SMART TRASH-BIN

Engineering Clinics Project

meet our team

DHYAN
20BCE7648
SCOPE

VENKATA KARTHIK DRAKSHARAM
20BCN7028
SCOPE

KHUSHI SHARMA
20BCN7001
SCOPE

ADUSUMILLI SERISHMA
20BES7039
SENSE

TWINKLE KUMARI
20BCN7023
SCOPE

L SHANMUKHA SAI SRIVALLI
20BES7054
SENSE

agenda

Identification of problem and Title of the project

Identification of Required Components

Identification of approximate budget required

Plan of Action

Timeline of Progress

Identification of Problem

SMART TRASH-BIN

Throwing garbage all over the place will not only dirty our surroundings and pollute the environment, making it very unhygienic, but also causes bad odors and encourages the infestation of cockroaches, flies, and other insects. There are various diseases caused due to poor maintenance of hygienic conditions.

We don't need to do something to open it without touching it without stepping on it, just approaching it or bringing our hands closer, we are hygienic without touching the garbage can to dispose of the trash.

It is sometimes difficult to know where to put the different types of waste (wet and dry).

But if the people have this much of awareness, they already have done this, to make this more interesting we are offering Credit system which they can use later as a discount or offer.

This project is to design a smart automatic recycling trash bin, and it is an interesting solution to a before-mentioned inconvenience that comes from recycling Dry and other types of waste. By using this, we hope that the convenience of a recycling trash bin that helps users to sort the trash will inspire more people to recycle.

Identification of Required Components

Hardware Components

One Metallic Plate

Leather Belt

Wood for conveyer belt

Screws

Wheels

Mold

2 Bins of size 22x22x24

Arduino UNO

Ultrasonic Sensor

Soil moisture Sensor

Touch Sensor

Servo Motors

Load Sensors

Jumper wires

Hardware Components

LED
LCD Screen
Outer Bin
USB Cable
Adapter
9V Batteries
Card Board

Thin Metallic Wires
Hammer
Cutter
Pipes
Switch
Cycle Pump Tube
Screw Driver

Double Plaster
HX 711Module Load cell
Wires
One Steel Scale
Reset Switch

Software Components

- Aurdino Software- Aurdino IDE 2.0.0
- Mobile App- Android Studio
- Xampp, Database Software
- Programming Language Involved- C

IDENTIFICATION OF APPROXIMATE BUDGET REQUIRED

Total Approximate Budget is 8K-9K

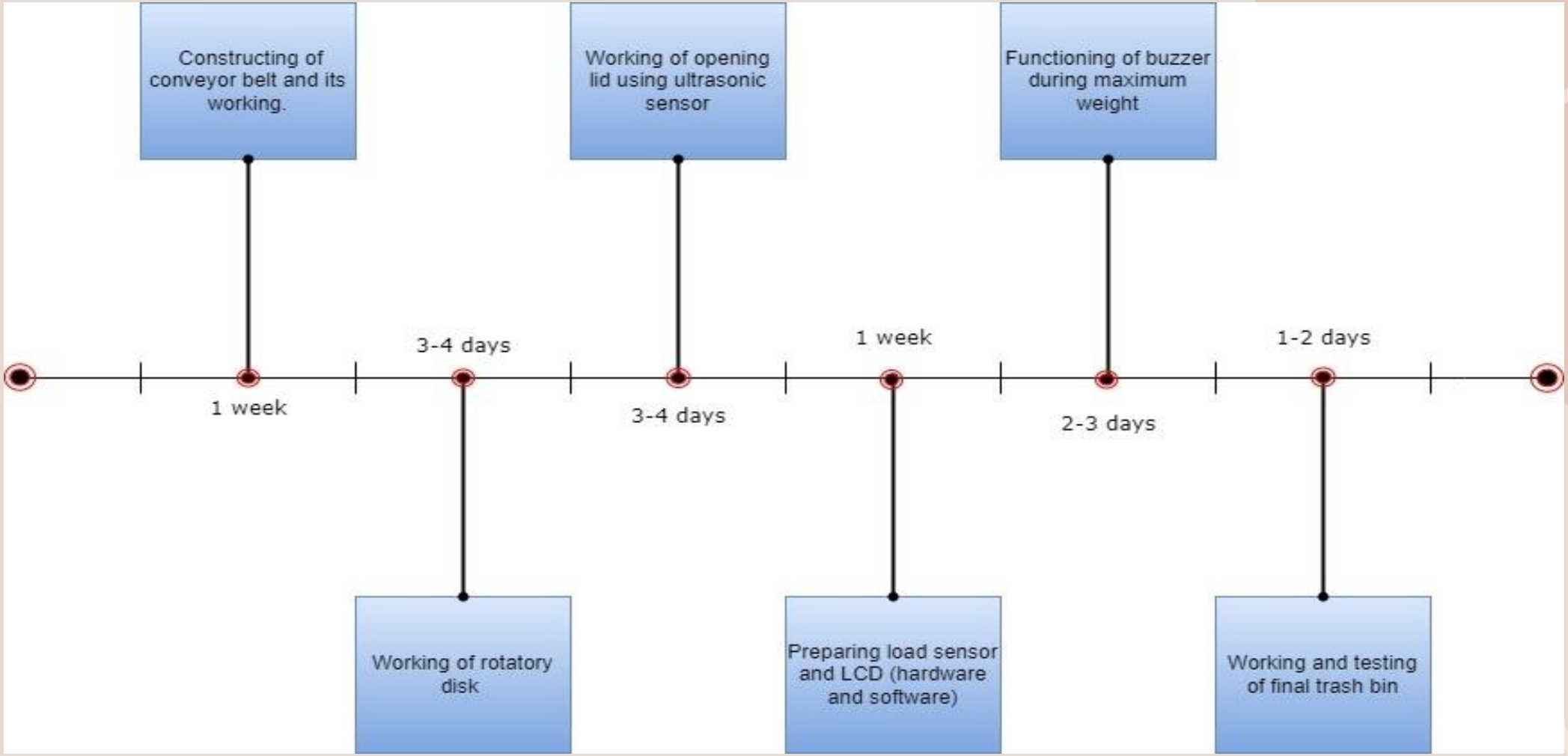
Plan Of Action

A person comes to a trash bin with some amount of waste with him. An ultrasonic sensor detects the person nearby to him such a way that, It will detect and automatically opens the outer lid, allowing the trash to fall on a conveyor belt. Conveyor will be in ideal state initially. Outer lid is closed after the person leaves the waste bin surroundings. Thereafter, conveyor takes the action in which the sequential detection takes place using soil moisture sensor and touch sensor. The two sensors are placed within a uniform distance such a way that giving enough time to segregate the waste and for rotation of two bins.

After outer lid is closed, the conveyor is on a move. Either touch or soil moisture sensor will detect respective material. Based on the FIFO (First In First Out), The inputs are taken, and the bins are rotated accordingly for segregation.

When dry and wet waste are separated, they have their respective cabins where they have individual load sensors detects the weight. Based on the previous weight and the added weight, we calculate individual weight, so that the points/credits are given accordingly.

Timeline


Constructing of conveyor belt and its working.
1 week
3-4 days
Working of rotatory disk
Working of opening lid using ultrasonic sensor
3-4 days
1 week
Preparing load sensor and LCD (hardware and software)
Functioning of buzzer during maximum weight
2-3 days
1-2 days
Working and testing of final trash bin

thank you