BUSITEMA UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF COMPUTER ENGINEERING

FINAL YEAR PROJECT REPORT

Bachelor of Computer Engineering

Title: Automobile Traffic Management System for T-junction

By

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A final year project report submitted to the department of computer engineering at Busitema University in partial fulfilment of the requirements for the award of a bachelor degree in computer engineering.

DECLARATION

I, **ABALIWANO FRANCIS** Reg. No BU/UG/2016/1709 hereby declare that this project report is my original work except for citations made and has never been published/submitted to any other university or institution of higher learning for any academic award.

Sign: .....
Date: .....

DEDICATION

I dedicate this report to my beloved parents Mr. Azimafesi Bwekwaso and Ms. Babirye Annet, my sister Namukubembe Flavia, my brothers Waiswa Godfrey and Kintu Harman, my supervisor Mr. Alunyu Andrew, lecturers for Computer Engineering Department and to the almighty God. Your contribution to my education has been wonderful, encouraging and promising a bright future in my life. May the Almighty God reward you abundantly.

ACKNOWLEDGEMENT

I would like to appreciate my supervisor, Mr. Alunyu Andrew who has continuously guided me throughout this project. May God bless you and reward you abundantly. I give some extra credit to my parents, brothers, sisters and friends who have provided financially, materially, spiritually until the completion of this project, may God bless you. I also appreciate the Department of Computer Engineering at large for the guidance and insight into concepts of research and project management as well as technical knowledge applicable in the design of the system.

Approval

This is to certify that the project titled "**Automobile Traffic Management System for TJunctions**" has been under my supervision and is now ready for examination.

Sign: ……

Date: ……

Mr. Alunyu Andrew
Department of Computer Engineering

Abstract

Traffic management is one of the most prioritized processes that both developing and developed countries can't do away without. Proper traffic management can help to reduce time wasting, accidents, and increase workers' productivity thereby speeding up the rate of economic development. This project was developed to reduce the average car waiting time and accidents at T-junctions. It reduces the waiting time by giving time for green light according to the traffic density. The system takes care of three conditions i.e., no traffic, little traffic and too much traffic and these conditions are determined using ultrasonic sensors. The time given to vehicles from a particular lane depends on its traffic density. If a lane has no vehicle the system switches to another lane, if a lane has little traffic the green light shows for some short time and if the active lane has too much traffic the lights show green light for a longer time before switching to the next lane.

The system also has the lane blocking module that closes the lane when the lights are showing red to avoid the risk of accidents when cars cross during the red lights time. To ensure that these people get to know when the lights are about to turn red, the 7-segmets display are used to show the time remaining to stop crossing the junction for the active lane and they display the waiting time for the lanes that are not active.

The web application is used by drivers to view traffic at these junctions so that they can be able to use the alternative road in case traffic is too much. It is also used by administrators to add other junctions to the system, control time for little traffic and high traffic and also storing data about traffic at junctions that can be used for further research or in planning.

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LIST OF ACRYNOMS

LED: Light Emitting Diode

PCB: Printed Circuit Board

IDE: Integrated Development Environment

SQL: Structured Query Language