ABSTRACT

High temperatures can also interfere with the growth and production of broilers, so there are good temperature and humidity standards depending on the age of the livestock. From the existing problems, this research aims to make it easier for chicken farmers to monitor ammonia gas levels, methane, temperature, and humidity around the environment. monitoring results can be monitored via gadgets or computers. This system uses the concept of the Internet of Things so that chicken farmers can access or monitor from anywhere and anytime. This system uses an Arduino ESP32 Microcontroller and 3 sensors, namely the DHT22 sensor as a temperature and humidity sensor, the MQ-135 sensor as a sensor to calculate ammonia gas levels, and the MQ-4 as a sensor to detect methane gas. In the application of this system, the type of data communication used uses the pubblish/subscribe method with the MQTT protocol. Testing of each sensor is carried out to measure the reliability of the system that has been made. The DHT 22 sensor has accuracy test results ranging from 97.08% to 97.81% with errors ranging from 2.19% to 2.92%. The MQ-135 sensor shows the average result of the sensor point, the sensor point where there is gas is 17.07 PPM, and the one where there is no gas is 1.23 PPM. The MQ-4 sensor shows the results of the data with the average sensor, the sensor point that has gas is 101.12 PPM and the average that does not have gas is 2.41 PPM. Throughput test results from 30 test results show a throughput value of 280.61 kbps. As for the results of testing the delay value, the average delay value is 97.15 ms.

Keywords: *Internet of Things, Website, Chicken breeders (Broilers), ESP32, MQTT*