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Design and Development of a Web-Based Information System for Submitting Orders for Goods at Depo Soehartono Pati

Pungki Pujiyanto[1*], Arif Setiawan[2], Muhammad Arifin[3]

[1,2,3] Information Systems Program, Faculty of Engineering, Muria Kudus University, Kudus 59327, Indonesia

Corresponding Author Email: pungkypujianto@gmail.com

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ABSTRACT

Ordering goods is important in ensuring smooth business operations and meeting customer requests. By managing stock and orders effectively, companies can increase efficiency, reduce costs, and increase customer satisfaction. Ordering the right goods can manage the flow of goods in and out efficiently and effectively. Using manual orders using paper forms is considered less efficient in terms of cost, security and time. In terms of costs, companies must add to the costs of issuing paper forms. and from a security perspective, orders that still use paper form are very risky due to data manipulation. Meanwhile, in terms of time, the process of ordering goods takes longer. The problem with the Soehartono Pati depot is that it still uses paper forms in making orders for goods. The current development of computer technology must of course be applied by companies in the process of ordering goods. Efficiency in work and employee performance is important for a company.

1. INTRODUCTION

Depo Soehartono Pati is one of the largest building shops in Pati Regency. The shop is located on Jl. Jendral Sudirman no.110 Pati Central Java wants to have a modern outlet store concept. Depo Soehartono provides various building material needs from the initial stage to the finishing stage, everything is available. Not only building materials, Depo Soehartono also sells various carpentry tools and other building material needs. The people of Pati know Depo Soehartono Pati as the most complete building shop and has many choices of every product. Depo Soehartono Pati has more than 100 employees consisting of sales, warehouse staff, drivers, admin and office staff. Depo Soehartono can survive in the era of very rapid online shop media attacks, this is because Depo Soehartono has experienced salespeople who can understand field conditions.

Stock of goods has an important role in the smooth operations of a company [1]. Because from the stock of goods, sales are able to understand which items are selling quickly and which items are not selling well. Therefore, knowledge about stock of goods is something that every salesperson must understand. At Soehartono Pati, stock management is running properly, but there are several things that need to be addressed in the goods order process system to meet stock needs. In this case the process of ordering goods still uses paper which is felt to be less efficient and operationally wasteful. Ordering goods that are optimal and according to your needs can cover storage costs, shipping costs and costs of shortages of goods[2]. Orders have an important role in ensuring that stock of goods remains under control and meeting customer demand. With effective orders, companies can manage the flow of goods in and out, identify goods needs, and optimize warehouse use [3]. Overall stock of goods and orders has an important role in ensuring smooth business operations and meeting customer demands. By managing stock of goods and orders effectively, companies can increase efficiency and reduce costs[4].

The rapid development of information technology as it is currently is very beneficial for individuals and companies in carrying out their activities. Information technology really makes it easier and faster for every individual to do their work and produce accurate and efficient information[5]. In this case the author offers a solution to the problem described above, namely by creating a web-based goods order information system. With the existence of a web-based goods order information system, it is hoped that it will make it easier for sales to order goods.

2. RESEARCH METHOD

There are several stages carried out in this research, starting from data collection, system development, and system design.

2.1 Data Collection Method

In this research, to obtain accurate and relevant data, the author collected data sources by:

2.1.1 Primary Data Source

Primary Data Sources are data obtained directly from the research object either through observation or recording of the research object [6]. which among other things includes:

a. Observation

Direct data collection involves observing and recording research objects for data collection purposes.

This research begins by analyzing the system requirements that will be used in system design. The research method uses a descriptive analytical method in the form of a survey directly going into the field to make observations on matters related to the problem being discussed [7].

b. Interview

Collection by direct face to face and question and answer with employees at the Soehartono depot who are interested and have a connection with the research.

2.1.2 **Secondary Data Source**

Secondary data is data taken indirectly from the research object.[8] This data was obtained from books and literature, including:

a. Literature Study

Collecting data from books that match the problem theme. For example, collecting theories regarding design for preparing practical work reports.

b. Documentation Study

Collecting data from literature and documentation from the internet, or other information sources. For example, for literature review material on goods and stock data.

2.2 System Development Methods

The system development method used is the Waterfall Model Method. This development model is linear from the initial system development stage, planning stage, to the development stage and maintenance stage [9]. A software engineering model that takes a systematic and sequential approach and is systematic in building software. The stages of the process include:

1. analysis

It is the largest part of the system in working on a project, starting with looking and searching for what is needed by the system. In this process the author saw that what was needed at the Soehartono Pati depot was a web-based goods order information system.

2. Software Requirement Analist

This is the stage of the process of collecting software requirements, analyzing the things needed in implementing a software creation project including the scope of information, required functions, resulting performance capabilities and interface design.

3. Design

The interface design stage that is easy for users to understand refers to analytical data. In this stage the author wants to provide a design that is easy to use and easy to understand.

4. Coding

The stage of translating data that has been designed into a specific programming language.

5. Testing

This is the testing stage of the software being built.

6. Maintenance

The final stage of a completed software can undergo changes or additions according to user requests.

2.3 System Design Method

The system design method in this study uses the Unified Modeling Language (UML). Unified Modeling Language (UML) is a modeling language for software development that is built using object-oriented programming techniques[10]. UML (Unified Modeling Language) emerged because of the need for visual modeling to specify, describe, build and document software systems. UML (Unified Modeling Language) provides several visual diagrams that show various aspects of the system. Some graphic diagrams provided in UML (Unified Modeling Language) include:

1. **Use case Diagram**

   Use Case diagrams describe an interaction between one or more actors and the information system to be created. Roughly speaking, use cases are used to find out what functions exist in an information system and who has the right to use those functions.
2. **Class Diagram**

   Class Diagrams are used to describe the system structure in terms of defining the classes that will be created to build the system
3. **Sequence Diagram**

   Sequence diagrams describe the behavior of objects in use cases by describing the lifetime of objects and messages sent and received between objects.
4. **Activity Diagram**

   Activity diagrams describe the workflow or activities of a system or business process.
5. **State chart Diagram**

   Statechart Diagrams show a sequence of instantaneous states that an object goes through, events that cause a transition from one activity to another, and actions that cause changes in one activity.

3. RESULTS AND DISCUSSION

the results of the discussion, a goods order information system was designed using the Unified Modeling Language (UML). Unified Modeling Language (UML) is a modeling language for building software that is built using object-oriented programming techniques.

3.1 Data and Information Needs Analysis

To build a goods order system, data and information are needed that will be processed by the system, including user data, employee data, goods data, order data and reports.
Actors describe all system users, actors in this system are divided into 3 can bee see in table 1, including:

1. The company leader, someone who will manage data to validate order submissions and check reports.
2. Admin, verifies the process of submitting orders for goods and manages stock of goods.
3. Employees, submit orders for the goods they need.

Table 1. Business processes used in the system

No	Business Process	Actor	Use Case
1	employee asks for goods order form	employee	Request a product order form
2	employees fill out the goods order form	employee	fill in the order form

3	Admin checks stock of items ordered	admin	manage order forms
4	Employees deliver goods orders	employee	order submission
5	Company leaders check product orders	employee	check order submission
6	company leaders validate goods orders	head of the company	validation

3.2 Business Use Case

Business use cases describe the relationship between business actors, business use cases and business workers in an organization or agency. Business use case overview of the process of recording and processing case data carried out by business workers and business actors is shown in figure 1.

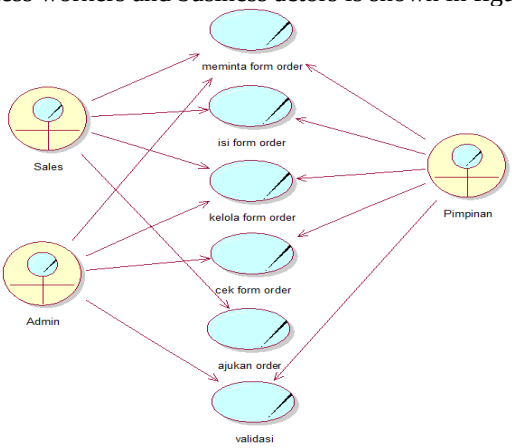

Figure 1. Business Use Case Diagram.

3.3 Sistem Use Case

The system use case diagram explains who is involved in the system (actors) and what the system does (use cases). Based on the use case system process explained previously, it can be depicted how the use case system diagram is formed is shown in figure 2.

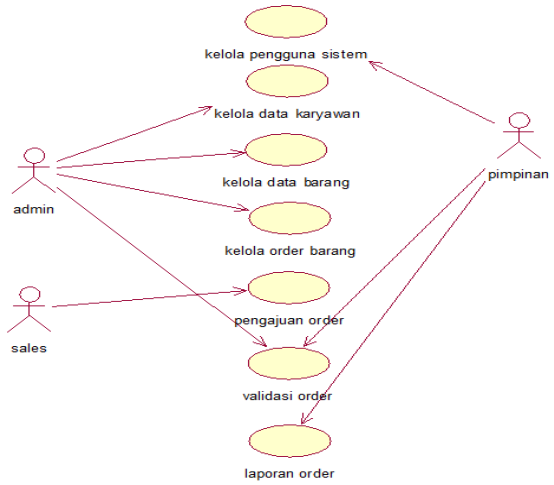

Figure 2. Use Case Diagram

3.4 Clas Diagram

Class Diagrams are diagrams used to display several classes in the system/software being developed. Class diagrams provide an overview of the system/software and existing relationships.

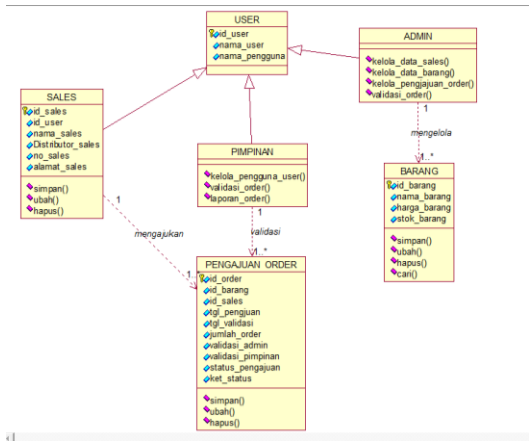

Figure 3. Class Diagram

Figure 3. Class diagram is used to illustrate the objects used in the system.

3.5 System Result

4. Log in Page

On the login page, users registered in the system can enter via this page. Below is a screenshot of the login page is shown in figure 4.

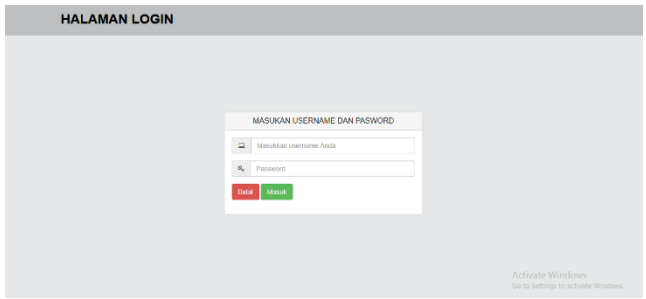

Figure 4. Log in Page

1. Sales Data Page

The sales data page that is accessed by the admin can be used by the admin to add, delete and edit sales data. The sales data display can be seen in the image below is shown in figure 5.

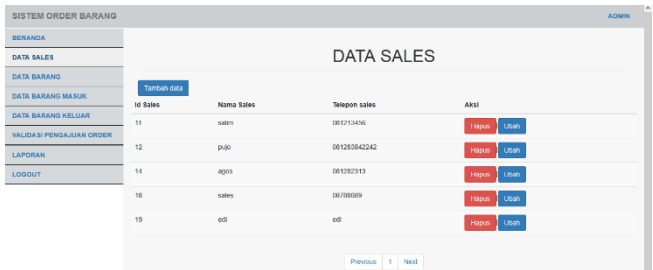

Figure 5. Sales Data Page

2. Incoming Items Page

The incoming goods page provides information about incoming goods. The admin can add meaning to edit and delete

incoming goods data. Below is the display of the incoming goods page by the admin user is shown in figure 6.

Figure 6. Incoming Items Page

3. Outgoing Goods Page

Outgoing goods page, admin can view outgoing goods data, delete, edit and add outgoing goods data. Below is the appearance of the outgoing goods page by the admin user is shown in figure 7.

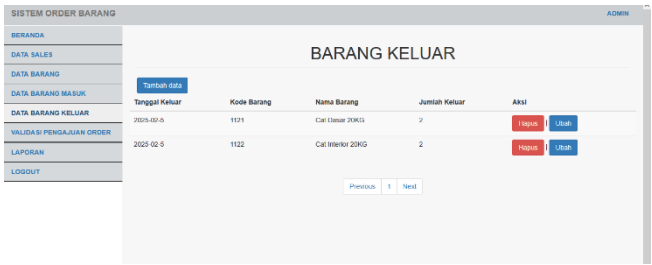

Figure 7. Outgoing Goods Page

4. Order Submission Validation Page

Order submission validation page, admin can view order submissions and provide validation for late submitted orders. Below is a display of the order submission validation page for admin users is shown in figure 8.

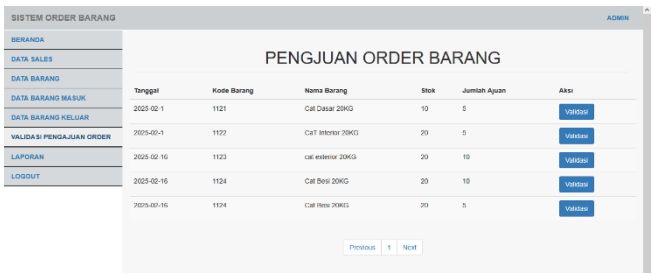

Figure 8. Order Submission Validation Page

5. Reports Page

On the report page the admin can see the validated goods order submissions. Below is the report page display for admin users is shown in figure 9.

Figure 9. Reports Page

6. Incoming goods page

On the incoming goods page for the sales account, sales can see the incoming goods that have been added by the admin. Below is a display of the incoming goods page by the sales user is shown in figure 10.

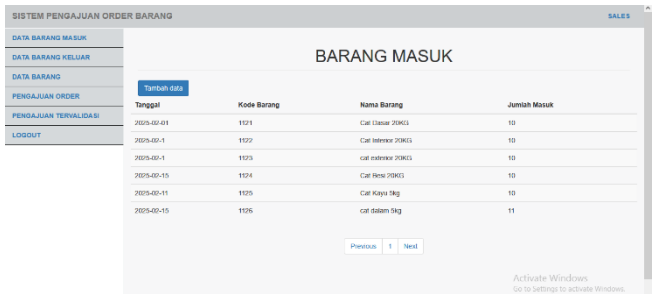

Figure 10. Incoming goods page

7. Outgoing Goods Page

On the sales account's outgoing goods page, sales can see the outgoing goods data which has been managed by the admin. Below is a display of the outgoing goods page for Sales users is shown in figure 11.

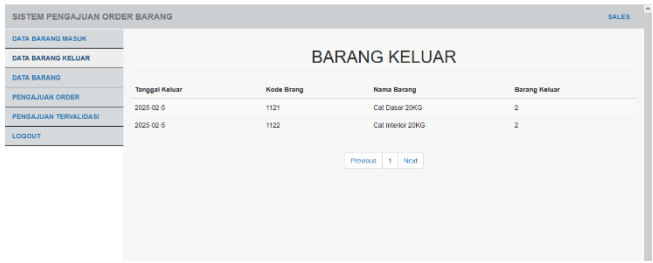

Figure 11. Outgoing goods page

8. Stock page

On the stock page, sales can see the stock of goods that are still available. Below is a display of the stock page for Sales users is shown in figure 12.

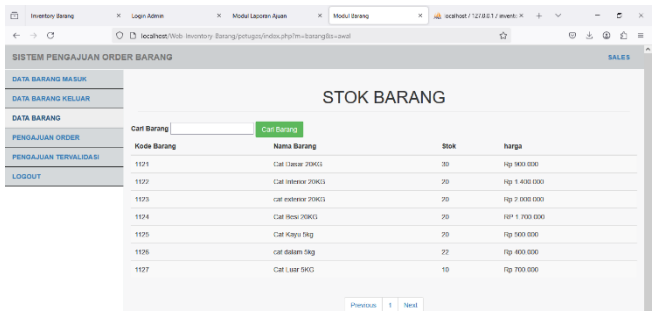

Figure 12. Stock page

9. Order submission page

On the goods order submission page, sales can add a sales order submission. When the stock of goods starts to run out, sales can fill in this page to order goods.
Below is a display of the order submission page for Sales users is shown in figure 13.

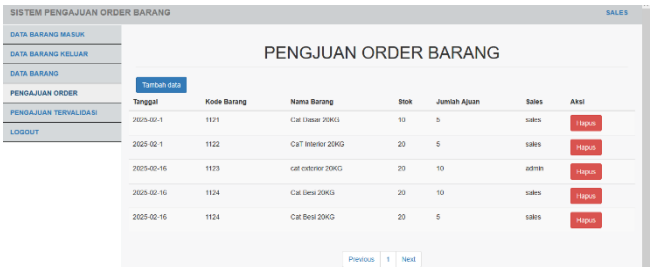

Figure 13. Order submission page

10. Order submission form page

On this page, sales can add items to order. Below is a display of the order form page for Sales users is shown in figure 14.

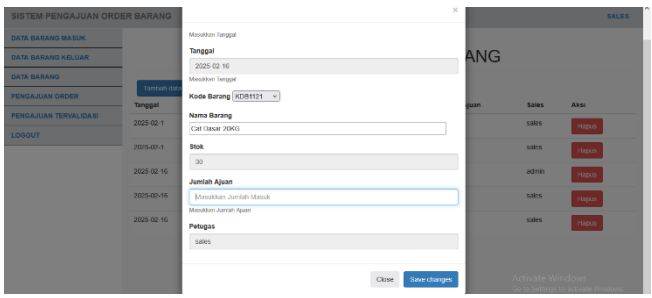

Figure 14. Order submission form page

11. Validated submission report

On the validated submission report page, sales can see the items that have been validated by the admin and the number of items validated. Below is a display of the validated item report page for Sales users is shown in figure 15.

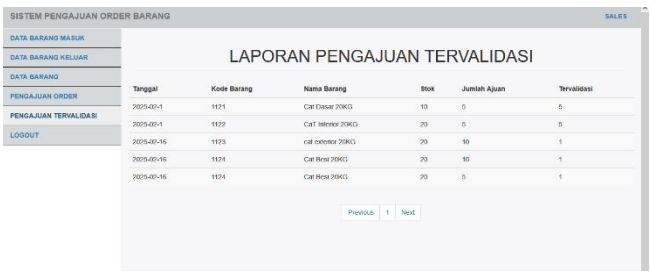

Figure 15. Validated submission report

4. CONCLUSION

Based on the results of analysis and design, as well as implementation and discussion, the authors can provide the following conclusions:

1. This information system was created to help manage the process of submitting orders for goods at the Depo Soehartono.
2. Help report the list of goods order submissions.
3. The system created is also used to help manage order data and stock of goods. It is hoped that the goods order.

Information system can be developed again to improve the system in the future so that it is more developed and up to date.

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