DESIGN AND DEVELOPMENT OF MICROCONTROLLER BASED BOTTLE CLEANER

Undergraduate Design Project
Submitted to the Faculty of the
College of Engineering and Information Technology
Cavite State University
Indang, Cavite

In partial fulfillment
of the requirements for the degree
Bachelor of Science in Computer Engineering

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ABSTRACT

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A study was conducted to develop a microcontroller based bottle cleaner. The project aimed to create a bottle cleaner that can produce output faster, increase a community based bottle recycling center and to help environment by recycling bottles. The general objective of the study was to develop a bottle cleaner. The study specifically aimed to design and construct a microcontroller circuit for the system; design and fabricate the bottle cleaner; develop software for the system; test and evaluate the system; and conduct a cost computation for the system.

The materials that were used in the study were: microcontroller unit, DC motors, capacitive sensors, magnetic sensors, limit switch, self-priming pump, relay, switches, conveyor belt and 3D printed materials. The microcontroller based bottle cleaner can clean bottles faster than the manual process. Flipping bottles, spraying solution and rinsing with high pressure water are the major process developed for the system.

Result of the evaluation showed that based from the evaluated speed of the bottle cleaner was considerably faster than the manual process. The quality was also acceptable based on visual inspection done to the outputs of the bottle cleaner.

The study was proven effective on its capability to meet its objectives. Thus, it helps to present the advantages in performance of the bottle cleaner. The microcontroller based bottle cleaner had a total cost of P 62,820.00.

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