



# WMS

## Warehouse Management System

PennWest California

User Manual

CSC 4900 – Senior Project 1

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## Instructor Comments/Evaluation

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## Project Overview and Application

This project is a warehouse management system which can create efficient, organized, and responsive warehouse operations by using applications like bootstrap, Apache, docker, Visual studio code, PHP, MySQL and JavaScript. Our project is a web application that uses MySQL as our database, to then break it into rows and columns for easy data retrieval and storage. PHP is the main programming language that allows for same file HTML, PHP, and JavaScript coding. This means PHP can generate dynamic page content, its efficient at creating, reading, updating and deleting data and can interact with our database to store, retrieve and manage data within our database based on user input. This helps optimize processes like inventory tracking, order fulfillment, space utilization and shipment management.

By maintaining real-time records and automating repetitive tasks, reducing errors will enhance overall warehouse performance. This will ensure that companies can manage their supply chains more effectively and stay competitive in the market. The project will utilize Bootstrap as the front-end framework to build a responsive interface, AJAX and JavaScript will be used to improve user interaction, Apache will be used for our bridge between our web application and the internet as our web server and Docker will provide us a container to run all our applications in one place to be able to interact with each other. For our simplified management, a streamlined warehouse operation was implemented, introducing role-based access to ensure data integrity and secure management of products.

Our applicant will be able to handle automating inventory updates, stock management, and reporting. Along with being able to handle its products with the inclusion of QR and Barcode scanning for easy product management and auditing. How users will interact with our system is

through various pages on our dashboard, consisting of storage and products, orders, inventory, vendors, customers, returns, users and roles.

## **Motivation:**

The design and overall structure of our web application is to make people's lives easier in the warehouse management space along with there is a big market for the system we developed. When discussing our design, we wanted to help warehouse managers efficiently track and manage their inventory; this includes ongoing shipments, deliveries, and supplies within the warehouse. While existing systems are available, they are not as affordable or rely on manual or outdated systems to track stock, leading to inefficiencies, errors, and increased operational costs. The team aimed to make a warehouse management system to simplify inventory tracking and management.

The main aspiration when designing our application was to focus on user-friendliness, compatibility, and practical use by warehouse managers and workers as most warehouse managers lack these functionalities that we provide. This includes a responsive design for warehouse managers and workers to minimize the learning curve to use our system. Our system includes QR and Barcode scanning for easy product management and for viewing within the warehouse. Overall, the team wanted to construct a cool and effective system for others to use.

## **Comparison to existing similar products:**

There are quite a few warehouse management systems out there in the world, each of them having strengths and weaknesses. Fishbowl Warehouse is a WMS that provides functionality like SMB-friendly inventory management, automated reorder points, barcode scanning and tracking and multi-location inventory management. In our system we integrate a lot of the functionality that is other system has along with having them both being cost-effective for SMBs and easy to use.

Also, Zoho Inventory has features like budget-friendly, multi-channel order tracking and barcode scanning for quick fulfillment.

For local businesses the best WMS options are these two managers mentioned above, as they are cost-effective and easy to use but lack deep automation and AI. Knowing this, the team wanted the system to focus heavily on having a user-friendly interface, since our target audience may not have an IT team, barcode scanning and inventory tracking to reduce manual errors, order and shipment tracking for smooth fulfillment and cloud-based access so the user can manage inventory remotely. We also developed features for real-time inventory updates for users to always know stock levels, low-stock alerts to prevent shortages or stockouts, multi-location tracking so that the business can grow with our system since they would have access to multiple storage areas and customizable role base access control so that the user can have data integrity within the system. Our WMS is like other budget friendly systems, but different because of all the other functionality added to it to make it an all-in-one system for small businesses.

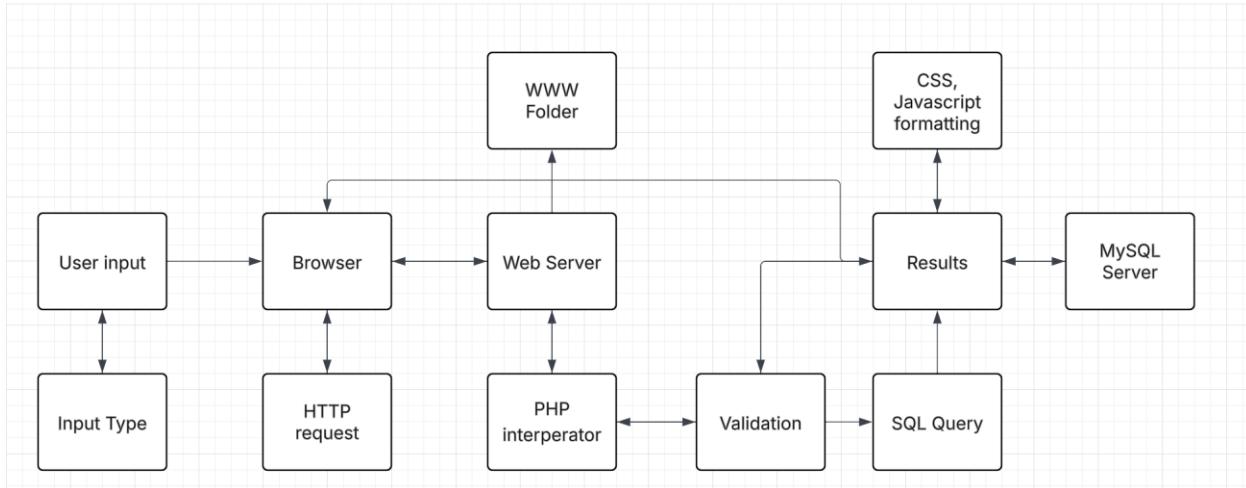
## **Community or social implications of the project**

The positive impacts of our management system were one of the main driving forces for choosing this project. Some positive impacts are it would open new jobs in system management, IT support and logistics as our system would need to be maintained. There will be economic growth as our system will make for faster and more reliable supply chains which will benefit local businesses. Along with an enhanced consumer experience with the use of our efficient system, consumers will receive products quickly and correctly.

The implementation of our system will lead to a reduced environmental impact by optimizing inventory and shipping reduces our waste and carbon footprint. For all positives

comes negatives and some negative impacts can be workplace stress. Since the WMS uses real-time tracking to monitor worker productivity this can lead to a high-pressure environment. An economic disruption can occur within small businesses that are not using our WMS and may struggle to compete with large, automated warehouses.

## System block diagram



This system block diagram shows the data processing of our warehouse management system web application. The process begins with the user interacting with an input form where the data is entered through specific input types. The browser sends a http request and sends the data to the Apache web server. Then the web server refers to the PHP script located in the WWW folder then this data is interpreted through the PHP interpreter. The PHP script performs input validation on the user input to ensure that correct data gets processed. If the input is valid a SQL query is called and then is sent to the MySQL server to retrieve or change the data. The browser receives the response and uses HTML to display the data, CSS for styling, and JavaScript to enhance dynamic behaviors. The result is then rendered in the browser therefore completing the cycle of user input to processed output.

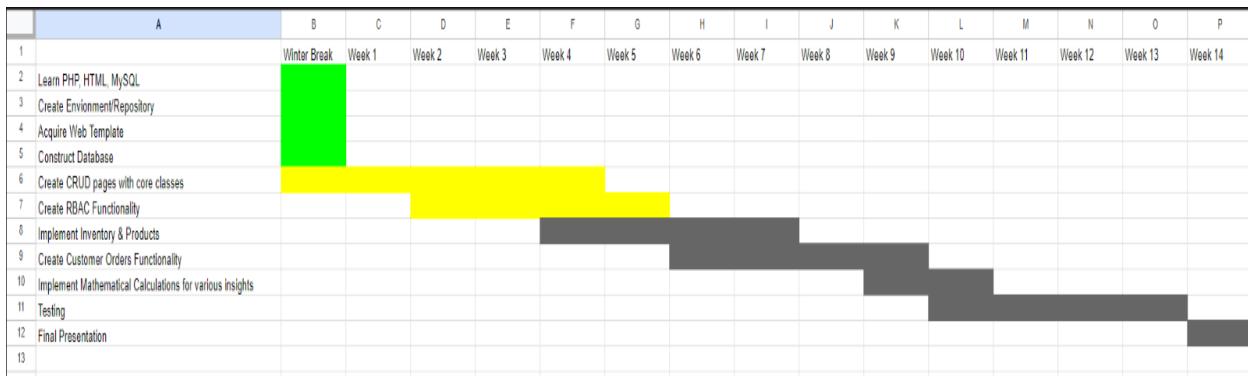
# Project implementation details

## **Difference from design document:**

The difference between this document and our design document is the construction of the document. Our design document is to give the development team a strong foundation to reference when developing this project. This will help aid and guide us through the functionalities and goals of this warehouse management system as well as keeping everyone on track without deviating too much from the source. That will include detailed descriptions of all the software and functions needed for the project to work effectively and efficiently. Along with the audience being different since the design document is mainly for developers, engineers, project managers and designers. While this document is displaying all the functionalities implemented within the final project from the design document. This includes plain language, screenshots, UI walkthroughs and a step-by-step guide. This document is made for the user, customers, or operators to follow understanding the structure and functionality of our web application to then being updated based on user feedback and product updates.

Another way that these two documents differ is that the team has had to alter some of the designs shown in our design documents. An example of this is the fact that we included nothing about vendor and customer containers but are included because of further thinking of how we wanted to construct the project. This can also be shown on various pages with added functionality that was not included in the design document since when implementing our ideas, we came up with new innovative ideas to make our system work even better by having new functionality we didn't think of when designing our project.

The Gantt chart shown in figure 1 gave the team a timeline at the beginning of the project. The team gave time slots to make sure there was enough time to implement all functionality required. There were many parts within the project that took longer than expected or required more thinking to move forward with cause for some implementations to be added before others. As well as there were new ideas like stated previously that were implemented in this phase that were not discussed in previous documents. This was offset by the fact that we started this project during the winter, so we got quite a bit done then. During this phase of the project, we have been focusing on adding functionality each week that helps the user enjoy our system.



## Challenges during implementation:

There were many challenges when constructing this project with some being bigger than others, but some small challenges were things like getting our environment set up for each developer in the team and for each developer to understand a new language. Along with the structure of our data tables and how data is going to be displayed. Even though these are small they were essential to help with the foundation of everything else in the project. Other bigger challenges were the implication of RBAC which is our role-based access control system. The complication with RBAC stemmed from the fact that we had to go back and add this

functionality to each page and then test each page and the role to ensure that our system was working properly.

As well as getting vendor orders functionality created and the logic for utilizing the containers to associate with the vendor orders. When in development we realized that we would have to prioritize something else to process our orders which is why we added customer and vendor containers. These containers were important to separate vendors' and customers' orders so that managers can distinguish which orders we are dealing with. Since this was not a part of our design, we had to pivot to which took a lot of time to develop and implement. So overall the main challenges were getting vendor orders functionality created. The logic for utilizing the containers to associate with the vendor orders, getting customer orders functionality created the logic for utilizing the containers to associate with the customer orders, reworking functions of customer orders for improved readability, the implementation of multiple modals for different issues and actions on the same page.

## **Use of software engineering principles**

The team used the project construction standards discussed in previous documents during the Fall semester to develop our WMS. The project was broken down into the requirements, specification, design, and implementation.

The requirement phase was completed early in the project, the document contained information that was an overview and refined the team's project and its idea's. This was the beginning of our project and was the foundation of future documents. Some of the ideas within the document were changed or added throughout the project's progression, but the bases of the ideas remain throughout all our phases.

The next phase was the specification document which was completed mid-semester during the fall. This was a crucial phase since it was necessary to define each process and how it would function with set software. The construction of this document gave us insight into how exactly each component would function and interact with each other. There are different flowcharts and block diagrams that were created to help visualize the process and future of the project.

We wrapped up the fall semester with a design document which provided a full breakdown of each module and went over each process needed for the project. This helped find and handle future logical errors and improved the overall structures of the program.

The implementation phase was set up by the previous phases and will be completed over the duration of the spring semester. It was important to refer to these documents so when the team began implementation, we had a guide to assist us through each function we wanted in the project. A Gantt chart was made to manage implementation time with each function added along with a changelog that held all our commits, which were tested during development and then pushed to our environment to then be added to the software.

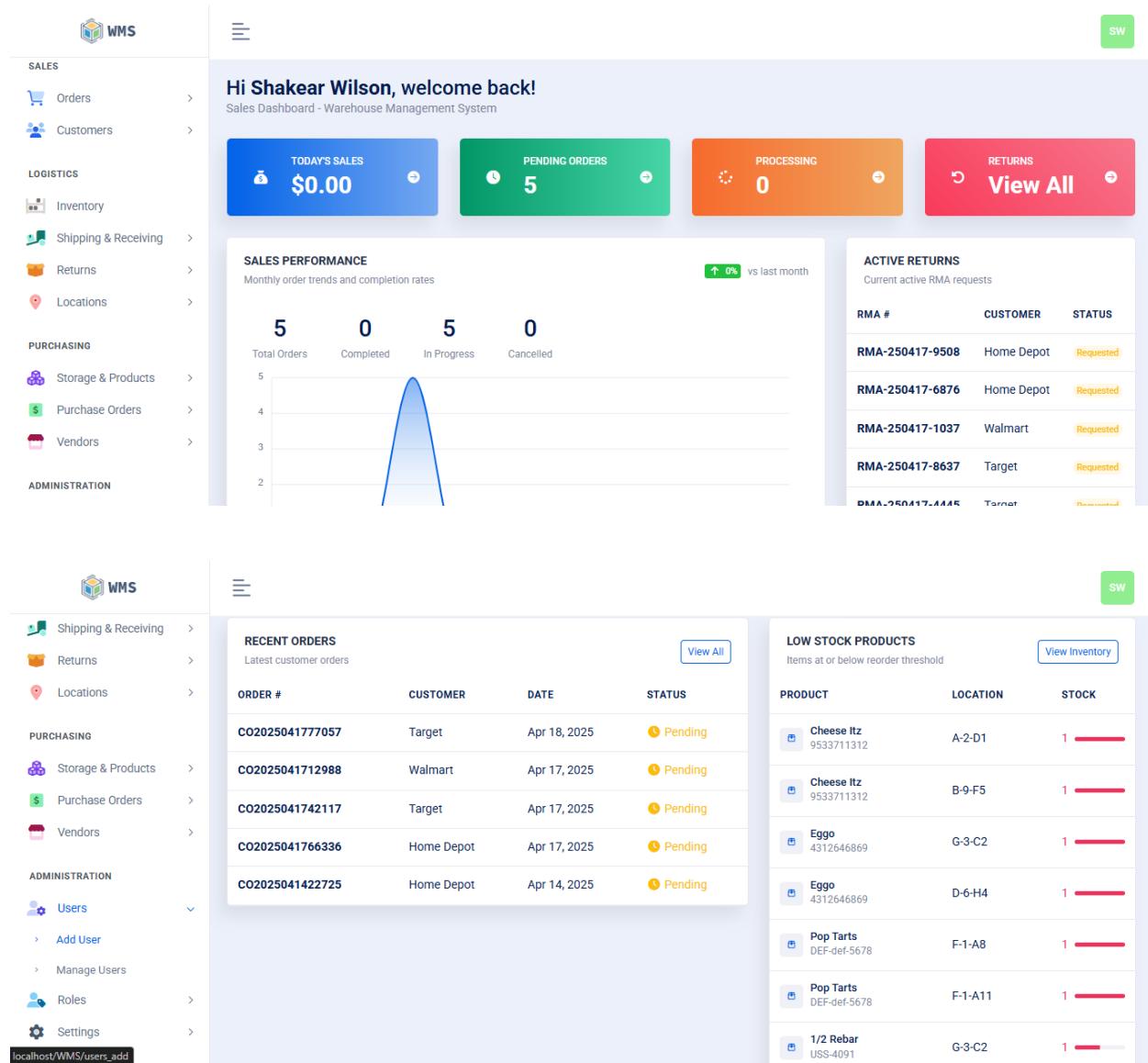
## User's Manual

Our Warehouse Management System was designed and developed with employees and employers that work in a warehouse in mind. This system has dynamic features for all its users, including automating inventory updates, stock management, and data security. Our application is a tool for managing and storing inventory within a warehouse allowing for businesses using it to grow.

## Login

To login to the WMS application, the user must be added by their employer who hired them. The employer will need to direct themselves to the user's add page which is under Administration > Users > Add User shown in figure 2.1.

## 2.1 Warehouse Management System Interface



The image displays two screenshots of the Warehouse Management System (WMS) interface. The top screenshot shows the main dashboard with a navigation menu on the left and various performance metrics and charts in the center. The bottom screenshot shows the 'Add User' page, which is a form for creating a new user account.

**Main Dashboard (Top Screenshot):**

- Navigation:** SALES, LOGISTICS, PURCHASING, ADMINISTRATION.
- Header:** Hi Shakear Wilson, welcome back! Sales Dashboard - Warehouse Management System.
- Metrics:**
  - TODAY'S SALES: \$0.00
  - PENDING ORDERS: 5
  - PROCESSING: 0
  - RETURNS: View All
- SALES PERFORMANCE:** Monthly order trends and completion rates. Data: Total Orders (5), Completed (0), In Progress (5), Cancelled (0). A line chart shows a single peak at value 5.
- ACTIVE RETURNS:** Current active RMA requests. Table:
 

RMA #	CUSTOMER	STATUS
RMA-250417-9508	Home Depot	Requested
RMA-250417-6876	Home Depot	Requested
RMA-250417-1037	Walmart	Requested
RMA-250417-8637	Target	Requested
RMA-250417-4445	Target	Resolved

**Add User Page (Bottom Screenshot):**

- Navigation:** Shipping & Receiving, Returns, Locations, PURCHASING, ADMINISTRATION (with sub-options: Users, Add User, Manage Users, Roles, Settings).
- Links:** localhost/WMS/users\_add
- Recent Orders:** Latest customer orders. Table:
 

ORDER #	CUSTOMER	DATE	STATUS
CO2025041777057	Target	Apr 18, 2025	Pending
CO2025041712988	Walmart	Apr 17, 2025	Pending
CO2025041742117	Target	Apr 17, 2025	Pending
CO2025041766336	Home Depot	Apr 17, 2025	Pending
CO2025041422725	Home Depot	Apr 14, 2025	Pending
- Low Stock Products:** Items at or below reorder threshold. Table:
 

PRODUCT	LOCATION	STOCK
Cheese Itz	A-2-D1	1
Cheese Itz	B-9-F5	1
Eggo	G-3-C2	1
Eggo	D-6-H4	1
Pop Tarts	F-1-A8	1
Pop Tarts	F-1-A11	1
1/2 Rebar	G-3-C2	1

Figure 2.1 Warehouse Management System dashboard

## 2.2 User Login Information

The screenshot displays the User Login Information administration view. The top portion shows a list of users with columns for First Name, Last Name, Email, and Role. The bottom portion shows a detailed view of a user with fields for First Name, Last Name, Email, Username, Password, Confirm Password, Title, Country Code, Phone Number, Role, and Active Account status. A 'Register User' button is visible at the bottom right.

Figure 2.2 User Login Information administration view

Figure 2.2 shows the users add page on the employer's point of view since they are adding a new user to their system adding security. The information needed from the user is a first and last name, valid email address, username, password and a valid phone number. The administration will decide your title and role in the company and will activate your account.

## 2.3 User Login

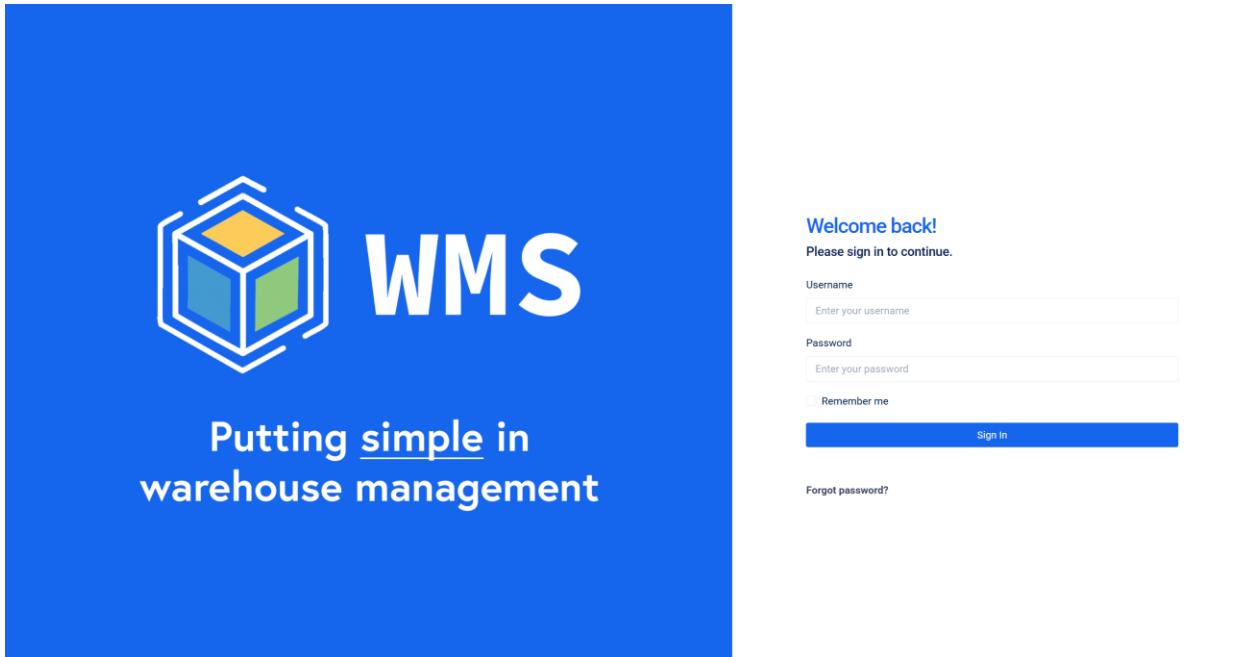


Figure 2.3 User Login user view

Figure 2.3 The user will then receive an email to activate their account, once the user clicks activate account on that email it will redirect the user to the login page. This display that your account is now active through email verification and now the user can login in with their username and password at: Login - <https://wmsproject.bcolditz.tech/login>

## Welcome

After the user logs in they will be directed to our main dashboard which displays statistics about the company and on the left-hand side shows the pages that are available. There are various pages the user can see and interact with, the user's access to some pages might be limited since they are based on a role. A role will grant you access to specific pages with features needed for that set role, making other pages inaccessible for that user that don't involve set role. As stated previously, these roles are assigned by administration.

Transition to different type of roles and go in-depth on the feature that are on set page for that role and why they are important for that user to have.

## Warehouse Associate

A warehouse associate plays a key role in a warehouse when dealing with incoming shipments, order fulfillment and warehouse organization. The associate will be involved in tasks like receiving and unloading shipments, inspecting and organizing inventory, picking and packing orders and potentially operating warehouse equipment.

### 3.1 Warehouse Associate

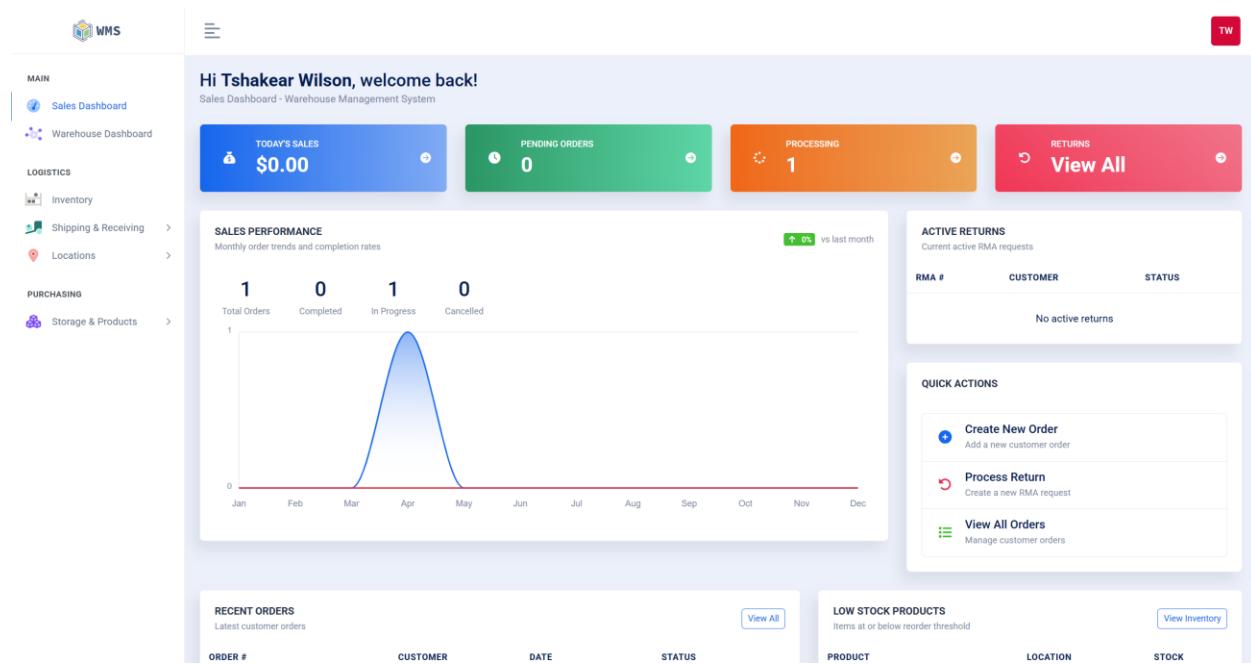
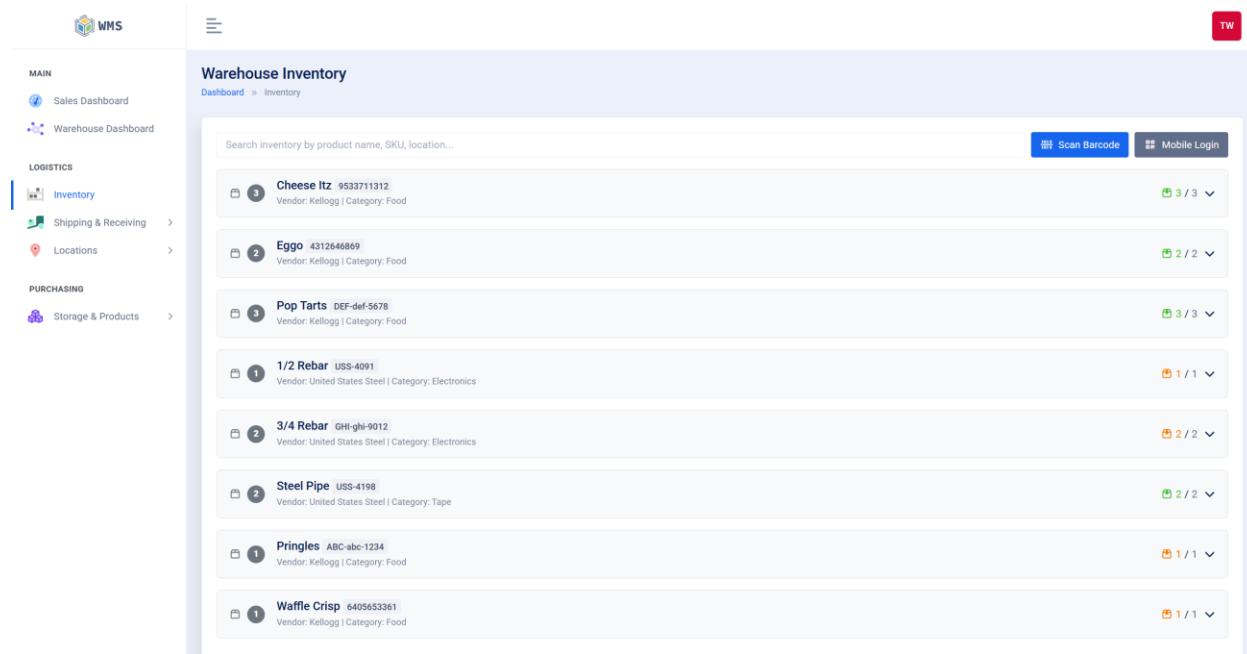


Figure 3.1 Warehouse Associate dashboard view

Figure 3.1 A warehouse associates permissions consist of a dashboard, inventory, shipping & receiving, locations and storage & products. These are the only pages a warehouse

associate will have access to as these are the only pages needed for them to do their job efficiently.

## 3.2 Warehouse Associate Inventory



The screenshot shows the 'Warehouse Inventory' page within a larger application interface. The left sidebar contains 'MAIN' (Sales Dashboard, Warehouse Dashboard), 'LOGISTICS' (Inventory, Shipping & Receiving, Locations), and 'PURCHASING' (Storage & Products). The main content area is titled 'Warehouse Inventory' and shows a list of products:

Product	SKU	Vendor	Category	Quantity
Cheese Itz	9533711312	Kellogg	Food	3 / 3
Eggo	4312646869	Kellogg	Food	2 / 2
Pop Tarts	DEF-def-5678	Kellogg	Food	3 / 3
1/2 Rebar	USS-4091	United States Steel	Electronics	1 / 1
3/4 Rebar	GHI-ghi-9012	United States Steel	Electronics	2 / 2
Steel Pipe	USS-4198	United States Steel	Tape	2 / 2
Pringles	ABC-abc-1234	Kellogg	Food	1 / 1
Waffle Crisp	6405653361	Kellogg	Food	1 / 1

At the top right, there are buttons for 'Scan Barcode' and 'Mobile Login'. A red 'TW' button is in the top right corner of the main content area.

Figure 3.2 Warehouse Associate inventory view

Figure 3.2 This page has many different features and data that the user can interact with. There is a search field for the users to search inventory by product name, sku or locations. Other features on this page include barcode scanning, mobile login and printing out product labels which will be discussed later. The data shown on this page includes the products that are in the warehouse inventory, the quantity of that product and the different containers that the product is being stored in.

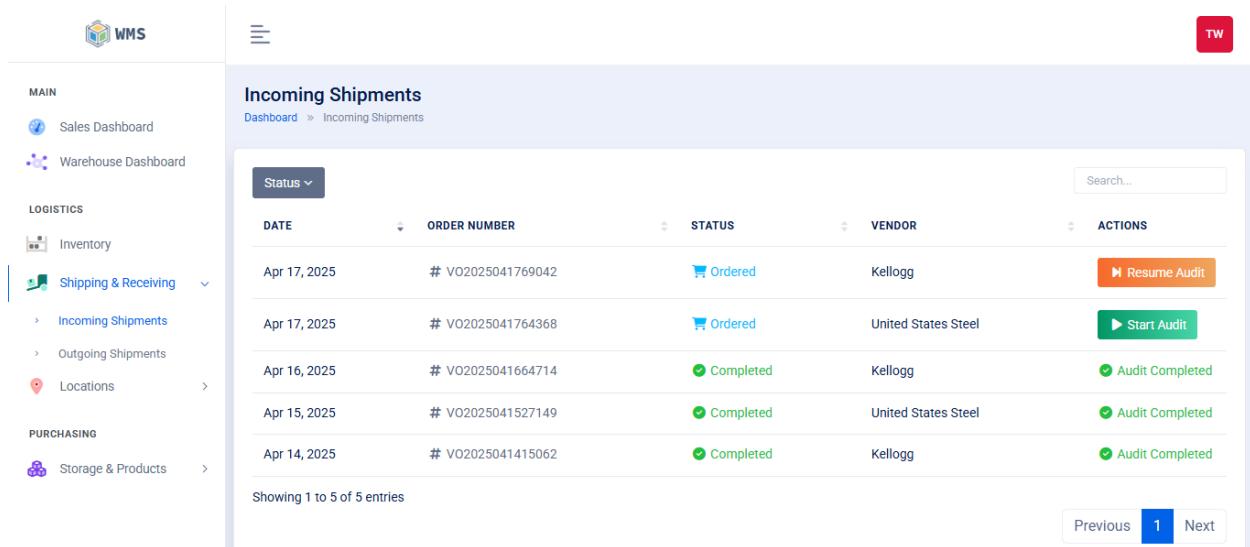
### 3.3 Warehouse Associate Shipping & Receiving



Figure 3.3 Warehouse Associate Shipping & Receiving view

Figure 3.3 The warehouse associate will have two options under Shipping & Receiving, incoming and outgoing shipments. Incoming shipments are the products that are being delivered to the warehouse from our vendors. The process begins when an order is placed, and the vendor sends an advance shipping notice detailing what has been sent. Once the shipment has arrived, the warehouse staff checks those items and conducts an audit. Outgoing shipments deal with getting products out of the warehouse and sending them to a customer. The associate will pick and pack the products according to the order. The order will then be handed off to a delivery service for transportation.

#### 3.4(a) Warehouse Associate Incoming Shipments



The screenshot shows the WMS interface with a sidebar on the left and a main content area on the right. The sidebar includes sections for MAIN (Sales Dashboard, Warehouse Dashboard), LOGISTICS (Inventory, Shipping & Receiving with sub-options: Incoming Shipments, Outgoing Shipments, Locations), and PURCHASING (Storage & Products). The main content area is titled 'Incoming Shipments' and shows a table of 5 entries. The table columns are DATE, ORDER NUMBER, STATUS, VENDOR, and ACTIONS. The entries are:

DATE	ORDER NUMBER	STATUS	VENDOR	ACTIONS
Apr 17, 2025	# VO2025041769042	Ordered	Kellogg	Resume Audit
Apr 17, 2025	# VO2025041764368	Ordered	United States Steel	Start Audit
Apr 16, 2025	# VO2025041664714	Completed	Kellogg	Audit Completed
Apr 15, 2025	# VO2025041527149	Completed	United States Steel	Audit Completed
Apr 14, 2025	# VO2025041415062	Completed	Kellogg	Audit Completed

At the bottom of the table, it says 'Showing 1 to 5 of 5 entries'. The page includes a search bar, a status dropdown, and navigation buttons for 'Previous', '1', and 'Next'.

Figure 3.4(a) Warehouse Associate incoming shipment's view

Figure 3.4(a) This page's features consist of order sort that is based on the status of the order, or the user can use the search field to search for a specific order. The user will have the option to resume an audit or to start an audit on an incoming order.

### 3.4(b) Warehouse Associate Incoming Shipments

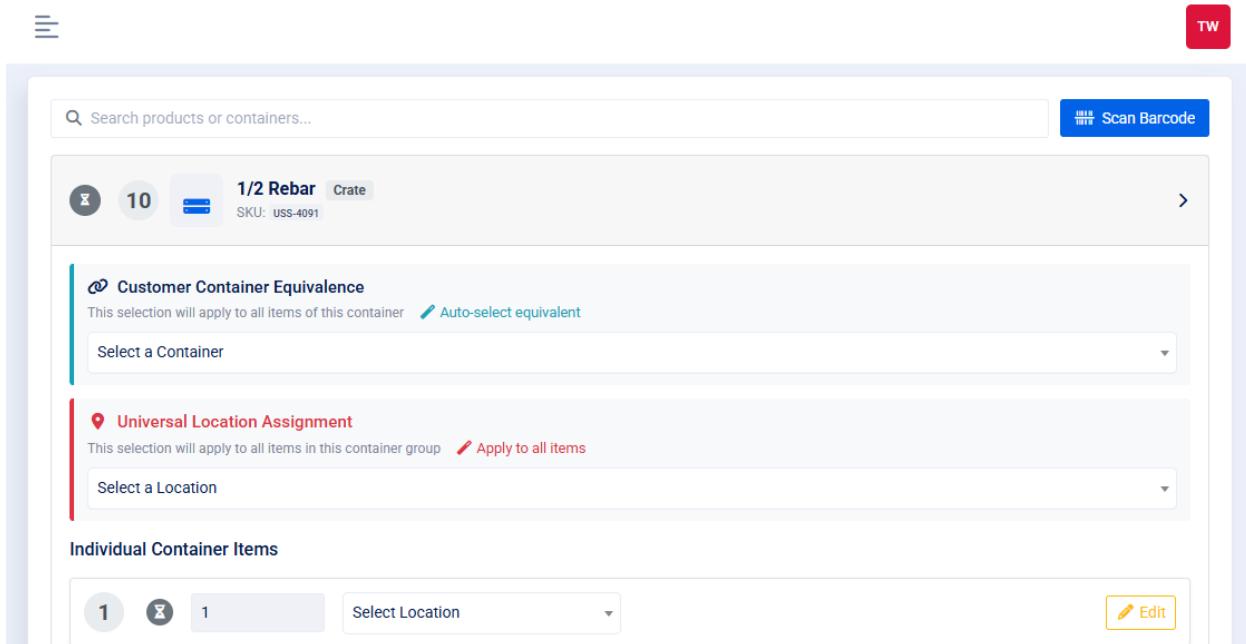


Figure 3.4(b) Warehouse Associate incoming shipment's view

Figure 3.4(b) This page is where the associate will conduct their audit on a specific order. The information on this page consists of the product, product container, SKU and the quantity of the product that's coming in. Some features are a search field to search for products or the container along with barcode scanning functionality. The data that the user needs to input is to assign a customer container for set vendor product and to assign locations for all products in the order. Customer container equivalence that is shown in figure 3.4(c) shows how the user will select or search for a customer container, if the user uses auto-select equivalent then the system will try to find a container that fits the description. The same thing applies for universal location assignment and setting a location for a single product; the user can select or search for a location that's in the warehouse and assign that location to all products in that drop down by using apply to all items. After all items are processed then the audit can be completed shown in figure 3.4(d).

Figure 3.4(c) Warehouse Associate Incoming Shipments

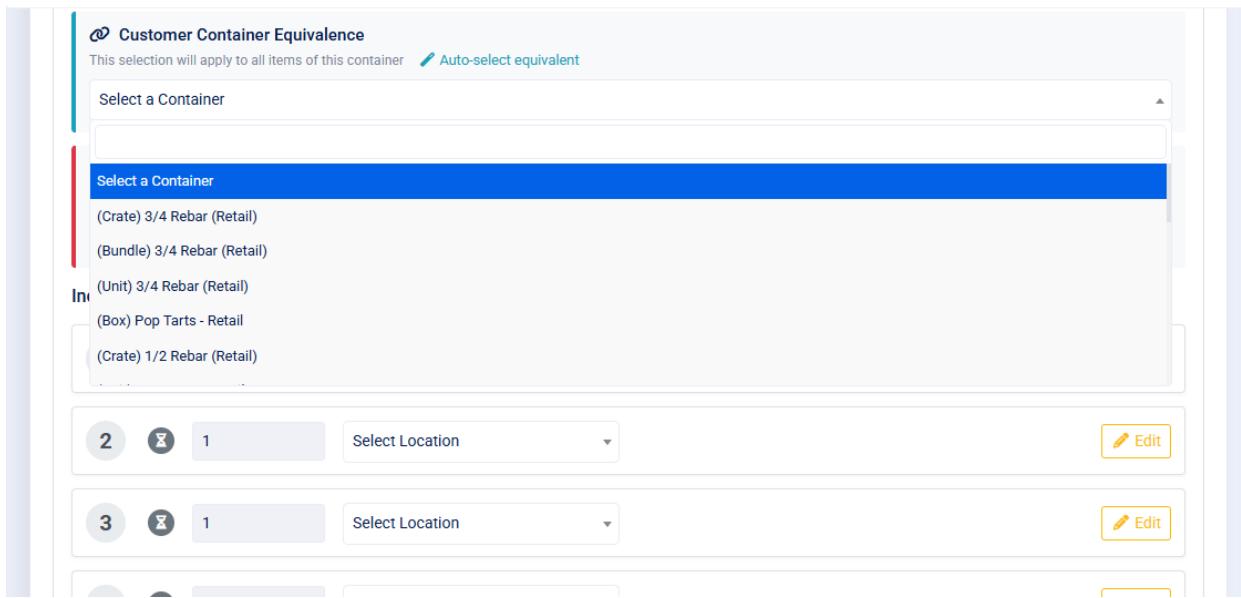


Figure 3.4(c) Warehouse associate incoming shipment audit page

Figure 3.4(d) Warehouse Associate Incoming Shipments

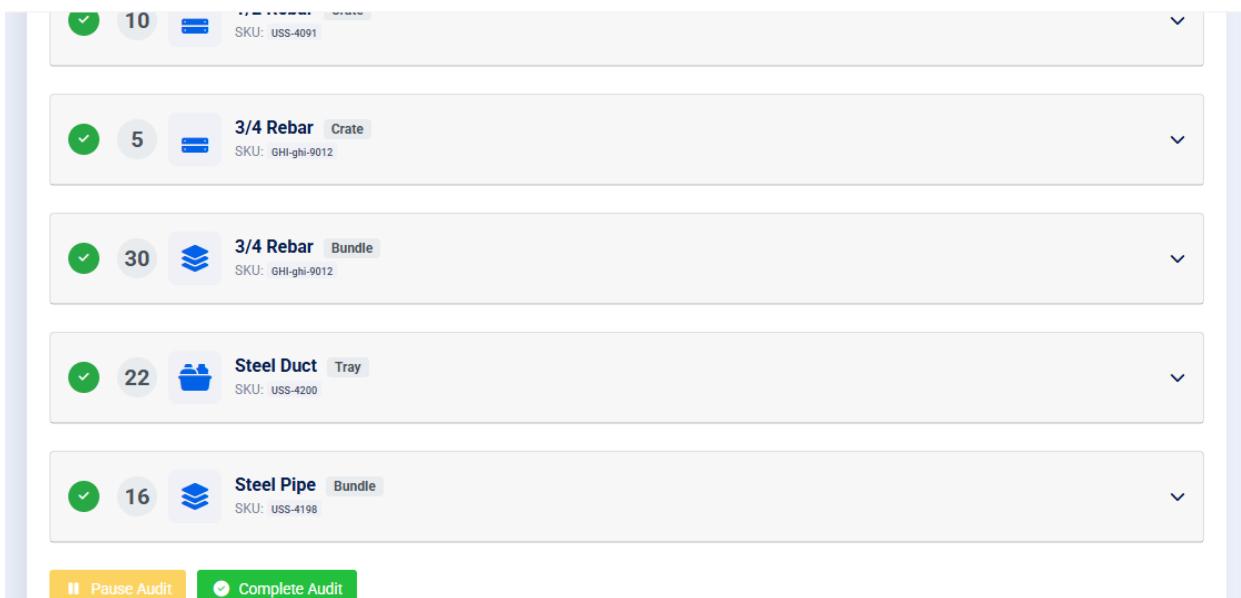


Figure 3.4(d) Warehouse associate incoming shipments audit page completion

3.5(a) Warehouse Associate Outgoing Shipments

Outgoing Shipments					
Dashboard > Outgoing Shipments					
Status	DATE	ORDER NUMBER	STATUS	CUSTOMER	ACTIONS
Processing	Apr 20, 2025	# CO2025042060892	Processing	Harbor Freight	<span>▶ Resume Fulfillment</span>
Draft	Apr 20, 2025	# CO2025042060524	Draft	Target	<span>▶ Resume Fulfillment</span>
Pending	Apr 20, 2025	# CO2025042046048	Pending	Walmart	<span>▶ Start Fulfillment</span>

Showing 1 to 3 of 3 entries

Previous 1 Next

WMS Project, 2025.  Credits

Figure 3.5(a) Warehouse associate outgoing shipments page

This figure shows the page that the user would follow to then complete an outgoing shipment. When the user clicks start fulfillment, they will be redirected to our fulfillment page as shown in figure 3.5(b).

### 3.5(b) Warehouse Associate Fulfillment

Shipment Fulfillment

Dashboard > Outgoing Shipments > Fulfillment

Search products...

**Order Information**

Order #: C0202504207232  
Date: Apr 20, 2025  
Status: Processing

**Customer Information**

Name: Walmart  
Contact: Walmart  
Phone: +1 (720) 555-5678

PRODUCT	CONTAINER	LOCATION	STATUS
1/2 Rebar (Retail)	Crate	Z-4-E6	0/1
Cheese Itz - Retail	Box	G-3-C2	0/1
Eggo - Retail	Crate	F-1-A25	0/1
Pop Tarts - Retail	Box	F-1-A27	0/1

**Complete Fulfillment**

Figure 3.5(b) Warehouse associate outgoing shipments fulfillment page

This figure shows all the products that were in the customer's order, and they need to be fulfilled. How the associate would do that is based on the user scanning the product label and the system will automatically update the status of that product. After all the products are scanned and the order can be fulfilled and can be sent to the customer.

## Warehouse Associate Conclusion

The warehouse association also has access to locations including positions, levels, bays, racks and colors and storage & products pages that include vendor and customer catalog as well as vendor and customer containers. An associate work will not involve these pages, but they will still need access to them to view their data. They will only be able to view the page and will not be allowed to edit or add or delete these pages, the functionality and structure of these pages will be displayed in other roles.

# Inventory Manager

An inventory manager in a warehouse plays a central role in ensuring that the flow of goods in and out of the facility is smooth, accurate, and efficient. Their job is all about control, coordination, and visibility over inventory from the moment products arrive to the moment they leave.

## 4.1 Inventory Manager

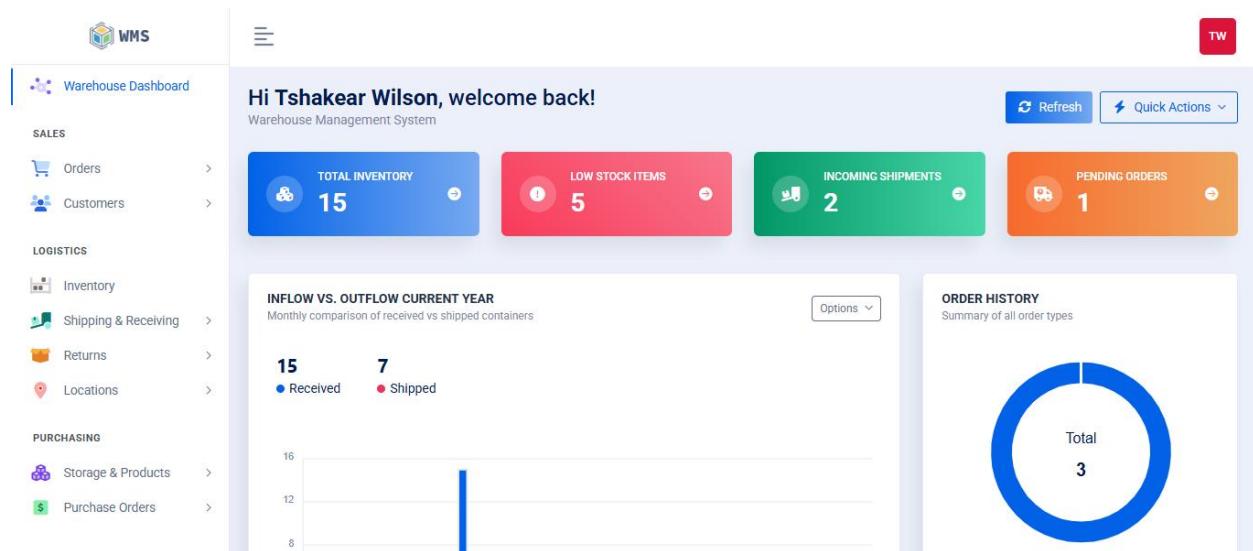
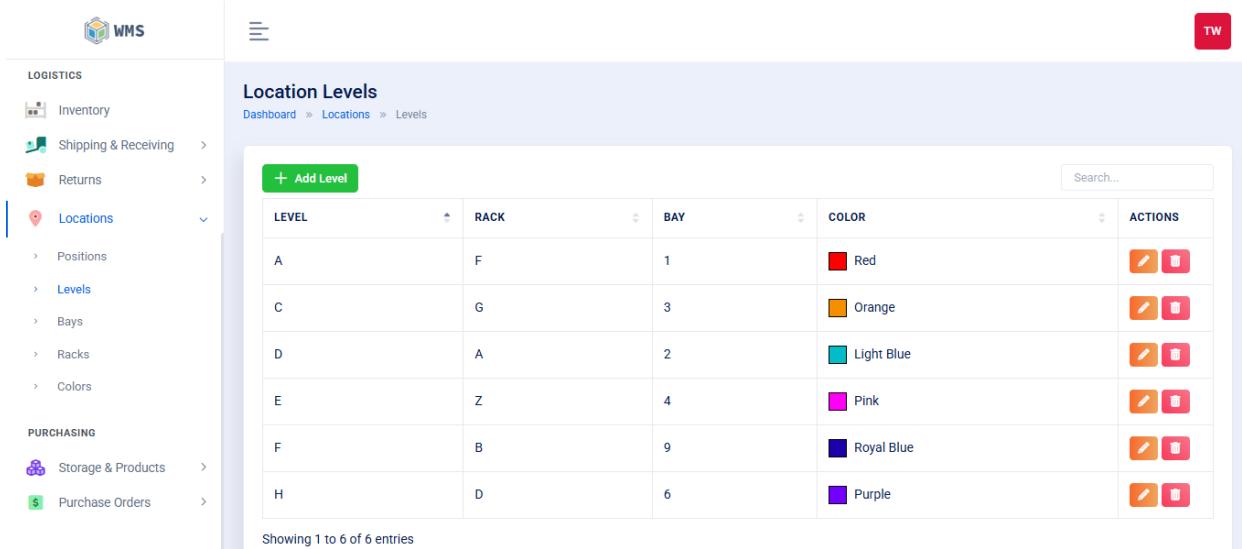


Figure 4.1 Inventory managers dashboard

In figure 4.1 the pages shown on the dashboard are all the pages needed for an inventory manager to do their job at a high level. Although these permissions look like a warehouse associate, there are many differences like the returns, purchase orders, orders and the features that are available in locations.

## 4.2 Inventory Manager Locations



The screenshot shows a web-based inventory management system. On the left, a sidebar menu is visible under the 'LOGISTICS' section, with 'Locations' selected. The main content area is titled 'Location Levels' and shows a table of data. The table has columns: LEVEL, RACK, BAY, COLOR, and ACTIONS. The data is as follows:

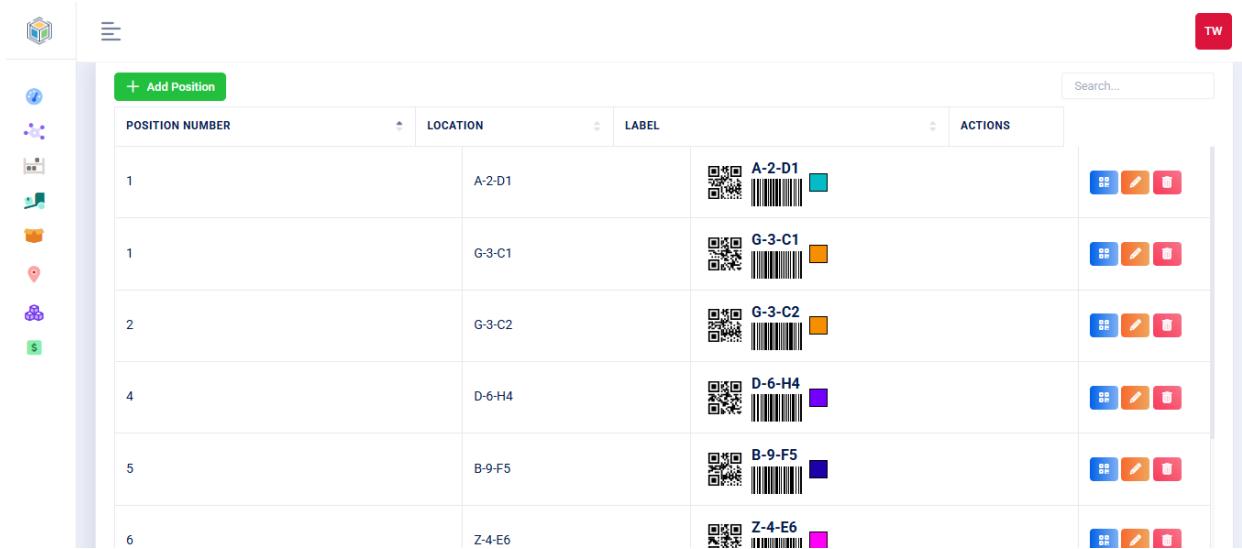
LEVEL	RACK	BAY	COLOR	ACTIONS
A	F	1	Red	 
C	G	3	Orange	 
D	A	2	Light Blue	 
E	Z	4	Pink	 
F	B	9	Royal Blue	 
H	D	6	Purple	 

Showing 1 to 6 of 6 entries

Figure 4.2(a) Inventory manager locations

Figure 4.2(a) shows how locations are going to be constructed throughout the warehouse. A location in the warehouse needs a rack, bay, level and color. When the inventory manager is done making the level then they can finish the locations by adding a position to it. These levels can be added, edited and deleted upon the user's request. There is also search functionality that is built into the page.

## 4.2(b) Inventory Manager Locations



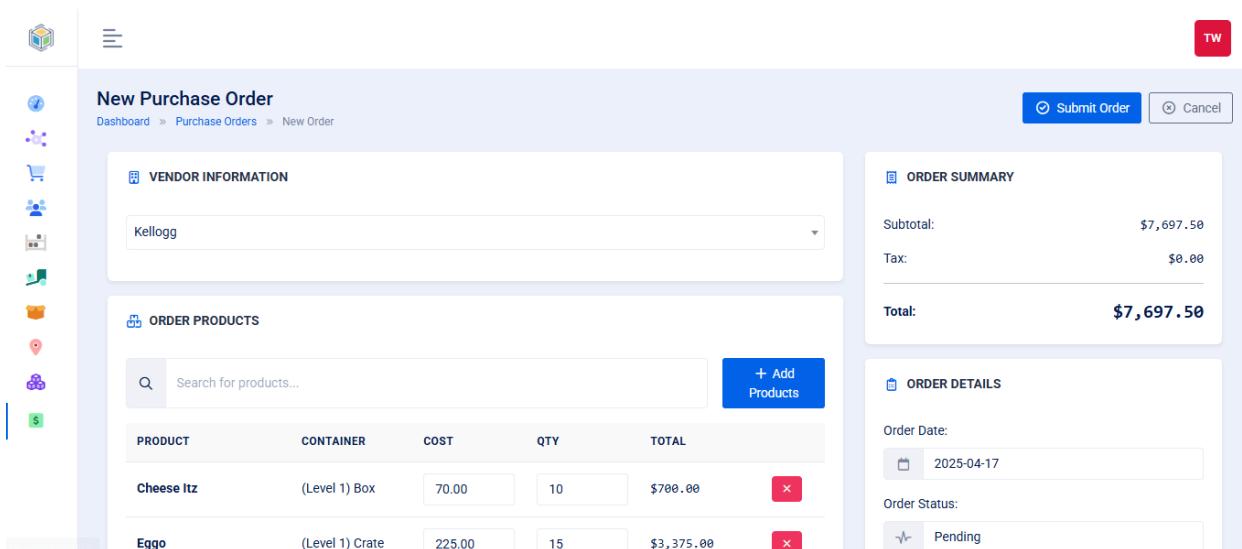
The screenshot shows a table titled 'Inventory manager locations'. The columns are 'POSITION NUMBER', 'LOCATION', 'LABEL', and 'ACTIONS'. The 'POSITION NUMBER' column contains values 1 through 6. The 'LOCATION' column contains values A-2-D1, G-3-C1, G-3-C2, D-6-H4, B-9-F5, and Z-4-E6. The 'LABEL' column displays QR codes and barcodes for each location. The 'ACTIONS' column contains three icons: a blue square with a white grid, an orange square with a white pencil, and a red square with a white minus sign.

POSITION NUMBER		LOCATION	LABEL	ACTIONS
1		A-2-D1	A-2-D1  	  
1		G-3-C1	G-3-C1  	  
2		G-3-C2	G-3-C2  	  
4		D-6-H4	D-6-H4  	  
5		B-9-F5	B-9-F5  	  
6		Z-4-E6	Z-4-E6  	  

Figure 4.2(b) Inventory manager locations

Figure 4.2(b) is the final step to creating a location and this is achieved by adding a location. This page has search functionality on it along with being able to print a location label, this label will hold information about the location. The user is allowed to add, edit and delete any location that they deem fit.

#### 4.3 Inventory Manager Purchase Orders



The screenshot shows a 'New Purchase Order' page. The left sidebar has icons for Home, Dashboard, Purchase Orders, and New Order. The main area has tabs for 'VENDOR INFORMATION' (selected) and 'ORDER PRODUCTS'. The 'VENDOR INFORMATION' tab shows 'Kellogg' in a dropdown. The 'ORDER PRODUCTS' tab shows a search bar 'Search for products...' and a table with columns 'PRODUCT', 'CONTAINER', 'COST', 'QTY', and 'TOTAL'. The table contains two rows: 'Cheese Itz' (Level 1 Box) with cost \$70.00, quantity 10, and total \$700.00; and 'Eggo' (Level 1 Crate) with cost \$225.00, quantity 15, and total \$3,375.00. The 'ORDER SUMMARY' section shows Subtotal: \$7,697.50, Tax: \$0.00, and Total: \$7,697.50. The 'ORDER DETAILS' section shows Order Date: 2025-04-17 and Order Status: Pending.

Figure 4.3 Inventory manager new purchase order

Figure 4.3 shows that an inventory manager can create a purchase order which is important so that the inventory manager can reorder items that are low stock but will have to wait to get it approved from high ups. They can also view purchase orders to then conduct a return on them shown in figure 4.3(b).

Figure 4.3(b) Inventory Manager Returns

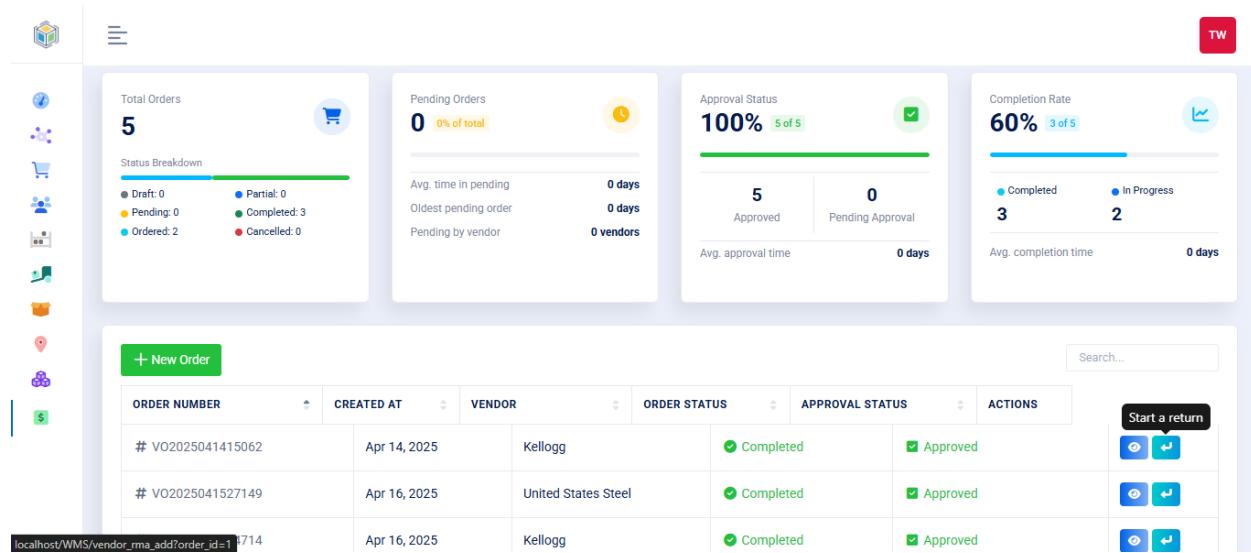


Figure 4.3(b) Inventory manager managing purchase orders

#### 4.4 Inventory Manager Vendors Return

New Vendor Return

Dashboard > Vendor RMAs > New Return

ORDER INFORMATION

Vendor: Kellogg Order Date: Apr 14, 2025 Order Status: Completed

RETURN DETAILS

RMA Number \*: Enter RMA number

RMA Status \*: Draft

Requested Action \*: Select an action

Return Reason \*: Enter reason for return

Shipping Carrier: e.g., FedEx

Tracking Number: Enter tracking number

Additional Notes:

Figure 4.4 Inventory manager vendors return page

This figure displays the information that is needed to start a vendor return along with some general information about the order. The information needed includes RMA number, requested action, return reason and the selected products that will be returned, the user can also include the tracking number and shipping carrier. The requested actions can be a replacement product, a refund or store credit. The products also have a drop down for their conditions which can be used, damaged or defective, the reason for the return can also be specified. After all conditions are met then the user can submit the return which can be shown in figure 5.4(b).

Figure 4.4(b) Inventory Manager Vendor Returns

Products for Return

Check boxes next to products you wish to return and specify quantities.

Select All

PRODUCT	CONTAINER	SHIPPED	RETURN	CONDITION	REASON	NOTES
<input checked="" type="checkbox"/> Cheese Itz	(L1) Box	1	1	Damaged	Incorrect	Notes
<input checked="" type="checkbox"/> Cheese Itz	(L2) Unit	1	1	Used	Incorrect	Notes
<input type="checkbox"/> Eggo	(L1) Crate	1	0	Damaged	Other	Notes
<input type="checkbox"/> Eggo	(L2) Unit	1	0	Damaged	Other	Notes
<input type="checkbox"/> Pop Tarts	(L1) Box	1	0	Damaged	Other	Notes
<input type="checkbox"/> Pop Tarts	(L2) Unit	1	0	Damaged	Other	Notes

Figure 4.4(b)Inventory manager product selection for vendor returns

## 4.5 Inventory Manager Vendor RMAs

Vendor RMAs

Dashboard > Vendor RMAs

TOTAL RMAs: 1

COMPLETED: 0

PENDING: 1

THIS MONTH: 1

Vendor return submitted successfully!

RMA NUMBER	VENDOR	STATUS	REQUESTED ACTION	CREATED AT	ACTIONS
27278686688	Kellogg	Pending	replacement	Apr 17, 2025	

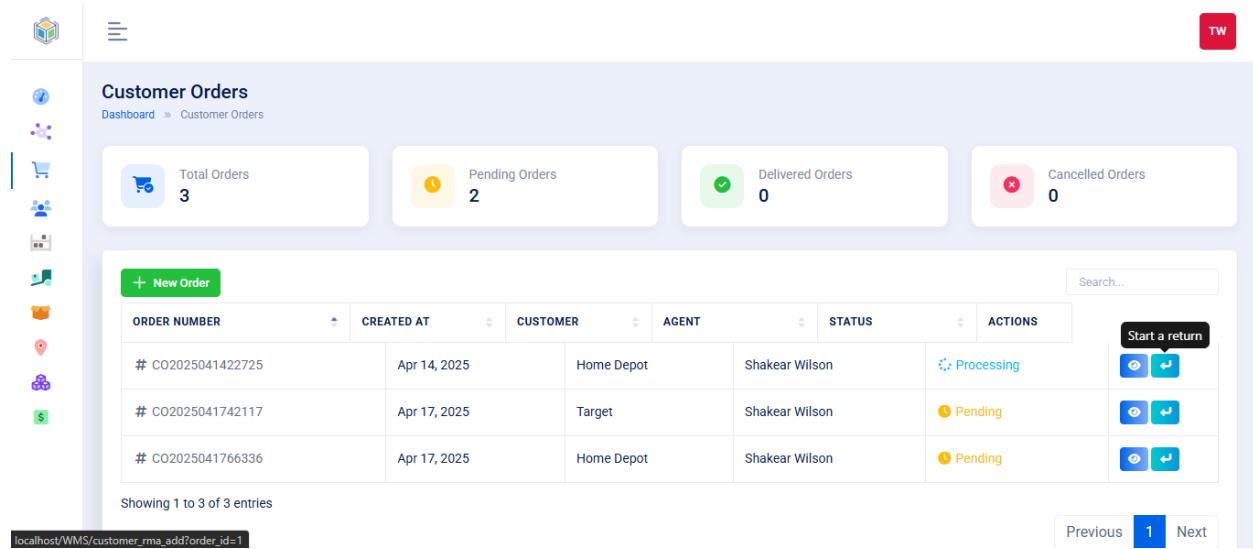
Showing 1 to 1 of 1 entries

Previous **1** Next

Figure 4.5 Inventory manager vendor RMAs page

This figure displays our system's Vendor RMAs which has information about completed, pending and total RMAs that are in the system. On this page the inventory manager can view, edit and delete vendor RMAs.

## 4.6 Inventory Manager Customer Returns



The screenshot shows the 'Customer Orders' page of an inventory management system. At the top, there are four summary boxes: 'Total Orders' (3), 'Pending Orders' (2), 'Delivered Orders' (0), and 'Cancelled Orders' (0). Below these is a table with the following data:

ORDER NUMBER	CREATED AT	CUSTOMER	AGENT	STATUS	ACTIONS
# CO2025041422725	Apr 14, 2025	Home Depot	Shakear Wilson	Processing	 
# CO2025041742117	Apr 17, 2025	Target	Shakear Wilson	Pending	 
# CO2025041766336	Apr 17, 2025	Home Depot	Shakear Wilson	Pending	 

At the bottom of the table, it says 'Showing 1 to 3 of 3 entries'. The URL in the address bar is 'localhost/WMS/customer\_rma\_add?order\_id=1'. The page includes navigation buttons for 'Previous', '1', and 'Next'.

Figure 4.6 Inventory manager customer orders page

This page shows information about customer orders like total orders, pending orders delivered or cancelled orders. In this figure the inventory manager will need to navigate to the customer orders page to start a return for that customer's order. The inventory manager can also view and create customer orders.

## 4.7 Inventory Manager Customer Returns

New Customer Return

Customer: Home Depot Order #: CO2025041422725

View Order

RETURN DETAILS

RMA Number \*: RMA-250417-9508

Return Reason \*: Damaged in Transit

Requested Action \*: Refund

Shipping Carrier: FedEx

Tracking Number: 86626126354

Notes

Figure 4.7 Inventory manager customer returns page

This page is just like the vendor returns page with the information needed being the requested action, return reason and the selected products that will be returned, the user can also include the tracking number and shipping carrier. Some bilipid information is the customer and the customer's order number. The user can also click on view order to view the customer's order that they are conducting a return on. The requested actions can be a replacement product, a refund or store credit. The products also have a drop down for their conditions which can be used, damaged or defective, the reason for the return can also be specified. After all conditions are met then the user can create a customer RMA which can be shown in figure 5.7(b).

#### 4.7(b) Inventory Manager Customer returns

Return Products

	PRODUCT	SKU	ORDER QTY	RETURN QTY	CONDITION	REASON
<input checked="" type="checkbox"/>	Cheese Itz - Retail	9533711312	1	1	Like New	Not as Described
<input type="checkbox"/>	Cheese Itz - Retail	9533711312	1	0	New/Unopened	Defective
<input checked="" type="checkbox"/>	Eggo - Retail	4312646869	1	1	New/Unopened	Wrong Item
<input type="checkbox"/>	Eggo - Retail	4312646869	1	0	New/Unopened	Defective

[Create Customer RMA](#)

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Figure 4.7(b) Inventory Manager customer returns page

## 4.8 Inventory Manager Customer RMAs

Customer RMAs

Dashboard > Customer RMAs

RMA #	CUSTOMER	RETURN REASON	STATUS	CREATED	ACTIONS
RMA-250417-6876	Home Depot	Damaged	Requested	Apr 17, 2025 Tshakear Wilson	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>
RMA-250417-9508	Home Depot	Damaged	Requested	Apr 17, 2025 Tshakear Wilson	<a href="#">View</a> <a href="#">Edit</a> <a href="#">Delete</a>

Showing 1 to 2 of 2 entries

Previous [1](#) Next

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Figure 4.8 Inventory manager customer RMAs page

This figure displays our system's Customer RMAs page which has information on RMA numbers, the customer, the status and the date in which it was created. On this page the inventory manager can view, edit and delete customer RMAs. Currently the return is pending, if the

warehouse wants to approve the order the inventory manager would need to edit the return and set status to approved as shown in figure 4.9.

## 4.9 Inventory Manager RMAs

The screenshot displays a software interface for managing RMAs. The top left section, 'CUSTOMER INFORMATION', shows a customer entry for 'Walmart' with an order number 'CO2025041712988'. The top right section, 'RETURN ITEMS', is titled 'RETURN ITEMS' and shows a table with columns 'PRODUCT', 'SKU', 'QUANTITY', and 'REASON'. A message 'No items found' is displayed. The bottom left section, 'RMA DETAILS', contains the following information:

- RMA Number: RMA-250417-1037
- Return Reason: Damaged
- Requested Action: Credit
- Approved By: Shakear Wilson on Apr 21, 2025
- Shipping Information: FedEx - 86626126354

The bottom right section, 'RMA TIMELINE', shows a vertical timeline of events:

- RMA Created**: Created by Shakear Wilson on Apr 17, 2025 11:03 PM.
- RMA Approved**: Approved by Shakear Wilson on Apr 21, 2025 02:04 AM.
- Shipping Information**: FedEx - 86626126354 on Apr 21, 2025.
- RMA Completed**: All processing completed for this return on Apr 21, 2025 02:04 AM.

Figure 4.9 Inventory manager approving and completing a customer RMA

## Inventory Manager Conclusion

The inventory manager also has access to storage & products pages that include vendor and customer catalog as well as vendor and customer containers. An inventory manager's work will not involve these pages, but they will still need access to them to view their data. They will only be able to view the page and will not be allowed to edit or add or delete these pages, the functionality and structure of these pages will be displayed in other roles.

# Purchasing manager

A purchasing manager in a warehouse plays a critical role in ensuring that the facility is stocked with the right materials, products, and supplies needed to operate efficiently. While they aren't usually involved in the physical handling of inventory on the warehouse floor, their work directly influences everything from inventory levels to vendor relationships, lead times, and costs.

## 5.1 Purchasing manager

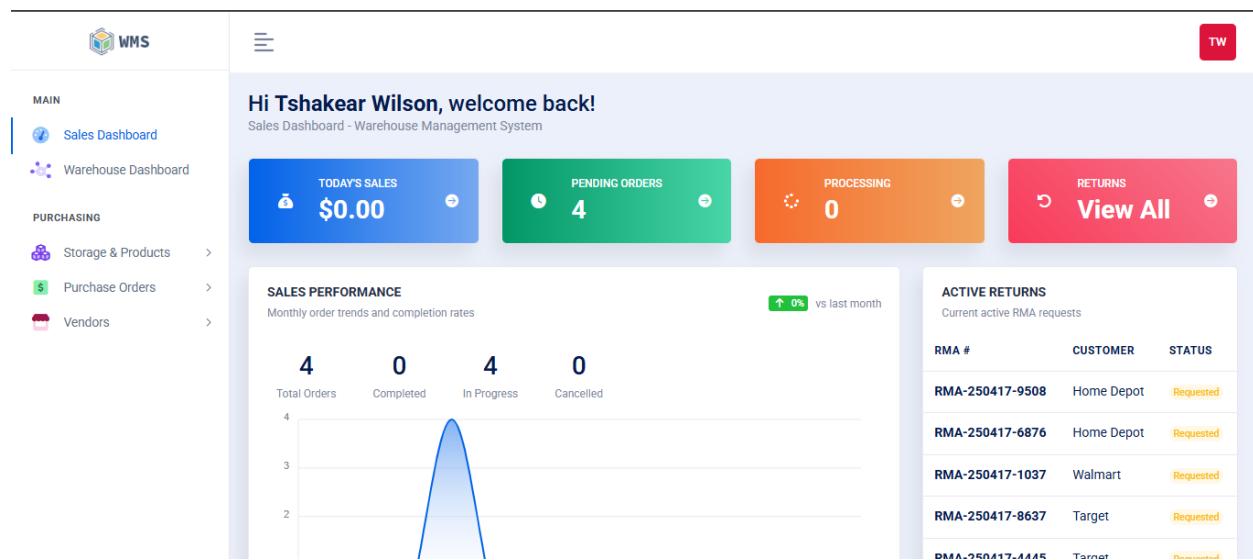


Figure 5.1 Purchasing managers dashboard

Figure 5.1 displays all the pages that a purchasing manager would access to. Purchasing manager's permissions consist of a dashboard, storage & products, purchasing orders and vendor. These are the only pages a purchasing manager would need to effectively help the warehouse.

## 5.2 Purchasing Manager's Vendors

Name  
Ollie's

Address Line 1  
William Penn

Address Line 2

City  
Monroeville

State  
Pennsylvania

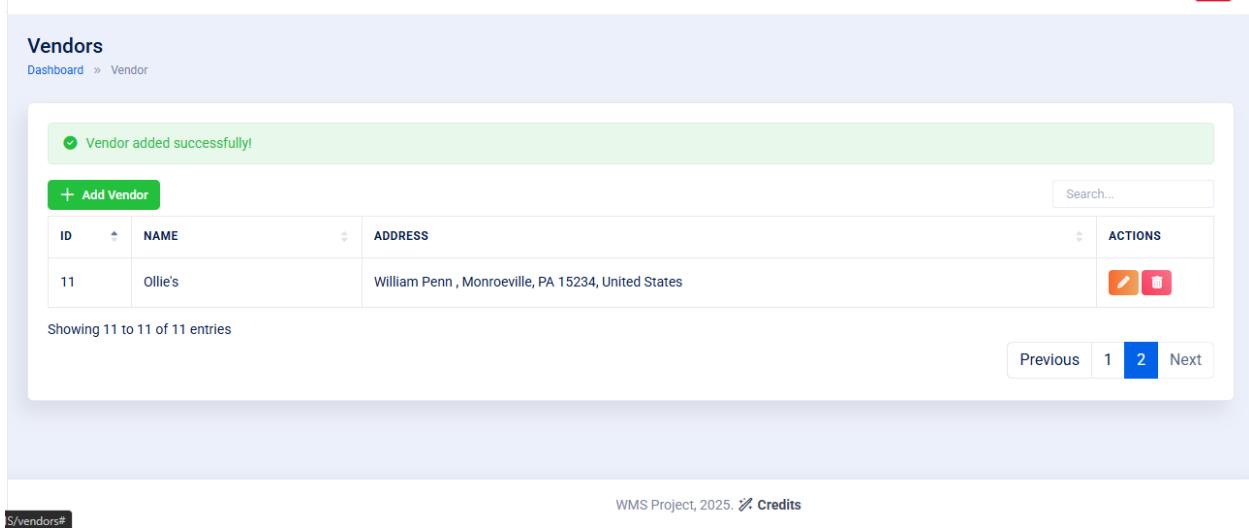
Postal Code  
15234

Country  
United States

Figure 5.2 Purchasing managers add vendor's page

Purchasing managers are responsible for creating new connections with vendors so that the warehouse has someone to order products from. In figure 5.2 the manager would need to enter the following information from the vendor, the name of the vendor, address, city, state, postal code and the country the vendor is from. Once all the data is entered properly and submitted their vendor will then be added to the warehouse vendors, shown in figure 5.2(b).

## 5.2(b) Purchasing Manager Vendors



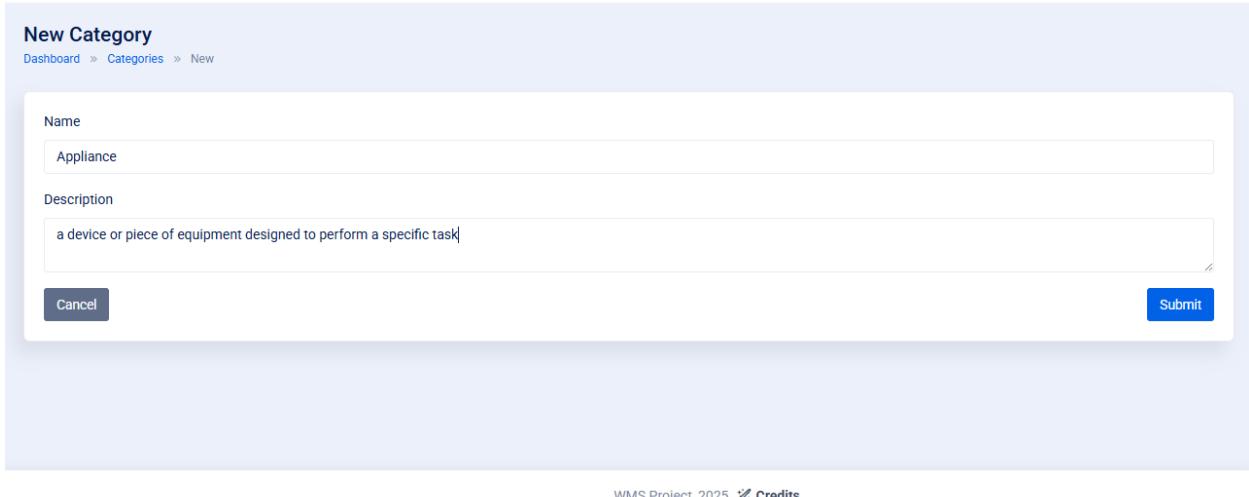
The screenshot shows a table with the following data:

ID	NAME	ADDRESS	ACTIONS
11	Ollie's	William Penn, Monroeville, PA 15234, United States	 

Below the table, the text "Showing 11 to 11 of 11 entries" is displayed. At the bottom right, there are navigation buttons: "Previous", "1", "2" (which is highlighted in blue), and "Next".

Figure 5.2(b) Purchasing manager vendor's page

### 5.3 Categories



The screenshot shows a form with the following fields:

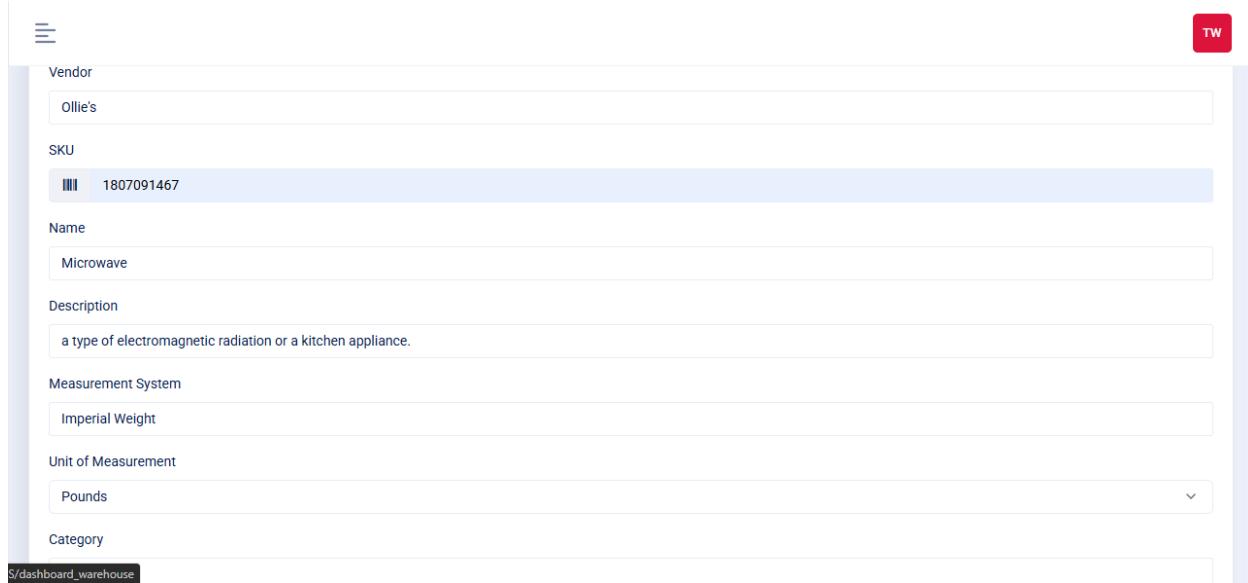
- Name:** A text input field containing "Appliance".
- Description:** A text input field containing "a device or piece of equipment designed to perform a specific task".

At the bottom, there are two buttons: "Cancel" (gray) and "Submit" (blue).

Figure 5.3 Purchasing manager categories add page

Figure 5.3 shows a basic page that requires a name and description to make a category that is going to be assigned to products that the manager buys from its vendors.

## 5.4 Purchasing Manager Vendor Catalog



Vendor  
Ollie's

SKU  
1807091467

Name  
Microwave

Description  
a type of electromagnetic radiation or a kitchen appliance.

Measurement System  
Imperial Weight

Unit of Measurement  
Pounds

Category  
S/dashboard\_warehouse

Figure 5.4 Purchasing manager vendor catalog add page

This page is crucial for a purchasing manager as this is the page that will add new products for the warehouse to order from. As seen in figure 5.4 we need a vendor, SKU, product name, measurements for set product and a category. In this example we'll use the vendor made in figure 5.2(b) and the category from figure 5.3. Once submitted, that product is now a part of vendor products shown in figure 5.4(b).

## 5.4(b) Vendor Products

Vendor Products

Dashboard > Vendor Products

Vendor product added successfully!

+ Add Product Scan Barcode microwave

NAME	SKU	UNIT OF MEASUREMENT	VENDOR NAME	ACTIVE	ACTIONS
?	Microwave	1807091467	Imperial Weight (Pounds)	Ollie's	<input checked="" type="checkbox"/> Active

Showing 1 to 1 of 1 entries (filtered from 18 total entries)

Previous 1 Next

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Figure 5.4(b) Vendor products page

## 5.5 Purchasing Manager Vendor Containers

Product Information

Product \* Eggo

Container Details

Parent Container \* Pallet

Select the container this will be placed inside of

Container Type \* Box

Select the type of container you're creating

Container Description

Enter any additional details about this container

Optional: Add any specific details about this container

Container Hierarchy

- Product Eggo Level 0
- Pallet Level 1
  - New Box Level 2
    - Your new container
    - Qty: 10

The screenshot shows a user interface for adding a new container. On the left, a form is displayed with the following fields:

- A text input field with placeholder text: "Enter any additional details about this container" and a note: "Optional: Add any specific details about this container".
- A section titled "Quantity & Pricing" with two input fields:
  - "Quantity per container \*": Value 10, description "Number of items that fit in this container type".
  - "Purchase price per container \*": Value \$ 82.50, description "Price for selling this container".
- A "Reorder Threshold \*" input field with value 5.
- A "Active Container" toggle switch, which is turned on (blue).
- A note: "Inactive containers won't appear in selection lists".

At the bottom left is a "Cancel" button and at the bottom right is an "Add Container" button.

On the right side, there is a visual representation of a container hierarchy. A green box labeled "New Box" contains the text "Your new container" and "Qty: 10". Above it, a red box labeled "Level 2" contains the text "TW".

Figure 5.5 Purchasing manager vendor containers add page

The purchasing manager now must put products into containers to make the correlation between the product, its price and the container that the warehouse will be receiving. Figure 5.5 shows how to make a product container by requiring the user to input the product, the container type quantity, price and reorder threshold. On the right-hand side is the systems visual container hierarchy to help users visualize the containers. These products containers will be how the warehouse orders products on its purchase order page.

## 5.6 Purchasing Manager Orders

The screenshot shows a user interface for managing purchase orders. On the left, there is a table titled 'Order Items' with columns for Product, Unit Price, Quantity, and Total. The table lists several items including 1/2 Rebar, Steel Duct, Steel Pipe, and Steel Plate, with a total of \$21,550.00. Below the table is a section for 'Order Notes'. On the right, there are two main sections: 'Approval Status' and 'Actions'. The 'Approval Status' section is highlighted in pink and shows a red 'X' icon with the text 'Not Approved'. It also includes a dropdown for 'Select Partner' set to 'Michael James (mJames@gmail.com)' and two checkboxes for 'Send invoice PDF to partner' and 'CC order approver'. The 'Actions' section contains two buttons: a green 'Approve PO' button with a checkmark icon and an orange 'Edit PO' button with a pencil icon.

PRODUCT	UNIT PRICE	QUANTITY	TOTAL
1/2 Rebar (Level 1) Crate	\$1,000.00	10	\$10,000.00
1/2 Rebar (Level 2) Bundle	\$50.00	3	\$150.00
Steel Duct (Level 1) Tray	\$700.00	7	\$4,900.00
Steel Pipe (Level 1) Bundle	\$500.00	5	\$2,500.00
Steel Plate (Level 1) Pallet	\$2,000.00	2	\$4,000.00
Total:			\$21,550.00

Figure 5.6 Purchasing managers invoice approval page

The purchasing manager also deals with purchasing orders which you can refer to figure 4.3 for that page. One that page the user will choose a vendor, pick the products the warehouse needs and the quantity. After all data is entered the order can be submitted and the purchasing manager needs to approve the order. Figure 5.6 shows the purchase orders invoice where the manager can approve the order.

## 5.7 Purchasing Orders

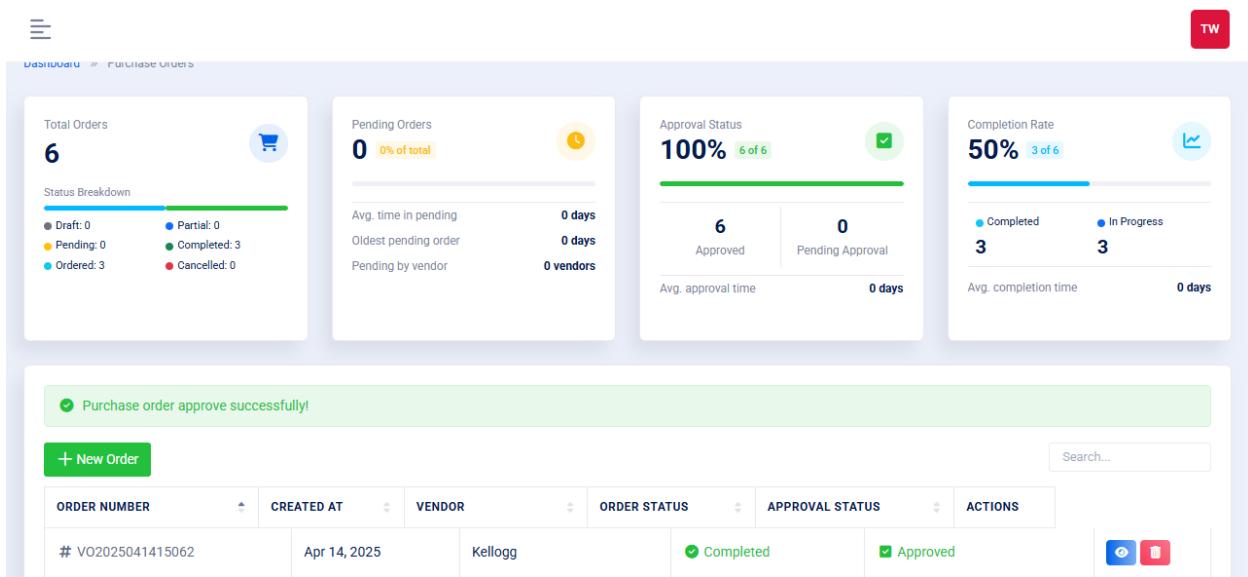


Figure 5.7 Purchasing orders base page

Figure 5.7 is the base page of purchasing orders. This page has special cards to demonstrate the status of orders, total orders, pending orders and completion rate. These are just small amounts of information the user can use to infer what to complete next. This page is how the purchasing manager gets to the purchasing orders invoice to approve orders as shown in figure 5.6.

## Purchasing Manager Conclusion

The purchasing manager also has access to the customer catalog and container which look like the vendor pages, but since a purchasing manager does not directly work with customer products, they can only view the pages.

## Shipping & Receiving Manager

A shipping and receiving manager oversee the critical entry and exit points of goods, essentially managing everything that comes into the warehouse and everything that goes out. Their role is hands-on, fast-paced, and central to keeping warehouse operations running smoothly and on schedule.

## 6.1 Shipping & Receiving Manager

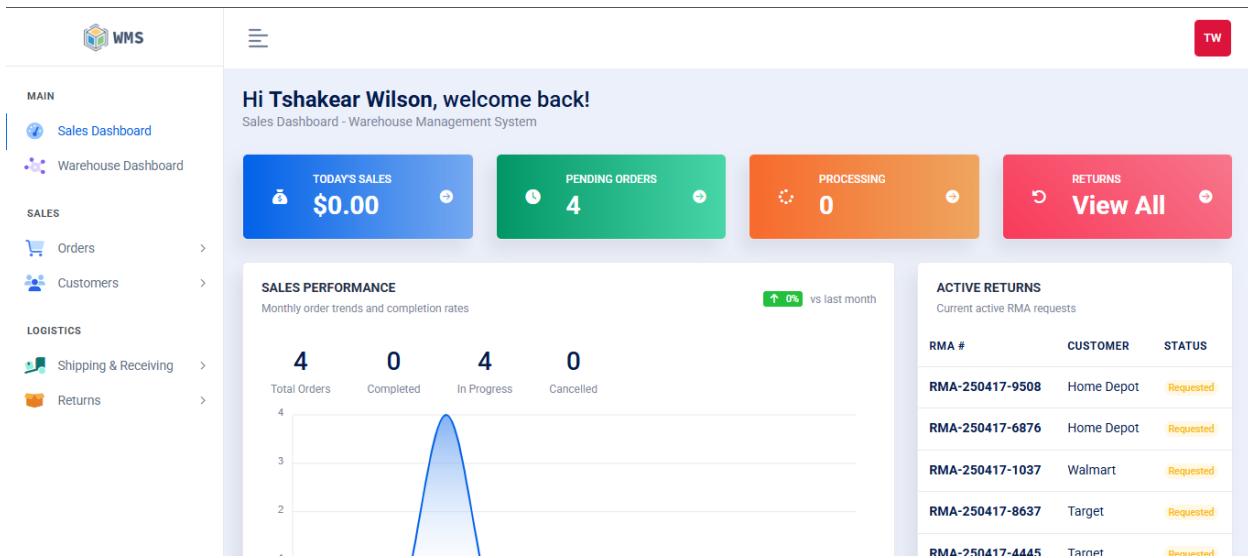


Figure 6.1 Shipping & receiving manager dashboard

A shipping and receiving manager will have access to orders which include customer orders, customers, shipping & receiving being incoming and outgoing shipments and returns. For returns the user can refer to figure 4.4 and 4.7, these figures show both returns. Incoming and outgoing shipments can be seen in figures 3.4(a) and 3.5(a), demonstrating the process of incoming products and the picking and packing process for customer orders.

## 6.2 Customer Orders

**CUSTOMER INFORMATION**

Customer: Target Tax Rate: 6 %

**ORDER PRODUCTS**

PRODUCT	CONTAINER	COST	QTY	TOTAL
1/2 Rebar (Retail)	(Level 1) Crate (Available: 1)	1300.00	1	\$1,300.00
3/4 Rebar (Retail)	(Level 1) Crate (Available: 1)	2000.00	1	\$2,000.00
Pop Tarts - Retail	(Level 1) Box (Available: 2)	55.50	1	\$55.50

**ORDER SUMMARY**

Subtotal: \$3,755.50  
Tax (6%): \$225.33  
Total: \$3,980.83

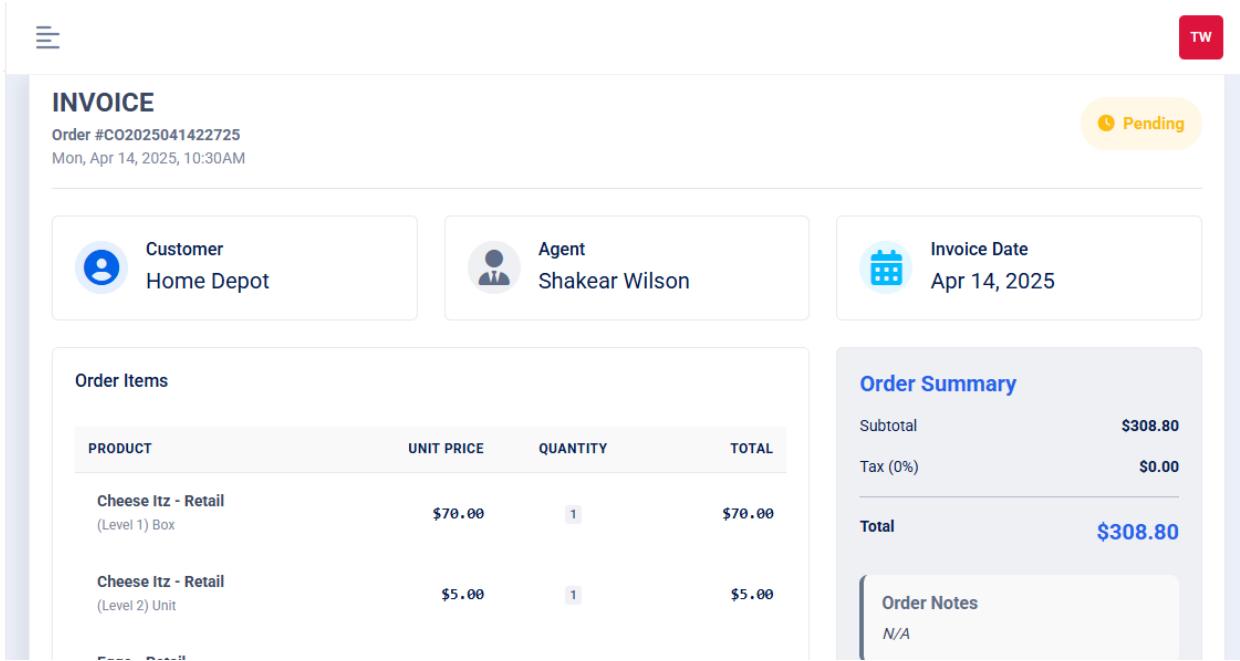
**ORDER DETAILS**

Agent: Shakear Wilson  
Order Date: 2025-04-17  
Order Status: Pending

Figure 6.2 customer orders add page

Figure 6.2 shows how a customer order will be processed. The data needed to complete a customer order is the customer that the manager is sending the products to, the tax rate and selected products that are in the warehouse's inventory that the customer wants, the manager then applies a status to the order and submits it to be picked and packed for shipping.

### 6.3 Customer Invoice



The screenshot shows a customer invoice page with the following details:

- INVOICE**
- Order #CO2025041422725
- Mon, Apr 14, 2025, 10:30AM
- Status: Pending
- Customer:** Home Depot
- Agent:** Shakear Wilson
- Invoice Date:** Apr 14, 2025
- Order Items:**

PRODUCT	UNIT PRICE	QUANTITY	TOTAL
Cheese Itz - Retail (Level 1) Box	\$70.00	1	\$70.00
Cheese Itz - Retail (Level 2) Unit	\$5.00	1	\$5.00
- Order Summary:**

Subtotal	\$308.80
Tax (0%)	\$0.00
<b>Total</b>	<b>\$308.80</b>
- Order Notes:** N/A

Figure 6.3 Customer invoice page

This page holds general information about the customer's order and can be accessed by the shipping & receiving manager. The information on the page consists of the order number, the agent that made the order, the ordered items and an order summary.

## 6.4 Customers



The screenshot shows a form for entering customer information:

- Name: Best Buy
- Address: Mall Circle Drive
- City: Monroeville
- State: Pennsylvania
- Zip Code: 15146
- Email: bestbuyguy@gmail.com
- Agent: (empty field)

Email  
bestbuyguy@gmail.com

Agent  
Shakear Wilson

Country Code  
United States (+1)

Phone Number  
(412) 555-5555

Tax Exempt  
No

Figure 6.4 Customer's add page

Figure 6.4 shows the page where the shipping and receiving manager will create customers that the warehouse will have connections with selling products. The required information for a customer is their name, address, city, state, zip code, valid email address and phone number, an agent and if the business is tax exempt.

## 6.5 My Customers

MAIN

- Sales Dashboard
- Warehouse Dashboard

SALES

- Orders
- Customers
  - My Customers
  - Add Customer
  - Manage Customers

LOGISTICS

- Shipping & Receiving
- Returns

**My Customers**

Dashboard > Customers > My Customers

**Best Buy**  
# EZGAWONNPR  
Not Exempt

bestbuyguy@gmail.com  
(412) 555-5555  
Mall Circle Drive, Monroeville, PA 15146

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Figure 6.5 My customer's page

As shown in figure 6.4 the customer was added and now can be viewed on my customers page or the manage customers' page shown in figure 6.5. This page can be used for the manager to contact their customers about upcoming products and sales.

## Customer service representative

A Customer Service Representative manages order-related concerns, answers questions, and handles product returns. Their main responsibilities are focused on resolving customer problems, guaranteeing accurate order handling, and assisting with customer return authorizations when needed.

### 7.1 Customer Service Representative

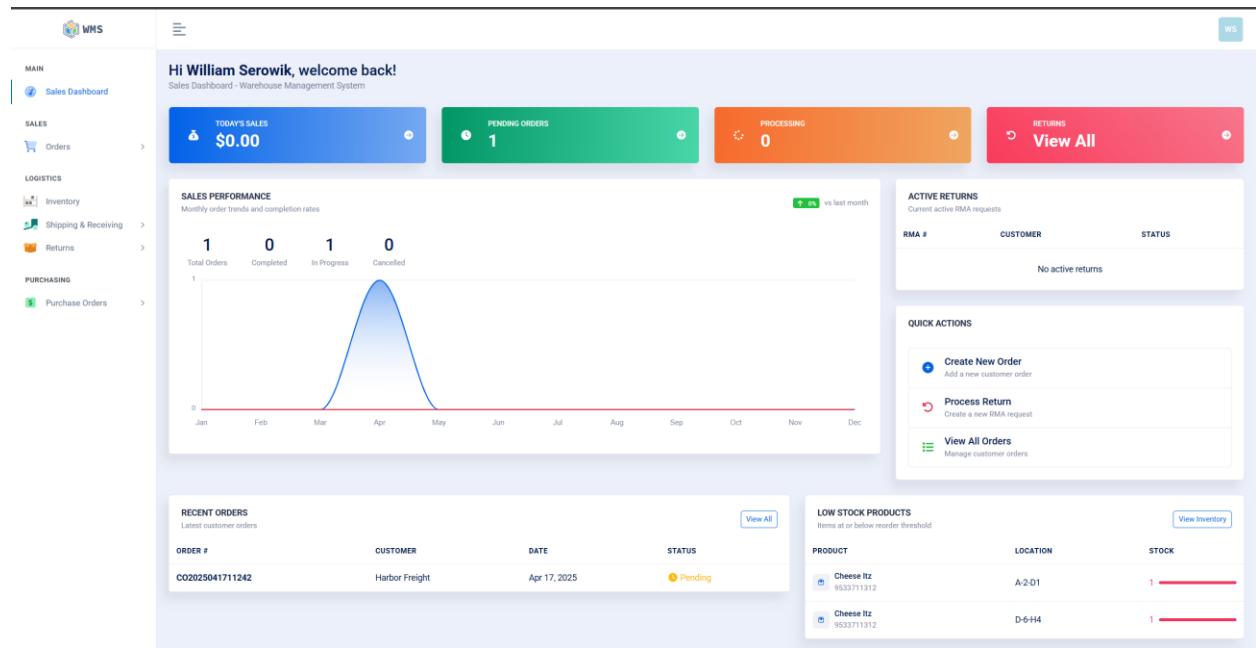


Figure 7.1 Customer representative's dashboard

Customer representatives have access to a limited number of pages necessary to handle customer operations. These include orders, customers, and returns. These permissions allow the Representative to review customer orders, manage return processes, and aid customers without access to the inventory or shipping workflows.

## 7.2 Customer service Representative – Orders

As seen in figure 4.3 and 4.6 the representative can view order details such as status, products, quantities and any shipment details. They can use filters and a search function to quickly locate specific orders. While they cannot edit orders, they can provide updates or report issues to the fulfillment team.

## 7.3 Customer service Representative – Customers

Customers						
Dashboard > Customers						
<a href="#">+ Add Customer</a> <span style="float: right;">Search...</span>						
NAME	EMAIL	PHONE	TAX EXEMPT	AGENT	ACTIONS	
Harbor Freight # U0Z541WP1V	harborfreight@example.com	+1 (123) 123-1231	☒ Not Exempt	WS William Serowik test-william	<a href="#">Edit</a> <a href="#">Delete</a>	
Home Depot # HUL840EXUL	homedepot@example.com	+1 (512) 555-9012	☒ Exempt	TK Ty Kress tkress	<a href="#">Edit</a> <a href="#">Delete</a>	
Lowes # UNY8XG2YGY	lowes@example.com	+1 (217) 555-1234	☒ Exempt	BC Brian Colditz bubbycolditz	<a href="#">Edit</a> <a href="#">Delete</a>	
Target # SKK455RFGK	target@example.com	+44 53245 345634	☒ Not Exempt	WS William Serowik swilliam	<a href="#">Edit</a> <a href="#">Delete</a>	
Walmart # MPZQDTIGKS	walmart@example.com	+1 (720) 555-5678	☒ Not Exempt	TK Ty Kress tkress	<a href="#">Edit</a> <a href="#">Delete</a>	

Showing 1 to 5 of 5 entries

Previous 1 Next

In figure 7.3 This page provides a list of registered customers in the system. It includes relevant details like company name and contact information. CSRs can access a customer's profile to assist with questions, view purchase history, and help start the return process if needed. They only have permissions for data review and not modifications

## 7.4 Customer Service Representative – RMAs (Return Requests)

In figure 4.4 you can see the processes for starting returns on customer orders. The information needed on this page is the product, the quantity, reason, reimbursement type, and additional customer notes. CSRs can either approve, reject, or leave as pending based on the warehouse's return policy. Status changes are logged, and customers can be notified accordingly. The representative plays a key role in closing the feedback loop between the customer and warehouse

### Customer Service Representative Conclusion

The representative does not interact directly with the physical inventory, locations, or purchase orders. Their role is strictly digital, and customer focused, access is limited mostly view only for most data. With some form-based inputs where customer action is required (such as return approvals). This design keeps customer information secure while giving the Representative the tools needed to support cases, returns, and inquiries accurately.

## Sales Agent

A sales agent in a warehouse plays a critical role in the sale of products from the warehouse inventory to customers. While they aren't usually involved in the physical handling of inventory on the warehouse floor, their work directly influences everything from inventory levels to customer relationships, lead times, costs, and earnings.

### 8.1 Sales Agent

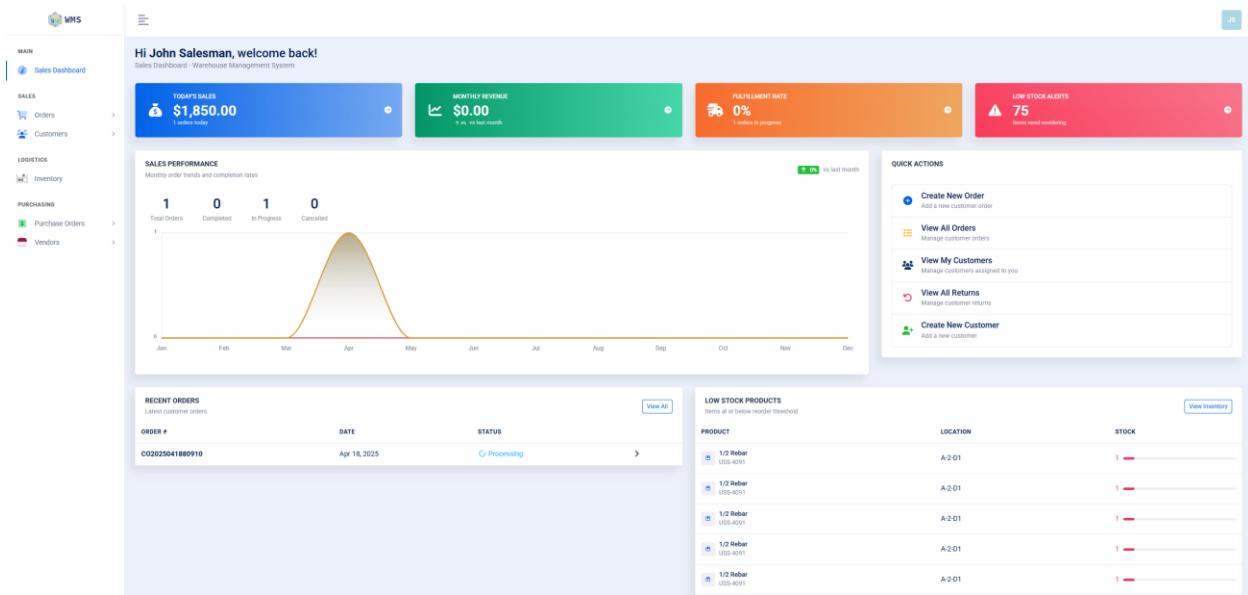


Figure 8.1 Sales Agent Dashboard

Figure 8.1 displays all the core pages that a sales agent would access. Sales agent permissions include the dashboard, orders, customers, limited access to purchasing orders, vendors, and inventory. These tools allow the sales manager to effectively oversee sales activity, manage customers, and ensure product availability. The dashboard provides real-time summaries of key metrics such as active orders, completed sales, customer activity, and inventory alerts. As shown in figure 8.1, the cards display high-level information that helps sales agents prioritize tasks and identify where follow-up may be needed.

## 8.2 Sales Agent's Customers

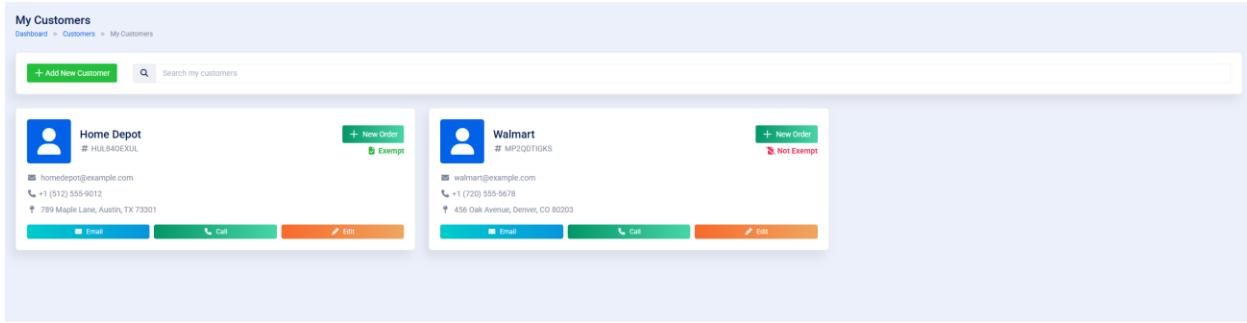


Figure 8.2 Sales Agent My Customers Page

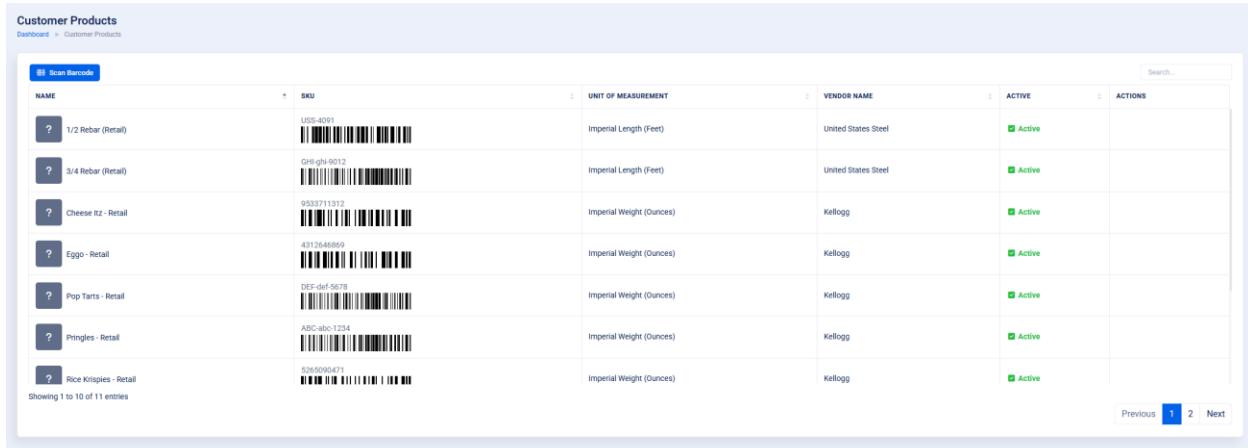
Figure 8.2 shows the view page for customers. This searchable tile list displays key details like contact info, address, and tax status. It helps the sales agent manage their customer relationships and respond to inquiries more effectively.

### 8.2(b) Sales Agent Add Customers

Figure 8.2(b) Sales Agent Add Customers Page

Sales agents are responsible for onboarding new customers. In figure 8.2(b), a new customer can be added by entering fields such as name, email, phone, billing and shipping addresses, and company name. Once submitted, the customer becomes selectable when creating new orders.

## 8.3 Sales Agent Customer Catalog



Customer Products						
Dashboard > Customer Products						
NAME		SKU	UNIT OF MEASUREMENT	VENDOR NAME	ACTIVE	ACTIONS
?	1/2 Rebar (Retail)	USS-4991	Imperial Length (Feet)	United States Steel	<input checked="" type="checkbox"/> Active	
?	3/4 Rebar (Retail)	GRIL-GLS-9012	Imperial Length (Feet)	United States Steel	<input checked="" type="checkbox"/> Active	
?	Cheese Itz - Retail	6103711142	Imperial Weight (Ounces)	Kellogg	<input checked="" type="checkbox"/> Active	
?	Eggo - Retail	4717144089	Imperial Weight (Ounces)	Kellogg	<input checked="" type="checkbox"/> Active	
?	Pop Tarts - Retail	DEF-Def-9879	Imperial Weight (Ounces)	Kellogg	<input checked="" type="checkbox"/> Active	
?	Pringles - Retail	ABC-abc-1234	Imperial Weight (Ounces)	Kellogg	<input checked="" type="checkbox"/> Active	
?	Rice Krispies - Retail	51241990421	Imperial Weight (Ounces)	Kellogg	<input checked="" type="checkbox"/> Active	
Showing 1 to 10 of 11 entries						
Previous		1	2	Next		

Figure 8.3 Sales Agent Customer Catalog Page

Figure 8.3 displays the page that allows the sales agent to browse and review products available to each customer. Products are organized by categories and customer-specific offerings. This helps ensure the sales agent only offers valid SKUs to each client. Inventory availability is also visible on this page

## 8.3(b) Sales Agent Customer Container

**Product Information**

Product \*

Rice Krispies - Retail

**Container Details**

Parent Container \*

Pallet

Select the container this will be placed inside of

Container Type \*

Box

Select the type of container you're creating

Container Description

Enter any additional details about this container

Optional: Add any specific details about this container

**Quantity & Pricing**

Units per container \*

25

Number of units that fit in this container type

Sale price per container \*

\$ 37.00

Price for selling this container

Active Container

Inactive containers won't appear in selection lists

**Container Hierarchy**

```

graph TD
    Product[Product: Rice Krispies - Retail, Level 0] --> Pallet[Pallet: This pallet has multiple boxes on it, Units: 1, Level 1]
    Pallet --> NewBox[New Box: Your new container, Units: 25, Level 2]
  
```

Figure 8.3(b) Sales agent customers container add page

In figure 8.3(b) shows how the sales agent would create new customer containers for customers to order from. These containers will differ from vendor containers as these are the containers that the warehouse will be using to sell products in. The customer then can buy the product based on the containers available for that product.

## 8.4 Sales Agent's Inventory View



Figure 8.4 Sales Agent Inventory View Page

Though sales agents do not control warehouse stock levels, they need to verify inventory availability when creating or reviewing orders. Figure 8.4 shows a read-only view of inventory levels across all products, including quantities on hand and reorder thresholds. This allows for more accurate order placement and customer service.

## 8.5 Sales Agent View Orders

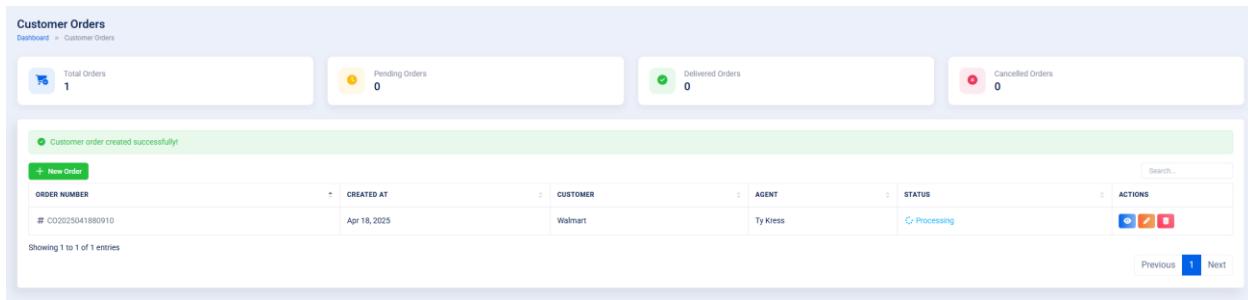
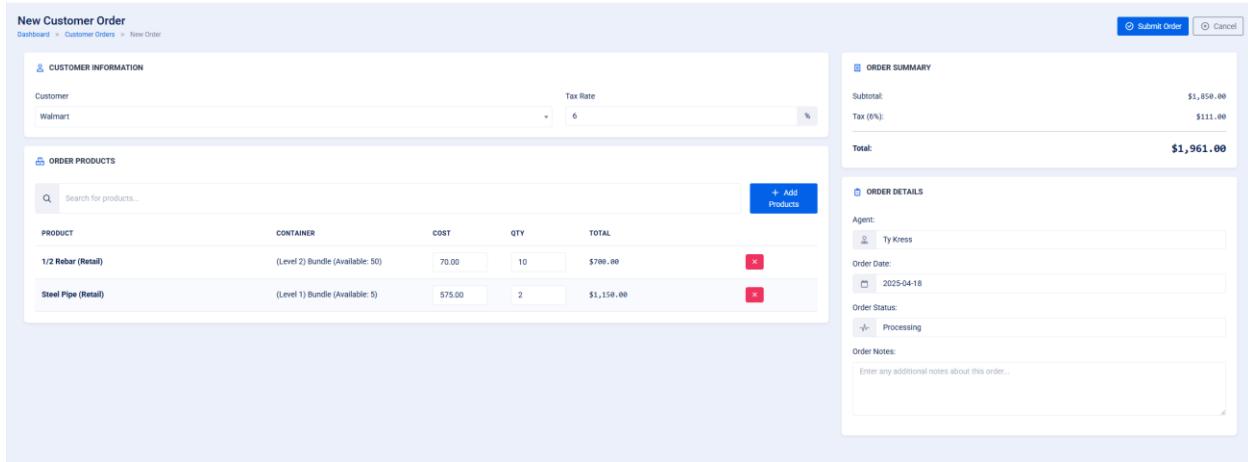


Figure 8.5 Sales Agent View Orders Page

Figure 8.5 displays the sales order view page, which provides a searchable list of all orders created by the agent or team. Sales agents can review statuses, shipping progress, and

order totals. This view helps with follow-ups and customer communication regarding current and past orders.

### 8.5(b) Sales Agent Add Orders



The screenshot shows a web-based application for creating a new customer order. The interface is divided into several sections:

- Customer Information:** A dropdown menu for 'Customer' is set to 'Walmart'. A 'Tax Rate' input field shows '6'.
- Order Products:** A table lists two items:

PRODUCT	CONTAINER	COST	QTY	TOTAL
1/2 Rebar (Retail)	(Level 2) Bundle (Available: 50)	70.00	10	\$700.00
Steel Pipe (Retail)	(Level 1) Bundle (Available: 5)	575.00	2	\$1,150.00
- Order Summary:** Subtotal: \$1,850.00, Tax (6%): \$111.00, Total: \$1,961.00.
- Order Details:** Agent: Ty Kress, Order Date: 2025-04-18, Order Status: Processing, Order Notes: (empty).

Figure 8.5(b) Sales Agent Add Orders Page

Sales agents are responsible for creating and managing sales orders. In figure 8.5(b), the agent selects a customer and chooses from available inventory. The system allows them to enter product quantities, pricing (if applicable), and additional order notes. Once submitted, the order appears in the order history, and its status can be updated as it progresses through fulfillment.

### 8.6 Sales Agent Vendors

Vendors		Search...	
Dashboard > Vendor			
ID	NAME	ADDRESS	ACTIONS
1	3M	3M Center 90th Street, Maplewood, MN 55109, United States	
2	United States Steel	600 Grant Street U.S. Steel Tower, Pittsburgh, PA 15219, United States	
3	PPG Industries	PPG Place 300 Fifth Avenue, Pittsburgh, PA 15222, United States	
4	Kraft Heinz	200 East Randolph Street Suite 300, Chicago, IL 60601, United States	
5	Scotch	3M Center 90th Street, Maplewood, MN 55109, United States	
6	Apple Inc	One Apple Park Way, Cupertino, CA 95014, United States	
7	Kellogg	1 Kellogg Square, Battle Creek, MI 49017, United States	
8	Herman Miller	1000 Furniture Drive, Zeeland, MI 49464, United States	
9	Frito-Lay Inc	One Frito-Lay Drive, Plano, TX 75024, United States	
10	Dell Technologies	One Dell Way, Round Rock, TX 78682, United States	

Figure 8.6 Sales Agent View Vendors Page

Sales agents have read-only access to vendor information. Figure 8.6 displays a basic vendor view showing names, contact details, and associated products. This information can assist in communicating product details to customers or coordinating with purchasing when stock needs to be replenished.

## 8.7 Sales Agent View Purchase Orders

Purchase Orders		Search...			
Dashboard > Purchase Orders					
Total Orders <b>2</b>					
Status Breakdown					
• Draft: 0	• Pending: 0	• Completed: 1			
• Ordered: 1	• Canceled: 0				
Pending Orders <b>0</b> 0% of total					
Avg. time in pending					
Oldest pending order					
Pending by vendor					
0 days	0 days	0 days			
Approved Status <b>100%</b> 2 of 2					
2 Approved	0 Pending Approval	0 days			
Avg. approval time					
Completion Rate <b>50%</b> 1 of 2					
1 Completed	1 In Progress	0 days			
Avg. completion time					
<a href="#">+ New Order</a>		Search...			
ORDER NUMBER	CREATED AT	VENDOR	ORDER STATUS	APPROVAL STATUS	ACTIONS
# V02025041635277	Apr 16, 2025	United States Steel	Completed	Approved	
# V02025041682469	Apr 16, 2025	United States Steel	Ordered	Approved	

Figure 8.7 Sales Agent View Purchase Orders Page

PRODUCT	UNIT PRICE	QUANTITY	TOTAL
Steel Duct (Level 1) Unit	\$700.00	1	\$700.00
Steel Duct (Level 2) Unit	\$25.00	1	\$25.00
	Total:		\$725.00

Figure 8.7(b) Purchase Order Overview

Sales agents can also view purchase orders to track incoming stock and estimated delivery dates. As seen in figure 8.7(b), they can check vendor names, items ordered, quantities, and statuses. This page is for viewing only, helping sales agents manage expectations and update customers accordingly.

## Sales Agent Conclusion

The sales agent is essential to the customer's experience within the warehouse system. With access to customer and order creation tools, and visibility into vendors, inventory, and purchase orders, they can provide fast, accurate service. Their role bridges customer interaction and warehouse readiness, ensuring a smooth sales pipeline.

## Warehouse Manager

The warehouse manager's role includes access to all the permissions and pages of the roles previously mentioned, see figure 9. In addition to the pages laid out previously, the warehouse manager has access to view User's information.

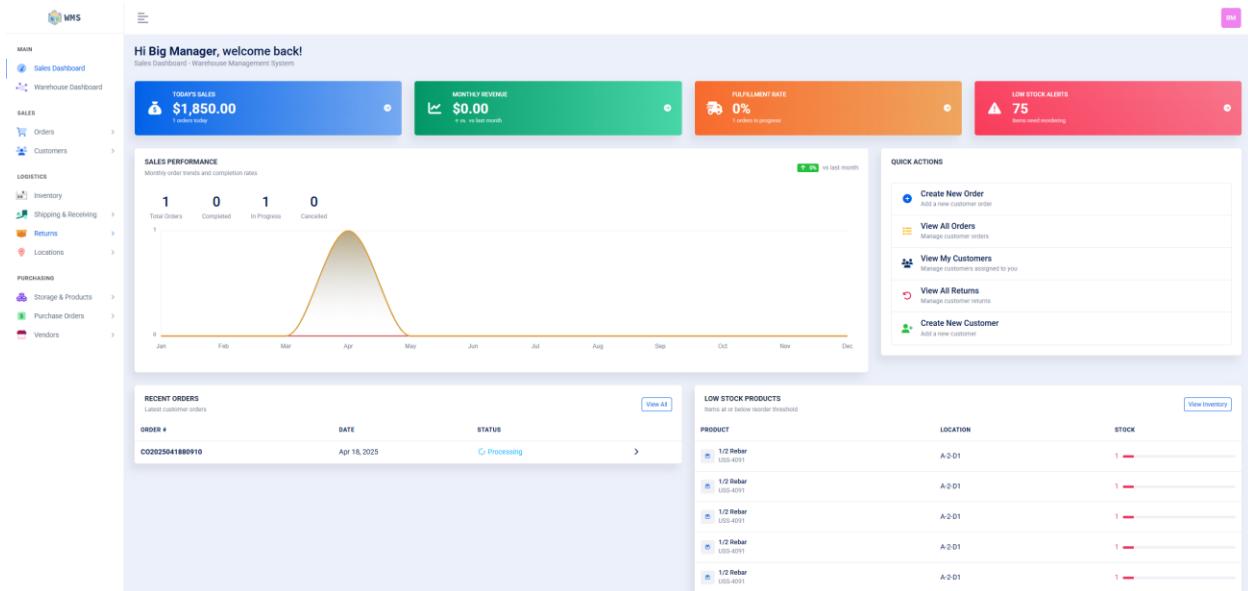


Figure 9 Warehouse Manager Dashboard

## 9.1 Warehouse Manager Users

Users					
ACCOUNT		EMAIL	ROLE	ACCOUNT STATUS	ACTIONS
	Admin User	admin@wms.com	Administrator	Suspended	
	Austin Oertel	austinoertel@hsdhs.org	Administrator	Activated	
	Brian Colditz	bubbycolditz@gmail.com	Administrator	Activated	
	Clayton Sanner	san5024@penwest.edu	Administrator	Activated	
	Shakear Wilson	swagger1793@gmail.com	Administrator	Activated	
	Ty Kress	tykress@gmail.com	Administrator	Activated	
	William Serowik	serowik.william@gmail.com	Administrator	Activated	

Figure 9.1 User View Page

Warehouse managers have read-only access to user accounts within the system. Figure 9.1 shows a list of users and their associated roles. This allows the manager to verify who is

assigned to various responsibilities, helping them coordinate across departments more efficiently. However, user roles and permissions cannot be edited by this role.

## Warehouse Manager Conclusion

The warehouse manager has the broadest operational access in the system, acting as the bridge between roles and ensuring all departments—from sales and customer service to receiving and inventory—operate in sync. With control over locations, audit cycles, and cross-department reports, the warehouse manager is positioned to oversee efficiency, accuracy, and daily execution across the facility.

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## Table of Index / Glossary

**AJAX** - stands for Asynchronous JavaScript and XML. It is a set of web development techniques using various technologies to create dynamic web applications

**Apache** – A widely used open-source web server software that helps deliver web content to users.

**Docker** – A platform that uses containers to run applications in isolated environments, ensuring consistent functionality across systems.

**Location** – A specific storage space in the warehouse defined by rack, bay, level, and position.

**Mobile Login** – A feature that allows warehouse associates to log in to the system using mobile devices for flexibility and efficiency.

**PHP** – The main programming language used in this system to manage server-side scripting and database interaction.

**QR (Quick response)** - a two-dimensional barcode that can be scanned with a smartphone to access information.

**RMA (Return Merchandise Authorization)** – A process that tracks and approves product returns from customers or to vendors.

**RBAC (Role-Based Access Control)** – A system of assigning permissions to users based on their job responsibilities.

**SKU (Stock Keeping Unit)** – A unique code or number used to identify individual products.

## Appendix: Team Details and Individual Contributions

The work shown was distributed among group members who developed the Warehouse Management System with this document being led by Shakear Wilson. This document was started in the final phases of the project and was completed alongside the implementation of the software for our system. Each member of the team completed their section as well as helped to add to other members' sections. The document was created by all the following individual efforts:

Brian was responsible for Project overview and application, system block diagram, Project implementation details, team details along with the user's manual for this document. During the implementation phase of this project Brian was the leader in the group and helped develop web pages, tables for the database, the implementation of functionality and logic in our system, security/error checking web pages, the development of RBAC, educating group members on coding languages being used & best practices, and optimizing code.

Ty was responsible for Project overview and application, system block diagram, user's manual, team details, challenges during implementation and the Glossary for this document. During the implementation phase of this project Ty helped in developing the functionality of many web pages, the implementation of functionality and logic in our system along with handling weekly reports.

William was responsible for Project implementation details, system block diagram, user's manual, challenges during implementation and motivation for this document. During the implementation phase of this project William helped in developing the functionality of many web pages, security/error checking web pages, the implementation of functionality and logic in our system and development of RBAC.

Shakear was responsible for project overview and application system block diagram, use of software engineering principles, difference from design document, comparison to existing similar products user's manual, challenges during implementation, team details and motivation for this document. During the implementation phase of this project Shakear helped in developing the functionality of many web pages, the implementation of functionality and logic in our system.

Other contributions that were coordinated by group members consisted of:

- Discord meetings/discussion
- In person discussion
- Formatting and planning outline of document
- Meeting at Writing Center
- Feedback and Proofreading

## Appendix: Writing Center report

The following notes related to your 4/18/2025 2:30 – 3:00 PM EDT appointment with Addison Wonak:

I went over the manual to see if there were any big changes to be made, or anything else that stood out to me. Mostly I focused on the formatting, adding comments to the paper about its consistency in font sizes, and placements of the headlines. I also looked at the table of contents, and how the outlines of information were spread out in the paper.

## Appendix: Code listing

## Appendix: Workflow Authentication

I, Brian Colditz, agree with the details defined in this document that represent functional requirements of WMS. Also, I agree that the work that was done as stated by this document

Signature:



Date: 4/18/2025

I, Ty Kress, agree with the details defined in this document that represent functional requirements of WMS. Also, I agree that the work that was done as stated by this document

Signature:



Date: 4/18/2025

I, Shakear Wilson, agree with the details defined in this document that represent functional requirements of WMS. Also, I agree that the work that was done as stated by this document

Signature:



Date: 4/18/2025

I, William Serowik, agree with the details defined in this document that represent functional requirements of WMS. Also, I agree that the work that was done as stated by this document

Signature:



Date: 4/18/2025