UNIVERSITI TEKNOLOGI MARA

WEARABLE DEVICE TO MONITOR COVID-19 SYMPTOMS

MUHAMMAD IZAT IRFAN BIN MOHD SAM

BACHELOR OF COMPUTER SCIENCE (Hons.) NETWORKING AND DATA COMMUNICATION

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ABSTRACT

There was a wearable system/appliance that monitors the main symptoms of COVID-19. Easy sensors, microcontrollers, and appliances, such as mobile devices and peripherals, were used for the identification and tracking of body temperature, heart rate, breathing rate, and other vital signs that were of great importance in warnings to patients and remote healthcare personnel to great signs of COVID-19 or related diseases. However, in this current situation of pandemic, the healthcare system has been packed with the people that had been affect with this COVID-19 virus. This will make hospital being packed and over flows and due to high number of patients or suspected cases and also PUI, the swab test result will take more time to be confirmed. Therefore, this wearable device will surely ease the burden of the healthcare workers to monitor COVID-19 symptoms. This project is develop using Arduino and contains an Android mobile application in which the healthcare worker is able to easily monitor the PUI or COVID-19 patient and symptoms. Preliminary test results were presented and followed by the basic definition of the measuring theory, system integration, optical signal processing, and networking. The theory was easy and inexpensive, based on our everyday use of materials, but highly resistant to ruins and objects.

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CHAPTER 1

INTRODUCTION

In this chapter, a brief explanation of the project's background and other related components for the project proposed will be explained.

1.1   Background of Study

Wearable in healthcare was electronic or telecommunication and multimedia that can measure or detect and monitor vital signs such as heart rate, body temperature, blood pressure, oxygen saturation, etc. According to (Patil et al., 2019), Wearable technology in healthcare includes electronic devices that consumers can wear, like Fitbits and smartwatches, and were designed to collect users' health and exercise data. The first step to diagnosing medical problems measured vital signs. It can be done at home, ambulance, workplace, or elsewhere (M.S et al., 2020).Almost all of us will use the application to monitor our daily health, such as a smartwatch, heart rate monitor, stress monitor, thermometers, blood pressure, glucometers, and many other helpful application and instruments.

Covid-19 or coronavirus disease 2019 was an illness caused by a novel coronavirus identified amid an outbreak of respiratory cases in Wuhan City. According to the Coronaviridae Study Group (CSG) of the International Committee on Taxonomy of viruses' studies, this virus was as forming a sister clade to the severe acute respiratory syndrome coronaviruses ("SARS-CoVs"). The covid-19 had a typical symptom. It depends on the virus, but common signs include respiratory symptoms, Fever, cough, shortness of breath, and breathing difficulties. In several cases, an infection can cause pneumonia, respiratory syndrome, kidney failure, and even death (WHO,2020). Severe symptoms consist of above 100 bpm heart rate and lower than 92% oxygen saturation.

To prevent or reduce the spread of this infectious disease, the government has come out with several measures through the ministry of health. One of the essential and effective measures was to quarantine the