ABSTRACT

SMART TRASH DESIGN FOR A SMART CITY BASED ON THE INTERNET OF THINGS

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Waste is one of the complex problems faced by both developing and developed countries. Smart cities emerged as a demand for building a city identity that is livable, safe, comfortable, greenery, climate and disaster-resiliently, based on physical character, economic excellence, local culture, and technology-based competitiveness. The waste problem is a common problem and has become a universal phenomenon in various parts of the world, including being a problem for big cities in Indonesia. The problems above gave rise to the idea of researching and designing smart trash for a smart city based on the Internet of Things. Ultrasonic sensors were used to measure the height of the trash, and GPS provided location information where the trash can was full, while the Blynk application was used to monitor the trash can. Based on the test results, it was found that the research had succeeded in creating a Smart Trash Box tool. Once the Nodemcu is active and connected to wifi, the sensor and GPS neo 6 reading results will appear in the Blynk application. Meanwhile, from the results of testing the entire system, it can be seen that the results of the ultrasonic sensor 2 readings are that if the distance is <5 cm then the status of the waste box is full, whereas if the ultrasonic distance is > 5 cm then the status of the waste box is empty. If the trash box status is full, the Blynk application will receive a notification of the trash box coordinates.

Keywords: Smart City, Waste, GPS, Internet of Things.