

WEB-BASED INVENTORY AT PT YABES MEGA UTAMA

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Abstract— PT Yabes Mega Utama is a company engaged in trading, installation and maintenance of various product equipment and supplies. In inventory data processing activities, the process of making inventory reports is still done manually, causing problems including the inaccuracy of inventory data due to the long recording process, prone to recording errors, the process of checking data for items that are empty and making reports takes quite a long time. because you have to do a document search first. The purpose of this research is to assist the warehouse employees of PT Yabes Mega Utama in carrying out the processing and recording of inventory data and simplify ongoing business processes. The data collection method in this study is the method of observation, interviews, literature study, and documents while the system design method used is the System Development Lifecycle Waterfall method which consists of the stages of analysis, design, coding, testing, and implementation. The result of this research is the creation of an inventory website application that can assist warehouse employees in processing inventory data. The conclusion of this research is that the inventory website application that has been built can help solve the problems experienced by employees of the warehouse department of PT Yabes Mega Utama in managing inventory in the warehouse and make it easier for employees of the warehouse department of PT Yabes Mega Utama in carrying out the inventory management process so that it can facilitate business processes. in progress.

Keywords— Application, Website, Inventory, Codeigniter.

I. INTRODUCTION

Currently, technology in the field of computers continues to develop so that the ability of computers to help humans and solve problems is increasing. Besides being used to store computer data, it can also process data and present data that is easier to understand [1]. One of the information technology that is often used today is the website.

The website is a place on the internet that can be accessed by anyone in this world, anytime someone can find out about others, ask someone questions, and provide input or even find out and buy a product [2]. The use of the website in conveying information is very helpful and useful for an institution or company. Submission of information with the website takes a short time and can be done anywhere. The process of getting information from the website is also more up-to-date. The information displayed

and presented may change over time so that the information presented is not out

of date or late. This convenience causes the website to become one of the most popular means of information for users today [3].

PT Yabes Mega Utama is a company engaged in trading, installation and maintenance of various product equipment and supplies. In data processing activities inventory of goods, problems were found including making inventory reports still using manual recording and calculations so that it is prone to writing errors and takes a long time to produce precise and accurate reports, the process of checking inventory data takes quite a long time because it has to do Document search first, besides that the inventory data is stored in the form of a document in the form of a stock card so that the document is vulnerable to loss and damage.

Based on the above problems, a research was made by building a website-based inventory application that aims to help warehouse employees of PT Yabes Mega Utama in carrying out the processing and recording of inventory data and simplify ongoing business processes.

II. THEORITICAL BACKGROUND

A. Website

Website is an information media found on the internet. The website can not only be used for information distribution, but can be used to create an online store [4]. A website is also a group of files and folders containing scripts (programming languages) that are stored on an online hosting server and has a special address that distinguishes one website from another [5].

Website can be static and dynamic. It is static if the content of website information is constant and rarely changes, while it is dynamic if the content of website information is always changing [6].

B. Inventory

Inventory comes from the word inventory, which is a written list of all items owned by a person or an office along with their total value and amount [7]. Inventory is also an item, product, or resource that is stored for use or sale in the future or a future period by a company or organization [8]. Inventory for the company is used to prevent customer needs which are sometimes unpredictable, so stock in production activities must be maintained [9].

To carry out the inventory function, companies generally manage inventory which consists of four types of inventory [9]. The inventory consists of raw material inventory, semi-

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finished material inventory, and finished goods inventory. Inventories of raw materials and semi-finished materials are usually stored before being used into the production process. Trading companies only have one type of inventory, namely merchandise inventory [8]. Merchandise inventory is a current asset that has stock of goods that are still there or not yet sold, or goods owned by the company for resale [10].

The inventory system is a set of policies and management, which monitors inventory levels, and determines which levels should be maintained, when stock should be replenished and how much should be ordered [11]. The inventory system functions to determine the optimal amount of inventory with minimal total costs [12]. Inventory system in and out of goods is an activity consisting of data entry of goods, return data and inventory data that reports all transactions in and out of goods from day to month [12].

C. CodeIgniter

CodeIgniter is an open source web application framework used to form dynamic PHP applications [13]. CodeIgniter has a complete library to perform various operations commonly required by web-based applications, for example accessing databases, validating forms so that the system being developed is easy. CodeIgniter is also the only framework with comprehensive and understandable documentation. CodeIgniter source code is completed with comments in it so that it further clarifies the function of a program code. In addition, the website produced by CodeIgniter is very clean and Search Engine Friendly [14].

In its use, CodeIgniter uses the MVC (Model, View, Controller) method to make it easier for developers or programmers to build a web-based application without having to create it from scratch [15]. MVC is a concept that separates the main components into 3 components, namely the model, view and controller. The model is part of the handling associated with database processing. View is the part that handles the user interface page. The controller is a collection of action instructions that connect the Model and View, so the user will not be in direct contact with the model [16].

III. METHOD

A. Method of Collecting Data

The data collection methods used in this study are as follows:

1. Observation

This data collection method is done by making direct observations of the object under study to determine the activities carried out by PT. Yabes Mega Utama.

2. Interview

In this data collection method the authors conducted direct interviews with related parties to obtain information that could not be obtained from the observation method.

3. Literature Study Method

This data collection method is carried out by collecting information and data from books, journals, articles, internet sites, and other related sources to form the basis of this research.

4. Documents

In this data collection method, the authors collect data by studying notes or documents from the research site related to the problem under study from PT. Yabes Mega Utama.

B. Design Method

The design method used for making this website-based inventory information system is the Waterfall Lifecycle System Development Method which can be seen in the following figure :

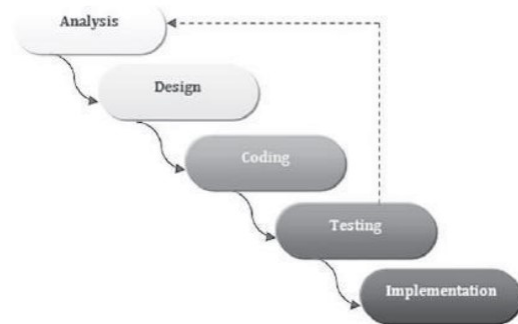


Fig. 1. Waterfall System Development Life Cycle [17].

In this method, the system design is carried out in stages, where a phase must be done first before proceeding to the next phase. The stages of the Waterfall Lifecycle System Development Method are as follows:

1. Analysis

At this stage the authors collect all the information and data needed and analyze the problems experienced by PT. Yabes Mega Utama then determined a solution in order to solve the problem.

2. Design (System Design)

At this stage the authors make a system description in accordance with the known needs of the requirements analysis stage.

3. Coding

At this stage the system will be formed with the tools used to create a source code to create modules as specified. The module will be arranged neatly according to the description made at the design stage to make it easier to build the system.

4. Testing (System Testing)

At this stage, testing will be carried out on the system that has been completed at the development stage to ensure that the system can run smoothly and there are no errors or bugs.

5. Implementation

At this stage, after the testing stage the system that has been tested will be installed and run for real.

IV. RESULT

A. Use Case Diagram

On the PT Yabes Mega Utama inventory website,

directors can enter the inventory website with the login function, view and change employee accounts, view inventory data, supplier data and buyer data. The director can also view incoming goods data consisting of purchase data and sales return data, goods data out consists of sales data and purchase return data view report data consisting of daily, monthly and yearly stock reports, daily and monthly reports of incoming goods and daily and monthly reports of outgoing goods and then exiting the website using the logout function. modify item data.

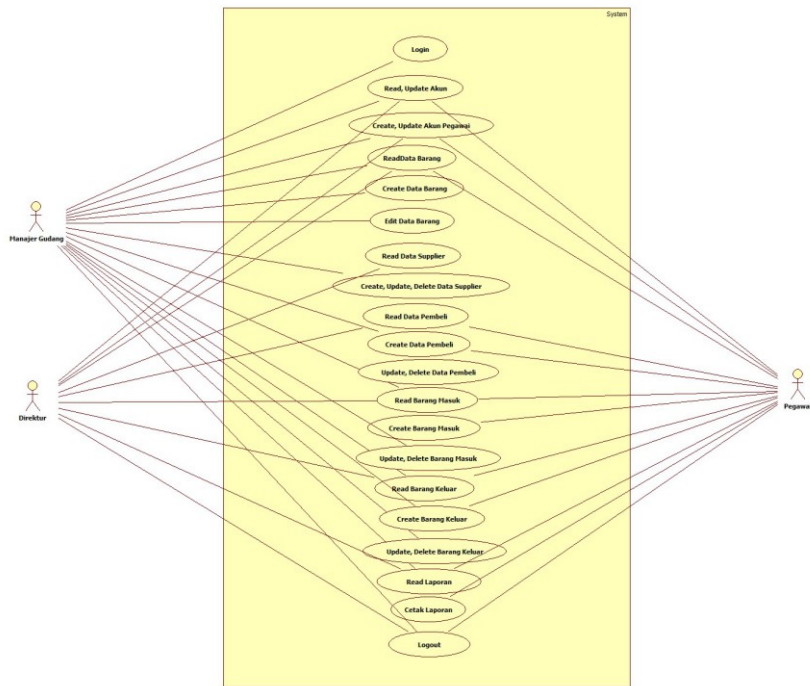


Fig. 2. Use Case Diagram

Warehouse managers can enter the inventory site with the login function, view and modify employee accounts, then view, add, and. In addition, warehouse managers can also view, add, change and delete supplier data, buyer data, incoming goods data consisting of purchase data and sales return data, outgoing goods data consisting of sales data and purchase return data and view and print report data which consists of daily, monthly and yearly stock reports, daily and monthly reports of incoming goods and daily and monthly reports of outgoing goods.

Warehouse staff can login to enter the inventory website. Warehouse staff can also view item data then view and add buyer data. In addition, warehouse staff can also view and add incoming goods data consisting of purchase data and sales return data, outgoing goods data consisting of sales data and purchase return data as well as view and print reports consisting of daily, monthly and annual stock reports. , daily and monthly reports of incoming goods and daily and monthly reports of outgoing goods.

B. Activity Diagram

In the activity diagram, the flow that occurs is that first the director, warehouse manager and employees will log in by entering a username and password. After successfully logging in, the director and warehouse staff can view inventory data while the warehouse manager can view, add, and change item data. The director can also view supplier data while the warehouse manager can view, change, add and delete supplier data. Then the director can view supplier data. The warehouse manager will modify, add, view and delete buyer data. Warehouse staff can also view and add buyer data. The director can view incoming goods data, warehouse managers can add, view, change and delete incoming goods data and warehouse staff can add and view incoming goods data. After that, the director can see the

data of outgoing goods, the warehouse manager can view, add, change and delete the data of goods out while the warehouse staff can add and view the data of goods out.



Fig. 3. Activity Diagram

The director, manager and warehouse staff can view the report data. Warehouse managers and warehouse staff can print the report by pressing print report. Finally, the director, warehouse manager, and warehouse staff can log out.

C. Class Diagram

The following is a class diagram of the PT Yabes Mega Utama inventory website :

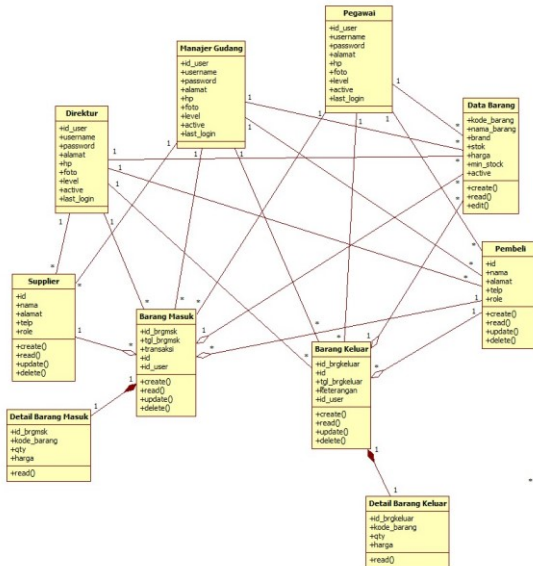


Fig. 4. Class Diagram

D. Sequence Diagram

In the sequence diagram the process that occurs is that the director will first see the login page. On the login page, the director will perform the login process, after which the system will verify the username and password that have

been entered. If successful, the system will open a director account. The director can view his account profile on the profile page. On the profile page the director can also change the profile where after the process is complete the system will display the profile page again with the updated profile data.

The director can also carry out the process of changing the account password by going to the change password page. Then the system will display the page again with a notification that the password has been successfully updated. Directors can view employee account data by opening the employee account data page. On the employee account data page, the director can perform the process of adding and changing employee account data. When the director has carried out the process, the system will display the employee account data page again with the updated employee account data. the system will display supplier data.

Then the director can also view buyer data by opening the buyer data page. When opening the buyer data page, the system will display buyer data. Then the director can view item data by going to the item data page where the system will display item data. When the director opens the supplier data page to view supplier data, The director can view the incoming goods data page which consists of purchase data and sales returns where when the director runs the process the system will display it. After that, the director can also see the data page of outgoing goods consisting of sales data and purchase returns.

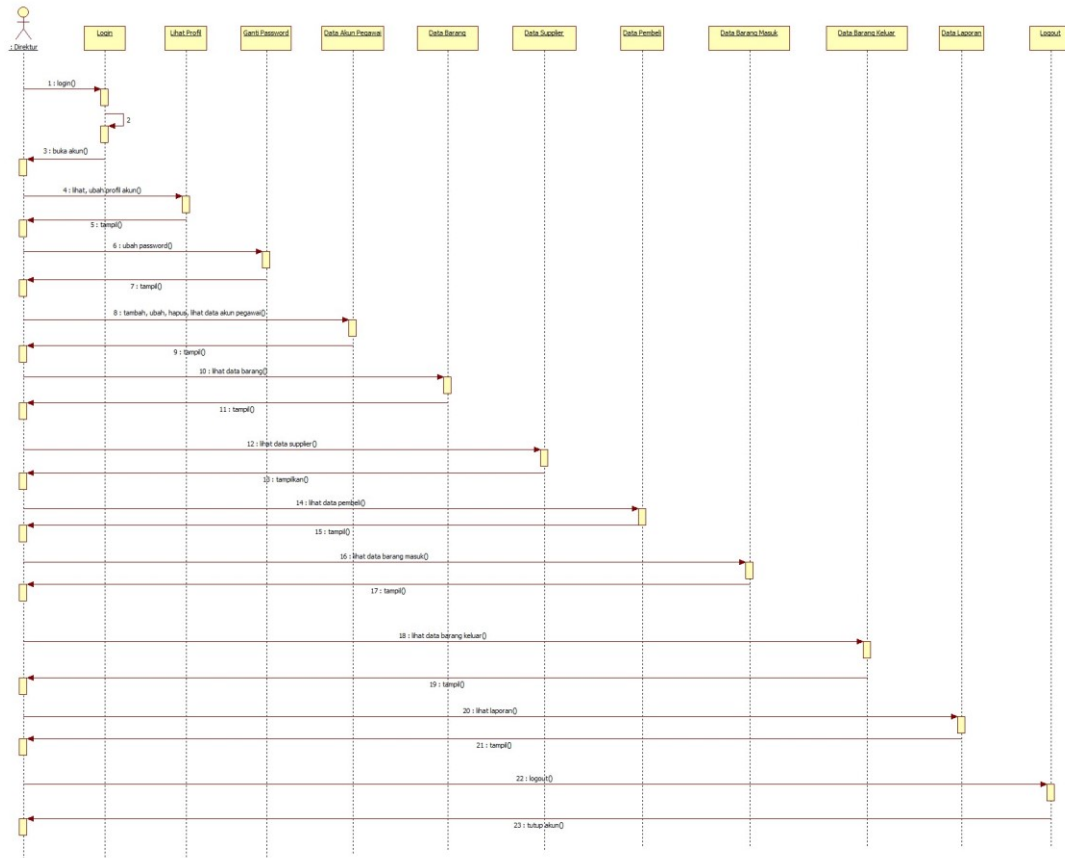


Fig. 5. Director Sequence Diagram

The director can view the report data page consisting of daily, monthly, annual stock reports, daily and monthly reports of incoming goods and daily and monthly reports of outgoing goods where on that page the warehouse manager can search for report data according to the desired time. After the process is complete, the system will display the page again. After that, the director can close the website by logging out where after the director has logged out, the system will close his account.

In the sequence diagram of the process that occurs, the warehouse manager will first see the login page. On the login page, the warehouse manager will perform the login process, after which the system will verify the username and password that have been entered. If successful, the system will open a warehouse manager account. The warehouse manager can view his account profile on the profile page. On the profile page the warehouse manager can also change the profile where after the process is complete the system will display the profile page again with the updated profile data. The warehouse manager can also perform the process of changing the account password by going to the change password page. Then the system will display the page again with a notification that the password has been successfully updated. Warehouse managers can

view employee account data by opening the employee account data page. On the employee account data page, the warehouse manager can perform the process of adding and changing employee account data. When the warehouse manager has carried out the process, the system will display the employee account data page again with the updated employee account data. Then the warehouse manager can view the item data by going to the item data page. On the item data page the warehouse manager can perform the process of adding and changing item data. After the process is done, the system will display the item data page again with the updated item data. On the supplier data page, the warehouse manager can perform the process of adding, changing and deleting supplier data. After the process is complete, the system will display the supplier data page again with updated supplier data. Then the warehouse manager can also view buyer data by opening the buyer data page. On the buyer data page the warehouse manager can perform the process of adding, changing and deleting buyer data. After the process is complete the system will display the buyer data page again with the updated buyer data.

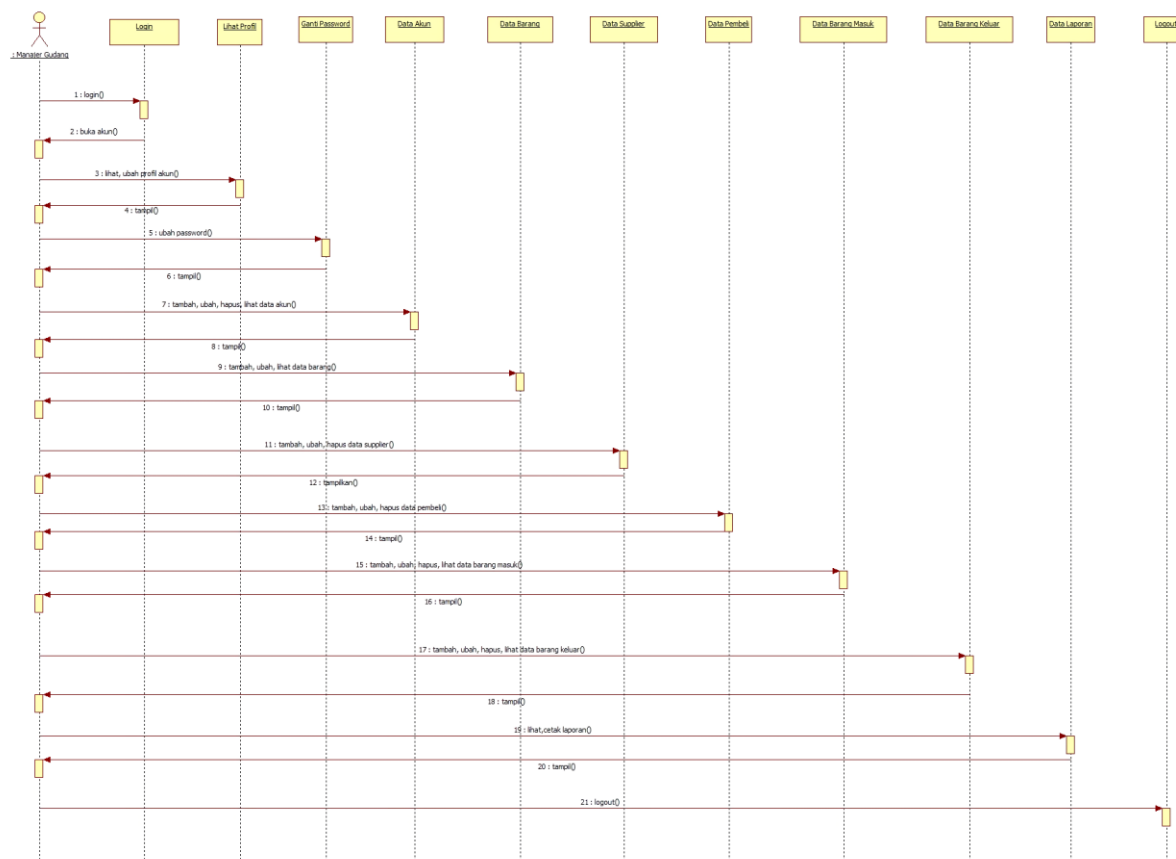


Fig. 6. Warehouse Manager Sequence Diagram

The warehouse manager can view the incoming goods data page which consists of purchase data and sales returns. On the incoming goods data page the warehouse manager can perform the process of adding, changing and deleting incoming goods then the system will display the incoming goods data page again with the updated data. After that, the warehouse manager can view the outgoing goods data page which consists of sales data and purchase returns. On the goods data page, the warehouse manager can perform the process of adding, changing and deleting outgoing goods, then the system will display the goods data page again with updated data. Finally, the warehouse manager can view the report data page which consists of daily, monthly, annual stock reports, daily and monthly reports of incoming goods and daily and monthly reports of outgoing goods where on that page the warehouse manager can search for report data according to the desired time and perform the page printing process. After the process is complete, the system will display the page again. After that, the warehouse manager can close the website by logging out where after the warehouse manager logs out, the system will close the account.

In the sequence diagram the process that occurs is that the warehouse staff will first see the login page. On the login page, the warehouse staff will perform the login process, after which the system will verify the username and password that have been entered. If successful, the system will open a warehouse staff account. Warehouse staff can view their account profiles on the profile page. On

the profile page the warehouse staff can change the profile where after the process is complete the system will display the profile page again with the updated profile data.

Then the warehouse staff can carry out the process of changing the account password by going to the change password page. Then the system will display the change password page again with a notification that the password has been successfully updated. Warehouse staff can view item data by going to the item data page where the system will display the item data page. Then warehouse staff can also view buyer data by opening the buyer data page. On the buyer data page, warehouse staff can perform the process of adding buyer data. After the process is complete the system will display the buyer data page again with the updated buyer data.

Warehouse staff can view the incoming goods data page which consists of purchase data and sales returns. On the incoming goods data page, warehouse staff can carry out the process of adding incoming goods then the system will display the incoming goods data page again with updated data. After that the warehouse staff can see the data page of outgoing goods consisting of sales data and purchase returns. On the goods data page, warehouse staff can perform the process of adding goods out, then the system will display the data page for goods out with updated data. Finally, warehouse staff can view report data pages consisting of daily, monthly, annual stock reports, daily and monthly reports of incoming goods and daily and monthly reports of outgoing goods where on that page the warehouse

manager can search for report data according to the desired time and perform the page printing process. After the process is complete, the system will display the page again.

After that, the warehouse staff can close the website by logging out where after the warehouse staff logs out, the system will close the account.

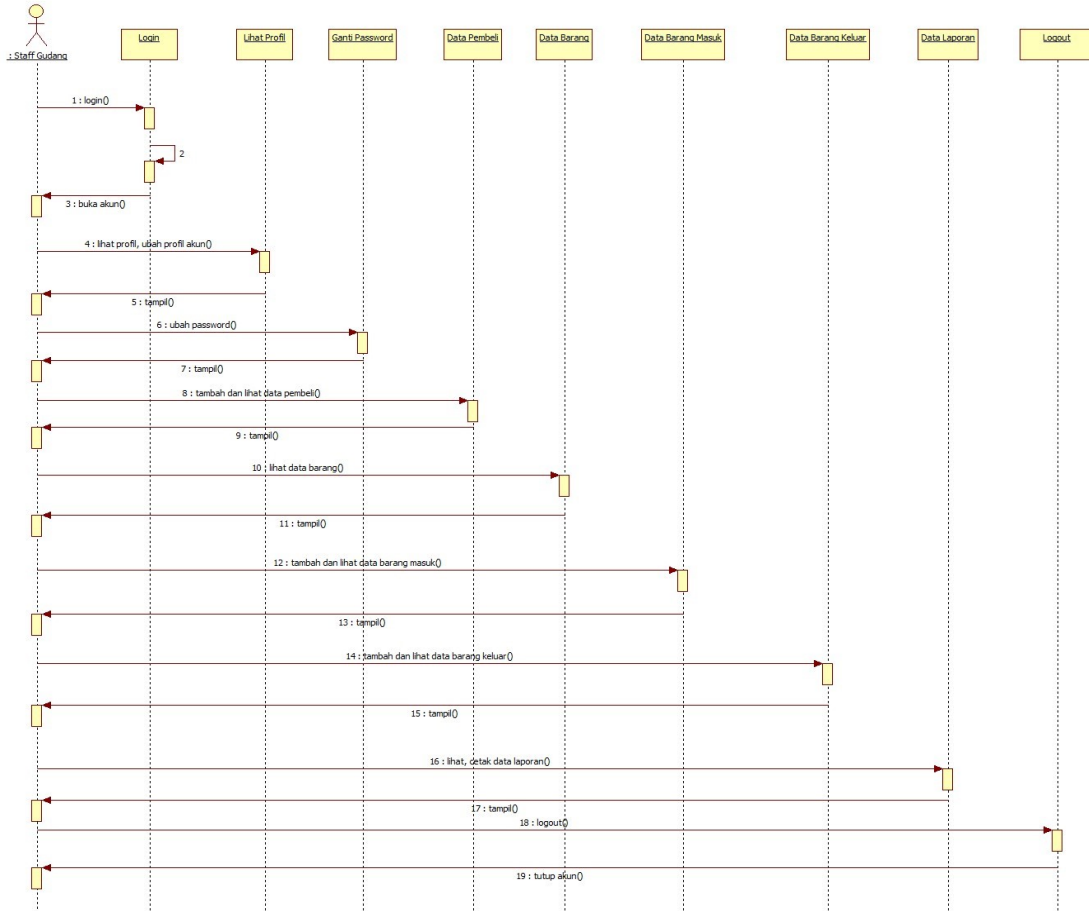


Fig. 7. Warehouse Staff Sequence Diagram

E. Collaboration Diagram

The following is a collaboration diagram of a director on the inventory website of PT Yabes Mega Utama:

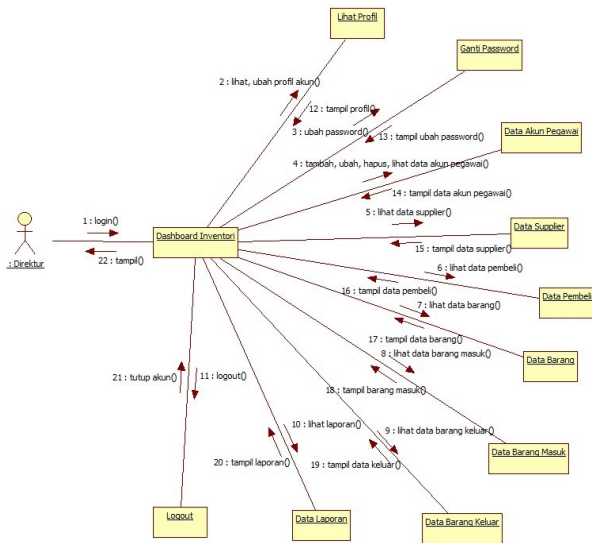


Fig. 8. Director Collaboration Diagram

manager on the inventory website of PT Yabes Mega Utama:

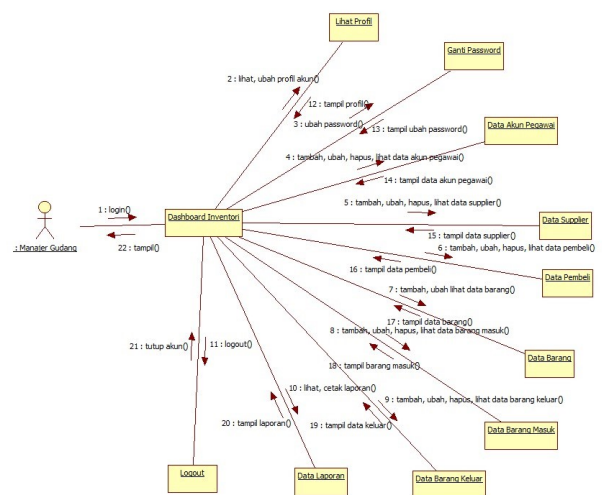


Fig. 9. Warehouse Manager Collaboration Diagram

The following is a collaboration diagram for warehouse staff on the inventory website of PT Yabes Mega Utama :

The following is a collaboration diagram of a warehouse

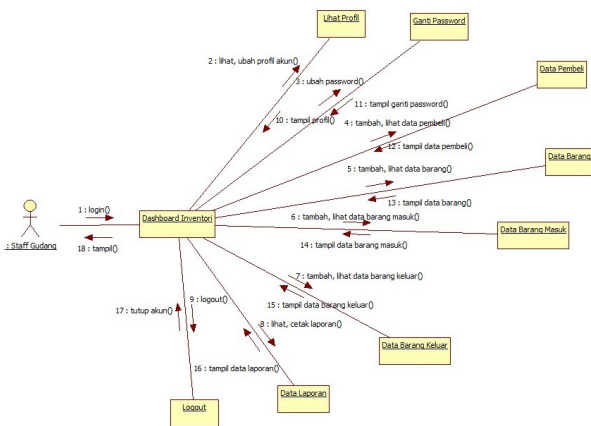


Fig. 10. Warehouse Staff Collaboration Diagram

F. Use Case Diagram

The following is an entity relationship diagram from the PT Yabes Mega Utama inventory website:

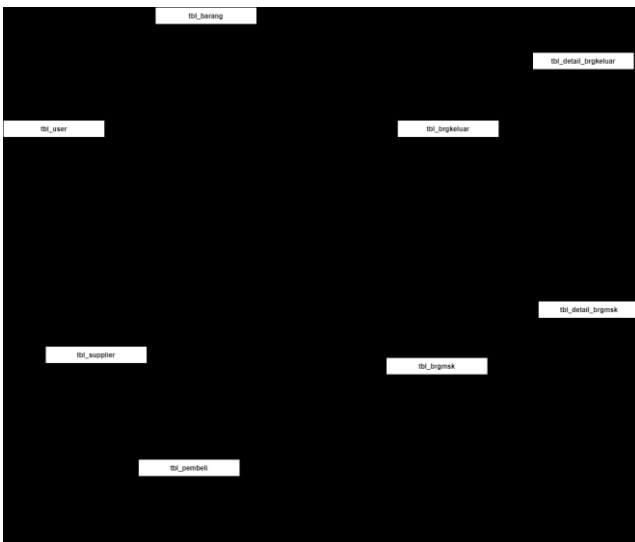


Fig. 11. Entity Relationship Diagram

G. Result

The following is the result of the appearance of the PT Yabes Mega Utama inventory information system website:

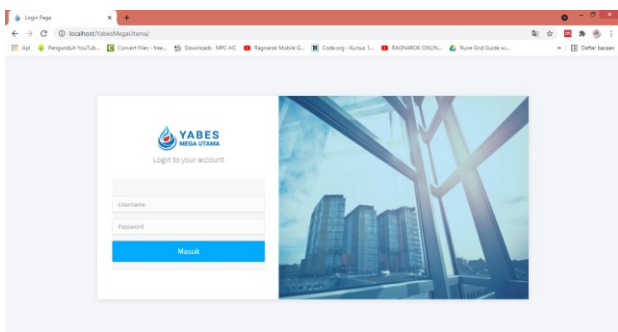


Fig. 12. Login Page

Fig. 12 is a page display that appears when the director, warehouse manager, or warehouse staff will log in to enter the PT Yabes Mega Utama inventory website.

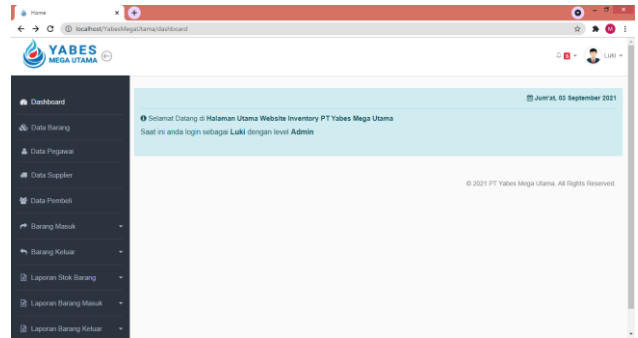


Fig. 13. Dashboard Pages

Fig. 13 is the main page display that will appear after the director, warehouse manager, and warehouse staff have successfully logged in. On the main page only directors and warehouse managers can access employee data pages, buyer data and supplier data. In addition to these functions, directors, warehouse managers and warehouse staff can access the goods data page, incoming goods data, outgoing goods data and reports consisting of stock reports, incoming goods reports and outgoing goods reports.

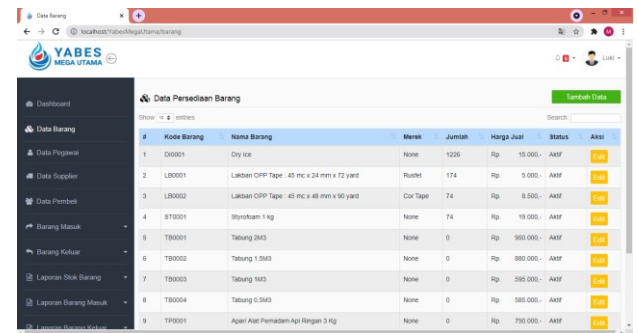


Fig. 14. Inventory Data Page

Fig. 14 is a page display used by directors, warehouse managers, and warehouse staff to view inventory data. On the inventory data page, the warehouse manager can view item data, add item data and edit item data. Warehouse staff can also view item data and add inventory data on the inventory data page while the director can only view inventory data.

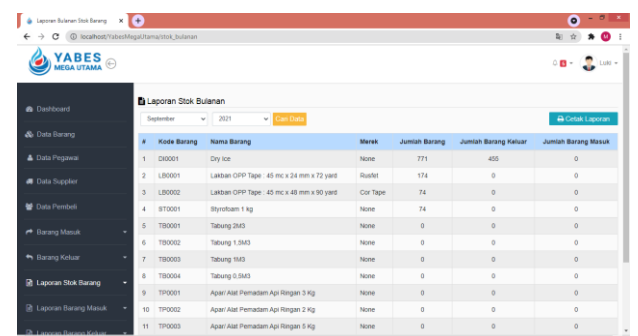


Fig. 15. Stock Report Page

Fig. 15 is a page display used by directors, warehouse managers and warehouse staff to view stock reports. On the stock report page, warehouse managers and warehouse staff can search for report data according to the desired time and print the report. On the stock report page the director can

only search for report data according to the desired time but cannot print the report.

V. CONCLUSION

A. Conclusion

Based on the results of the study, the following conclusions were obtained:

1. The design of the inventory website application can help solve the problems experienced by PT Yabes Mega Utama warehouse employees in managing the stock of goods in the warehouse.
2. The inventory website application can help PT Yabes Mega Utama warehouse employees in carrying out the inventory management process so that it can facilitate ongoing business processes.

B. Suggestion

Based on the results of this study, the suggestions that can be given by the author are as follows:

1. Make the inventory website look even more attractive.
2. Increase other features on the inventory website so that the website can function even better.

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