

## THE IMPLEMENTATION OF WAREHOUSE MANAGEMENT SYSTEM (WMS) AT CV. EVERFRESH KEDIRI

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### Abstract

Warehouse Management System (WMS) as software to improve the efficiency of warehouse management. Warehouse management systems require solutions to optimise the management of accurate inventory data to record every transaction in the warehouse, manage the way goods are stored, and integrate between warehouses. CV. Everfresh Kediri is a manufacturing company engaged in seed production. The problems identified in warehouse operations mostly come from human error. This research was conducted to improve warehouse operational management by developing a Warehouse Management System (WMS) using the myWMS application as the right solution to reduce human error by implementing various management processes, including inbound and outbound management and tracking, as well as visualizing the time of each process that occurs from goods entering to exiting the warehouse. Testing using the FIFO LIFO method with myWMS software shows that the FIFO method is the best choice for the company because it can streamline the operational process up to 10 Minutes 18 Seconds or 20.04% from the old manual process.

**Keywords:** Warehouse Management System (WMS), Cost Efficiency, Warehouse Management, Inventory

## INTRODUCTION

Warehousing plays an important role in a company's logistics system by providing storage for products and providing management with information on the status, condition, and type of products stored in the warehouse (Badres & Idris 2022). Effective and efficient warehousing can help businesses reduce costs and maximize profits. To achieve these goals, warehouse management is very important. Warehouse management is considered one of the important aspects of maintaining the company's operational performance and sustainability (Lesmana, 2023). Optimal warehouse management is the main key to achieving the goals of a business because it can support the smooth production process. According to Samuel et al. (2023), for smooth warehousing operations, a structured and efficient storage system is needed to support the smooth production process and warehousing activities. In its activities, there is a scope of warehouse management, including the administrative process, management of incoming goods and packaging storage, and release of goods.

Warehouse management activities are very complex, if done manually it is complicated and can cause problems. This condition is supported by research by Herdianzah et al. (2022), that the standard warehouse system or manual warehouse system causes problems including, namely, greater company expenses, the process of data collection and data entry, both for warehouse data and ordering and shipping goods, takes a long time, data errors, namely information about inventory and stock of goods owned by the company and even loss of goods. In addition, research conducted by Priyanggodo et al. (2022), that the system is not interconnected for data exchange between departments so there is no real-time data sharing, which results in the number of items not being recorded correctly. This causes a difference in data between the records on the stock card and the actual number of items in the warehouse.

Warehouse management plays a role in ensuring the smooth flow of goods and business continuity is the main goal of effective warehouse management. By implementing good warehouse management, companies can save operating costs, speed up the delivery process, increase customer satisfaction, and strengthen competitiveness in the market. The use of technology in warehouse management to improve efficiency and productivity is becoming increasingly important (Zain et al., 2023). In this context, it is important to implement the optimization of optimizing scientific and technological advances. The use of

management information systems is an effort chosen by many companies to improve warehouse management (Winata et al., 2024). Businesses need to implement technologies such as Warehouse Management System (WMS), and software that facilitates inventory management, storage organization, and warehouse space optimization (Azzahra et al., 2023).

Warehouse Management System (WMS) is a vital element in the supply chain, with the main purpose of controlling all processes that take place in it, including shipping, receiving, storing, moving, and picking goods (Prasidi et al., 2019). A maximally optimized and organized system is needed to control the process of issuing, receiving, and distributing goods. The results of data processing from this system will provide great benefits for all parties who need data related to warehouse management (Hasanah & Daurrohmah, 2024). WMS plays a role in organizing and optimizing all warehousing activities in the supply chain, such as receiving inventory, storing inventory, and managing inventory orders. Compared to doing it manually, a Warehouse Management System (WMS) can increase efficiency and productivity, reduce errors and losses, reduce costs, and increase scalability for the company.

Previous research conducted on logistics companies by Yusuf et al. (2023) at PT Ritra Cargo Semarang provided efficient results on the material handling process and data collection. Research by Dewi et al. (2023) at PT Shippindo Teknologi Logistik (Shipper) shows the potential of warehouse management systems in customer registration of goods, validation of item data, automatic shelf mapping, integration of room temperature and humidity monitoring. Both studies conducted show that with a Warehouse Management System (WMS) in logistics companies the efficiency of time, labor, and costs in warehousing operations can be improved. Further research is needed in other industries. In this case, research will be conducted in a different industry, namely a company engaged in the production of horticultural seeds to understand the opportunities and benefits associated with the Warehouse Management System in the industry.

CV. Everfresh Kediri is one of the manufacturing companies engaged in the production of seasonal vegetable and fruit seeds with the trademark Seed Cap Kujang which produces watermelon, melon, cucumber, chili, tomato, long bean, sweet corn, bitter melon, beans, mustard greens, and eggplant seeds. The entire stock of products owned for product stock is stored in a warehouse. The warehouse consists of a stock storage warehouse and storage of packaging and returns. Storage and retrieval of stock is done manually with the

help of employee labor. Raw materials received from suppliers are sorted, packed, and put into the warehouse. After that, the warehouse stock is recorded manually by the warehouse clerk. CV. Everfresh Kediri in inputting stock data of incoming or outgoing goods is still done manually using a book.

**Table 1**  
**Product Stock Difference Data CV. Everfresh Kediri (2023)**

Month	Stock Admin	Physical Stock	Stock Difference Percentage
1	3806	3934	3,4%
2	3719	3496	-6%
3	2899	2867	-1,1%
4	3012	3151	4,6%
5	1737	1860	7,1%
6	2117	2370	11,9%
7	2917	3148	7,9%
8	2700	3249	5,5%
9	2719	3111	14,4%
10	6890	6942	2,6%
11	7226	7385	16,1%
12	11063	11025	-1,1%
	<b>50805</b>	<b>52538</b>	<b>65,3%</b>

Table 1 shows data on the difference in the number of stocks of packaging products between the data in the admin and the actual goods in the warehouse. This is thought to be caused by manual data collection. The impact of this difference is data entry errors between the admin office and the warehouse and data loss. At CV. Everfresh Kediri if there is a difference in data, the warehouse admin must track the movement of stock through stacked notebooks alternately one by one. Not only that, product stock notebooks also sometimes experience recording problems, including unclear writing, writing that cannot be read due to fading, and there are records of one type of product written twice on different sheets. These conditions can cause warehouse staff to lose a lot of time in searching for data.

In addition, the warehouse layout also needs to be considered so that warehousing activities can run following the wishes of the company. The warehouse at CV. Everfresh Kediri consists of a stock storage warehouse and packaging storage and returns. In the warehouse, several products do not get a place causing the room to look fuller and untidy.

Products that do not have a place are placed and stacked in an empty place without seeing the placement. This is thought to be due to the absence of a standard warehouse layout. A poorly organized warehouse layout can result in the placement of materials that are difficult to find and warehouse capacity that is not maximized. Based on the background description above, this study aims to determine the application of warehouse management systems with Warehouse Management System (WMS) at CV. Everfresh Kediri to improve cost efficiency.

## **REVIEW OF LITERATURE**

### **Inventory Management**

Inventory management has a crucial role in supply chain management, which focuses on monitoring and managing non-capital assets (stock) and inventory. The ultimate goal is to balance investment in inventory with customer service and achieve a low-cost strategy. Items that a company has for sale or processing in the production process are categorized as inventory (Swasono & Prastowo, 2021). Types of inventories include raw materials, auxiliary materials, work-in-progress, finished goods, semi-finished goods, and spare parts (Heizer & Render, 2020).

Good inventory management is very important because it affects inventory costs, which include purchasing costs, ordering costs, storage costs, and shortage costs. Effective inventory management can ensure the smooth operation of the company and achieve business goals optimally (Kurniawan & Wicaksono, 2023).

### **Warehouse Management**

Warehouse management is a system for controlling materials in the warehouse, including storing, receiving, and issuing materials so that control can be ensured at the right time, in the right process, and the right amount (Zahra & Purwaningsih, 2023). Warehouse management involves planning, organizing, and controlling logistics technically and administratively (Kamsariaty et al., 2023). According to Ariyanto et al. (2023), the main functions in warehousing activities include movement such as: receiving, inspection and quality control, putting away, storage, order picking, packing, sorting, packing and distributing, cross-docking, replenishment, storage, and information transfer.

According to Fadhila et al. (2022), there are several types of warehouses based on the type of goods, including raw material warehouses, warehouses as finished goods storage,

warehouses as assembly and transit centers, and transshipment warehouses. Meanwhile, according to Hermawan (2020), the types of warehouses based on their functions include general storage, cold storage, consolidation warehouse, distribution warehouse, cross-docking, logistics center warehouse, automated warehouse, and break bulk warehouse.

### **Warehouse Layout**

Warehouse layout is the design, analysis, conceptualization, and realization of facility situations to achieve cost efficiency in the process of receiving to shipping goods (Nugraha et al., 2022). According to Sitorus et al. (2020), warehouse layout includes the arrangement of storage space and material management to maximize space utilization and efficiency, and efforts to minimize storage and retrieval mileage are important strategies to reduce costs and increase productivity. Factors to consider in this case include warehouse dimensions, aisle length, picking techniques, material management systems, and adequate information technology infrastructure.

Warehouse layout is a strategic operational decision that determines the company's operational effectiveness in the future supporting the company's productivity improvement. This is due to the smooth flow of production factors to be processed and increased employee work efficiency (Ramdan et al., 2020).

### **FIFO LIFO**

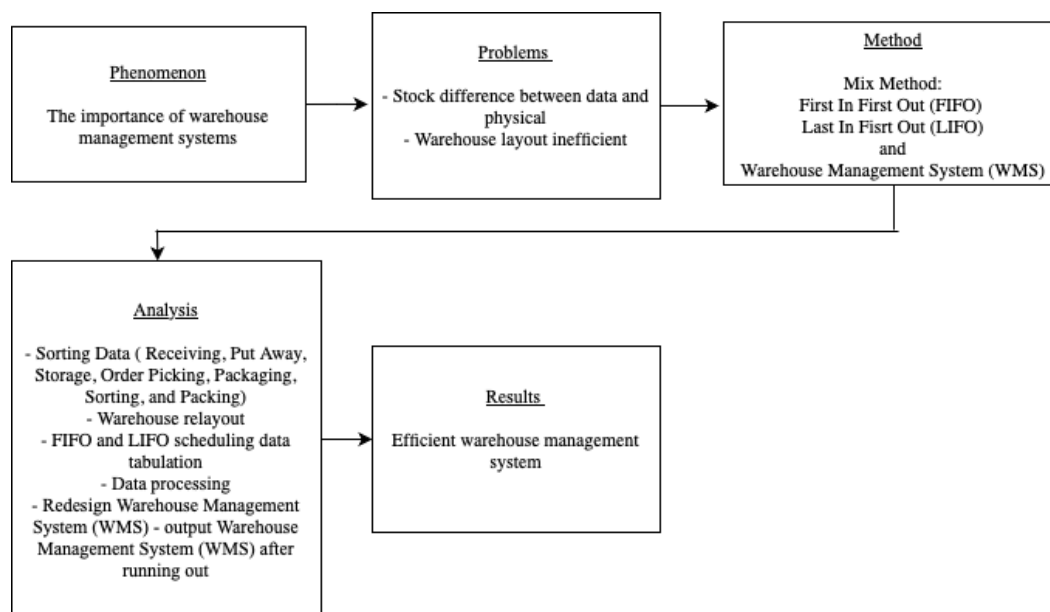
First in First Out (FIFO) or queuing method. meaning that the earliest goods received by the warehouse must come out first (Tanjung et al., 2023). The advantages of the FIFO method are that it provides an accurate picture of the value of inventory, avoids the risk of devaluation, and minimizes the possibility of quality deterioration or damage to finished products (Hardianti et al., 2024). In addition, the FIFO (First in First Out) method helps prevent waste because this method ensures that any newly received items in the warehouse will take precedence (Munawaroh et al., 2024). Meanwhile, Last in First Out (LIFO) is the management of inventory of goods that enter the warehouse last must leave first (Tanjung et al., 2023). According to Oktaviana & Auliandri (2020), the advantages of this method are that it can save taxes when inflation occurs, facilitate comparison of current costs with current income, and can equalize annual profits when fluctuating (Widyasari et al., 2023).

## Warehouse Management System (WMS)

A Warehouse Management System (WMS) is a set of activities that includes organizational, technical, and economic processes related to inventory storage. WMS is a software solution that provides visibility of a company's entire inventory and manages supply chain execution (Belter et al., 2023). The system is designed to organize the movement and storage of materials in the warehouse, and process all related transactions, from shipping, receiving, and storing, to picking. The goal is to improve warehouse efficiency by accurately managing and maintaining inventory (Domingues et al., 2023).

There are main features of a Warehouse Management System (WMS), namely inventory control, real-time capabilities, serial number tracking, automation ERP integration, picking management, mobile readiness, shipping lading, warehouse modeling, order and analytics, and reverse logistics. The implementation of WMS can provide benefits, namely speeding up the processing time, ensuring the accuracy of inventory data, and optimizing warehouse layout and space utilization.

### Conceptual Framework



**Figure 1**  
**Conceptual Framework**

### RESEARCH METHOD

The descriptive quantitative approach in this research aims to describe and describe an event and describe it accurately and systematically based on quantitative analysis data.

Observation and interview methods are used to collect primary data in this study. In addition, secondary data is used, including data on the amount of production, inventory stock data, and sales data. This research uses an analysis method with myWMS software. With stages, namely, sorting data consisting of receiving, put-away, storage, order picking, packaging, sorting and packing, warehouse relayout, FIFO and LIFO scheduling data tabulation, data processing, re-design Warehouse Management System (WMS) with myWMS software with inventory control, picking management, mobile readiness, warehouse modeling, and reporting and analytics features, and output Warehouse Management System (WMS) after running out.

## RESULTS AND DISCUSSION

### Sorting Data

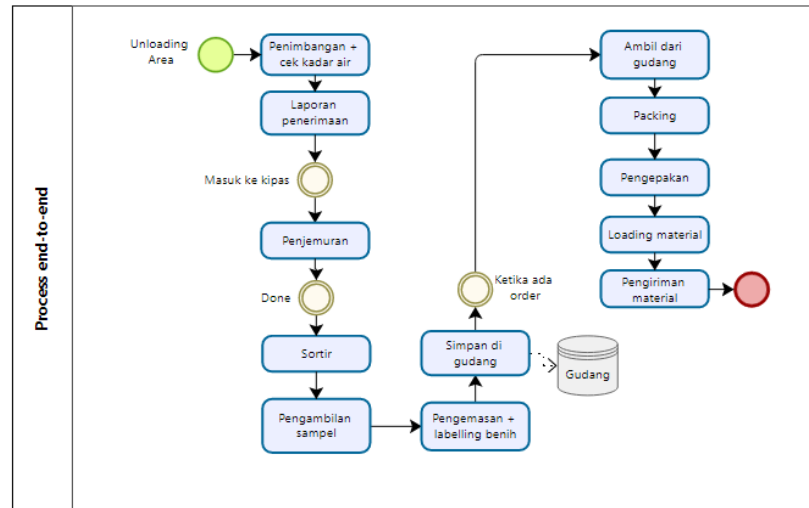
Sorting data consists of receiving, putting away, storage, order picking, packaging, sorting, and packing.

**Table 2**  
**Sorting data**

No.	Job	Time Used
1.	Receiving	3 minutes 15 seconds
2.	Put away	17 minutes 12 seconds
3.	Storage	5 minutes 10 seconds
4.	Order Picking	4 minutes 5 seconds
5.	Packaging	3 minutes 5 seconds
6.	Sortir	2 minutes 20 seconds
7.	Packing	3 minutes 15 seconds

By using the old model, sorting data consisting of receiving, put-away, storage, order picking, packaging, sorting, to packing at CV. Everfresh takes approximately 40 minutes duration for their main process. The long data sorting process can cause difficulties in meeting the job completion target.

## Warehouse Layout



**Figure 2**  
**End-to-End Process Normal**

The process used by CV Everfresh Kediri notationally uses 15 steps of activity from the beginning to the end of the warehousing process. The stage of work starts from unloading area, weighing and measuring water content, receiving report, fanning, drying seeds, sorting, sampling seeds, packaging and labeling seeds, storage in the warehouse, incoming orders, taking inventory in the warehouse, packing, packing, loading materials, and after that shipping materials.

### Tabulation of Scheduling Data with First in First Out (FIFO) and Last in First Out (LIFO)

Simulation Results

Scenario information		Name	Type	Instances completed	Instances started	Min. time	Max. time	Avg. time	Total time
Process end-to-end		Scenario 1	Process	8	9	50m 41s	50m 41s	50m 41s	6h 43m 28s
Process end-to-end		Process	Process	8	9	50m 41s	50m 41s	50m 41s	6h 43m 28s
Unloading Area		Unloading Area	Start event	9					
Penimbangan + cek kadar air		Penimbangan + cek kadar air	Task	8	9	2m 23s	2m 23s	2m 23s	19m 46s
Laporan penerimaan		Laporan penerimaan	Task	8	8	46s	46s	46s	6m 35s
Masuk ke kipas		Masuk ke kipas	Intermediate event	8	8				
Penjemuran		Penjemuran	Task	8	8	17m 12s	17m 12s	17m 12s	2h 17m 36s
Done		Done	Intermediate event	8	8				
Sortir		Sortir	Task	8	8	2m 12s	2m 12s	2m 12s	17m 36s
Pengambilan sampel		Pengambilan sampel	Task	8	8	2m 40s	2m 40s	2m 40s	21m 20s
Pengemasan + labelling benih		Pengemasan + labelling benih	Task	8	8	3m 14s	3m 14s	3m 14s	23m 52s
Simpan di gudang		Simpan di gudang	Task	8	8	5m 10s	5m 10s	5m 10s	41m 20s
Ketika ada order		Ketika ada order	Intermediate event	8	8				
Ambil dari gudang		Ambil dari gudang	Task	8	8	4m 57s	4m 57s	4m 57s	39m 56s
Packing		Packing	Task	8	8	4m 57s	4m 57s	4m 57s	39m 56s
Pengepakan		Pengepakan	Task	8	8	4m 57s	4m 57s	4m 57s	39m 56s
Loading material		Loading material	Task	8	8	4m 57s	4m 57s	4m 57s	39m 56s
Pengiriman material		Pengiriman material	Task	8	8	4m 57s	4m 57s	4m 57s	39m 56s

**Figure 3**  
**Tabulation of Scheduling Data Per Activity Using the Manual Method in the Application**

Name	Type	Instances completed	Instances started	Avg. time (m)	Total time (m)
Process end-to-end	Process	430	481	50.68333333333334	22852.3333333333
Unloading Area	Start event	481			
Penimbangan + cek kadar air	Task	478	481	2.38333333333333	1139.23333333332
Laporan penerimaan	Task	477	478	0.766666666666663	365.699999999998
Masuk ke kipas	Intermediate event	477	477		
Penjemuran	Task	460	477	17.1999999999999	7911.99999999994
Done	Intermediate event	460	460		
Sortir	Task	458	460	2.20000000000002	1007.60000000001
Pengambilan sampel	Task	455	458	2.66666666666669	1213.33333333335
Pengemasan + labelling benih	Task	452	455	3.23333333333335	1461.46666666667
Simpan di gudang	Task	447	452	5.16666666666668	2309.5
Ketika ada order	Intermediate event	447	447		
Ambil dari gudang	Task	442	447	4.5	1989
Packing	Task	439	442	3.75	1646.25
Pengepakan	Task	435	439	3.41666666666667	1486.25000000001
Loading material	Task	430	435	5.40000000000004	2322.00000000002
Pengiriman material	Task	430	430	0	0
NoneEnd	End event	430			

**Figure 4**  
**Scheduling Data Tabulation Results Using Manual Method (in Minutes)**

Figure 4 shows the total results of the warehousing process using the manual method takes a total of 50 minutes and 48 seconds to complete all activities, from receiving goods to shipping goods.

The screenshot shows a window titled "Simulation Results" with a "Process end-to-end" sidebar. The main area displays "Scenario information" for "Scenario 1" with a duration of "00:08:00:00". Below this is a table with columns: Name, Type, Instances completed, Instances started, Min. time, Max. time, Avg. time, and Total time. The data in the table is as follows:

Name	Type	Instances completed	Instances started	Min. time	Max. time	Avg. time	Total time
Process end-to-end	Process	8	9	40m 37s	40m 37s	40m 37s	3h 24m 56s
Unloading Area	Start event	9					
Penimbangan + cek kadar air	Task	8	9	2m 38s	2m 38s	2m 38s	21m 4s
Laporan penerimaan	Task	8	8	45s	45s	45s	6m
Masuk ke kipas	Intermediate event	8	8				
Penjemuran	Task	8	8	17m 19s	17m 19s	17m 19s	2h 18m 32s
Done	Intermediate event	8	8				
Sortir	Task	8	8	2m	2m	2m	16m
Pengambilan sampel	Task	8	8	2m 15s	2m 15s	2m 15s	18m
Pengemasan + labelling benih	Task	8	8	3m 10s	3m 10s	3m 10s	25m 20s
Simpan di gudang	Task	8	8	1m 30s	1m 30s	1m 30s	12m
Ketika ada order	Intermediate event	8	8				
Ambil dari gudang	Task	8	8	4m 15s	4m 15s	4m 15s	34m

**Figure 5**  
**Tabulation of Scheduling Data Per Activity Using the FIFO Method in the Application**

Name	Type	Instances completed	Instances started	Avg. time (h)	Total time (h)
Process end-to-end	Process	8	9	0.6769444444444444	5.415555555555555
Unloading Area	Start event	9			
Penimbangan + cek kadar air	Task	8	9	0.04388888888888888	0.3511111111111111
Laporan penerimaan	Task	8	8	0.01250000000000001	0.1000000000000001
Masuk ke kipas	Intermediate event	8	8		
Penjemuran	Task	8	8	0.2886111111111111	2.308888888888889
Done	Intermediate event	8	8		
Sortir	Task	8	8	0.03333333333333333	0.2666666666666666
Pengambilan sampel	Task	8	8	0.03749999999999999	0.2999999999999999
Pengemasan + labelling benih	Task	8	8	0.05277777777777779	0.422222222222223
Simpan di gudang	Task	8	8	0.02500000000000001	0.2000000000000001
Ketika ada order	Intermediate event	8	8		
Ambil dari gudang	Task	8	8	0.02083333333333332	0.1666666666666666
Packing	Task	8	8	0.05138888888888889	0.4111111111111111
Pengepakan	Task	8	8	0.05277777777777779	0.422222222222223
Loading material	Task	8	8	0.05833333333333334	0.4666666666666667
Pengiriman material	Task	8	8	0	0
NoneEnd	End event	8			

**Figure 6**  
**Scheduling Data Tabulation Results Using Manual FIFO (in Minutes)**

Figure 6 shows the total results of the warehousing process using the FIFO method takes a total of 40 minutes and 37 seconds to complete all activities, from receiving goods to shipping goods.

Name	Type	Instances completed	Instances started	Min. time	Max. time	Avg. time	Total time
Process end-to-end	Process	8	9	44m 47s	44m 47s	44m 47s	5h 58m 16s
Unloading Area	Start event	9					
Penimbangan + cek kadar air	Task	8	9	2m 30s	2m 30s	2m 30s	21m 4s
Laporan penerimaan	Task	8	8	45s	45s	45s	6m
Masuk ke kipas	Intermediate event	8	8				
Penjemuran	Task	8	8	17m 19s	17m 19s	17m 19s	2h 18m 32s
Done	Intermediate event	8	8				
Sortir	Task	8	8	2m 20s	2m 20s	2m 20s	18m 40s
Pengambilan sampel	Task	8	8	2m 15s	2m 15s	2m 15s	18m
Pengemasan + labelling benih	Task	8	8	3m 10s	3m 10s	3m 10s	25m 20s
Simpan di gudang	Task	8	8	1m 45s	1m 45s	1m 45s	14m
Ketika ada order	Intermediate event	8	8				
Ambil dari gudang	Task	8	8	5m 67s	5m 67s	5m 67s	57m 44s

**Figure 7**  
**Tabulation of Scheduling Data Per Activity Using LIFO Method in the Application**

Name	Type	Instances completed	Instances started	Avg. time (h)	Total time (h)
Process end-to-end	Process	8	9	0.7463888888888888	5.971111111111111
Unloading Area	Start event	9			
Penimbangan + cek kadar air	Task	8	9	0.0438888888888888	0.3511111111111111
Laporan penerimaan	Task	8	8	0.0125000000000001	0.1000000000000001
Masuk ke kipas	Intermediate event	8	8		
Penjemuran	Task	8	8	0.2886111111111111	2.308888888888889
Done	Intermediate event	8	8		
Sortir	Task	8	8	0.0388888888888888	0.3111111111111111
Pengambilan sampel	Task	8	8	0.0374999999999999	0.2999999999999999
Pengemasan + labelling benih	Task	8	8	0.0527777777777779	0.422222222222223
Simpan di gudang	Task	8	8	0.0291666666666667	0.233333333333334
Ketika ada order	Intermediate event	8	8		
Ambil dari gudang	Task	8	8	0.0472222222222223	0.377777777777779
Packing	Task	8	8	0.0555555555555554	0.444444444444443
Pengepakan	Task	8	8	0.0611111111111109	0.488888888888888
Loading material	Task	8	8	0.0791666666666666	0.633333333333333
Pengiriman material	Task	8	8	0	0
NoneEnd	End event	8			

**Figure 8**  
**Scheduling Data Tabulation Results Using Manual FIFO (in Minutes)**

Figure 8 shows the total results of the warehousing process using the LIFO method takes a total of 44 minutes 47 seconds to complete all activities, from receiving goods to shipping goods.

**Data Processing**

**Table 3**  
**Comparative Analysis Results of 3 Models**

	Old Model	FIFO	LIFO
<b>Not According to standards</b>	210 pcs	24 pcs	29 pcs
<b>Too Long in the Warehouse</b>	452 pcs	62 pcs	125 pcs
<b>Miss Control</b>	512 pcs	53 pcs	70 pcs
<b>End-to-End Process</b>	50 minutes 48 second	40 minutes 37 seconds	44 minutes 47 seconds
<b>Overstock</b>	74 %	11 %	45 %
<b>Storage Duration</b>	5 minutes 10 seconds	1 minute 30 seconds	1 minute 45 seconds
<b>Understock</b>	30 %	12 %	72 %
<b>Late Delivery</b>	21%	5 %	11 %
<b>Warehouse Optimization</b>	<b>Space</b> -	38 %	25 %

Based on Figure 10, it can be concluded that the FIFO method is the most superior among the other two simulations because it is more efficient and effective in seven of the eight variables, which consist of not according to standards, too long in the warehouse, miss control, end to end process, overstock, storage duration, late delivery, and warehouse space optimization.

### Redesign Warehouse Management System (WMS)

Aa Varietass	# Kemasa...	Date	Benih Masuk(Tahun/Bula...	Σ Benih M...	Status	Σ Formula
Janges	5	November 17, 2023	November 17, 2023	0 Day	● Not started	AMAN2 🍌
Janges	30	November 17, 2023	November 17, 2023	0 Day	● Not started	AMAN2 🍌
Janges	3	October 24, 2023	October 23, 2023	1 Day	● Not started	AMAN2 🍌
Janges	25	October 18, 2023	October 16, 2023	2 Day	● Not started	AMAN2 🍌
Janges	25	October 18, 2023	October 16, 2023	2 Day	● Not started	AMAN2 🍌
Janges	54	October 19, 2023	October 16, 2023	3 Day	● Not started	AMAN2 🍌
Janges	25	October 26, 2023	October 23, 2023	3 Day	● Not started	AMAN2 🍌
WELUT	50	May 24, 2024	May 20, 2024	4 Day	● Not started	AMAN2 🍌
Janges	25	October 27, 2023	October 23, 2023	4 Day	● Not started	AMAN2 🍌
Janges	15	October 20, 2023	October 16, 2023	4 Day	● Not started	AMAN2 🍌
Janges	5	October 27, 2023	October 23, 2023	4 Day	● Not started	AMAN2 🍌
Janges	50	October 28, 2023	October 23, 2023	5 Day	● Not started	WAYAHE2 ! !
Janges	75	November 11, 2023	November 6, 2023	5 Day	● Not started	WAYAHE2 ! !
ELITA	30	October 26, 2023	October 19, 2023	7 Day	● Not started	WAYAHE2 ! !
ELITA	30	November 14, 2023	November 6, 2023	8 Day	● Not started	WAYAHE2 ! !

**Figure 9**  
**Redesign Warehouse Management System (FIFO)**

From initially only using manual or handwritten methods, by using this management system software, companies can be more efficient in sorting and selecting products that will leave the warehouse. When the data enters, the admin can manage which items will be issued based on the length of shelf life and based on the date of entry. WMS features used in CV. Everfresh Kediri based on existing problems, among others: inventory control, picking management, mobile readiness, warehouse modeling, and reporting and analytics features.

### Inventory Control

#### Inventory QC System

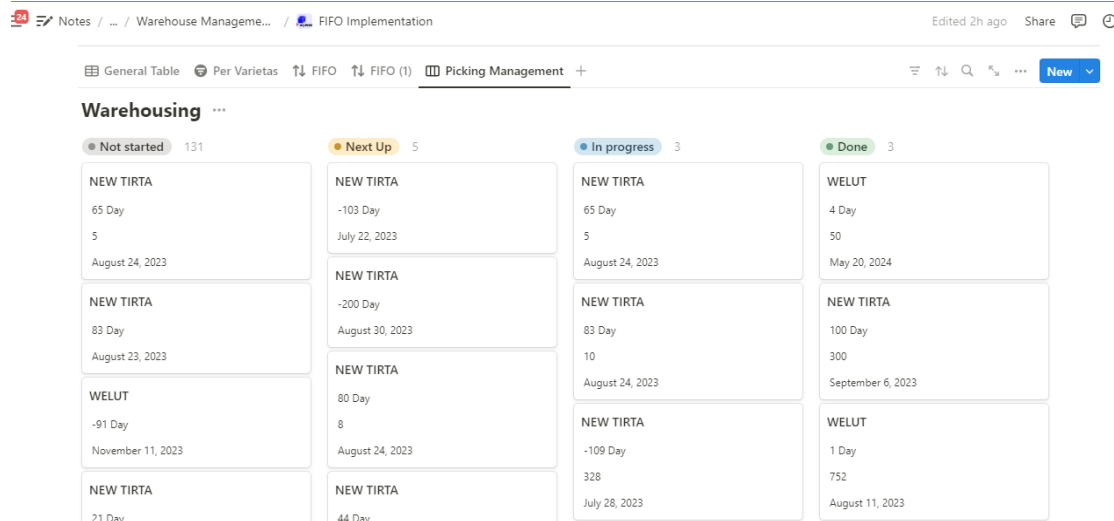
Data Center - Active +

Aa Object	Last Initiative Control	Σ Warning	Σ Last Control Form...	Control Type	# Qty in Hand
🍌 Janges	May 25, 2024	WAYAHE2 ! !	2 Days ago	Every Day	455 🍌
🍌 Welut	May 7, 2024	WAYAHE2 ! !	20 Days ago	Every 10 Day	523 🍌
🍌 New Tirta	May 11, 2024	WAYAHE2 ! !	16 Days ago	Every 10 Day	600 🍌
🍌 Panjitavi	May 3, 2024	WAYAHE2 ! !	24 Days ago	Every 10 Day	945 🍌
🍌 Tombo	April 18, 2024	WAYAHE2 ! !	39 Days ago	Every 10 Day	1276 🍌
🍌 Idaman	April 13, 2024	WAYAHE2 ! !	44 Days ago	Every 10 Day	1347 🍌
🍌 Indraya	May 17, 2024	WAYAHE2 ! !	10 Days ago	Every 10 Day	896 🍌
🍌 Megan	May 13, 2024	WAYAHE2 ! !	14 Days ago	Every 10 Day	764 🍌
🍌 Minthul	May 14, 2024	WAYAHE2 ! !	13 Days ago	Every 10 Day	923 🍌
🍌 Bola	May 16, 2024	WAYAHE2 ! !	11 Days ago	Every 10 Day	837 🍌
🍌 Jambu	May 14, 2024	WAYAHE2 ! !	13 Days ago	Every 10 Day	762 🍌

**Figure 10**  
**Inventory Control System**

The use of this software is used to control the inventory of raw material handling materials.

## Picking Management



**Figure 11**  
**Picking Management System**

Picking management system using an integrated inventory management system to facilitate the management of goods to be removed from the warehouse.

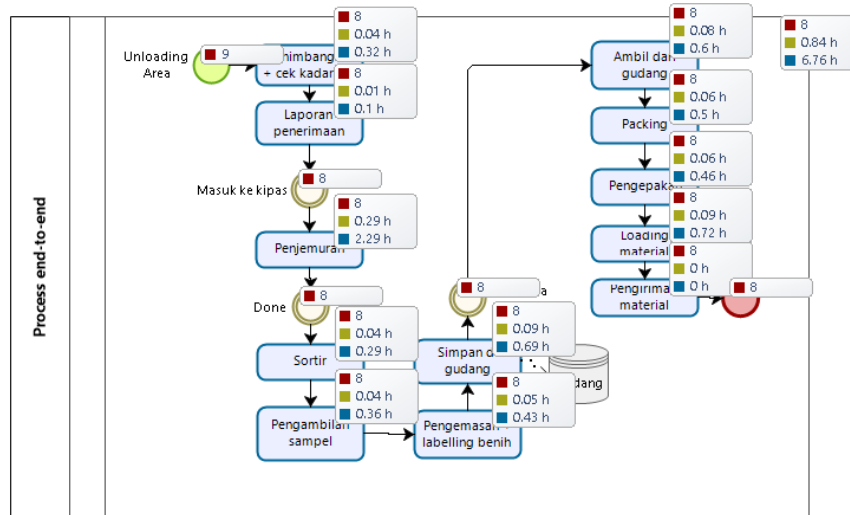
## Mobile Readiness



**Figure 12**  
**WMS Software Display on Mobile**

Mobile readiness allows users to access anywhere and anytime, using their preferred device. These benefits can increase flexibility, productivity, and range of use.

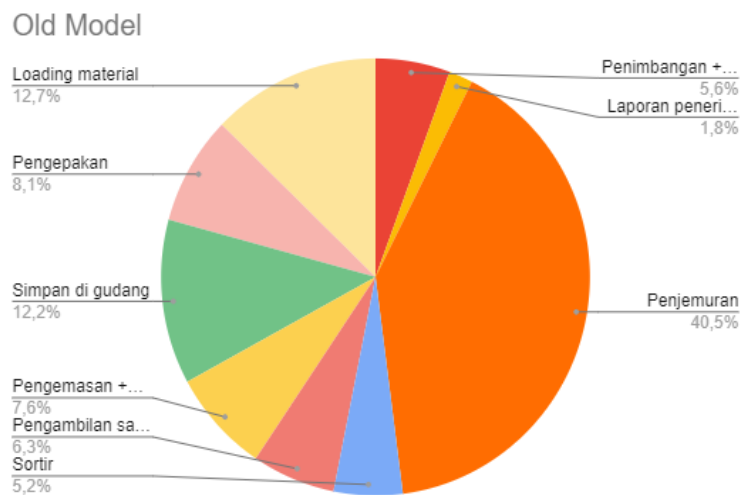
### Warehouse Modelling



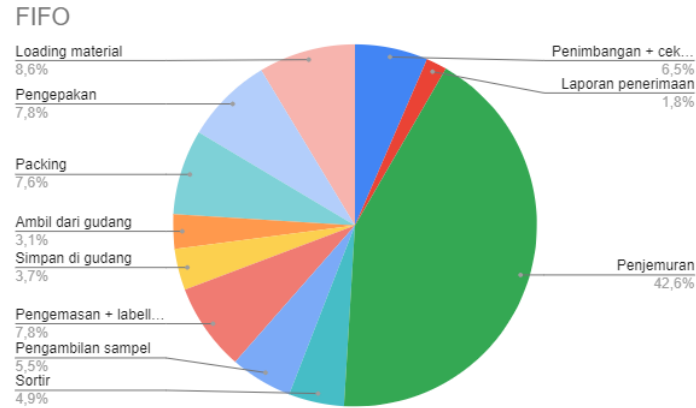
**Figure 13**  
**The Old Model's Per-Activity Scheduling Uses Notation**

Figure 13 is an image of the warehouse layout that was previously created using an application outside of myWMS. After the warehouse layout is uploaded to the system, it produces a notation of the processing time that needs to be done from the initial to the final stage according to the system.

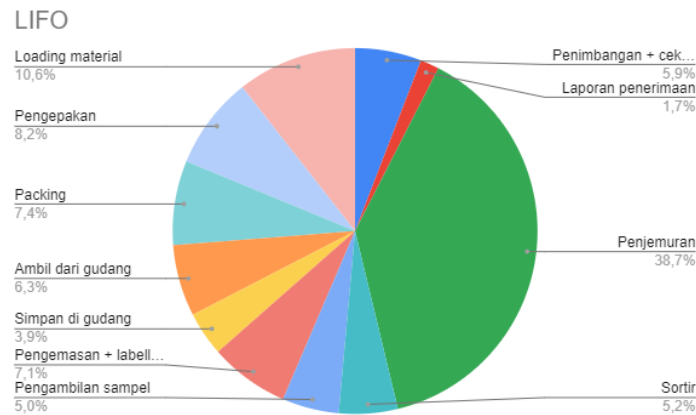
### Reporting And Analytics Features



**Figure 14**  
**Old Model Process Duration Portion**



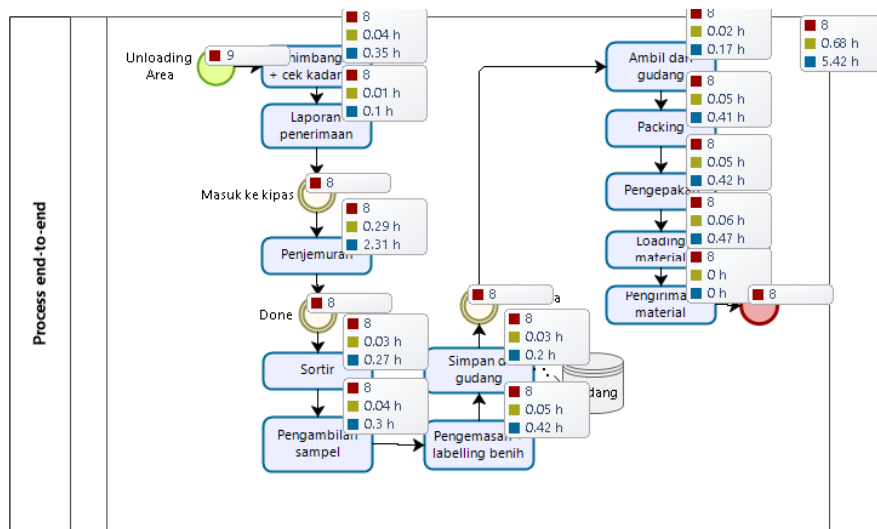
**Figure 15**  
**FIFO Model Process Duration Portion**



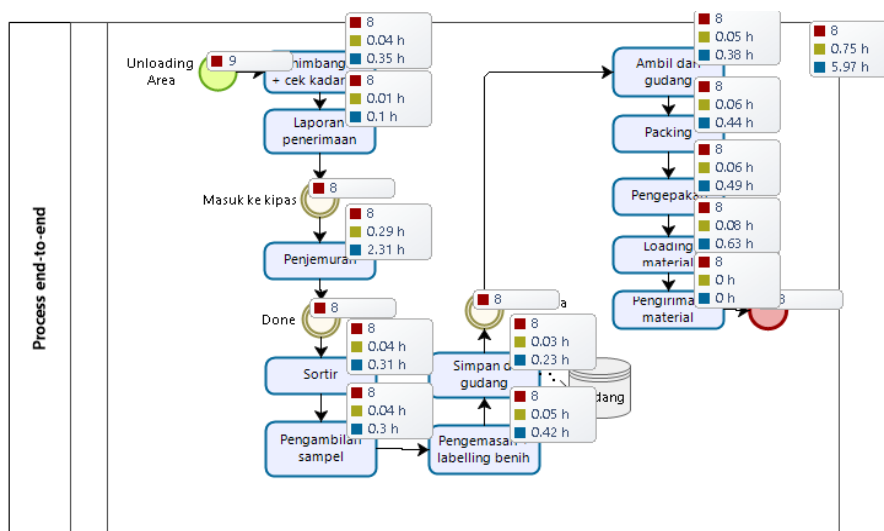
**Figure 16**  
**LIFO Model Process Duration Portion**

By using three models, the method is used to compare and analyze which activities require the most time. Analysis of the figure above shows significant differences in the input and output of goods from the warehouse, FIFO = 6.8%, LIFO = 10.12%, and Manual = 18.5%, these figures show FIFO is superior in terms of portions.

### Output Warehouse Management System (WMS) after Running Out



**Figure 17**  
**Scheduling Per Activity FIFO Method Using Notation**



**Figure 18**  
**Scheduling Per Activity LIFO Method Using Notation**

The notation step that has the most striking difference in duration is the storage and retrieval of goods from the warehouse. The difference is caused by the implementation of the use of MyWMS software which can cut operational processes, especially in the input or output of goods from the warehouse because it uses an integrated automation system.

## CONCLUSION

In the end-to-end warehousing process, using the current flow model, CV. Everfresh requires 50 minutes and 48 seconds starting from receiving goods to loading out goods to logistics. By using the FIFO model, this figure can be cut or streamlined to 40 minutes 37 seconds while using the LIFO model the duration of the process can be 44 minutes 47 seconds. Therefore, it can be concluded that from the analysis that has been carried out, the FIFO method using myWMS software and inventory control, is the best choice for the company because it can streamline the operational process up to 10 minutes 11 seconds or 20.05% of the old manual process.

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