



اَوْنِبُوْرَسِيْتِيْ بِاَتِيْكِنُوْلُوْ كِيْ مَارَا  
UNIVERSITI  
TEKNOLOGI  
MARA

**AC-19 HYGIENE SINK**

**AIDIL HAIKAL BIN SHAHRIN (2018416452)**

**AIZAT ZAHIMI BIN AMIR (2018678634)**

**DR NOR DIYANA MD SIN**

**DIPLOMA IN ELECTRICAL ENGINEERING**

**(ELECTRONIC)**

**J4EE1114A1**

## **ACKNOWLEDGEMENT**

First and foremost, praises and thanks to Allah SWT, the Almighty, for His showers of blessings throughout the project work to complete the project successfully. I would like to express my deep and sincere gratitude to our supervisor, Dr Nor Diyana Md Sin for giving us the opportunity to do the project research and giving us invaluable guidance throughout this final year project. She has taught us many things about the projects and also willing to give her opinion on our project so that we can improve our project. Thanks to her, we manage to see how to do this project systematically and correctly. We are extremely grateful for what she has done for us. We also want to thank the lectures that in charge of the project program by giving us their knowledge and time to help us with our projects. We are also extremely grateful for our parents for their love, prayers and support that they give to us throughout this project. They have sacrificed their time and money for us. Other than that, we want to thanks to our family, sibling that has help to make this project to realization. Special thanks to fellow student and friend that help us throughout this final year project until the project is successfully done.

## **ABSTRACT**

Due to the recent corona virus spreading around the world, it moves through the air and you may get it when you touch your eyes and mouth using our hands that have the virus, so that's why hygiene is now more important than ever. This virus has taken the life of more than a few hundred thousand people of the world. COVID-19 19 phenomenon has made people take care of their hygiene. So, this project is to develop a smart sink which has an automatic faucet that is user-friendly. This project uses sensors which the sensor will detect the user's hand and then the mechanism will run and dispense water, hand soap and hand sanitizer. After that, a water level sensor that is built in for the hand sanitizer and liquid soap will detect the water sensor and if it is lower or same than 10ml, it will trigger the system to send a notification to the user to refill the hand sanitizer or liquid soap. This project will keep users' hands stay clean as it reduces touch and lowers the chance to get the virus.

<b>TABLE</b>	<b>OF</b>	<b>CONTENTS</b>	
<b>DECLARATION.....</b>			<b>iii</b>
<b>SUPERVISOR APPROVAL.....</b>			<b>iv</b>
<b>ACKNOWLEDGEMENT.....</b>			<b>v</b>
<b>ABSTRACT.....</b>			<b>vi</b>
<b>LIST OF FIGURES.....</b>			<b>ix</b>
<b>LIST OF TABLES.....</b>			<b>xi</b>
<b>LIST OF ABBREVIATIONS.....</b>			<b>xii</b>
<b>LIST OF SYMBOL.....</b>			<b>xiii</b>
<b>CHAPTER 1.....</b>			<b>1</b>
<b>INTRODUCTION.....</b>			<b>1</b>
<b>1.0 PROJECT OVERVIEW.....</b>			<b>1</b>
<b>1.1 INTRODUCTION.....</b>			<b>1</b>
<b>1.2 PROBLEM STATEMENT.....</b>			<b>2</b>
<b>1.3 OBJECTIVES.....</b>			<b>3</b>
<b>1.4 SCOPE OF WORK.....</b>			<b>3</b>
<b>CHAPTER 2.....</b>			<b>6</b>
<b>LITERATURE REVIEW.....</b>			<b>6</b>
<b>2.1 SUMMARY OF OTHERS AUTOMATIC SINK PROJECT.....</b>			<b>6</b>
<b>CHAPTER 3.....</b>			<b>11</b>
<b>METHODOLGY.....</b>			<b>11</b>
<b>3.1 SYSTEM DIAGRAM.....</b>			<b>11</b>
<b>3.2 HARDWARE IMPLEMENTATION.....</b>			<b>12</b>
<b>3.3 SOFTWARE IMPLEMENTATION.....</b>			<b>17</b>
<b>3.4 SYSTEM OPERATION.....</b>			<b>19</b>
<b>3.5 SCHEMATIC DIAGRAM.....</b>			<b>22</b>
<b>3.6 CODING.....</b>			<b>24</b>
<b>3.7 MATERIAL COST.....</b>			<b>29</b>
<b>CHAPTER 4.....</b>			<b>30</b>
<b>RESULT AND DISCUSSION.....</b>			<b>30</b>
<b>4.1 CIRCUIT DIAGRAM.....</b>			<b>30</b>
<b>4.2 RESULT OF SOFTWARE SIMULATION.....</b>			<b>33</b>
<b>4.3 RESULT OF HARDWARE IMPLEMENTATION.....</b>			<b>35</b>
<b>4.4 PCB LAYOUT.....</b>			<b>45</b>
<b>4.5 TECHNICAL PROBLEM AND SOLUTION.....</b>			<b>47</b>

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.0 PROJECT OVERVIEW**

This project is an automatic sink which allows users to wash their hands without the need to turn the tap. This project allows the user to wash their hands with no contact needed or so ever. This project idea came with the recent pandemic that can spread through contact hence why the idea of doing an automatic sink is brought up.

#### **1.1 INTRODUCTION**

Nowadays the world is full of disease and viruses. The world is not as clean as it used to be. The world is always evolving and so are viruses. This can be proven by seeing and feeling what is happening nowadays which is the Covid-19. This virus can kill people and it has made about hundred thousand people be a victim to it still has no antidote so the only way is to do everything that you can to prevent it. So that's why hygiene is very important. So, to take care of hygiene is basically by taking care of your hands. Washing your hands properly is one of the most important things you can do to help prevent and control the spread of many illnesses. Good hand hygiene will reduce the risk of things like flu, food poisoning and healthcare associated infections being passed from person to person. So, washing your hands is one of the most important and effective ways to prevent from getting and spreading viruses.