**System Requirements Document**

**Eagle Wholesale**

**Warehouse Management System**

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# Problem

*This section is a prose description of the problem that is to be solved by the system including background and context for the problem and a clear statement of the main problem(s) to overcome.*

The owner operates a warehouse wholesaler. The warehouse is open Monday through Friday 6AM-6PM. The warehouse buys large quantities of items from manufacturers or other wholesalers and then sells these in single amounts to convenience stores. These include all sorts of non-refrigerated products, including candy, car parts, school supplies, and other convenience items.

The warehouse today is managed and tracked mostly by hand. Items are hand counted, orders are delivered by fax and must be recorded by hand, and all records are kept in virtual or paper spreadsheets. This leads to items often being miscounted and misplaced, as well as makes the process too slow. A lack of precise records also makes organization more difficult, which then leads to more time being spent trying to locate and store items.

The owner would like to have a new computer management system to replace their existing paper records. The owner wants this to improve accuracy of orders, reduce time spent locating, storing, and picking items, improve inventory management and increase customer satisfaction.

# Objectives

*This section is a list of objects that the solution is required to achieve.*

* Reduce the amount of paper used to record data.
* Improve the accuracy of records on the current inventory.
* Improve the speed of storing and picking items.
* Reduce the time spent checking orders.
* Improve the accuracy of when a given supply needs to be restocked.
* Improve customer satisfaction by making it easier to place orders.
* Improve inventory management by tracking where items are stored and storing similar items near each other.
* Reduce labor by allowing price changes to be scheduled ahead of time.
* Improve the accuracy of the minimum and maximum amounts of each product that need to be stored.
* Reduce the number of times and the amount of time that the warehouse is out of stock for an item.

# Existing system

*This section describes how the existing system or process works today. This could include proses and/or swim-lane flowchart.*

Today the system has three main functions: placing supplier orders, filling customer orders, and performing inventory counts.

The current process of ordering from a supplier works as follows: the inventory clerks search through the Excel spreadsheets that track the inventory of the store and look for any items that are below their minimum stock level. The clerks write these items down and find which supplier provides them. They then fill out an order sheet for the supplier and send it by fax to the supplier. Later, the orders arrive. The inventory clerks print off a copy of what was ordered and hand it to the warehouse clerks. The warehouse clerks then receive a copy of the Bill of Lading from the delivery driver. The warehouse clerks count the items delivered by hand and write down any differences on the Bill of Lading and return it to the driver. They then record any differences between the original order and Bill of Lading on the original order and deliver this to the inventory clerks. The inventory clerks record the changes and provide the warehouse clerks with a sheet that notes the location each item should go in. The warehouse clerks then put the items away in the order they are on the list. If there are any items that do not fit in the appropriate slot, the warehouse clerks write this down. When all items are put away, the warehouse clerks return the sheet they marked up to the inventory clerks who then update the inventory spreadsheets.

The current process for filling customer orders works as follows: customers receive catalogs from the warehouse showing what items are available. Customers manually write in an order which items they would like to order with the item number associated with it. The customers then fax these sheets to the warehouse. The inventory clerks pick up the faxes and compare them to their inventory spreadsheets. They then create order sheets listing the items and quantities that will be shipped based on what is shown to be available in the inventory. The inventory clerks then put these orders in boxes for the day that the delivery trucks will go to the customer who placed the order. On the day the order will be shipped, the warehouse clerks collect the order sheet. The clerks walk around the warehouse, picking each item on the list and noting any differences between what was ordered and what is available in the stock. The warehouse clerks then return the order sheets to the inventory clerks, who then create a Bill of Lading for the order. The warehouse clerks place the picked items on palettes and the Bill of Lading in the appropriate loading area. The shipping clerks then check the palettes against the Bill of Lading by hand. After this they shrink-wrap the orders and load them on to the truck with the help of the driver. Finally, the shipping clerks hand the driver the Bill of Lading, who then delivers the items and Bill of Lading to the customer.

The current process for performing an inventory count is as follows: inventory clerks review their spreadsheets and determine which items needed to be counted in the inventory check. They create a sheet with a list of these items, where they are located, and the quantity that is expected to be there. They hand these sheets to warehouse clerks. The warehouse clerks go down the list, finding each item and hand counting how many of them are stored in the provided location. They record any differences and return the paper to the inventory clerks. The inventory clerks then record the new counts into their spreadsheets.

The owner has identified these problems:

* The warehouse is unable to fill client orders.
  + Inventory clerks make errors in ordering products from suppliers.
  + Manual records lead to misplacing items.
* Warehouse clerks make errors in loading supplies to clients.
* Inventory clerks must spend too much time processing orders and updating inventory records.
* Paper records are inefficient to keep updated.
* Warehouse clerks spend too much time checking inventory by hand.
* Warehouse clerks spend too much time trying to locate items they need to pick for a client order.
* Inventory clerks have difficulty keeping track of surplus.

A screenshot of a cell phone

Description automatically generatedExisting Customer Ordering Process Flow Chart

A screenshot of a cell phone

Description automatically generatedExisting Product Ordering Process Flow Chart

# Functional Requirements

*This section is a list of functions the system is required to meet. Each of these functions will be support by a Use Case in a later section.*

* 1. **Maintain Item Information (add, update, delete)**
     1. Description - Item is any good that is sold by the warehouse. The system shall provide a way to add, update and delete Items.
     2. Data Elements
        1. Item Data
           1. Supplier
           2. SKU
           3. Item Name
           4. Warehouse Item Number
           5. Supplier Item Number
           6. Customer Item Number
           7. Description
           8. Bin Location
           9. Slot Location
           10. Case Quantity
           11. Case Cost
           12. Number in Inventory
           13. Minimum Number
           14. Maximum Number
           15. Most Recent Order Date
           16. UPCs
           17. Prices
        2. UPC Data
           1. Item UPC(s)
           2. Case UPC(s)
        3. Price Data
           1. Current price – the price currently being charged
           2. Future price – the price scheduled for the item to change to and the date of the price change
           3. Promotional prices – special discount prices for certain items, such as those on sale
     3. Rationale
        1. The Item data is needed to provide data to clients and to keep records of current inventory
        2. The UPC data is needed to identify items from a barcode
        3. The Price data is needed to identify the amount customers will be charged
  2. **Maintain Customer Information (add, update, delete)**
     1. Description – Customer is any business that purchases items from the warehouse. The system shall provide a way to add, update and delete Customers.
     2. Data Elements
        1. Customer Data
           1. Customer Name
           2. Customer Address
           3. Customer Number
           4. Customer P.O. Number
           5. Authorization Data
        2. Authorization Data
           1. Username
           2. Password
     3. Rationale
        1. The Customer data is needed to verify that a given user can place orders with the warehouse and access order information
        2. Authorization data is needed to confirm the user placing the order is the given Customer
  3. **Maintain Vendor Information (add, update, delete)**
     1. Description – Vendor is any business that the warehouse orders cases of Items from. The system shall provide a way to add, update and delete Vendors.
     2. Data Elements
        1. Vendor Data
           1. Vendor Name
           2. Vendor Address
           3. Vendor Number
           4. Vendor P.O. Number
     3. Rationale
        1. The Vendor data is needed for the warehouse to track where to order items from and track where different supplier orders are placed
  4. **Maintain Warehouse Information (update)**
     1. Description – Warehouse is the establishment that stores and resales Items to customers. The system shall provide a way to update Warehouse information.
     2. Data Elements
        1. Warehouse Data
           1. Warehouse Name
           2. Warehouse Address
           3. Warehouse P.O. Number
           4. Warehouse Phone Number
     3. Rationale
        1. Warehouse data is needed to provide customers and vendors information about the warehouse
  5. **Maintain Supplier Order Information (add, update, delete)**
     1. Description – Supplier Order is a list of items that are to be purchased by the warehouse. The system shall provide a way to add, update and delete Supplier Orders.
     2. Data Elements
        1. Order Data
           1. Supplier Name
           2. Supplier Address
           3. Supplier P.O. Number
           4. Order Placement Date
           5. Item Data
           6. Authorization Information
        2. Item Data
           1. Item Name
           2. Supplier Item Number
           3. Description
           4. Price
           5. Number Ordered
        3. Authorization Data
           1. Authorization Status
           2. Authorized By
           3. Order Date
     3. Rationale
        1. Order data is needed to provide information to the warehouse on when orders were placed with given suppliers
        2. Item data is needed to identify what products are going to be ordered from the supplier
        3. Authorization data is needed to clarify when the order was accepted and who placed the order
  6. **Maintain Customer Order Information (add, update, delete)**
     1. Description – Customer Order is a list of items that are to be sold by the warehouse. The system shall provide a way to add, update and delete Customer Orders.
     2. Data Elements
        1. Order Data
           1. Customer Name
           2. Customer Address
           3. Customer Number
           4. Customer P.O. Number
           5. Order Placement Date
           6. Item Data
           7. Authorization Information
        2. Item Data
           1. Item Name
           2. Description
           3. Current Price
           4. Number Ordered
           5. Bin Location
           6. Slot Location
           7. Number in Inventory
        3. Authorization Data
           1. Authorization Status
           2. Authorized By
           3. Order Date
     3. Rationale
        1. The Order data is needed to provide information to the warehouse on who has placed an order and on what date
        2. The Item data is needed to identify what products need to be picked from the inventory and in what quantities
        3. Authorization Information is needed to clarify when the order was accepted and who took the order
  7. **Maintain Inventory Information (update)**
     1. Description – Inventory is a list of all the items contained within the warehouse. The system shall provide a way to update its Inventory.
     2. Data Elements
        1. Item Data
           1. Item Name
           2. Warehouse Item Number
           3. Description
           4. Bin Location
           5. Slot Location
           6. Case Quantity
           7. Number in Inventory
           8. Minimum Number
           9. Maximum Number
           10. Most Recent Order Date
           11. UPCs
        2. UPC Data
           1. Item UPC(s)
           2. Case UPC(s)
     3. Rationale
        1. The Item data is needed to provide data to warehouse clerks and to keep records of current inventory
        2. The UPC data is needed to identify items from a barcode
  8. **Maintain Route Information (add, update, delete)**
     1. Description - Route is a list of locations to which a truck will deliver orders. The system shall provide a way to add, update and delete Routes.
     2. Data Elements
        1. Location Data
           1. Store Name
           2. Store Address
           3. Store Order
        2. Route Data
           1. Directions to Location
           2. Estimated Arrival Time
     3. Rationale
        1. Location data is needed to provide the driver more information on what needs delivered
        2. Route data is needed to provide the driver directions on how to get to the various stores and track how long the drive will take
  9. **Maintain Employee Information (add, update, delete)**
     1. Description - Employee is any individual that is employed by the warehouse. The system shall provide a way to add, update and delete Employees.
     2. Data Elements
        1. Order data
           1. Employee Name
           2. Employee Address
           3. Employee Phone Number
           4. Employee Position
           5. Authorization Data
        2. Authorization data
           1. Username
           2. Password
     3. Rationale
        1. Employee data is needed to verify that a user can access certain functions, such as updating item information
  10. **Automatically Generate Supplier Orders**
      1. Description - Supplier Order is a list of items that are to be purchased by the warehouse. The system shall provide a way generate orders for suppliers based on what is low in stock.
      2. Data Elements
         1. Order Data
            1. Supplier Name
            2. Supplier Address
            3. Supplier P.O. Number
            4. Order Placement Date
            5. Item Data
            6. Authorization Information
         2. Item Data
            1. Item Name
            2. Supplier Item Number
            3. Description
            4. Price
            5. Number Ordered
         3. Authorization Data
            1. Authorization Status
            2. Authorized By
            3. Order Date
      3. Operational Flow
         1. Normal Operations
            1. At the beginning of the week, the system checks what items in Inventory are below their minimum stock
            2. The system generates supplier orders for each supplier that sells the items low on stock
            3. Review the generated orders and make any necessary edits
            4. Send the orders to the suppliers
      4. Rationale
         1. The warehouse needs a way to generate supplier orders to reduce the workload on inventory clerks
  11. **Receive Supplier Orders**
      1. Description – Supplier Order is a list of items that are to be purchased by the warehouse. The system shall provide a way to help warehouse clerks check in an Order.
      2. Data Elements
         1. Bill of Lading Data
            1. Driver Name
            2. Shipment Number
            3. Item Data
         2. Item Data
            1. Item Name
            2. Description
            3. Current Price
            4. Number Ordered
            5. Number Shipped
            6. Number Received
      3. Operational Flow
         1. Normal Operations
            1. Shipment arrives from a supplier
            2. Use the system to check items in quickly
            3. The checked items are added to running list
            4. The system updates Order data with the changes in item quantities
         2. Exceptions
            1. A single item cannot be checked multiple times to be added to the list
      4. Rationale
         1. The warehouse needs a way to reduce the amount of time spent checking items that were received from a supplier
  12. **Put Away Supplier Orders**
      1. Description - Supplier Order is a list of items that are to be purchased by the warehouse. The system shall provide a way for to help warehouse clerks put away items from orders quickly.
      2. Data Elements
         1. Item Data
            1. Item Name
            2. Description
            3. Number Ordered
            4. Location Data
         2. Location Data
            1. Slot Location
            2. Bin Location
      3. Operational Flow
         1. Normal Operations
            1. The system accesses the list of items brought by the shipment
            2. The system automatically generates an ordered list of items to put away based on the fastest route
            3. The warehouse clerk puts the items away in the given order
         2. Exceptions
            1. The slots provided do not have enough room to store the given items

The warehouse clerk locates an empty location to store the items and records it into the system

The system adds the new location to its Inventory information

* + 1. Rationale
       1. The warehouse clerks need a way to put items away more efficiently
  1. **Take Customer Orders**
     1. Description – Customer Order is a list of items that are to be purchased from the warehouse. The system shall provide a way for customers to place orders quickly.
     2. Data Elements
        1. Order data
           1. Customer Name
           2. Customer Address
           3. Customer Number
           4. Customer P.O. Number
           5. Order Placement Date
           6. Item Data
        2. Item data
           1. Item Name
           2. Warehouse Item Number
           3. Description
           4. Current Price
           5. Number Ordered
     3. Operational Flow
        1. Normal Operations
           1. Head to order website
           2. Sign in using customer information
           3. Browse through catalog of items
           4. Add items in selected quantities to the order
           5. Finalize the order
           6. System displays order information and offers to print it off for the customer
        2. Exceptions
           1. New customers must apply for a customer number
           2. New customers are then verified and given a customer number
     4. Rationale
        1. The customer needs a way to place an order that is quick and convenient
  2. **Pick Customer Orders**
     1. Description - Customer Order is a list of items that are to be purchased from the warehouse. The system shall provide a way for warehouse clerks to pick orders quickly.
     2. Data Elements
        1. Item Data
           1. Item Name
           2. Description
           3. Number Ordered
           4. Location Data
        2. Location Data
           1. Slot Location
           2. Bin Location
     3. Operational Flow
        1. Normal Operations
           1. The system accesses the list of items for the order
           2. The system automatically generates an ordered list of items to pick based on the fastest route
           3. The warehouse clerk picks the items in the given order
        2. Exceptions
           1. The slots provided do not have enough items to fill the order

The warehouse clerk marks it in the system

The system marks the item as needing to be ordered and updates the Inventory

* + - * 1. The slots provided do not have the items they are marked with

The warehouse clerk marks it in the system

The system removes this storage location from the Inventory

* + 1. Rationale
       1. The warehouse clerks need a way to pick items more efficiently
  1. **Ship Customer Orders**
     1. Description – Customer Order is a list of items that are to be purchased from the warehouse. The system shall provide a way to help shipping clerks confirm Customer Orders for shipping.
     2. Data Elements
        1. Bill of Lading Data
           1. Driver Name
           2. Shipment Number
           3. Item Data
        2. Item Data
           1. Item Name
           2. Description
           3. Current Price
           4. Number Ordered
           5. Number Shipped
           6. Number Received
     3. Operational Flow
        1. Normal Operations
           1. Shipment is placed in load area for shipping clerk
           2. The system helps the shipping clerk in confirming that the Bill of Lading matches what is on the palettes
           3. The shipping clerk confirms the shipment and shrink-wraps and loads the shipment
        2. Exceptions
           1. There is an error in the Bill of Lading

The shipping clerk notes the error

The system updates the Bill of Lading according to the new information

* + 1. Rationale
       1. The warehouse needs a way to reduce the amount of time spent confirming shipments
  1. **Deliver Customer Orders**
     1. Description - Customer Order is a list of items that are to be purchased from the warehouse. The system shall provide a way to help drivers deliver Customer Orders.
     2. Data Elements
        1. Location Data
           1. Store Name
           2. Store Address
           3. Store Order
        2. Route Data
           1. Directions to Location
           2. Estimated Arrival Time
     3. Operational Flow
        1. Normal Operations
           1. Sign into the system
           2. Select the current date
           3. The system displays route information to help the driver
           4. The driver uses the provided information to deliver the Order
     4. Rationale
        1. The driver needs a way to deliver orders more effectively

* 1. **Inventory Count**
     1. Description - Inventory Count is a method of checking the real inventory of items and comparing it to the inventory records. The system shall help warehouse clerks perform an Inventory Count.
     2. Data Elements
        1. Item Data
           1. Item Name
           2. Warehouse Item Number
           3. Description
           4. Bin Location
           5. Slot Location
           6. Number in Inventory
           7. UPCs
        2. UPC Data
           1. Item UPC(s)
           2. Case UPC(s)
     3. Operational Flow
        1. Normal Operations
           1. Sign into the system
           2. Start an Inventory Count for a given set of items
           3. The system automatically generates an ordered list of items to check based on the fastest route
           4. Use the system to count items in quickly
           5. The system updates the Inventory with the counted number
     4. Rationale
        1. The warehouse needs a way to confirm that their inventory numbers are accurate
  2. **Control access to all management functions (maintenance and reports)**
     1. The system shall provide control to functions base on the identity of the user and the role of the user.
     2. Operational Flow
        1. Identify specific user
        2. Ensure the user login in is who they say they are (single password is sufficient)
     3. Rationale
        1. Only certain users have permission to do certain functions.

# Non-Functional Requirements

*This section is a list of non-functional requirements the system is required to meet. This would include: usability, reliability, performance, supportability, interface, training, operations, and legal.*

* Usability
  + The system shall be easy for both clients and inventory clerks to use so that orders and inventory can be updated quickly.
    - An inventory clerk should be able to add or remove an item from the system in under a minute.
    - An inventory clerk should be able to update the information of an item in under 30 seconds.
    - An inventory clerk should be able to use the system with only thirty minutes of training.
    - Customers should be able to use the system without training
* Reliability
  + The system shall be highly reliable since, if the system is not available, customers cannot place orders and inventory cannot be updated.
    - The system should be available 99.99% of the warehouse open hours.
* Performance
  + All updates to information shall be performed in under 1 second.
* Supportability
  + The system shall automatically install updates received from the software development team.
* Interface
  + The system shall support interfacing with supplier’s online order submission software.
  + The system shall support interfacing with customer’s store software.
* Training
  + The system shall not require training for customer use and should only require thirty minutes of training for clerk use.
* Operations
  + The system shall be operable by inventory clerks. These users have minimal computer experience.
* Legal
  + The system shall meet legal requirements regarding trade across state borders.

# Target Environment

*This section describes the required system-operating environment if there is one.*

The system-operating environment must be able to interface with some form of mobile device, as well as some form of barcode scanner, based on the client’s suggestions.

# Use Cases

*This section describes the Use Cases that support the functional requirements. Each Use Case includes name, initiating actor, participating actors, diagram, list and details of each scenario.*

This is a list of use cases identified for this system. The definition of each use case follows.

* 1. Log in
  2. Log out
  3. Add Item
  4. Update Item
  5. Delete Item
  6. Add Customer
  7. Update Customer
  8. Remove Customer
  9. Add Vendor
  10. Update Vendor
  11. Remove Vendor
  12. Update Warehouse
  13. Add Supplier Order
  14. Update Supplier Order
  15. Delete Supplier Order
  16. Add Customer Order
  17. Update Customer Order
  18. Delete Customer Order
  19. Update Inventory
  20. Add Routes
  21. Update Routes
  22. Remove Routes
  23. Add Employee
  24. Update Employee
  25. Remove Employee
  26. Create Supplier Orders
      1. Generate Supplier Orders
      2. Review Supplier Orders
  27. Receive Supplier Orders
  28. Put Away Supplier Orders
  29. Take Customer Orders
  30. Pick Customer Orders
  31. Ship Customer Orders
  32. Deliver Customer Orders
  33. Perform Inventory Count

**System Authorization Use Cases**

1. Log In
2. Log Out

A close up of a logo

Description automatically generated

|  |  |
| --- | --- |
| **Name** | **Log in** |
| **Description** | Grant a user access as an authorized user. |
| **Actor(s)** | User |
| **Flow of Events** | 1. User wants to use the system  2. User selects to Log in  3. User enters credentials  4. System tests the credentials and grant access or shows and error |
| **Special Requirements** | Require credentials (username and password) |
| **Pre-Conditions** | User has previously been set up as a user in the system. |
| **Post-Conditions** | User is authorized to the system if requirements and exceptions are met |
| **Exceptions** | Credentials do not match what is in the system |

|  |  |
| --- | --- |
| **Name** | **Log out** |
| **Description** | Remove a user access as an authorized user. |
| **Actor(s)** | User |
| **Flow of Events** | 1. User wants to end using the system  2. User selects to log out  3. System logs the User out |
| **Special Requirements** | None |
| **Pre-Conditions** | User is currently authorized to the system |
| **Post-Conditions** | No user is currently authorized if requirements and exceptions are met |
| **Exceptions** | There must be a user authorized before a use can be logged out |

**Item Maintenance Use Cases**

1. Add Item
2. Update Item
3. Delete Item

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Description automatically generated

|  |  |
| --- | --- |
| **Name** | **Add Item** |
| **Description** | Add the information for a new item to the system. This happens when new items are planned to be ordered from a supplier. For all the items, descriptive information, UPCs and prices should be added. |
| **Actor(s)** | Inventory Clerk |
| **Flow of Events** | 1. A new item is ordered  2. Clerk selects to add a new item  3. Clerk enters information about the item  4. Clerk selects to save the item |
| **Special Requirements** | Require item number and description |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Item is added to system if requirements are met and there are not special exceptions |
| **Exceptions** | Do not add if item number exists in system  Do not add UPC if UPC exists in system |

|  |  |
| --- | --- |
| **Name** | **Update Item** |
| **Description** | Update the information for an existing item in the system. This happens when a correction is required, a new UPC is discovered or pricing has changed. |
| **Actor(s)** | Inventory Clerk |
| **Flow of Events** | 1. A change in item information is detected  2. Clerk selects to update an item  3. Clerk selects item to update  4. Clerk enters information about the item  5. Clerk selects to save the item |
| **Special Requirements** | Require item number and description |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Item is updated in system if requirements and exceptions are met |
| **Exceptions** | Do not update if item number exists in system  Do not update UPC if UPC exists in system |

|  |  |
| --- | --- |
| **Name** | **Delete Item** |
| **Description** | Delete the information for an existing item in the system. This happens when an item is entered in error. |
| **Actor(s)** | Inventory Clerk |
| **Flow of Events** | 1. An item is identified that needs deletion  2. Clerk selects to delete an item  3. Clerk selects item to delete  4. Clerk deletes an item |
| **Special Requirements** | None |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Item is deleted from system if requirements are met |
| **Exceptions** | None |

**Customer Maintenance Use Cases**

1. Add Customer
2. Update Customer
3. Delete Customer

A close up of a logo

Description automatically generated

|  |  |
| --- | --- |
| **Name** | **Add Customer** |
| **Description** | Add the information for a new customer to the system. This happens when a convenience store applies to purchase items from the warehouse. For all customers, customer name, address, and number must be added. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A new customer has applied  2. Manager selects to add a new customer  3. Manager enters information about the customer  4. Manager selects to save the customer |
| **Special Requirements** | Require customer name, address and number |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Customer is added to system if requirements are met and there are not special exceptions |
| **Exceptions** | Do not add if customer number exists in system  Do not add if customer name exists in system |

|  |  |
| --- | --- |
| **Name** | **Update Customer** |
| **Description** | Update the information for an existing customer in the system. This happens when a correction is required, such as a customer changing their name, address, or other contact information. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A change in customer information is detected  2. Manager selects to update a customer  3. Manager selects customer to update  4. Manager enters information about the customer  5. Manager selects to save the customer |
| **Special Requirements** | Require customer name, address and number |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Customer is updated in system if requirements and exceptions are met |
| **Exceptions** | Do not update if customer number exists in system  Do not update if customer name exists in system |

|  |  |
| --- | --- |
| **Name** | **Delete Customer** |
| **Description** | Delete the information for an existing customer in the system. This happens when a customer decides to no longer be a part of the warehouse system. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A customer is identified that needs deletion  2. Manager selects to delete a customer  3. Manager selects customer to delete  4. Manager deletes a customer |
| **Special Requirements** | None |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Customer is deleted from system if requirements are met |
| **Exceptions** | None |

**Vendor Maintenance Use Cases**

1. Add Vendor
2. Update Vendor
3. Delete Vendor

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|  |  |
| --- | --- |
| **Name** | **Add Vendor** |
| **Description** | Add the information for a new vendor to the system. This happens when the warehouse begins buying products from a new retailer. For all vendors, vendor name, address, and number must be added. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A new vendor has been selected  2. Manager selects to add a new vendor  3. Manager enters information about the vendor  4. Manager selects to save the vendor |
| **Special Requirements** | Require vendor name, address and number |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Vendor is added to system if requirements are met and there are not special exceptions |
| **Exceptions** | Do not add if vendor number exists in system  Do not add if vendor name exists in system |

|  |  |
| --- | --- |
| **Name** | **Update Vendor** |
| **Description** | Update the information for an existing vendor in the system. This happens when a correction is required, such as a vendor changing their name, address, or other contact information. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A change in vendor information is detected  2. Manager selects to update a vendor  3. Manager selects vendor to update  4. Manager enters information about the vendor  5. Manager selects to save the vendor |
| **Special Requirements** | Require vendor name, address and number |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Vendor is updated in system if requirements and exceptions are met |
| **Exceptions** | Do not update if vendor number exists in system  Do not update if vendor name exists in system |

|  |  |
| --- | --- |
| **Name** | **Delete Vendor** |
| **Description** | Delete the information for an existing vendor in the system. This happens when the warehouse decides to stop ordering products from a vendor. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A vendor is identified that needs deletion  2. Manager selects to delete a vendor  3. Manager selects vendor to delete  4. Manager deletes a vendor |
| **Special Requirements** | None |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Vendor is deleted from system if requirements are met |
| **Exceptions** | None |

**Warehouse Maintenance Use Cases**

1. Update Warehouse

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|  |  |
| --- | --- |
| **Name** | **Update Customer** |
| **Description** | Update the information for the warehouse. This happens when a correction is required, such as the warehouse changing their name, address, or other contact information. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A change in warehouse information is detected  2. Manager selects to update the warehouse  3. Manager enters information about the warehouse  4. Manager selects to save the warehouse |
| **Special Requirements** | Require warehouse name and address |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Warehouse is updated in system if requirements are met |
| **Exceptions** | None |

**Supplier Order Maintenance Use Cases**

1. Add Supplier Order
2. Update Supplier Order
3. Delete Supplier Order

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|  |  |
| --- | --- |
| **Name** | **Add Supplier Order** |
| **Description** | Add the information for a new supplier order to the system. This happens when the warehouse needs to order more items besides those that the system automatically creates orders for. For all orders, warehouse information and items ordered should be added. |
| **Actor(s)** | Inventory Clerk |
| **Flow of Events** | 1. A need for a supplier order is detected  2. Clerk selects to add a new supplier order  3. Clerk enters information about the supplier order  4. Clerk selects to save the supplier order |
| **Special Requirements** | Require warehouse name and number |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Supplier Order is added to system if requirements are met |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Update Supplier Order** |
| **Description** | Update the information for an existing supplier order in the system. This happens when a correction is required. |
| **Actor(s)** | Inventory Clerk |
| **Flow of Events** | 1. A change in supplier order information is detected  2. Clerk selects to update a supplier order  3. Clerk selects supplier order to update  4. Clerk enters information about the supplier order  5. Clerk selects to save the supplier order |
| **Special Requirements** | Require warehouse name and number |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Supplier Order is updated in system if requirements are met |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Delete Supplier Order** |
| **Description** | Delete the information for an existing supplier order in the system. This happens when a supplier order is entered in error or a supplier order is canceled. |
| **Actor(s)** | Inventory Clerk |
| **Flow of Events** | 1. A supplier order is identified that needs deletion  2. Clerk selects to delete a supplier order  3. Clerk selects supplier order to delete  4. Clerk deletes a supplier order |
| **Special Requirements** | None |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Supplier Order is deleted from system if requirements are met |
| **Exceptions** | None |

**Customer Order Maintenance Use Cases**

1. Add Customer Order
2. Update Customer Order
3. Delete Customer Order

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|  |  |
| --- | --- |
| **Name** | **Add Customer Order** |
| **Description** | Add the information for a new customer order to the system. This happens when the warehouse receives an order from a customer that is not through the online submission system. For all orders, customer information and items ordered should be added. |
| **Actor(s)** | Inventory Clerk |
| **Flow of Events** | 1. A need for a customer order is detected  2. Clerk selects to add a new customer order  3. Clerk enters information about the customer order  4. Clerk selects to save the customer order |
| **Special Requirements** | Require customer name and number |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Customer Order is added to system if requirements are met |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Update Customer Order** |
| **Description** | Update the information for an existing customer order in the system. This happens when a correction is required. |
| **Actor(s)** | Inventory Clerk |
| **Flow of Events** | 1. A change in customer order information is detected  2. Clerk selects to update a customer order  3. Clerk selects customer order to update  4. Clerk enters information about the customer order  5. Clerk selects to save the customer order |
| **Special Requirements** | Require customer name and number |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Customer Order is updated in system if requirements are met |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Delete Supplier Order** |
| **Description** | Delete the information for an existing customer order in the system. This happens when a customer order is entered in error or a customer order is canceled. |
| **Actor(s)** | Inventory Clerk |
| **Flow of Events** | 1. A customer order is identified that needs deletion  2. Clerk selects to delete a customer order  3. Clerk selects customer order to delete  4. Clerk deletes a customer order |
| **Special Requirements** | None |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Customer Order is deleted from system if requirements are met |
| **Exceptions** | None |

**Inventory Maintenance Use Cases**

1. Update Inventory

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|  |  |
| --- | --- |
| **Name** | **Update Inventory** |
| **Description** | Update the information for the Inventory. This happens when a correction is required, such as a stock count showing that a given quantity is wrong. |
| **Actor(s)** | Inventory Clerk |
| **Flow of Events** | 1. A change in inventory information is detected  2. Clerk selects to update the inventory  3. Clerk enters information about the inventory  4. Clerk selects to save the inventory |
| **Special Requirements** | None |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Inventory is updated in system if requirements are met |
| **Exceptions** | None |

**Route Maintenance Use Cases**

1. Add Route
2. Update Route
3. Delete Route

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|  |  |
| --- | --- |
| **Name** | **Add Route** |
| **Description** | Add the information for a new route to the system. This happens when it is decided to create a new route to cover shipments. For all routes, location information should be added. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A route is determined to be needed  2. Manager selects to add a new route  3. Manager enters information about each location on the route  4. Manager selects to save the route |
| **Special Requirements** | Require location information |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Route is added to system if requirements are met |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Update Route** |
| **Description** | Update the information for an existing route in the system. This happens when a correction is required, such as a new store being added to a route. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A change in route information is detected  2. Manager selects to update a route  3. Manager selects route to update  4. Manager enters information about the route  5. Manager selects to save the route |
| **Special Requirements** | None |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Route is updated in system if requirements are met |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Delete Route** |
| **Description** | Delete the information for an existing route in the system. This happens when a route is no longer going to be used. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A route is identified that needs deletion  2. Manager selects to delete a route  3. Manager selects route to delete  4. Manager deletes a route |
| **Special Requirements** | None |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Route is deleted from system if requirements are met |
| **Exceptions** | None |

**Employee Maintenance Use Cases**

1. Add Employee
2. Update Employee
3. Delete Employee

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|  |  |
| --- | --- |
| **Name** | **Add Employee** |
| **Description** | Add the information for a new employee to the system. This happens whenever the warehouse hires new staff. For all employees, employee name, address, and sign-in information must be added. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A new employee has been hired  2. Manager selects to add a new employee  3. Manager enters information about the employee  4. Manager selects to save the employee |
| **Special Requirements** | Require employee name, address and sign-in information |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Employee is added to system if requirements are met and there are not special exceptions |
| **Exceptions** | Do not add if username exists in system |

|  |  |
| --- | --- |
| **Name** | **Update Employee** |
| **Description** | Update the information for an existing employee in the system. This happens when a correction is required, such as an employee changing their name, address, or other contact information. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. A change in employee information is detected  2. Manager selects to update an employee  3. Manager selects employee to update  4. Manager enters information about the employee  5. Manager selects to save the employee |
| **Special Requirements** | Require employee name, address and sign-in information |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Employee is updated in system if requirements and exceptions are met |
| **Exceptions** | Do not update if username exists in system |

|  |  |
| --- | --- |
| **Name** | **Delete Employee** |
| **Description** | Delete the information for an existing employee in the system. This happens when an employee has been fired or resigned. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. An employee is identified that needs deletion  2. Manager selects to delete an employee  3. Manager employee item to delete  4. Manager deletes an employee |
| **Special Requirements** | None |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Employee is deleted from system if requirements are met |
| **Exceptions** | None |

**Supplier Order Use Cases**

1. Create Supplier Orders
   * 1. Generate Supplier Orders
     2. Review Supplier Orders
2. Receive Supplier Orders
3. Put Away Supplier Orders

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| --- | --- |
| **Name** | **Generate Supplier Orders** |
| **Description** | Automatically generate orders to suppliers. This happens once a week when the system detects items that are low on inventory. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. The system detects items that are below their minimum quantity  2. The system generates a Supplier Order for each supplier of the low stock items |
| **Special Requirements** | None |
| **Pre-Conditions** | There are items low on stock |
| **Post-Conditions** | The system has generated a set of Supplier Orders |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Review Supplier Orders** |
| **Description** | Allow the manager to review generated Supplier Orders. |
| **Actor(s)** | Manager |
| **Flow of Events** | 1. The system displays generated orders to the Manager  2. Manager updates orders as necessary  3. Manager selects to submit the orders  4. System submits orders to suppliers |
| **Special Requirements** | None |
| **Pre-Conditions** | Manager has been authorized to the system |
| **Post-Conditions** | Supplier Orders are submitted to suppliers |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Receive Supplier Orders** |
| **Description** | Confirm the count of orders received. This happens when a shipment from a supplier arrives. |
| **Actor(s)** | Warehouse Clerk |
| **Flow of Events** | 1. A shipment arrives in the warehouse  2. Clerk selects to receive order  3. Clerk uses system to quickly count items  4. System automatically compares count taken to Bill of Lading  5. Updated Bill of Lading is sent to suppliers |
| **Special Requirements** | None |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Shipments are received and accepted |
| **Exceptions** | None |

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| --- | --- |
| **Name** | **Put Away Supplier Orders** |
| **Description** | Store cases of Items. This happens when a Supplier Order has been received and needs to be put away. |
| **Actor(s)** | Warehouse Clerk |
| **Flow of Events** | 1. A shipment is received by the warehouse  2. Clerk selects to put away order  3. Clerk uses system to put items away more efficiently  4. Clerk updates any incorrect storage locations  5. Clerk selects to finish putting items away  6. System updates Inventory |
| **Special Requirements** | None |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Inventory is updated in system if requirements are met |
| **Exceptions** | None |

**Customer Orders Use Cases**

1. Take Customer Orders
2. Pick Customer Orders
3. Ship Customer Orders
4. Deliver Customer Orders

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|  |  |
| --- | --- |
| **Name** | **Take Customer Orders** |
| **Description** | Receive Customer Orders. This happens when a Customer submits their order through the online system. |
| **Actor(s)** | Customer |
| **Flow of Events** | 1. Customer heads to order website  2. Customer signs in using their customer information  3. Customer browses through catalog of items  4. Customer adds items in selected quantities to the order  5. Customer finalizes the order  6. System displays order information and offers to print it off for the customer  7. System stores the order |
| **Special Requirements** | None |
| **Pre-Conditions** | Customer has been authorized to the system |
| **Post-Conditions** | Customer Order is added to the system |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Pick Customer Orders** |
| **Description** | collect Items for a Customer Order. This happens when the Customer Order is about to be shipped. |
| **Actor(s)** | Warehouse Clerk |
| **Flow of Events** | 1. A Customer Order is received by the warehouse  2. Clerk selects to pick order  3. Clerk uses system to pick items more efficiently  4. Clerk updates any incorrect storage locations  5. Clerk selects to finish picking items  6. System updates Inventory |
| **Special Requirements** | None |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Inventory is updated in system if requirements are met |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Ship Customer Orders** |
| **Description** | Confirm the count of orders received. This happens when a shipment from a supplier arrives. |
| **Actor(s)** | Shipping Clerk |
| **Flow of Events** | 1. A shipment has been placed to leave the warehouse  2. Clerk selects to ship order  3. Clerk uses system to quickly count items  4. System automatically compares count to Bill of Lading  5. Updated Bill of Lading is created and sent with driver |
| **Special Requirements** | None |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Order is shipped and ready to deliver |
| **Exceptions** | None |

|  |  |
| --- | --- |
| **Name** | **Deliver Customer Orders** |
| **Description** | Bring shipped orders to customers. This happens when an order has been successfully shipped and needs to be delivered. |
| **Actor(s)** | Driver |
| **Flow of Events** | 1. Driver signs into the system  2. Driver select the current date  3. The system displays route information to help the driver  4. The driver uses the information to deliver the Order |
| **Special Requirements** | None |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Orders are successfully delivered to Customers |
| **Exceptions** | None |

**Inventory Count Use Cases**

1. Perform Inventory Count

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|  |  |
| --- | --- |
| **Name** | **Perform Inventory Count** |
| **Description** | Run a check of the actual warehouse inventory. This happens occasionally to confirm the accuracy of Inventory records. |
| **Actor(s)** | Warehouse Clerk |
| **Flow of Events** | 1. A need to perform an Inventory Count is detected  2. Clerk selects to perform Inventory Count  3. Clerk uses system to count items more efficiently  4. Clerk updates any incorrect storage locations  5. Clerk selects to finish checking inventory  6. System updates Inventory |
| **Special Requirements** | None |
| **Pre-Conditions** | Clerk has been authorized to the system |
| **Post-Conditions** | Inventory is updated in system if requirements are met |
| **Exceptions** | None |

# Glossary

*This section is a list of terms used in the document with their definition. This would include actors and data elements.*

|  |  |
| --- | --- |
| **Term** | **Definition** |
| Warehouse | A location where various clerks and managers work and where items are stored. |
| Manager | A warehouse employee who is responsible for the operation of the warehouse. |
| Warehouse Clerk | A warehouse employee who is responsible for the moving of items within the warehouse. |
| Inventory Clerk | A warehouse employee who is responsible for the tracking and managing the stock in the warehouse. |
| Shipping Clerk | A warehouse employee who is responsible for ensuring that the right items are being transported of to customers. |
| Driver | A warehouse employee who is responsible for the transportation of warehouse stock to customers. |
| Customer | Any business that purchases items from the warehouse. |
| Supplier | Any business that the warehouse orders cases of items from to fill stock. |
| Item | A good that is available for sale in the warehouse. It usually has a number called an item number or SKU. It also has UPCs. |
| Case | A container of a given quantity of items. Containers are purchased from suppliers and later opened to pick items for a customer order. |
| SKU | A stock keeping unit is a number for an item in a warehouse. |
| UPC | A Universe Product Code is a number that is assigned to an item by a manufacturer and is represented as a bar code on the packaging. |
| Price | The price to be charged for an item. The price usually has an effective date that after that date the price replaces any previous price. |
| Order | A list of items to be added to or removed from the warehouse. Orders include item information, customer information, and supplier information. |
| Bill of Lading | A list of items that are believed to have been shipped to a customer. The Bill of Lading is used to compare what is received to what was ordered. |
| Aisle | A row of shelves within the warehouse where items are stored. Labelled alphabetically from North to South. |
| Slot | A given shelf of a shelving unit. Labelled numerically, from the bottom to the top. |
| Bin | A given container within a slot that is used for storing single items. Labelled numerically, left to right. |
| Picking | The act of collecting the proper quantity of items for an order and placing them in the designated place to be shipped. |
| Putting Away | The act of taking a supplier shipment and storing the cases on to the proper shelves of the warehouse. |