BUSITEMA UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF COMPUTER ENGINEERING

SMART VEHICLE ANTITHEFT SYSTEM

BY

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A project report submitted to the Department of Computer Engineering in partial fulfilment of the requirements for the award of the Bachelor's degree in Computer Engineering of Busitema University

JUNE, 2016

Declaration

I **MASEMBE MANSHOURI (BU/UG/2012/73)** hereby declare that this project report is my original work except where explicit citation has been made and to the best of my knowledge; it has never been published and submitted for the award of any academic qualification in any institute of higher learning before.

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Approval

This is to certify that the project report under the title "**Smart Vehicle Antitheft System**" has been done under my supervision and is now ready for examination.

Mr.Lusiba Badru

Department of Computer Engineering

SIGNATURE.....

DATE.....28/06/2016.....

Acknowledgement

I wish to extend my sincere gratitude to all those who have made this project a success.

First, I wish to thank my supervisor Mr.Lusiba Badru who assisted, directed and guided me through my project work.

Special thanks also go to the entire Department of Computing Engineering, Busitema University, for their great assistance and technical input during the course of the study.

My sincere thanks to all my research colleagues for their supportive criticisms and comments on the subject at various stages of the study, without their support this achievement wouldn't have been possible.

Great thanks ZAICTRONICS in Wandegeya-Kampala for granting me access to their Electronics laboratory.Also, special thanks to HAJJAT Kawomera, Ms.Nagujja Aidah and Mr.Mpagi Kharim for the financial support rendered, and all the members of my family for being responsible and supportive during the entire period of study.

Above all, I thank **God the Almighty** for giving me wisdom, knowledge, health, life and the patience to learn amidst all the challenges I encountered throughout this period.

List of Acronyms

GM	General Motors
VIN	Vehicle Identification Number
LCD	Liquid crystal display.
TDM	Theft Deterrent Module.
RKS	Remote keyless system
PID	Passive infrared detector.
IR	Infrared

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Abstract

A Smart Vehicle Antitheft system is a system that monitors the security of the vehicle with the help of various sensors. This system uses RF technology to send a signal from a car section to the user/owner section in case one of the sensors detects a parameter considered such as touching, lifting, door opening, car motion. This system improves the technology of the existing Car alarm systems by using a vibrator and LCD screen to alert the owner in case of car theft. The Information was gathered, consultations made and document reviews, concerning the existing Car alarm systems. The main objective of this study was to design and implement a smart vehicle antitheft system that will prevent Car theft and it was successful. After making analysis of the gathered information, development of the smart vehicle antitheft system kicked-off. The following were the major hardware components that were used in this project implementation; ultrasonic sensor , vibration sensor, reedswitch ,Halleffect sensor,Arduino microcontroller, vibrator, RF module and many other smaller components like the resistors, LEDs, Transistors etc. The components of the system were tested prior to system testing using a bread board after which were soldered on a copper board. The functionality of the system was under the control of the algorithm/code that was written on the microcontroller. The system was finally subjected to system testing to validate and verify its final working, under the supervision of my project supervisor before presenting to the panel at Busitema University.

CHAPTER: ONE

1.0 Introduction

1.1 Background

Security has always been an issue due to increasing crime rates most especially in the developing countries like Uganda. Therefore, technology is being used as a tool to provide greater safety as preventive action to lessen the probability of crime rates. Car vehicle is one of the most valued possessions nowadays and having one of this in the third world countries most specially to ordinary company employee is very difficult to become a reality and losing it is really a cruel imagination if it happens. [1]

Vehicles are important in today's fast-paced society. Hence, acquiring a vehicle nowadays is considered a necessity, compared to the past where it was considered a luxury. In this thriving society, more and more vehicles are produced to meet the increasing demands of people and businesses from all corners of the world. Here comes the necessity to provide more and more safety and security features to them. [2]Security, especially theft security of vehicle in common parking places has become a matter of concern. [3] Motor Vehicle Theft' means the removal of a motor vehicle without the consent of the owner of the vehicle. 'Motor Vehicles' includes all land vehicles with an engine that run on the road, including cars, motorcycles, buses, Lorries, construction and agricultural vehicles. **Statistics indicate that** in 2014, around 132,000 motor vehicles worldwide were identified as stolen **and** each year, more than a million vehicles are stolen in the United States with a car stolen every 23 seconds [14].

In general, research has identified three forms of motor vehicle theft: Recreational theft, Theft for the purpose of transportation and Theft for profit. Motor vehicle theft for recreational purpose typically involves joyriding or stealing a vehicle for fun with no real destination or other motive in mind. This category of motor vehicle theft is often engaged in by youth looking to obtain status among their peers or who Experience some psychological/physical thrill associated with engaging in or participating in a motor vehicle theft. Motor vehicle theft for transportation involves stealing a vehicle for a single-trip, transportation associated with or facilitating the commission of another offence, such as a break and enter, or the theft of a vehicle for longer-term personal use. Motor vehicle theft for profit typically involves stripping the car of its parts for reuse or resale, more organized chop-shop organizations that may involve organized crime, the retagging or re-identification of cars (giving a stolen car the identify of a wrecked vehicle) for export, or insurance fraud.

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