POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

DESIGN A ALERT SYSTEM FOR A DEAF USING ARDUINO

NAME	REGISTRATION NO
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JABATAN KEJURUTERAAN ELEKTRIK

SESI 2 2021/2022

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This report submitted to the Electrical Engineering Department in fulfillment of the requirement for a Diploma in Electrical Engineering

JABATAN KEJURUTERAAN ELEKTRIK

SESI 2 2021/2022

CONFIRMATION OF THE PROJECT

The project report titled "Design a Alert System For A Deaf Using Arduino" has been submitted, reviewed and verified as a fulfills the conditions and requirements of the Project Writing as stipulated

Checked by:

Supervisor's name :FA'IZAH BT YA'ACOB

Supervisor's signature:

Date :

Verified by:

Project Coordinator name :

Signature of Coordinator :

Date :

"I acknowledge this work is my own work except the excerpts I have already explained to our source"

1. Signature : 

Name : **NURAIN SYAFIQAH BINTI SHAFEE**

Registration Number : **08DJK19F2012**

Date :27/6/2022

DECLARATION OF ORIGINALITY AND OWNERSHIP

TITLE : DESIGN ALERT SYSTEM FOR A DEAF USING ARDUINO

SESSION: SESI 2 2021/2022

1. I, **1. NURAIN SYAFIQAH BINTI SHAFEE 08DJK19F2012**

   is a final year student of **Diploma in Electrical Engineering, Department of Electrical, Politeknik Sultan Salahuddin Abdul Aziz Shah**, which is located at **Persiaran Usahawan,40140 Shah Alam Selangor Darul Ehsan**. (Hereinafter referred to as 'the Polytechnic').

2. I acknowledge that 'The Project above' and the intellectual property therein is the result of our original creation /creations without taking or impersonating any intellectual property from the other parties.

3. I agree to release the 'Project' intellectual property to 'The Polytechnics' to meet the requirements for awarding the **Diploma in Electrical Engineering** to me.

Made and in truth that is recognized by;

a) **NURAIN SYAFIQAH BINTI SHAFEE**)
(Identification card No: (010506-10-0260) .....
) **NURAIN SYAFIQAH BINTI SHAFEE**

In front of me, **PN. FA'IZAH BT YA'ACOB**) .....
(750212-04-5482)) **PN. FA'IZAH BT YA'ACOB**
As a project supervisor, on the date:

ACKNOWLEDGEMENTS

I have taken efforts in this Project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them. I am highly indebted to PUAN FA'IZAH BT YA'ACOB for their guidance and constant supervision as well as for providing necessary information regarding the Project & also for their support in completing the Project.

I would like to express my gratitude towards my parents & my classmates for their kind co-operation and encouragement which help me in completion of this Project. I would like to express my special gratitude and thanks to industry persons for giving me such attention and time.

My thanks and appreciations also go to my colleague in developing the Project and people who have willingly helped me out with their abilities.

ABSTRACT

The project is an Alert System For A Deaf, where the sensor used to detect something or someone in front user house. The bulb will blinking when sensor detected something or someone in front user house And will stop blinking automatically when nothing have in front user house. This project made of Arduino UNO, Ultrasonic sensor, relay 5v, jumper wire, battery with connector, mini breadboard and 3pin plug with cable. This project useful for deaf to know when someone knock the door, to know if someone try to open the door or window to know if courier coming to delivery her order. This sensor can detect until 200cm length. This project focused to help a deaf to do daily routines without something bad happen. A deaf will more alert for any happen in their home or anywhere they go. The project is also having a positive impact for a long time. It also follows the passage of time increasingly sophisticated by using the "Alert System for a Deaf".

ABSTRAK

Projek ini ialah Sistem Amaran Untuk Orang Pekak, di mana penderia digunakan untuk mengesan sesuatu atau seseorang di hadapan rumah pengguna. Mentol akan berkelip apabila sensor mengesan sesuatu atau seseorang di hadapan rumah pengguna Dan akan berhenti berkelip secara automatik apabila tiada apa-apa di hadapan rumah pengguna. Projek ini diperbuat daripada Arduino UNO, Ultrasonic sensor, relay 5v, jumper wire, bateri dengan penyambung, mini breadboard dan plug 3pin dengan kabel. Projek ini berguna untuk orang pekak mengetahui apabila seseorang mengetuk pintu, untuk mengetahui sama ada seseorang cuba membuka pintu atau tingkap dan untuk mengetahui sama ada kurier datang untuk menghantar pesanannya. Sensor ini boleh mengesan sehingga 200cm panjang. Projek ini memberi tumpuan untuk membantu seorang pekak melakukan rutin harian tanpa perkara buruk berlaku. Orang pekak akan lebih berwaspada terhadap apa-apa yang berlaku di rumah mereka atau ke mana sahaja mereka pergi. Projek ini juga memberi impak positif dalam jangka masa lama. Ia juga mengikuti peredaran zaman yang semakin canggih dengan menggunakan "Sistem Makluman untuk Orang Pekak".

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CHAPTER 1

1 INTRODUCTION

1.1 Introduction

Hearing loss presents many everyday challenges.Communication may be the biggest challenge of all-getting and giving information, exchanging ideas, sharing feelings-whether in one-to-one contact or in groups. Sometimes there are small disruptions of daily life that result from reduced hearing. For example, how do you know when there is someone at the door? Or the phone is ringing? Or the baby is crying? With the present set of concept of hearing disability, the Census of India, 2001 counted 1,261,722 people in whom hearing disability existed (Males 53.4% and Females 46.59%). Many devices and systems are available to help deaf and hard of hearing people improve communication, adapt to their environment, and function in society more effectively. Alert systems, or simply signalers,are designed to help notify different events, such as the phone ringing, the doorbell, a baby's cry, motion, weather alerts, or smoke alarms. It usually happens that the deaf people are unaware of the visitor to the home. So it would be of great help for those people if they have alert about the visitor to home and can know who is at the door? The proposed system here is designed to alert the hearing impaired about the visitor.

1.2 Background Research

In February 2018 alone, there are a total of 572 building fire happened in Malaysia. During which the fire alarm is triggered, the building will be evacuated. Usually, the fire alarm used is the standard bell alarm which triggers a high tone ring across the building. This could be a problem in the case for deaf people as their inability to hear it could potentially be too late for them to evacuate. Thus, I decided to do this project in the hopes of giving alternatives to warn deaf people in case of a fire drill. In Malaysia alone, there is estimated 160,000 Malaysians who are vocally incapable. The adult Deaf tend to congregate in cities or towns where they can find jobs and socialize with other Deaf. In Malaysia each state has at least one school for Deaf children, with a total of 23 elementary schools, two vocational schools and one secondary school. Most are residential schools where local Deaf children live at home. With this many amount of deaf people, It should be a necessity for the safety of the deaf individuals to be improved especially in the case of a fire. I thought of a system which involves something that is a necessity for the people who are deaf. Initially, the idea was to create a watch or a bracelet of some sort that is connected

wirelessly to a transmitter unit. This proves to be a non-practical solution as the watch itself would be bulky and heavy causing discomfort while wearing it. Then, the idea to use the phone's own vibration motor came and it sprung up new sketches and plans for the project. The transmitter unit is consists of mainly a microcontroller, a sound vibration sensor and some small electronic components such as resistors, capacitors and etc. The transmitter unit is connected using wifi though the wifi needs to have access to the internet for the system to work. To vibrate the motor on the phone in the case of a fire, an app is created to gather the current data from the transmitter unit and process it. The app needs also to be connected to the internet as the "middle man" between the transmitter unit and the phone's app is an online database/server that is specially configured for this purpose. The app will turn on the motor causing the phone to vibrate if there is a fire alarm and it will turn the motor off once there is no fire alarm detected. The transmitter unit is located next to a fire alarm and this system can be shared up to 20 people or possibly more (testing sessions done for 20 devices).

1.3 Problem Statement

There are several problems that have been identify in this project which are:

·Its hard for a deaf to hearing someone knock the door
Sometime a deaf hard to hear when someone knock the door because its not clear for them.

·Its hard for a deaf to know someone come closer to their house.
A robber can try open the door or window without a deaf know it.

·Its hard for a deaf to know if have something in front her house.
A delivery courier will put the packages infront the door without a deaf knows.

1.4 Research Objectives

The main objective of this Project is to make it easier for deaf to go through their daily routine like a normal human being.

More specifically the principle objective of this research are:

1. -To make it easier for deaf to know when someone knock the door.
2. -To make it easier for deaf to know if someone try to open the door or window.
3. -To make it easier for deaf to know if courier coming to delivery her order.

1.5 Scope of Research

- The sensor connect to the light blinking to alert a deaf to go through their daily routine like a normal human being.
- The materials is Arduino UNO, ultrasonic sensor, breadboard, wire jumper, relay 5V, plug 3pin with cable, bulb.

1.6 Project Significance

The project is an Alert System For A Deaf, where the sensor used to detect something or someone in front user house. The bulb will blinking when sensor detected something or someone in front user house And will stop blinking automatically when nothing have in front user house. This project made of Arduino UNO, Ultrasonic sensor, relay 5v, jumper wire, battery with connector, mini breadboard and 3pin plug with cable. This project useful for deaf to know when someone knock the door, to know if someone try to open the door or window to know if courier coming to delivery her order. This sensor can detect until 200cm length. This project focused to help a deaf to do daily routines without something bad happen. A deaf will more alert for any happen in their home or anywhere they go. The project is also having a positive impact for a long time. It also follows the passage of time increasingly sophisticated by using the "Alert System for a Deaf".

1.7 Chapter Summary

In this first chapter, I have described about the background research of the original idea for the beginning of this project. Then, I have identified the problems that are happening nowadays. In addition, I have demonstrated the objectives in this project and I have removed the scope the study I obtained from the objective study. Finally, I came up with an important project.