

THE DESIGN OF A STOCK TAKING INVENTORY APPLICATION BASED ON ANDROID

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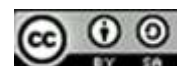
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Abstract. The stocktaking activities at the company take a relatively long time depending on the number of goods and assets owned. As a result, the company can only carry out stock taking at the end of the day or in a non-peak season. This condition resulted in the company's being disorganized in doing stocktaking. This study aims to create an application that can facilitate the management of stocktaking inventory of goods. The system development method uses the SDLC (System Development Life Cycle) model. Which has the stages of planning, system analysis, system design, system implementation, system testing and system maintenance. Application improvement starts from system preparation to detailed system design terms, including database design, input output design, and Android-based technology. The information system is built using Android Studio using the Java programming language. This study resulted in a stock-taking application for inventory that stores information about stock taking inventory by displaying features of stock ownership data, inventory items, updating item data, and stocktaking inventory reports. It is hoped that PT. Barata Indonesia (Persero) Turbine Component Division will quickly, effectively, and efficiently in data processing stocktaking inventory of existing goods and compiling reports per period systematically.

Keywords: Android; Inventory; Stocktaking

Abstrak- Aktivitas stock opname dalam perusahaan memakan waktu yang relatif lama bergantung menurut banyaknya barang dan aset yang dimiliki, sebagai akibatnya perusahaan hanya bisa melaksanakan stock opname waktu akhir atau dalam keadaan tidak ramai (non-peak season). Kondisi ini mengakibatkan perusahaan tidak tertib dalam mengerjakan stock opname. Penelitian ini bertujuan menciptakan aplikasi yang bisa memudahkan manajemen stock opname persediaan barang. Metode pengembangan sistem menggunakan model SDLC (*System Development Life Cycle*) dimana mempunyai tahapan-tahapan Perencanaan, Analisis Sistem, Perancangan Sistem, Implementasi Sistem, Pengujian sistem dan Perawatan sistem. Perbaikan aplikasi dimulai dari persiapan sistem sampai termin desain sistem yang rinci, meliputi rancangan *database*, *input output*, sampai teknologi berbasis android. Sistem informasi dibangun menggunakan android studio menggunakan bahasa pemrograman java. Penelitian ini menghasilkan sebuah aplikasi stock opname persediaan barang yang menaruh informasi tentang stock opname persediaan barang dengan menampilkan fitur data stock opname, persediaan barang, *update* data barang dan *report* stock opname persediaan barang. Diharapkan bisa dipakai pihak PT. Barata Indonesia (Persero) Divisi Komponen Turbin secara cepat, efektif dan efisien pada pengolahan data stock opname persediaan barang yang terdapat dan menyusun laporan per periode secara sistematis.

Kata Kunci : Android; Persediaan Barang; Stock Opname



INTRODUCTION

The term inventory counting refers to tracking and adjusting the inventory of goods and assets owned by the company, both for display in the warehouse or for use in the company's business process database system. With this stock taking to determine the accuracy of recording inventory stock. In some companies, this stock taking is done for inventory of goods and cash, while in manufacturing companies it is for supplies of raw materials, auxiliary materials, semi-finished goods, and finished goods.

Companies generally carry out stock taking periodically, whether it be every month, quarterly, six months or annually. Stocktaking of goods is done to equalize the total goods in the depot with the number of goods entered in the database system. While stock taking is done, input and output activities cannot be carried out. Stock taking activities in each company take a relatively long time [1] adrift based on the number of commodities and assets owned by the company. As a result, the company can only do stock taking when it is off or in a situation that is not crowded (non-peak season). This condition causes the company to conduct irregular stock taking. And it is also prone to data collection errors if the items recorded are relatively large [2].

The warehouse is one of the important places in the company that functions as an inventory produced by the company. One of the main sources of danger for all companies is the entry and exit of goods, which have a significant impact on a company's business processes. Therefore, every company must have a system for the distribution of goods [3].

Several studies have been conducted

on Android applications to assist in the inventory process. This research [4] is an Android-based inventory processing application that is expected to be able to use the device's camera, to transfer barcodes and match the transferred data with data from affiliated company databases. The research [5] uses an Android barcode scanner to design an inventory system application and saves data from the scanner to an online server so that the Android inventory system application can be accessed from a mobile phone. Research was conducted [6] to build an Android based inventory application using the Unified Model Language (UML) development method. This study used this method to help companies check inventory status both in warehouses and points of sale. Another survey was conducted by [7] people who create personal inventory apps for the convenience of salespeople using Android. This application has the ability to scan barcodes.

Inventories of goods must be able to meet the needs of the company, especially standard material supplies. Because if the stock of the raw materials cannot be met, it will damage the way of production. Meanwhile, if the supply of raw materials is excessive, it can increase the storage budget, damage, and loss of raw materials [8].

PT. Barata Indonesia (Persero) Turbine Components Division is one of the manufacturing companies in Indonesia that manufactures turbine components and is active in the field of power generation. It is located on Jl.Eropa 1 Kav. B-2, KIEC, Cilegon – Banten Indonesia, 42443. Every year, PT. Barata Indonesia (Persero) Turbine Components Division held stock taking activities for goods inventory. In the stock taking process, the inventory of

goods can be said to be less efficient and effective because everything is done manually, starting from the process of collecting data, entering goods data, and reporting goods data. And there are many differences in the list of items in demand, so it must be adapted using the requisition list of the stock checking team. All of these things often cause inaccurate output, take a long time, and if there is an error in data collection, it causes losses to the company.

Based on this problem, in order to be more efficient and effective in working on existing inventory stock taking data and systematically compiling reports per period, it is hoped that an Android mobile-based stock taking inventory application will overcome the existing obstacles.

The objectives to be achieved from this research are more organized data management; improving and speeding up the process of stocktaking inventory of goods; and reducing data collection errors.

Information systems are very reliable for solving various kinds of problems that occur in companies that are in the field of goods and services [9][10]. Applies to components that are claimed to be building blocks, namely input components, models, outputs, technology, hardware, software, databases, and controls. All these components are interconnected with each other and build a unity to achieve the goal [11].

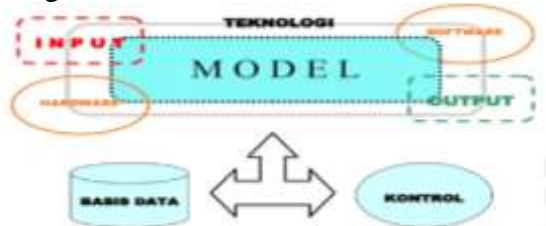


Image 1. Information System Components [11]

Units that exist within a company in procedures that still exist to be produced, as well as finished goods that are provided to meet customer requests at any time that store and maintain certain rules in a ready to use state and are stored in the database [12]. Inventories are permanent assets available for sale in the activities that occur within the company or assets that are processed exclusively or non- exclusively into goods that will be produced and then sold [13]. A lot of inventory is needed to make up sales and make a profit.

For this reason, an operating system was created for Linux-based mobile devices that includes an open source operating system, middleware, and applications made for smartphones and tablet personal computers [14]. Android also provides an open platform for programmers to develop applications that will be used by various mobile devices [15].

METHOD

The system development method used is the development of the SDLC (System Development Life Cycle) method. It is a classic methodology used to develop, maintain, and use information systems. The system of everyday life itself is a methodology, although it is more closely related to the need to develop faster systems. System development can be made faster can be achieved by increasing the life cycle and using computer-based tools [16]. SDLC stages are broadly divided into six main activities, namely:

1. Planning

The initial term for system development, which defines the assumption of resource requirements

such as physical devices, humans, techniques, and generic rules. The planning stages are understanding and defining the problem, and selecting the target system.

2. System Analysis
The current research stage on the existing system aims to design a new or updated system.
 3. System Design
The final stage of system analysis is selecting the processes and data required by the new system. The steps taken are to prepare a narrative and generic system design in the form of information and provide implementation proposals.
 4. System Implementation
The stage of running a synchronous system using their respective functions.
 5. System Testing
This is the stage of testing the system that has been built.
 6. System Maintenance
System maintenance is required for various reasons, which include system use, system audit, control, system restoration, and development.
- Each activity in the SDLC can be explained through the objectives (purpose) and output of its activities (deliverable).



Image 2. SDLC.Development Stages

RESULTS AND DISCUSSION

Application Implementation

The survey results are available in the form of an Android-based inventory application that can be accessed via an Android smartphone. The steps for implementing the program from inventory created on mobile devices and inventory applications :

1. Main Menu

In the primary menu, the user can select the desired menu, for example, admin, warehouse, accountant, and manager :



Image 3. Main Menu

2. Login Menu

Its function is to input the user id and password before the user accesses the stocktaking application for inventory. The login page displays :



Image 4. User Login

3. SAP Stock Form Menu

This SAP stock menu page presents data that has been inputted by the admin:



Image 5. SAP Stock Form

4. Menu Update Stock Take

The stocktaking update page functions to update item data that can be done by the user in sync with the user portal. The display of the Stock Taking Update Form is :



Image 6. Form Update: Stock-Taking

5. Menu Form Table Adjustment

The Adjustment Form Menu is a user page for making stock-taking adjustments. Display of the Adjustment Table Form Menu :

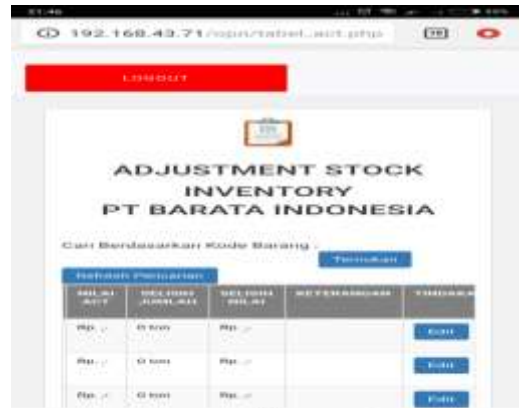


Image 7. Adjustment Table Form

6. Menu Report Stock Taking

The Stock Taking Report page displays the stock take output, which can be reviewed and accessed by the user manager :

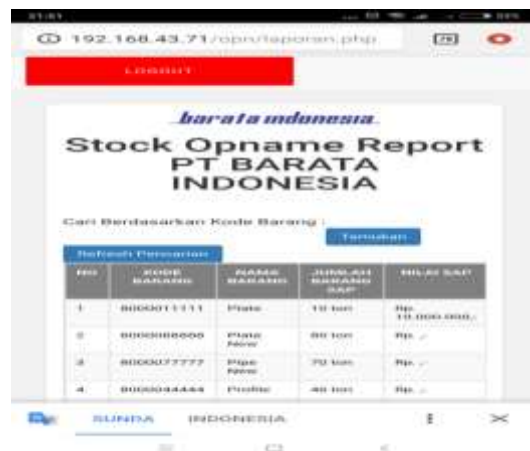


Image 8. Stock-Taking Report

7. Export Form Menu

This page functions to export stocktaking data to Microsoft Excel :



Image 9. Export Form

Testing Stage

At the testing stage of this program, researchers use black box testing to find out whether the output according to application testing is running according to what has been planned. Testing the application of stock taking inventory of goods is carried out by warehouse staff of PT. Barata Indonesia (Persero) Turbine Components Division. Program testing is carried out in three stages.

1. Software Logic

Looking at the logic that the program runs, whether it is in sync with expectations or still needs to be improved.

2. Check Program Command

Testing the program by executing all the commands that are still in it and determining the program instructions can be executed.

3. External Function

Ensure the synchronous output needs to use a specific input.

System Maintenance

The implementation of the system must receive support so that it can run optimally. System support is obtained, including by system users to be able to run the system correctly according to the

instructions for using the program. System maintenance is carried out to keep the permanent system running optimally. System errors or system discrepancies in the future can be corrected by repeating the stages of the system life cycle.

CONCLUSION

The system that was built makes it easier for the process of recording stock taking inventory of goods, using an Android based application to reduce recording errors in the warehouse section, making it easier for the accounting department to make adjustments to stock inventory data, and making it easier to view the output of the stock take inventory report so that it is faster and more accurate.

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