ABSTRACT

Trash is one of the problems that is often faced in every country, both developing countries and developed countries in the world. According to data from the Ministry of Environment and Forestry (KLHK) it states that the total amount of trash in Indonesia in 2019 will reach 68 million tons, and plastic trash is expected to reach 9.52 million tons or 14 percent of the total trash. Life in the community sometimes still monitors the trash and distinguishes wet and dry rubbish manually. With the presence of IOT technology, it is expected to be a solution to the problem of handling trash. In this study, using several tools and materials such as the rain sensor FC37 to sort trash, the ultrasonic sensor HC SR04 to detect the height of trash and the presence of incoming objects, servo motor as a drive to sort trash, nodemcu esp8266 as a microcontroller, buzzer and LEDs as alarms and indicators, Android application for system monitoring. This system is expected to be able to help monitor the capacity of trash that is in a trash can remotely using the internet or separate types of trash automatically in the community environment. The results of remote monitoring testing, namely when the height of trash in wet and dry trash can reach a height of ≥ 20cm, will bring up notifications and turn on the buzzer and LED. Testing the measurement of trash height using an ultrasonic sensor has a percentage error of 0%. The work system for trash sorting has very good accuracy for sorting trash. The large amount of data and distance do not really affect the delay in the range of distances of 0 meters to 10 meters. The resulting packet loss has an average of 0% error.

Keywords: Trash, Trash Bin, IOT, Ultrasonic Sensor, NodeMCU EPS8266, Android Application