

## INFORMATION SYSTEM FOR INVENTORY OF GOODS USING PROTOTYPE MODEL

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### Abstrak

*Management persediaan barang merupakan kegiatan terpenting, karena bila persediaan barang yang terdapat digudang tidak dikelola dengan baik akan memungkinkan terjadinya penurunan keuntungan dan kehilangan pelanggan. PT Andalan Teknik Karetindo Putra Bangsa memiliki kelemahan dalam kegiatan management persediaan barangnya, dimana penyajian informasinya dikerjakan secara manual yaitu melalui proses pencatatan pada sebuah buku, kemudian dipindahkan kedalam aplikasi spreadsheet. Terkadang data yang disampaikan belum akurat, yaitu masih terdapat kekeliruan mengenai stok barang. Pada penelitian ini, kami menggunakan model perangkat lunak prototype. Pembuatan website ini dibuat guna mengatasi permasalahan tersebut serta untuk meningkatkan efektifitas dan efisiensi dari kinerja perusahaan. Dimana kami membuatkan 2 hak akses level, yaitu untuk staff gudang dan pimpinan perusahaan. Dengan adanya website ini, staff gudang dapat mengetahui dengan cepat dan akurat ketersediaan barang dan pimpinan dapat langsung mengetahui stok barang yang tersedia digudang serta dapat langsung mencetak laporan persediaan barang tanpa harus bertanya kebagian gudang.*

*Kata kunci: Sistem Informasi; Model Prototype; Persediaan Barang*

### Abstract

Inventory management is the most important activity, because if the inventory in the warehouse is not managed properly, it will allow a decrease in profits and loss of customers. PT Andalan Teknik Karetindo Putra Bangsa has weaknesses in its inventory management activities, where the presentation of the information is done manually, namely through the process of recording in a book, then transferred to the Speedsheet application. Sometimes the data submitted is inaccurate, that is, there are still errors regarding the stock of goods. In this research, we used a prototype software model. Making this website is made to overcome these problems and to increase the effectiveness and efficiency of company performance. Where we make 2 level access rights, namely for warehouse staff and company leaders. With this website, warehouse staff can quickly and accurately find out the availability of goods and leaders can immediately find out the stock of goods available in the warehouse and can immediately print inventory reports without having to ask to the warehouse.

Keywords: Information System; Prototype Model; Inventory

### INTRODUCTION

Inventory (inventory of goods) is all customer requests with a minimum inventory of goods (Guslan & Rodianto, 2019). According to Ristono in Yudha, Sudarma and Mertasana (Alit, Yudha, Sudarma, & Mertasana, 2017) Inventory

(inventory of goods) consists of 3 kinds of inventory, namely inventory of raw materials, semi-finished goods and finished goods. The supply of goods must be managed properly, to ensure the smooth traffic of goods

It should be noted that the balance sheet or profit and loss of a company is very influential on

the company's inventory of goods, be it a trading or manufacturing company (Murdihardjo & Effendy, 2013). Companies engaged in manufacturing usually have their inventory of raw materials, in-process goods, finished goods inventories and other materials used in the production process. As for trading companies, the inventory of goods is the merchandise itself (Manengkey, 2014).

In addition, operational problems that often occur in managing stock inventory are when the inventory is small and the demand cannot be fulfilled. Then if the inventory is too large, the company will get a loss (Nawang, Kurniawati & Duta, 2017). Therefore, the company must be able to plan well in optimizing the number of items ordered, in order to minimize the cost of inventory (Suryani, 2012). Because the inventory of goods has a direct impact on the profits of a company (Tamodia, 2013).

PT Andalan Teknik Karetindo Putra Bangsa is a company in the field of trade and services (rubber raw material). However, this company, in its inventory management activities, still has weaknesses, namely in the process of recording goods, where there is often a mismatch between the stock of goods recorded and its physical (Nuari, 2017) and preparation of inventory reports that still use a manual system, where the recording is carried out in a book then transferred to a number processing application (spreadsheet), where this application has not been said to be optimal when the process of searching for goods data (Meilano, R, Damanik, 2019). In addition, the stock data provided by the warehouse is sometimes inaccurate and data errors often occur. Judging from these problems, this company needs a new system, in order to support the effectiveness and efficiency of its performance in inventory management activities, namely by creating an appropriate information system and in accordance with the needs. (Fauziah, S & Ratnawati 2018).

Previous research has also experienced the same thing, so that an inventory information system was created, in order to make it easier for companies to manage stock items and to provide more effective information. The information system can automatically perform data searches, record incoming and outgoing goods. The stages of making the information system are to collect data (observation, interview and archiving techniques), the design uses Entity Relational Diagrams (ERD), Normalization, Context Diagrams and Data Flow Diagrams (DFD) and use the waterfall model. (Dahlan, 2018).

In addition, PT. Nusatara Sejahtera, where the goods order system still uses manual-calculated

stock recording which can create a gap for forgetfulness in the recording process and there is often an imbalance between the number of stock items recorded and the physical stock. From these problems, this company created information systems, in order to manage incoming and outgoing goods data, stock data, ordering goods in one web application using the model-waterfall and depiction of the ongoing process using Data Flow Diagrams (DFD) (Hasanudin, 2018).

It can be concluded, if the company has not been well computerized in the transaction process of its inventory activities (both in the form of recording incoming and outgoing goods and searching for goods data), it can result in a lack of effectiveness and efficiency in company performance, especially in providing information on inventory.

It is known that PT Andalan Teknik Karetindo Putra Bangsa has a very significant number of transactions, so the creation of this inventory information system can help company performance in terms of speeding up the search or tracking of inventory data and making it easier for companies to create inventory reports that can be done at any time. (Mauluddin, S & Santini, 2018).

The descriptions above, conclude that in the company PT Andalan Teknik Karetindo Putra Bangsa, there are employee performance that is less effective and efficient in the process of managing inventory, where this affects the turnover and profits the company gets.

On this basis, we conducted this research with the aim of assisting PT Andalan Teknik Karetindo in improving the efficiency and effectiveness of company performance in inventory management activities, so that the existing inventory data can be accurate between the availability of goods in the warehouse and data on the system and can increase company profits.

## RESEARCH METHODS

### Data collection technique

1. Observation  
We collect data by making direct observations on this company.
2. Interview  
At this stage, we conducted interviews with the Chairman or Owner of PT Andalan Teknik Karetindo Putra Bangsa, in order to obtain accurate information and data.
3. Literature Study  
We collected several sources of information for the smooth running of this research, namely



Figure 3 is a warehouse staff diagram usecase design:

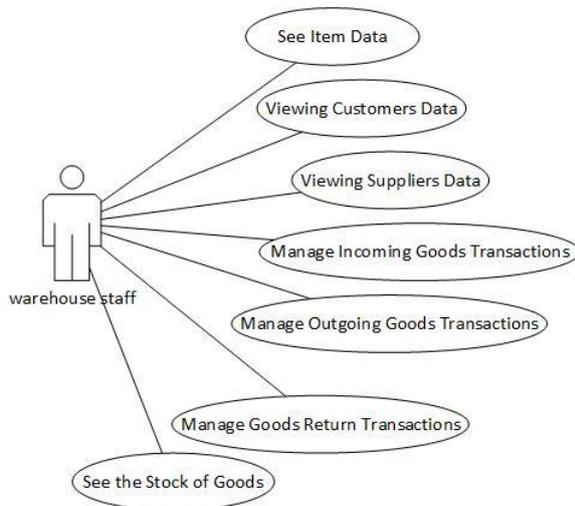


Figure 3. Warehouse Staff Usecase Diagram

### 3. Building a Prototype

In building prototyping, it focuses on presenting the needs of the user. In the website design process, the programming languages HTML, CSS, Javascript and PHP are used. Before the prototyping design is given to the client or user, it is necessary to test the system first using User Acceptance Testing (UAT)

#### Testing Using User Acceptance Testing (UAT)

User Acceptance Testing (UAT) is the stage of the testing process where the user provides input and suggestions for system testing.

Table 1. UAT Test Results Warehouse Staff Login Page and Add Items

Use Case	Test results [Successfully   Failed]	Examiner Name *	Test Date of Examiner Notes	Note
Usecase Test: Login Description: Verifies users registered to the system  Test Case: Username: (input NIP) Password: admin  Expected results:	It works	Muhammad Rohana Suryadarma	12 January 2021	
- If the login is successful, it will enter the inventory page - If the login is not successful, it will not enter the inventory page and display an error message through the display	It works	Basuki	January 14, 2021	
Usecase Test: Manage Item Data Description: Verifies the data input of goods  Test Case: Item Code: ORG001 Item Name: Oring Unit: Pcs Selling price: 5500 Purchase price: 5000	It works	Muhammad Rohana Suryadarma	12 January 2021	
Expected results : - If successfully entered, the message "Saved Data" will appear - If the data is not successfully inputted (not all of them are inputted), the message "Data is still empty" will appear. Return to the column that has not been entered.	It works	Basuki	January 14, 2021	

### 4. Evaluation and Improvement

Evaluation is carried out by the client, whether this prorotyping is appropriate and

appropriate to the client's needs or there are still deficiencies. When it is appropriate, then the fourth stage is taken, namely the implementation process



(implementation) in the company, if it is not suitable, then the prototyping needs to be revised again by repeating steps one, two and three.

## RESEARCH RESULTS AND DISCUSSION

### 1. Login Page Views

In Figure 4 is a display of the login page, this page is the start page if we want to enter the inventory information system access:



Figure 4. Login Page Form

### 2. Main Page Display

The display in Figure 5 is the main page display on the inventory system, here the user can select the menu according to his needs. For its appearance, it can be seen in Figure 5:



Figure 5 Main Menu Page Form

### 3. Add Item Data Page Views

The Add Item Data page view is used to add item data. The view can be seen in Figure 6:

Figure 6. Item Data Page Form

### 4. Transaction Page Views

This page functions to manage incoming goods data along with details of incoming goods and suppliers supplying. The display can be seen in Figure 7:

Kode Barang	Nama Barang	Unit	Quantity	Harga	Tp
P0002	Kawatbata	Pakal	1	100000	K
Grand Total					10

Figure 7. Transaction Page Form

### 5. Incoming Goods Report Page Display

This page functions to generate incoming goods reports based on the selected transaction time period. The display can be seen in Figure 8:

No	No Purchase	Tanggal Masuk	Kode Barang	Deskripsi	Suplier	Barang Masuk
1	00000P1310017	2017-12-06	P0003	besi	PT Sapha Tunggal Tbk	17
2	00000P1310017	2017-12-06	P0003	besi	PT Waskita (P)	16
3	00000P1310017	2017-12-06	P0005	besing	PT Waskita (P)	1

Figure 8. Incoming Goods Report Page Form

The inventory information system that has been designed can improve the smooth performance of the warehouse employee staff in managing inventory stock. In addition, the

leadership can directly print the required inventory report without having to recap the warehouse staff first. The warehouse employee staff section can easily find out when and how many items to order from the next supplier.

## CONCLUSIONS AND SUGGESTIONS

### Conclusion

PT Andalan Teknik Karetindo Putra Bangsa has a very significant number of transactions, so it is very prone to errors in the calculation of the stock of goods so that an inventory information system is created using a web application. by using the waterfall model in order to help the company's performance in terms of speeding up the search or tracking of inventory data and make it easier for companies to create inventory reports.

### Recommendation

The supply information system with this web application needs improvement to keep up with future application developments. Can use barcode scans to make it easier to update stock data on goods. And it is necessary to periodically back up data to prevent damage or loss of data and to periodically perform virus scans.

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