PROTOTYPE DESIGN HUMAN BODY TEMPERATURE MONITORING BASED ANDROID O.S USING BLUETOOTH CONNECTION

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ABSTRACT

Vital signs human healthy can be detected by body temperature, pulse, respiration and blood pressure. Body temperature can be used as the main prediction on human health. Because of that, the existence of an instrument measuring and monitoring human body temperature is needed. In this final project, designed a prototype of a human body temperature monitoring based android using bluetooth connection with the performance in a jacket that consists of three points of measurement, determine in the mouth, right arm and left armpit.

The steps that was taken for designing a temperature measurement system is designing a system of hardware and software. The sensor used IC LM35 spread in three-point measurement. These sensors as detection of changes in body temperature, and temperature change results will be read and processed in the microcontroller ATMega8a-pu. Once the data is processed, then the data will be sent to android device via bluetooth connection.

After the measurement and analysis, it can be seen that the tool has the dynamic response in settling time by 5 minutes. This device has static characteristics, including the range of measurement ranged from 31-41°C, 10°C by span, resolution of 0.01°C. The maximum distance of data transfer is 35 meters, and
the ability of 9 volt battery for 90 minutes. This tool has a value of 0.2915°C accuracy error, precision error of 0.8°C for A sensor (mouth), and the value accuracy of 0.4149°C error, precision error of 0.2974°C for B sensor (right armpit), and the error value accuracy of 0.3846°C, precision error of 0.5956°C for C sensor (left armpit).

Keywords: temperature, health, microcontroller, bluetooth, android