

**PHARMACY STOCK MANAGEMENT SYSTEM CASE  
STUDY: LINDO PHARMACY MALABA.**

**NAME: ATHIENO LILIAN HOPE**

**REG NO: BU/UP/2019/1271**

**TELL: 0782242417/0751743760**

**EMAIL: [hopeathieno65@gmail.com](mailto:hopeathieno65@gmail.com)**

**A FINAL PROJECT REPORT SUBMITTED TO THE FACULTY OF  
SCIENCE AND EDUCATION UNDER THE DEPARTMENT OF  
COMPUTER STUDIES LEADING TO PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE AWARD OF A BACHELORS DEGREE  
IN INFORMATION TECHNOLOGY.**

**SUPERVISOR**

**DR ANGOLE RICHARD**

**DEPARTMENT OF COMPUTER STUDIES**

**FACULTY OF SCIENCE AND EDUCATION**

**31<sup>ST</sup>, JAN ,2023.**

## DECLARATION

I, ATHIENO LILLIAN HOPE, with Registration number BU/UP/2019/1271 hereby declare that this Project Report is original and has not been published or submitted for any other degree award to any other University before.

Sign..... *HLHP* ..... Date: *15/02/2023* .....

**Athieno Lillian Hope**

## APPROVAL

This Project Report has been submitted for Examination with the approval of my caring supervisor.

Sign.......... Date: ..15-02-2023.....

DR: ANGOLE RICHARD OKELLO.

Department of Computer Studies

Faculty of Science Education

## DEDICATION

Firstly, I thank the Almighty God who has successfully enabled me to complete with a sound mind and good health. I then dedicate this report to my inspiration of all times my dad **Mr. JOHN JULIUS**. Sincerest appreciation to my lovely mum **Miss ADIKINI JANE** as well as a big shout out to my dearest siblings. Thank you so much for the support and may the Almighty reward you abundantly. Special thanks to my supervisor **Dr. ANGOLE RICHARD OKELLO** who guided me on the dos and don'ts of making this report a success. For if it was not him, maybe I would not shoot the tip of this mountain. Lastly, let me thank everyone that has put his/her effort in seeing me go through my education up to this level including my fellow 4 course mates whom I started and ended the course with. May the Great One bless and ease your journey and endeavours here after.

## ACKNOWLEDGEMENT

First and foremost, I would like to thank the Almighty God who has enabled me to complete my course successfully regardless of inevitable challenges here and there.

With positive vibes, I would like to thank my supervisor **Dr. Angole Richard Okello**. He made me realize that not everything is given on a silver platter henceforth one needs to always work hard and ensure that he/she always finds a solution to any given problem. I do feel proud for I know something that will bare fruits all because of him.

With a lot of gratitude, I extend my sincere appreciation to the manager of LINDO Pharmacy Malaba Mr. Ogwang Andrew for the great cooperation and assistance offered especially during data collection.

With happiness and joy I sincerely thank my fellow students for they indeed helped me so much to attain this great level through encouragements, discussions, and a lot more. If it was not you my dear ones, I think I would not climb this mountain.

Lastly, I acknowledge all my friends as well as the whole community that made my life a success at Busitema University.

## Table of Contents

DECLARATION.....	ii
------------------	----

APPROVAL.....	iii
DEDICATION.....	iv
ACKNOWLEDGEMENT .....	v
Table of figures .....	
vi .....	viii
Acronyms.....	x
ABSTRACT .....	xi
1.0: Introduction.....	12
1.1: Background of study.....	12
1.2 Problem Statement .....	13
1.3 Purpose of Study .....	13
1.4: main objective .....	13
1.5: Specific Objectives.....	13
1.6: Research Questions.....	14
1.7: Scope .....	14
1.8: Significance of the Study .....	15
2.0 Introduction.....	16
2.1: Management Information Systems.....	16
2.1.1: Management .....	16
2.1.2 Information.....	16
2.1.3: System .....	17
2.2: Role of Pharmacy Computer Systems .....	18
2.3: Databases .....	19
2.4: Data Bank .....	19
2.5: Database Management System (DBMS) .....	20
2.5.1 Advantages of Using Database and DBMS: .....	21
2.8.2 Disadvantages of Using Database and DBMS .....	22
2.9: Conclusion .....	23
3.0: introduction.....	24

3.1 area of study.....	24
3.2: study population .....	24
3.4 Sample Selection .....	25
3.5 Iterative model .....	25
3.5.1 data collection .....	26
3.5.2 Data Collection Tools.....	27
3.6 system analysis .....	28
3.7 system design .....	29
3.7.1 Data Modelling .....	29
3.8 Implementation Coding and Testing .....	30
3.9 Integration and System Testing.....	30
3.10 Operation and Maintenance .....	31
3.11: System Specifications .....	31
3.12: Conclusion .....	31
4.0 Introduction.....	32
4.1 System Study (current system).....	32
4.1.1: Strength of The Existing Approach.....	32
4.1.2 Weakness of The Existing Approach .....	32
4.2 Requirement Analysis and Definition.....	33
4.2.1 Hardware and Software Requirements.....	33
4.2.2 User and Security Requirements.....	33
4.2.3 Functional Requirements .....	33
4.2.4 Non-Functional Requirements .....	34
4.3 System Design.....	34
4.3.1 Architecture Design.....	35
4.3.2 Context Flow Diagram .....	35
4.4 Data Flow Diagram .....	36
4.5 Entity Relationship Diagram .....	37
4.6 Use Case Diagram.....	38

4.6.1: Use Case Table.....	39
4.4 Conclusion .....	41
5.0 Introduction.....	42
5.1 Implementation.....	42
5.2 Tools and Programming Languages Used .....	42
5.3 User Interfaces .....	43
5.3.1 Login panel .....	43
5.3.2: Dash board panel .....	44
5.3.3 Create New Invoice Panel and the manage customer page .....	44
5.3.4 Add customer form and manage customer page .....	45
5.3.6 Add Supplier Form and manage supplier page .....	46
5.3.7 Reports .....	46
5.4: Data storage .....	47
5.5: System Testing.....	49
5.5.1 Unit Testing .....	50
5.5.2 Integration Testing .....	50
5.5.3 Security Testing .....	50
5.6: System Validation.....	50
6.0 Introduction.....	51
6.1 Discussion .....	51
6.4 Future work .....	53
References:.....	54
APPENDIX I-Questionnaires.....	55
When was the pharmacy founded? .....	55
APPEDIX II- Requirements collection introductory letter .....	58

**Table of figures**

Figure 1: showing architecture design .....	
35	



Figure 2: context diagram .....  
36

Figure 3: shows a dataflow diagram. ....  
37

Figure 4: shows an Entity Relationship diagram. ....  
38

Figure 5: shows a Use case. ....  
39

Figure 6: shows the login panel. ....  
43

Figure 7: dashboard .....  
43

Figure 8: shows the create invoice panel .....  
44

Figure 9: manage customer .....  
44

Figure 10: shows Add customer form. ....  
44

Figure 11: shows add medicine panel and manage medicine page. ....  
45

Figure 12: Add Supplier form and manage supplier page. ....  
45

Figure 13: shows Reports. ....  
46

Figure 14: Admin table. ....  
46

Figure 15: shows the customer table. ....  
47

Figure 16: shows the invoice table .....  
48

Figure 17: shows the Medicine table .....  
48

Figure 18: shows the supplier table. ....  
49

**Acronyms**

CD	Compact Disc
DBMS	Database Management System

GB	Giga Byte
GHZ	Giga Hertz
LAN	Local Area Network
M.I.S	Management Information Systems
MySQL	My structured Query language
PDUR	Prospective Drug Utilization Review
P H P	Hypertext preprocessor RAM - Random Access Memory

### **ABSTRACT**

This project was aimed at designing a web-based Pharmacy Stock Management System; a system to aid in the management and operation of the pharmacy.

Methods that were used to gather information about the current system include; interviews, record review and questionnaires. From that information, requirements for the new system were obtained.

The methodologies used include the Structured System Analysis and Design (SSAD) which was used for analysis and designing the system as well as the RAD (Rapid Application Development) which was easy to deliver a working system with all the modules worked upon one after the other.

Furthermore, I went ahead and employed MySQL as a database management system, PHP as the technology which is an open source general purpose scripting language that is especially suited for web development and can be embedded into HTML. In addition, HTML (Hyper-text Mark-up Language) and CSS (Cascading Style Sheets) which are the core web scripting languages for building web pages and web applications were used. HTML provided the structure of web pages whereas CSS was mainly used to control the styling and layout of web pages.

The system generates reports that are vital for the pharmacy administration.

# CHAPTER ONE

## 1.0: Introduction

Chapter one presents an overview and the rationale upon which the research outcomes are evaluated. It has eight sections namely: Introduction, background of the study, statement of the problem, research questions, general and specific objectives of the study, scope of the study, research contribution, and justification.

## 1.1: Background of study

Stock control and business processes have been tedious and a complicated process in many organizations today. This has been so because these processes are done manually, placing the workload on the general staff (Lee and Billington 1992). Today's organizations value efficiency and reliability in terms of delivery and management of their products, relative to slow and inefficient manual systems in place. Manual systems are far reaching negative effects which are time consuming as the staff doesn't have prior knowledge of available stock levels in the store hence unable to predict proper timing for new stock deliveries. This means customers are kept waiting while the staff go down in the shelves to trace the product. The management also is not in a good position to monitor the profits, trends of growth, losses and development strategies to be put in place for the future, due to inconsistencies of manual record keeping systems. This project will involve design and implementation of a computerized stock control system. This is a system that will allow an easy and effective way to control and maintain business processes. For instance, stock levels which were initially manual will be automated. Maximum stock levels will be computerized hence investment on inventory will be kept at minimum so that the funds are made available for more productive uses thereby avoiding borrowing and consequent loss on interest. Losses will be minimized on account of obsolescence due to overstocking Minimum stock levels will be maintained automatically making sure that items are available in the store where and when needed. Expired medicine and drugs that are out of stock will be detected automatically. The system is intended to run on a networked environment so information will be shared efficiently hence reducing on the time wasted by moving from one place to another hence a database will be used to capture the information. (Farquhar, Fikes et al. 1997).

The appointment of a systems administrator who will be in charge of maintaining the system and also user training on the use of the new system.

#### References:

1. Borins, S. (2002). "Leadership and innovation in the public sector." Leadership & Organization Development Journal **23**(8): 467-476.
2. Farquhar, A., et al. (1997). "The ontolingua server: A tool for collaborative ontology construction." International journal of human-computer studies **46**(6): 707-727.
3. Lee, H. L. and C. Billington (1992). "Managing supply chain inventory: pitfalls and opportunities." MIT Sloan Management Review.
4. Santibáñez, P., et al. (2012). "Operations research methods improve chemotherapy patient appointment scheduling." The Joint Commission Journal on Quality and Patient Safety **38**(12): 541-AP542.
5. Chaudahary, A.K. (1997). Encyclopedia of Management Information System,
6. Date, C.J. (2001). An Introduction to Database Systems. 7th Edition. Pearson Education Publishers. New Delhi.
7. Elizabeth, A. *et al.* (2007). Journal of the American Pharmaceutical Association
8. Gerald, V. P. (2000). Database management systems - designing and building business applications. Second edition. McGraw-Hill Publishers. New York.
9. James, AR. (2000). Introduction to information Systems. Second Edition. McGraw-Hill Publishers. New York.
10. Raghu, R and Johannes; G. (2000). Database management systems. Second edition.