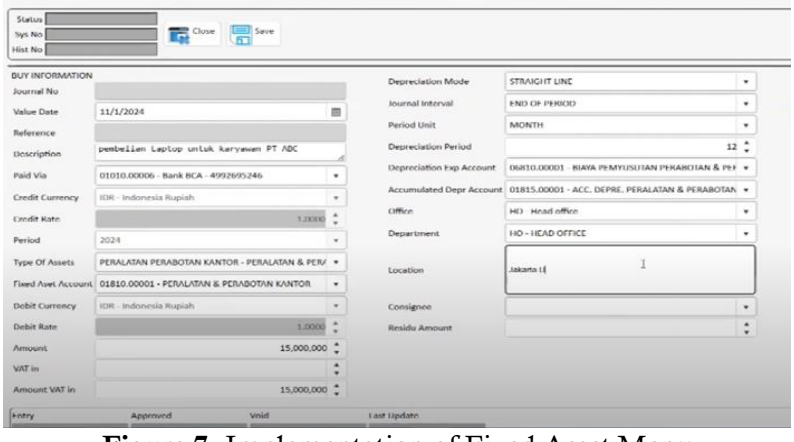

Figure 7. Implementation of Fixed Asset Menu

Figure 7 illustrates an example implementation in the Fixed Asset menu, using the case study of purchasing a laptop for an employee at PT. ABC. The image explains that each field has a different function, ranging from the Value Date to the Residual Amount.

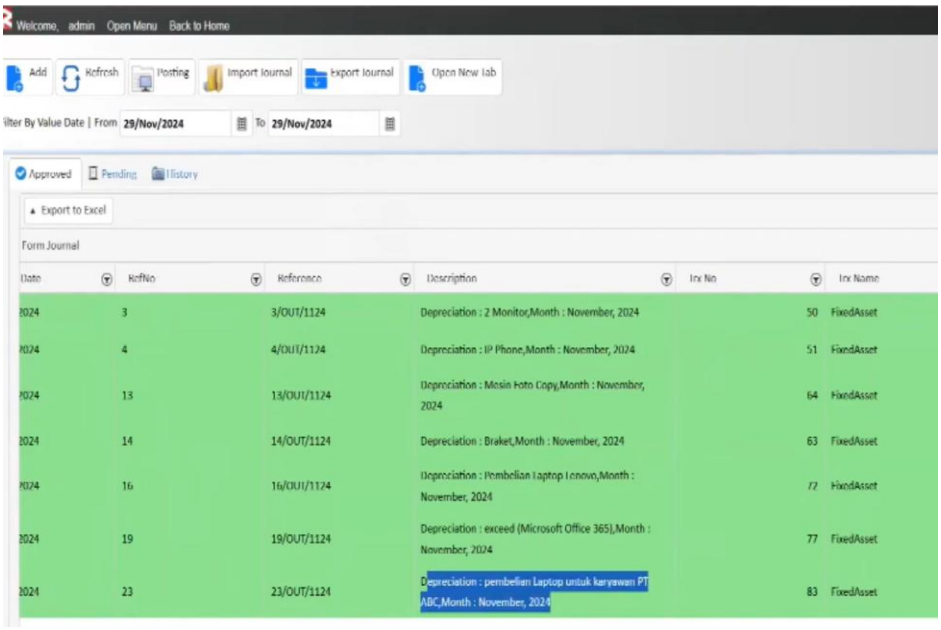

Figure 8. Implementation results in the Journal Menu

Figure 8 illustrates that after entering data in the Fixed Asset menu, there are several stages, such as waiting for approval, posting, and then creating an Automatic Journal.

5. Discussion

This research discusses the development of a web-based company asset management information system using HTML, CSS, and JavaScript for the front end, C# for the back end, SQL for database management, and .NET as the framework. Based on the development process results, several points need to be discussed.

System Analysis

This system is designed to address the limitations of manual management, which often leads to inaccurate asset records, tracking difficulties, and potential asset losses for the company. With a web-based approach, this solution offers ease of access, efficient management, and improved data accuracy, thereby optimally supporting business processes.

Benefits of Using the System

In the context of Fixed Asset Management, a web-based information system can help companies automate the recording and reporting processes and provide Automatic Journals that can be used to improve financial strategies. Therefore, the development of the web-based Fixed Asset module is considered essential to improving efficiency and accuracy in Fixed Asset management.

Application Review

The implementation of this application has successfully made the employees' tasks in managing company assets more efficient, especially in the Accounting department. Several success factors can be measured, such as the creation of automatic journals, which allows workers to avoid sorting through asset items manually, as the system can track records from previous years.

Data Security

Based on detailed testing by the developers, this system generates consistent and secure data from both input and output stages.

6. Conclusion

This system is designed to address the limitations of manual management, which often leads to inaccurate asset records, tracking difficulties, and potential asset losses for the company. With a web-based approach, this solution offers ease of access, efficient management, and improved data accuracy, thereby optimally supporting PT. Prima Solusi Computindo's business processes.

The use of the Fixed Asset module in this information system not only helps in digitally recording assets but also includes features such as asset status tracking, depreciation calculation, and integrated asset reporting. Overall, the development of this system demonstrates that web-based technology can enhance operational efficiency and accuracy in managing company assets.

Recommendation

Based on the implementation results and discussions within our group, there are several suggestions. To optimize the web-based fixed asset management information system, continuous development should be carried out by adding relevant features, such as integration with the finance module. Additionally, it is important to provide users with training to maximize the system's potential and focus on data security through encryption and two-factor authentication.

Limitations and avenue for future research

This research identifies several issues within the system. This discussion focuses on the Design and development of a web-based application for managing company assets, with the aim of making asset management more efficient.

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