

ABSTRACT

The human body has several vital signs that are very, very important for human survival. The vital signs consist of body temperature, blood pressure, oxygen saturation, and heart rate. In connection with these vital tools, the oximeter and DS18B20 sensor are the right tools to be used to measure the value of each of these vital signs. In addition, the standard measurement of Abnormal (Hypoxemia) in the intensive care unit for guidelines for administering oxygen therapy refers to the value of oxygen levels denoted by SpO₂ which is displayed in percentage values (%).

Therefore, in this final project, a monitoring system for oxygen saturation, heart rate, and body temperature was designed. This tool utilizes IoT (Internet of Things) technology using a NodeMCU microcontroller equipped with an ESP8266 WiFi module. Through this tool we can monitor the value of oxygen saturation, heart rate and body temperature using the website.

Based on the results of the tests that have been carried out, this tool is known to function properly. This tool can detect the value of oxygen saturation, heart rate and body temperature with an accuracy value of 98% for the results of oxygen saturation data, 99% for heart rate data, and 99.25%. With this tool we can help humans to always know the condition of his body from an early age, so that nothing untoward happens. As well as being able to analyze the monitoring results data to determine the standard measurement of Abnormal (Hypoxemia) in the intensive care unit for guidelines for providing oxygen therapy.

Keywords: *oximeter, abnormal (hypoxaemia), heart rate, oxygen level, body temperature.*