# DECLARATION

I, Edwin ngila kyalo of AdmNo. 230192, certify that this project is my own work, based on my personal study and research done. I acknowledge all the resources and materials used to come up with this project whether it was articles, class notes, reports, and any other kind of documentation.

I also certify and confirm that this project has never been submitted anywhere for academic audit and that it has not been copied in whole from any source or otherwise plagiarized from any source or persons.

I confirm that I have identified and declared all possible conflicts that I may have.

Signed and confirmed by: -

Candidate Name:

Candidate signature:

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Supervisors Name:

Supervisors Signature:

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# List of tables and figures

# Abstract

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# CHAPTER ONE

## introduction

what is a stock management system? A stock management system or also known as an Inventory management system is used to maintain an optimal stock level (make sure that the level of items is consistent), track goods during transit, receive new items, manage warehouse processes such as packing and distributing, preventing items from becoming outdated and prevent spoilage, and ensure your products are never out of stock.

## background of the study

The project come to my attention during an exaction to a supermarket warehouse. In this warehouse their where people walking around counting items that where in stock and noting them down in their notebooks and after the counting is done, they would tally the total and make decision based on the outcome.

This process takes them 3 to 4 hours after closing hours, and it is done four times a week, even after the process the outcome of the result is still not accurate as it should be. After research the outcome shows that it is advisable to carry out the process once every month, but this is only achievable if the organization has a fully working system in the works.

Diving in deeper to the manegment portion of the warehouse the manager complained that the number of employees that are used to take the stock is a lot and is monetary expensive to them. This problem is not faced only by them but many of the warehouses are all facing the same problem.

The warehouse also does not give an accurate estimate of the net income that it brings in because of loss of manually written recipes. Many of the supplies that bring in items operate through manually written recipes. The warehouse also has a challenge of keeping up with orders given to them by the branches of the supermarket.

Another thing is, it is hard for them to keep track of goods that are nearly or in the verge of getting expired so as to remove them from store and make space for new items to be restocked

## problem statement

The problems that stock takers came by during the operation are; over stocking as a result of under counting, items getting lost in the warehouse, the cost of items is undervalued, data lose through loss of tally sheets and supplier receipts, warehouse revenue (the amount of money that a warehouse brings in in the end of the year), keeping track of items that have or almost about to expire and keep up with branch demands.

To solve the problems that have been identified we need to know the types of systems that are used. Examples of stock management systems are: -

1. Manual inventory management system. (pen, paper and counting)
2. Periodic inventory management system. (manual system integrated with perpetual system)
3. Perpetual inventory management system. (a fully automated)

For the purpose of a well efficient, self-running system the perpetual inventory management system is the best route to take for the problem at hand. A Perpetual inventory management system is a system that is fully automated. The system checks for the levels of stock of items, tracks transactions, updating cost of items at every stage of the cycle, it also tracks sells and updates in real time.

Over stocking as a problem can be solved through the process of keeping track of items that are fast moving and items that are not fast moving. When this is taken to consideration the warehouse is able to know the items that should never run out and also know the items that should not be considered during re-stoking. The system will keep the recodes of the items in the stock and every time there is a perches the system will minus and at the end of the day show the summary of the day.

Items getting lost in the warehouse can be solved through checking in items when the suppliers bring them in. at the same time when the items are being checked in the warehouse the suppliers with manual receipts will be captured through a picture and stored for future references. During the checking in the uses is required also to enter the buying cost of the items. The system will reduce the time used for check-in by using a barcode reader that will be used to scan the bar code of the boxes for easy input and will also solve the problem of track. Tracking in the warehouse is used to follow the items from the supply end till the item is on the shelf.

A warehouse is usually a central place where goods are stored and later distributed to the branches. The system will have a messaging or an alert portal that will be able to receive alerts from the branch managers requesting items that are depleted from their holding house or giving the reports back to the warehouse manager telling him/ her that the goods have been received. The system will have two

## objectives

The objectives from the problems stated are: - have a system that will receive input through the use of barcodes and manually, have a system that will track items in the warehouse, have a system that will keep recodes e.g. Supplier receipts and supply branch recodes, have a system that tracks the fast-moving items and gives the times that the fast-moving items occur, have a system that will extensively show summaries of the total distribution in a month and at the end of the year which will ensure that the business meets its targets, have a system that will help in tallying items using barcodes and have a system that will contact the suppliers to restock. The system will be divided into two one part for the warehouse and one part for the branches.

## Scope of the study

The project will cover mostly on the basis of supermarket warehouses. The goal of the project is to help supermarket warehouses to keep track of goods from the time the products come from the suppliers to the storage to the end consumers. During the process a lot of activities take place and it is hard to keep up with every step from dealing with multiple suppliers, accounting for every item in the warehouse and keeping up with branch demands.

## justification

The project at hand will bring a big change to the supermarket warehouse management at large by; reducing the number of workers needed in the warehouse end of the business, budgeting for a re-stocking, avoiding human error, saving time, and improving accuracy. The project will save the organization monetary revenue when considered.

## budget and resources

to come up with the project the budget and resources to be considered is: - a well working laptop, a code editor, internet connectivity, class notes for reference and server space for web hosting.

## project schedule

Project documentation / research for the project

\*This process will continue to take place when the project.

\*From chapter one to chapter three in 2 months.

PROJECT TAKES 6 MONTHS IN TOTAL

System development for the back end (2 months)

\*Starting with the back end of the project to make a strong database for the system.

1. Develop the database for the warehouse – draw the entity relational diagram and develop the database
2. Integrate the barcode API with the project.
3. Consume the application for the mobile application
4. Develop the database for the branches- draw the entity relational diagram and develop the database.

System development for the front end (2 months)

\*Develop a fully responsive GUI and a smart changing user interface.

1. Responsive and a good looking GUI.
2. Include Graphs and charts
3. Develop the GUI for the mobile app

# CHAPTER TWO

## literature review

### Introduction

In the literature review, we will be able to show studies of the current working system and show studies that relate to the development of the system. The challenges that the old system had.

### Time taken during inventory management

The Manual inventory management system is time-consuming for the workers in the warehouse sector of the business. According to skuvault.com, it takes 3-2 weeks to conduct a full physical stock count and in the process, not all the items are counted. But it is not the same case when using a Perpetual inventory management system. From an anecdotal view, I think when using the system, it will not take the longest time to carry out the process. In addition, the system will be automated and give up-to-date details of items in stock.

### The number of people employed in the warehouse

The number of people needed during the stock-taking process will be determined by the size and capacity of the warehouse according to unleashedsoftware.com. The system that is currently in development uses a barcode reader which makes it easier even for one person to carry out the stock-taking process.

### Changing demands in the market place

The consumers of the products are going to determine the number of items that should be available and ready to be distributed to the deferent branches. According to netsuite.com the manual inventory management system does not keep up with customer demands, compared to Perpetual inventory management system which is automated it will keep up with the customer demands by giving alerts to the user indicating that the levels of items are about to end. Also by going off customer demands we will avoid overstocking warehouses

### Expiration dates

It is hard for organizations that use manual inventory management systems to keep track of the items that are almost or about to expire. For the Perpetual inventory management system there are measures that have been put in place to avoid keeping items from spoiling in the warehouse where determine the shelf life of an item is determined by: -

SHALF LIFE

CURENT DATE

=

EXPIRATION DATE OF ITEMS

-

### Lose of data

Data that is collected through ether data tally sheets or supplier receipts can get lost. To avoid this, the new system will capture the manual receipts and store them for future reference.

## Description and representation of the system

The system process can be illustrated through a diagram: -



# CHAPTER THREE

## project methodology

# CHAPTER FOUR

## SYSTEM ANALYSIS AND REQUIREMENT MODELING

# CHAPTER FIVE

## SYSTEM DESIGN

# CHAPTER SIX

## SYSTEM IMPLEMENTETION

# CHAPTER SEVEN

## LIMITATION AND RECOMMENDATIONS

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# APPENDIX