

Software Requirement Specification

For

CSCI222 Assignment 1

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Revision History

Name	Date	Reason for change	Version

1. Introduction

This document is to provide an overview of the functionality of the Warehouse Management System. This document will describe the scope, the organization, description, constraints and requirements.

1.1. Purpose

The purpose of this document is to present a detailed description of the Warehouse Inventory Management System. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which the System needs to operate under and the requirements the System needs to fulfil during development.

1.2. Document Conventions

Term	Definition
ROLE	The role in which a USER can take. Determines access to functionalities within the system
USER	The person currently using the system. Person is to be a warehouse staff.
ACCOUNT	A combination of a username and password unique to a USER.
STOCK	The existing inventory within the warehouse.

1.3. Intended Audience and Reading Suggestions

This document is intended for the developers during the development of the 1st iteration of the complete System as well as the parties interested in the System.

1.4. Project Scope

This software system is to be an inventory management system for an existing warehouse. The system is to be created using the C++ programming language with the intention of running it on a Linux OS. The system will be designed to enable warehouse staff to keep track of all transactions of items either coming in or going out of the warehouse.

The software will be designed to restrict access to functionality depending on the ROLE of the USER. The ROLE is determined by the ACCOUNT in which the USER uses to access the system. Should an ACCOUNT have 3 unsuccessful login attempts, the ACCOUNT is to be locked, denying the USER any access.

The system will enable the USER to add items into, remove items from and edit the items within the warehouse STOCK. The system will also allow a USER to search for items within the STOCK. In addition, the system will be able to display a summary report on the STOCK within the warehouse within a timeframe chosen by the USER.

2. Overall Descriptions

2.1. Product Perspective

This product is a warehouse management system which controls and displays the inflow and outflow of stocks in the warehouse. Using this system allows users to have an efficient flow in managing the stocks in the warehouse.

2.2. Product Features

The systems allow the user to log in to their own account and use it to add and remove stocks and existing stocks respectively as well as editing the stock's information. In case of human error in keying the information for a certain stock, user can make changes to it. Processing transaction with the system is also part of its functionality as it allows the user to control the inflow and outflow of stocks in the warehouse. With many stocks in the warehouse, this system also has a function to allow the user to search for any specific stock they want. With a clear and specific search system, the user will get what they want to search for. This system also stores transaction records in terms of daily, weekly, monthly and yearly. This transaction records are able to be exported out to a text file for keeping purposes, both digital and physical copy if necessary.

2.3. User Classes and Characteristics

Two main user will be the manager and staffs. With the staff account, they can only have access to login, search, process and print out the transaction information for the stocks. Whereas the manager will have more functions including those of the staff, like add, remove and editing of the stocks. This was set in a way that the manager has control of what's in and out of the warehouse and can overlook the warehouse in a more classroom manner.

2.4. Operating Environment

Linux OS, Ubuntu.

2.5. Design and Implementation Constrain

The system is solely programmed on C++ for Linux OS and running on other OS might be at risk of the system unable to function. The customer's organization will not be responsible for maintaining the delivered software.

2.6. User Documentations

Please refer to “CSCI222_Assn1_Manager_Instruction_Manual.docx” and “CSCI222_Assn1_Staff_Instruction_Manual.docx”

3. System Features

In this section of the SRS, we will see detailed feature of the system with the help of detailed use case description. All cases will be rated with priority component rating in terms of their importance to the system, the damage/penalty if one feature would fail and the benefit of having this feature in the system.

Priority Table

Low Priority	Medium Priority	High Priority
1-3	4-6	7-9

3.1. Log in

Login is a standard feature that most systems have. It is the first line of access for users. This feature is rated 9(High Priority). Login is the feature where different user with different access level to be able to access their correct platform in the system. This feature would include security features such failed login attempt checks to ensure no user tries to brute force into the system. If this feature fails, Users would not be able to access the system at all. This would cause the business to stop operating and result in the disruption of normal flow of the business. This would in return, cause delay in work. Business would be in a risk of penalties or even cost charges if the users are unable to login into the system for a long period of time.

Use Case Textual Description	
UC-ID	1.
Name	Login
Description	Staff or Manager logging into Warehouse Management Tool system to use the program.
Actor(s)	Both Staff and Manager have the right to log in to this system.
Main Scenario	<ol style="list-style-type: none">1. User turns on system2. System prompts for user ID and password3. User keys in user ID and password4. System checks if user account is locked5. System checks if user ID and password input is correct6. Upon match, System logs user in
Possible	<u>Wrong user name and password</u> A – 5.1.a. Upon mismatch, system shows error message and re-prompts user to input user ID and password again.

Scenario	<p>A – 5.2.a. System updates user ID’s number of attempts at logging in by incrementing 1.</p> <p><u>3rd failed attempt at logging in</u></p> <p>B – 5.1.b. Upon mismatch on 3rd attempt, system shows error message to user and tells user that they are locked out from logging in.</p> <p>B – 5.2.a. System updates user ID’s number of attempts at logging in by incrementing 1.</p> <p><u>Attempting to log in when locked out</u></p> <p>C – 4.1. System notices that user has attempted to log in 3 times.</p> <p>C – 4.2. System shows error message to user saying that they are no longer allowed to log in.</p>
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3.2. Add new stock

This feature allows users to add new stock into the system. This feature is rated 8(High Priority). This feature is the only way the user, who is a manager can add a new stock into the database. If this feature was to fail, this will cause a disruption of updating the new stock into the database. If the business would have a high flow of stocks being bought in frequently, this disruption could cause huge delay of work being piled up and affecting the business flow

Use Case Textual Description	
UC-ID	2.
Name	Add new stock item
Description	Manager will add a new stock and enter all details into the system.
Actor(s)	Manager is the only person who has the right to add a new stock.
Main Scenario	<ol style="list-style-type: none">1. Manager selects “Add new stock item” from main menu2. System prompts to enter item name, category, and sub category3. Manager enter above details for new item.4. System checks if item already exists5. System fetches last item ID and generates ID for new item.6. System prompts for item price.7. Manager enters item price.8. System checks if input is valid.9. System prompts for quantity of incoming stock.10. Manager enters incoming stock quantity.11. System checks if input is valid.12. System prompts for date and time of transaction.13. Manager enters date and time of transaction14. System checks if input is valid.15. System prompts for item stock threshold.

	16. Manager inputs item stock threshold. 17. System checks if input is valid. 18. System creates item and transaction with gathered input. 19. System prints success message and details of newly created item. 20. System asks user if they would like to add another item 21. Manager selects No. 24. System ends process and returns to previous menu
Possible Scenario	<u>Stock already exists</u> A – 4.1. System found that item already exists. A – 4.2. System prints error message and returns to main menu. <u>Input value is wrong</u> B – 8.1. / 11.1 / 14.1 / 17.1 System finds invalid input. B – 8.2. / 11.2 / 14.2 / 17.2 System prints error message and prompt for correct input. <u>Manager wants to add another item</u> C – 21. Manager selects Yes C – 21.2. System repeats process from step 2.

3.3. Remove stock

This feature allows users to remove stock from the system. This feature is rated 6(Medium Priority). This feature allows the manager to remove all details of an existing stock from the system. This feature will be use if the stock quantity was zero and does not have the intention to restock again. If this feature was to fail, it would not affect the flow of the business greatly as having an unwanted stock data still stored in the database would not affect the business flow. But if the system were to have many data of unwanted stocks throughout the years, it might cause unnecessary problem during checks in the future.

Use Case Textual Description	
UC-ID	3.
Name	Remove stock
Description	Manager will remove all details of an existing stock from the system.
Actor(s)	Manager is the only person who has the right to remove an existing stock.

Main Scenario	<ol style="list-style-type: none">1. Manager selects “Remove existing stock” from main menu2. System prompts for item ID.3. Manager enter item ID.4. System checks for item with given ID5. System print out the item details and ask the manager if they want to proceed to delete.6. Manager select Yes.7. System deletes item from data.8. System prints success message9. System asks Manager if they would like to remove another item10. Manager selects No11. System ends process and returns to previous menu
Possible Scenario	<p><u>Item does not exist</u> A – 4.1. System cannot find item with given ID. A – 4.2. System prints error message, and returns to main menu.</p> <p><u>Manager changes their mind</u> B – 6. Manager selects No. B – 6.1. System returns to main menu.</p> <p><u>Manager wants to remove another item</u> C – 10. Manager selects Yes C – 10.2. System repeats process from step 2.</p>

3.4. Edit existing stock item

This feature allows users edit a particular stock from the system. This feature is rated 8(High Priority). This feature allows user, the manager to edit all the details of a particular stock. These include the name, category, sub-category and quantity value. If this feature was to fail, this will disrupt the flow of the business as new information will not be able to be updated, in return employees will not be updated with the new information and continue to use the old information provided by the system. This would risk the business of giving inaccurate information of details of a stock.

Use Case Textual Description	
UC-ID	4.
Name	Edit existing stock item
Description	Manager edit the existing stock item.
Actor(s)	Manager is the only person who has the right to edit an existing stock item.
Main	<ol style="list-style-type: none">1. Manager selects “Edit existing stock item” from main menu.2. System prompts user to enter item ID3. Manager enter item ID of an item that they want to edit.

Scenario	<ol style="list-style-type: none">4. System checks for item with given ID5. System displays the details of this stock item and asks Manager if they want to proceed to edit6. Manager selects Yes.7. System prompts for item's new name, category, sub-category.8. Manager inputs all required information mentioned above.9. System checks if input entered clashes with any existing data.10. System prompts for new quantity.11. Manager inputs quantity value.12. System checks if input is valid.13. System prompts for new quantity threshold.14. Manager inputs new quantity threshold.15. System checks if input is valid16. System updates item with new information17. System prints item description with new information18. System checks if item quantity is below threshold19. System tells user to press enter to continue20. User presses enter21. System ends process and returns to previous menu
Possible Scenario	<p><u>Stock item does not exist</u> A – 4.1. System could not find item of given ID A – 4.2. System prints error message and returns to main menu.</p> <p><u>Manager changes mind</u> B – 6. Manager selects No. B – 6.1. System returns to main menu.</p> <p><u>New description clashes with existing item</u> C – 9.1. System found existing item with clashing data C – 9.2. System prints error message and returns to main menu.</p> <p><u>Input value is wrong</u> D – 12.1. / 15.1. System finds invalid input. D – 12.2. / 15.2. System prints error message and prompt for correct input.</p> <p><u>Alert of threshold</u> E – 18.1. If the new quantity is below threshold, system prints an alert message.</p>

3.5. Search stock item

This feature allows user to search a stock in the system. This feature is rated 8(High Priority). This feature allows user to search a stock by different details of the stock. By stock item ID, name, category, price and quantity. This feature is essential to the system as it allows user to find a specific item detail in a large amount of data. If this whole features would to fail, User would not be able to retrieve information of stocks and unable to provide accurate stocks details for the business. This can result in delay of transaction in turn delaying the workflow of the business

Use Case Textual Description	
UC-ID	5.
Name	Search stock item
Description	Staff and Manager search for stock item and view the details of it.
Actor(s)	Both Staff and Manager have the right to search for a stock item.
Main Scenario	<ol style="list-style-type: none">1. User selects “search stock item” from main menu2. System display the sub-menu for user to select: Search by item ID. (UID 5.1) Search by item name. (UID 5.2) Search by category. (UID 5.3) Search by price. (UID 5.4) Search by quantity. (UID 5.5) Return to main menu3. System prompts for selection4. User selects an option.<ol style="list-style-type: none">5. System checks if user input is valid6. System will bring user to the following corresponding step (see labeled UID)
Possible Scenario	<u>Input is invalid</u> A – 5.1. System finds user input is invalid or out of range. A – 5.2. System prints error message and asks user for input again.

3.5.1. Search item by ID

This feature is a sub feature of search stock item. This feature is rated 6(Medium Priority) as this is one of the way to search a stock by. If this feature was to fail, there would be other ways to search for the item. It will not delay the flow of

the business. The benefit of the feature is that by searching for the unique ID that each stock has, user would be able to find the specific stock that he or entered the unique ID.

Use Case Textual Description	
UC-ID	5.1.
Name	Search item by ID
Description	Staff and Manager search for a specific stock item and view the details of it, and also has the option to view item's transaction history
Actor(s)	Both Staff and Manager have the right to search for a stock item.
Main Scenario	<ol style="list-style-type: none">1. User selects "Search by item ID" from previous menu2. System prompts for item ID3. User inputs item ID4. System checks if item with given ID exists5. System prints out found item's details, and asks user if they want to view item's transaction history6. User selects Yes7. System checks if transaction history has under 50 records.8. System prints out full transaction history.9. System asks if user would like to export full transaction history10. User selects Yes.11. System exports full transaction history into text file with appropriate naming convention.12. System prints success message13. System tells user to press enter to continue14. User presses enter15. System ends process and returns to previous menu
Possible Scenario	<p><u>Item does not exist</u> A – 4.1. System cannot find item with given ID. A – 4.2. System prints error message and returns to previous menu.</p> <p><u>User does not want to see transaction history</u> B – 6. User selects No B – 6.1. System ends process and returns to previous menu</p> <p><u>Transaction history is too long</u> C – 7.1. System finds that transaction history is too many (does not fit condition) C – 8. System prints out only the latest 50 transaction records.</p> <p><u>User does not want to export transaction history</u> D – 10. User selects No. D – 10.1 System ends process returns to previous menu.</p>

3.5.2. Search item by name

This feature is a sub feature of search stock item. This feature is rated 4(Medium Priority) as this is one of the way to search a stock by. If this feature was to fail, there would be other ways to search for the item. It will not delay the flow of the business. Item name might not be unique therefore there would be a chance of duplicate item with the same name appears as the search result.

Use Case Textual Description	
UC-ID	5.2.
Name	Search item by name
Description	Staff and Manager search for stock item by name and gets a list of items that contains the search query
Actor(s)	Both Staff and Manager have the right to search for a stock item.
Main Scenario	<ol style="list-style-type: none">1. User selects “Search by item name” from previous menu2. System prompts for item name3. User inputs item name4. System goes through list of all items and draws out all items containing search query5. System prints out results6. System tells user to press enter to continue7. User presses enter8. System ends process and returns to previous menu
Possible Scenario	<p><u>No match found</u> A – 5. System prints out empty results</p> <p><u>Empty input</u> B – 4. System skips this step and simply returns to main menu.</p>

3.5.3. Search item by category

This feature is a sub feature of search stock item. This feature is rated 4(Medium Priority) as this is one of the way to search a stock by. If this feature was to fail, there would be other ways to search for the item. It will not delay the flow of the business. Item category are not unique therefore there would be a chance of duplicate item with the same name appears as the search result

Use Case Textual Description	
UC-ID	5.3.
Name	Search item by category
Description	Staff and Manager search for stock item by category and gets a list of items that contains the search query

Actor(s)	Both Staff and Manager have the right to search for a stock item.
Main Scenario	<ol style="list-style-type: none"> 1. User selects “Search by item category” from previous menu 2. System prompts for item category and sub-category 3. User inputs item category and sub-category 4. System goes through list of all items and draws out all items containing search query 5. System prints out results 6. System tells user to press enter to continue 7. User presses enter 8. System ends process and returns to previous menu
Possible Scenario	<p><u>No match found</u> A – 5. System prints out empty results</p> <p><u>No sub-category input</u> B – 4. System goes through list of all items and draws out all items containing search query of “category” input only.</p> <p><u>Empty input</u> C – 4. System skips this step and simply returns to main menu.</p>

3.5.4. Search item by price

This feature is a sub feature of search stock item. This feature is rated 4(Medium Priority) as this is one of the way to search a stock by. If this feature was to fail, there would be other ways to search for the item. It will not delay the flow of the business. Item price are not unique therefore there would be a chance of duplicate item with the same name appears as the search result

Use Case Textual Description	
UC-ID	5.4.
Name	Search item by price
Description	Staff and Manager search for stock item by price and gets a list of items that contains the search query
Actor(s)	Both Staff and Manager have the right to search for a stock item.
Main Scenario	<ol style="list-style-type: none"> 1. User selects “Search by item price” from previous menu 2. System prompts for minimum price 3. User inputs minimum price 4. System checks if input is valid 5. System prompts for maximum price 6. User input maximum price 7. System checks if input is valid 8. System goes through list of all items and draws out all items containing search query 9. System prints out results 10. System tells user to press enter to continue

	11. User presses enter 12. System ends process and returns to previous menu
Possible Scenario	<p><u>No match found</u> A – 5. System prints out empty results</p> <p><u>No minimum OR maximum input</u> B – 4. System goes through list of all items and draws out all items containing search query of the other input only.</p> <p><u>Empty input</u> C – 4. System skips this step and simply returns to main menu.</p> <p><u>Input value is invalid</u> D – 4.1 / 7.1 System finds invalid input. D – 4.2 / 7.2 System prints error message and prompt for correct input.</p>

3.5.5. Search item by quantity

This feature is a sub feature of search stock item. This feature is rated 4(Medium Priority) as this is one of the way to search a stock by. If this feature was to fail, there would be other ways to search for the item. It will not delay the flow of the business. Item quantities are not unique therefore there would be a chance of duplicate item with the same name appears as the search result

Use Case Textual Description	
UC-ID	5.5.
Name	Search item by quantity
Description	Staff and Manager search for stock item by quantity and gets a list of items that contains the search query
Actor(s)	Both Staff and Manager have the right to search for a stock item.
Main Scenario	1. User selects “Search by item Quantity” from previous menu 2. System prompts for minimum quantity 3. User inputs minimum quantity 4. System checks if input is valid 5. System prompts for maximum quantity 6. User input maximum quantity 7. System checks if input is valid 8. System goes through list of all items and draws out all items containing search query 9. System prints out results 10. System tells user to press enter to continue 11. User presses enter 12. System ends process and returns to previous menu

Possible Scenario	<p><u>No match found</u> A – 5. System prints out empty results</p> <p><u>No minimum OR maximum input</u> B – 4. System goes through list of all items and draws out all items containing search query of the other input only.</p> <p><u>Empty input</u> C – 4. System skips this step and simply returns to main menu.</p> <p><u>Input value is invalid</u> D – 4.1 / 7.1 System finds invalid input. D – 4.2 / 7.2 System prints error message and prompt for correct input.</p>
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3.6. Process Transaction

This feature allows the user to process incoming and outgoing stock. This feature is rated 8(High Priority). This feature directly affects the flow of the business as multiple transactions of stocks are made daily. If this feature were to fail, all transactions will be halt and disruption of business workflow will occur. Business would be in a risk of penalties or even cost charges if the transactions cannot be made.

Use Case Textual Description	
UC-ID	6.
Name	Process Transaction
Description	Staff and Manager need to track transactions when there is incoming stock or outgoing stock.
Actor(s)	Both Staff and Manager have the right to process transactions.
Main Scenario	<ol style="list-style-type: none"> 1. User selects “Process Transaction” from main menu 2. System display the sub-menu for user to select: Process incoming stock. (UID 6.1) Process outgoing stock. (UID 6.2) Return to main menu 3. System prompts for selection 4. User selects an option. 5. System checks if user input is valid 6. System will bring user to the following corresponding step (see labeled UID)
Possible	<p><u>Input is invalid</u> A – 5.1. System finds user input is invalid or out of range. A – 5.2. System prints error message and asks user for input again.</p>

Scenario	
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3.6.1. Process incoming stock

This feature is a sub feature of process transaction. This feature is rated 8(High Priority). Processing stocks is one of the main functions of this system. This feature allows users to process incoming stock. If this feature were to fail, user would not be able to process incoming stock and the quantity will not be updated. Therefore making the details of the specific stock inaccurate. This would affect the flow of the business as transactions were made daily and inaccurate data may cause a disruption of workflow in the business

Use Case Textual Description	
UC-ID	6.1.
Name	Process incoming stock
Description	Staff and Manager need to track incoming transactions
Actor(s)	Both Staff and Manager have the right to search for a stock item.
Main Scenario	<ol style="list-style-type: none">1. User selects “process incoming stock” from previous menu2. System prompts for stock item ID.3. User inputs item ID that he wants to process.4. System searches data for item of given ID5. System prints out summary of item found and asks if user would like to continue.6. User enters Yes.7. System prompts for quantity of stock that is coming in.8. User inputs incoming quantity.9. System checks if quantity input is valid10. System prompts for date and time of transaction11. User inputs date and time of transactions12. System checks if date and time is valid13. System creates a transaction and updates item’s stock.14. System prints out details of updated item and new transaction created15. System tells user to press enter to continue16. User presses enter17. System ends process and returns to previous menu

Possible Scenario	<p><u>Empty input</u> A – 4. System skips this step and simply returns to main menu.</p> <p><u>Item does not exist</u> B – 4.1. System cannot find item with given ID. B – 4.2. System prints error message, and returns to main menu.</p> <p><u>User changes their mind</u> C – 6. User selects No. C – 6.1. System returns to main menu.</p> <p><u>Input value invalid</u> D – 9.1 / 12.1 Input value is invalid D – 9.2 / 12.2 System prints error message and prompts for input again.</p>
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3.6.2. Process outgoing stock

This feature is a sub feature of process transaction. This feature is rated 8(High Priority). Similar to process incoming stock, processing outgoing stocks is one of the main functions of this system. If this feature were to fail, user would not be able to process outgoing stock and the quantity will not be updated. Therefore making the details of the specific stock inaccurate. This would affect the flow of the business as transactions were made daily and inaccurate data may cause a disruption of workflow in the business.

Use Case Textual Description	
UC-ID	6.2.
Name	Process outgoing stock
Description	Staff and Manager need to track outgoing transactions
Actor(s)	Both Staff and Manager have the right to search for a stock item.
Main Scenario	<ol style="list-style-type: none"> 1. User selects “process outgoing stock” from previous menu 2. System prompts for stock item ID. 3. User inputs item ID that he wants to process. 4. System searches data for item of given ID 5. System prints out summary of item found and asks if user would like to continue. 6. User enters Yes. 7. System prompts for quantity of stock going out. 8. User inputs outgoing quantity. 9. System checks if quantity input is valid 10. System prompts for date and time of transaction 11. User inputs date and time of transactions 12. System checks if date and time is valid 13. System creates a transaction and updates item’s stock.

	14. System prints out details of updated item and new transaction created 15. System checks if stock has fallen below threshold 16. System tells user to press enter to continue 17. User presses enter 18. System ends process and returns to previous menu
Possible Scenario	<p><u>Empty input</u> A – 4. System skips this step and simply returns to main menu.</p> <p><u>Item does not exist</u> B – 4.1. System cannot find item with given ID. B – 4.2. System prints error message, and returns to main menu.</p> <p><u>User changes their mind</u> C – 6. User selects No. C – 6.1. System returns to main menu.</p> <p><u>Input value invalid</u> D – 9.1 / 12.1 Input value is invalid D – 9.2 / 12.2 System prints error message and prompts for input again.</p> <p><u>Alert of threshold</u> E – 15.1. If the new quantity is below threshold, system prints an alert message.</p>

3.7. Edit transaction

This feature allows user to edit current and past transaction. This feature is rated 6(Medium Priority). This feature would only be use if an error was made in a transaction. Error could be in the form of wrong quantity in or out or wrong date input. If this feature were to fail, the user would not be able to edit past transaction history but the flow of business will still continue. But over a period of time, inaccurate data might cause a disruption of workflow or checks.

Use Case Textual Description	
UC-ID	7.
Name	Edit transaction
Description	Manager edit the transaction if there occurs any error.
Actor(s)	Only Manager has the right to edit transactions.
Main Scenario	1. Manager selects “Edit transaction” from main menu. 2. System prompts for transaction ID. 3. Manager inputs transaction ID of an item that they want to edit. 4. System checks for item with given ID 5. System displays the details of this transaction and asks Manager if they want to proceed to edit. 6. Manager selects Yes. 7. System prompts for stock quantity in, stock quantity out.

	<ol style="list-style-type: none">8. Manager enters stock quantity in and out.9. System checks for valid input.10. System prompts for transaction's date and time.11. Manager enters transaction's date and time.12. System checks for valid input13. System prints out summary of updates Manager has input, and asks for confirmation of execution (to edit)14. Manager selects Yes.15. System updates transaction with new information.16. System prints updated transaction details and update details17. System checks if stock has fallen below quantity threshold.18. System returns to main menu19. System tells user to press enter to continue20. User presses enter21. System ends process and returns to previous menu
Possible Scenario	<p><u>Stock item does not exist</u> A – 4.1. System could not find item of given ID A – 4.2. System prints error message and returns to main menu.</p> <p><u>Manager changes mind</u> B – 6. / 14. Manager selects No. B – 6.1 / 14.1. System ends process and returns to previous menu.</p> <p><u>Invalid input</u> C – 9.1. / 12.1. System finds invalid input. C – 9.2. / 12.2. System prints error message and prompt for correct input.</p> <p><u>Alert of threshold</u> D – 17.1. If the new quantity is below threshold, system prints an alert message.</p>

3.8.1. View daily stock summary report

This feature allows users to view transaction report by date. This feature is rated 5(Medium Priority). This feature is optional for the user only if user would want to view transaction history of a certain date or time period. This feature also allows user the option of exporting the result of summary transaction into a text file. If this feature were to fail, it would not disrupt the flow of the business. This applies to the same for all stock summary report.

Use Case Textual Description	
UC-ID	8.1.
Name	View daily summary report
Description	Staff and Manager want to see all the transactions in a specific day.
Actor(s)	Both Staff and Manager have the right to print daily summary report.
Main Scenario	<ol style="list-style-type: none">1. User selects "View daily stock summary report" from main menu.2. System prompts for date.3. User inputs date that he wants to see the transaction summary report.4. System checks if date is valid5. System goes through list of all transactions and draws out all transactions from this specific day.6. System prints out results.7. System ask the user whether he wants to export full report.8. User selects yes.9. System export full report to text file.10. System prints success message11. System tells user to press enter to continue12. User presses enter13. System ends process and returns to previous menu
Possible Scenario	<p><u>Input date is invalid</u> A – 4.1. System finds user input date is invalid format. A – 4.2. System prints error message and asks user for input again.</p> <p><u>User does not want to export to text file:</u> D – 8. User selects No. D – 8.1 System ends process and returns to previous menu.</p>

3.8.2. View weekly summary report

Use Case Textual Description	
UC-ID	8.2.
Name	View weekly summary report
Description	Staff and Manager want to see all the transactions in a specific week.
Actor(s)	Both Staff and Manager have the right to print weekly summary report.
Main Scenario	<ol style="list-style-type: none">1. User selects "View weekly stock summary report" from main menu.2. System prompts for date.3. User inputs date that he wants to see the transaction summary report.4. System checks if date is valid5. System goes through list of all transactions and draws out all transactions from this specific week.6. System prints out results.7. System ask the user whether he wants to export full report.8. User selects yes.9. System export full report to text file.10. System prints success message11. System tells user to press enter to continue12. User presses enter13. System ends process and returns to previous menu
Possible Scenario	<p><u>Input date is invalid</u> A – 4.1. System finds user input date is invalid format. A – 4.2. System prints error message and asks user for input again.</p> <p><u>User does not want to export to text file:</u> D – 8. User selects No. D – 8.1 System ends process and returns to previous menu.</p>

3.8.3. View monthly summary report

Use Case Textual Description	
UC-ID	8.4.
Name	View monthly summary report
Description	Staff and Manager want to see all the transactions in a specific month.
Actor(s)	Both Staff and Manager have the right to print monthly summary report.
Main Scenario	<ol style="list-style-type: none">1. User selects "View monthly stock summary report" from main menu.2. System prompts for date.3. User inputs date that he wants to see the transaction summary report.4. System checks if date is valid5. System goes through list of all transactions and draws out all transactions from this specific month.6. System prints out results.7. System ask the user whether he wants to export full report.8. User selects yes.9. System export full report to text file.10. System prints success message11. System tells user to press enter to continue12. User presses enter13. System ends process and returns to previous menu
Possible Scenario	<p><u>Input date is invalid</u> A – 4.1. System finds user input date is invalid format. A – 4.2. System prints error message and asks user for input again.</p> <p><u>User does not want to export to text file:</u> D – 8. User selects No. D – 8.1 System ends process and returns to previous menu.</p>

3.8.4. View yearly stock summary report

Use Case Textual Description	
UC-ID	8.4.
Name	View yearly summary report
Description	Staff and Manager want to see all the transactions in a specific year.
Actor(s)	Both Staff and Manager have the right to print yearly summary report.
Main Scenario	<ol style="list-style-type: none">1. User selects "View yearly stock summary report" from main menu.2. System prompts for date.3. User inputs date that he wants to see the transaction summary report.4. System checks if date is valid5. System goes through list of all transactions and draws out all transactions from this specific year.6. System prints out results.7. System ask the user whether he wants to export full report.8. User selects yes.9. System export full report to text file.10. System prints success message11. System tells user to press enter to continue12. User presses enter13. System ends process and returns to previous menu
Possible Scenario	<p><u>Input date is invalid</u> A – 4.1. System finds user input date is invalid format. A – 4.2. System prints error message and asks user for input again.</p> <p><u>User does not want to export to text file:</u> D – 8. User selects No. D – 8.1 System ends process and returns to previous menu.</p>

4. External Interfaces Requirements

4.1 User Interfaces

System uses a user-friendly interface which allows a read, receive & send function which can be easily used by anyone. Details of the UI can be found inside both the Manager and Staff Instructions Manual.

4.2 Hardware Interfaces

This system works on any PC that runs on Linux OS, Ubuntu.

4.3 Software Interfaces

System only works within itself with a text file to store information from transactions done by user through the systems. The file can be excess by the system by menu selection and display only what the user wants.

5. Other Non-Functional Requirements

5.1 Performance Requirements

Program is to run with minimal overhead during main functionality.

Priority is to be given to run time efficiency as opposed to memory.

If large amounts of data are required to be initialized, it is to be done so during the initial start-up of the program.

Required data will be stored on separate text files whose name shall be hard-coded into the system.

5.2 Security Requirements

Text files containing user information such as usernames and passwords are to be encoded and to only be decrypted when a user is attempting to log into the system.

Text files containing STOCK data might need to be encrypted, depending on client's request. Said feature is to be determined.

5.3 Software Quality Attributes

Program is to be easily used due to the possibility of the USER changing frequently.

- Request someone that is not related to development of the project to attempt to use the program while being provided information that a USER on the client side would be provided with.

Program is to display accurate data when requested.

- Data should correspond to inputs and provided data files

Program should be easily ported to other machines due to the possibility of client wanting to re-use the program in a different location/machine.

- Move program on to various machines and test for consistency.