ABSTRACT

Human vital signs are a basic measure of body function used to detect health problems, especially the elderly who need regular monitoring of vital signs because they tend to be more vulnerable to various health problems as their body functions decline. In addition, families of the elderly cannot always be there to care for and monitor their health due to time constraints because they have to work. Therefore, a monitoring system for vital signs in the elderly such as body temperature, heart rate and oxygen saturation based on the Internet of Things is needed which is expected to make it easier to monitor the vital signs of the elderly in real-time. In this study, the design of an Internet of Things-based monitoring tool is made by measuring body temperature using the MLX90614 non-contact infrared sensor, heart rate and oxygen saturation using the MAX30100 sensor which will then be processed by the NodeMCU ESP32 as the control center. The processed data will then be displayed on the LCD and sent to the telegram bot. From the research results, the accuracy obtained for body temperature is 97.96% with a thermogun comparator, heart rate is 97.32% with an oxymeter comparator and oxygen saturation is 97.56% with an oxymeter comparator.

Keywords: *Heart Rate, Oxygen Saturation, Body Temperature, Vital Signs, Telegram*