

ABSTRACT

A pandemic is a time when the Covid-19 virus occurs in the world. Covid-19 is a virus that causes disease in humans and animals, caused by physical contact so that there is an increase in the number of deaths from transmission. Temperature measuring devices such as digital thermometers are the first tools to be used in preventing the transmission of Covid-19. However, digital thermometers are only able to read temperatures at close range and even in direct contact with objects so that the function of this thermometer is reduced during a pandemic because it makes it easier for viruses to move. So that it is necessary to increase the function of the sensor, therefore the author will design a temperature reading device based on a non-touch temperature sensor using the linear regression method by modeling temperature readings if the measurement distances are different and find out the performance of the non-touch sensor in terms of the percentage error value. In this study, two sensors were used, namely the MLX90614 infrared temperature sensor and the HC-SR04 ultrasonic sensor. The way this system works is to check the temperature which is implemented using the linear regression method, the use of the implementation of linear regression is able to reduce the error from the temperature readings obtained, then the test is carried out using this method and a fixed temperature comparator on the thermometer. The temperature reading results from the sensor on the Arduino IDE platform can be read. The lowest error results were obtained from optimizing the sensor with a thermometer comparison by testing 20 trials at 33°C, which was 2.57%, at 34°C, 1.44%, at 35°C, 0.84%, at 36 °C is 0.44%, at 37°C is 1.02%, and at 38°C is 1.37%.

Keywords: Covid-19, MLX90614, Ultrasonic, Arduino, Linear Regression