



## APPLICATION OF THE FIFO MODEL IN THE DRUG INVENTORY INFORMATION SYSTEM AT THE ASYFA KRUENG MANE PHARMACY

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### Keywords:

Stok, FIFO, Information System

### ABSTRACT

Asyfa Krueng Mane Pharmacy is a business entity engaged in the sale of drugs. The drug supply data processing system that was carried out at the Asyfa Krueng Mane Pharmacy still uses ordinary stationery to process drug supply data so that it is deemed less effective and efficient. Therefore, there is a need for an information system that can be used to assist and support the efficiency of the drug data processing process at the Asyfa Krueng Mane Pharmacy using the FEFO (First First Out) method, which is a method that dispenses drugs with shorter expiry dates than drugs with a later expiry date. long. With the application of the FEFO method in the Asyfa Krueng Mane Pharmacy information system, it is hoped that there will be no more accumulation of drugs and drugs with shorter expiration than drugs with longer expiration can be issued in order. As for the research results, you can see the Asyfa Pharmacy and type of Obt001 and type of Paracetamol and drug stock and date of entry and exit

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## 1. Introduction

Supplies are an important part of company activities, including pharmacies. Without stock, a business unit runs the risk of not being able to meet the needs of its customers, which means they will not meet their customer service goals. Utilization of Information Technology Decision Making System [1].

When holding stock, there is often a need for a more efficient way to control and manage large amounts of stock, including in pharmacies. The effectiveness and efficiency of the procurement department certainly contributes to the existence of Asyfa Krueng Mane Pharmacy [2], [3].

Medicines are handled by the logistics function in the pharmacy. The logistics management function is a process consisting of planning and scheduling, shortage, procurement, storage, distribution, maintenance, disposal and control. Inventory management is a key function of inventory management which aims to balance supply and demand. Availability of the right type and quantity of medical supplies at the right time, in good condition and at the lowest possible cost is the most important thing to consider when handling them. From the problems above, the authors have prepared a container that can make it easier for drug store owners to easily find out how much of their remaining drug supply is neatly listed on the Web. Inventories are a number of finished goods, raw materials, goods in process owned by the company for sale or further processing [4].

Company property for resale. There are various methods of recording inventory, namely the perpetual inventory method, where each movement of inventory is recorded on an inventory card, and in the physical inventory method (physical inventory method), only additional inventory from purchases is recorded, while inventory movements are reduced. because usage is not recorded in the stock card [5], [6].

## 2. Literature Review

The system is a series of two or more parts that are interconnected and interact to achieve a goal. Most systems consist of smaller subsystems that support the larger system. A system is designed to deal with something that happens repeatedly or intermittently to solve a particular problem. The systems approach is a philosophical approach in which the understanding of the structure coordinates activities and activities in the organization in the most efficient way. Then there is technology that can see technology for monitoring in determining drug stocks [7].



Based on the journal [8] according to (Edhy Sutanta) reveals: "In general an information system can be interpreted as a set of subsystems that interact with each other, relate to each other and form a unit, integrate with each other and work together between components with one another in a way -certain ways of performing data processing functions, receiving input in the form of data, then processing it, and producing output in the form of information as a basis for making decisions that are useful and have real value that have an impact both in the short term and in the long term long term, in supporting operational, managerial and organizational strategic activities, by utilizing various resources that are owned and available for these functions in order to achieve goals and search within the hospital [9].

A pharmacy is a place where you buy and sell medicines and services. Pharmacy staff are also stationed at the pharmacy to provide other medical services to the public Pharmacies also provide health services to the general public regarding pharmaceuticals such as pharmaceutical raw materials, traditional medicines, medical devices, cosmetics and medicines [10].

There are many different types of drugs. All types of drugs have their own characteristics and purposes. There are drugs with substances that are unstable when made into tablet form, so capsules, powders, solutions, ointments, and so on, there are also drugs that do not dissolve in the stomach but dissolve in the intestines. All are specially formulated to achieve the desired therapeutic effect based on the type of disease suffered and an information in the data store [11]

To maintain the quality of the drug, the storage process must pay close attention, starting from the storage area, conditions, moisture, and other external factors that directly affect the drug, to the length of time it is stored, to prevent the drug from being damaged or entering the expiration date before it can be used and for the drug to see classification. childhood diseases and their medicine.[12]. Sembiring, F., Sari, D. P., Sukmawan, D., Permana, A., & F, M. J. (2019). Improving efficiency in managing pharmacy drug inventory, this study uses FEFO (First-First Out) which is a method to assist management by removing consumables from warehouses and also for distribution to patients in the form of an information system [13].

Later drugs issued from warehouses have shorter expiration dates than products with longer expiration dates, so consumer products with earlier expiration dates will be issued or sold first, currently drug data is only stored in the form of manual bookkeeping, it is difficult to organize properly. adjusted for drug age. For this reason, a web-based information system was created which will store drug data at the Asyfa Krueng Mane pharmacy. It is hoped that it will make it easier for pharmacists to find out data on drugs that are nearing their expiration date or those that have run out of stock, including an explanation of the types of drugs and also other supporting data.

### 3. Method

#### 3.1 Data Collection

Data collection method is a method that physically collects data to be analyzed in research. The data collected in this study includes the following data:

1. Interviews: namely data collection techniques that obtain information by interviewing and asking questions to several pharmacy staff and existing customers directly.
2. Observation Method: In this case make observations on the problems encountered related to the design and manufacture of drug supply information systems for the Asyfa Krueng Mane Pharmacy.
3. Literature Study Method: This method searches for materials that support the definition of the problem through books, the internet, magazines, theses, which are closely related to the subject matter.

#### 3.2 Research Stages

This study uses the FEFO method with the process flow seen in the following system scheme:

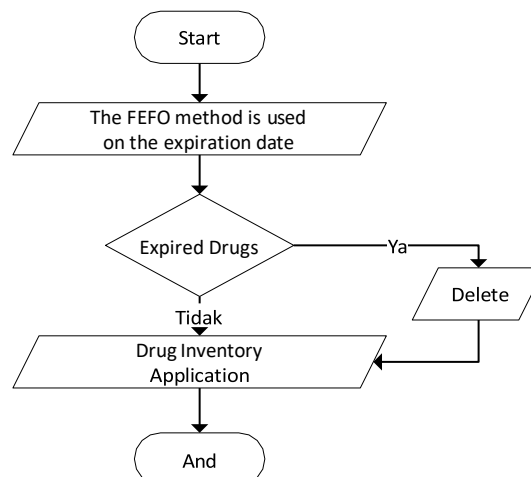


Figure 1. Skema Sistem

#### 3.3 Data Analysis

As for analyzing data in data mining applications, the Knowledge Discovery in Databases (KDD) stage consists of several stages, namely data selection, data mining, analysis, evaluation, and results.

### 4. Results and Discussion

#### 4.1 Initial Data Analysis

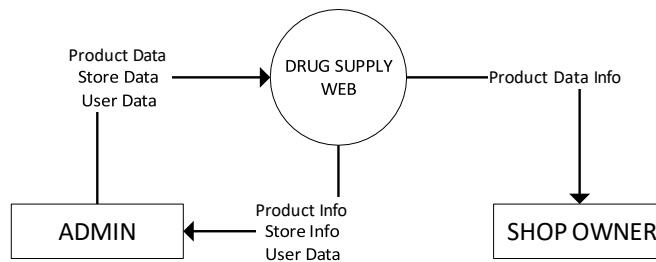
reliminary data analysis Information System Implementation Using the FEFO method In managing the inventory and flow of drugs in and out at the pharmacy are as follows:

**Table 1. Preliminary Data Analysis**

No	Store Name	Drug Code	Medicine name	Amount	Drug Type	Date
1	Ashfa Pharmacy	Obt001	Paracetamol	50	Free	01-01-2021
2	Ashfa Pharmacy	Obt002	Bioferron	50	Free	25-10-2021
3	Ashfa Pharmacy	Obt003	Bodrex	50	Free	28-11-2022
4	Ashfa Pharmacy	Obt004	Betamol	50	Free	14-09-2023
5	Ashfa Pharmacy	Obt005	Ferosfat	50	Free	10-05-2026
6	Ashfa Pharmacy	Obt006	Omegavit	50	Free	02-05-2024
7	Ashfa Pharmacy	Obt007	Neogobion	50	Free	25-11-2022
...	...	...	...	...	...	...
...	...	...	...	...	...	...
199	Ashfa Pharmacy	Obt0199	Diapet	70	Herbs	26-06-2031
200	Ashfa Pharmacy	Obt0200	Rapet Wangi	70	Herbs	26-06-2032

**4.2 System planning**

And drug information will be accessed and managed by admins and users using the web-based FEFO method, the relationship between admins and users can be seen in the following context diagram:

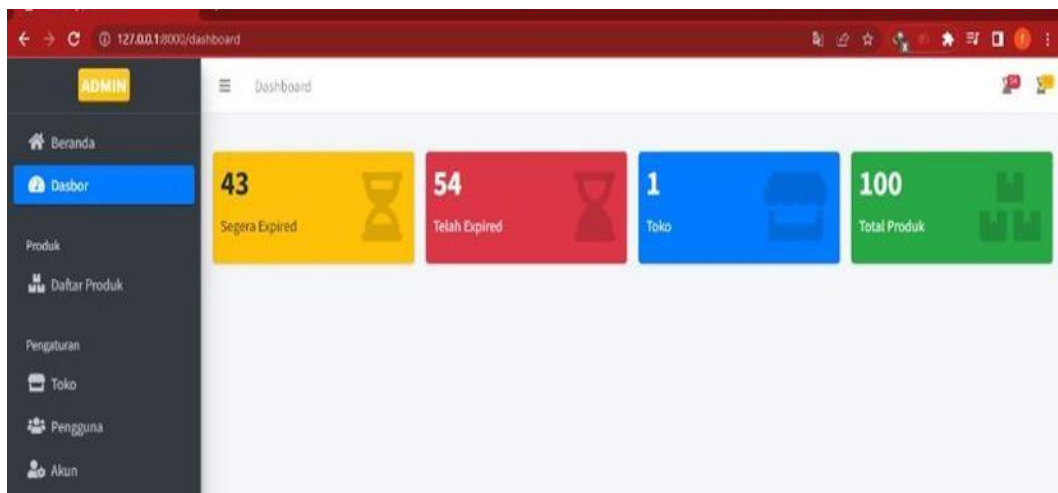


**Figure 2. Context Diagram**

**4.3 Implementation Sistem**

**A. Dashboard Page**

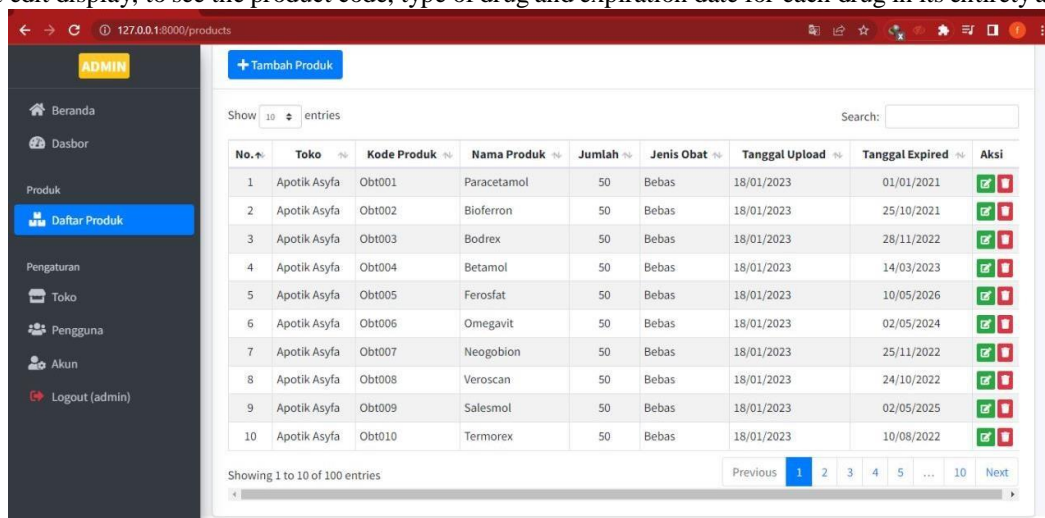
The application dashboard page contains menus and information in the form of drug lists and other information needed:



**Figure 3. Display Dashboard Page**

## B. Add a Stock Edit Menu and Drug Types

Product edit display, to see the product code, type of drug and expiration date for each drug in its entirety and detail:























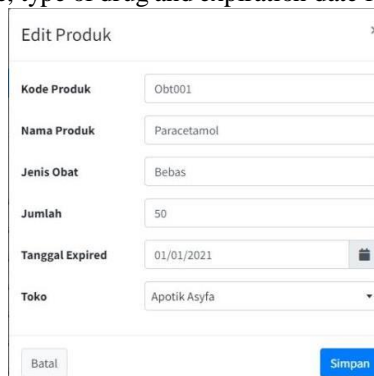
No.	Toko	Kode Produk	Nama Produk	Jumlah	Jenis Obat	Tanggal Upload	Tanggal Expired	Aksi
1	Apotik Asyfa	Obt001	Paracetamol	50	Bebas	18/01/2023	01/01/2021	 
2	Apotik Asyfa	Obt002	Bioferron	50	Bebas	18/01/2023	25/10/2021	 
3	Apotik Asyfa	Obt003	Bodrex	50	Bebas	18/01/2023	28/11/2022	 
4	Apotik Asyfa	Obt004	Betamol	50	Bebas	18/01/2023	14/03/2023	 
5	Apotik Asyfa	Obt005	Ferosfat	50	Bebas	18/01/2023	10/05/2026	 
6	Apotik Asyfa	Obt006	Omegavit	50	Bebas	18/01/2023	02/05/2024	 
7	Apotik Asyfa	Obt007	Neogobion	50	Bebas	18/01/2023	25/11/2022	 
8	Apotik Asyfa	Obt008	Veroscan	50	Bebas	18/01/2023	24/10/2022	 
9	Apotik Asyfa	Obt009	Salesmol	50	Bebas	18/01/2023	02/05/2025	 
10	Apotik Asyfa	Obt010	Termorex	50	Bebas	18/01/2023	10/08/2022	 

Figure 4. Display of Drug Data Page

Product edit display, to see the product code, type of drug and expiration date for each drug in its entirety and detail




Edit Produk ×

Kode Produk

Nama Produk

Jenis Obat

Jumlah

Tanggal Expired  

Toko

Figure 5. Product Edit Display

### 5.1 Conclusion

The conclusions from this research are the application of the FIFO Model in the Drug Inventory Information System at the Asyfa Krueng Mane Pharmacy as follows:

1. With this application, it can be easier to see drug stocks and everyone who works in a pharmacy can use the Asyfa Pharmacy Information System.
2. With the Asyfa Pharmacy drug supply information system website, owners or workers can easily find out which medicines will expire or have expired and applications. The research results are in the form of a drug supply network, the website is designed in PHP, and the database is stored with MySQL

### 5. Acknowledgement

The suggestions from the research are as follows:

1. Admins must be more careful in inputting drug data so that customers can find out any information about the drug.
2. There is a model in viewing the program and must understand in terms of inputting drug data so that the drug data entered is not mixed up and the owner of the pharmacy must often check drug data that is almost expired so that people who want to buy medicine do not buy expired drugs.

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