ABSTRACT

Waste management is one of the complex problems that are still being faced by developing countries and developed countries in the world. The problem of waste management is a common problem and has become a universal phenomenon in various parts of the world, including a problem for big cities in Indonesia. With this problem, we need a waste management system called a waste bank. There are still many waste management mechanisms that are carried out conventionally, namely, first starting with sorting the waste according to the type from the house / source, then bringing the sorted waste to the waste bank. Then the residents register or register, then the waste bank management will weigh it and the management will record the total waste weighed (Kg and Rp) and finally the customer will receive his savings book. This allows for loss of savings data, transaction data, and less efficiency.

In this final project, a waste bank hardware equipped with an RFID sensor that is connected to the Firebase Realtime Database is designed and realized to identify people who are saving so that input errors do not occur, and equipped with a Load Cell sensor that is connected to the Firebase Realtime Database, which is used to weigh waste weight automatically and can be stored in the information system, this can minimize the occurrence of data loss, and make the system in the waste bank more efficient.

The test results show that this hardware can function as planned. The hardware that is designed can identify people who save using the RFID sensor, with the results of the trial successfully detecting registered RFID tags and unable to read unregistered RFID tags. And can weigh the weight automatically using a Load Cell sensor connected to the Firebase Realtime Database with an error percentage of 3.09%.

Keywords: Waste Bank, RFID Sensor, Load Cell Sensor, Firebase Realtime Database