ABSTRACT

Vital signs is a measurement of the most basic functions of the body which to find out the clinical signs. It is useful for diagnosing a disease and determining the appropriate medical treatment plan.

The respiratory rate is one of the most important parameters because the respiratory rate can provide valuable information related to the condition of the heart, nerves and lungs pulmonary. Patients who are in critical condition are generally monitored by measuring their respiratory rate. Heart rate is an important parameter in the human cardiovascular system. When the heart rate is irregular, it can be a critical sign.

The objective of this study is to design respiration rate and heart rate monitor. So the author designed an apparatus to detect the respiration by using a flex sensor and the heart rate monitor using the SEN11574 module. The results of these sensors are then sent to the Internet via ESP32 microcontroller. The parameters were displayed to the Web using the Internet of Things (IoT) based on ThingSpeak application. After the comparison between design and standard, the results showed that the error is 2.3% and 0,57% for respiration rate and heart rate, respectively.

Kata Kunci: Vital Signs, Respirasi, Flex Sensor, Heart Rate, SEN11574, ESP32, ThingSpeak