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**FACULTY OF ENGINEERING**

**DEPARTMENT OF COMPUTER ENGINEERING**

**FINAL YEAR PROJECT REPORT**

**AUTOMATED SHOPPING TROLLEY FOR THE SUPERMARKT**

**BY**

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**A Project Report Submitted to the Department of Computer Engineering in**

**Partial Fulfillment of the Requirements for the Award of a Bachelor's Degree in  
Computer Engineering**



**DECLARATION**

I, **LUKAKAMWA SALEH** Reg. No BU/UP/2017/367 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.....15/03/2022

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## **DEDICATION**

I dedicate this report to my beloved parents Mr. Kanakulya Yusufu and Ms. Namuwase Amina, My sister Mutesi Shalifa, Nakaziba Jaliya, My brothers Basutaine Bashiri and Mususwa Arajabu, My supervisor Mr. Alunyu Andrew, Lecturers for Computer Engineering Department and to the almighty God.

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**APPROVAL**

This is to certify that the project titled “**Automated Shopping Trolley for the Supermarket**” is being been done under my guidance and is now ready for examination.

Signature .....

Date .....

Mr. Alunyu Andrew

Department of Computer Engineering.

## **LIST OF ACRONYMS**

**IDE:** Integrated Development Environment

**LAN:** Local Area Network

**MAN:** Metropolitan Area Network

**WAN:** Wide Area Network

**LED:** Light Emitting Diode

**PCB:** Printed Circuit Board

**IDE:** Integrated Development Environment

**SQL:** Structured Query Language

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## 1.1 BACKGROUND

Of recent, the human lifestyle has changed and has become more hectic. Time is money and as people don't have much time to spend on Shopping which is an inevitable thing. Hence, they prefer shopping in the supermarkets to get all the products at the same place. This saves them a lot of time compared going to different shops to purchase only a limited type of products. In addition, supermarket provides shopping trolley to customers to enable them to transport large amounts of food and materials to save energy and minimize potential musculoskeletal injuries and spread of disease like COVID-19 caused by the manual handling of heavy loads on the trolley[1][2]. Although Shopping in the supermarkets benefits the customers there are safety issues while transporting items using a trolley in the supermarket.

Apparently, the world has had cases of a highly infectious virus known as corona virus disease (COVID-19) which is spread directly or indirectly from one person to another through entering the mouth or nose and can last on surfaces between 8-9 hours if not disinfected so to minimize its spread in a crowded places like shopping supermarkets/malls as more people come they always get into touch to the surface of the trolley and because of multiple users waiting to use the same shopping trolley to transport the items to cash out point this could result into rapid spread of covid-19 among people which contrary to the standard operating procedures[3]. Some people lose control when pushing the trolley when overloaded, hence hitting other people along the way even the arranged items in their different compartments.

This inconveniences the customer and brings fear amongst users due to the energy they have to put in pushing the manual trolley and a getting embarrassed in public as she or he is knocking down other property in the supermarket[4]. Many customers face a problem of difficulty in controlling the trolley on sloppy surfaces and escalators which has led to accidents and this is a serious problem where by a customers has no limitation on the items they are supposed to purchase which in turn the surface area of the trolley to volume ratio is small thus making it overloaded thus bring difficulty in moving it on the sloppy and escalator areas and could bring about destruction of the property for example[5], a case that happened in 2019 at Quality supermarket in Naalya where the trolley slid from the customer in the parking yard which hit another person's car destroying the head lamp and at the end of it one person was injured. Therefore is a need of designing an automatic touchless shopping trolley which will reduce on the threat of contracting infections as well as getting accidents and also help the owners to continue running their businesses smoothly without making enormous losses[6]

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