

ABSTRACT

The application of E-health is currently a concern in various countries. The COVID-19 pandemic has made people's daily activities switch to online methods, and so on with health services. The emergence of Internet of Things (IoT) technology facilitates the advancement of health services from face-to-face consultations to E-health consultations, in the hope of helping to reduce the spread of the COVID-19 virus and other infectious diseases.

Vital signs monitoring is very important to strengthen the medical diagnosis and continuity of the patient's health. When monitoring the patient's vital signs, it is necessary to have supervision by medical personnel with repeated and time-consuming examinations. So, in that case, the medical personnel are at risk of contracting diseases that is infected by the patients due to continuous direct contact. Therefore, a patient vital sign monitoring system is needed that is easy to implement by the patients to save time and reduce the risk of medical personnel contracting viruses or diseases infected by patients.

The results of the realization of the Vital Signs Monitoring System produce a percentage level of accuracy by using conventional Vital signs as a benchmark for the actual value, with 99.48% accuracy value of the temperature sensor, 98.31% of the blood pressure sensor, And the pulse oximeter sensor with 95.67% of accuracy on the pulse rate measurement, and 98.77% on the oxygen saturation measurements. The results of the system data acquisition can be sent to Firebase with a throughput speed between 51.6kbps-52.72kbps, packet loss value between 0.36%-2.04%, and a delay value between 44.99ms-46.34ms.

Key Words: Internet of Things, Vital Signs, E-health, COVID-19, real-time, portable.