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ABSTRACT

Nowdays, people always pay attention to their health specifically the heart health condition. Heart is a vital organ that can affect a person's survival. With different human mobility, a person with heart disease is very likely to have a sudden heart attack without knowing the time. Therefore, someone who has a history of heart disease requires an individual monitoring system that can update the latest conditions in real time regarding the condition of heart rate, oxygen saturation and body temperature. In this final project research design a remote monitoring system heart rate sensor, oxygen saturation sensor and body temperature sensor. The system is designed with NodeMCU Wemos D1mini components, heart rate sensor, oxygen saturation (MAX30102) and temperature sensor (LM75A). The output of the monitoring will be sent using a bot system through the Telegram application in real time. This tool has also gone through measurement quality assurance testing by adopting ISO 17025 which includes Sensitivity, Selectivity, and Toughness of the tool. The results of testing tools on Respondent 1 obtained an average of 73.8 bpm which indicates Normal with an average SpO2 level of 71% and an average temperature of 33.9 ◦C, respondent 2 obtained an average of 71.7 bpm which indicates Normal with an average the average SpO2 level is 71% and the average temperature is 33.8 ◦C, and the 3rd respondent obtained an average of 72.8 bpm which indicates Normal with an average SpO2 level of 61.7% and an average temperature of 33.3 ◦C which signifies cold. The quality of service in QoS testing in this system results in a delay of 0.03428 ms.

Keywords: *Heart Rate, Oxygen Saturation, Body Temperature, Monitoring, Telegram*