Accounting Information System on Libra Using Laravel 9

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Abstract— Libra is a convenience store located in Magelang, Central Java. The store provides all kinds of necessities and people can buy the items wholesale or retail. This store has a problem in recording sales and purchases which results in the quantity in the warehouse not matching the original. To prevent further errors, a Laravel framework system was created with the waterfall design method. The Waterfall method is carried out with a systematic object approach starting from the system requirements stage, analysis stage, design stage, coding stage, testing stage, and maintenance stage. Testing uses the black box method to find out whether the system is operating properly or not. With the design of this system, recording purchases and sales of Toko Libra is more effective & efficient and can be stored in the system.

Keywords— information systems, accounting, laravel, point of sales system, design

I. INTRODUCTION

In this day and age where the industrial era 4.0 is increasingly developing, it requires all existing sectors to implement a new system using technological assistance. One sector that plays an important role in the country's economic growth is the trade sector. By applying technology to trade activities, existing businesses can run more effectively and efficiently.

Libra is one of the many businesses that still conduct sales activities manually. Libra is a business located on North Tidar, Magelang City, Central Java. Libra sells goods in grocery and wholesale. With only 3 employees, Libra can earn a turnover of 25 million rupiah a month. At this time Libra has several problems related to its operational activities. Libra records sales transactions using cash receipts. Of the many records made, there are often one or two notes that are lost due to negligence from the employees. In addition, checking and recording inventory is carried out by Libra staff. Staff sometimes make mistakes in recording the amount of inventory available. As a result of the loss of notes and recording of inappropriate inventory stock, sales activities do not run as they should. There has been an incident where the buyer wants to buy a certain item and the staff says it is available, after checking it turns out that the item is out of stock which causes the buyer to cancel the purchase at GRS Libra.

From the problems mentioned above, research was made to design an accounting information system for Toko Libra.

II. LITERATURE REVIEW

This research aims to design a proper accounting information system, we should know the definition of the root first.

A. ACCOUNTING INFORMATION

A system is a unity of various elements that are interconnected to perform a set goal. With the existence of a system in an

object, the object's activities will run smoothly and effectively[1]. Information is data that has been processed so that the processed data can be used as a basis for making the right decisions[2]. And for the last, accounting is activities to provide quantitative information that will be used to make economic decisions related to business continuity[3]. Based on the three explanations above, we can conclude that an accounting information system is a system that can collect and process data to produce accounting information that is useful for decision makers.

B. WHOLESALE

Wholesaling is any activity of selling products in large quantities to non-consumer end buyers for resale or business user[4]. Usually, wholesale businesses have target buyers, namely retailers, wholesalers, industrial companies, and government agencies. Wholesalers have the concept of buying products in large quantities at lower prices from the manufacturer, then the products will be resold to retailers and retail companies. Wholesalers will benefit from the difference between the price when the goods are purchased from the manufacturer and the price when the goods are sold to other parties. In accordance with the wholesale concept discussed above, wholesalers will buy goods in large quantities so that they can ask for discounts from sellers and then sell them at a higher price.

C. PHP

PHP (Hypertext Processor) is a programming language used to translate the program code base into machine code that can be understood by a computer and it is server-side scripting and open source[5]. The meaning of Server-side scripting is that data processing is done by the server, which means that the server will send the requested data from the database and display it on the web page that will be seen by the user.

D. FRAMEWORK

A framework is a work frame that developers use to develop a program or application systematically. It's a basic conceptual structure used to solve or deal with a complex problem[6]. Frameworks are very helpful for developers in the process of creating a system because developers get programming components that have been provided by the framework, in other words, developers do not need to create a program from scratch.

To make the system, needs a framework that contains PHP, so Laravel is chosen. Laravel is a framework that can help in developing a website with the PHP programming language. Laravel framework is favored by many developers because of its effective performance with its easy and simple usage. Laravel uses an MVC structure that separates the front-end and back-end program code so this structure plays an important role in the website development process.

III. METHOD

Because system design begins with analysis and ends with testing waterfall method is an appropriate method for designing this system. The Waterfall method is one of the oldest SDLC (Software Development Life Cycle) because of its natural nature. It is a methodology for designing and building software systems, where the design process gradually flows from top to bottom[7]. The Waterfall method is carried out with a systematic approach to objects starting from the system requirements stage, analysis stage, design stage, coding stage, testing stage, and maintenance stage. All of these stages must be carried out sequentially / according to the flow, therefore this method is called Waterfall. Figure 1 a waterfall method diagram, can be shown below :

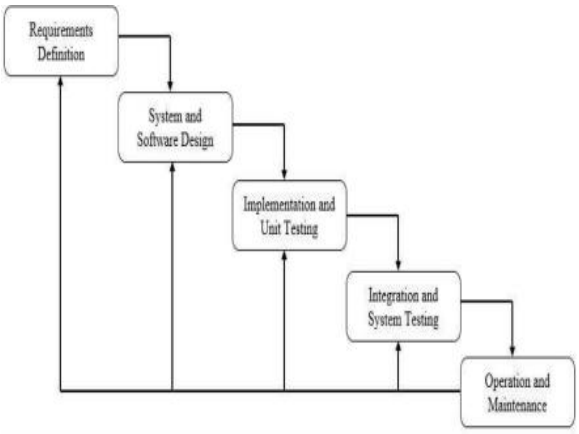

Figure 1 Waterfall Method Diagram

The research object used in this study is a wholesale business called Libra. Libra is located in North Tidar, Magelang City, Central Java. To get the data, research using qualitative data taken from interviews such as the reasons for switching from manual to system-based operational activities.

Besides the qualitative data, also used primary data that also obtained from interviews. The result of the interviews is to get data of all products sold at Libra.

last but not least, the research used secondary data that can be obtained from other parties or can be obtained from primary data that has been further processed by primary data collectors. Secondary data from this research are purchase invoices and sales notes owned by GRS Libra. This data is used when creating an inventory stock system.

IV. RESULT AND DISCUSSION

After discussing with the owner of Libra, can conclude that the main problem is on sales, purchasing, and warehouse inventory.

A. PROBLEM ANALYSIS

The design of the system will be based on the main problem. Table 1 shows the problem analysis of the store.

Table 1 Problem Analysis

Problem	Solution
Sales recording is still done manually Price calculation is still done semi-manually (with the help of a calculator).	Creating a system for the sales module so that recording can be done quickly & price calculations can be done automatically.
Supplier data is not written in detail, Purchase recording is still done manually (invoices).	Creating a system for the purchasing module so that recording can be done quickly and accurately.
Inventory recorded is not accurate.	We are creating the "Products" module to make it easier for users to check the current stock and price.

B. DESIGN

After understanding the problems that exist. the next step is to design diagrams and flowcharts to understand the business flow of the system to be created.

In this system there are only 2 actors who can use the system, they are the admin and the cashier. Admin has all access to the system, while the cashier only has access to the product management & sales purchase section. For a better explanation, Figure 2 shows the use case diagram of the system.

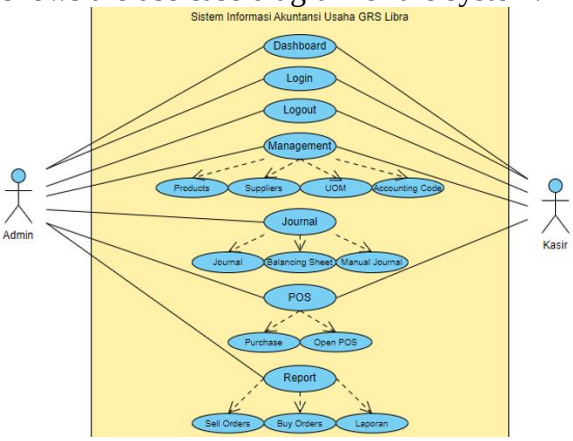

Figure 2 Use Case Diagram

After creating a Use Case Diagram, we can understand the actors that will use the system and start making the flowchart to describe the flow of the system. Figure 3 and Figure 4 show the Purchase Flowchart and Sales Flowchart.

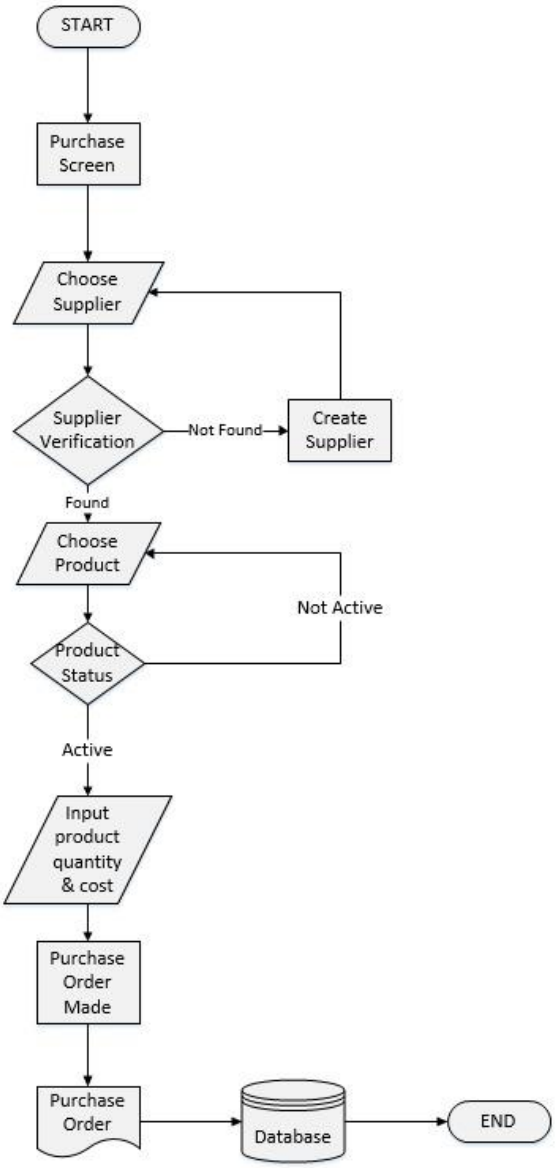

Figure 3 Purchase Flowchart

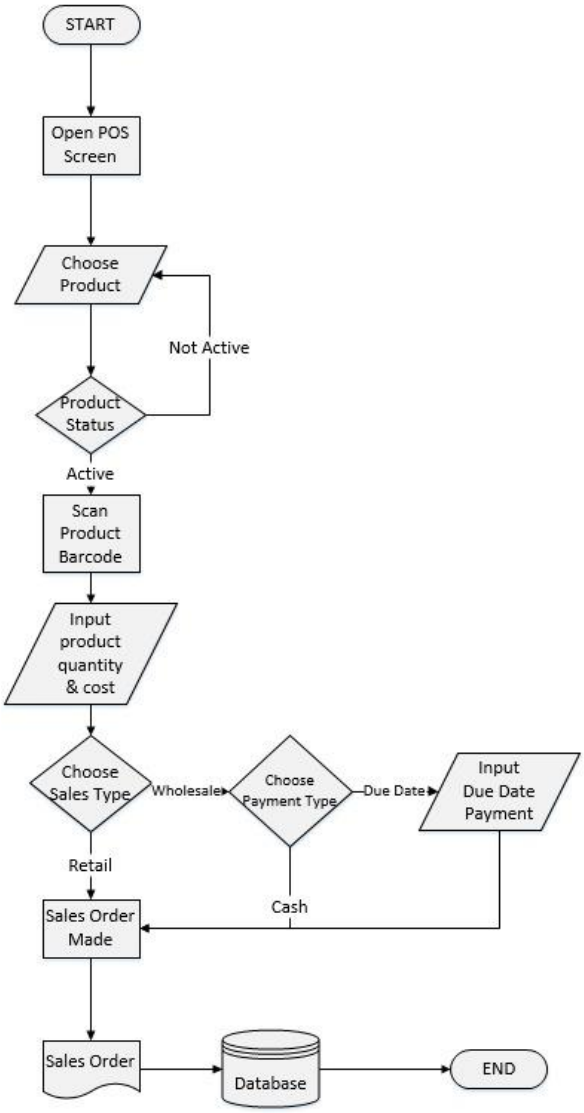

Figure 4 Sales Flowchart

C. IMPLEMENTATION

Before accessing the website, user must log in into the system first. Figure 5 shows the login page of the system.

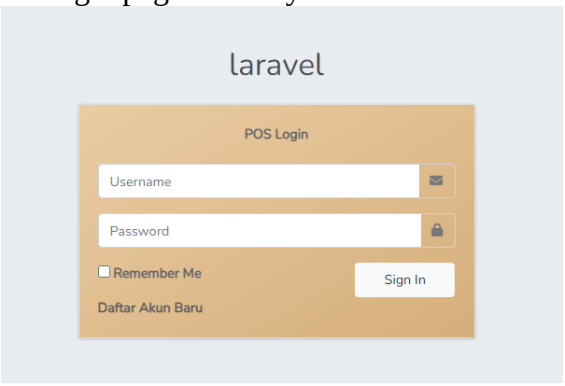

Figure 5 Login Page

After completely login to system, user will be shown the dashboard page.

Dashboard page has function to monitor how much income, expenses, sales, and purchases the system has made. On the top right of the dashboard, there is also a date & time and notification of items that will be expired. Figure 6 shows the dashboard page.

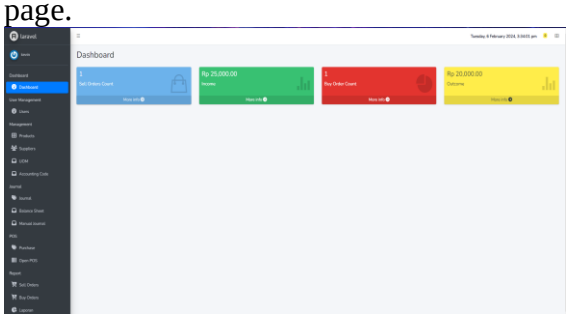

Figure 6 Dashboard Page

Figure 7 is the design of the user page to make settings for the user. It is used to create, update, and delete users.

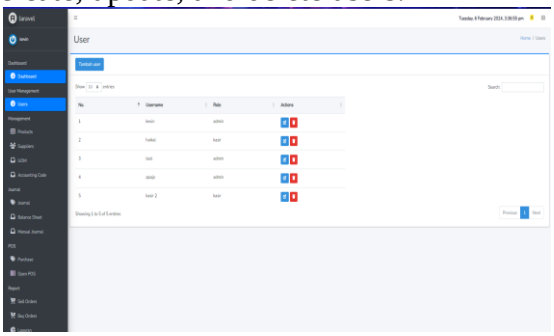

Figure 7 User Page

To start the operational, first user needs to creating the product for the store. User need to go to product page to create it. Product page created to perform the setup process on the product, like adding products, changing products, or deleting products. Figure 8 shows the product page.

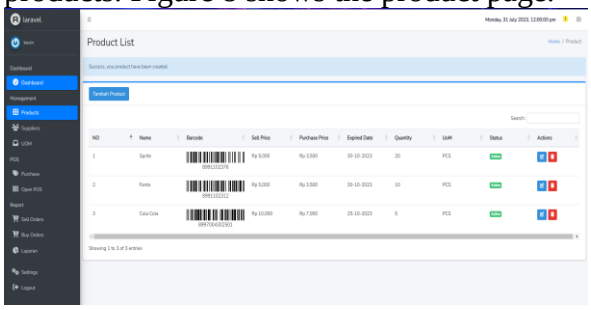

Figure 8 Product Page

After setting up the products, the user must add suppliers to the system. The purpose is to buy products from the suppliers. Figure 9 shows the supplier page.

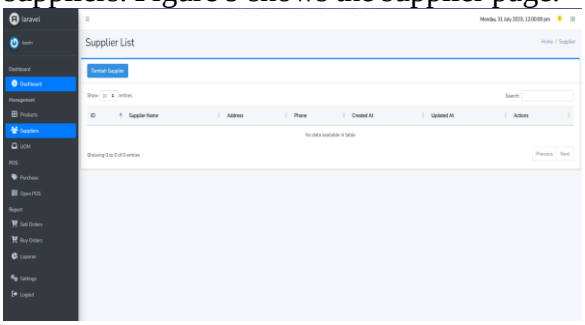

Figure 9 Supplier Page

UOM (Unit of Measurement) is also needed to support the completeness of the system. with the existence of UOM, products can be distinguished from others. Figure 10 shows the UOM page.

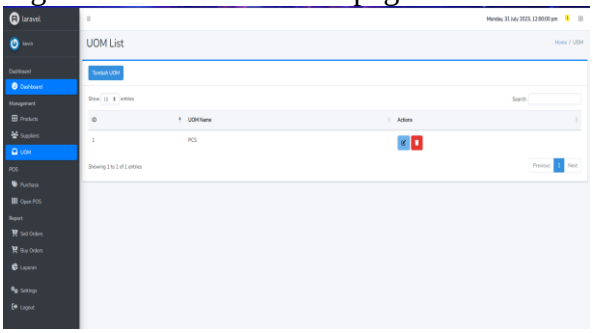

Figure 10 UOM Page

Accounting Code has a function to add or delete accounting codes. This accounting code is used for inputting journals and displaying the trial balance. Figure 11 shows the accounting code page.

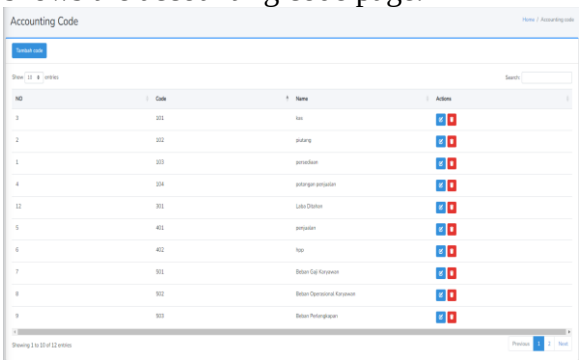

Figure 11 Accounting Code Page

This is the main part of the system. The purchase page is used to record the purchase process. Users must select a supplier first before inputting any items purchased. On this purchase page, users do not use the barcode scan feature but input the items

manually. After inputting the required items, the user can click the submit button to complete the process of recording the purchase of goods. Figure 12 shows the Purchase Page.

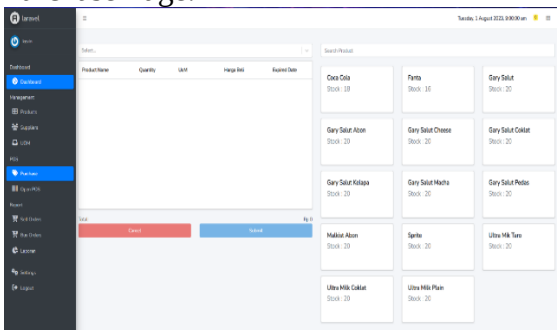

Figure 12 Purchase Page

This is also the main part of this system. The Open POS page is used to process the sales recording process. Users must select the type of sale first before inputting any items purchased. On this Open POS page, users can use the barcode scan feature to automatically input goods.

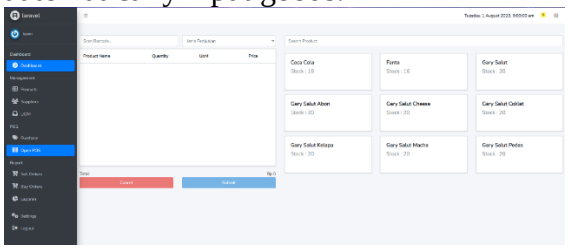

Figure 13 Open POS Page

D. BLACKBOX TESTING

To check the accounting information system that has been designed, the research used the black box method. this method is quite appropriate for testing this system due to its effectiveness. after testing thoroughly, did not find any bugs in the system. the whole system works well. The system is also in accordance with the wishes of the Libra store owner. With this it can be concluded that the system can be submitted to the user to carry out store operations.

V. CONCLUSION

From the results of research conducted by the author, it can be concluded that designing an accounting information system with the Waterfall method can help the business operations of Libra. Recording purchases and sales of Libra will be more effective & efficient and can be stored in the system and also Libra sales activities will be faster because it uses a barcode and scanner system. Then the system can compare prices between suppliers with one another, so that Libra can buy goods at the lowest price.

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