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Management System Cargo Data the Export in Gapura Angkasa Company

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Abstract:

The company PT Gapura Angkasa is engaged in aviation, which operates in Indonesia by prioritizing high quality services, providing cargo warehousing, handling passengers and baggage, and aircraft flight operations. The system of managing incoming and outgoing cargo in the export section that runs currently still uses Microsoft Excel to process data. The current system is not running well because there are still a number of errors, which are errors when managing data, it takes a long time to search for incoming and outgoing cargo data. Based on the problems that occur, this system was made using PHP programming language and Mysql database, the system development method uses the system development life cycle (SDLC), the analysis method uses the Critical Success Factor (CSF).

Keywords —Cargo, CSF, Outgoing Cargo and Incoming Cargo, PHP.

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I. INTRODUCTION

PT Gapura Angkasa began to be known internationally through the IATA (International Air Transport Association) meeting in Kuala Lumpur in April 1998 and PT Gapura Angkasa began to be known to the world (especially for International Airlines and Ground Handling companies). Ground Handling International Magazine vol.3 issue may 1 June 1998 (p.2) published by the Ground Handling International Publication & Exhibition of the Stable (UK). The ad confirmed the membership of PT Gapura Angkasa in IATA.

Cargo Handling Service is specifically designed to maintain cargo security and safety. With the support of the best and most advanced technology, Gapura provides world-class services to meet your needs 24/7. The cargo that is handled can be in the form of goods, letters, or documents, starting from the receipt (acceptance) to delivery (delivery) for both incoming cargo and to be sent. All services that Gapura does fully comply with International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA) regulations.

The gate has an ideal location for 8,936 square meters of warehousing in the Soekarno-Hatta International Airport Cargo Area. Within this area, integrating bonded warehousing areas, dangerous goods reception areas with specially designed storage facilities. The Gapura Warehouse is equipped with an X-ray scanning system, digital balance sheet, integrated information technology system, and is equipped with a web-based surveillance camera (CCTV) to provide maximum security and direct monitoring for all cargo handling activities. Gapura understands that cargo handling must be carried out efficiently and precisely so that it is specifically designed a sophisticated computerized cargo management system to process documents and experience in handling imported goods, exports, and direct cargo

movement. Gapura staff who are experienced and well trained will be ready to help and provide the best service to meet the demands of the airline, consignee and shipper.

And the purpose of this study is to make it easier for staff to manage incoming cargo documents, cargo build-up processes, cargo build-up data reports, manage outbound cargo documents, so as to make it easier for users to manage and recapitulate incoming cargo documents until cargo exits.

II. RESEARCH METHOD

Data Collection Methods: Observation Method: In this method the author makes direct observations and collects from very important sources of information in the development of systems that are needed in the Export of PT. Space Archway, Interview Method (Interview Research): This method is carried out through a question and answer process with one or several speakers at the place or location where the object of research is conducted and Space Archway, and Library Study Methods: The literature study method is carried out to support the interview and observation methods that have been conducted. Information gathering is done by looking for references.

Systems Analysis Method, the method used by researchers to analyze this system are:

A. Object Oriented Analysis (OOAD)

Object Oriented Analysis (OOA) or object-oriented analysis with UML. This analysis process is carried out on the results of the stages of data collection by interview, observation and literature study. Rosa A.S and M. Shalahuddin[1], states that "the oriented approach is a technique or approach to see problems and systems (software systems, information systems, or other systems). Object-oriented approach will look at the system to be developed as a collection of objects that correspond with real-world objects.

B. CRITICAL SUCCESS FACTOR (CSF)

Critical success factors (CSF) is an analysis strategy that helps a manager to achieve the goals of the company. CSF (Critical Success Factor) is a limited area in a business that if fulfilled will guarantee the success of competitive performance for the company ".

While Tri Hartati[2] said that "CSF (Critical Success Factor) is used to interpret the objectives, tactics, and operational activities, including information needs, as well as the strengths and weaknesses of the current system in the company.

From the two opinions above, it can be concluded that the CSF (Critical Success Factor) analysis is an analysis that can only be done in one area to determine the strengths and weaknesses of the system that runs on a company.

Tri Hartati [2]in the Journal of Engineering and Computer Science, CSF (Critical Success Factor) has the following types and sources:

a. Active: Managers determine and influence the success factors for carrying out control activities and measuring the end.
b. Passive: The manager does not determine the success factor but he can track it.
c. Internal and external organization.

C. DEVELOPMENT METHODS

The development method used in this research is the SDLC [3](System Development Life Cycle) method with the following stages:

a. Planning (Planning)
b. Analysis (Analysis)
c. Design (Design)
d. Implementation (Implementation)
e. Election (Maintenance)

D. Literature Review

Many previous studies have discussed the assessment of online data processing systems, so this study needs to be done with a literature study (literature review) as one of the applications of research methods to be carried out. Among them are:

1. A review of studies from researchers Mohit Chaudhari and Atul Wankhede[4]the title Inventory Management System using STRUTS Framework Architecture. This research makes

an inventory system to track and monitor sales and inventory available without problems from the business system by using JAVA and MySQL programming languages as a place to store and update data in managing inventory. Researchers adopt to use MySQL as a place to store and update data in managing inventory. Every organization needs supplies for the smooth running of its activities. It functions as a link between production and distribution processes. The system maintains computerization of organization related information. Maintaining and storing data in the form of an excel sheet that is being accessed by the organization's admin and its employees is a very tedious job. Security is very low as other people can access data, even those who don't have permission to access the database. To reduce this new system issue provides level-wise authorization for security purposes. This system is related to information processing on NPD (New Project Development) which will include product tracking activities to product delivery. This system will also provide additional features in a level-wise authorization for security purposes.

2. Review of studies from researchers Devkate Deepali M[5]entitled "Single Sign-On Secure Authentication Password Mechanism" This study discusses the Single Sign On Mechanism that allows users to sign only once and have their identity automatically verified by every application or service that is they want to access afterward. Most application architectures require users to memorize and utilize a collection of credentials (for example user names or passwords or tokens) for each application. Single sign-on (SSO) is a new authentication mechanism that allows legal users with a single credential to be authenticated by service providers on distributed computer networks. Impersonation attacks and session attacks are the weak points of the existing system "recovery credentials attack" compromise privacy credentials in the scheme as a malicious service provider can recover legitimate user credentials. Another attack, "impersonation attacks without credentials" suggests resources and services offered by service providers might be able to access without authentication by malicious users. and to protect the privacy and health of credentials, the exploitation of the user ID as the signing key to sign Schnorr's signature on the hashed Session key, and by using the Advanced Encryption Exchange and identification of safe standard keys.
3. Study reviews from researchers Syed Jamal Abdul Nasir, Nurul Nadia Suraidi, Nabihah Amirah and Raja Durratun Sakinah[6]entitled "A Study on Relationship between Inventory Management and Company Performance: A Case Study of Textile Chain Stores". This study found that company X had several inventory problems such as disorganized inventory arrangements, a large number of inventory days or no cycle counts and no accurate balance records due to unskilled workers. This study also proves that there is a significant relationship between return on assets (ROA) and day inventory. This paper also provides recommendations to companies and for further research.
4. Research conducted by Ade Setiadi and Fifit Alfiah[7]entitled "AJM Motor Shop Spare Part Sales System Using CI Based on MVC Architecture". In the world technology, especially programming at this time, both desktop and web base, is increasingly rampant use a framework and one of the PHP-based frameworks that are widely used is CodeIgniter (CI). The CI Framework was indeed developed to make it easier to develop applications with source file structures the code uses the Model-Views-Controller (MVC) architecture approach and oriented programming the object. Therefore, we use CI in developing this application with the Object Oriented method Analysis and Design as a system development method. With the design of this system has

been facilitate the store owner in managing customer data, suppliers and goods that are purchased and di selling and making reports required for the calculation of sales and can provide information that is useful for store owners up to date.

III. DISCUSS AND RESULT

A. *Model Design System*

The proposed system design is made using Unified Modeling Language (UML) diagrams, while for making web software created using the PHP programming language with a database system using MySQL. This application only uses four design diagrams as follows:

a. Usecase diagram

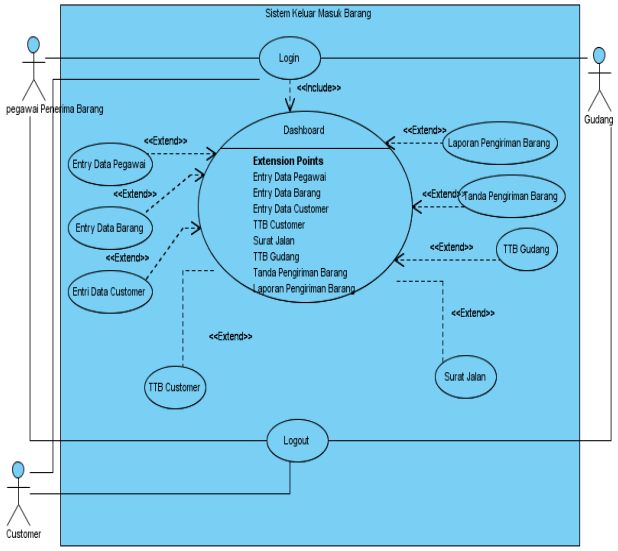

Figure 1. Use case diagram of the proposed system

Based on Figure 1. The proposed use case diagram contains the following explanation:

1. Usecase: Login
   Actor: Employee, Warehouse, Customer
   Scenario: Planning, Production, Manager can log into the system
2. Usecase: Home
   Actor: Employee, warehouse, customer
   Scenario: Can display the homepage menu
3. Usecase: Displays shipping data of goods
   Actor: Customers and Employees
   Scenario: Customers and employees can display goods delivery data
4. Usecase: Manage Goods Receipt
   Actor: Employee and warehouse
   Scenario: Employees and warehouses can manage goods receipts
5. Usecase: Manage Travel Letters
   Actor: Employee
   Scenario: Employees can manage travel documents
6. Usecase: manage item data
   Actor: Warehouse
   Scenario: The warehouse can manage goods data
7. Usecase: Manage customer data
   Actor: Employee
   Scenario: Employees manage customer data
8. Usecase: Manage employee data
   Actor: Employee
   Scenario: Employees can manage employee data
9. Usecase: Manage
   Actor: Employee
   Scenario: Employees can manage employee data.

b. *Activity diagram*

The following is an activity diagram that illustrates the designed system activity flow, namely:

1. Activity Diagram proposed for Employees

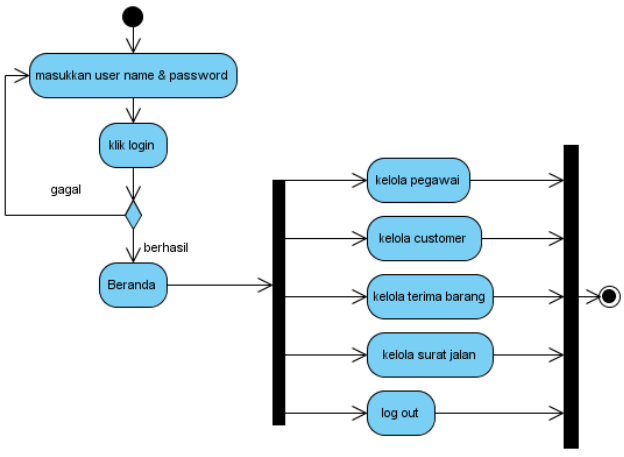

Figure 2. Activity diagram of the proposed system for Employees

Based on figure 2. there is an explanation as follows:

a. 1 (one) intial node to initiate the object.
b. 8 (eight) actions, consisting of: Enter username & password, Click Login, Display the homepage, manage employee data, manage customer data, manage goods receipts, manage travel documents log out
c. 1 (one) Fork node for branching activities
d. 1 (one) Decision node for condition selection
e. 1 (one) Join node to join activities

2. Activity Diagram proposed system for Warehouse

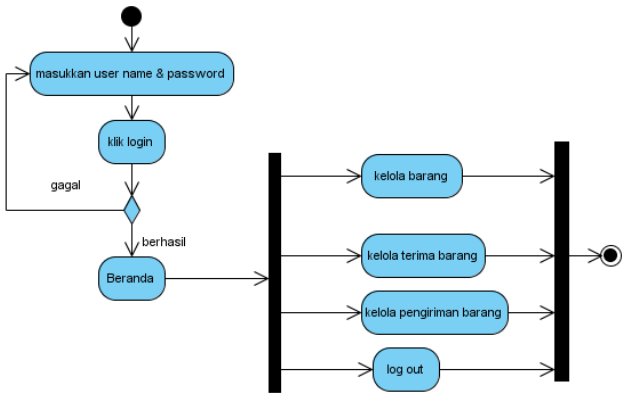

Figure 3. Activity diagram of the proposed system for the warehouse

Based on Figure 3. there is an explanation as follows:

a. 1 (one) intial node to initiate the object.
b. 7 (Seven) actions, consisting of: Enter username & password, Click Login, Display the homepage menu, manage goods, manage receipt of goods, manage shipping marks, log out
c. 1 (one) Fork node for branching activities
d. 1 (one) Decision node for condition selection
e. 1 (one) Join node to join activities

3. Activity diagram proposed for customers

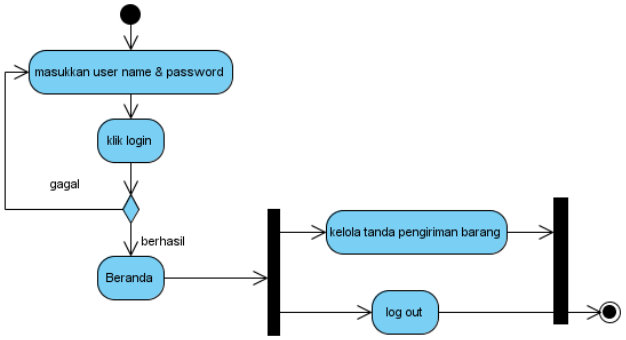

Figure 4. Proposed Activity Diagram for Customers

Based on Figure 4. there is an explanation as follows:

a. 1 (one) intial node to initiate the object.
b. 4 (four) actions, which consist of: Enter username & password, Click Login, Display the homepage menu, display data on shipping goods
c. 1 (one) Fork node for branching activities
d. 1 (one) Decision node for condition selection
e. 1 (one) Join node to join activities

c. Sequence Diagram

Here is a sequence diagram that illustrates the flow that is being designed, namely:

1. Proposed Sequence Diagram for Login

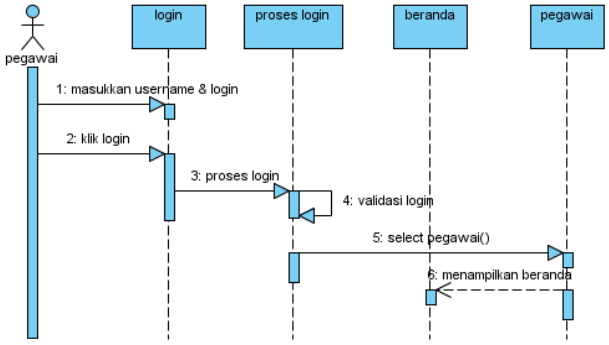

Figure 5. Sequence Diagram proposed for Login

Based on Figure 5. the proposed system sequence diagram contains:

a. 1 (one) actor who does the activity, which is: Employee
b. 4 (four) lifeline, i.e. Login Form, login process, homepage, employee

c. 6 (six) messages, enter the username and password, click login, login process, validate data, select employees, display the homepage.

2. Sequence Diagram proposed for receipt of goods

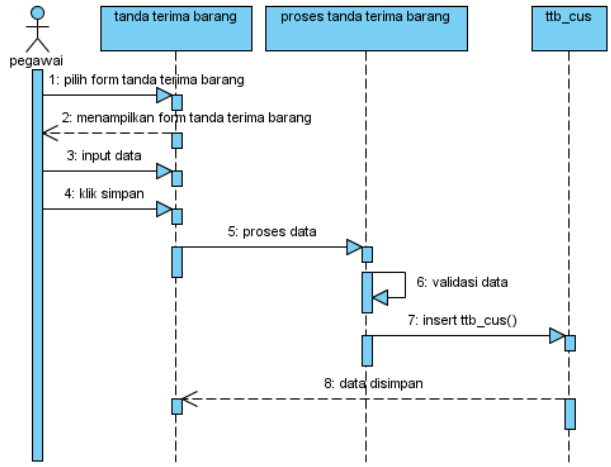

Figure 6. Sequence Diagram proposed for receipt of goods

Based on the figure 6. Sequence Diagram the proposed system contains:

a. 1 (one) actor who carries out activities, namely Employee
b. 3 (three) lifeline, i.e. receipt of goods, process of receipt of goods, ttb_cus
c. 8 (eight) massages, select the item receipt menu, display the item receipt form, input data, click save, vaid data, insert ttb_cus, save data.

3. Sequence Diagram proposed to manage goods

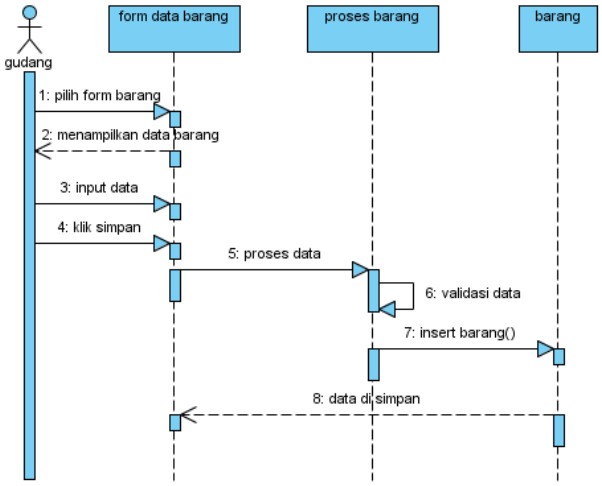

Figure 7. Sequence Diagram proposed to manage goods

Based on Figure 7. Sequence Diagram the proposed system contains:

a. 1 (one) actor who carries out an activity, i.e. warehouse
b. 3 (three) lifeline, i.e. data form of goods, process of goods, goods
c. 8 (eight) message, select item fom menu, display item data form, input data item, click save, process data, validate data, insert item, save data.

4. The proposed sequence diagram is managed by the customer

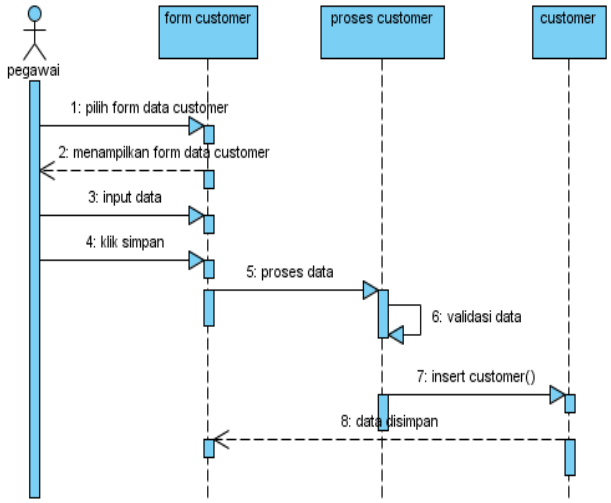

Figure 8. Sequence diagram of the proposed system of customer management data

Based on the figure 8 sequence diagram the proposed system consists of:

a. 1 (one) actor who carries out an activity, i.e. Employee
b. 3 (three) lifeline, i.e. customer data form, customer process, customer
c. 8 (eight) messages, namely Select the customer menu, display customer forms, input data, click save, process data, validate data, insert customers, save data.

5. Sequence Diagram proposed for employee management

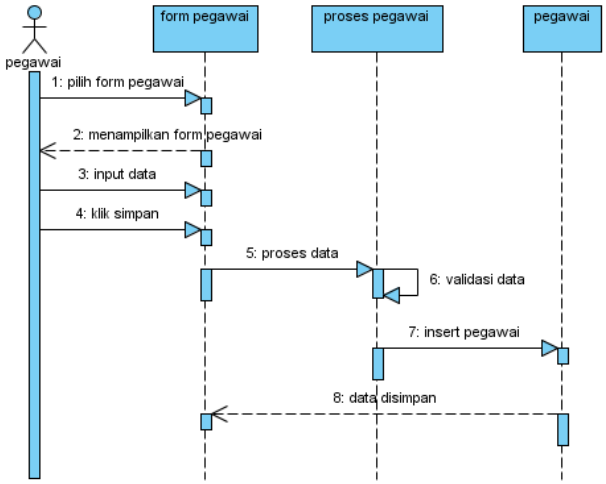

Figure 9. Sequence Diagram proposed for employee management

Based on Figure 9 the proposed Sequence Diagram contains:

a. 1 (one) actor who carries out an activity, i.e. Employee
b. 3 (three) lifeline, i.e. employee data form, data process, employee
c. 5 (six) messages, select employee form menu, display employee form, input data, click save, process data, validate data, insert employee, save data.

6. Sequence Diagram proposed to manage delivery of goods

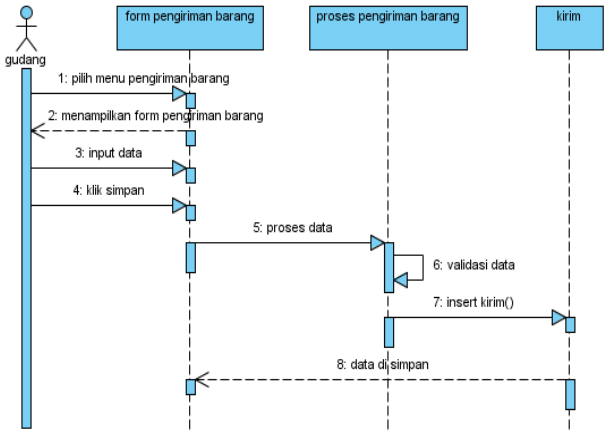

Figure 10. Sequence Diagram proposed to manage the delivery of goods

Based on Figure 10 the proposed Sequence Diagram contains:

a. 1 (one) actor who carries out an activity, i.e. warehouse
b. 3 (three) lifeline, i.e. the goods delivery form, the process of sending goods, sending
c. 6 (six) messages, select the item delivery menu, input data, click save, process data, validate data, insert send
d. 2 (two) return messages, displaying the shipping form, data stored.

7. Proposed Sequence Diagram for travel documents

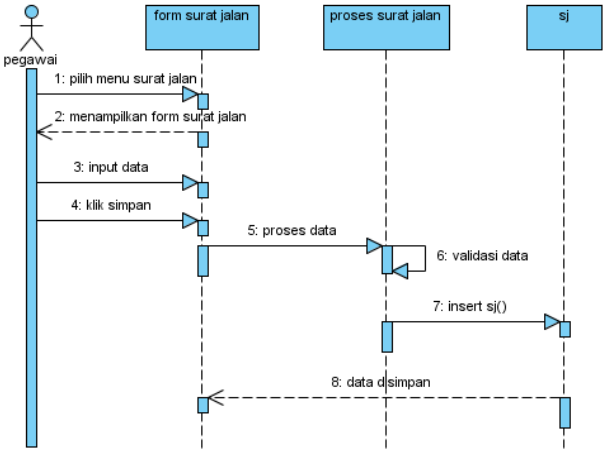

Figure 11. Sequence Diagram proposed for travel documents

Based on Figure 11 the proposed Sequence Diagram contains:

a. 1 (one) actor who carries out an activity, i.e. employee
b. 3 (three) lifeline, i.e. form of travel document, process of travel document, sj
c. 6 (six) messages, i.e. select the delivery menu, input data, click save, process data, validate data, insert sj
d. 2 (two) return messages, which display the form of a travel letter, the data is stored

B. Class Diagram System

The following are class diagrams based on the system database:

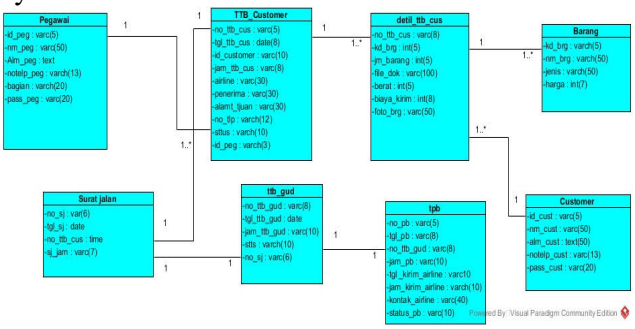

Figure 12. Class system diagram

Based on figure 12. The proposed system class diagram contains:

1. 8 (eight) classes, a set of objects that share attributes and operations.
2. 7 (seven) association, the relationship between one object and another object.

C. Research Implementation

1. Display Login Page

In the login page, there is a username and password field. This is useful as certain employee access rights to access the system. This is useful to avoid data changes by irresponsible parties.

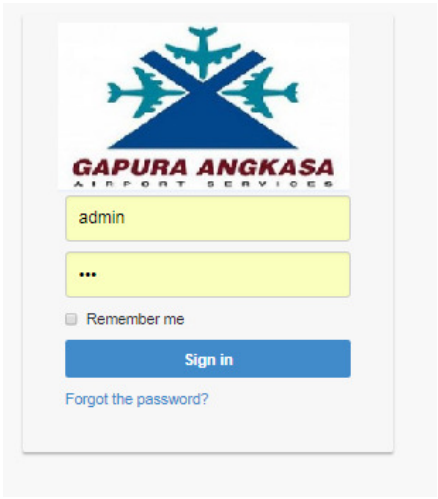

Figure 13. Display the login page

2. Display Item Data Menu

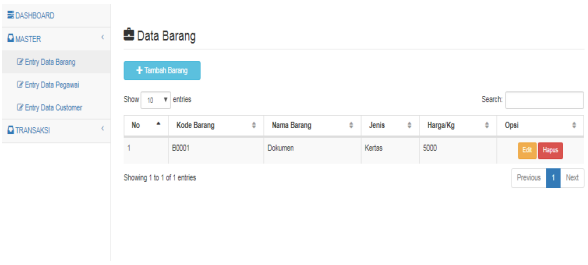

Figure 14. Display Item Data menu

3. Display the Goods Input form

Display form can be accessed by the warehouse

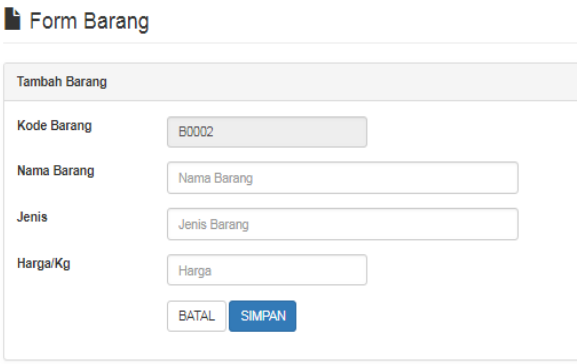

Figure 15. Display of Goods Input form

4. Customer Data Display

Display customer forms can be accessed by employees

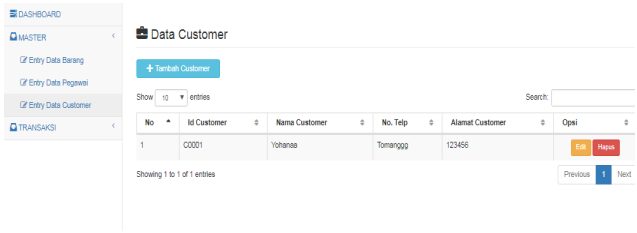

Figure 16. Display customer data

5. Display employee forms

Display employee forms can be accessed by employees

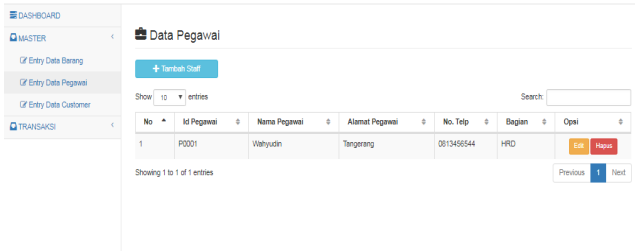

Figure 17. display of added employees

6. Display Warehouse Goods Receipt Form

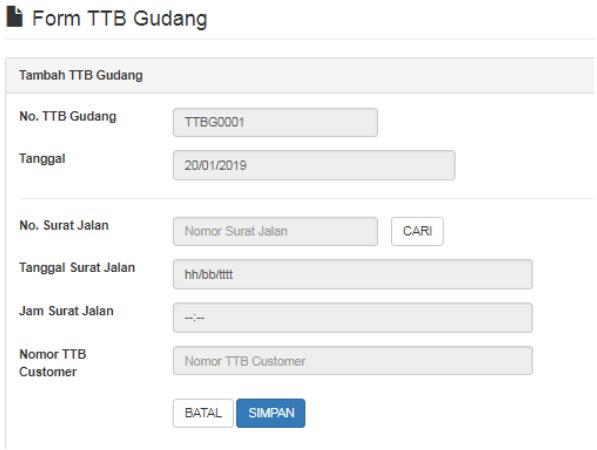

Figure 18. Display of Warehouse Goods Receipt.

IV. CONCLUSIONS

The following conclusions based on research at PT Gapura Angkasa that are in accordance with the research:

1. To find out what are the obstacles that often occur in the processing of data in and out of goods at PT Gapura Angkasa that runs at this time.
2. The purpose of this research is the creation of an application that can facilitate the warehouse and recipient employees in managing data items in and out.
3. Adding knowledge and experience from research into the management of incoming and outgoing goods systems currently running at PT Gapura Angkasa and can produce a management system for incoming and outgoing goods that can assist the warehouse in managing data for incoming and outgoing goods.

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