BUSITEMA UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF COMPUTER ENGINEERING

FINAL YEAR PROJECT REPORT

TITLE: WATER TROUGH MANAGEMENT SYSTEM.

BY

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BU/UP/2015/336

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A Final Year Project report Submitted to the Department of Computer Engineering in Partial Fulfillment for the Award of Bachelor of Computer Engineering Degree

April 2019

ACKNOWLEDGEMENT

First of all, I acknowledge the Almighty God for the gift of life, knowledge, wisdom, understanding and guidance for without Him, I would not have been able to accomplish this project. Glory be to you for you have taken me through the project since its start to this far end. May your name be praised.

My supervisor Mr. Ocen Gilbert, thanks so much for taking me through the project. Thank you so much for the aid offered to me.

Also, I acknowledge all the other department lecturers who have always given me time for consultation regardless of whether they are my supervisors or not, thank you for the helping attitude.

Fellow students who offered help in form of advice and information.

Special thanks to my family for their never ending financial and advisory support. May God reward you abundantly.

DECLARATION

I, ISABIRYE MOSES GRACE do hereby declare that this Project is original and has not been submitted for any other degree award to any other University before.

Signature ..... Date .....

APPROVAL

I satisfy that the project proposal “Water Trough Management System” has been done under my supervision and is now ready for examination.

Name: MR. OCEN GILBERT

Signature ..... Date: .....

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DEDICATION

I dedicate this project report to my beloved parents Mr. Kisega James Patrick and Mrs. Kisega Harriet for the love and support they have provided to me throughout this project period.

I also dedicate it to my project supervisor Mr. Ocen Gilbert for his tremendous effort and guidance in relation to my project, the encouragement and moral support he offered to me during my research period. May the almighty God Bless him.

LIST OF ACRONYMES AND ABBREVIATIONS

ID IDENTIFICATION

NFC NEAR FIELD COMMUNICATION

RFID RADIO FREQUENCY IDENTIFICATION

RF RADIO FREQUENCY

IR INFRARED RADIATION

ABSTRACT

Water is very essential to the lives of cattle and the more the cattle takes water, the more the benefits from them. Therefore, this calls for cattle drinking clean water. Water pumped to the drinking places (troughs) is always clean but due their openness, the water gets contaminated. The contaminates are both from the cattle themselves and other external factors. The contaminated water causes water borne diseases to the cattle.

The methods in place that are used are motion detections in a motion detector water pump system, animal nose operation in animal operated nose pump system and automatic water fountains. These methods used have some weakness and thus the designed system solves these weaknesses. The designed system is a water trough management system that is always closed and only opens when the cattle have come to take the water.

This system when employed on the farms will enable cattle access only clean water since the trough is ever closed. It only opens when the cattle have come to take water and then water begins flowing from the tank to it. The external factors have no access to the inside of the trough. The water pumped to the trough is clean and safe to drink. The remaining water that the cattle have drunk on is considered dirty and is pumped out. The system has a provision for cleaning it in case the farmer wants to clean it.

In conclusion, the system reduces the water borne diseases in cattle that come up due to openness of the water troughs where water gets contaminated by closing the trough hence disenabling external factors to have access to the inside of the trough.

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CHARPTER ONE

INTRODUCTION

The introduction comprises of background, problem statement, objective, justification and scope of the study**.**

1.1 Background

Water is an essential nutrient for cattle production, it accounts for 50-80% of a cattle's live weight depending on age and degree of fat cover, and is involved directly or indirectly in every physiological process occurring within the cattle, water is a medium for transportation of nutrients, waste products, hormones, and other chemical messengers, and aids in the movement of food through blood osmotic pressure and is a major component of secretions such as saliva and milk[1].

The total body weight of dairy cattle is 56 to 81% water and water is the main component of milk and waste products, therefore, dairy cattle have a substantial daily requirement for water, decreasing free water intake is undesirable as it will limit milk production and reduce health status, resulting in decreased product profitability[2].

Providing high quality water to cattle will have benefits similar to the provision of quality forages, increased water consumption has been shown to result in greater feed intake, improved health and increased weight gain[3]. The better the quality of the water, the more the cattle drink [4].

Water pumped to the water troughs is ever clean but due to their openness, the water after gets contaminated by the external factors[5]. For cattle drinking from open troughs have a greater opportunity to get water borne diseases[6]. These factors can be droppings of birds, dust carried by wind, rain water.

Water borne diseases are caused by the pathogens found in water contaminated with infected feces, urine, discharges and tissues when water is exposed to external factors. The water borne diseases include anthrax caused by bacillus anthracic, paratuberculosis caused by

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