Software Requirements Specification

for

Supply Chain Management - Warehouse Management

Version 1.0 approved

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Genesis

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

This SRS describes the software functional and nonfunctional requirements for release of the warehouse management system. Warehouse management System is a sub system of Supply Chain Management. This document is intended to be used by the members of the project team that will implement and verify the correct functioning of the system. Unless otherwise noted, all requirements specified here are high priority and committed for release 1.0.

1.2 Document Conventions

The warehouse management software will allow Warehouse managers to keep track of the inventory and approve the orders to and from the warehouse. The warehouse management software also permits the warehouse workers to order, store and ship out goods from the warehouse to different retailers. It will also allow the Store managers at the retailer's side to request goods from the warehouse.

1.3 Intended Audience and Reading Suggestions

The Warehouse Management System is a new system that replaces the current manual pen and paper processes for inventory and demand in the warehouse. The context diagram in Figure 1 illustrates the external entities and system interfaces for release 1.0. The system

1.4 Product Scope

The Warehouse management software makes the day to day operations at a warehouse fast and system driven. The WMS automates tasks like ordering and also gives store managers an easy way to order items to their store. It also helps warehouse employees to keep track and manage the inventory at the warehouse.

1.5 References

1.https://www.oracle.com/in/scm/logistics/warehouse-management/

2.IEEE Recommended Practice for Software Requirements Specifications:

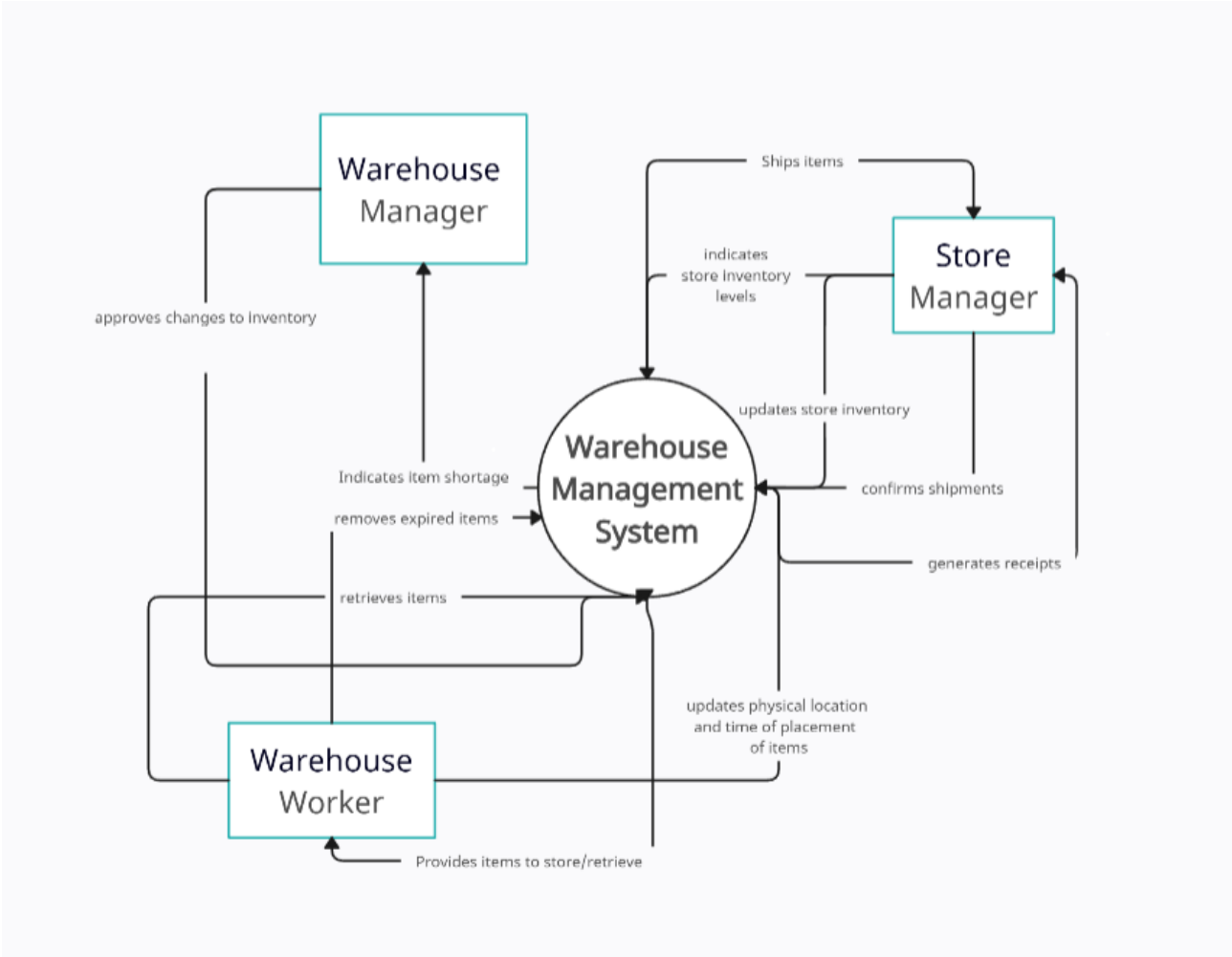
https://ieeexplore.ieee.org/document/720574

2. Overall Description

2.1 Product Perspective

The Warehouse Management System is a new system that replaces the current manual pen and paper processes for inventory and demand in the warehouse. The context diagram in Figure 1 illustrates the external entities and system interfaces for release 1.0. The system

2.2 Product Functions



2.3 User Classes and Characteristics

Warehouse Manager	A warehouse manager is an employee who has the highest level of authority at the warehouse. He keeps track of the inventory at the warehouse and is in charge of making sure that there is no shortage of any stock. He also manages all of the other warehouse employees. The warehouse manager must also maintain inventory accuracy.
Warehouse Worker	A warehouse worker is an employee who handles the day to day tasks of the warehouse such as unloading and receiving the incoming stock to the warehouse. They also have to do inventory management and keep a tab on when and where items are placed in a warehouse. They also have to pack and ship items when requested by the required store manager. They also have to make sure that time sensitive items are removed once they cross their expiry date.
Store Manager	A store manager needs to be able to communicate with the warehouse manager about inventory levels and also needs to approve orders from the warehouse. He needs to be able to order a specific number of a certain product from the warehouse. The store manager also needs to be able to generate receipts for the orders received.

2.4 Operating Environment

Our software is designed (have many releases) to work across different operating system platforms

Minimum System Requirements

OE1: Operating Systems : Windows 8 , Mac 10.10 , Linux 5.10

OE2: Hardware : Ryzen 3, Intel i3

OE3: Application : Microsoft Office, Libre Office

OE4: Server : 12.5 Gb per user (can be extended), 4Gb for requests.

2.5 Design and Implementation Constraints

CO-1:All scripts shall be written in javascript
CO-2:All databases use MongoDB

2.6 User Documentation

Software provides a basic tutorial and help page online.

2.7 Assumptions and Dependencies

AS-01 Network connectivity to run the website on a web browser.
The WMS works on the assumption that the user is connected to the internet at all times.

DE-01 The site requires the user to have a certain level of technical expertise.

3. External Interface Requirements

3.1 User Interfaces

UI-1: The system shall provide a help link from each displayed HTML page to explain how to use that page.

UI-2: The Web pages shall permit complete navigation, inventory item selection, Web pages shall also permit order placement, storage and shipment of goods from the warehouse
using the keyboard alone, in addition to using mouse and keyboard combinations.

3.2 Hardware Interfaces

No hardware interface required.

3.3 Software Interfaces

SI-1: Warehouse Inventory Management System
The WMS shall communicate with the Warehouse Inventory Management System through a programmatic interface for the following operations:

SI-1.1: The WMS shall transmit the quantities of goods ordered to the Warehouse Inventory System through a programmatic interface.

SI-1.2: The WMS shall poll the warehouse Inventory System to determine whether a requested item is available in the inventory.

SI-1.3: When the Warehouse Inventory System notifies the WMS that the quantity of a specific item is below a certain threshold value, the WMS will automatically place an order for the requested items.

SI-1.4: The WMS shall also transmit the quantity of goods to be stored at the warehouse to the Warehouse Inventory Management System

SI-1.5: The WMS shall also transmit the quantity of goods to be shipped out of the warehouse to the Warehouse Inventory Management System.

SI-1.6: The WMS shall also transmit the details of the shipment to the Warehouse Inventory Management System to print a receipt confirming the shipment.

SI-2: Retailer Order System
The WMS shall communicate with the Warehouse Inventory Management System through a programmatic interface for the following operations:

SI-2.1: To allow the store manager to send requests for goods to the warehouse

SI-2.2: To allow store manager to keep track of the shipment

3.4 Communications Interfaces

CI-1: The Warehouse management system shall send an e-mail message to the Patron to confirm acceptance of an order, quantity, and delivery instructions.

CI-2: The Warehouse management system shall send an e-mail message to the Patron to report any problems with the meal order or delivery after the order is accepted.

4. System Features

4.1 Storing and Ordering—

4.1.1 Description and Priority

Feature	Priority
SO1)Store Item:Items are stored in the warehouse tracking their position,quantity and lifespan if they are perishable	High
SO2)Shipment records: it tracks every instance of items entering and leaving the warehouse	High
SO3)Order Item: Requests items to be sent to the warehouse when amount of the item falls below a certain threshold	High

SO4)Date of next shipment: It tracks when the warehouse will be receiving the next resupply of items	Medium
SO5)Receipt on receiving item: It generates a table of all items received	Medium

The warehouse management software automatically orders the items once the quantity drops below a certain amount.The software also helps the warehouse staff to store the received goods by logging it in.

4.1.2 Stimulus/Response Sequences

Stimulus: Warehouse worker requests to make an entry in the table
Response: System queries Warehouse worker for details of received items, payment, and delivery instructions
Stimulus: Warehouse worker requests to make an entry to confirm the storage of the item
Response: The System queries the warehouse worker for the details of the items to be stored, the shelf it should be stored in and confirms the storage.
Stimulus: Warehouse manager requests to oversee all orders and confirming storage.
Response: The system shows the manager all the orders and all items stored. The System also gives the manager an option to confirm outgoing orders from the warehouse.

4.2 Warehouse-side Shipment

4.2.1 Description and Priority

The warehouse workers sends shipments out based on the orders from the retailers.The Warehouse managers approves these shipments.

Feature	Priority
WH1)Locate Item: return the physical location and amount of item that has been requested to be shipped	High

SO2)Shipment records: it tracks every instance of items entering and leaving the warehouse	High
WH2)Shipment tracking: It gives estimate time for shipment to arrive to the store	Low

4.2.2 Stimulus/Response Sequences

Stimulus: Warehouse worker confirms the order has been shipped.
Response: System automatically updates the shipments table with details of shipped items and also removes the quantity of the shipped items from the storage.
Stimulus: Warehouse Manager requests to see all shipments.
Response: The System shows all shipments and gives an option to approve the shipments to the manager.

4.3 Store-side Ordering and Tracking

4.3.1 Description and Priority

The warehouse management software helps the retailer to make an order to the warehouse. The WMS also helps the store manager to keep track of the shipment and generate a receipt on arrival.

Feature	Priority
ST1)Requesting item: if the store has a deficiency in items a request can be made to warehouse to supply said items	High
ST2)Receipt on receiving item: It generates a table of all items received from the warehouse	Medium
WH2)Shipment tracking: It gives estimate time for shipment to	Low

Feature	Priority
ST1)Requesting item: if the store has a deficiency in items a request can be made to warehouse to supply said items	High
ST2)Receipt on receiving item: It generates a table of all items received from the warehouse	Medium
arrive to the store	

4.3.2 Stimulus/Response Sequences

Stimulus: Store manager makes a request with details of the item.
Response: System places an order and sends the details to the warehouse. After confirmation the
Stimulus: Store manager requests to track the shipment
Response: The System shows the store manager the status of the shipment.

Stimulus: The store manager requests for receipt to confirm the shipment has been received.
Response: The system automatically generates a receipt with details related to the shipment.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

PE-1: All Web pages generated by the system shall be fully downloadable in no more than 10 seconds over a 40KBps modem connection.

PE-2: The system should be able to generate a receipt within 5 seconds of the order confirmation.

PE-3: The system shall display confirmation messages to users within 4 seconds after the user submits information to the system.

5.2 Safety Requirements

No safety requirements have been identified.

5.3 Security Requirements

SE-1: All network transactions that involve financial information or personally identifiable information shall be encrypted per BR-33.
SE-2: Users shall be required to log in to the Warehouse Management System for all operations.
SE-3: Patrons shall log in according to the restricted computer system access policy per BR-35.
SE-4: The system shall permit only members who are on the list of authorized Warehouse Managers to create or edit menus, per BR-24.
SE-5: Only users who have been authorized for home access to the corporate Intranet may use the WMS from non-company locations.

5.4 Software Quality Attributes

Availability-1: The Warehouse Management System shall be available to users on the corporate Intranet and to dial-in users 99.9% of the time between 5:00 AM and midnight local time and 95% of the time between midnight and 5:00 AM local time.
Robustness-1: If the connection between the user and the system is broken prior to an order being either confirmed or canceled, the Warehouse Management System shall enable the store to recover an incomplete order.

5.5 Business Rules

Not applicable

6. Other Requirements

Appendix A: Glossary

WMS = Warehouse Management Software
SRS = Software Requirement Specifications

Appendix B: Analysis Models

Not applicable

Appendix C: To Be Determined List

Not applicable