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Inventory System Design Using the First In First Out Method

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Abstract

The use of computers is growing rapidly in all fields according to the progress of the times, resulting in many changes in human life in dealing with every problem that occurs and is related to the development process as a whole. One of the developments in the business sector is the Inventory System. Businesses operating in the field of drug sales still use the method of stocking goods, where when one of the stocks of a drug runs low, it will be immediately stocked. The information system that will be created for drug supplies uses the First In First Out (FIFO) method. The FIFO method means that the company will first use old/first-in stock for sales. It is hoped that this research will help leaders and employees manage drug stock transaction data efficiently.

Keywords : Information Systems, Inventory, FIFO, Employee

1. Introduction

In the current era of globalization, computers are a tool that is needed by many agencies and companies. The use of computers is growing rapidly in all fields according to the progress of the times, resulting in many changes in human life in dealing with every problem that occurs and is related to the development process as a whole. One of the developments in the business sector is the Inventory System.

Inventory system or inventory of goods is an asset that includes goods owned by a company or certain business entity with the intention of reselling them within a normal business period [1][2]

The FIFO (First in First Out) method is a method that assumes that the purchase price of inventory items is allocated to the cost of goods sold based on the order of purchase. That inventory items purchased earlier will be used or issued first, so that the value of final inventory items will be assessed based on the purchase price of the last inventory item [3]

The FIFO method is based on goods that are first in, first out. This means that if the medicines (of the same type and brand) are the first to enter the warehouse, the goods will be sent first to the pharmacy , this aims to avoid expiry of these medicines [4] . With FIFO, inventory costs are calculated on goods that are ready to be sold or consumed consumed that has been around for longer and that means the available stock is purchased the oldest or was produced first and the units used will be charged at the price of the oldest item [5].

The FIFO method means that the goods in inventory that are first purchased will be sold or used first so that those in ending inventory are those purchased or produced later [6] [7] . With FIFO, inventory costs are calculated on goods ready to be sold or consumed that have been around longer and this means that the available stock is the oldest purchase or the first to be produced and the units used will be charged at the price of the oldest goods.

When implementing the first in first out method, this means that the company will first use old stock/first in (first in) for sales. Therefore, inventory at the end of the period will usually be valued at the cost of the last purchase. The FIFO method is suitable for companies that sell products with expiry dates such as food, drinks, medicines and other products [8]

Inventory of goods is a process of a sales transaction, so that sales can run smoothly, the goods needed must be available, therefore checking the inventory of goods must be carried out periodically so that the goods are out of stock so that they can be available again [9] [10]

Inventory of goods is one of the company's activities that is very important for the company's development. The problem that this company often faces is that errors often occur in recording transaction data for orders and sales of goods, resulting in difficulties in controlling inventory. As the number of types of goods increases,

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several problems arise, namely inventory information cannot be presented quickly, precisely and accurately [11]

The cause of this problem is processing transaction data which requires several stages and often occurs when recording errors in invoices, forms and reports. Apart from that, processing transaction data into inventory information is often delayed by staff in the inventory section. To overcome this problem, an inventory information system that is appropriate and meets needs is needed

At the Ridel Farma Pharmacy, the need for information regarding stock inventory is very necessary. Businesses operating in the field of drug sales still use the method of stocking goods, where when one of the stocks of a drug runs low, it will be immediately stocked. When tracing incoming and outgoing goods, it will be very difficult and take time because you have to check the available drug stock one by one. One way to overcome this problem is to use an information system. This information system will later provide information regarding stock inventory. The stock management information system implemented at the Ridel Farma Pharmacy is expected to overcome existing problems. Apart from that, Ridel Farma Pharmacy can get benefits such as faster data processing and decision making and can save time, it is easier for companies to manage stock of goods.

2. Research methodology

So that the steps taken by the author in this research do not deviate from the main discussion and are easier to understand, the sequence of steps will be made systematically so that they can be used as clear and easy guidelines for solving existing problems. The sequence of steps that will be carried out in this research can be seen in Figure 3.1 below:

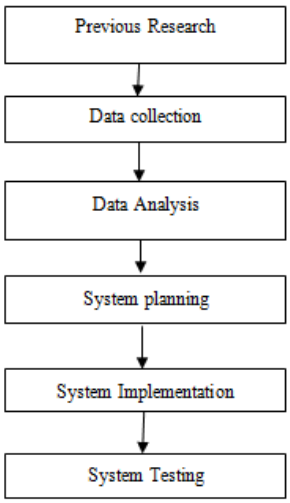

Figure 1. Research Framework

Research stages are a sequence of processes or steps that will be carried out in completing this research. The stages of this research are as follows:

Previous Research

Preliminary research is to directly inspect the research location and ask permission if you want to conduct research at that location

Data collection

The collection of required evidence is carried out during the research process until the specified time

Analysis

Based on the problem identification above, the researcher conducted data analysis first. This is so that problem solving can produce new solutions.

System planning

The data that has been collected and the analysis process has been carried out is then designed to obtain a final result by taking clear action.

System Implementation

Implementation The system is the stage of laying out the system so that it is ready to operate. Implementation aims to confirm the design modules, so that users can provide input for the development of the *Inventory System application* . At this stage the design of the *Inventory System application* is carried out using the *PHP programming language* and *MySQL Database* .

Testing

The testing carried out by the author is a process that aims to ensure whether all functions work properly and look for errors that occur in the system .

3. Results and Discussion

Application of the First In First Out (FIFO) Method

Table 1 Application of the FIFO Method

Date	Information	Sales Amount	Amount in process
03/01/2022	Purchase 1	100 Units	-
03/08/2022	Purchase 2	50 Units	-
03/12/2022	Purchase 3	50 Units	-
Number of Stock Items		200 Units	-
Number of Items Sold		-	-

There are several purchase transactions 1 to 3 with a total of 200 units.

Date	Information	Sales Amount	Amount in process
03/01/2022	Purchase 1	100 Units	0 Units
03/08/2022	Purchase 2	500 Units	300 Units
03/12/2022	Purchase 3	100 Units	100 Units
03/22/2022	Sales 1	-	300 Units

Number of Stock Items	700 Units	400 Units
Number of Items Sold	-	300 Units

Process sales 1 with a quantity of 300 Units, then processed on purchase data 1 the initial quantity of 100 Units is reduced by 100 Units where in sale 1 there are still 200 Units and continues with purchase 2 which is reduced by 200 Units remaining from the amount in purchase 2 to 200 Units and purchasing 1 becomes 0 Units, so the total stock of goods is 400 Units and the number of goods sold is 300 Units (the reduction process can be seen in the table above)

Date	Information	Sales Amount	Amount in process
03/01/2022	Purchase 1	0 Units	0 Units
03/03/2022	Purchase 2	300 Units	250 Units
03/12/2022	Purchase 3	100 Units	100 Units
03/22/2022	Sales 1	300 Units	300 Units
03/30/2022	Sales 2	-	50 Units
Number of Stock Items		400 Units	350 Units
Number of Items Sold		300 Units	350 Units

process is 50 units because in purchase 1 the quantity was 0 units, then purchase 2 is continued with a quantity of 300 units, reduced by 50 units to 250 units and the total stock of goods is 350 units and the number of goods sold is 350 units (the reduction process can be seen in the table above)

From the explanation above, it can be understood that the sale of goods is taken from the first time it is carried out.

System Implementation

Login page

The login page is the page used to enter the username and password according to each user, which can be seen in Figure 2.

Figure 2 . Login Page Display

Category Data Page

The category data page is a page that we use to input category data before inputting item data, where when we input item data we have to determine where the item category is located. It can be seen in Figure 3

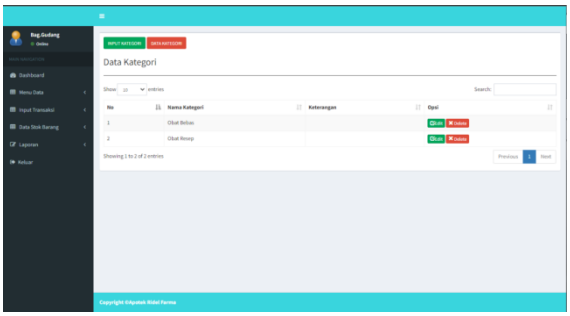

Figure 3 . Category Data Page View

Supplier Data Page

The supplier data page is the page that we use to input supplier data before inputting goods data,

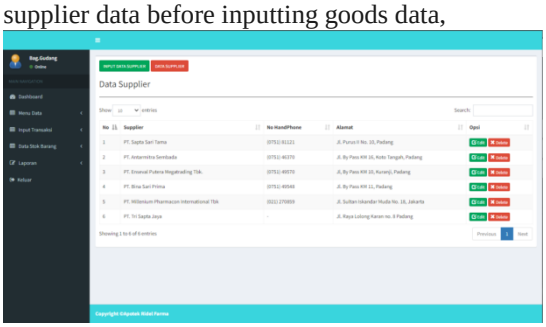

Figure 4 . Supplier Data Page Display

Item Data Page

The item data page is the page that we use to input item data according to the categories we have entered previously

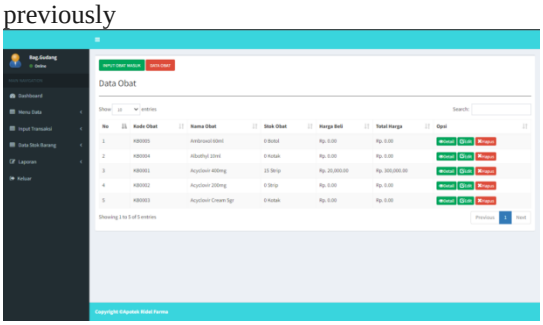

Figure 5 . Item Data Page Display

Purchase Transaction Page

The purchase transaction page is the page that we use to input purchase transactions for goods from suppliers

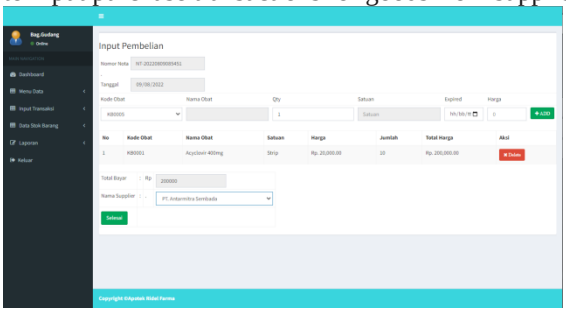

Figure 6 . Purchase Transaction Page Display

Stock Items Page

The stock page is a page that we use to see or check the remaining stock of goods

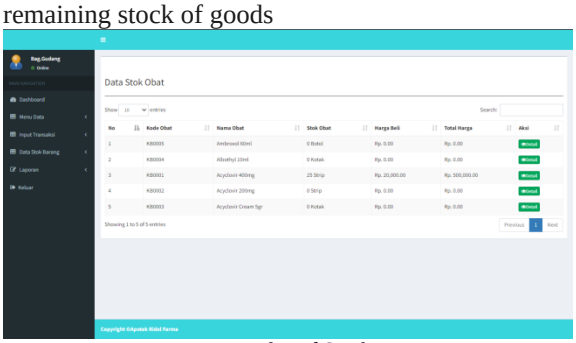

Figure 7 . Display of Stock Data Page

Sales Transaction Page

page is the page that we use to input sales transactions to consumers

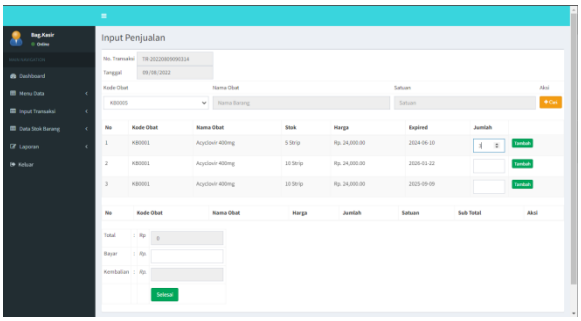

Figure 8 . Sales Transaction Page Display

Sales Report Page

The sales report page is a page that we use to view sales reports that have been made, whether daily, monthly or annually

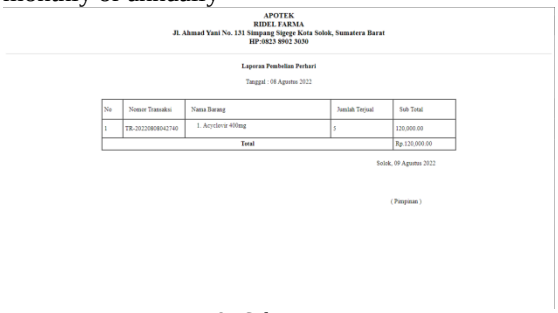

Figure 9 . Sales Report Page View

4. Conclusion

The drug stock inventory information system uses the FIFO method, so processing data is easier , more effective and efficient and reduces the occurrence of errors and makes it easier to produce accurate ordering and sales reports. This built system can simplify the systemized process of collecting data on incoming and outgoing goods so that it is easier to search for the necessary data and with an inventory system it can reduce the buildup of paper. This information system makes it easy for warehouses and cashiers to record data on outgoing goods.

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