Medical Equipment And Medication Inventory Information System At West Citarip Puskesmas Is Based On A Website

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Abstract

An inventory information system offers data from many processes, including purchasing, storing, and reporting. As a result, it is essential to create an application for the Inventory Information System to transform the company's performance process from manual to automated, resulting in more thorough reports. Data collection, system design, system analysis, and database system design are used to create this application. It is creating PHP-based application programs. MYQSL is the database used, while VisualStudio Code is used for development scripts. It has been determined that the West Citarip Health Center's Drug and Medical Device Inventory Information System is ready to be designed and implemented.
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Keywords : *Inventory Information System,PHP*

INTRODUCTION

The speed at which science and technology are evolving nowadays makes it more critical than ever to access an information system that can assist in processing and accurately presenting data. Using computers as data processors and information producers has made it impossible to isolate human activities from their effects on information.

Enterprises are encouraged to improve their data processing systems so that the information produced may be used in decision-making processes and can also be used to control businesses due to the high rate of errors in processing and creating reports in many information technology-using enterprises.

One type of government organization that needs information technology support to support its business activities is one that provides medical devices based on a doctor's prescription, or what we are more familiar with as the Puskesmas. One of its essential functions is keeping track of the enormous amounts and various specifications of pharmaceuticals and medical equipment in the Puskesmas institution's inventory. Citarip Health Center is one of the healthcare facilities that processes inventory data while continuing to use traditional methods and manual medications and medical equipment. Without the aid of a computer, each inventory management task is still completed by hand. Three types of stock recording cards—the complete list of incoming goods from distributors, stock cards per item, and stock recap cards—as well as two types of record books—the daily goods order book and the daily goods sales recap book—are used in the process of recording drug report data. Additionally, each record of the distributor's receipt of the items is retained as a backup in case something is lost from the two books and three registration cards.

This healthcare facility needs a data processing system to get around this. With this system, it is hoped that it will be helpful in several ways, such as making it simpler to record drugs and medical equipment when checking for specific drugs or medical equipment, reducing the accumulation of drugs in warehouses, preventing drug stock from running out, and

eliminating the need for manual reporting because the system can handle it.

A thesis entitled "Website-Based Medical Equipment And Medicine Inventory Information System At Citarip Community Health Center" was prepared as a result of the author's study and inventory system implementation at the West Citarip Community Health Center.

METHOD

Research methodology comes from the word "Method," which means the right way to do something, and "Logos," which means science or knowledge. So, methodology means doing something by using thought carefully to achieve a goal. Meanwhile, "research" is an activity to search, record, formulate, and analyze to compile a report.

Data Collection Technique

Observation

Observation or observation method is one method of collecting data/facts that is quite effective. Observation is direct observation, an activity that aims to obtain the necessary information by observing and recording with direct observation of agencies or foundations.

Interview

Interview, namely a data model by asking questions or debriefing directly with Dr.Nina, who has credibility in providing answers directly regarding research object reports. The interview question list functions to answer the function of the problem formulation in the research conducted. Entitled "Inventory Information System for Drugs and Medical Devices at the Citarip Public Health Center"

System Development Methods

The method used for system development is the (Object et al.) method. The OOSE method is an activity development method that places more emphasis on use cases. The advantage of this method is that it is easy to learn because it has a simple notation but covers all stages in engineering soft traps. The stages of the system are as follows:

1. Requirement Model, namely finding out the system requirements with the following steps:
   a. Observational study, namely observing directly the supply of drugs at the West Citarip Health Center
   b. Interview, namely direct question and answer with Dr.Nina as a staff member at the West Citarip Public Health Center
2. Analysis Model: The data that has been obtained is then analyzed to determine system requirements and then determines the required objects
3. Design Model: This stage starts with designing the system architecture using UML (Unified et al.) modeling, interface, and user interaction.
4. Implementation Model: The design results that have been made are then realized into code that is ready to be used.
5. Testing Model: After completion, a series of tests are carried out to ensure the system can run properly.

RESULTS AND DISCUSSION

Currently Running System Processes

The current system analysis aims to find out in detail about the system that is currently running at the West Citarip Public Health Center

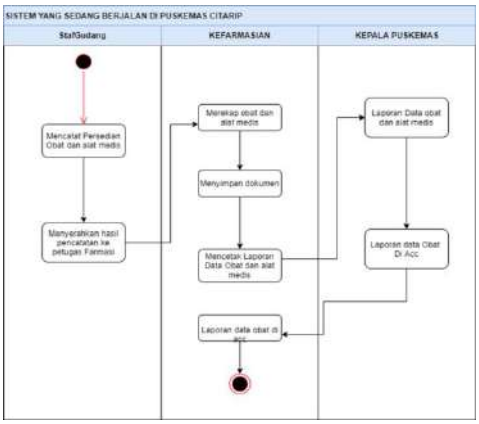


Figure 1. Proposed use

Use case diagrams are crucial for illustrating, describing, and preserving the behavioral needs of a system. Users and users of the system employ use case diagrams. The system's anticipated functions are described in the suggested use case diagram. The system's "what" rather than "how" is highlighted. This diagram will illustrate the procedures modeled in a collection of actors and use cases and the links between them. The following is the proposed use case:

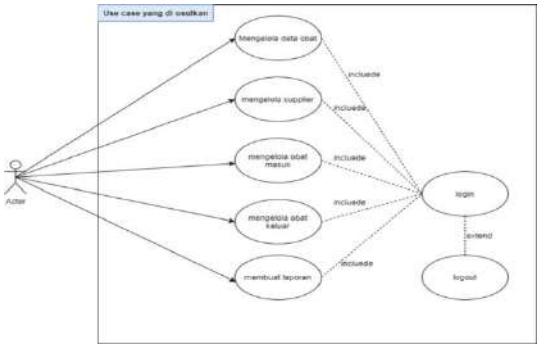


Figure 2. Use Case

Use Case Description

Table 1. Use Case Description

No	Use Case	Description
1	Login	Is the process of checking access rights to who has the right to access the system
2	Process drug data	Can view and manage drug stock in the application
3	Enter drug stock data	To add drug stock data
4	Edit drug stock data	To change drug stock data
5	Manage suppliers	Can view and manage suppliers in the application
6	Supplier data input	Can add supplier data in the application
7	Edit supplier data	Can change supplier data
8	Delete supplier data	To delete supplier data
9	Manage medication intake	Can view and manage supplier data
10	Edit incoming drug data	Can edit drug data
11	Delete incoming drug data	To delete drug data
12	Enter drug category	To add a drug data category
13	Edit drug category	To edit the drug category
14	Manage medication out	Can view and manage outgoing medication data
15	Edit out drug data	To change the medicine out
16	Delete drug data out	To clear the medicine out
18	Delete drug data out	To delete drug data out
19	Create drug data reports	Can see the drug report data that comes out
20	Create supplier data	Can see supplier data

Scenario Use Case Diagram

A use case scenario can be used to define or further clarify the process above flow, specifically by employing tables with the actors' names, aims, and short descriptions. The activities of the actors directly interacting with

the system are also documented in the scenario section and what the system does.

Login Use Case Scenario

Table 2. Scenario Use Case Login

Login use case scenario	
Use case	Login
Actor	Head of administration
Pre-Condition	Actor opens the application
Post-Condition	Displays the main admin page
Main flow event	
Actor action	System reaction
Opens the login page	
	Displays the login page
Enter user and password	
Actor action	Displays the main login page

Scenarios Process Data And Drugs

Table 3. Drug Data Scenario

Scenario processes drug data	
Use case	Processing drug stock data
Actor	Head of administration
Pre-condition	The system displays the main warehouse admin page
Post-condition	The system displays drug stock data
Main flowmap	
Actors action	System reaction
Actor selects the medicine stock menu	
	The system displays the drug stock page
The actor fills in the drug stock data in the incoming drug stock data update table	
	The system saves data to a database
	Sistem menampilkan data stock obat

Drug Entry Scenario

Table 4. Admission drug scenarios

Scenario processing suppliers	
Use case	Process suppliers
Actor	Head of administration
Pre-conditon	The system displays the main admin page
Post-condition	The system displays the supplier's main page
Main flowmap event	
Actors action	System reaction
The actor selects the supplier menu	
	The system displays the supplier's main page
The actor selects the add button "add supplier"	
	The system displays the add supplier form
Actor fills in the add supplier form	
Actor selects the "save" button	
	The system saves data to a data base
The actor selects the "Edit" button on the supplier data	
	The system displays the supplier edit form
Actor fills in the "edit" form	
Actor selects the "update" button	
	The system saves data to a database
Actor selects the “Delete” button	
	The system deletes data in the database
	The system displays the supplier's main page

Drug Scenario Out

Table 5. Drug discharge scenario

Scenario processes outbound drug data

Use case	Processing outbound drug data
Actor	Head of administration
Pre-conditon	The system displays the main admin page
Post-condition	The system displays outgoing drug data
Main flowmap event	
Actor action	Reaksi sistem
Actor selects the exit drug data menu	The system displays the main page of outgoing drug data
Actor selects the "add" button for outgoing drug data	The system displays the add drug out form
Actor fills in the form to add medication out	
Actor selects the "save" button	The system saves data to a data base
Actor selects the "edit" button on the outgoing data	The system displays an edit form for outgoing drugs
Actor fills in the edit form	
Actor selects the "update" button	The system saves data to the database
The actor selects the "delete" button on the selected outgoing drug data	The system deletes data in the database
	The system displays the main page
	The system displays the main page of outgoing drug data

Scenario For Creating Drug Data Reports

Table 6. Scenarios for creating drug data reports

Scenario processes drug data	
Use case	Processing drug data
Actor	Head of administration
Pre-conditon	The system displays the main admin page
Post-condition	The system displays drug data
Main flowmap event	
Actors action	System reaction
Actor selects the drug data menu	
	The system displays the main drug data page
Actor selects the "add" drug data button	
	The system displays the form of adding drugs
Actor fills in the form to add medicine	
Actor selects the "save" button	
	The system saves data to the database
Actor selects the "edit" button on the data	
	The system displays the drug edit form
Actor fills out the edit form	
Actor selects the "update" button	
	The system saves data to the database
The actor selects the "delete" button on the selected drug data	
	The system deletes data in the database
	The system displays the main page

Use Case Scenario Processing Supplier Reports

Table 7. Use case scenarios processing supplier reports

Scenario processes supplier data reports	
Use case	Process supplier data reports
Actor	Head of administration
Pre-conditon	The system displays the general admin main page
Post-condition	The system prints reports
Main flowmap event	
Actor action	System reaction
The actor selects the supplier data report menu	
Actor selects the “print” button	The system displays all supplier data reports
Actor action	
	The system prints supplier reports

Logout Use Case Scenario

Table 8. Logout use case scenarios

Scenario processing logout	
Use case	Logout
Actor	Administration
Pre-conditon	The system displays the main admin page
Post-condition	Actor exits the system
Main flowmap event	
Actors action	System reaction
Actor selects the logout menu	
	The system displays the login page

Activity Diagrams

Activity diagrams are extended flowchart diagrams that show the flow of control from one activity to another. This diagram is used to model the dynamic aspects of the system. The activity diagram depicts the functional flow of the system. The following is an activity diagram for designing a web-based medical drug inventory information system in West Citarip.

Login Activity Diagrams

Below is an activity diagram that depicts the actor and system process for logging in:

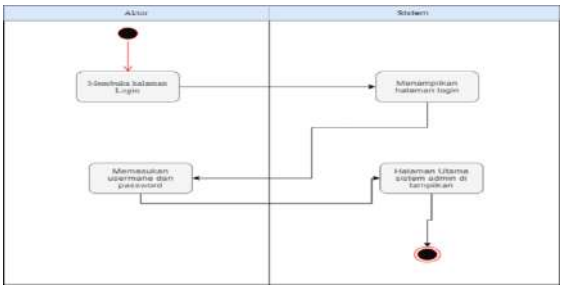


Figure 3. Login Activity Diagram

Drug data activity diagram

Below is an activity diagram that describes actors and systems for processing drug data:

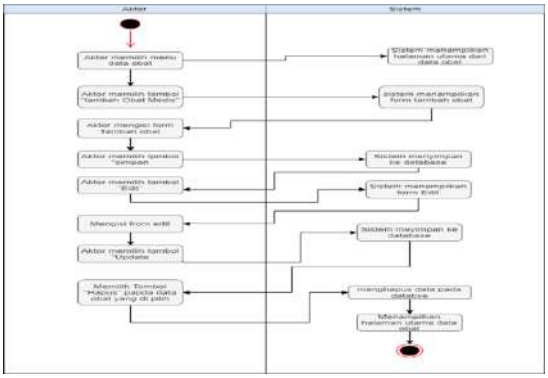


Figure 4. Activity diagram for drug data

Activity Diagram Supplier Data

Below is an activity diagram that depicts actors and systems for processing supplier data

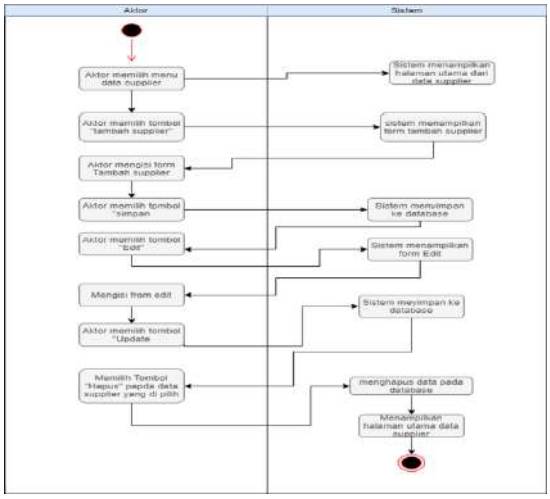


Figure 5. Supplier Data Activity Diagram

Activity Diagram of Incoming Drug Data

Below is an activity diagram that describes the actors and systems for processing incoming data:

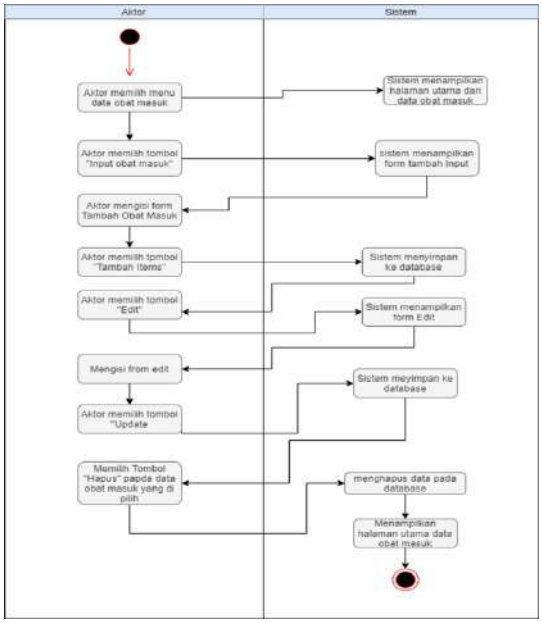


Figure 6. Activity Diagram of Incoming Medicine Data

Activity Diagram of Medication Outflow Data

Below is an activity diagram that depicts the actors and system for processing outgoing drug data:

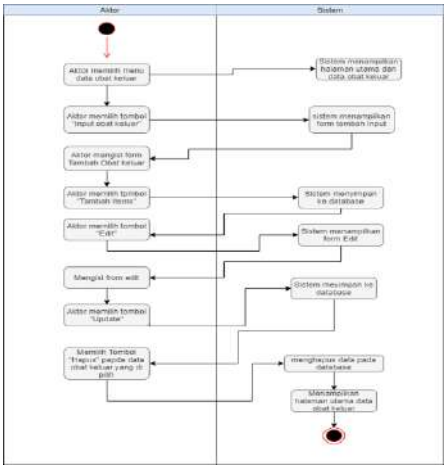


Figure 7. Activity Diagram of Outgoing Drug Data

Activity Diagram Making Drug Data Reports

Below is an activity diagram that depicts the actors and system for creating drug data reports:

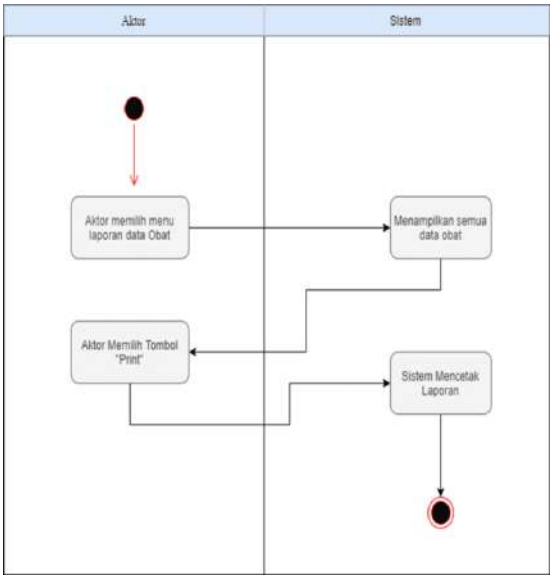


Figure 8. Activity Diagram creating drug report data

Activity Diagram Creates Supplier Data Reports

Below is an activity diagram that describes the actors and systems for making supplier reports:

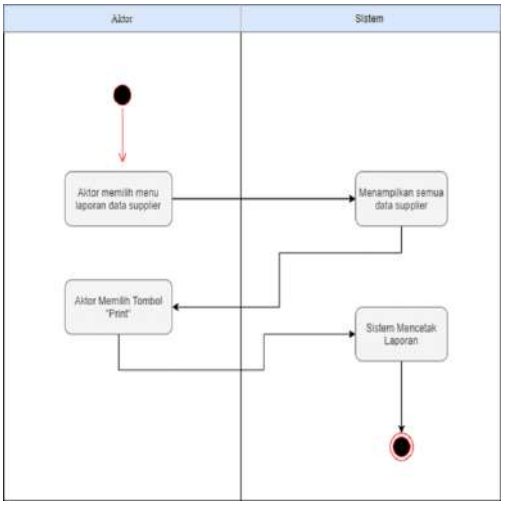


Figure 9. Activity Diagram Creating Supplier Data Reports

Activity Diagram Logout

Below is an activity diagram that depicts the actors and system for logging out:

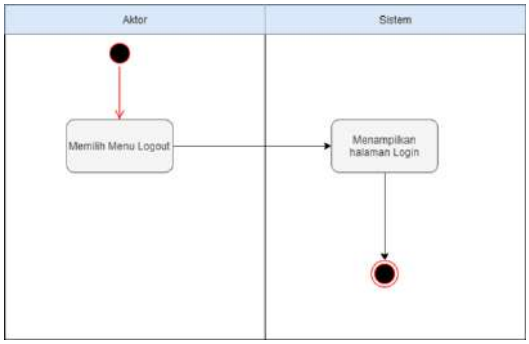


Figure 10. Logout Activity Diagram

System Requirements

The hardware needed to be able to support the implementation of a computerized system. Hardware implementation that can support system applications that will be made include:

Hardware

1. AMD A8-5550M APU White Rodeo
2. Spec hard disk 500gb
3. 3.4GB of RAM
4. Monitors !4inc
5. Keyboards
6. Mouse

Software

1. Cpanel
2. Web Server: Apache
3. Database : MySQL
4. Programming Language: PHP & Laravel Framework 7
5. Operating System : Windows, Linux, MacOS
6. Web Browser : Google Chrome

Program Use

Brainware is one of the important components in implementing the system and is usually in the form of a human object as the implementing staff which consists of:

1. Users, namely people who are users of the results of the system that has been completed, namely: Head of Administration
2. Programmers, namely people who function as creators and repair computer programs that refer to the system being built

Data Base Implementation

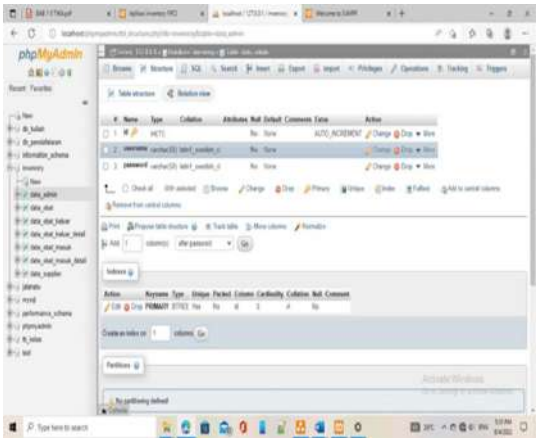


Figure 11. Implementation of admin data

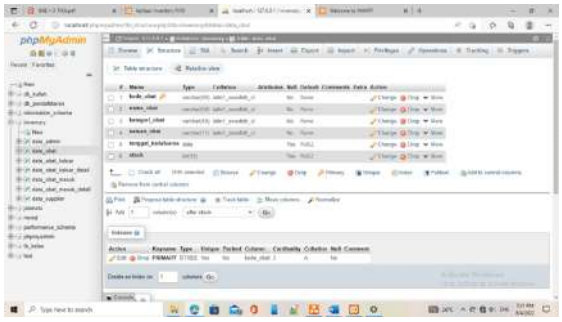


Figure 12. Drug data implementation

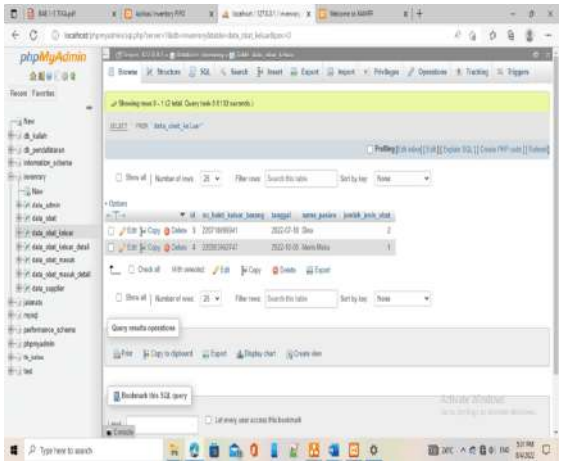


Figure 13. Data Out Implementation



Figure 14. Implementation of drug details

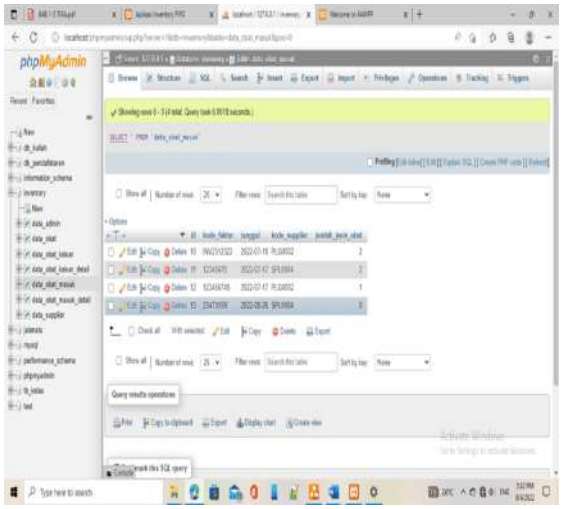


Figure 15. Exit Drug Implementation

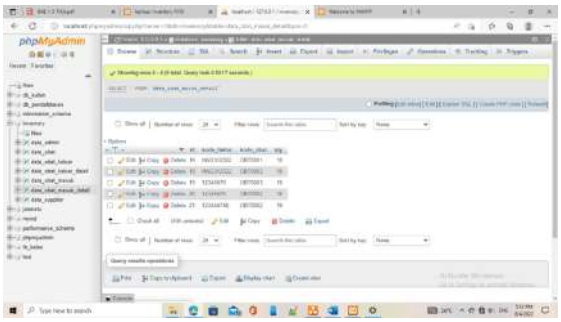


Figure 16. Detailed drug implementation

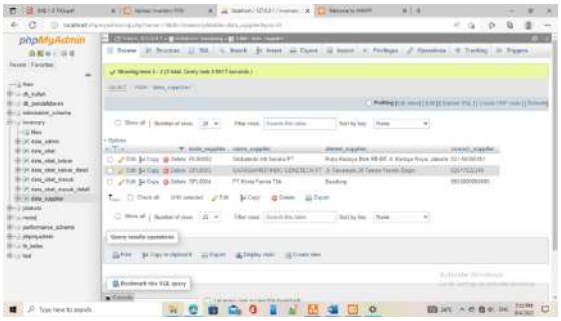
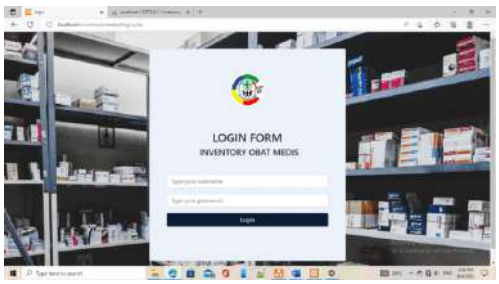


Figure 17. Supplier data implementation

Interface Implementation

Login Interface Implementation



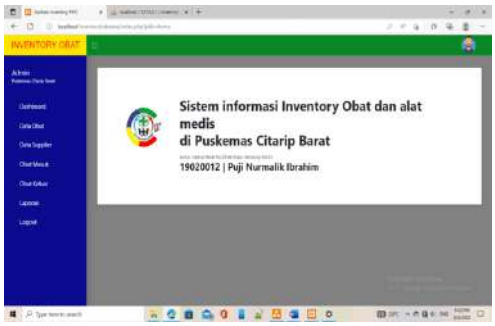


Figure 18. Login and Dashboard

Drug Data Interface Implementation

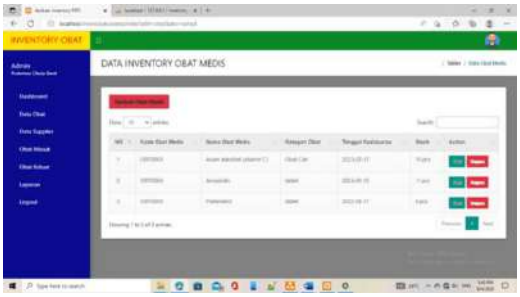


Figure 19. Drug Data

Implementation of the Drug Data Form

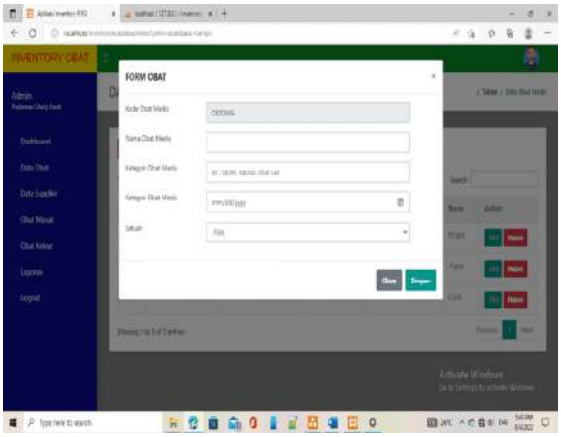


Figure 20. Drug Data Form

Supplier Data Implementation

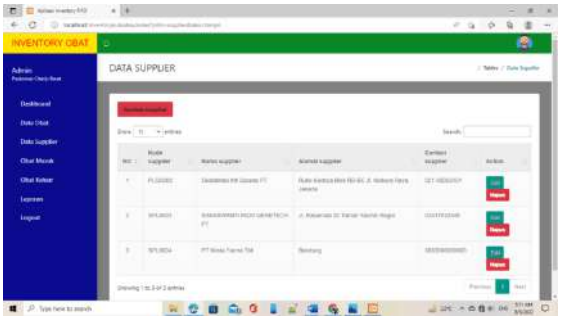


Figure 21. Supplier data

Implementation From Supplier

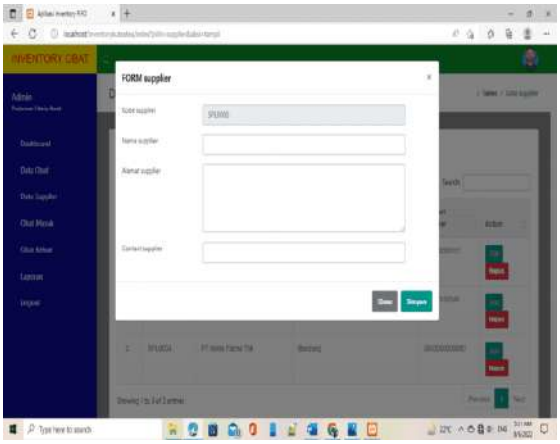


Figure 22. From Suppliers

Implementation of Admission Medication

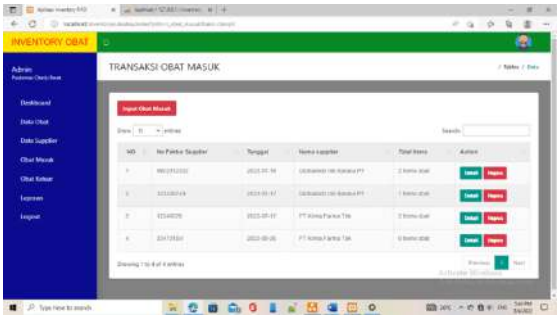


Figure 23. Medication Entry

Implementation of Medication Entry Form

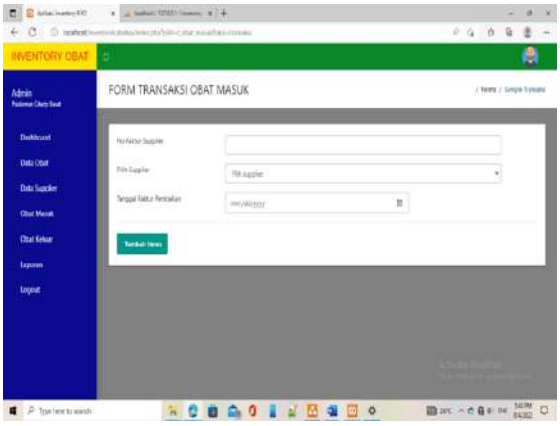


Figure 24. Medication Entry Form

Exit Drug Implantation



Figure 25. Medication Exit

Implentasu Medication Discharge Form

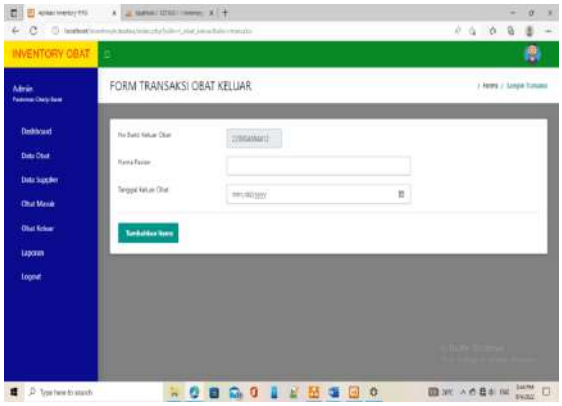


Figure 26. Medication discharge form

Implementation of Drug Data Reports

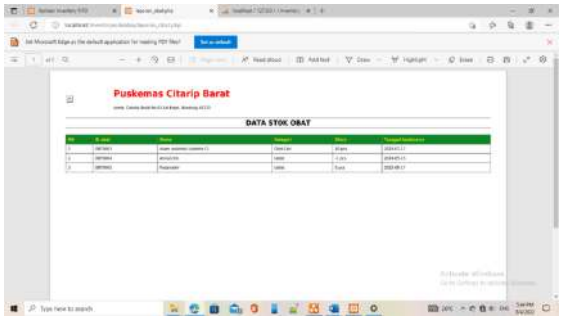


Figure 27. Drug data report

Implementation of supplier reports

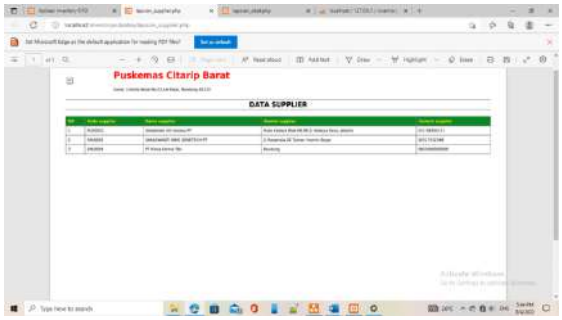


Figure 28. Supplier Report

CONCLUSION

After creating an inventory system for medicines and medical equipment at the health center, it is hoped that this will simplify the inventory system and create accurate and efficient drug reports. The author can provide several conclusions, including:

1. Drug data processing can be done quickly, precisely and accurately and avoid data entry errors.
2. Computerized system as a result of technological development that helps in handling transaction data processing so that it can facilitate better monitoring of drug entry and exit.
3. Searching for data is faster and easier because all drug data already has a database.
4. Implementation of this drug inventory information system will simplify pharmacy operational activities and improve effective and efficient performance.
5. This inventory system can help facilitate computerized recording so as to improve service and supervision

Based on the conclusions from the discussion and explanation above, the author provides suggestions that can be used as very useful and useful input for the West Citarip Community Health Center, namely as follows:

1. In order for the use of this inventory information system to run well, it is necessary to provide training for users so that the use of this information application program can function optimally.

2. For the owner or manager of this website to update drugs regularly so that transaction staff can see product information in detail.
3. For web managers, they must carry out maintenance in order to minimize the occurrence of problems on the web.
4. Web managers must regularly back up to anticipate crimes involving the loss or error of a website.

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