



**POLITEKNIK**

**SULTAN SALAHUDDIN ABDUL AZIZ SHAH**

**SOCIAL DISTANCE ALERT WRISTBAND**

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ROHAIDI

08DEU19F2016

**JABATAN KEJURUTERAAN ELEKTRIK**

**SESI 2021/2022**

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**NAME**

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MUHAMMAD SYAFIQ BIN ROHAIDI

08DEU19F2016

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

**JABATAN KEJURUTERAAN ELEKTRIK**

**SESI 2021/2022**

## **CONFIRMATION OF THE PROJECT**

The project report titled "Design a Fingers Exergame to Improve Fine Motor Skill for Autistic Children 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 :

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 : **MUHAMMAD SYAFIQ BIN ROHAIDI**

Registration Number : **08DEU19F2016**

Date : 22/1/2022

## DECLARATION OF ORIGINALITY AND OWNERSHIP

TITLE : SOCIAL DISTANCE ALERT WRISTBAND

SESSION: SESI 1 2021/2022

1. I, **1. MUHAMMAD SYAFIQ BINROHAIDI**

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, 40150 Shah Alam, Selangor**. (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) **MUHAMMAD SYAFIQ BIN ROHAIDI**  
(Identification card No: - 010825050053)



)

.....  
) **MUHAMMAD SYAFIQ BIN ROHAIDI**

In front of me, **PN.NAAGAJOO THI A/P ADIN NARAINA** (Click here to enter text.)  
As a project supervisor, on the date:

)

.....  
) **PN.NAAGAJOO THI A/P ADIN NARAINA**

## **ACKNOWLEDGEMENTS**

Alhamdulillah, First and foremost, in the name of Allah SWT, the most gracious and precious, I would like to express our heartfelt gratitude to Allah SWT for providing us with the patience, strength, determination, and obstacles that have enabled me to make wise decisions and have the courage to complete this project. Next, I would like to thank to Polytechnic Sultan Salahuddin Abdul Aziz Shah for giving us the opportunity to produce this proposal for project 1 by providing facilities such as the lab to get some idea to stabilize my project.

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## **ABSTRACT**

When it comes to dealing with the worldwide Covid-19 pandemic, flattening the curve for coronavirus cases will be tough if residents do not take action to stop the virus from spreading. Keeping a safe space between individuals in public is one of the most critical tactics in these epidemics. The identification of persons using social distance monitoring is presented in this work as a preventive technique in limiting physical contact between people. This study is aimed to all people go to places that require social distance like shopping complex , sport places and so on. The Ultrasonic sensor is used to track the people approach others. The Arduino UNO is used a microcontroller which the ultrasonic sensor track the people and the PIR sensor work with a type of electrical sensor that detects infrared (IR) light emitted by objects in its area of vision. This devices can show to us either it save or not in LCD and the buzzer will sound “beep”when the people approaching us less than 100 cm.This project successful in controlling the social distance between us and the people around us.

**Keywords:** Covid 19 pandemic , social distance, ultrasonic sensor, PIR sensor , arduino UNO.

## **ABSTRAK**

*1 Apabila ia datang untuk menangani pandemik Covid-19 di seluruh dunia, meratakan keluk untuk kes coronavirus akan menjadi sukar jika penduduk tidak mengambil tindakan untuk menghentikan virus daripada merebak.*

*Menjaga ruang selamat antara individu di khalayak ramai adalah salahsatu taktik paling kritikal dalam wabak ini. Pengenalpastian orang yang menggunakan pemantauan jarak sosial dibentangkan dalam kerja ini sebagai teknik pencegahan dalam mengehadkan sentuhan fizikal antara orang. Kajian ini bertujuan untuk semua orang pergi ke tempat yang memerlukan jarak sosial seperti kompleks membeli-belah, tempat sukan dan sebagainya. Penderia Ultrasonik digunakan untuk mengesan orang yang mendekati orang lain. Arduino UNO menggunakan mikropengawal yang sensor ultrasonik menjejaki orang dan sensor PIR berfungsi dengan jenis sensor elektrik yang mengesan cahaya inframerah (IR) yang dipancarkan oleh objek dalam kawasan penglihatannya. Peranti ini boleh menunjukkan kepada kita sama ada ia disimpan atau tidak dalam LCD dan buzzer akan berbunyi "bip" apabila orang ramai menghampiri kami kurang daripada 100 sm. Projek ini berjaya mengawal jarak sosial antara kita dan orang di sekeliling kita.*



*Kata kunci: Pandemi Covid 19 , jarak sosial, sensor ultrasonik, sensor PIR , arduino UNO.*

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## **LIST OF ABBREVIATIONS**

LCD – Liquid Crystal Display

LED RGB – Light Emitting Diode Red Green Blue

PIR – Passive Infrared

# CHAPTER 1

## 3 INTRODUCTION

### 1.1 Introduction

This chapter describes the introduction/background of study, problem statement, objectives and scope of the research as well as the significance. In section 1.1 explain about the background of study for the social distance alert wristband. Where in section 1.2 explain about the problem statement. In section 1.3 explain about the objective of the project. In section 1.4 explain about the scope of the implementation of this project. In section 1.5 explain about the significance of Project.

### 1.2 Background Research

In order to prevent the covid-19 virus from spreading further, the idea of creating a social distance alert wristband project was highlighted. The social distance alert wristband can be utilized in everyday life situations and can curb covid-19 outbreaks from spreading. Ultrasonic sensors and PIR sensors have all been proposed for use in this system in a number of studies.

First of all, after examining some of the problems people, we found that most of them people problems to know their distands with other. For example, when a person goes out of the house to buy daily necessities or work, they are exposed to the public. So, social distancing alert wristband is one of the solution ways to prevent from being exposed to the covid-19 epidemic.

In order for the project to work properly, the techniques used in this project include programming and coding skills. Because it is the most basic method of running the Arduino system, it was chosen for this project. To make the job easier, all people should learn programming and coding. The circuit picture processing programming uses Proteus 8.7 software. The use of Arduino IDE can speed up functionality in data-independent or data



sharing. This is especially important for fast data transfer in social distancing alert wristband.

In this project also use the component to produce this project are such as Arduino-Uno, ultrasonic sensor, buzzer, LCD display and PIR sensor. These are the main items needed in producing the project. Arduino Uno is a microcontroller board based on ATmega328P, an 8-bit microcontroller with 32KB Flash memory and 2KB RAM. It contains everything needed to support a microcontroller. Ultrasonic sensors is an electronic device that measures the distance of a target object by emitting ultrasonic sound waves, and converts the reflected sound into an electrical signal and the Arduino Uno was used as the main component in this project. The project also use the PIR sensor, the PIR sensor allow to sense motion, almost always used to detect whether a human has moved in or out of the sensors range. Lastly the buzzer that been use is piezo buzzer. Piezo buzzer is used in alarms, warning devices and alerts when have human near 1 meter from the person that wore the social distance alert wristband.

### **1.3 Problem Statement**

As informed COVID-19 spreads mainly among people who are in close contact within about 1 meter for a prolonged period. Spread happens when an infected person coughs, sneezes, or talks, and droplets from their mouth. From the research found out that mostly people are not concern about social distance. It is because of they take it as a small matter. Another reason that people were not know the proper distance that have to follow when facing crowd people.

### **1.4 Research Objectives**

The main objective of this Project is it maintain at a 1-metre distance between themself and others to reduce risk of infection when cough, sneeze or speak.

More specifically the principle objective of this research are:

1. Maintain an even greater distance between themself and others when indoors.
2. To be more concern about taking care distance which is in 1 meter when go outside and when facing the crowd people.

## **1.5 Scope of Research**

1. This Project is focusing on public interior spaces such as grocery shops, banks, and other areas where the public congregates.
2. The emphasis is distance between the user and the people around him.
3. The main controller is using Arduino UNO.

## **1.6 Project Significance**

The main purpose of this project is to help people from being exposed to covid-19 outbreaks. For example, when a person goes out of the house to buy daily necessities or work, they are exposed to the public. So, social distancing alert wristband is one of the solution ways to prevent from being exposed to the covid-19 epidemic. Lastly, among the benefits that users get when using this social distancing alert wristband is that can reduce covid-19 positive cases and even prevent the spread of the disease. Besides that, with this social distancing alert wristband can prevent covid-19 outbreaks from spreading.

## **1.7 Chapter Summary**

I discussed the background research for the initial idea for the start of this project in this first chapter. Then I identified the issues that are currently occurring. Furthermore, I have illustrated the project's aims and reduced the scope of the study I acquired from the objective study. Finally, I devised a significant initiative.