Automated Charity Device

Evelyn L. De Castro, Roland Jay M. Bruce, King Roque C. Aranas, Dylan S. Cabreros, and Renee Ann Eunice C. Opaco

Computer Engineering Department, Lyceum of the Philippines University - Batangas
Capitol Site, Batangas City, Philippines

Abstract

To support one of the tri-fold functions of the university, which is the community extension, and to promote waste management, the authors proposed an alternative way of donating and helping the indigent communities. There is a need for technological advancement of promoting charity, not only by monetary means but also with the cost of properly disposing of plastic bottles. The extension program can be supplemented with the use of modern sustainable technology abiding by the law, which will also encourage the LPU – Batangas community to take part, in a cost-effective and environment-friendly system of Community outreach.

At the core of this stand-alone device is a computer system unit that manages various operations with the help of a microcontroller. The system interface is responsible for accepting donations and verifying the beneficiary's identity. It uses a web-based application for monitoring these transactions and updating the system database. It can distinguish different coins, bills, and recyclable plastic bottles that have a corresponding credit value to be converted into cash and added into the total accumulated fund for the beneficiaries registered in the system. Beneficiaries of this project through the printed coupons can purchase goods from affiliated stores of the University's extended community. The Internet of Things (IoT) technology was used for accessing and controlling the device.

Furthermore, the testing generated 100% results on effectiveness based on accuracy, reliability, and user-friendliness. The adoption of the device is an innovative addition to the existing extension programs and waste management schemes of the institution.

***Keywords*:** *IoT, Charity, Reverse Vending, Microcontroller, web-based application*