

**BUSITEMA
UNIVERSITY**
Pursuing Excellence

DEPARTMENT OF COMPUTER ENGINEERING

FINAL YEAR PROJECT REPORT 2023/2024

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IOT BASED CONTAMINATED FOOD DETECTION SYSTEM

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A Final year project report submitted to the Department of Computer Engineering in partial
Fulfillment of the Requirement for the award of a Bachelors Degree in Computer
Engineering and informatics from Busitema University

DECLARATION

I Nakabale Godfrey, BU/UP/2020/1254 a student of Busitema University, do declare that the Final year report presented has been prepared uniquely by me after thorough research work and consideration at Busitema University. I also affirm that this Final year report has been drafted by me and has never been submitted to any academic institution.

SIGNATURE 

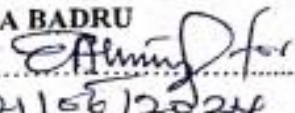
DATE 20th June 2024

APPROVAL

This is to certify that the above-named student **NAKABALE GODFREY**, Reg NO: **BU/UP/2020/1254** has compiled this Final year report under the supervision and guidance of the University supervisor.

University Supervisor

Mr. LUSIBA BADRU

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Date: 21/06/2024 ,

DEPARTMENT OF COMPUTER ENGINEERING AND INFORMATICS

DECLARATION

I dedicate this project to my benefactors my parents, all the lecturers, students, staff and generally all those interested in learning more about how people can be easily and smartly protected from food poisoning from the comfort of their homes, offices or anywhere.

ACKNOWLEDGEMENT

First and foremost, i would like to thank the Almighty God for the gift of life, breath in my lungs, the opportunity to do what i do. Further more i would like to acknowledge the sincere efforts of my supervisor, Mr. Lusiba Badru for his guidance and supervision all through this project process, the Busitema University staff members especially the computer department, Dr. Alunyu Andrew, Dr. Matovu Davis, for making me what i am today.

Most importantly, my family for their continuous support, prayers and encouragement, my friends for always being there for me and for Busitema university, engineering faculty for all the skills and knowledge they have implanted in me.

DEDICATION

I dedicate my work to my family especially my parents and many friends. A warm gratitude to my loving parents, Walungama Vicent and Nalusiba Jane whose words of encouragement and push for tenacity ring in my ears. My sisters and my big brother who comforted me in low and ups times, it is really very special. Mostly importantly all the Busitema Staff who have made the man of today and tomorrow.

ABSTRACT

This Final year report documents an IOT based detection model design developed to detect the parameters that describe contaminated food within a certain period of time under storage. Existing systems such as RFID technology, packaging, Laboratory tests and analysis were deployed previously to tackled the problem of contamination but each had shortcomings. The developed system aims to bridge the gaps of those existing systems. The model design is made up of a microcontroller and different sensor modules to achieve this requirement. The different sensors collect data from the stored food and surrounding, processed by the microcontroller and sent to an IOT platform via a WIFI module. Parameters such as gas emissions, temperature, humidity, color and moisture are monitored to set threshold values, where an alarm is triggered when the sensor reading surpass the set threshold value

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ABBREVIATIONS/ ACRONYMS

IOT Internet Of Things

LCD Liquid Crystal Display

RFID Radio Frequency Identification

GMP Good Manufacturing Practices

WIFI Wireless Fidelity

IDE Integrated Development Environment

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