ABSTRACT

At the hospital the checking system is carried out using an invasive method, namely by applying the blood sampling method. Invasive methods involve the stages of taking blood through a peripheral blood vessel or vein. This process has potential risks, such as bruising on the skin, swelling, redness, and causing discomfort and pain for individuals who undergo it. The method used is Non-Invasive to design and realize a monitoring system for blood sugar levels using an infrared sensor with a non-invasive procedure to match the mg/dL value with input in the form of an infrared sensor and output in the form of two outputs, namely the thingspeak platform and serial monitor. Then the tool being tested is able to test the results of a non-invasive test tool and can know the level of accuracy and precision in a condition such as a fasting condition, namely getting an accuracy value in the fifth data of 98.615% and the sixth data of 97.936% which results in a precision level of 7 ,5659 %. Furthermore, in the condition 2 hours after eating, namely obtaining an accuracy value in the second data of 98.415% and the fifth data of 97.373% which results in a precision level of 28.9279%, and finally in the free condition data, namely obtaining an accuracy value in the second data of 92.700 % and the seventh data is 97.700% which produces a precision level of 15.1307%. As well as being able to enable recording of medical record history or displaying data records that have been tested to IoT (Internet of Things) on the Thingspeak platform thereby speeding up and facilitating access in the process of searching for patient data, increasing overall efficiency.

Keywords: *Blood Sugar, non-invasive methods, accuracy, precision, infrared sensors.*