Multiuser-Based Fertilizer Supply Information System in East Plongkowati KUD, Grobgan District

Sifa Alfiana[1], Putri Amalia Syafitri[2], Rina Setiana

Abstract. *KUD Plongkowati Timur is located at Jalan Godong-Karangrayung, Grobogan Regency, which apart from operating in the savings and loan business unit, is also a distributor of fertilizer products produced by PT. Petrokima Gresik and PT. Pupuk Sriwidjaja Palembang. In running the fertilizer distributor business unit at KUD Plongkowati Timur, the process of recording purchase and sales transactions is not carried out using an integrated system in the database, all data is still recorded conventionally by the administration section, while the administration section's computer functions to create reports which are copied from notes provided by cashier so that data security is not guaranteed because the database is not yet integrated. Based on the problems that exist in the East Plongkowati KUD, the author would like to propose a design of a Fertilizer Inventory application system to be taken into consideration in helping speed up the process of recording purchase and sales transactions and can provide the information needed by the East Plongkowati KUD, Grobogan Regency in the form of purchase reports, sales reports, reports. suppliers, customer reports. So the design of the fertilizer inventory information system uses the Microsoft Visual Basic 6.0 programming language with a database from Microsoft Access 2007 and the design of reports from Crystal Report 7. It is hoped that making this application can be one of the efforts that can be made to overcome problems that often occur so that it can increase work effectiveness which of course will have an impact on improving the quality of service to customers.*
Keywords : System, Information, R & D, Inventory, Goods.

1. INTRODUCTION

The increasingly rapid development of information technology from year to year has become a tough challenge for information technology users themselves and encourages every organizational sector, both formal and informal, or other institutions to be able to use it to support work activities so that they can produce fast, precise and accurate information. To make this happen, other supporting resources are needed, such as software whose capabilities can be relied upon and human resources who must master information technology itself. From technological developments, we must understand and recognize this technology. Where technological sophistication will continue to develop rapidly in various aspects of life in the future. Activities that generally use the role of information technology, namely information systems, are financial data processing, buying and selling data processing, personnel data processing, inventory data processing and so on.

Purchases and sales are activities that affect the amount of inventory. Purchasing will increase the amount of inventory, while selling will reduce it. These three things are interrelated and constitute the core of the company's activities. The resulting information will help managers decide on the amount of inventory to be purchased, as well as the amount available for sale, as well as control and supervise the number of company inventory assets.

In processing inventory data, information systems are very useful in terms of accuracy and speed of the process. In KUD Plongkowati Timur District. Grobogan, apart from operating in the savings and loans sector, KUD is also a distributor of fertilizer products produced by PT. Petrokima Gresik and PT. Pupuk Sriwidjaja Palembang, because there are quite a large number of residents there who work as farmers so that the transactions that occur are relatively large in number, but in the process of recording purchase and sales transactions, they do not use an integrated system in the database, all data is still recorded conventionally by the administration section, whereas The administrative function of the computer is to create reports which are copied from the receipt given by the cashier so that data security is not guaranteed because the database is not yet integrated.

When the report was made, this was quite troublesome for several parties, especially the administration. For reports, the administration always re-registers the notes collected for one month, the administration also involves the warehouse and cashier to equalize the stock according to the data collection of each person concerned when checking the stock every day, so it takes at least two or three days to present the report , because there is no special application program to record and display reports on the required data, and errors occur when collecting data on stock of goods, for example the amount of stock of goods in the bookkeeping records is different from the amount of physical stock of goods, so this causes a difference due to the note is damaged or lost. Likewise, the recording of goods returns, both purchase returns and sales returns, this needs to be recorded because it relates to the amount of stock of goods, the data collection of which must be clear so that it does not cause harm either morally or materially, because it is directly related to consumers.

2. THEORETICAL FOUNDATION

A. System

The system according to (Fatta, 2017) states that a system is a collection of objects that are related and interact with each other and the relationship between objects can be seen as a single unit designed to achieve one goal.

In line with what was stated by Sutabri and Fatta, (Abdul Kadir, 20 1 9) said that a system is a collection of interrelated or integrated elements that are intended to achieve a goal.

From the definition, the general understanding of the system can be further detailed, namely:

1. Each system consists of various elements.

2. These elements are an inseparable part of the system in question.

3. The elements in the system work together to achieve system goals.

4. A system is part of another larger system. (Tata Sutabri, 2017)

B.   Information

Information is data that has been processed into a form that is meaningful to the recipient and is useful in making current or future decisions. (Fata, 2017)

Information is data that has been classified or processed or interpreted for use in the decision-making process. (Tata Sutabri, 2017)

Information can be grouped into three parts, namely:

1. Strategic Information

This information is used to make long-term decisions, including *external information* , company expansion plans, etc.

2. Tactical Information

This information is needed to make medium-term decisions, such as sales trend information which can be used to develop sales plans.

3. Technical Information

This information is needed for daily operational needs, such as information on stock availability, sales returns and daily cash reports.

In another sense, information is data that is processed into a form that is more useful and more meaningful for those who receive it. (Jogiyanto HM, 2019)

C.   Information Systems

An information system is a framework that coordinates resources (humans, computers) to convert input *(input)* into output *(information)* , in order to achieve company goals. (Abdul Kadir, 2019)

The information system chart is:

D.   Purchase

The definition of purchases according to (Soemarso SR, 2018) is defined as "Purchases are (*purchasing*) accounts used to record all purchases of merchandise in a period".

Meanwhile, according to Bordnar and (Hopwood, 2017) it is a synonym for procurement, which means "Procurement is the business process of selecting sources, ordering, and obtaining goods and services".

From the definition above, it can be concluded that purchasing is an activity carried out to procure goods that a company needs to run its business, starting from selecting a source to obtaining the goods.

Purchases is an account used to record all goods purchased by a company in a period. Purchases made by the company aim to meet the company's goods needs. Purchase transactions can be classified into two: Local purchases and import purchases, local purchases are purchases from domestic suppliers, while imports are purchases from foreign suppliers. Purchases can be made in cash or credit. When carrying out purchasing procedures, there are procedures that must be known, including the functions involved in purchasing.

E.   Sale

Sales are one source of company income. If the greater the sales activity in a company, the greater the income the company will receive.

The definition of sales according to (Basu Swastha, 2019) in his book entitled "Management Sales" states that:

"Sales is the science and art of personal influence carried out by sellers to persuade other people to be willing to provide the goods or services offered."

F.   Goods

Goods are complex properties, both tangible and intangible, including packaging, color, price, company services received by buyers to satisfy their wants or needs. Goods are products that have been processed and have use value, therefore goods are better known as products. Broadly speaking, a product is defined as something that can be offered to someone to satisfy a need or want. (Basu Swastha , 2019)

G.   Inventory.

Inventory *is* items of assets held for sale in normal business operations or goods that will be used or consumed in producing goods to be sold. (Kieso, Weygent, Worfield, 2017)

Inventory is "merchandise goods held for sale in a company's business operations or goods used in the production process or stored for that purpose." (Werren, Reeve, Fesse, 2017)

Inventory obtained by the company is immediately resold without further production processes, which is called merchandise inventory. Thus, essentially the inventory of merchandise is for sale in the company's business operations, and according to Werren, Reeve, Fesse's opinion, the company can store inventory before

selling in a warehouse, which often applies to large companies such as retailers whose inventory turnover is sufficient. high and varied to overcome sales so that there is no shortage of inventory .

H.   Microsoft Access 2007

Development of Microsoft Office Access 2007 as follows:

Around 1992 Microsoft launched Office on the market. This application was used to process words and numbers like Wordstar and Lotus. For the initial version, Microsoft Access was not yet included in Office. It wasn't until around 1995 that Microsoft relaunched Microsoft Office 95 complete with Microsoft Access. At the same time, the Microsoft Office Windows 95 operating system was also released. The world's computer community is starting to love the Microsoft Windows operating system. Microsoft Office is starting to develop and is increasingly being used in offices, government agencies and education.

This time Microsoft launched a new version of Microsoft Access 2007, there are many differences from the old version. For more details, you can pay attention to the explanation below:

At first glance, the appearance of Microsoft Access 2007 is very different from Microsoft Access 2003, this new version offers ease of use for users. However, behind its convenience, this version has new capabilities that are more reliable, of course. (Dhewiberta Hardjono, 2017)

I.   *Crystal Report*

Crystal Report is a program that can be used to create, analyze and translate information contained in a database or program into various types of very flexible reports. Some of the advantages of Crystal Report are:

1. The report generation is not too complicated, making it possible for even novice programmers to create reports without having to involve a lot of programming code.
2. Integrated with various other programming languages, allowing programmers to utilize it with their skills.
3. Report output import facility that supports popular formats such as Microsoft Word, Excel, Access, Adobe Portable Document Format (PDF), HTML and so on.

The Crystal Report screen element is not far from the Data Report screen element (one of the *default facilities* provided by Microsoft Visual Basic for creating reports). It's just that Crystal Report is equipped with more facilities for developing various types of reports. (Madcoms, 2018)

J.   *Databases*

A database is a collection of data that is interconnected with each other, stored in storage outside the component and used by certain software to manipulate it. *A database* is an important component in an information system, because it functions as a line of information provider for its users. The application of *a database* in an information system is called *a database* system. This *database* system is an information system that integrates components of data that are interconnected with each other and makes them available for various applications within an organization (Jogiyanto HM, 2019).

3. METHODOLOGY

This research uses the R & D (Research and Development) method. For thesis Research and Development, only 6 (six) steps of the R&D development model are used
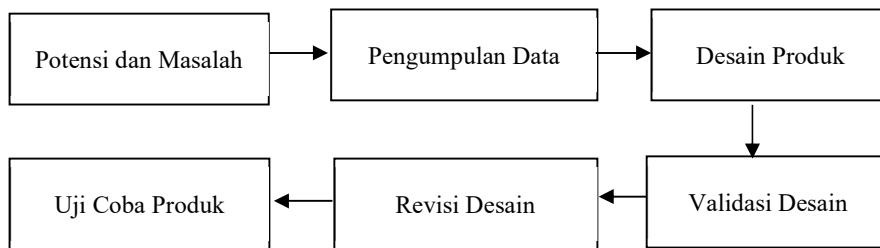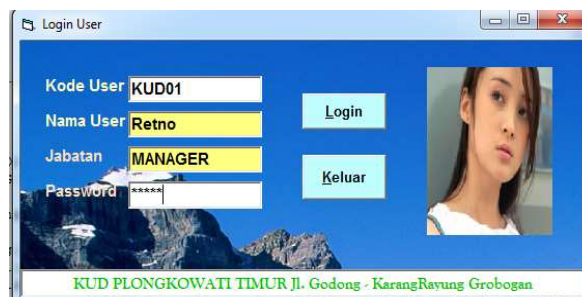

Image of Research Methods

4. RESULTS AND DISCUSSION

A. Program Results

1. Inputs

a. User Login Display

As a first step in using the system, each user is required to log in first

Login Display Image

To use the login form, users simply input their respective user code, then the user photo, user name and user position will automatically appear. Then the user

must enter the password that each user has. If the password is correct, you will enter the main menu. If the password is wrong, you cannot enter the main menu until the password is correct.

b. Main Menu Form Display.

In the main menu form there are several menus that can be selected according to the administration that will be carried out. The main menu display can be seen in the image below:

Main Menu Display Image

On the main menu, menus will be displayed according to each user's access rights which are regulated by the company's highest control party policy, namely management of menu access rights. In accordance with the needs of the user in this program. In the main menu display there is also a description of the user's position after logging in.

c. User Form Display.

User Form Display Image

In the user data form, the user can input the data of a new user who will access and enter this program, according to the manager's policy of course. To input a new user, first type the user code as index, user name, select the position, type the user address then enter the password and the last one inputs the user's photo.

Once everything is complete, click "Save". To cancel data input, click "Cancel", "Refresh" to update the database. To delete, type the user code, the data will automatically appear, then click "Delete". And as validation the "save" button will be active after all the data is filled in and also uses validation to avoid duplicate data.

d. Display Supplier Form.

Supplier Form Display

The Supplier data form is used to input existing and required suppliers for each transaction. To add a new supplier, type the supplier code, supplier name, address and supplier telephone number. If all data is complete, click "Save". Click "Cancel" to cancel data input, "Refresh" to update the database. To delete, just type the supplier code, the data will automatically appear, after that click "Delete". ". And as validation the "save" button will be active after all the data is filled in and also uses validation to avoid duplicate data.

e. Item Form Display.

Figure 4.6 Display of the Item Form.

The Goods data form is used to input existing fertilizer data and is used in each transaction. To add new item data, type the item code, item name and the following data, click "Save" if all the data is complete. Click "Cancel" if you want to cancel data input, "Refresh" to update the database. To delete, type the item code, the data will automatically appear, then click "Delete". ". And as validation the "save" button will be active after all the data is filled in and also uses validation to avoid duplicate data.

f. Customer Form Display.

Figure 4.7 Customer Form Display

The Customer Form is used to input existing customer data and is used in every transaction. To add new customer data, type the customer code, customer name and the next data follows. "Save" if all data is complete. Click "Cancel" if you want to cancel data input, "Refresh" to update the database. To delete, type the item code, the data will automatically appear, then click "Delete". ". And as validation the "save" button will be active after all the data is filled in and also uses validation to avoid duplicate data.

g. Purchase Form Display

Figure 4.8 Purchase Form Display

The purchase form is used to input goods/fertilizer procurement transaction data. To use this purchase form, first click the "New" button because all the columns cannot be filled in in the initial display, the invoice column that is disabled is the new invoice number or invoice number, after the "New" button is clicked all the columns will be active and ready to be used. fill in and can save new purchase data. Click "Save" if all data has been completely filled in. Click "Cancel" if you want to cancel data input, "Refresh" to update the database. To delete, type the item code, the data will automatically appear, then click "Delete".

B. Final Product Discussion

1. Expert Validation

The design of a multiuser-based fertilizer inventory information system has been validated by experts. The expert who validated this design was appointed by STEKOM and is a lecturer from STEKOM itself.

The validation itself was carried out on October 30 2013 at the STEKOM campus. This fertilizer supply information system design received a total of 31 points. By means of experts, they filled out a questionnaire that had been prepared by the researcher. Furthermore, according to the value indicator table, the results obtained for this system design are the predicate "Very Good", the conclusion drawn by experts for this system design is "Very Good", so it can be used even though there are still slight revisions.

From the results of the validation that has been carried out, the design can be used to create *a prototype* of the system to be developed. With several additions and revisions added in *the implementation of the system prototype* .

2. Try it on prospective users

The system prototype created has passed the stages of validation by experts and testing by users. This is done to assess whether *the prototype* created is in accordance with the expected research objectives.

prototype trial was carried out at the research object with the research subjects being potential users, where the research subjects were 3 people, namely 1 manager, 1 person from the administration section and 1 person from the warehouse department. Each subject filled out a questionnaire prepared by the researcher.

The results of filling out the questionnaire by research subjects can be seen in the questionnaire table. The questionnaire results table can be seen in the table below:

Table of User Validation Questionnaire Results

No	Indicator	User 1	User 2	User 3	Total
A.	**Input activities**				
1	Convenience of viewing the front page and subsequent pages	4	4	4	12
2	Is it easy to input data?	4	3	4	11
3	It is possible to display information to make it easier for users to manage administration	3	3	3	9
4	It is possible that users feel happy accessing because they quickly obtain information	3	3	4	10
5	It is possible for users to feel satisfied because the information provided meets the user's needs	4	4	3	11
6.	Users will continue to access because fast processing is possible	3	3	3	9
7.	Users will feel confident that they can use the programmed facilities	3	3	3	9
8	Users will feel helped in resolving administrative problems	4	4	4	12
9	Users are facilitated in administrative management by the program created	3	3	3	9
10.	Users feel that the information provided is appropriate to what is needed	3	3	3	9
	TOTAL SCORE	34	33	34	101
	TOTAL SCORES				

Information:

Indikator Pertanyaan		Indikator Total Nilai	
1 – 3	Tidak baik	10 – 30	Tidak baik
4 – 6	Cukup	31 – 60	Cukup
7 – 9	Baik	61 – 90	Baik
10 – 12	Sangat baik	91 – 120	Sangat baik

From the table data above it can be explained as follows:

For question number 1 with the question " Convenience of seeing the front display and subsequent pages " the total score from the three users was 12 points. Based on the value indicator table, it gets the description "very good".

For question number 2 with the question "Is it easy to input data" the total score from the three users was 11 points. Based on the value indicator table, it gets the description "very good".

For question number 3 with the question "It is possible to input display information to make it easier for users to manage administration" the total score from the three users was 9 points. Based on the value indicator table, it gets the description "very good".

For question number 4 with the question "It is possible for users to feel happy accessing because they quickly obtain information" the total score from the three users was 10 points. Based on the value indicator table, it gets the description "very good".

For question number 5 with the question " It is possible for users to feel satisfied because the information available meets the user's needs " the total score from the three users was 11 points. Based on the value indicator table, it gets the description "very good".

For question number 6 with the question " Users will continue to access because a fast process is possible " the total score from the three users was 9 points. Based on the value indicator table, it gets the description "very good".

For question number 7 with the question "Users will feel confident that they can use the programmed facilities" the total score from the three users was 9 points. Based on the value indicator table, it gets the description "very good".

For question number 8 with the question "Users will feel helped in resolving administrative problems" the total score from the three users was 12 points. Based on the value indicator table, it gets the description "very good".

For question number 9 with the question "Users are made easier to manage administration by the program created" the total score from the three users was 9 points. Based on the value indicator table, it gets the description "very good".

For question number 10 with the question " User input feels that the information provided is in accordance with what is needed " the total score from the three users was 9 points. Based on the value indicator table, it gets the description "very good".

From the total score of all prospective users who filled out the questionnaire, it is worth 101 points, and according to the total score indicator table, the indicator "Very Good" will be obtained. Which means that potential users feel that *the prototype* created is worthy of further development in the future.

5. Conclusion

From the explanations outlined in the previous chapters, the following conclusions can be drawn:

1. The fertilizer supply management system at KUD Plongkowati Timur Grobogan district is still less effective and still needs improvement.

2. Problems found in KUD Plongkowati Timur Grobogan district include:

   a. Process recording of purchase and sales transactions is carried out without using an integrated system in the database.

   b. In collecting data on goods, the warehouse department and cashiers have to re-register the data from the receipts collected during one month so that the process of making the report takes two to three days.

   c. There is a difference in stock of goods between bookkeeping records and physical goods due to damaged or lost records

   d. Data security is less guaranteed because the database is not yet integrated

3. The implementation of a multiuser-based fertilizer supply information system at the East Plongkowati KUD is expected to provide the following benefits:

   a. By processing data regularly, it is hoped that we can check whether goods that have been sold or that have not been sold can be recorded properly.

   b. To make it easier to process data and report information related to purchases, sales and inventory.

   c. By having access rights, all data can be guaranteed to be secure because only authorized users can view the data.

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