ABSTRACT

Waste is a daily activity of humans and / or natural processes in the form of solid [1] Based on research conducted by Indonesia Sustainable Waste (SWI), organic waste that produces the most is 60%, paper waste (9%), metal (4.3%) and other ingredients (12.7%) [2]. From research conducted by the katadata insight center, the Ministry of Environment and Forestry (KLHK) conducted on 354 families in the five largest cities in Indonesia, resulting in 79% having no reason to bother with waste sorting [3]. While waste that has been sorted properly can provide benefits that create a better economy and can also be used as energy [4]

With these considerations, a device that can sort waste automatically can be sent can be sent in realtime. This device is an automatic garbage bin using a Metal Detector, TGS2602 VOC Sensor, and Ultrasonic Sensor. Where there are two main sensors to allow the type of waste, namely Metal Detectors and VOC Sensors. For data on the height of the bin using Ultrasonic sensors. All components are approved on the Arduino UNO R3 board and use the Wi-Fi Module on the internet-connected NodeMCU to send junk capacity data to the Firebase Realtime Database.

Automatic sorting bins that have been made can make it easier for the wider community to distinguish types of waste or sort waste so that it can be put to good use. Sending garbage capacity data every 30 minutes to Firebase Realtime Database. With an error rate of waste sorting of 23.3%. The amount of data used is 225B. Power resistance in Hardware for 69 hours. So that the automatic sorting place can function properly.

Keywords: Waste Sorting, Metal Sensor, VOC Sensor, NodeMCU ESP8266, Firebase Realtime Database