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Implementation of Warehouse Management System at PT. Selong Ananta Supplies Based on Website with Whatsapp Notification

Muhammad Adib Iqbal Haq[1*], Pratomo Setiaji[2], Wiwit Agus Triyanto[3]

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

Corresponding Author Email: 201853013@std.umk.ac.id

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ABSTRACT

PT. Selong Ananta Supplies faces problems in warehouse management that are still done manually, such as recording stock, receiving, and issuing goods. This causes errors in recording, delays in decision making, and difficulties in tracking goods, which have an impact on operational efficiency and increased costs. To overcome these problems, it is recommended to implement a Website-Based Warehouse Management System equipped with a WhatsApp notification feature. This system will enable real-time stock management, automatic tracking of goods, and more effective communication with customers and staff, so that it can improve operational efficiency and accuracy of warehouse management at PT. Selong Ananta Supplies.

1. INTRODUCTION

Warehouse management plays a very important role in company operations. Warehouse management activities cover various aspects, such as receiving, placing, temporary storage, moving, checking, and sending goods to the customer's destination location (Herlambang, 2020). PT. Selong Ananta Supplies is a company located at Jl. Patimura, Gg. Kaliaji, Loram Kulon Village, Jati District, Kudus Regency, which has the status of a limited liability company with business number 1743329. This company is engaged in providing various products that are divided into three main categories, namely Hardware, Tools, and Fastener Nails (PT Selong Ananta Supplies, 2022). Hardware includes physical components and materials used in construction as well as various installations, both functional and decorative (Surya & Purnomo, 2021). Tools consist of hand tools and power tools used in various construction, repair, and maintenance activities (Santoso & Wijaya, 2020). Meanwhile, Fastener Nail is an object used to combine or tighten various parts so that they are connected into one unit (Hakim, 2019).

Currently, warehouse management at PT. Selong Ananta Supplies is still done manually. Recording of stock, receipt of goods, and issuance of goods is done using a notebook or simple software such as Microsoft Excel (Prasetyo, 2020). This manual process causes various problems, such as errors in stock recording, inaccurate stock information, delays in decision making, and difficulties in tracking available or ordered goods (Susanti, 2021). With more than 2,000 regular customers spread across Kudus, Jepara, Pati, Rembang, Blora, Grobogan, and Demak, this problem has a significant impact on warehouse operational efficiency, such as delays in fulfilling customer orders, increasing the risk of excess or shortage of stock, and potential losses due to lost sales or increased storage costs (Herlambang, 2020).

As a solution, the implementation of a Website-Based Warehouse Management System with WhatsApp Notifications is proposed. This system aims to automate the warehouse management process, including real-time inventory management, tracking incoming and outgoing goods, and ensuring data accuracy (Prasetyo, 2020). Additional features in the form of WhatsApp notifications will provide automatic information to customers and staff regarding the status of goods, such as confirmation of receipt of goods, delivery of goods, or reminders for running out of stock (Susanti, 2021). With this system, PT. Selong Ananta Supplies is expected to be able to improve warehouse operational efficiency, minimize recording errors, optimize customer service, and support faster and more accurate decision making (Santoso & Wijaya, 2020).

2. RESEARCH METHODS

2.1 System Design Methods

The system writer must go through the system development method. The software development life cycle (SDLC) or waterfall method, also known as the linear sequential model or the classic life cycle. Starting with the analysis process, design process, coding process, testing process, and support, the waterfall model offers a sequential or ordered approach to the software life cycle is shown in figure 1.

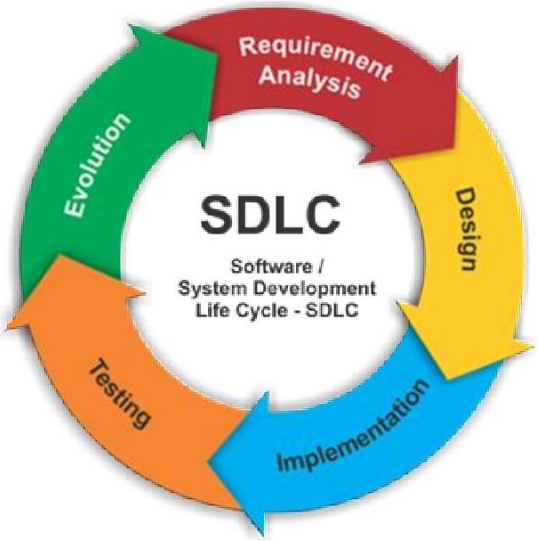


Figure 1. Metode SDLC

The application of system development in the waterfall method in this sales information system is as follows:

1. Software Requirements Analysis

The process of collecting requirements is carried out intensively to specify software requirements so that it can be understood what kind of software is needed by the user. The specification of software requirements at this stage needs to be documented.

2. Software Design

Software design is a multi-step process that focuses on the design of creating software programs including data structures, software architectures, interface representations, and coding procedures. This stage translates software requirements from the requirements analysis stage to design representations so that they can be implemented into programs at the next stage. The software design produced at this stage also needs to be documented.

3. Program Code Creation (Implementation)

The design must be translated into a software program. The result of this stage is a computer program in accordance with the design that has been made at the design stage.

4. Testing

Testing focuses on software in terms of logic and function and ensures that all parts have been tested. This is done to minimize errors and ensure that the output produced is as desired.

5. Support or Maintenance

It is possible for software to change when it has been sent to the user. Changes can occur due to errors that appear and are not detected during testing or the software must adapt to a new environment. The support or maintenance stage can repeat the development process starting from specification analysis for changes to existing software, but not to create new software.

2.2 Use Case Diagram

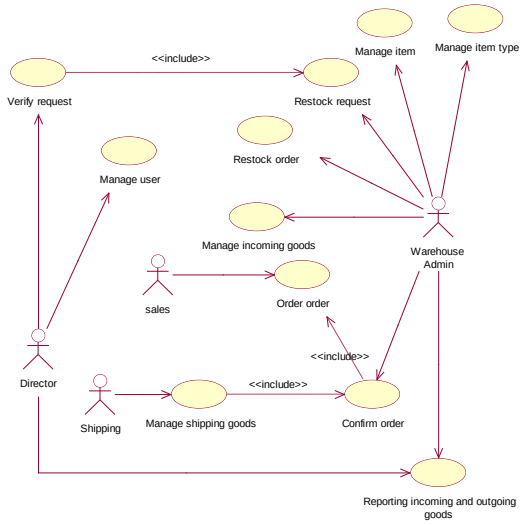


Figure 2. Use Case Diagram

The use case system diagram is shown in figure 2 will explain who is involved in the system (actors) and what the system does (use cases). From the business use case process, the use case system process of the Warehouse Management Information System at PT. Selong Ananta Supplies Based on the Website can be described. The use case system diagram that is formed can be seen in table 1 below:

Tabel 1. Business Proccess

No	Business Proccess	Actor	*Business Use Case*
1	The director manages user data for login access to the system	Director	Manage user
2	The warehouse admin manages data on the types of goods in the warehouse	Warehouse Admin	Manage item type
3	The warehouse admin also manages goods data	Warehouse Admin	Manage item
4	If there is stock that is no longer available or is almost finished, the warehouse admin will submit a restock request	Warehouse Admin	Restock request
5	The director then verifies the restock request	Director	Verify request
6	The warehouse admin then manages the stock order data	Warehouse Admin	Restock order
7	The warehouse admin then manages the incoming goods data that has been sent by the supplier	Warehouse Admin	Manage incoming goods
8	Sales then places an order for goods from customers and notifies the warehouse admin	Sales	Order order

9	The warehouse admin confirms the order from the sales department	Warehouse Admin	Confirm order
10	The shipping department manages the shipping of ordered goods according to the order data from sales.	Shipping	Manage shipping goods
11	After all transactions are carried out, the warehouse admin makes a report on incoming and outgoing goods to be given to the director	Warehouse Admin and Director	Reporting incoming and outgoing goods

2.3 Class Diagram

Class Diagram is a diagram used to display several classes in a system/software being developed. Class diagrams provide an overview of the system/software and the relationships that exist. The Class diagram design stage is as follows is shown in figure 3.

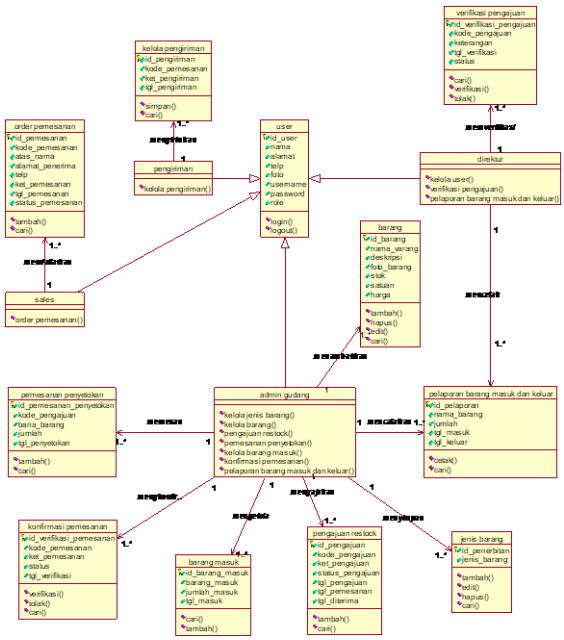


Figure 3. Class Diagram

2.4 Entity Relationship Diagram

Entity Relationship Diagram (ERD) is a diagram used to design a database, to show the relationship or relationship between entities or objects that are visible and their attributes. The main object of making an ERD diagram is to show what objects (set of entities) are to be involved in a database and how the relationship occurs between these objects. Here are the steps to produce an ERD is shown in figure 4.

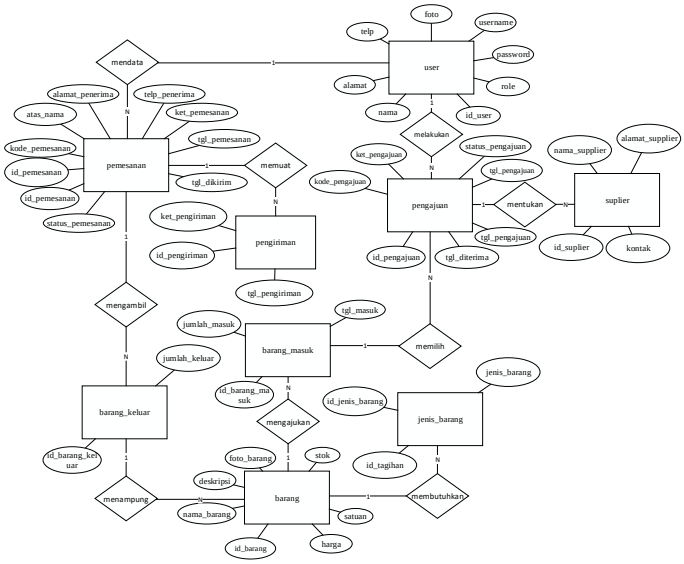
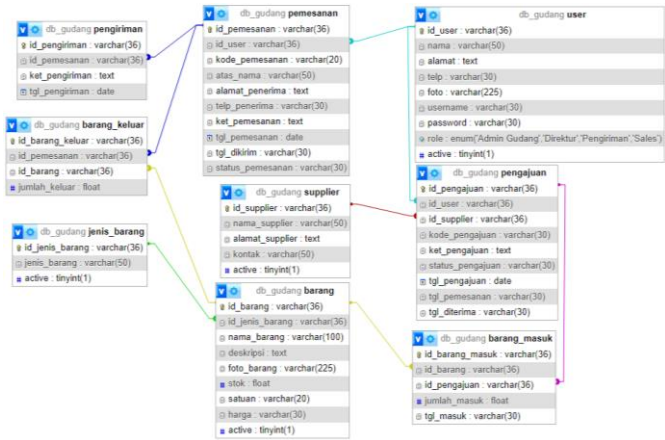


Figure 4. ERD

2.5 Table Relations

The table relations in the database formed for the Warehouse Management Information System at PT. Selong Ananta Supplies Based on the Website can be seen in Figure 5 below..



Gambar 5. ERD

2.6 Requirements PL/PK

Table 1 shows the requirements for building this website application, which consists of two parts, namely hardware and software is shown in table 2.

Tabel 2. List of Software and Hardware

Software	Hardware
Microsoft Windows 11/ mac os 12.6 Figma, Visual studio code, Google Docs, Canva, Draw io, XAMPP, MySQL, Chrome.	Processor Intel core i5 gen 10, ram 16 GB, SSD Processor AMD Ryzen 3 5000 Series Ram 8 GB, SSD Processor Intel core i5, ram 8 GB, SSD

3. RESULTS AND DISCUSSION

3.1 Research *Results*

The main page is the first page displayed when accessing this site/web. An image of the main page for visitors can be seen in figure 6.

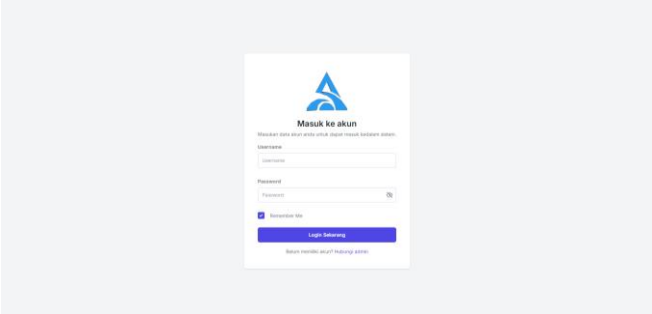


Figure 6. Home Login Page

The user dashboard display is the main display when the user successfully logs into the system. An image of the user's main page display can be seen in figure 7.

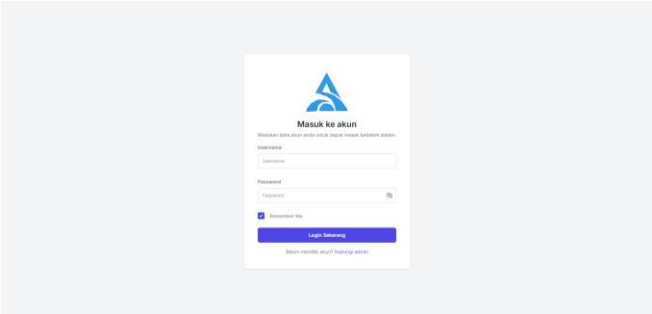


Figure 7. Main Login Page

The main page is the first page displayed when accessing this site/web. An image of the main page for visitors can be seen in figure 8.

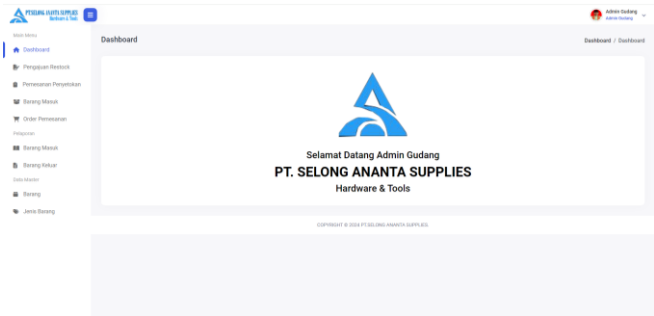


Figure 8. User Dashboard Page

The order form is a page used by the warehouse admin to submit a restock request for goods in the warehouse. An image of the order form page can be seen in figure 9.

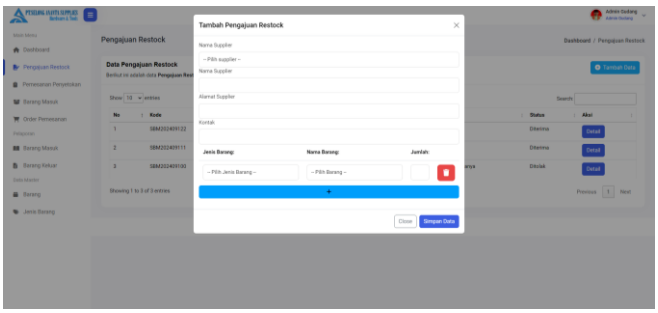


Figure 9. Restock Request Form Page

This submission verification form page is the page that appears when the director wants to verify the submission of restock goods. The appearance of the restock submission verification form can be seen in figure 10.

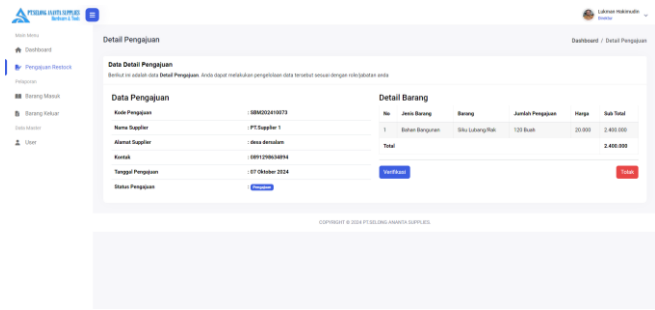


Figure 10. Submission Verification

This stock order form page is the page that appears when the warehouse admin makes a stock order. The appearance of the stock order form can be seen in figure 11.

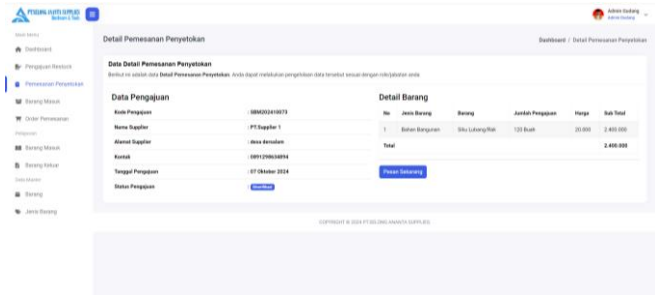


Figure 11. Stock Order Form Page

The Incoming Goods Management Form page is a page used by warehouse admins to add incoming goods data. The appearance of the incoming goods form can be seen in figure 12.

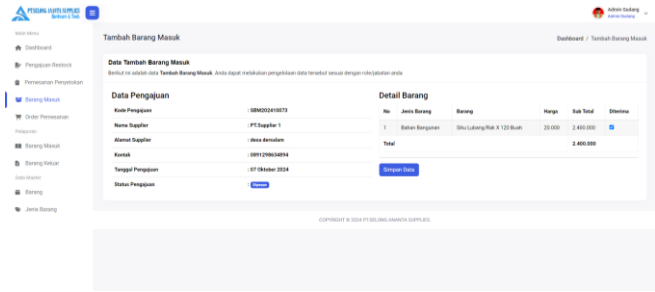


Figure 12. Incoming Goods Form Page

The order form page is a page used by sales to make orders from customers. The appearance of the incoming goods management form can be seen in figure 13.

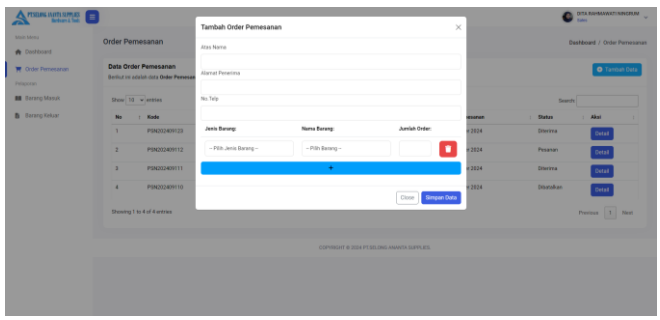


Figure 13. Manage Order Page

The order verification form page is a page used by the warehouse admin to verify orders that have been sent by sales. An image of the order verification form page can be seen in figure 14.

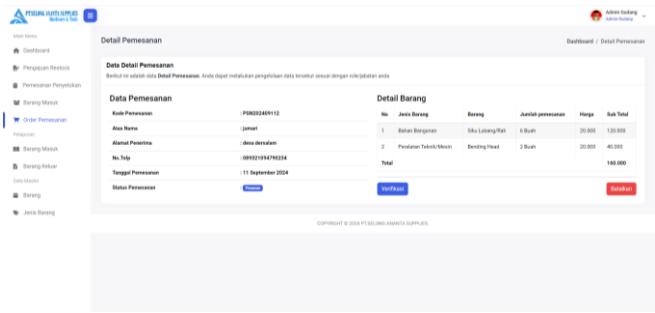


Figure 14. Order verification form page

The Outgoing Goods Report Data Form page is a page that can display and print all summary data from outgoing goods that have been running. The image of the Outgoing Goods Report Data Form page can be seen in figure 15

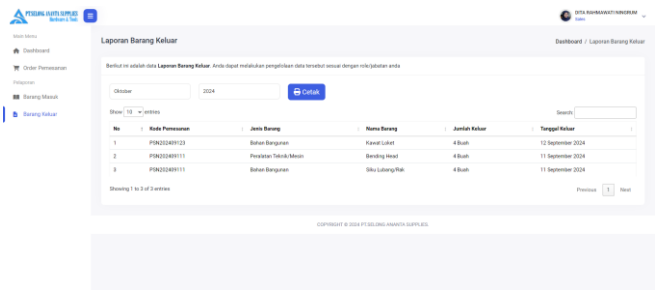


Figure 15. Report of Goods In and Out

4. CONCLUSION

The design results have produced a website-based Warehouse Management Information System Application at PT. Selong Ananta Supplies, which is equipped with features for managing stock, submitting restocks, and ordering online. This application is designed to manage data on goods in the warehouse efficiently, including managing restocks, processing orders, and reporting incoming and outgoing goods online, so that it can increase the effectiveness of the company's warehouse operations.

5. SUGGESTIONS

Based on the conclusions outlined above, the author provides suggestions that can help to complement some of the shortcomings in this system, namely, this system is still web-based, it is hoped that this program can be further developed using better Android-based technology so that customers can order online and warehouse admins can more easily carry out the warehouse management process.

REFERENCES

[1] Amrin, Amrin, David Ridwan Savero, and Muhammad Alawi. 2022. "Model Waterfall Untuk Perancangan Sistem Informasi Pengelolaan Data Arsip Gudang Pada Disdukcapil Kota Depok." INSANtek 3(1): 6–11.

[2] Anjas, C V, and Konveksi Bekasi. 2023. "Sistem Informasi Penjualan Barang Berbasis Website Dengan Algoritma Collaborative Filtering Di." 4(2).

[3] Listiyan, Edy, and Egia Rosi Subhiyakto. 2021. "Rancang Bangun Sistem Inventory Gudang Menggunakan Metode Waterfall Studi Kasus Di Cv. Aqualux Duspha Abadi Kudus Jawa Tengah." KONSTELASI: Konvergensi Teknologi dan Sistem Informasi 1(1): 74–82.

[4] Nugraha, Frasdica Fujianto, Nunu Kustian, and Risma Nurul Auliya. 2021. "Sistem Informasi Manajemen Gudang Pada PT. Datindo Infonet Prima Bekasi." Jurnal Nasional Komputasi dan Teknologi Informasi (JNKTI) 4(5): 347–55.

[5] Santoso, Bayu, and Thoyyibah T. 2022. "Perancangan Sistem Informasi Pengelolaan Gudang Pada PT. Sanjaya Amar Persada Sawangan Berbasis Web." OKTAL : Jurnal Ilmu Komputer dan Sains 1(08): 1095–1102. https://journal.mediapublikasi.id/index.php/oktal/article/view/414.

[6] A. Jauhari, D. R. Anamisa and F. A. Mufarroha, Rekayasa Perangkat Lunak, Malang: Media Nusa Creative, 2019.

[7] Sukamto, R. A., Shalahuddin, M. (2016). Rekayasa Perangkat Lunak Terstruktur dan Berorientasi Objek. Bandung: Informatika.

[8] Priyadi, Y. 2014. Kolaborasi SQL & ERD dalam Implementasi Database. Yogyakarta: ANDI.

[9] Mcleod. (1995). Sistem Informasi Manajemen. Jakarta: PT.Prenhalindo.

[10] James, A.F.S. (1995). Manajemen, Edisi Indonesia. Jakarta: PT.Prenhalindo.

[11] Wikipedia. 2019. Sistem Informasi Manajemen. Diambil kembali dari Wikipedia: https://id.wikipedia.org/wiki/Sistem_informasi_manajemen

[12] Sholiq. (2006). Pemodelan Sistem Informasi Berorientasi Objek dengan UML. Yogyakarta: Graha Ilmu.

[13] Jogianto. (2005). Analisis & Desain Sistem Informasi: Pendekatan Terstruktur Teori dan Praktik Aplikasi Bisnis. Yogyakarta: ANDIA

[14] Herlambang, D. (2020). Manajemen Gudang dan Tantangan Operasional. Jurnal Logistik Indonesia, 9(2), 56-68.

[15] PT Selong Ananta Supplies. (2022). Profil Perusahaan. Kudus: PT Selong Ananta Supplies.

[16] Surya, A., & Purnomo, T. (2021). Pengelolaan Material Hardware dalam Konstruksi. Jurnal Teknik Sipil, 15(3), 101-112.

[17] Santoso, R., & Wijaya, D. (2020). Teknologi dan Perkakas Modern untuk Pemeliharaan. Jurnal Teknologi Terapan, 7(4), 45-56.

[18] Hakim, M. (2019). Peran Fastener dalam Konstruksi dan Manufaktur. Jurnal Teknik Industri, 10(1), 89-98.

[19] Prasetyo, R. (2020). Sistem Informasi untuk Efisiensi Manajemen Gudang. Jurnal Teknologi Informasi, 13(2), 76-85.

[20] Susanti, R. (2021). Transformasi Digital dalam Manajemen Logistik. Jurnal Manajemen Logistik, 8(3), 67-78