


Design of Inventory Information Systems at CV Company. Web-Based Berjaya Jaya Abadi

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Article Info	ABSTRACT
<p>Article History: Received : 20 December 2023 Revised : 03 March 2024 Accepted : 21 March 2024</p> <p>Keywords: Information Systems Inventory Design Waterfalls Web</p>	<p>This research focuses on the design and implementation of a web-based inventory management system for CV. Berjaya Jaya Abadi company. Inventory management plays a crucial role in the efficient operation of businesses, particularly in ensuring optimal stock levels, minimizing costs, and improving overall productivity. The proposed system aims to streamline inventory-related processes by providing real-time access to inventory data, facilitating inventory tracking, and automating inventory management tasks. Utilizing web-based technology offers the advantage of accessibility from anywhere with an internet connection, allowing employees to manage inventory remotely and enhancing collaboration among team members. The system will include features such as inventory tracking, stock level monitoring, order management, and reporting functionalities to provide comprehensive support for inventory management tasks. By implementing this web-based inventory system, CV. Berjaya Jaya Abadi can expect improved efficiency, accuracy, and visibility in their inventory management processes, ultimately leading to better decision-making and business performance.</p>
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INTRODUCTION

Design of a web-based inventory information system for CV. Berjaya Jaya Abadi, several problems that may arise include diverse user needs, integration with existing systems, information security, suitability to business needs, and user training ([Manurian et al. 2020](#)). Designing a system that can effectively meet the needs of diverse users, integrate with existing systems, and still maintain information security is a key challenge ([Hidayat et al. 2022](#)). In addition, the system must also be designed to suit the company's unique business needs and ensure that users have an adequate understanding of the use of the system ([Tri 2020](#)). By overcoming this problem effectively, it is hoped that this web-based inventory information system can help CV. Berjaya Jaya Abadi increase efficiency in their inventory management and support the overall growth and sustainability of their business ([Badrul 2021](#)). An Information System is an association consisting of several modules that are integrated with each other which presents information and data processing to be presented according to user needs, databases, source code and design models represent the strands of

an information system design that is useful for making development and maintenance easier ([Fathurrozi et al. 2023](#)).

A company's inventory system is very necessary to make it easier for the company to carry out the process of collecting data on goods and reporting in a planned, controlled, systematic and interconnected manner ([Fathurrozi et al. 2023](#)). An inventory information system is a necessity that a company or business operating in the sales and purchasing sector must have so that it can process transaction data related to inventory effectively and efficiently ([Putra and Karluci 2022](#)).

Design of an inventory information system at the CV company. Web-based Berjaya Jaya Abadi is a lack of research that takes into account the specific needs and unique characteristics of the company ([Wijoyo and Hermanto 2020](#)). Although there has been a lot of research on web-based inventory information systems, few have specifically paid attention to the needs and challenges faced by CV companies. Berjaya Jaya Abadi ([Zalukhu and Handriani 2019](#)). In addition, previous research may not have covered adequate integration with the company's existing information technology infrastructure, such as pre-existing systems or the specific needs of the company's internal users ([Setiyani 2019](#)). Therefore, further research is needed to design an inventory information system that can effectively address the needs and challenges faced by CV companies. Berjaya Jaya Abadi, while taking into account the existing information technology infrastructure and the needs of its internal users ([Putri 2022](#)).

CV. Berjaya Jaya Abadi is a company that operates as a contractor and supplier for all types of paint, especially epoxy paint for floors, walls, steel and ships. This company has been established since 2009 and they always give more responsibility for every job they do, as well as the quality of every job which is always a priority, and this company has had many customers from several companies, especially those in Indonesia. However, the company still uses manual data to record the entry and exit of goods, so users often have difficulty finding the stored data so that in the end users lose a lot of time just looking for the data. Apart from that, the data and information currently used is still considered to be inaccurate. So it is necessary to utilize information technology which will be able to improve the quality of work and make it easier to process and obtain information quickly and accurately, namely an inventory information system application to solve this problem. The inventory information system application designed can also make it easier for marketing, admins and leaders to obtain information related to managing their inventory ([Rachmatullah and Purwani 2022](#)).

METHODS

To obtain the data needed in this research, the author used several data collection methods, namely as follows ([ASRIN 2022](#)):

Pegamatan (Observation)

Data collection was carried out deliberately and systematically. The author made direct observations by observing people, behavior and events in CV. Berjaya Jaya Abadi, in order to get the data needed so that it requires ideas and plans for a new breakthrough to solve this problem by the author in preparing a practical work report.

Interview

This method involves collecting data through questions asked by the author by conducting questions and answers directly to Mr. Nico Devandri Jaya as Commissioner at CV. Berjaya Jaya Abadi to find out the necessary data related to the inventory information system as material for preparing practical work reports.

Literature review

It is a data collection method by reading, noting, quoting and collecting existing data in library studies, in which the author carries out studies from several books, e-books, e-journals and learning modules that are closely related to writing practical work reports.

The software development method used in this research is the waterfall method which has sequential stages starting from analysis, design, coding, testing and supporting stages, but in this research it only reaches the testing stage. Furthermore, for development you can use the Object Oriented Design Analysis (OOAD) method which is more precise with an object approach ([Puspitasari 2016](#)).

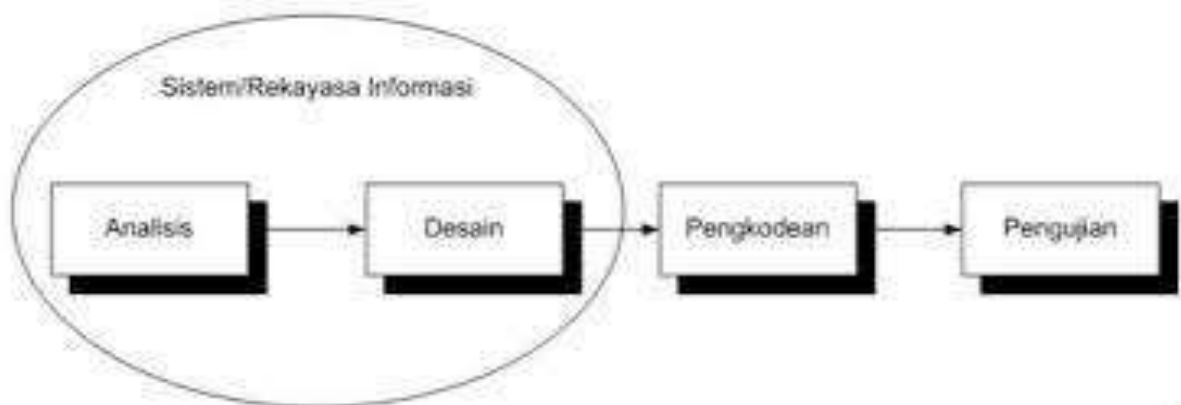


Figure 1. Waterfall method

Analysis

At this stage, an analysis of the needs of the Inventory Information System is carried out, namely how the system will work and the interface design of the Information System. Needs analysis is obtained by exploring in more depth the existing stock inventory information system and its weaknesses. The interface was created based on input from the company and several administrators who will be in contact with the information system. This stage also includes determining the purpose of creating this information system so that it can solve the problem of collecting stock inventory data on CV. Berjaya Jaya Abadi.

Design

The next stage is design where at this stage modeling activities are carried out starting from system modeling, architectural modeling to database modeling. System and architecture modeling using Unified Modeling Language (UML) diagrams ([Putra and Andriani 2019](#)) while database modeling uses Entity Relationship Diagram (ERD) ([Supiyandi et al. 2022](#)).

Coding

This stage is the stage in implementing the system that has been designed and tested in units, so that errors can be found in the system and repairs can be carried out immediately.

Testing

This stage is the stage for implementing or testing a system that has been previously created to be tested at CV. Berjaya Jaya Abadi, the system was tested on company commissioners.

RESULTS AND DISCUSSION

System Design Diagram

An inventory information system or inventory is a process of procuring goods as sales stock within a company. The following is a system design diagram specification for goods inventory.

Use Case Diagrams

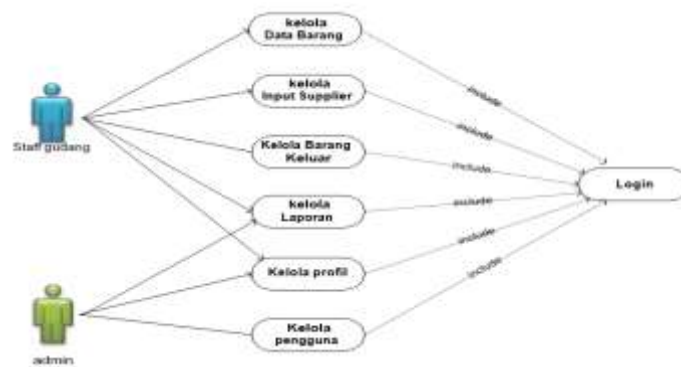


Figure 2. Use Case Diagrams

The actors in this system have 2 actors, admin and warehouse staff, where each job is differentiated according to Figure 2. Next, the description of the use case diagram in the picture above can be explained below, which can be seen in the following table:

Table 1. Use case diagram description

No.	Use Cases	Description
1.	Login	This use case is used for verification when a user wants to enter the inventory system
2.	Manage Item Data	This use case shows that users can view stock data, add, edit and delete items.
3.	Supplier Input	This use case is used to add and delete suppliers.

4.	Exit item	This use case illustrates that the user can delete data and display detailed data from outgoing goods.
5.	Profile	This use case illustrates that users can add, change and delete user data.
6.	Users	This use case illustrates that users can add, change and delete personal data.
7.	Report	This use case illustrates that users can view and print reports.

There are 2 actors in this inventory system, namely the warehouse admin and warehouse staff. An explanation of the actors in the adaptation system can be seen in the following table:

Table 2. Actor

Actor	Description
Admin	Actors who manage the system from managing user data, printing item data reports.
warehouse staff	Actors who can input data on incoming and outgoing goods, add suppliers, print reports

Class Diagrams

It is a diagram that shows the required classes in the operating system. Programmers use these diagrams to develop classes. This system diagram is used to see the system design. Class diagram of a web-based inventory information system for the CV company. Berjaya Jaya Abadi in picture 3. below:

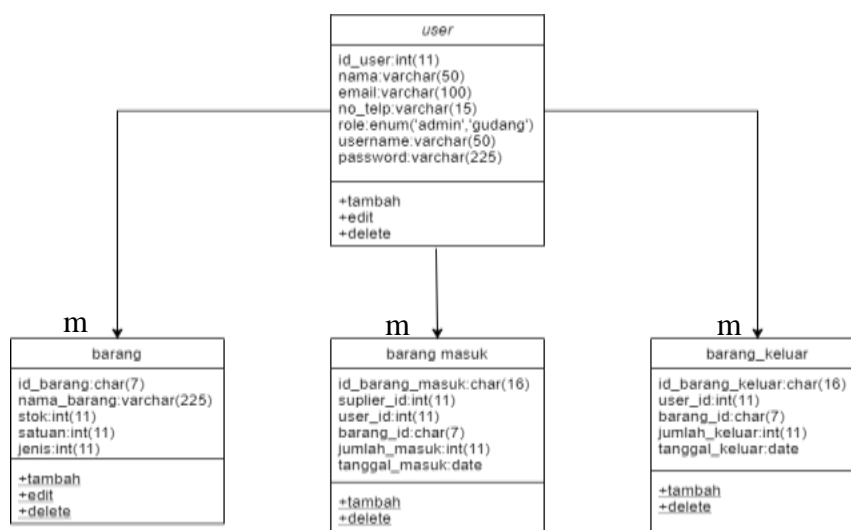


Figure 3. Class Diagrams

Activity Diagrams

Activity diagrams explain the various activity flows that occur in the system being designed, the beginning, middle and end of each flow. Activity diagrams can also show processes that run simultaneously and may require multiple executions.

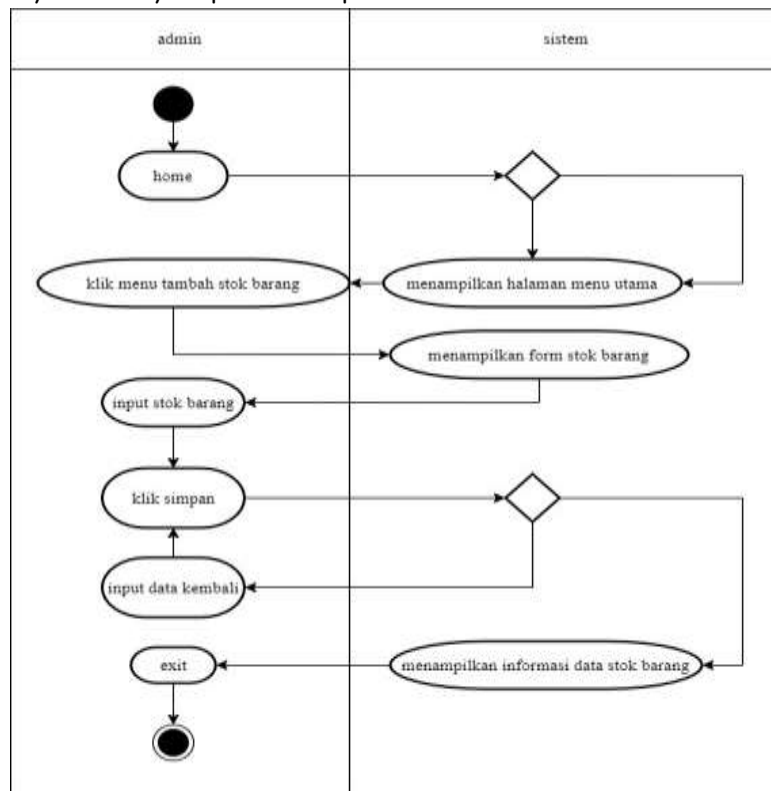


Figure 4. Activity Diagram

Sequence Diagrams

Sequence diagrams explain how objects behave in a use case by describing their lifetime and the messages sent and received between them. Therefore, in explaining sequence diagrams, you need to know the objects and methods that are part of the class where the objects in the use case are created.

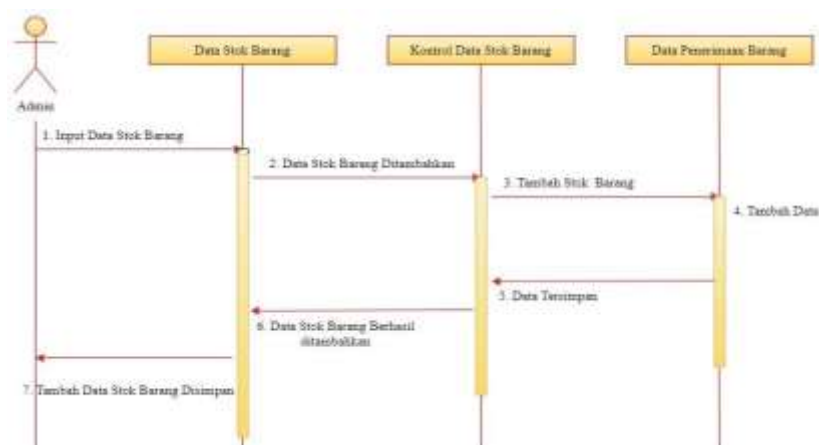


Figure 5. Sequence Diagrams

System Implementation

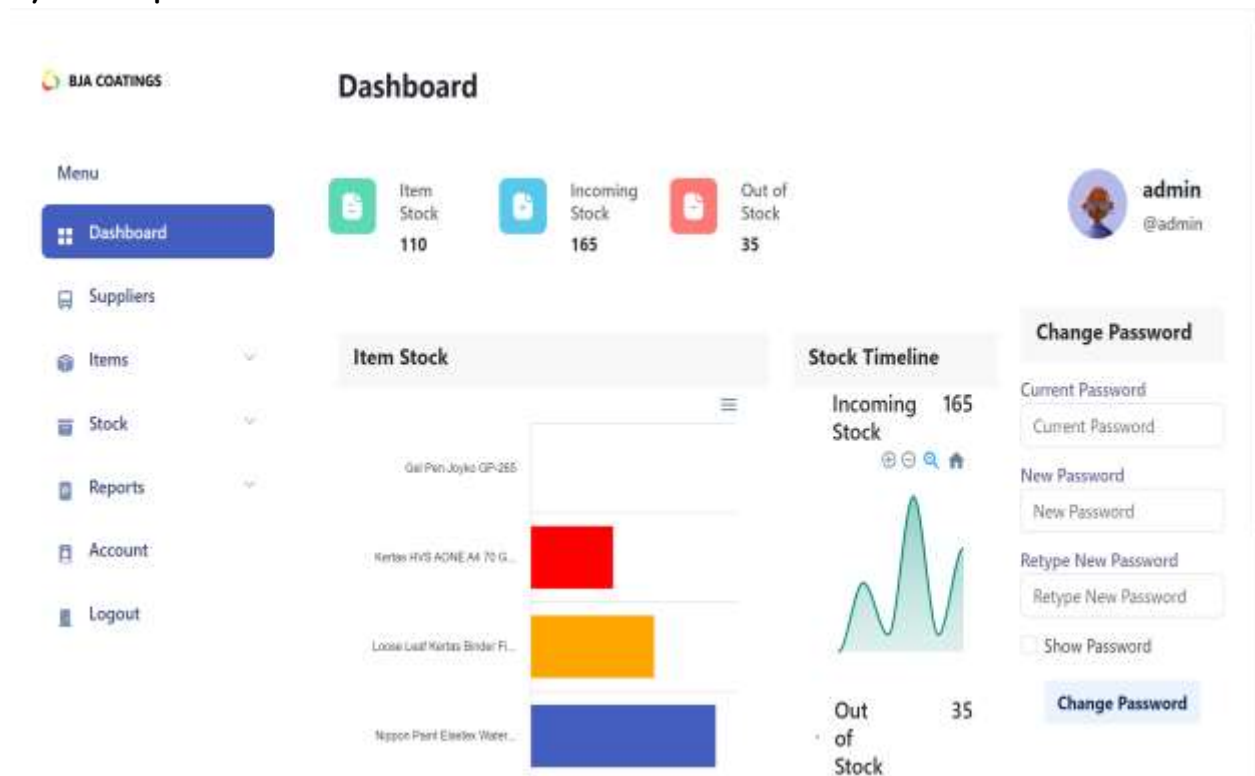


Figure 6. Dashboard View

The image above is a display of the system dashboard that has been created and designed to fulfill the system that will be used by the CV company. Berjaya Jaya Abadi. The display shows available stock, upcoming stock, and outgoing stock.

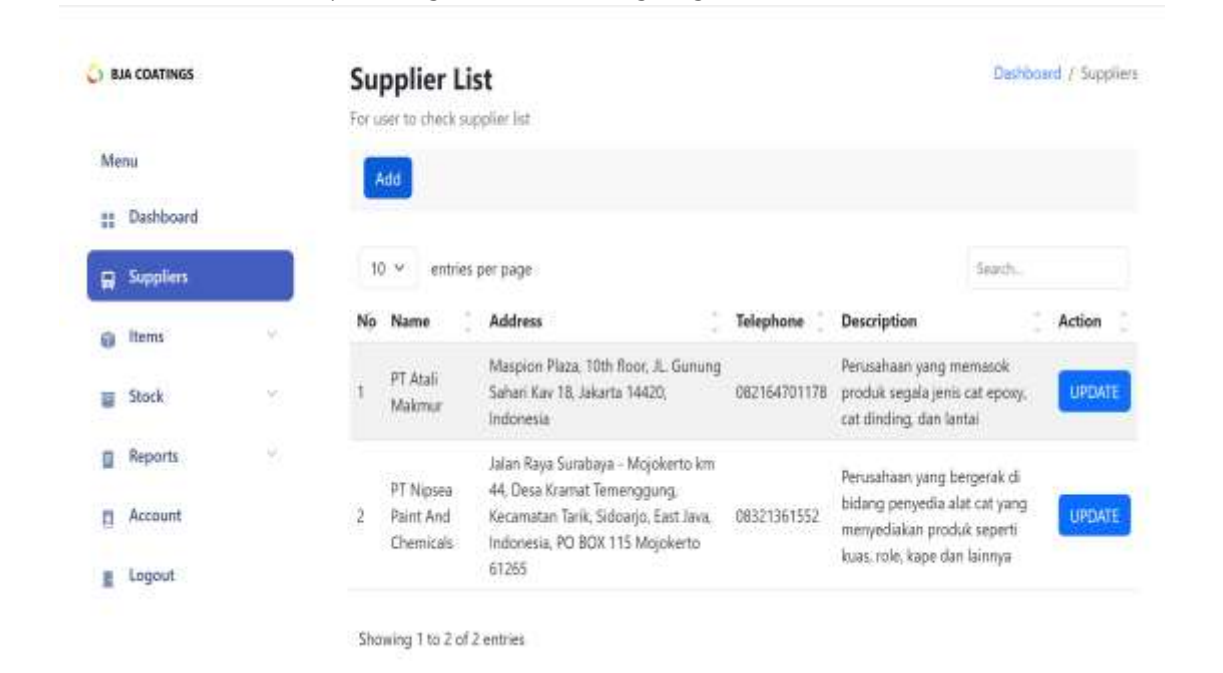


Figure 7. Supplier Data Display

In Figure 7 above, the supplier data menu displays the aim of which is to see the inventory of goods and which company the stock of goods was imported from.

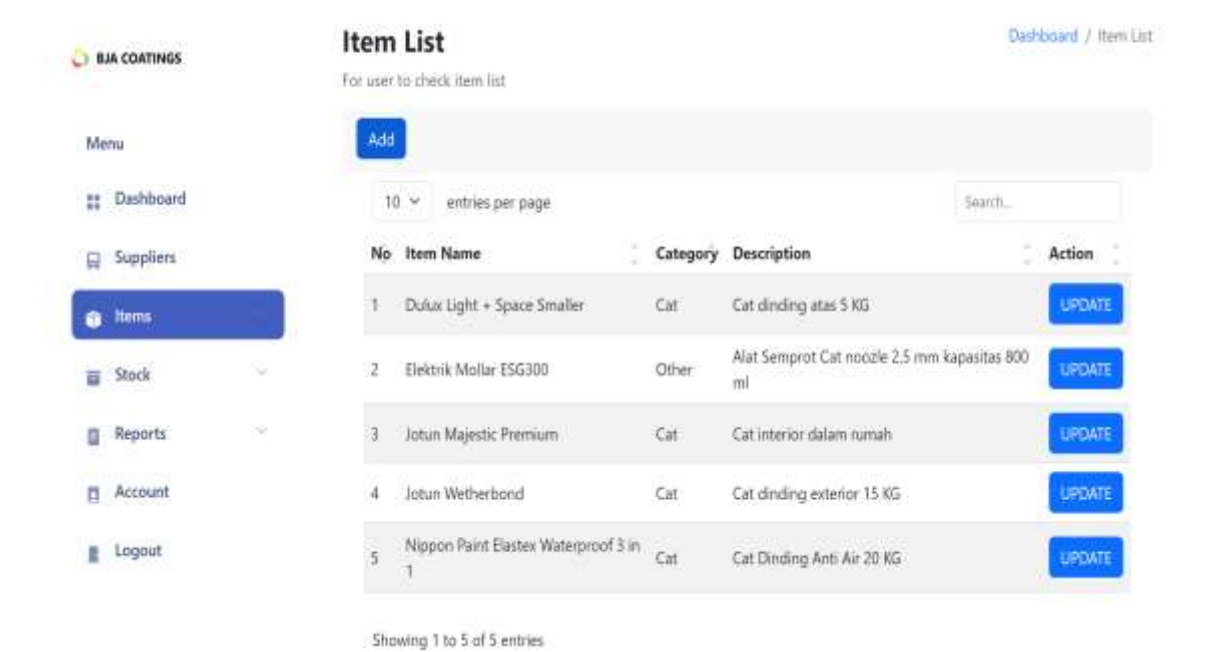


Figure 8. Item List Menu Display

Then the image above shows a list of goods in the company with all types of goods.

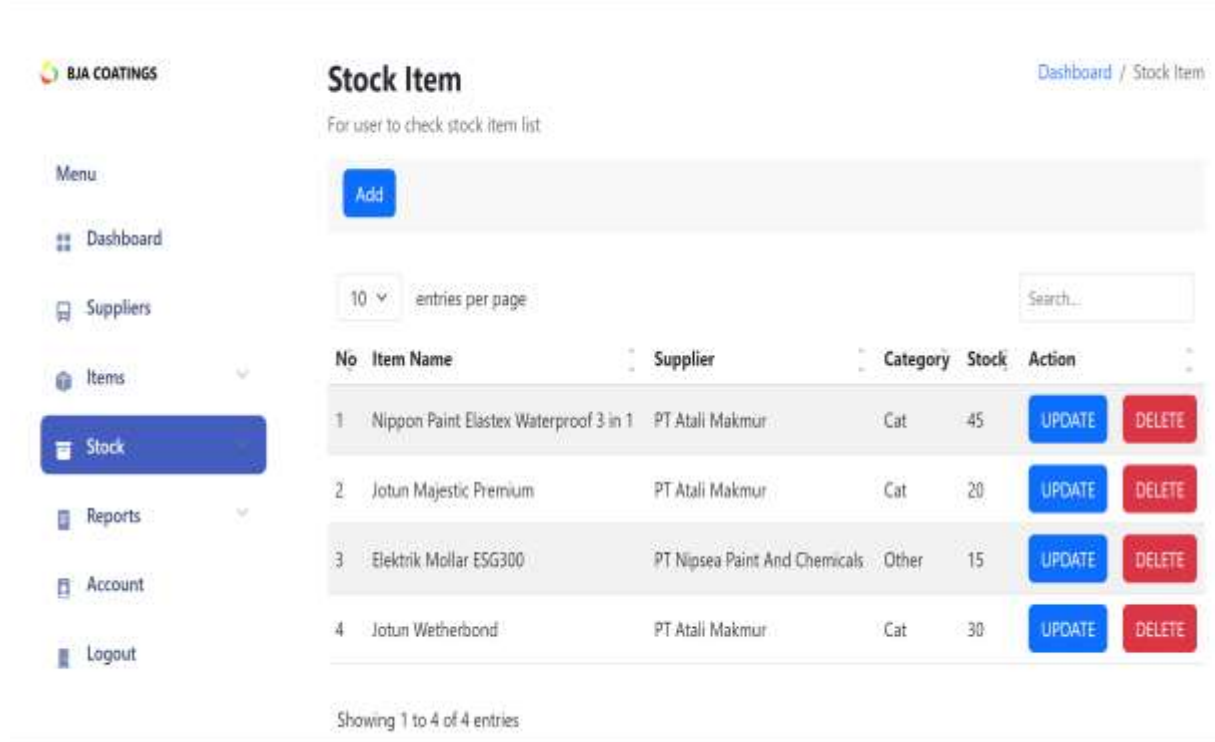


Figure 9. Stock Items

Figure 9 above is a display for entering the stock of goods available in the company to find out how much stock or remaining goods are available in the company.

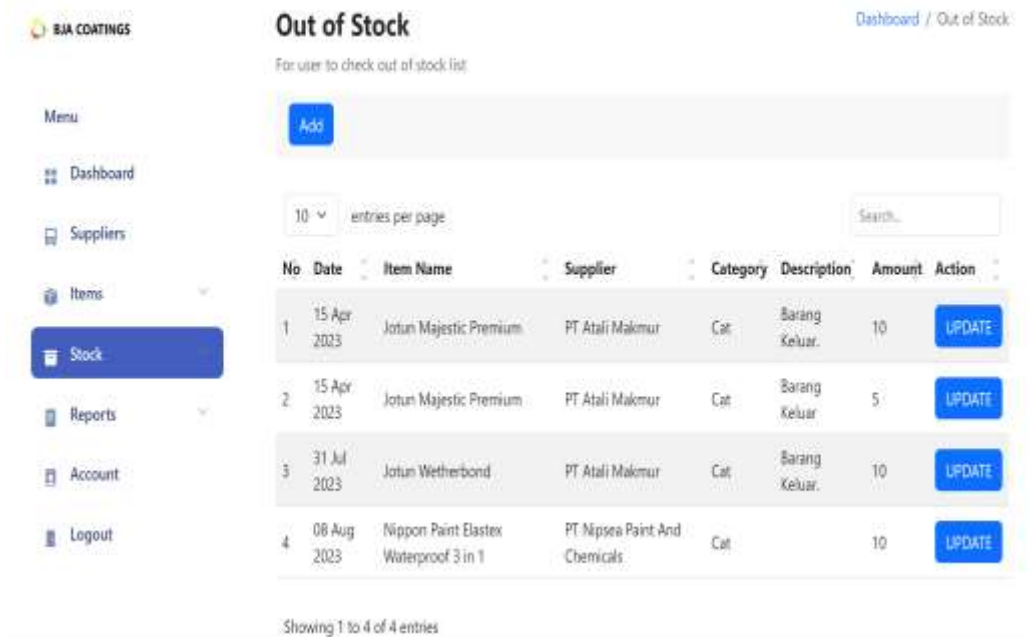


Figure 10. Out of Stock

The image above is a menu displaying outgoing goods along with the number of goods outgoing or used in painting construction.

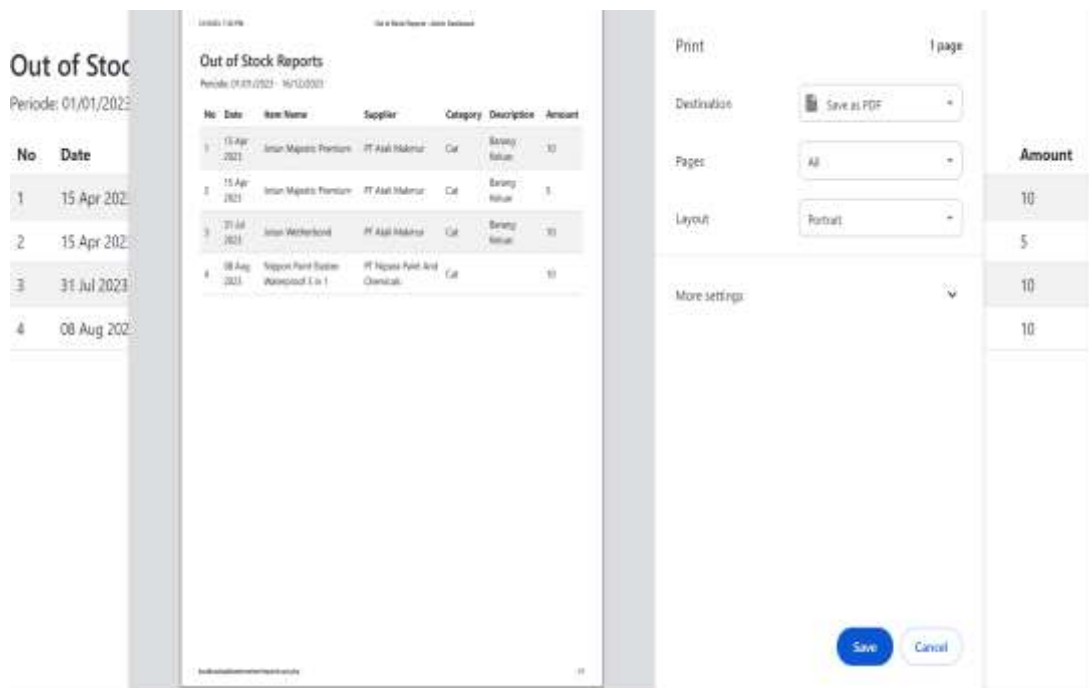


Figure 11. Out of Stock Report

Figure 11 above is an image that displays data reports on outgoing goods and these reports can be printed or saved in the system.

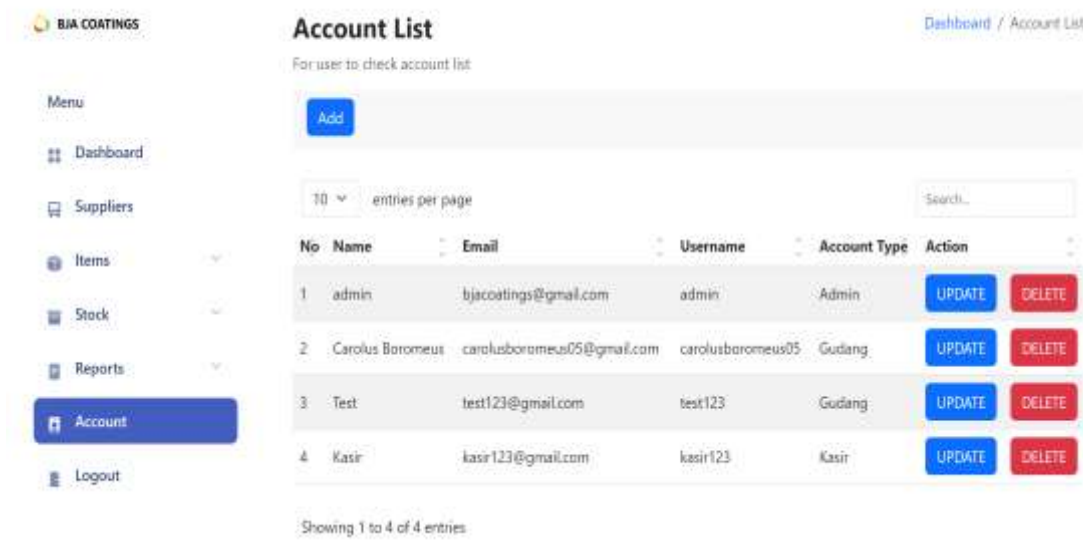


Figure 12. Account List

The image above is an image of a list of accounts that can use and operate the system to find out the availability of goods at the company.

CONCLUSION

Based on the explanation from the previous chapters regarding research carried out by the author regarding the design of an inventory information system to control inventory on CVs. Berjaya Jaya Abadi then the final conclusion is obtained. The inventory information system is designed to provide a more efficient and effective system in recording information and producing reports related to inventory activities. Inventory information systems are designed to limit access rights per user to strengthen system data and prevent unauthorized access to data. By implementing the program designed by the author, you can simplify the inventory process, obtain reports on receipt and release of goods quickly, and can be used at any time if needed. The inventory information system was developed using the OOAD system development method and UML tools (Use Case, Activity Diagram and Class Diagram).

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