

final report

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SULTAN SALAHUDDIN ABDUL AZIZ SHAH

**COVID PATIENTS HOUSE QUARANTINE
PEOPLE TRACKING BAND**

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JABATAN KEJURUTERAAN ELEKTRIK

SESI 2021/2022

**COVID PATIENTS HOUSE QUARANTINE
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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 2021/2022

CONFIRMATION OF THE PROJECT

The project report titled " COVID PATIENTS HOUSE QUARANTINE
PEOPLE TRACKING BAND " has been submitted, reviewed and verified as a
fulfills the conditions and requirements of the Project Writing as stipulated

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"I acknowledge this work is my own work except the excerpts I have already explained to our source"

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DECLARATION OF ORIGINALITY AND OWNERSHIP

**TITLE : COVID PATIENTS HOUSE
QUARANTINE
PEOPLE TRACKING BAND**

SESSION: SESI 1 2021/2022

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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.
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As a project supervisor, on the date:

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 PN. MAZLINA BINTI MAHROJI for her guidance and constant supervision as well as for providing necessary information regarding the Project & also for support in completing the Project.

I would like to express my gratitude towards my parents & member of (Organization Name) for their kind co-operation and encouragement which help me in completion of this Project. I would like to express my special gratitude and thanks to industry persons for giving me such attention and time.

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ABSTRACT

ESP32 is a series of low-cost, low-power system on a chip microcontrollers with integrated Wi-Fi and dual-mode Bluetooth. The ESP32 series employs either a Tensilica Xtensa LX6 microprocessor in both dual-core and single-core variations, Xtensa LX7 dual-core microprocessor or a single-core RISC-V microprocessor and includes built-in antenna switches, RF balun, power amplifier, low-noise receive amplifier, filters, and power-management modules. ESP32 is a suitable option for constructing a tracking application to follow individuals who are practising home quarantine to ensure they are doing it properly in order to prevent spreading due to these qualities, such as the long range and few constraints on deployment and use. A prototype for a quarantine people movement control tracker was built in this study in order to track the movements of persons who are meant to undertake house quarantine. In order to identify the position, the system takes GPS data. The data will be sent over WIFI in this quarantine personal mobility control tracker. To gather and process data, these GPS, ESP32, oximeter and battery are all connected. For monitoring reasons, data will be transferred through WIFI to the mobile application.

ABSTRAK

ESP32 ialah satu siri kos rendah, sistem kuasa rendah pada mikropengawal cip dengan Wi-Fi bersepadu dan Bluetooth dwi-mod. Siri ESP32 menggunakan sama ada mikropemproses Tensilica Xtensa LX6 dalam kedua-dua variasi dwi-teras dan teras tunggal, mikropemproses dwi-teras Xtensa LX7 atau mikropemproses RISC-V teras tunggal dan termasuk suis antena terbina dalam, balun RF, penguat kuasa, penguat terima bunyi rendah, penapis dan modul pengurusan kuasa. ESP32 ialah pilihan yang sesuai untuk membina aplikasi penjejakan untuk mengikuti individu yang mengamalkan kuarantin di rumah bagi memastikan mereka melakukannya dengan betul bagi mengelakkan penularan disebabkan oleh kualiti ini, seperti jarak jauh dan beberapa kekangan pada penggunaan dan penggunaan. Satu prototaip untuk penjejak kawalan pergerakan orang kuarantin telah dibina dalam kajian ini untuk mengesan pergerakan orang yang dimaksudkan untuk menjalankan kuarantin rumah. Untuk mengenal pasti kedudukan, sistem mengambil data GPS. Data akan dihantar melalui WIFI dalam penjejak kawalan mobiliti peribadi kuarantin ini. Untuk mengumpul dan memproses data, GPS, ESP32, oksimeter dan bateri ini semuanya disambungkan. Atas sebab pemantauan, data akan dipindahkan melalui WIFI ke aplikasi mudah alih.

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LIST OF SYMBOLS

LIST OF ABBREVIATIONS

CHAPTER 1

1 INTRODUCTION

1.1 Introduction

Quarantine has become very common since the invention of covid. Due to the large number of covid cases recorded and the need to quarantine at the center, all covid suspects and covid positive people are required to go through quarantine either at home or at a quarantine center. So some persons who are at beginning stage and want to quarantine at home are allowed. Even though covid is a major issue to worry about, some people are being exceedingly irresponsible and disobeying the laws by going out even when they are supposed to quarantine at home. This has got extremely serious concern so that cops are needed to check that the people who are suspects or positive conducting their quarantine properly.

1.2 Background Research

Cops are needed to patrol particular regions and ensure that those who are supposed to be quarantining themselves are actually doing so. To do this work, you'll need a lot of time and effort. There are a variety of tracking devices available to track various items such as dogs, phones, and other items, but none are designed for medical use. Providing a tracking band to those doing home quarantine can aid authority figures in completing their tasks more quickly and efficiently.

1.3 Problem Statement

One of the major issues is the difficulty in following up on those who have taken the covid test and are supposed to stay at home. Monitoring covid suspects and covid positive persons with a police officer or someone else takes a lot of manpower. It is expensive to use a lot of manpower.

1.4 Research Objectives

The main objective of this Project to track people who are covid suspect, this will save time and energy spent by the police officers where they sometimes have to visit suspect location to make sure they are at home. Other than saving energy and time this device can also reduce the man power and cost.

1.5 Scope of Research

By creating this location tracking bracelet the covid positive or suspect who are in house quarantine can wear it. This will help the people who are in charge to track their locations to make sure they are at home. Since this device track up to 20 km with some tweaking and directional antennas.

1.6 Project Significance

. There are several tracking projects available, many of which use ESP32 technology. However, none of them have been used as a quarantine persons movement tracker. For example, Sofwah Alimin Mahama Chedaod, Aznida Abu Bakar Sajak, and Jsrina Jaafar Mohd Sallehin Mohd Kassim developed an ESP32-based Movement Tracker for Smart Agriculture to track animals' locations over a long distance. The technology uses a peer-to-peer network to capture the animal's positional data and send it to the base station.

1.7 Chapter Summary

In essence, the biggest issue with tracking individuals in home quarantine is the high cost, manpower, and time required. If we cease manually tracking all of these variables, the virus will spread faster. We need technologies that will minimise manpower, cost, and time in order to overcome. However, no one has proposed a quarantine people movement control tracker as a solution.