ABSTRACT

Infusion or Intraneva (IV) is a medical device in the form of a bag filled with electrolyte fluids that the body needs. Infusions are used to help patients who are sick not to lack fluids or dehydration, because intravenous fluids will replace lost body fluids. Currently the infusion is still controlled manually. Because it is still manual, at least it requires time and direct supervision so that there are no risks in treating patients. Based on these problems, by using the concept of the internet of things network, we can design a tool that can monitor or monitor infusions. Hardware that supports monitoring technology is wemos D1 R2 as a microcontroller. The infusion will be installed with 2 sensors, namely ultrasonic to detect the volume of infusion fluids, and infrared sensors for reporting infusion drops, internet of things to send data, wemos D1 R2 to identify data, and a website server will display data. The results of testing the volume of infusion with an ultrasonic sensor, in the first website measurement, showed a result of 496 mL, and in direct measurement, the liquid was slightly below the 500mL line. This indicates that the results of sensor measurements and direct measurements do not have much different results. After that, testing the results of the number of infusion drops using an infrared (IR) sensor with a different direct calculation. The average error of infusion drops per minute is less than 4 drops per minute. QoS testing (throughput and delay) obtained an average result of 20.56 kbps with index 1 and 182.156 ms with index 3 between 20.36 - 00.08. There is a difference in the output between the website and the original state because the website renders the latest data only once when the website is launched. When it is reloaded or restarted it will only get the latest data from the MQTT broker, even if there are data changes, the website will not change its appearance because the sensor value on the website will only change to the latest if the website is reloaded manually.

Keywords *: Infusion, Internet of Things (IoT), Wemos D1 R2, Monitoring*