

**BUSITEMA UNIVERSITY**

**FACULTY OF ENGINEERING**

**DEPARTMENT OF COMPUTER ENGINEERING**

**INTEGRATING E-TABLET COUNTING WITH DRUG  
MANAGEMENT SYSTEM**

**BY**

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## **ACKNOWLEDGEMENT**

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## **DECLARATION**

I NAMBOOZE KEVIN BAYEGA, Reg No. BU/UG/2015/30, hereby declare that this project report is my own original work except where explicit citation has been made and it has not been presented to any institution of higher learning for any academic award.

**NAMBOOZE KEVIN BAYEGA**

BU/UG/2015/30

Sign.....

Date.....

**APPROVAL**

I certify that the project report entitled “**INTEGRATING E-TABLET COUNTING WITH DRUG MANAGEMENT SYSTEM**” has been done under my supervision and is now ready for examination.

Sign .....

Date .....

**Ms. ASINGWIRE BARBARA KABWIGA**

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## **DEDICATION**

To my dad and mum and everyone else that contributed to the completion of this project.

## **LIST OF ACRONYMS**

HC – Health Centre

IDE - Integrated Development Environment

IR - Infrared

LCD – Liquid Crystal Display

OPD – Out Patient Department

PCB - Printed Circuit Board

RF - Radio Frequency

GSM – Global System for Mobile Communications

## **ABSTRACT**

In Uganda today, the dispensing process is still a manual, long and an involved process. The pharmacists in government health centers use counting trays or stock container lids to count the medicine which is a time-consuming process susceptible to miscounting which could lead to medication errors. Plus, the record keeping done by writing in books increases time patient spends at the counter. Usually they are faced with large numbers of patients to give medicine to. Outpatients that visit these facilities end up spending long hours in line at the hospital sometimes a whole day as they wait to be given their prescriptions from the dispensary. It is such an inconvenience for both parties. Therefore, a system was developed that enables pharmacists do their job effectively by making the counting process faster by using an electronic tablet counter and auto generating dispensing records with the help of a record management system. This way they do not have to do it manually. The dispensing records can be retrieved at any time in case there is need for reports and auditing. The system also enables doctor to know what medicines are in stock such that either alternative is given to patient or he or she does not waste time in line only to find medicine out of stock. Generally, this all means less waiting time for the patients thereby improving the dispensing experience.

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# CHAPTER ONE: INTRODUCTION

## 1.1 BACKGROUND

Dispensing is the process of preparing and giving medicine to a named person on the basis of a prescription. It involves correct interpretation of the wishes of the prescriber and the accurate preparation and labeling of medicine for use by the patient. This process may take place in a public or private clinic, health center, hospital, dispensary or in a shop or community pharmacy setting. It is carried out by many different kinds of people with a variety of training and backgrounds. No matter where dispensing is done or who does it, any error or failure in the dispensing process can seriously affect the care of the patient. [1]

Dispensing is one of the vital elements of rational use of medicine. All resources involved in patient care prior to dispensing may be wasted in case a named patient does not receive effective form of correct drug, in appropriate packaging, and with correct dose and advice. Errors in the dispensing process lead to medication errors. These errors can be as a result of misinterpretation of prescription by pharmacist or dispenser, miscounting of medicine, cross-contamination due distractions, stress and busy work places. [2]

According to the Uganda Hospital and Health Centre Census Survey report, 51% of the population in Uganda seek medical treatment from government health facilities with about one million OPD visits in hospitals/HC IVs per month [3]. The dispensing process in these dispensaries is manual; with the dispenser using a tablet counting tray, clean piece of paper, or a tin lid for a stock container with a spatula to count tablets and capsules. This method of counting is liable to miscounting especially if there are any distractions and this could be life threatening to patients. Also before handing the medicines to the patient, records of medicines dispensed are entered into a record book to account for and verify stocks as well as trace any problems with medicines issued to patients. [4]

The whole dispensing process is long and involving, requiring a lot of time and in cases of high patient load, medication errors like over dosing or under dosing are highly likely as dispensers try to work faster in order to serve patients faster. Much of the time is focused on counting and less time is given for other patient care related services therefore there is need to improve the dispensing process and make it more efficient.

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