

Waterfall Model Inventory Information System at Alvinda Store Karawang

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ABSTRACT

Stock name is a process for calculating incoming and outgoing goods by inventory bookkeeping records. Manual calculations will take a very long time, and the risk of error is very high, so the presentation of the inventory report is hampered because it does not match the predetermined time. The stock opname information system with the Waterfall method can make it easier to accurately calculate the amount of stock inventory and can minimize the counting time to be faster. So that inventory reports can be generated quickly, accurately and on time.

Keywords: System Information; Stock Opname; UML

INTRODUCTION

Stock name is the process of calculating inventory carried out at the end of an accounting period to determine the amount of incoming and outgoing goods. Stock name is a critical process in maintaining company assets. The accuracy of the calculations in this will minimize fraudulent actions that irresponsible employees can carry out. The process of recording stock opname must follow applicable accounting standards. The conformity of the calculation results between the records in the inventory card and the physical goods is a control carried out following the correct inventory recording standards. A computer-based information system is a system that processes inventory, processes and generates inventory reports using information technology to facilitate companies in obtaining accurate and timely reports.

LITERATURE REVIEW

Some of the research that has been done by previous researchers on the stock opname information system published by IMTechno: Journal of Industrial Management and Technology (Vol 4 No.1, January 2023) researched by Dede Kusnadi and Eka Rini Yulia that the results of this study resulted in the design of a website stock opname information system capable of providing solutions to the problems faced by PT. XYZ in carrying out the stock opname process of sales results, and this website stock opname information system can speed up sales in calculating and inputting unsold stock anywhere and anytime to speed up the processing time for stock opname of sales results made by sales. This website stock opname information system can facilitate the process of processing stock opname that is still being run manually to be more computerized so that the admin can process all series of stock opname data more easily and quickly. The process of making stock opname reports, which previously was still being carried out manually, was less effective and efficient. Therefore, utilizing this website's stock opname information system can be a solution in making reports and reducing errors.

The journal, Indonesian Journal on Software Engineering conducted by Oky Irnawati (Vol 4 No.1-2018) concluded that the activities of receiving and issuing spare parts, such as recording, collecting and storing data become more efficient and more secure, can provide additional program functions to perform stock opname so that it makes it easier to adjust to the data in the database physically, makes it easier for users to see the history of incoming and outgoing goods and makes it easier for warehouse admins to carry out stock opname activities.

Meanwhile, according to Irmawati Carolina, Kresna Ramanda, Arief Rusman and Ikhwan Akbar in the Inti Nusa Mandiri journal (Vol 14 No. 1, August 2019) concluded that the current stock-taking data management system at PT. Arie Muti is still desktop-based; the data aggregation process still needs to be revised by collecting data from each user, and with this desktop-based system, managing stock-taking data becomes inefficient and ineffective. This application can help the admin in controlling stock at PT. Arie muti every month and even every day.

Previous Related Study

In previous studies, research on stock opname information systems was carried out by Dede Kusnadi and Eka Rini Yulia, who took the title "Website-Based Stock Opname Program Information System" and concluded that a website-based information system could provide solutions in carrying out stock opname and speeding up the calculation and input of stock items. As well as simplify the preparation of reports and minimize calculation errors.

Meanwhile, research conducted by Oky Irnawati in the journal Indonesian Journal on Software Engineering entitled "Implementation of the Waterfall Model in Stock Opname Information Systems" concluded that the activities of receiving and issuing

goods became more efficient and more guaranteed for accuracy, additional program functions for carrying out stock opname also made it easier physical adjustments to the data in the database, making it easier for users to see the history of incoming and outgoing goods, as well as making it easier for warehouse admins to carry out stock opname activities.

Moreover, the research conducted by Irmawati Carolina, Kresna Ramanda, Arief Rusman and Ikhwan Akbar entitled "Design of Stock Opname Application at PT.Arie Muti Based on Android" concluded that stock opname calculations were carried out using a barcode scanner which functioned to detect and count goods to be more effective and efficient.

System Information

The system is defined as a collection consisting of human, machine, procedure, document, data or other elements that are organized from these elements that relate to each other in achieving the goals that have been set. McLeod stated, "Information is data that is processed into a form that is more useful and more meaningful for those who receive it" (Sitohang, 2019)—according to (Ikhsan & Khaddafi, 2017) revealed that "A system to achieve certain goals must have basic properties that make it a character. The characteristics of a system consist of components, system boundaries, environments, interfaces, inputs, outputs, processes, and objectives. or goals." "Information (information) is data that has been managed and processed to provide meaning and improve the decision-making process. As its role, users make better decisions as the quantity and quality of information increases" (Romney and Steinbart (2015:4)).

Based on the above understanding, information is data processed to produce output in the form of reports that can be used as a user decision-making tool. An information system is a system that provides information needed by management as a means of making decisions in carrying out its operations. An information system combines people, information technology and organized procedures useful for management. According to Wijayanti and Bratamanggala in Mulyadi (2018: 129), "Accounting Information System is a form of information system that aims to provide information to managers of information generated by pre-existing systems, improving accounting controls and also internal checks.

"The Accounting Information System is a collection of subsystems that process financial and non-financial transactions that directly affect the processing of financial transactions." (Nuryanti and Santoso Susanto (2017:74)). According to Moscove Zaki in Morasa (2018: 585) "Accounting information system is a component of an organization that collects, processes, analyzes, communicates financial information and relevant decision making to outsiders of the company and internal parties." In designing a system, equipment is needed to support the creation of a design. Supporting equipment (Tools System) is a tool used to describe the

logical model of a system by using symbols, symbols, and diagrams that show the exact physical meaning.

Rosa and Salahuddin (2013: 133) explained that "UML (Unified Modeling Language) is one of the standard languages that is widely used in the industrial world to define requirements, make analysis and design, and describe architecture in object-oriented programming" Mulyani (2016: 48), states that "System development techniques that use graphical language as a tool for documenting and performing specifications on the system", UML provides a series of drawings and diagrams that focus on the robustness of object-oriented theory and partly focuses on design and construction details that are intended as a means of communication between programmer teams and users.

Stock-taking is counting physical inventory or merchandise owned by a company. The person responsible for this activity must identify each item, count it, and summarize the amount. This activity aims to ensure the accuracy of bookkeeping records, which is one of the procedures in the internal control system (SPI) (Agustini, 2022). "Stock taking is a physical inventory count of merchandise in a warehouse or store. This method is a requirement that must be carried out by company management in determining the ending inventory in real terms. Stock taking activities are really needed so that the company's operational costs do not exceed the limit so that management can determine the right amount of stock purchases in the future" (Gabinda Zahra, 2021).

METHOD

Design and Sample

The research method used is the waterfall model software development. According to Sukanto and Salahudin, the waterfall model starts with analysis, design, coding, testing and supporting stages (Lestari et al., 2018). The research design is as follows:

1. Design (Requirement Analysis)
At this stage, information is obtained from interviews, surveys and discussions. After obtaining complete data, the software development and supporting equipment needed can be determined.
2. Design (System and Software Design)
At this stage, the design process is carried out before coding to help the needs of the hardware and system that will be made as a whole.
3. Implementation (Implementation and Unit Testing)
At this stage, the coding process is carried out. The software will be combined into small modules in the next stage.
4. Testing (Integration and System Testing)
At this stage, the modules that have been made before are combined. After all the units or modules developed and tested in the following implementation stage are integrated into the overall system. After the integration

process is complete, further examination and testing of the system is carried out to identify possible system failures and errors.

5. Maintenance (Operation and Maintenance)

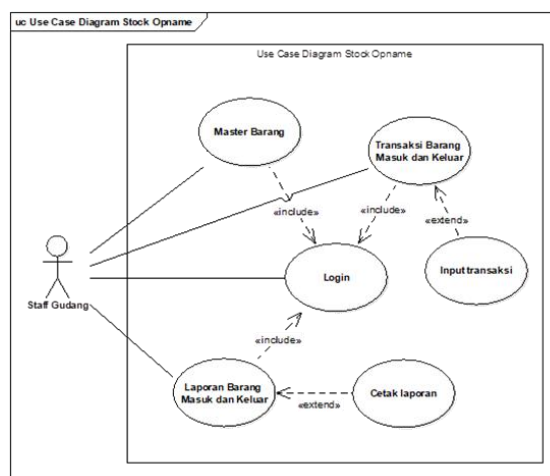
In the last stage of the waterfall method, the finished software is operated by the user and carried out maintenance. Maintenance allows developers to make improvements to errors that were not detected in the previous stages. Maintenance includes repairing errors, repairing the implementation of system units, and upgrading and adjusting the system as needed.

Instrument and Procedure

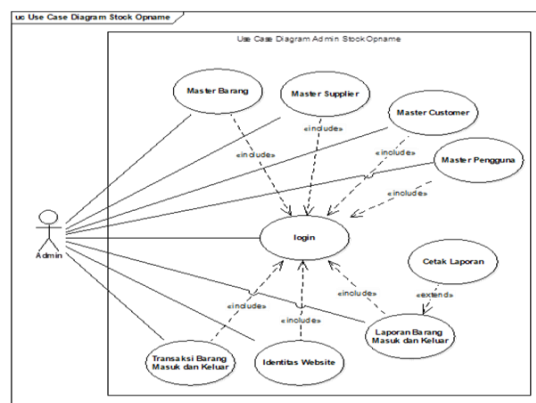
The activity diagram design in the proposed website design is divided into two activity diagrams: Warehouse Staff and Administrators with different needs. The following is a use case diagram design and activity diagram modelling for warehouse staff and administrators:

1. Design Use Case diagrams

A. Warehouse Staff Use Case Diagram Design

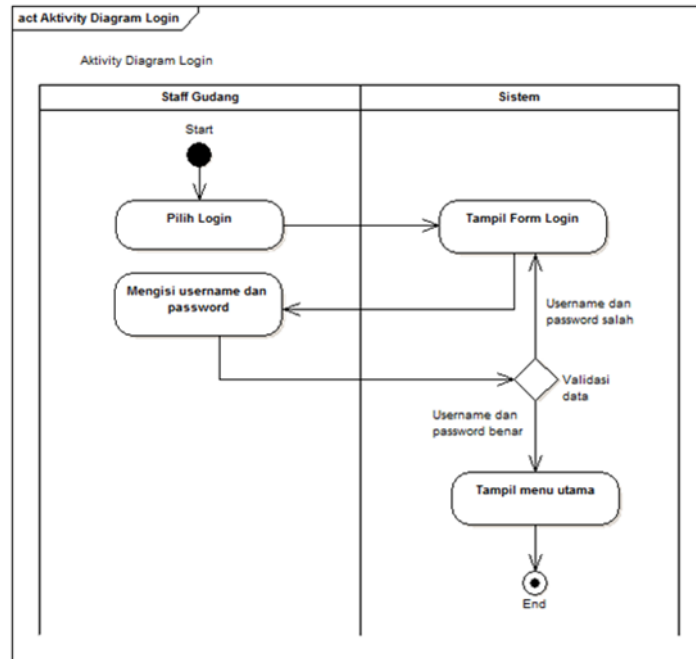


B. Administrator use case diagram design

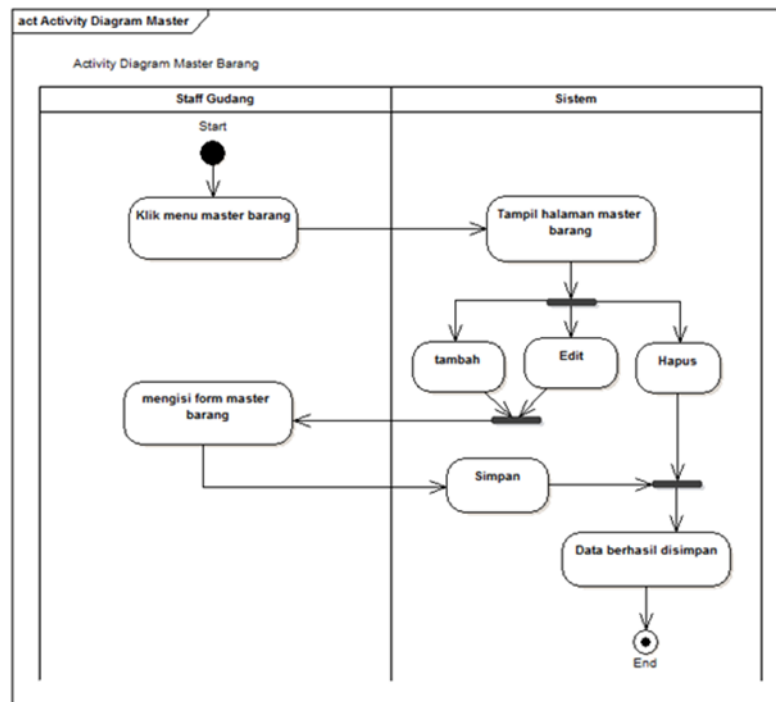


2. Activity Diagrams

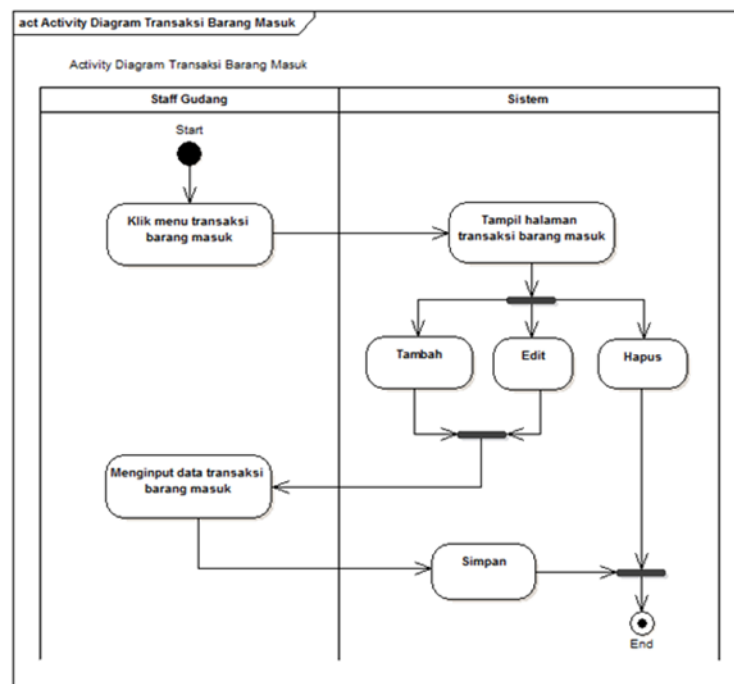
A. Activity Diagram for Warehouse Staff Login



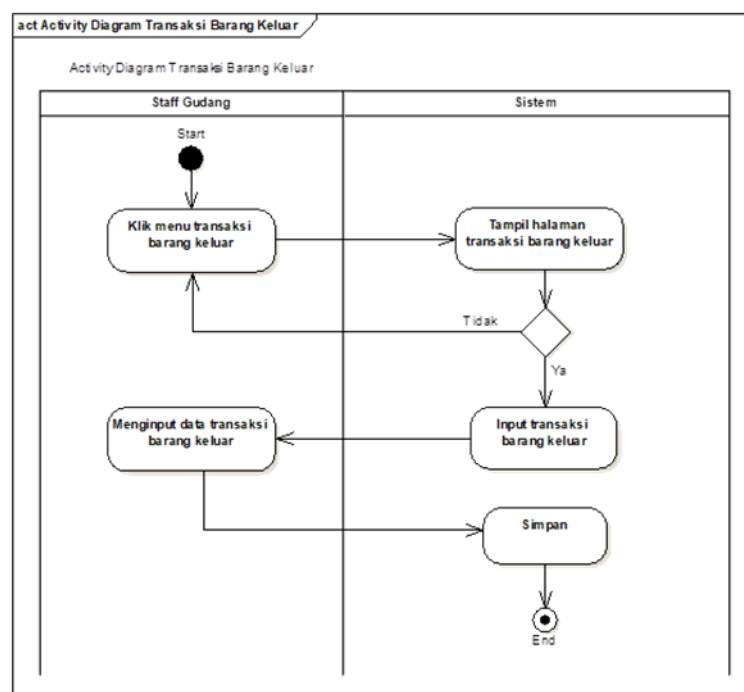
B. Activity Master Goods Diagram



C. Activity Diagram of Incoming Goods Transactions

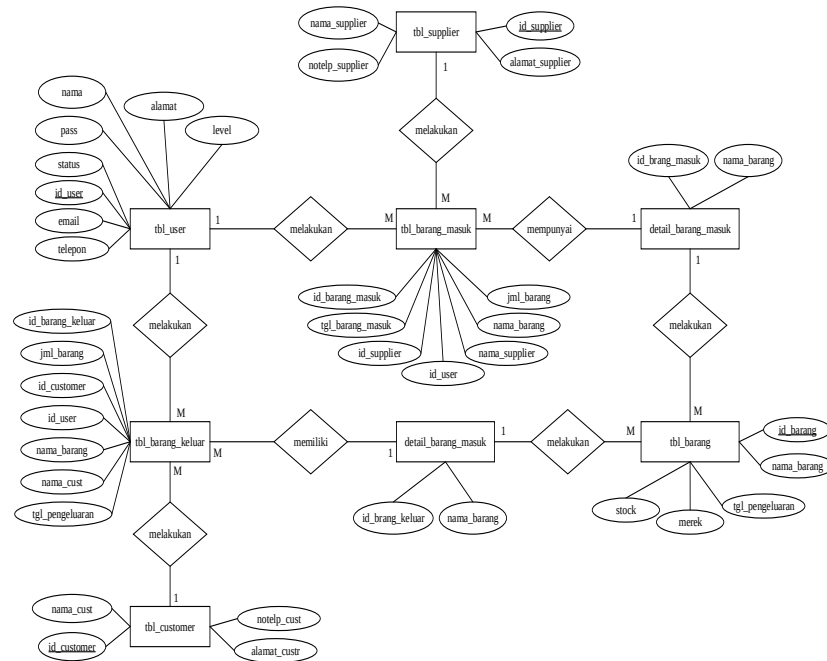


D. Activity Diagram Outgoing Goods Transactions

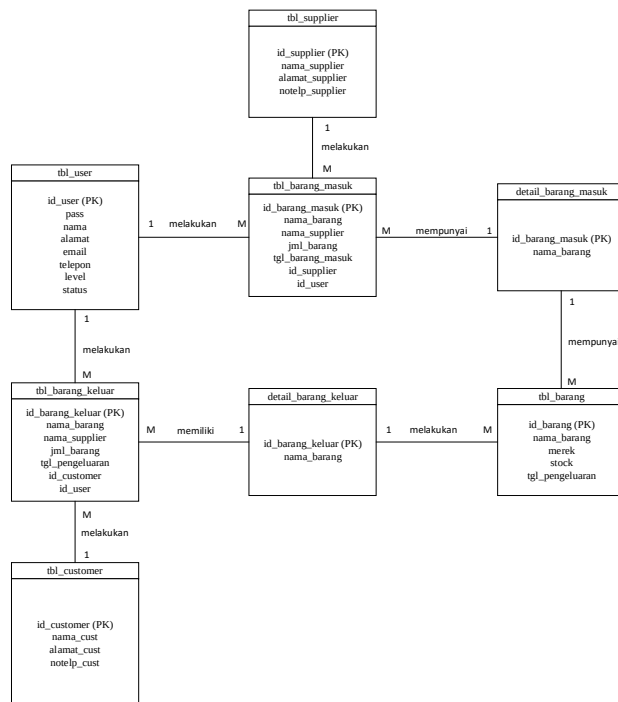


3. Prototype Design

A. Entity Relationship Diagram (ERD)



B. Logical Structure Record (LRS)



RESULT AND DISCUSSION

The activity diagram above makes it easier for warehouse staff to manage incoming and outgoing inventory systems so that more accurate and timely inventory reports are produced. Control through the inventory system can also help monitor the availability of goods in the warehouse. This inventory system helps Alvinda Store manage and control inventory so that accurate and timely inventory reports can be produced.

CONCLUSION

From the above research, it can be concluded as follows:

1. Management of inventory data that is still manual results in the risk of lost goods being out of control resulting in losses for the company.
2. A computerized inventory information system helps companies minimize the risk of inventory loss and makes it easier to track incoming and outgoing goods.
3. Simplify the calculation of incoming and outgoing goods to facilitate the preparation of inventory reports accurately and on time.

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