

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

An IoT Based Heartbeat and Temperature Sensor

NAME

REGISTRATION NO

Kugganaathan A/L Loganathan

08DEP19F2001

JABATAN KEJURUTERAAN ELEKTRIK

SESI 2 2021/2022

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NAME

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08DEP19F2001

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 "An IoT Based Heartbeat and Temperature Sensor" 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 : **Kugganaathan A/L Loganathan**

Registration Number : **08DEP19F2001**

Date :

**DECLARATION OF ORIGINALITY AND
OWNERSHIP**

TITLE : An IoT Based Heartbeat and Temperature Sensor

SESSION: 2 2021/2022

1. I, **1. Kugganaathan A/L Loganathan 08DEP19F2001**

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) **Kugganaathan A/L Loganathan**
(Identification card No: - 010222100859)

)
) **Kugganaathan A/L
Loganathan**

In front of me, **Puan Akmaria Syukhairilnisah bt Mohd Akhir** (780704025274)

As a project supervisor, on the date:

)
) **Puan Akmaria
Syukhairilnisah bt Mohd
Akhir**

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ABSTRACT

Nowadays there are people who take their health for granted by not checking their heartbeat and temperature constantly. This group of people can be referred children's and teenagers. Because of this they might not even know if they have contracted possible Covid-19 virus which can spread to other people, affecting them as well. As Medical Electronics is advancing with the application of the Internet of Things. During the endemic era, Internet of Things has helped the technology to grow, finding applications everywhere and in everything as well as simplify measuring and recording processes. In this project, a simple temperature and pulse sensor device is developed as an IoT application. The device could read pulse rate, measure surrounding temperature, and continuously monitors the pulse rate and surrounding temperature and updates them to an IoT platform. The IoT platform used in this project is Bylnk.

ABSTRAK

Pada masa kini ada orang yang mengambil mudah tentang kesihatan mereka dengan tidak memeriksa degupan jantung dan suhu mereka secara berterusan. Kumpulan orang ini boleh dirujuk kanak-kanak dan remaja. Disebabkan ini mereka mungkin tidak tahu sama ada mereka telah dijangkiti kemungkinan virus Covid-19 yang boleh merebak kepada orang lain, menjejaskan mereka juga.. Memandangkan Elektronik medikal semakin maju dengan aplikasi Internet Perkara. Semasa era endemik, Internet of Things telah membantu teknologi berkembang, mencari aplikasi di mana-mana dan dalam segala-galanya serta memudahkan proses pengukuran dan rakaman. Dalam projek ini, peranti penderia suhu dan nadi ringkas dibangunkan sebagai aplikasi IoT. Peranti boleh membaca kadar nadi, mengukur suhu sekeliling dan memantau kadar nadi dan suhu sekeliling secara berterusan serta mengemas kininya kepada platform IoT. Platform IoT yang digunakan dalam projek ini ialah Bylnk.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

It's now the era of the endemic, the number of Covid-19 cases are not as high as before. However, it is still wrong to take lightly of the virus. There are still people who do not take the Covid-19 disease seriously. Especially children and teenagers. Although, almost all of our citizens have been vaccinated, the probability of spreading covid is still there. Which means it can still be fatal if someone already has health problems. To prevent the spreading of this virus among children and teenagers, I came up with a device called the heartbeat and temperature sensor. The heartbeat and temperature sensor not only measures heartbeat pulse and the temperature of someone, it also stores their reading in a cloud storage. If an abnormal reading is recorded the data will be alerted to an authority. This way authorities can keep track of the student's health and notice faster if they ever get affected by the virus and can prevent formations of clusters.

1.2 Background Research

In many countries even Malaysia, there are still people out there who think that the virus is not as deadly as it seems therefore, they take the risks of not taking the vaccination and do not go for regular check-ups which can potentially save their lives. This may not only affect their lives but also their loved ones and other people. This mindset can be eradicated as time passes by due to the new emergence of multiple variants of the virus which are deemed to be deadly and proven with the amount of death rates. This problem can be avoided with some help.

1.3 Problem Statement

Nowadays people are not aware of their heartbeat and body temperature. They also donot attend regular checkups. Besides that, there still some of them who do not think ofCovid as a serious threat. Because of this, people are not realizing the seriousness of taking proper healthcare as well as its benefits.

1.4 Research Objectives

The main objective of this Project is to demonstrate a smart way to prevent any close contact with other people and make sure that they are aware of their currentbody status.

More specifically the principle objective of this research is:

1. To design a device which can not only measure people's temperature and pulse but record that data as well.
2. To implement the use of IOT into the project to strive towards a modern approach towards the current problem.
3. To develop a device that can help reduce the number of new Covid cases from emerging.

1.5 Scope of Research

- 1.Focused on Primary and Secondary school students who are just entering school after lock down
2. Students who are not aware of their health conditions.
3. Students who do not take Covid tests and medical checkups before entering school

1.6 Project Significance

There already similar prototypes of this project which are already mass produced around the world, therefore this is project is not the first of its kind. The first person towork on this project was a Japanese Bioengineer called Dr. Takuo Aoyagi who had already made the first prototype named oximeter back in 1974.

Since then, various implementations of this project have been released worldwide. Like those projects this one is also similar however, this device focuses more on a personalized use. We can record our temperature and heartbeat pulses on cloud storage online and can constantly check on them. Therefore, it can be said that this product is a slight upgrade from the other ones which nowadays we would usually see when entering a store, workplace and other public places.

1.7 Chapter Summary

This chapter contains contents such as introduction, background research, problem statement, research objective, scope of research and project significance related to the creation of this project.