PROJECT PROPOSAL ON

"Digital Trash Bin"

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Course No: CSE 3104
Course Title: Peripherals and Interfacing Laboratory

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Introduction:

Because of the increasing population in Bangladesh we have an increase in garbage which has increased environmental issues. Dustbin is a container which collects garbage or stores items which are recyclable or non-recyclable, decompose and non-decompose. Dustbins are used in home, office, public areas and many more places but in case they are full there are only a few to clean it, because of it the garbage is spilled out. For this reason we are facing an increase in pollution levels. Air pollution due to a dustbin can produce bacteria and viruses which can produce life harmful diseases for humans. For this we will design a smart dustbin using ARDUINO UNO, an ultrasonic sensor which will sense the item to be thrown in the dustbin and open the lid with the help of the motor. It will be a decent gadget in home, office and public places.

The project is to design a smart dustbin which will help in keeping our environment clean and also eco friendly. This smart dustbin management system is built on the microcontroller based system having ultrasonic sensors on the dustbin. Dustbin lid will open when someone comes near at some range then wait for the user to put garbage and close it. There will also be a digital buzzer that will be triggered and create sound periodically, if the trash is full.

Objectives:

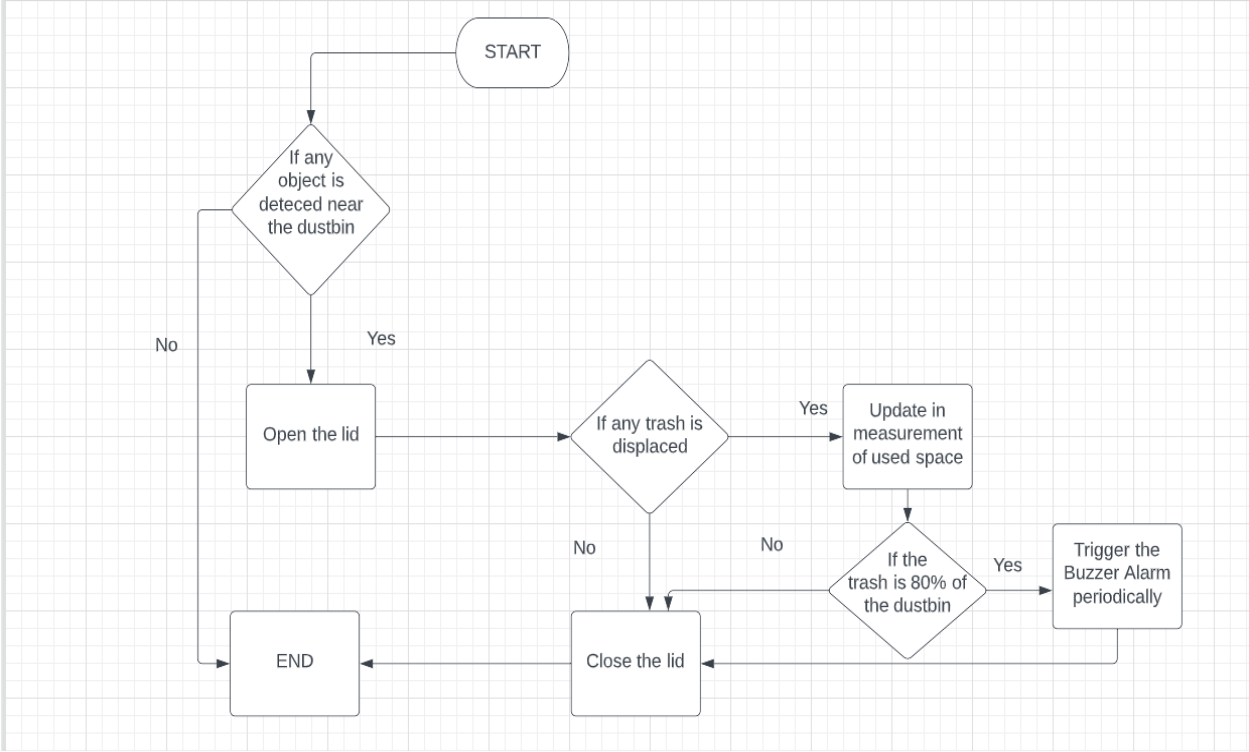
1. To design and build a prototype for an automatic open dustbin that can automatically open the lid when it detects the people who want to throw out their trash.
2. To get familiar with the Arduino and the respective sensors how to use them for a cause.
3. To use a buzzer to create sound periodically, if the trash is full.

Apparatus Required:

SL NO.	Apparatus Required	Quantity
1	Arduino Uno	01
2	Sonar Sensor	02
3	Servo Motor	01
4	Battery	02
5	Digital Buzzer	01
6	Jumper Wire	As required

Project Description:

This smart dustbin management system is built on the arduino uno microcontroller based system having ultrasonic sensors on the dustbin.Here we are using arduino for code execution, for sensing we will use ultrasonic sensor
.When the system is powered ON, Arduino keeps monitoring for any things that come near the sensor at a given range. When Ultrasonic sensor detect any object for example like hand or others, here Arduino calculates its distance and if it less than a certain predefined value,then set up servo motor gets activated first and with the support of the extended arm of the lid it will open.It will remain opened with the given delay and then it will automatically close.
Another feature will be measuring number of space used in dustbin as this will help customers to get notified when to take out the trash.An digital buzzer alarm will be triggered and create sound periodically if trash level is 80% of the dustbin.The measurement will be done by using a ultrasonic sensor.A complete flowchart of the procedure is given below:



Conclusion:

Our world is being polluted day by day for various reasons. Among them, one of the reasons is not to keep the waste materials in a specific place. That's why proper waste management is very necessary now. So, to keep our environment neat & clean, we need to encourage people to store the waste materials in a specific place. Therefore, we are going to do this project.