Export Management Information System: Evidence from Willbes Global Purwadadi Inc.

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Abstract

The case study in this research is the export goods data report at Willbess Global Inc. The purpose of this research is to design an information system for managing data on export goods based on a website at Willbess Global Inc.. This can help the process of inputting export goods data. Willbess Global Inc. always strives to improve its business process services, especially in the field of exporting goods with more systematic data processing. The research method used is the Rational Unified Process (RUP) which is a software engineering method developed by collecting various best practices in the software development industry. RUP uses an object oriented concept, with activities that focus on model development using the Unified Model Language (UML). This research has produced information system functions contained in each process of functional requirements such as managing, deleting, and changing information data on export goods data, data on types of transportation equipment used and data for export goods travel documents.

Keywords: *export data, information system, RUP, UML, website*

1. Introduction

Currently, many types of technology have begun to develop and were created by humans to help or facilitate every job. In its development, computer-based information systems are known as information systems, everything related to the process of sending goods must be stored properly and safely (Rizaldi et al., 2021). Information is an indispensable resource for management in decision making. To obtain information, it is necessary to have a system that processes data into valuable information.

One of the tools used in the process of shipping goods is a computer application, because recording and storage activities use a computer to be able to find out the status of goods, it is necessary to have media that provide information (Ependi, 2018; Yoshua et al., 2017).

Willbess Global Inc. is a company engaged in the garment industry seeking to increase company value by increasing textile exports and uncovering a winning venture business. The strategy taken by improving business processes is how to make the data processing of exported goods more systematic and well integrated and the results of data reports are integrated into each section so that each section can receive reports according to their needs.

Export activities are an activity to issue products for goods made by domestic companies (Benny, 2013), which in their activities must still meet the standards of existing regulations and provisions, namely customs rules. Export activities selling goods abroad use a payment system, the terms of sale that have been approved by exporters and importers (Noor, 2021), export activities reflect trade activities between nations that can provide a boost in the dynamics of international trade growth, so that a developing country the possibility to achieve economic progress commensurate with more developed countries.

The most important factor that determines exports is the ability of the exporting country to issue goods that can compete in foreign markets. Exports will directly affect national income. Net exports are the difference between a country's total exports and total imports. If the value of net exports is positive, it means that the value of exports is greater than the value of imports and if the value of net exports is negative, it means that the value of exports is less than the value of imports.

Website is one of the services obtained by computer users who are connected to the internet. The website provides information for users who are connected to the internet. The website is also a collection of pages that are used to display text information, images. Websites are usually built using the PHP (Perl Hypertext Preprocessor) programming language, a server-side scripting language that integrates with HTML to create dynamic web pages.
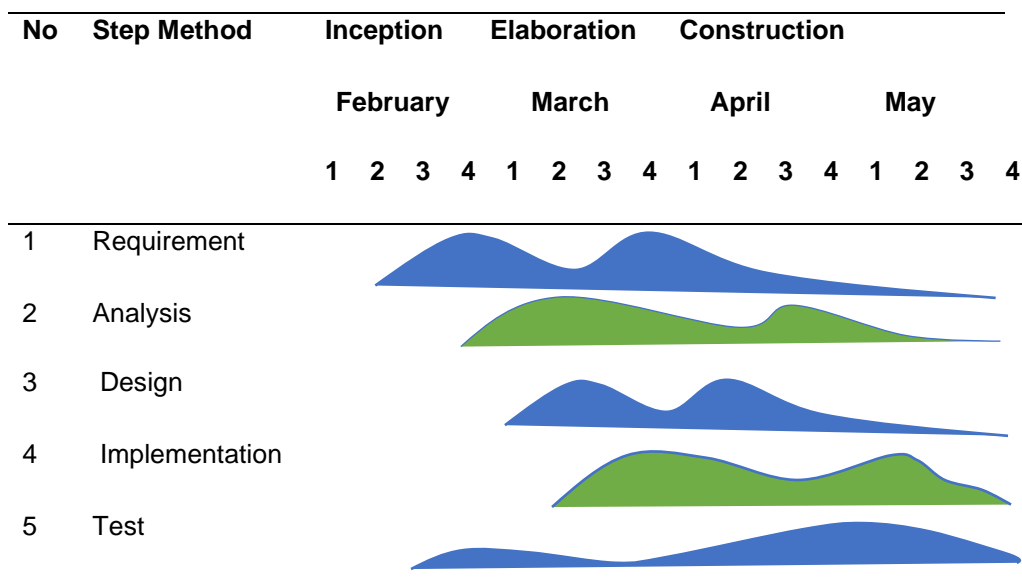
In this study, the opportunities that will be achieved at Willbess Inc.with the development of a website-based information system, namely the management of export goods data through the website will be able to integrate export data reports to all divisions.

2. Research Method

2.1. Data Collection

The researcher conducted interviews with the export data input staff to obtain the required information data. Conduct direct observations, view and retrieve the required data at Willbess Global Inc. The research was conducted at Willbess Global Inc. Jalan. Raya Purwadadi Number 23. Purwadadi Village, Purwadadi District, Subang Regency, West Java. Tel / Fax : +62-460862 / +62-260460868. The time used in this study is from February 2022 to May 2022.

Table 1. Time and Location of Research

No	Step Method	Inception				Elaboration				Construction							
		February				March				April				May			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Requirement																
2	Analysis																
3	Design																
4	Implementation																
5	Test																

Source: Research Result

2.2. System Development Method

In the website development of Willbess Global Inc. export data, the method used is the Rational Unified Process (RUP) software engineering method by collecting various best practices. The RUP development process covers the entire software development lifecycle that provides an approach to assisting the tasks and responsibilities of an organization's development (Supriadi & Hardian, 2019). The goal of RUP is to produce high-quality software that meets user needs. The main characteristic of RUP is using use cases and an iterative approach to the software development cycle. RUP uses an object oriented concept, with activities that focus on model development using the Unified Model Language (UML).

a. Unified Model League (UML)

UML is the standard specification language used to document, specify and build software (Gata & Gata, 2013). UML is a tool to support system development in the form of object modeling to support system development (Basril, 2018; Hendini, 2016). The tools used in object-oriented design based on UML are as follows: (1) Use Case Diagram modeling for information system behavior to determine the functions in the information system and who has the right to use it; (2) Activity Diagram describing the workflow (workflow) of a system or business process; (3) Sequence Diagram (Sequence Diagram) describes the behavior of objects in the use case by describing the life time and messages sent and received (4) Class Diagram (Class Diagram) system design model that shows the rules and responsibilities of system entities. The relationship between classes has a description called Multiplicity or Cardinality.

b. Rational Unified Process (RUP)

Software engineering methods developed by collecting various best practices found in the software development industry (Andrian et al., 2014). The goal is to produce high-quality software that meets user needs. The stages of system development are as shown in Figure 1.
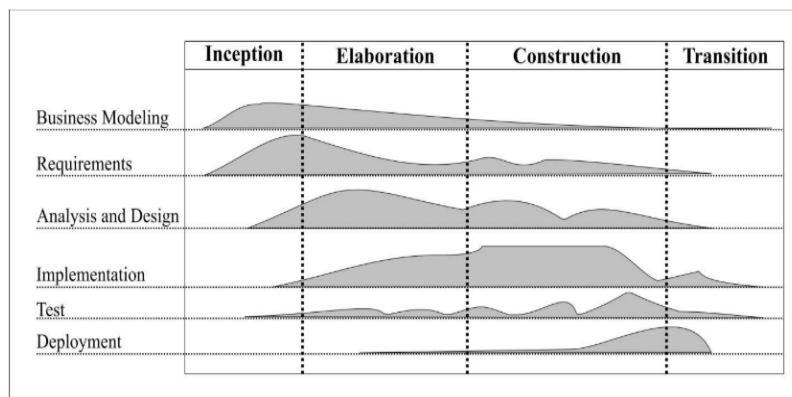
Source: Andrian et al (2014)

Figure 1. RUP Activities

RUP consists of four phases, namely, (1) Inception phase, company needs will be identified and interactions between entities are defined for all entities. The identifier covers all use cases and describes a significant use case; (2) Elaboration phase, the domain of a problem is analyzed, as the basis for

making architecture, making project plans, scope, details of functional and non-functional requirements; (3) The construction phase, all of the application feature components that have been designed are built and integrated into a product, and test the system features; (4) Transition Phase, the product that has been built begins to be transitioned to users or stakeholders. In this phase, a lot of feedback from users is obtained so that it can be used as a reference for the next release or improvement of software.

3. Results and Analysis

To implement RUP for website-based information system for data management of export goods, typical process were employed, including the inception stage, the elaboration stage, the construction stage and the transition stage. The following is a discussion and the results of the research conducted.

3.1. Inception Phase

The initial stage of building an information system website for managing data on export goods of Willbess Global Inc. is to analyze company needs, as well as interactions between entities including use cases and describing them.

a. Analysis of the Current Data Transmission Procedure.

The working process of the data transmission system at Willbess Global Inc. which is currently running is still using delivery via email or skype media accounts. The analysis of the data delivery system that is currently running are: (1) Adm staff add inventory accounts via media (Skype); (2) Inventory staff confirms Adm staff media accounts; (3) Inventory staff requests export data reports to Adm; (4) Adm ensures and checks the export data schedule; (5) Adm inputting export goods data; (6) If the export goods data report is valid or correct, then the admin will send the export goods data report via skype account or e-mail; (7) Export data reports will be received after all data has been checked directly by the inventory staff.

b. Description of Information Needs

This data is a list of information needs on the development of the information system website for data management of export goods of Willbess Global Inc.

Table 2. Information Needs Analysis

Information Needed	Purpose
Goods Data	Export goods data
Information data on means of transportation	Export goods data
Travel document information data	Export goods data

Source: Research Result

c. Use Case Diagrams

Based on the needs analysis and the current system flowmap, the following are the interactions between entities defined in all entities of Willbess Global Inc.'s export goods data information system.
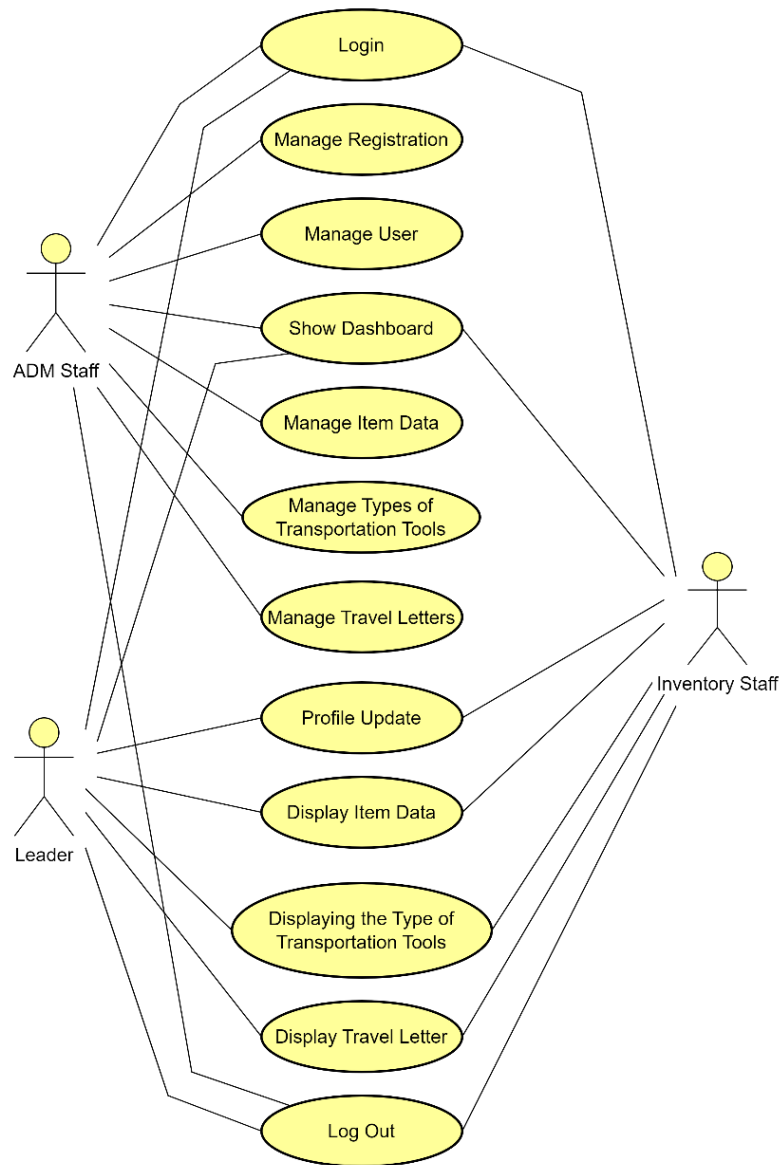
Source: Research Result

Figure 2. Use Case Diagram of Export Goods Data Information System

Figure 1 shows that the Adm staff manages all data information as a whole. Inventory staff can only view information data that has been managed by Adm actors. Leaders can only view information data that has been managed by Adm actors. In Table 3 is the definition of the use case made in Figure 1.

Table 3. Information Needs Analysis

Actor	Use Case Code	Use Case	Description
Actor: All	UC-1	Login	Use Case will validate which user logged into the system.
	UC-2	Log Out	Use Case that will log out of the system to the login screen
	UC-3	Show Dashboard	Use Case that will display all the information about the Dashboard view.
Actor: ADM Staff	UC-4	Manage Registration	Use Case that will handle the registration of all user registrations.
	UC-5	Manage User	Use Case that will handle user management.
	UC-6	Manage Item Data	Use Case that will prepare and manage all information regarding item data.
	UC-7	Manage Types of Transportation Tools	Use Case which will prepare and manage all information regarding the transportation equipment used for export.
	UC-8	Manage Travel Letters	Use Case which will prepare all information and manage the goods export certificate.
Actor: Inventory Staff	UC-9	Profile Update	Use Case that will handle profile identity updates.
	UC-10	Display Item Data	Use Case that will display all information about the data items to be viewed.
	UC-11	Displaying the Type of Transportation	Use Case which will display all the information that will be seen regarding the transportation equipment used for export.
	UC-12	Showing Travel Letter	Use Case which will display all the information that will be seen regarding the export certificate of goods.

Actor	Use Case Code	Use Case	Description
Actor: Leader	UC-9	Profile Update	Use Case that will handle profile identity updates
	UC-10	Display Item Data	Use Case that will display all information about the data items to be viewed.
	UC-11	Displaying the Type of Transportation	Use Case which will display all the information that will be seen regarding the transportation equipment used for export.
	UC-12	Showing Travel Letter	Use Case which will display all the information that will be seen regarding the export certificate of goods.

Source: Research Result

d. Activity Diagrams

Diagram Figure 3 explains that the Adm Staff manages the export data of the website system design that will be built.
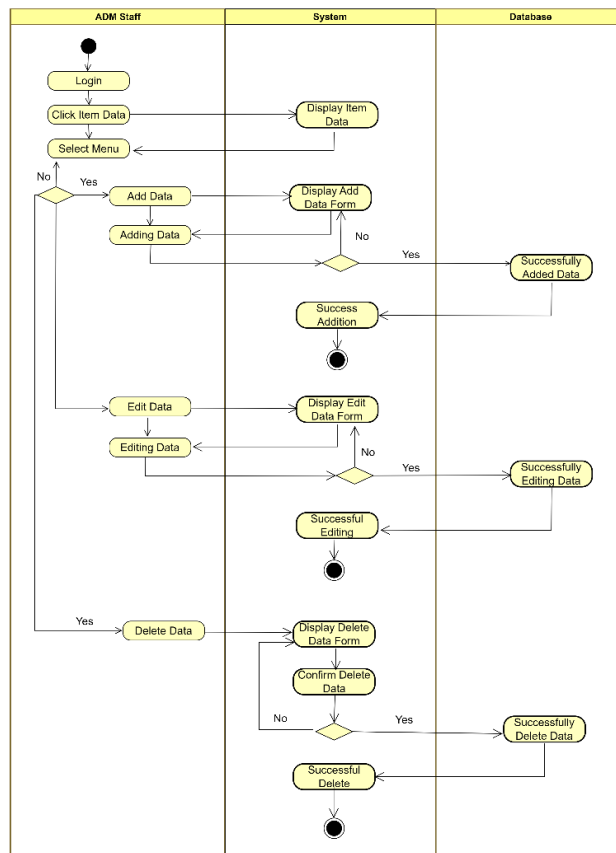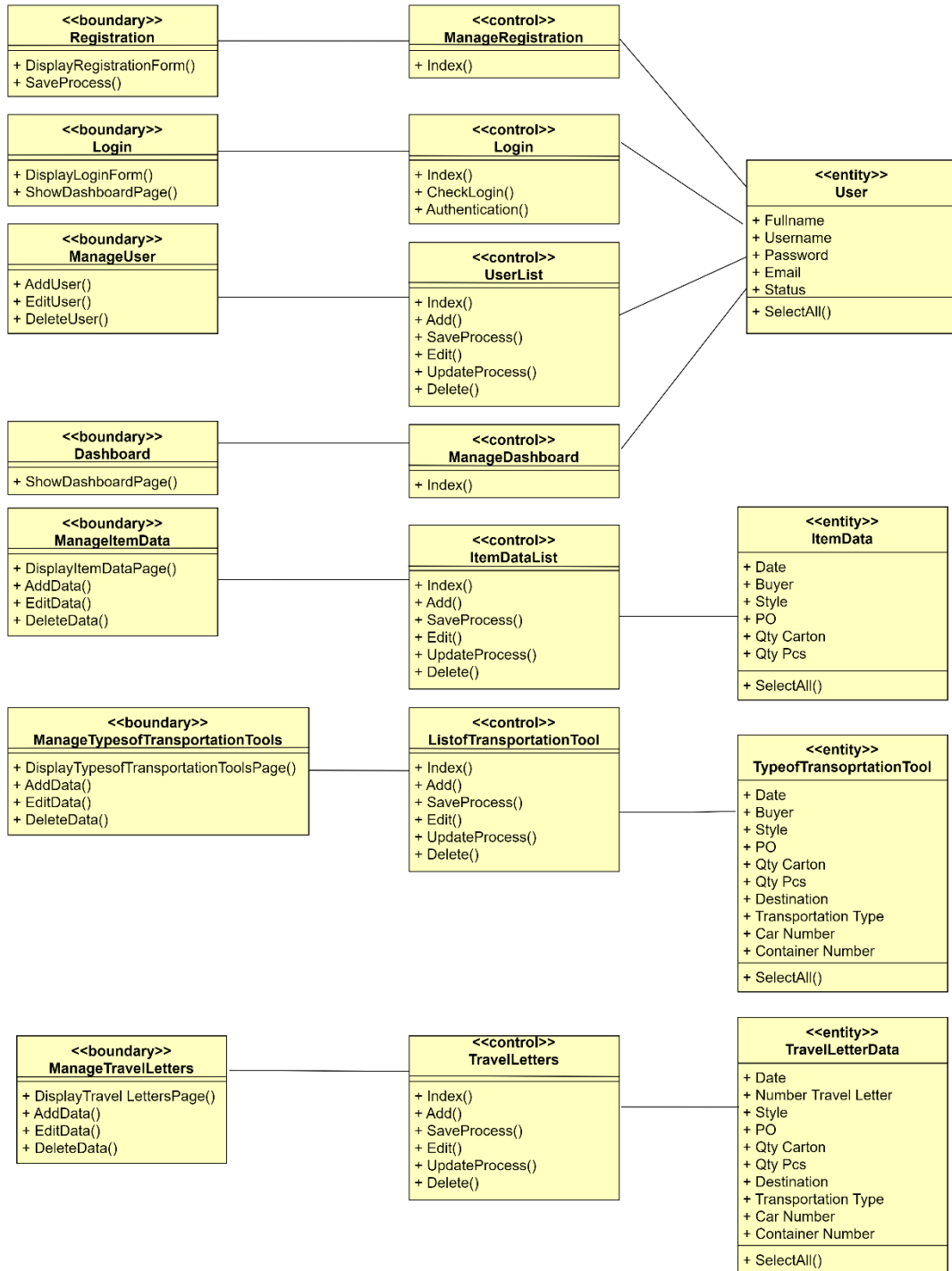

Source: Research Result

Figure 3. Activity Diagram of Manage Item Data

e. Class Diagram

The following is a class diagram design to build an information system for managing export goods data.
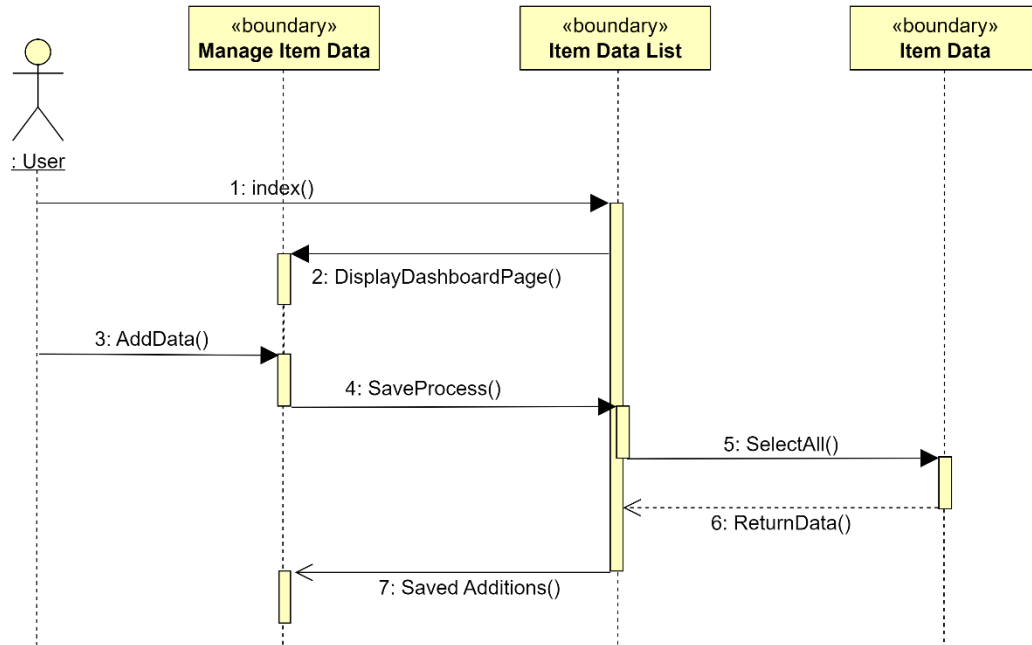

Source: Research Result

Figure 4. Class Diagram of Export Goods Data Management Information System

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f. Sequence Diagrams

Diagram Figure 5 illustrates user interaction with the website adding data items to the system design to be built.

Source: Research Result

Figure 5. Sequence Diagram Add Item Data

3.2. Elaboration Phase

The second stage is the development of an information system website for managing data on export goods of Willbess Global Inc., namely obtaining details of functional and non-functional requirements from the website that will be built as the basis for making architecture.

a. Functional Needs

In the development of the Willbess Global Inc. website, the functional requirements contain the processes carried out by the system.

Table 4. Functional Needs

Actor	SRS Number	Description
All Actors	SRS-F-1	The system can login to the system
	SRS-F-2	System can display Dashboard
	SRS-F-3	The system can logout outside the system
ADM staff	SRS-F-4	The system can manage users
	SRS-F-5	The system can manage item data

Actor	SRS Number	Description
	SRS-F-6	The system can manage information data on transportation equipment used for export
	SRS-F-7	The system can manage data for goods travel documents
Inventory Staff	SRS-F-8	The system can update profile data
	SRS-F-9	The system can display item data
	SRS-F-10	The system can display information on the means of transportation used for export
	SRS-F-11	The system can display data for goods travel documents
Leader	SRS-F-8	The system can update profile data
	SRS-F-9	The system can display item data
	SRS-F-10	The system can display information on the means of transportation used for export
	SRS-F-11	The system can display data for goods travel documents

Source: Research Result

b. Non-Functional Needs

In the development of the Willbess Global Inc. website, non-functional requirements contain the behavior of the system.

Table 5. Non-Functional Needs

| SRS Number	Description
SRS-NF-1	User will login (must enter user name and password)
SRS-NF-2	The system is equipped with security facilities (password encryption)
SRS-NF-3	The system is built with a simple interface, namely menus that are not too many and complicated.

Source: Research Result

3.3. Construction Phase

The third stage of the designed features began to be built and integrated into a website product information system for data management of export goods of Willbess Global Inc.

a. Item Data Manage Interface

Display of goods data management Figure 6 on the website of the export goods data management information system, contains data related to data

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on goods exported such as delivery date, buyer and other attributes that are the identity of the goods to be exported.
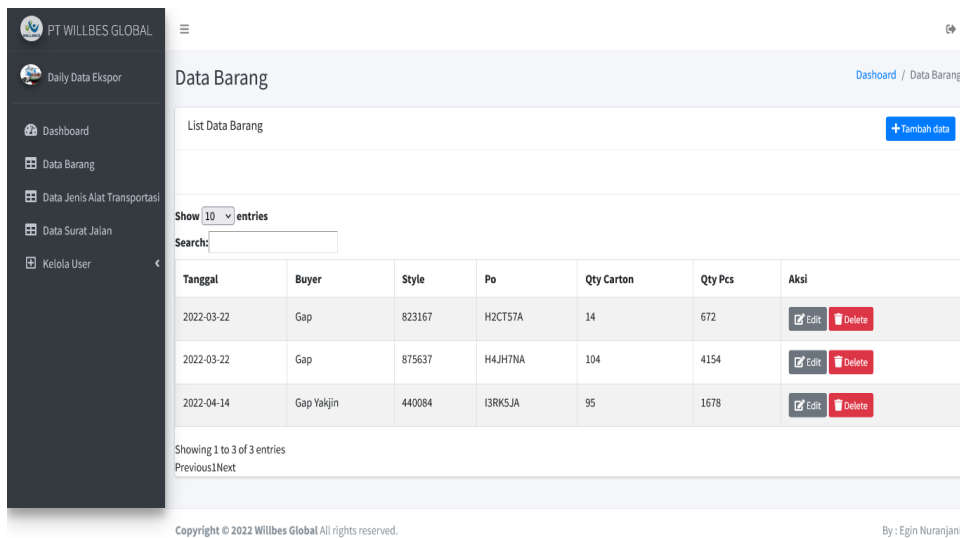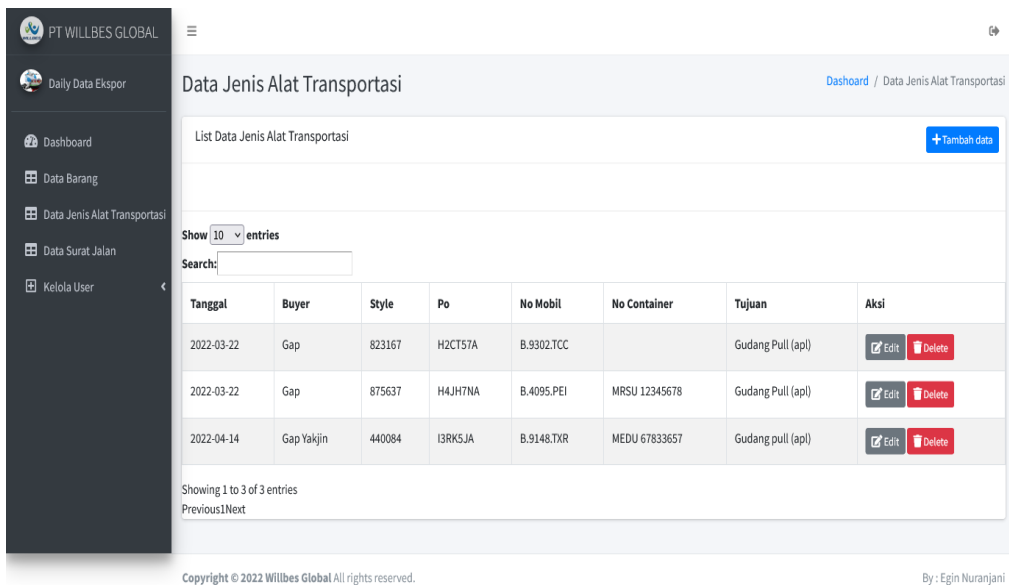

Source: Research Result

Figure 6. View Manage Item Data

b. Interface Display Manage Data Type of Transportation Tool

The display of managing data on types of transportation equipment Figure 7 on the website of the information system for managing data on export goods, contains data relating to the types of transportation means for data on exported goods such as delivery date, buyer, identity of cars and containers carrying goods to be exported.
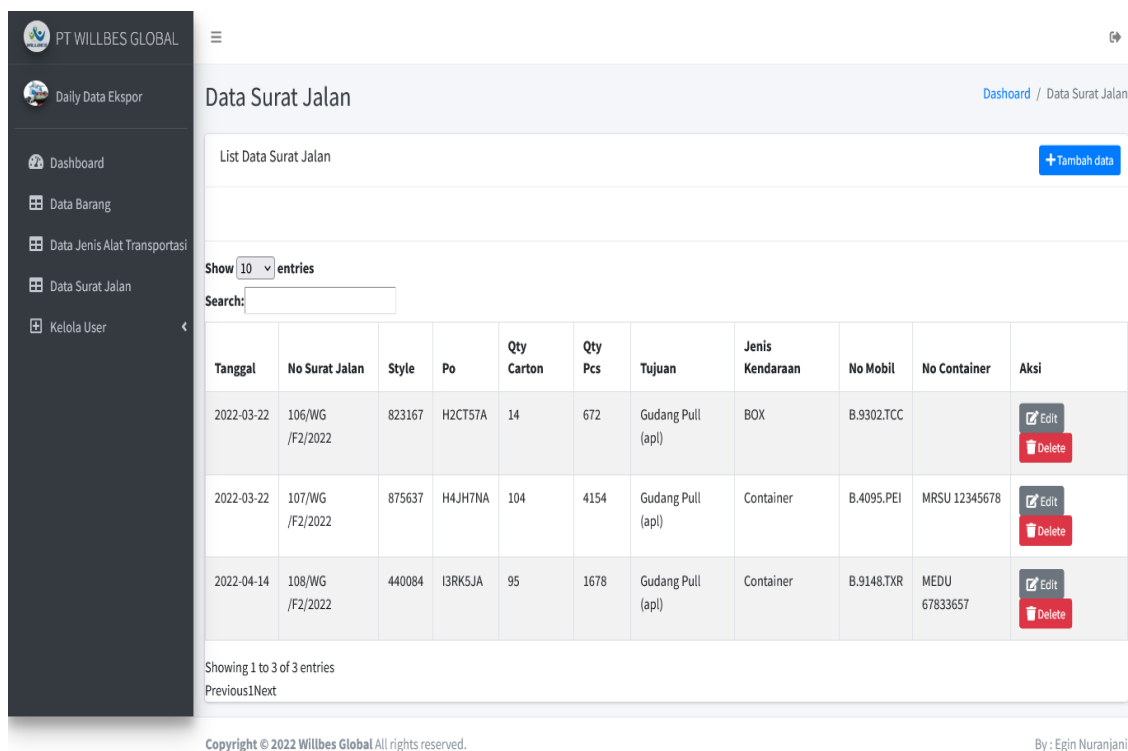

Source: Research Result

Figure 7. Display Manage Data Types of Transportation

c. Interface Display Manage Mail Data

Display of document management data Figure 8 export goods data management information system, contains data related to travel documents for data on goods exported such as delivery date, number of shipping documents for goods to be exported.

Source: Research Result

Figure 8. Display Manage Travel Letter Data

d. Website Information System Feature Testing

The following is a test plan for the Information System Management of Export Goods Data that has been made.

Table 6. Website Test

No	Test Description	Tested Needs	Test Scenario	Expected Results
1	Test Addition of Parent data items to the database table	SRS-F-6	Type the item data completely and correctly, then click the Record button.	Item data is OK recorded after the last record.
2	Testing Addition of Parent data types	SRS-F-7	Type data on the type of	Data on the type OK of transportation

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No	Test Description	Tested Needs	Test Scenario	Expected Results
	of transportation equipment to the database table.		transportation equipment completely and correctly, then click the Record button.	equipment is recorded after the last record.
3	Testing Addition of Parent Data Path to the database table.	SRS-F-8	Type the travel document data completely and correctly, then click the Record button.	Travel certificate OK data is recorded after the last record.

Source: Research Result

4. Conclusion

Based on the results, it was concluded that the website-based export goods data management information system that has been created has eleven functional requirements that can provide convenience for each user involved to integrate data into every part of the goods export process, so that with this system it can increase goods export activities at Willbess Global Inc.

Author Contributions

Santi Purwanti proposed the topic; Egin Nuranjani, Santi Purwanti, and Mohamad Hairiyanov conceived models and designed the experiments; Santi Purwanti, Mohamad Hairiyanov, and Jaja analysed the result.

Conflicts of Interest

The author declare no conflict of interest.

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