Research.

Design of Accounting Information System Regarding Website-Based Fixed Asset Opname

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Abstract. *This study aims to design a Website-based fixed asset opname accounting information system that is adapted to the business processes of PT Eka Bogainti. A Fixed asset opname is an activity to calculate and to compare fixed asset data in each store with the data in the system. This activity aims to control the existence of assets, to check the condition, and to find out if there are missing or damaged assets. The fixed asset opname system that was implemented by PT Eka Bogainti is currently conventional. For this reason, a system is required that aims to solve the conventional system which is wasteful of time and impractical. The research method is observation, interview, and documentation. Software development method that used as a reference is waterfall method. The results of this study is a Website-based fixed asset-opname system which is expected to increase the effectiveness and efficiency of the calculation system and recording fixed assets in the form of a website-based fixed asset opname system.*

Keywords: Accounting Information System, Fixed Asset, Fixed Asset Opname,

INTRODUCTION

Background.

Indonesia is experiencing rapid advances in information technology from year to year which is characterized by the use of information technology in several sectors, one of which is the corporate business sector. For the smooth running of a company's business, the role of information technology is very important, when the company already has good information technology, operational activities run smoothly, and company goals are achieved. In an effort to realize accurate information, a good information system is needed, one of which is information about accounting. An accounting information system is a system that carries out the process of collecting, recording, storing, and processing data and information to help users in making decisions (Romney et al. 2018).

PT Eka Bogainti, the company that oversees the Hokben brand of fast-food restaurants and has spread to 354 branches in Indonesia, has the availability of fixed assets in each branch to support the company's productivity and operations. Fixed assets in each branch consist of office equipment, machinery and restaurant equipment, furniture, vehicles, and other fixed assets. According to Mulyadi (2016) fixed assets are tangible assets that have a useful life of more than one year that are used by the organization for operational purposes, not intended for sale. Therefore, for PT Eka Bogainti, fixed asset management is very important in the company's operational activities so that the regulation and monitoring of fixed assets has an important role in the smooth operation of the company.

To realize effective and efficient fixed asset management in each branch, the company management assigns field work to conduct fixed asset opname (fixed asset stock-taking).

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Fixed asset-taking is one of the two parts of stock-taking, while the second is stock-taking of goods / supplies (Carolina et al., 2019). The purpose of both types of stock-taking is to control and adjust the number of goods physically with those listed in the system so that it can assist in decision making. Fixed asset opname carried out at PT Eka Bogainti aims to match fixed assets in each branch with the data contained in the company system (Michael Jims, 2023), so as to control the existence of fixed assets in the branch, check the condition of fixed assets, and to determine the condition of fixed assets. So far, the fixed asset-taking activities carried out by Cost Accounting Staff have used the accounting information system. The activity begins with taking fixed asset data from the ERP system and making a physical inspection form in Microsoft Excel one by one from each branch that has different fixed assets.

Because the data comes from several branches, the use of a website-based information system is needed to facilitate data integration and help improve fixed asset management, especially in terms of input physical inspection of fixed assets, report generation to data storage and search. This is in line with the results of research conducted by Maulana et al. (2018), stating that web applications can help manage inventory such as the process of procuring goods, stock-taking, borrowing and returning assets, maintaining assets and requesting consumables. Likewise, with the results of Prasena and Sama's research (2020), namely the application of web-based applications that make it easier to search for data, reduce manual recording errors and assist users in reporting stock items and inventory assets to leaders.

Research Question

Based on the explanation above, the researcher outlines several problems to direct the focus of the research so that the research results are in line with what is expected,namely:
1. How is the fixed asset-taking procedure that has been implemented at PT Eka Bogainti?
2. What are the obstacles faced by Cost Accounting Staff in carrying out fixed asset inventory at PT Eka Bogainti?
3. How to design and build an ideal accounting information system so that it can support fixed asset inventory management at PT Eka Bogainti?

LITERATURE REVIEW

Definition of System

The system is a relationship of two or more components that are interconnected and interact to achieve goals, generally the system consists of subsystems that support a larger system (Romney et al. 2018). The system is a collection (group) of relationships between subsystems or components both physically and non-physically to achieve certain goals (Susanto, 2017). It can be concluded that the system is very important because the system fully contributes to supporting the operational activities of a company. All components in a system must work together with each other to create an effective system that runs properly.

Definition of Accounting Information System

Accounting information system is an information system that functions to accommodate, record, store, and process data to obtain financial and management information needed by decision makers. According to Susanto (2017), the accounting information system is a collection of system subsystems, both physical and non-physical, that are interrelated and work together in processing transaction data related to finance into financial information. The definition of an accounting information system according to (Romney et al. 2018) is a system that collects, records and processes data that is useful in providing information to decision makers.

System Development

System development is the process of compiling a new system to replace the old system as a whole or improve the existing system (Setyorini, 2016). Some reasons why the system needs to be improved or developed are as follows:

1. The emergence of problems such as:
   a. There are irregularities in the old system
   b. Organizational Growth, Organizational growth in a better direction is very important in the face of increasingly fierce competition for the sustainability of the company. This growth results in the need for information increasing so that system development is needed so that it is always relevant to the needs of the organization.

2. To seize opportunities

   In market competition, the success of a business strategy depends on how quickly and precisely information is provided. If competitors take advantage of this speed of information, then success will fall into the hands of competitors.

3. Derivatives

   System development can occur due to instructions from various parties such as leadership, government, and others. In an effort to meet the needs of a company or organization, the information system development process includes needs analysis, design, implementation, and system maintenance.

Fixed Assets

Assets are resources owned by a company that have the potential to generate economic benefits in the future. Asset accounts include fixed assets, current assets, and other assets. According to Hery (2017), fixed assets are assets that can be observed physically and are eternal in nature so that they have a long usage period. Fixed assets are tangible assets. According to Widyatama (2018), fixed assets are a type of asset that can be used for more than one period of company's operations. Fixed assets are divided into two types, namely tangible fixed assets and intangible fixed assets. Tangible fixed assets are assets that have a physical form so that they can be observed. Examples of tangible fixed assets are land, buildings, equipment, vehicles, and others. Intangible fixed assets are assets that do not have a physical form but still have economic value. Examples of intangible fixed assets include goodwill, patents, trademarks, and others.

Waterfall Method

According to Rosa and Shalahuddin (2018), the waterfall method provides a sequential software lifecycle approach starting from analysis, design, coding, testing, and maintenance. If in the design process the first step has not been done, then the next step cannot be done and so on.

Stock Opname

According to Sudrajat (2020), Stock-taking is an activity of calculating goods between system data and physical in the field. Meanwhile, according to Michael Jims (2023), Stock-taking is an activity of recording and adjusting the physical inventory of trade goods in the field with the company's database. Stock-taking is divided into two types, namely stock-taking of goods/availability and stock-taking of fixed assets/fixed assets (Carolina et al. 2019). The purpose of both types of stock-taking is to control and adjust the number of goods physically with those listed in the system so that it can assist in decision making.

Flowchart

Flowchart is a graphical representation that describes the relationship between its core entities. Flowcharts are useful for presenting manual activities, computer processing, or

both. Document flow charts are used to describe the components of a manual system, including accounting records, organizational departments involved in the process and activities carried out in these departments (Kurniawan, 2020).

Data Flow Diagram (DFD)

Data Flow Diagram (DFD) is a diagram that shows the data flow and data processing of a system (Mulyadi, 2016). Data Flow Diagrams use symbols to describe entities, processes, data flows, and storage that aim to provide clues to how data is transformed when data moves through the system and describe the functions that transform data flows (Kurniawan, 2020).

Database

Database (database) comes from the word base which means base or base / gathering place and data which means something that represents a set of real fact information that represents an object in the form of letters, numbers, text, symbols, text, images, sounds, etc. A database is a collection of data groups (archives) that are interconnected and coordinated so that they can be reused quickly and easily (Ali, 2019). According to Kadir (2020), a database management system also known as (DBMS or Database Management System) is a data management system that aims to enable easy and fast data access (Kadir, 2020). Databases are divided into various types based on the data model used. The data model referred to here is the logical structure used in realizing the database. Based on this data model, databases can be distinguished, including:

a. Hierarchical database.

b. Network database

c. Relational database, and

d. Graph databases.

PHP

Programming languages are the most basic tools for programmers. With the right programming language one can drastically reduce the cost of building new applications as well as the development of existing ones. One of the commonly used programming languages is PHP. According to Abdulloh (2016), PHP (Hypertext Preprocessor) is a programming language that is processed on a server that functions to manage natural database data (Abdulloh, 2016).

MySQL

MySQL is one of the most widely used database software by software developers because it is open source. MySQL is integrated with the apache server and can be downloaded for free on the internet. MySQL is a DBMS (database management system) using Structured Query Language (SQL) commands that are usually used to create web-based applications. MySQL includes RDBMS (Relational Database Management System) which means that the database structure consists of tables, columns, and rows.

Website

According to Elgamar (2020), a website is a medium that consists of several pages and is interconnected and contains information in various formats such as images, videos, text, sound, or a combination of all these formats. The website is multi-platform, which can be accessed from various devices connected to the internet. Hyperlink is a term that refers to the relationship between the web, while hypertext is the text used as a connecting medium.

Black Box Testing

System testing is carried out to ensure that the system has met the specified objectives and can be used correctly. Black Box testing is a test that only sees results through test

data and checks the performance and functionality of the software. This Black Box testing emphasizes the functions that have been designed (Syaban and Bunyamin 2016). The following are the stages of testing each type of Black Box method:

1. Equivalence Partitioning
   This test is done by entering random data or data that does not match the data type on the form that already exists in the information system.
2. Boundary Value Analysis
   This test is carried out to show that data that exceeds a predetermined limit cannot be stored properly in the database.
3. Comparison Testing
   This test is done by comparing the system interfaces from various web browsers.
4. Sample Testing
   This test is carried out to ensure that the selected values can produce accurate data and match the data entered by the user.
5. Robustness Testing
   This test is carried out by entering random data to ensure that there are no errors in the case of invalid input.
6. Behaviour Testing
   Testing is done by creating new data several times with the aim of avoiding data stacks.
7. Performance Testing
   This test aims to assess the program's ability to operate effectively based on memory usage flow, data flow, and execution speed.
8. Requirement Testing
   This test emphasizes the specification of system requirements from the manufacturing stage to testing.
9. Endurance Testing
   This test emphasizes the correctness or wrongness of the results of mathematical operations on this system.
10. Cause - Effect Relationship Testing
    This test includes input conditions and data flow starting from input, view, update, delete and search.

RESEARCH METHODS

Data sources in this study were obtained through interviews, observations, and documentation. Interviews were conducted with several parties directly involved in this activity, namely the Cost Accounting Manager, Cost Accounting Staff, and the store. In addition, researchers make observations in the field so that the author can identify the problems that occur and collect documents and company archives related to research, such as physical inspection forms of fixed assets, fixed asset mutation forms, lists of asset types, and others. According to Rosa and Shalahuddin (2018), the waterfall method provides a sequential software lifecycle approach starting from the analysis, design, coding, testing, and maintenance stages. If in the process of designing the first stage (analysis) has not been completed, then the next stage (design) cannot be done so until the last stage. So each step must be done as thoroughly as possible by involving the user.

RESULT AND DISCUSSION

Current System Procedure
The fixed asset-taking activities that have been implemented at PT Eka Bogainti are divided into three stages, namely 1) the preparation stage, Dept. Head of Cost Accounting determines the store that will be carried out a physical inspection of fixed assets and forms an implementation team. Cost Accounting Staff will prepare equipment, prepare manual and computerized administration with the aim that the implementation of fixed asset opname runs optimally, conduct fixed asset opname on the list of fixed assets using the

fixed asset physical inspection form and distributed to the team on duty; 2) implementation stage, Cost Accounting Staff performs the process of checking and calculating fixed assets and completing information according to the fixed asset physical inspection form. In the implementation of the fixed asset taking process, the team must try to find all assets contained in the physical inspection form. If there are assets that are not physically found, they will be traced further, the Cost Accounting Staff makes a Minutes of Inspection (BAP); and 3) the evaluation stage, the Cost Accounting Staff shares knowledge with branch staff with the aim of increasing staff knowledge as an effort to improve performance.

Identification of Obstacles
Based on observations related to fixed asset-taking activities at PT Eka Bogainti, it can be concluded that several obstacles occurred during the physical inspection of fixed assets, including:
a. Before conducting fixed asset taking, the Cost Accounting Staff must first prepare a physical inspection form for the fixed assets of the branches to be inspected manually using Microsoft Excel one by one, where each branch has different fixed assets.
b. At the time of the physical examination, the Cost Accounting Staff still does conventional inputting, namely by using work papers and then inputting them in Microsoft Excel.
c. Cost Accounting Staff takes a long time to find asset data that is not in place or has moved locations. Based on these problems, the need for a system to support fixed asset opname activities is the main reason, so that an information system is needed that covers fixed asset opname activities from input to output, that can be used flexibly by users.

Design of SIA Fixed Asset Opname
a. System Requirements Analysis
System requirements analysis is used to identify the specifications of the system requirements to be built. System requirements analysis focuses on analysing functional requirements and non-functional requirements.
    1. Functional
        Some of the functions required by the system include:
        a. Login process for users and Cost Accounting managers who have been registered in the database.
        b. Import process of branch fixed asset data that will be checked by the user.
        c. The process of inputting the physical quantity of fixed assets that have been inspected.
        d. The process of inputting fixed asset mutations if there is a mutation.
        e. The process of printing reports by the user.
        f. Users can act as admins.

    2. Non-functional Needs Analysis
        Analysis of non-functional needs includes:
        a. Hardware
            The hardware specifications used in making this fixed asset opname information system include Intel® Celeron® quad-core processor N5100 (4M Cache, up to 2.80 GHz), 8GB Memory, 512GB SSD, and 14″ Full HD 1920 x 1080 Display.
        b. Software
            The software used in making this system includes operating system: Window 11 (64-bit), MySQL Database, PHP programming language, Chrome web browser, Visual Studio Code, Notepad, and Xampp v3.3.0.
        c. User (Brainware)
            User analysis (brainware) aims to identify individuals involved in running this system. Users of this system are users who act as administrators with access rights to manage data on the server side, as well as managers and Cost

Accounting Staff, with access rights to process data on the website and validate data.

b. Information System Design Stage

The purpose of designing an information system is to create a system that will meet user needs based on the previous system analysis stage. The data that has been analyzed is compiled into a format that can be communicated and understood by the user. The proposed design includes designing a Data Flow Diagram (DFD) and a database structure with an Entity Relationship Diagram (ERD).

1. Context Diagram

   Context diagram or DFD level 0 describes the flow of data in a simple way so that the context diagram will show how input / input into the system and output / output from the system. The following is a context diagram of the fixed asset opname information system.
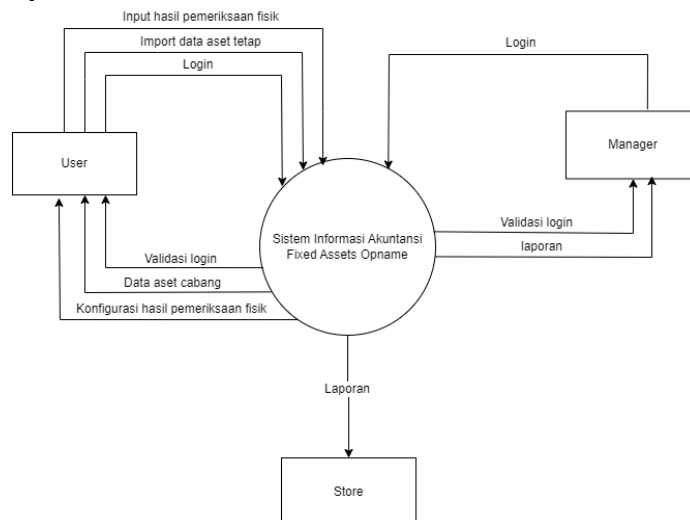
Figure 1 Context Diagram
Sumber : Data processed (2024)

2. DFD Level 1

   DFD level 1 explains the process in more detail than the process in DFD level 0. At this stage the process will be broken down into more detailed processes. DFD level 1 consists of four processes, which are derivatives of the context diagram, including login, fixed asset data management, inspection, and reports.

   - Process 1.0: Login

     Users register by entering a username and password based on user data that has been stored in the database.

   - Process 2.0: Fixed Asset Master

     This process is the main data management process whose data is the basis of the data. The data managed is asset data and its location.

   - 3.0 Process: Inspection

     The user selects the store to be inspected, imports fixed asset data obtained from Microsoft Dynamics AX, and inputs the results of the physical inspection that has been carried out.

   - Process 4.0: Report

     In this process, the output obtained is the results of the fixed asset inventory report. The fixed asset-taking report is used to evaluate, streamline assets, and control the assets in the branch.

3. DFD Level 2

The data fragments that come from the four processes in DFD level 1 are described in DFD level 2. The following is a description of the level 2 Data Flow Diagram that occurs in each process, including:

a. Login Process

The login process is divided into two processes, namely the process of filling in the username and filling in the password. Users and managers will be asked to fill in their username and password.

b. Fixed Asset Data Master Process

In this process, the user will input fixed asset data which will be used as a master's in physical inspection later. After success the master data will be stored in the fixedasset table.

c. Inspection Process

The examination process is divided into three processes, namely the process of importing fixed asset data, inputting physical examination results, and inputting fixed asset mutations. Users will import asset data by retrieving data from ERP, then input the quantity of physical check results which will be stored in the physical check table. If there are fixed assets that are not found during the physical check, the user will input mutations that will be stored in the asset mutation table.

d. Report Process

The report process is divided into two smaller processes. After completing the physical inspection, the user will print the fixed asset-taking report, which will be given to the store. Users will also archive reports and other files to facilitate managers' control.

Table Structure

The table structure used in this information system is as follows:

a. Fixedasset

The fixedasset table is used to store fixed asset data. The specifications of the fixedasset table are as follows.

Table 1 Fixedasset Table

Field Name	Type	Size	Description
fix_asset	Varchar	25	Fixed asset number
detail_asset	Text	-	Fixed asset name
location	Varchar	50	Fixed asset location

Source : Data processed (2024)

b. Login

The login table is used to store user and manager login data. The login table specifications are as follows.

Table 2 Login Table

Field Name	Type	Size	Description
iduser	Integer	11	Primary key
Email	Varchar	50	Email address
Password	Varchar	50	Password

Source : Data processed (2024)

c. Physicalcheck

The physicalcheck table is used to store data on the results of checks that have been

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carried out by users. The physicalcheck table specifications are as follows.

Table 3 Physicalcheck Table

Field Name	Type	Size	Description
id_asset	Integer	11	Primary key
asset_number	Varchar	25	Fixed asset number
item_description	Varchar	200	Fixed asset name
acquisition_date	Date	-	Date the fixed asset was received
quantity_before	Integer	11	Quantity before inspection
quantity_after	Integer	11	Quantity after inspection
additional_information	Text	-	Additional Information
store_code	Varchar	5	Branch *store code*

Source : Data processed (2024)

d. *Opname Preview*

The Opname_Preview table is used to store inspection reports and other files related to fixed asset opname activities. The specifications of the opname_preview table are as follows.

Table 1 *Opname_Preview*

Field Name	Type	Size	Description
no_file	Integer	11	Primary key
nama_file	Varchar	200	File name
berkas	Text	-	Document

Source : Data processed (2024)

e. *Store*

The store table is used to store the name and code of Hokben stores throughout Indonesia. The specifications of the store table are as follows.

Tabel 2 *Store Table*

Field Name	Type	Size	Description
kode_store	Varchar	5	Branch *store* code
nama_store	Varchar	100	Branch *store* name

Source Data processed (2024)

f. Mutation

The store table is used to store the name and code of Hokben stores throughout Indonesia. The Mutation table specification are as follows.

Table 3 Mutation Table

Field Name	Type	Size	Description
id_mutasi	Integer	11	Primary Key
asset_number	Varchar	25	Fixed asset number
tgl_mutasi	Date	-	Date of fixed asset mutation
store_awal	Varchar	5	*Previous Store*
store_akhir	Varchar	5	*Current Store*

Source Data *processed* (2024)

ERD (Entity Relationship Diagram)

ERD is made to describe the relationship of the database model that will be used. This system design uses a MySQL database with the name fixedassest. The Entity Relationship Diagram (ERD) for the fixedasset database can be seen in Figure 2.

Figure 2 Entity Relationship Diagram (ERD)
Source: Data processed (2024)

Implementation

The following is the implementation of the interface based on the design that has been made.

1. Login page

    The login page function as a security page before accessing the main menu. In the login view, users will be instructed to enter their username and password correctly, both users and managers.
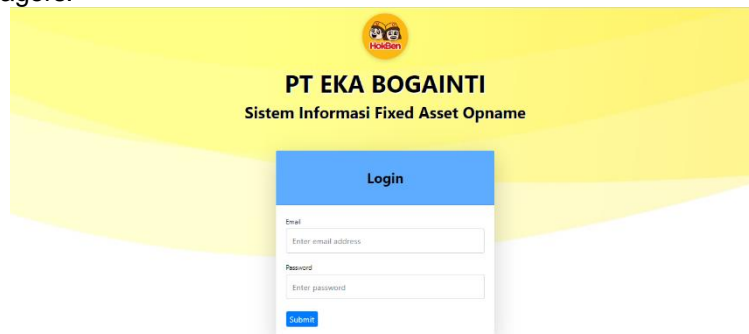
Figure 3 login view

2. Home page/Dashboard

    On the dashboard page, users can see the current number of Hokben branches and the total amount of fixed assets. While on the manager's dashboard page, the manager can see the number of Hokben branches, the number of users currently running the system, and the total amount of fixed assets.
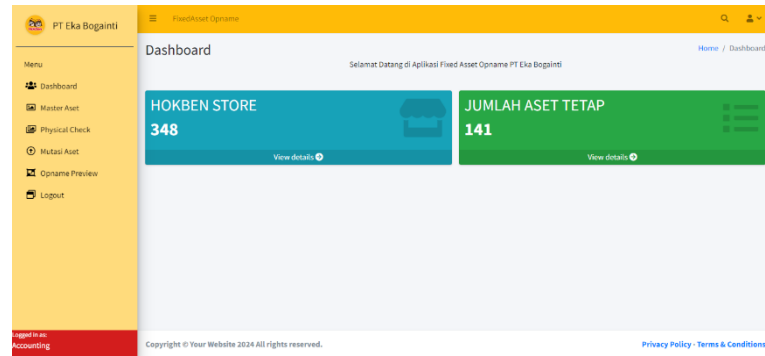
Figure 4 user dashboard view
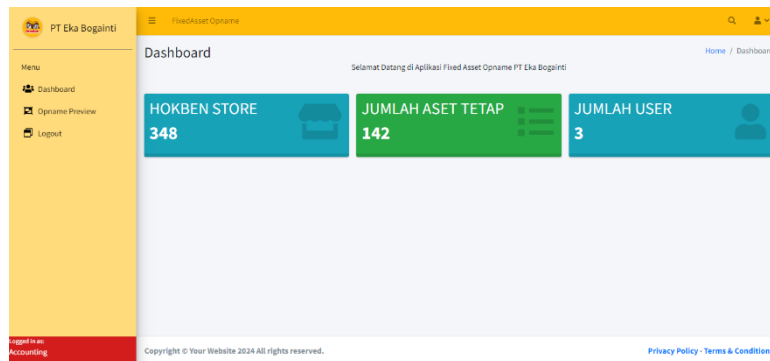
Figure 5 Manager dashboard view

3. Fixed Asset Master Page

This page contains a list of all assets in each branch. This master data has the functionalitry to import asset data, add asset data, and edit and delete asset data

Figure 6 Fixed Asset Master view

4. *Physical Check page*

This page is used to input the results of the physical inspection of fixed assets. There are five processes that can be done on this page, namely importing, adding, exporting, editing, and deleting data.

5. Asset Mutation Page

This page is used to input fixed asset mutations if the asset is not physically found in the store so that it can facilitate the search for asset ownership after being mutated.

6. *Opname Preview page*

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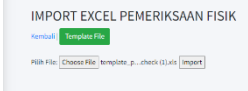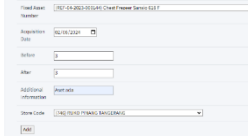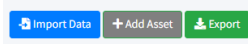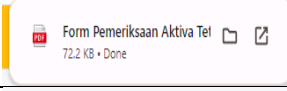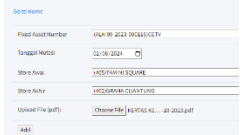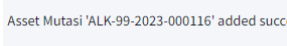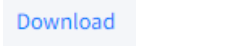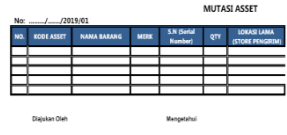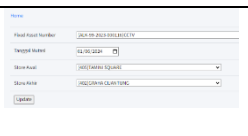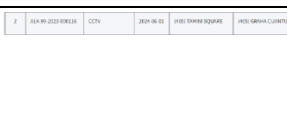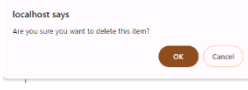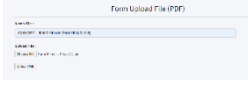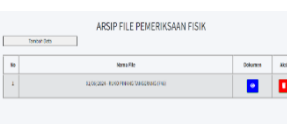
This page is used to save the physical examination results file that has been done by the user. The table of physical examination files that have been uploaded is on the *Opname Preview* page as shown below.
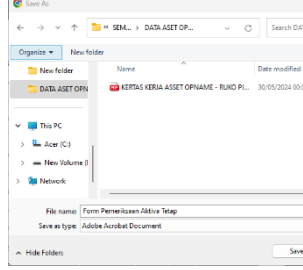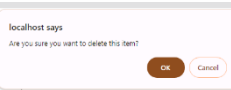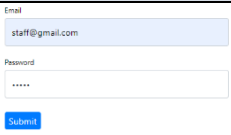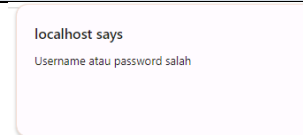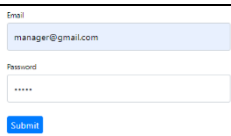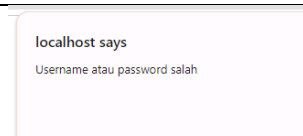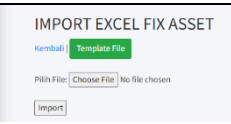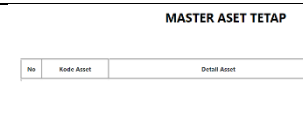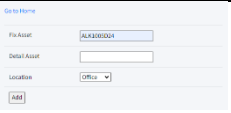
System Testing
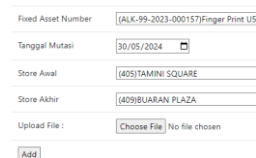
System testing is a stage that aims to ensure that the program that has been made runs according to user expectations and needs. Testing this fixed asset opname information system software uses the blackbox testing method, which is to test whether the input and output are in accordance with the expected specifications. This method focuses on the functionality of the software. The following are test scenarios and result using the black box method.

Table 4 Testing with normal data

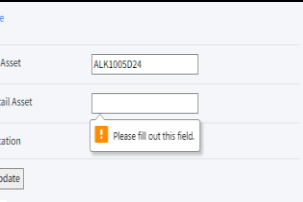| Normal Data				
Menu	**Testing Scenario**	**Input**	**Output**	**Result**
Login	*Username: user Password : user*			Succesfully enter the dashboard
	Username: manager Password : manager			Succesfully enter the manager page
Asset Master	Click import data according to the template			Data imported successfully
	Click add asset and fill in all fields			Data addedd successfully
	Click edit and change the contents of the fields			Data enters the database server
	Click delete aset data			Deleted data

		Normal Data		
Menu	**Testing Scenario**	**Input**	**Output**	**Result**
Physical Check	Click import asset data according to the template			Data imported successfully
	Click add asset and fill in all fields			Data successfully displayed
	Click export			Downloaded Form
Asset Mutation	Click add mutation and fill in all fields		Asset Mutasi 'ALK-99-2023-000116' added succes	Display the input result of fixed asset mutation
	Click the "download" button			Downloaded File
	Click edit and change the contents of the fields			Data enters the database server
	Click delete asset mutation			Data deleted from the database server
Opname Preview	Click the "Add Data" button and upload the PDF file.			Data enters to database server
	Click the "view" button			Display a preview of the document

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Normal Data				
Menu	**Testing Scenario**	**Input**	**Output**	**Result**
	Click the "download" button			Downloaded File
	Click delete file			Data deleted from the database server

Unnormal Data				
Menu	**Testing Scenario**	**Input**	**Output**	**Result**
Login	*Username: user Password:* false			Can't access the user page
	Username: manager Password: false			Can't access the manager page
Asset Master	Click import asset data and enter the file not according to the template			Fixed asset data is not displayed
	Click add asset by not filling any of the fields			Data was not added successfully

Normal Data				
Menu	**Testing Scenario**	**Input**	**Output**	**Result**
Physical Check	Click import and insert a file that does not match the template	IMPORT EXCEL PEMERIKSAAN FISIK	FORM PEMERIKSAAN FISIK ASET	Branch fixed asset data is not displayed
Asset mutation	Clicked add mutation and did not fill in all fields		Upload Gagal!	Additional asset mutation data is not displayed

CONCLUSION

Based on the results of the research and the design of the accounting information system regarding fixed asset inventory that has been carried out at PT Eka Bogainti, it can be concluded as follows:

1. The procedure for implementing fixed asset opname activities is still carried out manually, where the Cost Accounting Staff makes entries using the printed workpaper form which is then inputted back into Microsoft Excel for reconciliation. By using a website-based accounting information system, it is expected that data from each branch can be directly inputted and integrated into the system.

2. Cost Accounting Staff must make a physical inspection form of fixed assets branches using Microsoft Excel one by one where each branch has different fixed assets. This is time consuming and impractical.

3. The fixed asset inventory accounting information system is designed to support fixed asset inventory activities that have been conventional. The information system created aims to provide convenience and speed up the work process of Cost Accounting Staff in calculating and inputting the results of fixed asset inspection from several branches, so that this activity is well organized because the potential for human error will be reduced and reporting becomes more structured.

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