JAVA-BASED GOODS DATA RECORDING APPLICATION SYSTEM
AT ACHFI BALAMOA STORE

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ABSTRACT

Background: The use of information technology applied through information systems provides convenience to users, especially shop owners in doing work, not only in the recording of goods but also in the creation of goods data reports. Goods data is an important element in a store that must be managed properly and requires thoroughness so that applications are needed to minimize errors.

Aim: It makes it easier the process of recording data of goods that previously still use manual systems.

Method: In researching making application systems, the method used is a qualitative method, where the information obtained is sourced from various collections of data analysis and existing theories and then conclusions are drawn to obtain new theories.

Findings: The result of this application system is that the collection of goods will be faster and reports of the entry and exit of goods more accurate. The research method used is a qualitative method, where the information obtained is sourced from various data analysis sets and existing theories and then concluded to get a new theory.

KEYWORDS goods data; goods data report; system

INTRODUCTION

The use of a computerized system in today’s trading environment is important as a support in providing speed in presenting information related to company operations, especially in stores that have high routines in operating. Data processing, which increases and decreases every day, certainly requires technology that can assist operational activities. Computerization is one of the applications of information technology that can change something from what was originally done manually to make it easier to solve problems and make decisions quickly and precisely (Aji, 2019).

One of the main activities in the trading business is the entry and exit of goods. So far, recording the entry and exit of goods at the Achfi Store, which sells various basic needs, is still done manually, namely by recording the goods purchased by consumers on paper notes and not recording the goods that enter the store. This can be fatal because the store does not know the value of the goods owned. In addition, manual recording of store operations can slow down work time and hinder effective and efficient work results. Manual recording of goods also affects the stock data of goods which will not be systemized and of course, it is difficult to make decisions to increase inventory.

From here the researchers created an innovation by compiling a final project entitled Java-Based Goods Data Recording Application System at Achfi Balamoa Stores.
System

A system is a collection of elements interconnected with each other that form a unity to achieve a goal. In the company referred to elements of the system are internal departments, such as raw goods inventory, production, finished goods inventory, promotion, sales, finance, personnel, as well as external parties such as suppliers and consumers who are related to each other and form a single business entity.

According to Susanto (2013), systems are groups or groups of any Subcon system or component that are related to each other and work together harmoniously to achieve one particular goal.

According to Mulyadi (2010) stated that the system is a network of procedures created according to an integrated pattern to carry out the company's basic activities. Furthermore, McLeod and Schell (2004) quoted by Yakup in the book Introduction to Information Systems (2012) define a system as a group of elements that are integrated with the same goal to achieve the goal. A system is also a working network of interconnected procedures, gathered together to perform a pleasure or for a specific purpose.

Based on some of the above understandings it can be concluded that the system is a procedure that is made interconnected with certain intentions and objectives on a regular and well-organized basis.

The system will run well if it has characteristics in its implementation. The Sutabri System in Apriyanti (2013) states the characteristics of the system are: 1) Component (A system consists of several components that interact with each other, who cooperate to form a unity); 2) Boundary (The scope of the system is an area that limits between the system with other systems or systems with their external environment); 3) Environment (Any form that exists outside the scope or limitations of the system that affects the operation of the system is called the outside environment of the system); 4) Interface (Media that connects the system with other subsystems called system linking or interface); 5) Input (Energy entered into the system is called system input, which can be input maintenance and signal input); 6) Output (The result of energy being processed and classified into useful outputs); 7) Process (A system can have a process that will convert input into output); and 8) Objective (A system has definite goals and objectives).

Advantages of using the system in generating data include: 1) Facilitate in checking data; 2) Not much need for bookkeeping or physical documents because all stored in a database that can accommodate a lot of data; 3) Easier to find data; 4) The data presented is more accurate, and 5) Efficiency of time in completing reports.

Inventory of Goods

Inventory is also called inventory. Inventory is defined as assets or assets that exist for sale in ordinary business activities, in the production process of sales, or the form of materials or equipment for use in the production process or service delivery (Mulyadi, 2008).

Sofyan Assauri (2005) explained that the supply of goods is a current asset that includes goods that belong to the company to be sold in a period or inventory of goods that are still in work in a production process and supplies of raw materials that are also waiting for their use in a production process.
Inventory is the most important part of the company. The completeness of inventory of goods can be said to be the spear of the success of a company that causes the company's progress will be guaranteed. Because the supply of goods is one of the main elements of working capital that is constantly changing. Without supplies, the company will face the risk of not being able to meet the customer's wishes. Inventory of goods is divided into the following.

**Inventory of decent items**

Inventory of disposable goods means that the goods available can be directly consumed or used by the end consumer.

**Inventory of goods not worth using**

Inventory of goods not worth using means that goods that are not worth consuming can be because they are damaged, expired or moldy. This kind of inventory should be destroyed or returned in exchange for a decent item.

Companies that have developed usually have data on all goods entering and exiting, the goal is to know the accelerated cycle of merchandise exit.

According to Sofyan Assauri (2005), inventory control is a very important managerial function because if the company has too much stock of goods, it causes excessive storage costs.

The supply of goods there are different types of each type has special characteristics and the way of management is also different. The stock of goods of its type can be distinguished according to Assauri (2005) as follows:

1) Inventory of raw materials: Supplies of tangible goods used in the production process that can be purchased from suppliers or companies that provide raw materials;
2) Inventory of goods of product parts: Inventory of goods consisting of parts received from other companies, which can be directly combined with other parts, without going through the previous production process;
3) Supply of complementary materials: Materials needed in the production process to help successful production;
4) Inventory of semi-finished goods or goods in the process: Supplies of items that need to be reprocessed to then become finished goods; and
5) Finished goods inventory: Items that have been processed or processed and ready to be sold to customers.

Inventory factors although inventory will provide many benefits for the company, the company remains careful in determining inventory policy. To conduct their business smoothly, most companies feel the need for supplies.

According to Riyanto (2001) the large supply of goods owned by the company is determined by several factors, among others:

1) The volume needed to protect the running of the company against disruption runs out of supplies that can hinder or disrupt the course of production.
2) The volume of planned production, where the volume of planned production itself is highly dependent on the volume of the planned sale.
3) Large purchase of raw materials every time purchase to get a minimum purchase fee.
5) Purchase price of raw materials.
6) Storage costs and storage risks in warehouses; and
7) The speed level of the material becomes damaged or decreases in quality.

Sales
Sales are one of the marketing functions that are very important and decisive for the company in achieving the company's goal of obtaining profits or profits. The types of sales include:

1) Trade Selling, is a sale that occurs when manufacturers and wholesalers allow retailers to try to improve the distribution of their products, this involves the dealers with promotional activities, shows, supplies, and new products, so the heavy point is the sales through the dealer rather than on the sale to the final buyer.
2) Missionary Selling, sales are trying to be improved by encouraging buyers to buy goods from company distributors.
3) Technical selling seeks to increase sales by providing advice and advice to the final buyer of goods and services.
4) New Business Selling, trying to open new transactions by making prospective buyers become buyers just like insurance companies do; and
5) Responsive Selling, every salesperson is expected to respond to buyer demand through route driving and retaining. This type of sales will not create large sales, but a good customer relationship that leads to repurchase.

Database
A database is a collection of connected data stored together on a medium, organized based on a particular schema or structure, and with software to manipulate for a particular use. The database can also be interpreted as a set of data arranged in the form of several tables that have relationships or stand-alone.

The database's basic operations include:
1) Create a database, the command used to create a database with a given name
2) Drop database is the command used to delete a database with a given name
3) Create table is a command used to create a table in a database
4) Drop table is a command used to delete a table in a database
5) Insert is a command used to enter data into a table.
6) An update is a command used to update data in a table; and
7) Delete is a command used to delete data on a table.

MySql
According to Sudarma, MySql is a database program capable of sending and receiving data very quickly and multi-user that was pioneered by a database programmer named Michael Widenius on May 23, 1995. MySql has two forms of licensing: free software and shareware.

Broadly speaking, the function of MySql is to create and manage databases on the server-side that contain various information using the SQL language. Another function is to make it easier for users to access data containing information in the form of Strings (Text), which can be accessed personally and publicly on the web.
Almost all web service providers or hosts provide facilities for MySql in the development of website-based applications to be managed by web developers. Then, the interface of MySql is PHPMyAdmin. Which serves to connect the PHP programming language with MySql for the process of managing databases on the web.

MySql has several advantages and advantages over other databases, including:
1) MySql is the fastest server.
2) MySql is a multi-user so it can be used together at a time.
3) The table structure presented by MySql is more flexible and easier to create.
4) MySQL is portable where the database system can be processed in various platforms (Multi-platform) so that, it can be run both from the side of Windows, Linux, and Mac OS.
5) MySql is an open-source database management system that is free to be used by individuals or agencies without having to buy or pay to the creator.
6) MySql is a database that can store large-capacity data and has high performance and simplicity.

Java

The Java programming language was first developed by James Gosling and released in 1995. Java features include:
1) Object-oriented: Java is an object-based programming language. In general, objects combine data and functions into one unit in an application;
2) Platform independent: Java is compiled in bits of independent platform code. The point is that java-based applications can be easily opened using various computer systems and computer architectures, for example, can be opened using computers, smartphones, or other informatics engineering devices. But unlike the applications made using basic vasilis that can only be opened using Microsoft Windows operating system computers;
3) Simple: Java is designed simply so that it is easy to learn, especially among students;
4) Secure: Virus-free java security features;
5) Architectural-neutral: Java compilers create architectural-neutral object file formats, which make compiled code executable on different types of processors that have a Java runtime system;
6) Portable: Java is portable due to the presence of independent and architectural-neutral platforms;
7) Powerful and powerful: Java eliminates errors by running checks at compile and runtime times;
8) Multithreaded: With the multithreaded feature, you can create programs that can do many tasks at once;
9) Interpreted: Java bit code is translated directly on machine instructions and not stored;
10) High performance: Java has high performance because it uses a direct compiler; and
11) Distributed: Java is designed for internet distribution environments.

Netbeans

Netbeans is an IDE (Integrated Development Environment) for creating applications with java, PHP, C, C++, and HTML5. Netbeans began in 1996 as Xelfi which is an IDE project at
Charles University in Prague. In 1997, Roman Stanek commercialized Netbeans IDE which was later purchased by Sun Microsystems in 1999. In 2010, Sun and Netbeans were acquired by Oracle.

Netbeans has several features there are many features contained in Netbeans, among others:
1) Smart Code Completion, which serves to propose the variable name of a type, complete keywords, and also propose the parameter type of a method;
2) Bookmarking, which is a feature used to mark lines that one day we want to modify;
3) Go to commands, which is a feature used to jump into the declaration of variables, source code, or files contained in the same project;
4) Code generator, which is a feature used to generate constructors, setter and getter methods, and others; and
5) Error stripe, a feature used to mark errant lines by giving red highlights.

**I-Report**

According to Kurniawan, Mardiani, and Rahmansyah (2013), i-Report is a visual report designer built on JasperReport. I-Report is easy to understand and easy to use in visual report builders or designers for JasperReport and i-Report written in Java applications. Alternatively, there is an i-Report tool with the JasperReport library that can help in creating reports. JasperReport library is open and designed to add reporting capabilities to Java applications.

JasperReport has several features including the following:
1) *Flexible* report layout and design
2) Can view reports in text or image form
3) Can generate *reports* in various formats, such as HTML, PDF, RTF, xls, and CSV
4) Can receive data from data sources, such as JDBC

**DFD (Data Flow Diagram)**

A DFD (Data Flow Diagram) is a diagram that describes the process of flowing input/output data from a built information system. DFD is a diagram that uses symbol notation to describe the flow of system data.

The DFD (Data Flow Diagram) component is 1) User/Terminator (External entity) that provides input to the system or receives output from the system in the form of people, organizations, or other systems; 2) Process (Activities that process inputs into outputs); 3) Data Flow (Data flow on the system (Antar process, between terminators & processes, as well as between processes & data stores); and 4) Data Store (Storage of data on databases, usual tables).

In DFD there are 3 levels, namely:
1) Context Diagram: In context diagrams describe a large circle that can represent the entire process contained in a system. It is the highest level in DFD and is usually numbered 0 (Zero). All external entities are shown in the context diagram and the main data flow to and from the system;
2) Zero Diagram (level-1 diagram): The zero diagram is a large circle that represents the small circles in it. It is the breakdown from a context diagram to a zero diagram. This diagram contains data storage; and
3) Detailed Diagram: This is a diagram that outlines what processes are in a zero diagram.

**ERD (Entity Relationship Diagram)**

Entity Relationship Diagram (ERD) is a diagram that describes the relationship between tables woven through primary key and foreign key tables in a database. In the formation of ERD 3 components will be formed, namely:

1) An entity is an object that can be distinguished from others and can be realized in a database.
2) A relationship is a relationship between two types of entities and is represented as a straight line connecting two entities;
3) Attributes provide more detailed information about the type of entity. Attributes have an internal structure in the form of data types.

These types of attributes include:

1) A Key attribute is one or a combination of several attributes that can uniquely distinguish all rows of data in a table. It is said to be unique if in the attributes used as key there should be no lines of data with the same value.
2) Simple attributes are atomic in value, cannot be broken down/sorted anymore.
3) A multivalue attribute is one that has more than one (Multivalue) value than the attribute in question.
4) Composite attributes are an attribute consisting of several smaller attributes that have a certain meaning that can still be broken down or have sub-attributes.
5) Derivative attributes are those that do not have to be stored in a database or attributes resulting from other attributes or a relationship. This attribute is denoted by the disjointed oval shape.

**Previous Research**

According to Yulhan & Lestari in 2020 in their journal entitled java-based inventory information system on Ummy Solok, contains about Java-based inventory information system designed to facilitate in the process of recording goods data that is quite large and complicated and still managed manually. So that it has the goal that in recording and inventory and making reports easier to do and produce accurate data.

According to Ibn Sina in 2017 in his research entitled Evaluation of Drug Supply Planning Methods at Ibn Sina Yarsi Hospital Pasaman regency with simulation approaches were in a study designed an information system inventory of goods data that aims to be able to solve the problems faced ranging from the processing of inventory data that is still done manually as well as the process of presentation of inefficient and accurate information and lack of time efficiency.

The equation of making the above application is to both create Java-based goods data recording applications that aim to facilitate input of goods data and produce goods data reports quickly and accurately.

**METHOD**

In researching making application systems, the method used is a qualitative method, where the information obtained is sourced from various collections of data analysis and existing
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theories and then conclusions are drawn to obtain new theories. As is the case with the creation of a Java-based goods recording application system at the Achfi Store, the data obtained comes from the conclusion when researching that operational activity such as inputting and making goods data reports are still not systemized neatly while the goods data owned by the company is very important.

The reasons for conducting research using qualitative methods include:
1) More effective because the results obtained directly from the conclusions at the time of conducting research; and
2) Faster to make decisions because there is no need to do numerical calculations.

Steps in the creation of a Java-based goods recording application system include:

![Diagram of research steps]

**Picture 1.** Research Steps
RESULTS AND DISCUSSION

Main Menu Display

![Picture 2. Main Menu Display](image)

Item Data Display

![Picture 3. Item Data Display](image)

Purchase Data Display

![Picture 4. Purchase Data Display](image)
Incoming Item Data Display

![Picture 5. Display of Incoming Goods Data](image)

Sales Data Display

![Picture 6. Display of Sales Data](image)

Display of Goods Data Report

![Picture 7. Display of Goods Data Report](image)
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Display of Purchase Data Report

![Image of Purchase Data Report](image1)

**Picture 8. Display of Purchase Data Report**

Display of Pe. Data Report

![Image of Pe. Data Report](image2)

**Picture 9. Display of Pe. Data Report**

Incoming Goods Data Report Display

![Image of Incoming Goods Report](image3)

**Picture 10. Incoming Goods Data Report Display**
CONCLUSION

Java-based goods data recording application system is an application that is used to store the activity of entering and exiting goods, making it easier to record computerized goods data and produce faster goods data reports.

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