

RINGKASAN

ANALISIS PENGGUNAAN SENSOR SUHU MLX90614 DAN SENSOR ULTRASONIK HCSR04 TERHADAP KINERJA ALAT PRESENSI DAN PENGUKURAN SUHU TUBUH BERBASIS *INTERNET OF THINGS* (IOT)

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Coronavirus merupakan keluarga besar virus yang menyebabkan penyakit pada manusia dan hewan. Pada manusia, *coronavirus* menyebabkan penyakit infeksi saluran pernapasan, mulai dari flu, demam, anosmia hingga penyakit yang mematikan. Kasus *Covid-19* di Indonesia juga semakin mengkhawatirkan, penambahan tersebut menyebabkan total kasus *Covid-19* di Indonesia hingga 14 Juli 2021, pukul 12.00 WIB, mencapai 2.670.046 orang terhitung sejak kasus pertama diumumkan Presiden Joko Widodo pada 2 Maret 2020. Dari total kasus tersebut, 2.157.363 orang dinyatakan sembuh dan yang meninggal dunia mencapai 69.210 orang sejak awal pandemi. Penghindaran dini penyebaran virus *Covid-19*, dapat diselesaikan dengan memeriksa suhu tubuh internal seseorang.

Penelitian ini bertujuan untuk melakukan pelacakan penyebaran *Covid-19* di Fakultas Teknik Universitas Jenderal Soedirman. Apabila terdapat seseorang tertular *Covid-19* seringkali pelacakan kontak erat penularan virus *Covid-19* dilakukan dengan manual hal ini tentunya sangat tidak efisien dan dapat mempercepat penyebaran virus *Covid-19*. Semakin cepat kita mengetahui siapa saja yang melakukan kontak erat dengan pasien maka semakin cepat pula penanganan yang dapat dilakukan sebelum virus tersebut menyebar dengan lebih luas. Penelitian ini dilakukan dengan metode *Research and Development* (R&D) yaitu merancang sebuah alat presensi dan pengukuran suhu tubuh secara contactless menggunakan sensor suhu MLX90614, yang nantinya akan dimasukkan ke dalam database yang dapat diakses untuk memenuhi kebutuhan data hasil pengukur suhu sebagai *tracking* penyebaran *Covid-19* di Fakultas Teknik Universitas Jenderal Soedirman.

Berdasarkan hasil yang didapatkan dengan melakukan beberapa pengujian seperti pengujian Node MCU, pengujian jaringan *wifi*, pengujian sistem database, pengujian LCD, pengujian sensor suhu MLX9014, pengujian sensor ultrasonik HCSR04, pengujian akurasi pengukuran dan pengujian serta perbandingan keseluruhan sistem agar dapat mengetahui apakah bekerja secara akurat dan sesuai rancangan.

Kata kunci: coronavirus, pelacakan penyebaran *Covid-19*, sensor suhu MLX90614

SUMMARY

ANALYSIS OF THE USE OF TEMPERATURE SENSORS MLX90614 AND ULTRASONIC SENSORS HCSR04 ON THE PERFORMANCE OF PRESENCE AND BODY TEMPERATURE MEASUREMENTS BASED ON THE INTERNET OF THINGS (IOT)

Ramadoni Laksanajaya

Coronaviruses are a large family of viruses that cause disease in humans and animals. In humans, coronaviruses cause respiratory tract infections, ranging from flu, fever, anosmia to deadly diseases. Covid-19 cases in Indonesia are also increasingly worrying, the addition has caused the total number of Covid-19 cases in Indonesia until July 14, 2021, at 12.00 WIB, to reach 2,670,046 people since the first case was announced by President Joko Widodo on March 2, 2020. Of the total cases Of these, 2,157,363 people have recovered and 69,210 people have died since the start of the pandemic. Early avoidance of the spread of the Covid-19 virus, can be completed by checking a person's internal body temperature.

This study aims to track the spread of COVID-19 at the Faculty of Engineering, Jenderal Sudirman University. If someone is infected with COVID-19, often close contact tracing for the transmission of the COVID-19 virus is done manually, this is certainly very inefficient and can accelerate the spread of the COVID-19 virus. The sooner we find out who is in close contact with the patient, the faster treatment can be done before the virus spreads more widely. This research was carried out using the Research and Development (R&D) method, namely designing a contactless presence and measurement of body temperature using the MLX90614 temperature sensor, which will later be entered into an accessible database to meet the data needs of temperature measurement results as tracking the spread of Covid-19 At the Faculty of Engineering, General Sudirman University.

Based on the results obtained by carrying out several tests such as MCU Node testing, wifi network testing, database system testing, LCD testing, MLX9014 temperature sensor testing, HCSR04 ultrasonic sensor testing, measurement accuracy testing and testing and comparison of the entire system in order to find out whether it works accurately and according to plan.

Keywords: coronaviruses, covid-19 spread tracking, temperature sensor MLX90614