POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

Farm Fire Detector with IoT

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08DEP19F2020

JABATAN KEJURUTERAAN ELEKTRIK

SESI 2 2021/2022

POLITEKNIK

SULTAN SALAHUDDIN ABDUL AZIZ SHAH

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NAME: Ng Yook Loong

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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 "Farm Fire Detector IoT" has been submitted, reviewed and verified as a fulfills the conditions and requirements of the Project Writing as stipulated

Checked by:

Supervisor's name : ZABIDAH BINTI HARON

Supervisor's signature:

Date : 6/7/2022

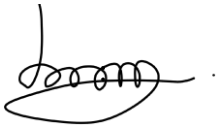
Verified by:

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 : **Ng Yook Loong**

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Date : **24/5/2022**

DECLARATION OF ORIGINALITY AND OWNERSHIP

TITLE : Farm Fire Detector with IoT

SESSION: Sesssion 2 2021/2022

1. I, **1. Ng Yook Loong 08DEP19F2020**

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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) **Ng Yook Loong**)
(Identification card No: - 011104-10-0879) .....
) **Ng Yook Loong**

In front of me, Click here to enter text. (Click here to enter text.))
As a project supervisor, on the date:)

.....
Click here to enter text.
ZABIDAH BINTI HARON

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 Politeknik Shah Alam for their guidance and constant supervision as well as for providing necessary information regarding the Project & also for their support in completing the Project.

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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

Global warming is getting worse lately as natural disasters such as tsunami and droughts are getting worse over time. One of the causes for these are fires that goes uncontrolled, whether in the the forest, farm or anywhere where a fire can spread easily. For example, in a farm, it not only destroy the crops and kills the farm animals, it also damages the livihood of the farmers and negatively impact the economy. There is a lack of awareness or solution to this as the effects of global warming keep worsening. This require a solution that is able to detect and also warn others of the presence of fire accurately. The IoT aspect is especially important as it will make it more useful and accesible. So, in this project, I will build a farm fire detection system that will connect to an email server to be able to notify people about fire wherever they are as long as there is access to the internet through email plus it will sound a buzzer that will warn the surrounding people.

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The abstract must be simple, written in one paragraph and not more than 200 words in one page.The abstract should be written in single spacing.The abstract should contains, an introduction, problem statement, research objectives, results and conclusion (optional)

ABSTRAK

Pemanasan global semakin teruk sejak kebelakangan ini kerana bencana alam seperti tsunami dan kemarau semakin teruk dari semasa ke semasa. Salah satu puncanya adalah kebakaran yang tidak terkawal, sama ada di dalam hutan, ladang atau di mana-mana tempat api boleh merebak dengan mudah. Sebagai contoh, di ladang, ia bukan sahaja memusnahkan tanaman dan membunuh haiwan ternakan, ia juga merosakkan mata pencarian petani dan memberi kesan negatif kepada ekonomi. Terdapat kekurangan kesedaran atau penyelesaian untuk perkara ini kerana kesan pemanasan global semakin teruk. Ini memerlukan penyelesaian yang mampu mengesan dan juga memberi amaran kepada orang lain tentang kehadiran api dengan tepat. Aspek IoT amat penting kerana ia akan menjadikannya lebih berguna dan mudah diakses. Jadi, dalam projek ini, saya akan membina sistem pengesanan kebakaran yang akan menyambung ke pelayan e-mel untuk dapat memberitahu orang ramai tentang kebakaran di mana sahaja mereka berada selagi ada akses ke internet melalui e-mel ditambah ia akan membunyikan buzzer yang akan memberi amaran kepada orang sekeliling.

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CHAPTER 1

1 INTRODUCTION

1.1 Introduction

Burning cases are becoming more rampant lately and it is a huge issue nowadays. Especially in Malaysia, where the temperatures are hotter than other places as we live in a tropical country near the equator. The chances of fires happening are increasing as time goes by. There was an 11% increase of fires occuring from 2009 to 2012 according to the Malaysian Journal of Forensic Science

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This section contains the introduction to the
which the research/project is concerned

1.2 Background Research

Farm Fire Detector with IoT is a device that will detects fire in the area and is part of a safety system. The buzzer connected to the system will ring when there is a fire nearby and alert the surrounding people. This type of system is useful as it can quickly alert the surrounding people of the fire. The NodeMcu board used will be connected to the network through Wi-Fi and send an email, warning the user about the fire just in case the user is not in the area. This makes the system very versatile and useful for mutliple use cases.

1.3 Problem Statement

Global warming is getting worse lately as natural disasters such as tsunami and droughts are getting worse over time. One of the causes for these are fires that goes uncontrolled, whether in the the forest, farm or anywhere where a fire can spread easily. For example, in a farm, it not only destroys the crops and kills the farm animals, it also damages the livihood of the farmers and negatively impact the economy. There is a lack of awareness or solution to this as the effects of global warming keep worsening.

1.4 Research Objectives

The main objective of this Project is to develop a Farm Fire Detector with IoT
More specifically the principle objective of this research are:

1. To design a farm fire detection system
2. To connect the fire detection system to the Internet with IoT
3. To send an email alert successfully when there is a fire detected

1.5 Scope of Research

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---------- This section contains clear scopes and limitations that you have considered in the project.

1. This Project is focusing on fire safety. Farm Fire Detector with IoT is the project to detect fire using flame sensor.
2. The emphasis is to alert the surrounding people using buzzer and the user with email alet.,
3. The main controller is using NodeMcu board to connect to the network, buzzer as the alarm and flame sensor component to detect fire.

1.6 Project Significance

In the 21st century, global warming is becoming worse as the amount of greenhouse gases has increased by a lot. This is partly due to the increase in human population throughout the years. More human means more food is needed. This lead to more farms. So, this project is important to prevent fire in farms so it will not negatively affect the planet and economy.

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This section contains the significance of the project/research. You should cite previous research in this area. You should cite those who had the idea or ideas first, and should also cite those who have done the most recent and relevant work. You should then

1.7 Chapter Summary

In chapter 1, the introduction, background research of the project is mentioned alongside with information that relates to the project “Farm Fire Detector with IoT”. Research of the project cited with previous projectst hat similar to this project and able is explained with the problem statement, and research objectives and scope.