

**POLITEKNIK**

**SULTAN SALAHUDDIN ABDUL AZIZ SHAH**

**DESIGN A FINGERS EXERGAME TO IMPROVE  
FINE MOTOR SKILL FOR AUTISTIC  
CHILDREN USING ARDUINO**

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**JABATAN KEJURUTERAAN ELEKTRIK**

**NOVEMBER 2021**



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USING ARDUINO**

**NAME**

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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**

**NOVEMBER 2021**

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The project report titled "  
Autistic Children Using Ardui  
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" has been submitted, reviewed and verified as a

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27/1/2022





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**DECLARATION OF ORIGINALITY AND OWNERSHIP**

**DESIGN FINGERS EXERGAME TO IMPROVE FINE  
MOTOR SKILL FOR AUTISTIC CHILDREN USING  
ARDUINO**

**SESI 1 2021/2022**

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**Selangor.** (Hereinafter referred to as 'the Polytechnic').

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.

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 AFIQ AKMAL BIN

) ***AFIQ AKMAL***

) .....  
MUHAMMAD AFIQ  
AKMAL BIN MOHD ZALI

In front of me, **USTAZ KHAIRULNAPISHAM**  
**BIN ABD RAZAK** (Click here to enter text.)

) .....  
) **USTAZ KHAIRUL**  
**NAPISHAM BIN ABD RAZAK**

As a project supervisor, on the date:



## **ACKNOWLEDGEMENTS**

Praise be to Allah SWT for the owners of nature, be grateful for the Divine Presence for His Taqik and His guidance, has given my permission to complete the Final Year Project Report, my final year project report book is a tribute to all parties involved in helping and providing guidance useful when I complete my Final Year Project, during semester 4 until the 5th semester in 2021/2022 session. I want to take this opportunity to express my appreciation to all those who have a lot of helping me throughout my performance in the Final Year Project. I would like to extend my sincere gratitude to my supervisor, Ustaz Khairul Napisham Bin Abd Razak for his assistance and guidance towards the progress of this thesis project. Throughout the year, Ustaz Khairul Napisham Bin Abd Razak has been patiently monitoring my progress and guiding me in the right direction, and offering encouragement. Obviously, the progress I had now will be uncertain without his assistance. Last but not least, I would like to thank you to Polytechnic Sultan Salahuddin Abdul Aziz Shah (PSA) and most of all I am very grateful to my family for their never failed encouragement and financial support they have given me over the years. I would like to thank you once again and may Allah bless us all.

## **ABSTRACT**

In this pandemic era medical field mostly must wear medical glove and its became twice layer then before so it became tighter than usual for our frontliner to wear it. With old method wearing glove it may slow to wear the medical glove with out number of patient than usual. The glover blower invented to fasten their respond time espeacially for ambulance crue. So that they can attend out number patient easily. This machine come with motion sensor so that no casual contact with the machine and can cut the spread the virus among our frontliner

**Keyword:** Frontline, Medical glove, Patient, Ambulance, Motion sensor

### **ABSTRAK**

Dalam era pandemik ini, bidang perubatan kebanyakannya mesti memakai sarung tangan perubatan dan ia menjadi dua lapisan daripada sebelumnya jadi ia menjadi lebih ketat daripada biasa untuk barisan hadapan kita memakainya. Dengan kaedah lama memakai sarung tangan, ia mungkin lambat memakai sarung tangan perubatan tanpa bilangan pesakit daripada biasa. Peniup sarung tangan dicipta untuk mempercepatkan masa tindak balas mereka terutamanya untuk ambulans crue. Supaya mereka boleh melayan pesakit nombor dengan mudah. Mesin ini dilengkapi dengan penderia gerakan supaya tiada sentuhan biasa dengan mesin dan boleh mengurangkan penyebaran virus di kalangan barisan hadapan kami.

**Kata kunci:** Barisan hadapan, sarung tangan perubatan, Pesakit, Ambulans, Penderia gerakan

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

My project is called portable medical glove blower for frontliner. This machine I made to easy frontliner or paramedic and hospital staff to wear glove when pick hour or emergency hour such as, performing cpr or attend emergency patient. Its also save time for them to wear tight glove. It also can use for paramedic at the ambulance department. When they go to a call they can wear the glove easy and shorten their respond time. this machine also equip with motion sensor. This motion sensor can help people when frontliner had a dirty hand such as bloody hand and they want to change or add extra glove they can use the sensor to switch on the machine. This machine also have a charging port that can charge and take to other places.

### 1.2 Background Research

The original idea for this project when I saw many frontliner are hard to wear medical glove. This is because the glove are to tight so its take time for them to wear it. Other than that, it make their respond time very late because they need to wear the tight glove and it take time. So with this project it is easy for frontliner to wear tight glove and fasten their respond time. This project also equipped with ultrasonic sensor so they can wave their hand to turn on the machine. It is also have solar and rechargeable battery so they can make it portable and bring it anywhere.

### 1.3 Problem Statement

In hospital when health staff want to attend to their patient they need to wear glove. So, the medical glove that we had is made from latex and it is to tight so it take time for them to wear it. But in this pandemic era they need to wear multiple glove at the same time so it is not easy to wear a tight glove and multiple layer. So this project will blow the glove under

10 second then frontliner has to insert their hand to the glove. Other than that, I this

project must be portable so other department such as emergency department, blood donation department can bring anywhere they want because equipped it with solar and rechargeable battery. Last but not least, to prevent covid-19 spreadness I change on off button to ultrasonic sensor so that they just need to wave their hand to turn it on.

#### **1.4 Research Objectives**

The main objective of this project is to increase the frontliner respond time to wear glove and to attend patient. I have found a solution to overcome the problem and help users do their activities throughout the day more specifically the objectives of this research are:

- i) Upgrading system that hospital use
- ii) Can reduce the risk of covid-19 deases
- iii) Make easy frontliner to wear glove
- iv) To increase their respond time

#### **1.5 Scope of Research**

This project is to make a machine that using ultrasonic sensor, that function as on off button. Other than that I also put solar system and rechargeable battery that can be portable and bring anywhere. So this project will be use in hospital that will ease frontliner work.

#### **1.6 Project Significance**

The importance of this project is to assist the hospital community and with their ppe wearing that they will wear most of the time. In addition, it can save their respond time to wear ppe and they will fast to attend the patient. Furthermore frontlner can bring anywhere this project such as ambulance crew so they can fast changing glove and wearing glove. Finally, the ultrasonic sensor is to break the spread of covid-19 deases

#### **1.7 Chapter Summary**

In this first chapter, I've described the background of the original idea for the beginning of this project. Then, I identified the problems that are happening nowadays. In addition, I have demonstrated the objectives of this project, and I also remember the significance of the study's objectives. Finally, I came up with a project