

Design Warehouse Management Inventory System Based On The Website

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Abstract

Warehouse management system is one of the most important parts of manufacturing companies in order to monitor all the supplies owned by the company for incoming goods and goods out. PT. Arista Latindo, is still using manual way to know the inventory they have today, so it will take a lot of time to be able to process the results of the use of raw materials, the resulting production, when using the system there are many mistakes that often occur in the process of recording thus affecting the overall system. Therefore, with technological advances to improve the existing system from the manual will be converted into computerized. For making these applications can use the website as a form of view that can be accessed by administrators more easily, quickly and effectively. When the design is done to better understand the needs of the user, the process is done and the output to be used, the testing process is done by waterfall method and black box testing method to check the errors associated with the display in applications that have been made and will be used in the company.

Keywords: Warehouse management system, waterfall, black box testing, web

1. Introduction

One inventory control tool is that firms must have effective and efficient inventory turns as controlling the right inventory is not easy. If the Inventory is too large compared to the needs of the company (overstock) will result in additional costs such as storage costs and maintenance costs. Meanwhile, if the inventory is too little will result in the risk of lack of inventory (sock out) because often the goods can not be brought in a sudden and as needed, causing the unstable production process and customer satisfaction to the service company itself. Therefore, companies should attempt to design a system and inventory model that aims to optimize inventory in order to minimize total costs. For that reason, every company is required to have good management in all aspects that have the function to carry out activities, such as production, marketing, finance up to human resources. One method of inventory management with the creation of a computerized website system is used to determine the number of inventory orders that can minimize storage costs and inventory ordering costs. With a web-based system is expected to assist companies in controlling and maintaining inventory. In addition to the above common problems, there is also a problem that is often face by the company in the inventory of goods that input still using the manual way and cause inhibition the delivery of material production material from the warehouse to the production and the slow update of existing stock data in the production, resulting in data inaccurate as well as in the manufacture of daily reports or important data to each section of the division is inhibited.

2. Rudimentary

A. Waterfall Method

The method used in the development of this software using waterfall model [1] which is divided into 5 stages, namely:

1. Requirements analysis software.
By using the website system at PT. Arista Latindo, admin can check the good data, can enter transaction goods in and out, display report data of goods overall.
2. Design software.
At this stage the author in the design of the program using Entity Relationship Diagram (ERD), Logical Record Structure (LRS)[2], Navigation Structure[3] and software used PHP and Mysql.
3. Creation of program code
At this stage, software design is realized as a series of programs or program units.
4. Testing.
Tests focus on the software in terms of logic, functional and ensure that all parts have been tested.
5. Support (support) or maintenance (maintenance).
The support and maintenance phases can repeat the development proces from the analysis of specifications for existing software changes, but not to create new software.

B. Navigation Structure

The navigation structure is a composite of the reference structure of website information and the link mechanism that supports visitors to perform site browsing[4]

C. Tools Program

Entity Relationship Diagram is a network model that uses the arrangement of data stored in the system abstract. Entity Relationship Diagram also describes the relationship between one entity that has a number of attributes with other entities in an integrated system. Entity Relationship Diagram is divided into three components, named entity, attribute, and relation. Broadly speaking the entity is the basis involved in the system. The attribute or field acts as an explanation of the entity, and the relation or relationship represents the relationship between two entities.[5]

Testing Black-Box Testing (testing black box) that is testing the software in terms of functional specifications without testing the design and program code. The test is intended to determine whether the input functions and the output of the software in accordance with the required specifications. Black box testing is done by making a test case that is trying all the functions by using the software whether in accordance with the required specifications. Test cases made to perform black box testing should be made with true cases and incorrect cases.[1]

3. Research and Methodology

3.1 Interface design

Describe the interface design (interfaces) contained in the application of warehouse inventory information system at PT. Arista Latindo, namely:

1. Administrator Interface Design

At the first time this application is run then this application will display the login menu that serves to enter into the main menu of this application to fill in the username and password that has been made in the database of this application. In the login view there are two users of the user administrator and user warehouse. User administrators function to add user login, while the warehouse user function for data entry and report creation of transactions entry by the user.

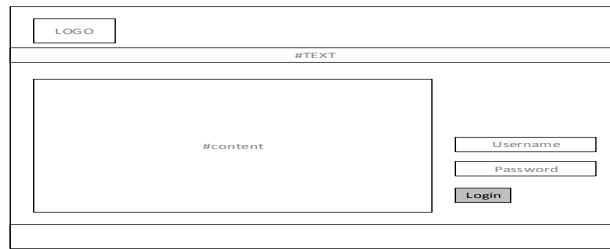


Figure 1 Administrator Interface Design

2. Interface Design Main Menu User Administrator

On the user management menu page, there are 3 forms that must be filled are username, employee name and password. From the data will be entered into the database that will be used to open warehouse management system applications. In addition to adding users, the tab can also be used to edit users and remove users from the database.

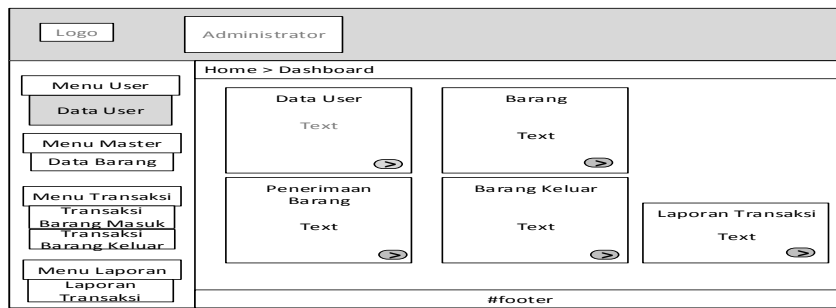


Figure 2 Interface Design Main Menu User Administrator

3.2 Database Design

The design of the database resulted in mapping the tables described with Entity Relationship Diagram (ERD) which shows the relationship between the tables that are related to each other in the database.

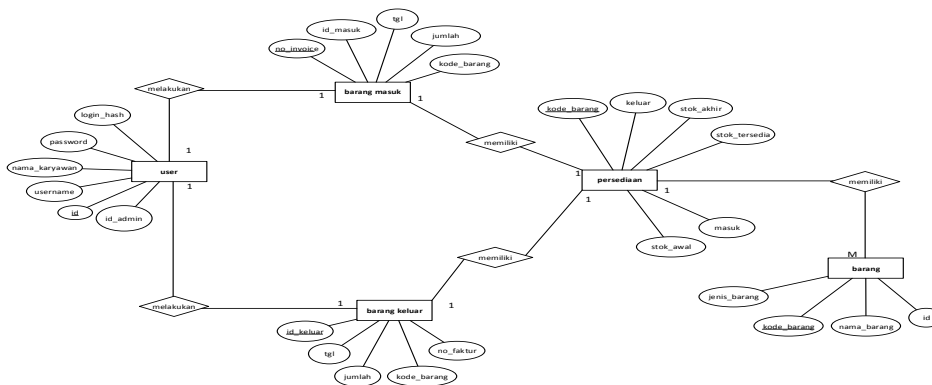


Figure 3 Entity Relationship Diagram

3.3.3 Design of the Navigation Structure

The design of the page navigation page admin can only be accessed by administrators who work to add, change and delete users on the web.

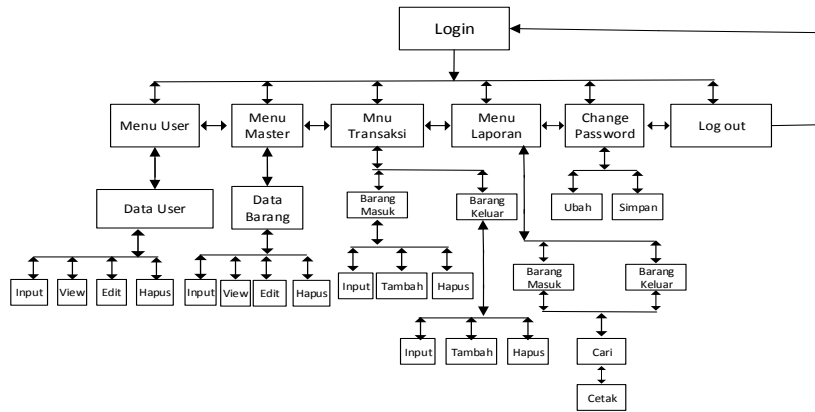


Figure 4 Admin Navigation Structure

4. Results and Discussion

4.1 Implementation of Interface Design

Implementation of interface design on warehouse inventory application based on interface design result.

1. Login Room Page

The login menu page is the initial display when the application is first to run. On the login page there is a username and password where there are two types of users to run this application is the user administrator and user warehouse.

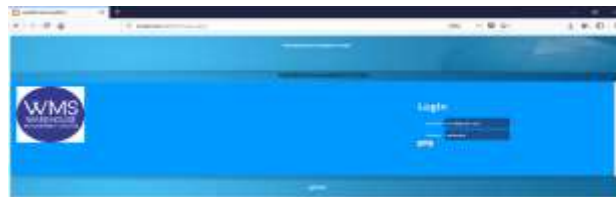


Figure 5 Login Room Page

2. User Menu Page

The user menu page has input in the form of username, employee name, along with the password that will be used to add the user to the warehouse management system application. Then on this menu there is the content of the home button so that the user can return to the main menu of the user.



Figure 6 User Menu Menu Page

3. Menu of Goods Data

The goods data menu page is used to add, edit and delete master items on the application. On this page, there are inputs in the form of goods names and types of goods that will be used for master data and goods that will be used for the process of

transaction in warehouse management system application. Then on this menu there is the content of the home button so that the user can return to the main menu of the user.



Figure 7 Menu of Good Data

4.2 Black Box Testing

4.2.1 Testing Against Admin Login Form

Table 1. Testing Against Admin Login Form

No.	Test scenario	Test case	Expected results	Test result	Conclusion
1.	Username and Password not in the content then click the login button.	Username: (blank) Password: (blank)	The system will deny access and display "Username not filled!"	according to expectations	<i>Valid</i>
2.	Type Username is filled and password is not filled or empty then click the login button.	Username: admin Password: (blank)	The system will deny access and display "Password not filled"	according to expectations	<i>Valid</i>
3.	Type Username is empty or empty and password is filled then click the login button.	Username: (blank) Password: admin	The system will deny access and display "Username not filled"	according to expectations	<i>Valid</i>
4.	Type in one of the conditions in the Username and Password then click the login button	Username: admin (True) Password: 1234 (Wrong)	The system will deny access and display "Username or Password wrong!"	according to expectations	<i>Valid</i>
5.	Type in one of the conditions in the Username and Password then click the login button	Username: user (wrong) Password: admin (True)	System will deny access and display "Username or Password wrong"	according to expectations	<i>Valid</i>
6.	Type Username and Password correctly then click the login button.	Username: admin (True) Password: admin (True)	The system accepts login access and then instantly displays the Administrator Page .	according to expectations	<i>Valid</i>

4.2.2 Testing Results Blackbox Testing On Page Input Goods

Table 1. Testing Against Admin Login Form

No.	Test scenario	<i>Test case</i>	Expected results	Test result	Conclusion
1.	Type Item Name not filled	Item Name: (empty)	System will deny access and display "item name not filled"	according to expectations	<i>Valid</i>
2.	Type Item Name filled	Item Name: (coconut)	The system will receive and store data.	according to expectations	<i>Valid</i>

5. Conclusion

The conclusions can be obtained from this research are:

- 1 Information system on warehouse inventory at PT. Arista Latindo must make an update that is from the manual system into the computerized system based on the website
- 2 In this web-based system can assist some parties in performing inventory data processing
- 3 Designing a simple user interface and designed in such a way as to make this web system easy to use by administrators and warehouse users
- 4 With the information system on the warehouse inventory provides the ease and speed of information in accessing the stock of goods

Some suggestions that can be taken from this research are:

- 1 In the use of warehouse inventory information system that has been computerized is expected to always backup data, so that if there is damage such as damaged hard drive or other, the data has been stored in the database is not lost.
- 2 In the development and improvement of this web that is in the stage of reporting in order to be developed into a graphic form to look more attractive look, not just the form of tables and writing.
- 3 The need for regular maintenance and security of web-based warehouse inventory information system and the improvement of the functions contained on this web to maximize the purpose of web development and performance.
- 4 Users in charge of updating data are expected to get training in advance in order to be able to adapt to existing programs in the website.

References

- [1] Sukamto,Rosa Ariani dan Muhammad Shalahudin. *Rekayasa Perangkat Lunak (Terstruktur dan Berorientasi Objek)*. Bandung: Informatika, 2013.
- [2] Simarmata,Janner. *Perancangan Basis Data*. Yogyakarta: CV Andi Offset, 2007.
- [3] Binanto,Iwan. *Multimedia Digital Dasar Teori dan Pengembangannya*. Yogyakarta: Andi Offset, 2010.
- [4] Andriansyah,Doni. *Sistem Informasi Pendaftaran Event dengan PHP untuk Panduan Skripsi*. Cirebon: CV Asfa Solution, 2016.
- [5] Yakub, *Sistem Basis Data*. Yogyakarta: Graha Ilmu, 2008.

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