



RECYCLE VENDING MACHINE
REVERSE TORQUE

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ABSTRACT

The idea of this project is to encourage people to recycle wastes by giving them monetary incentive. A recycle vending machine had been proposed. This recycle vending machine is one of the solutions to encourage people with recycling habits. The project is focus in recycling the aluminum can. Moreover, it helps to reduce the percentage of pollution. Pollution is one of the issues that received a great concern as the effects of the pollution are very worrisome. This project had everyone agreed as it is not just beneficial but also is very convenient and easy to use for everyone. The given name for this recycle vending machine is Reverse Tora.

To make this vending machine works, we use Arduino Mega 2560 as it is a micro controller board based on the ATmega2560. It has 54 digital input/output pins (of which 14 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the micro controller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. For the output, this machine requires the user to push the button to open the door. After the door open, the user will put the tins on the conveyor and the metal sensor will sense the tins. Next, the tins will be dropped into the box and user then will receive token based on the amount of tins that they recycle. Moreover, the user will listen to a short music as the appreciation for the user to recycle.

For the output of this vending machine, this machine allows people to recycle tins as we use inductive proximity sensor which will sense only metal. After the user put a tin in the machine, the proximity sensor will sense the tin which allow the servo motor to open the lid and drop the tin. Next, ultrasonic will detect the presence of the tin and allows another servo motor at coin pusher section to push the token as the reward for user. After the user gets the token, led red, yellow and green will light up and buzzer will produce a melody sound.

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CHAPTER 1

INTRODUCTION

1.1 Background of study

A reverse vending machine is a device that accepts used (empty) beverage containers and returns money to the user [1]. Reverse vending machine makes sure that a simple a simple of depositing a tin will make a big difference. This machine is very convenient and easy to use as it is just the reverse way from the usual vending machines. Unlike the usual and traditional vending machine out there where the customer inserts payment for an item that is then dispensed, reverse vending machine allow people to insert their empty tins and redeem rewards. Tins are the most waste wasted by human in this world within the increasing of the number of vending machine and water or food produce in aluminum cans along with the increasing number of the populations.

Reverse vending machine is a machine that may help to solve the problems. It is very important because it will help and encourage people to recycle without being too dependable on recycle dustbins or company who make job in responsibility to separate the waste products between the recyclable and non recyclable. There are many ways to recycle the tins such as reuse that tins or send it to recycle center. However, nowadays people are too busy to recycle and they just throw the tins everywhere. This habit is not just unpleasant in the eyes but also may has some negative effects in the future. Hence, in this project, recycle vending machine has many importances and contribution that may help to solve the problem and had been decided to help to reduce this problem.