ABSTRACT

Transportation of garbage in Purwokerto has been carried out 2-3 times in 1 week for each trash can. Waste that is left too long piles up in trash can because irregular transportation is a frequent problem. Therefore, the authors make smart bins that can monitor the height of garbage through an application on Android to overcome the problem of accumulating garbage in a trash can. This system uses an ultrasonic sensor to detect the height of garbage that will be processed in the NodeMCU, NodeMCU will update the time in real time once every second through the NTP server. If the time shows 8 o'clock in the morning, the data will be sent to the IFTTT (If This Then That) Applets according to the identity of the trash, using the address of the key and event that has been created. Then the event will occur in the IFTTT Applets, Webhooks accepts web requests from IFTTT. IFTTT will send a message to the Line and Facebook Messenger application, in the form of garbage height in accordance with the identity of the trash. If the garbage height > = 16 cm LED is lit, then if the garbage height <16 cm LED is off. The results of this study show that the difference in measurement of ultrasonic sensors with a ruler of 30 cm is 0.19 cm to 0.27 cm and the average error of measurement with an ultrasonic sensor is 2.76%, the format of filling garbage in 3 bins with notification on the Smartphone is the same , when sending smart trash notifications to Smartphones, which are 4.52 seconds to 5.6 seconds, the throughput value on data sent by smart bins to smartphones is 56,27 bits / sec to 68,13 bits / sec, and the compatibility between the times of smart bins sends data with notification time up to the corresponding Smartphone.

Keywords : Ultrasonic Sensor, NodeMCU, NTP Server, IFTTT (If This Then That), Webhooks, Line, Facebook Messenger, Smartphone.