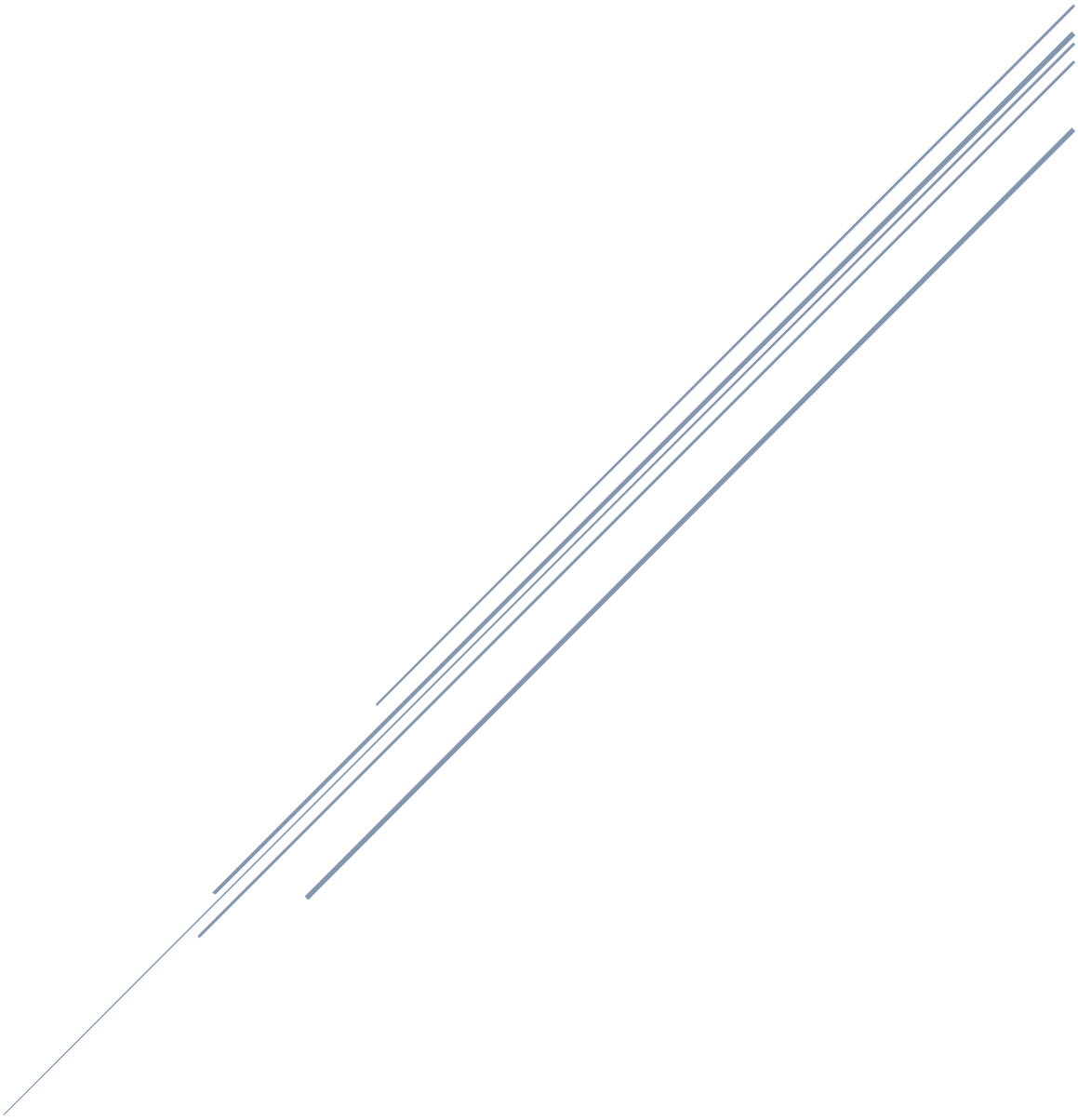
SMART DUSTBIN

Product Proposal



Team
TechDots

Introduction

Many of our labor force are working on ground level emptying the garbage bins whenever they are full. This has now become a challenge as the amount of garbage produced by our society are continuously increasing. Our aim is to make this process easier for the labor force by convincing residents to keep the garbage via a smart dustbin which helps them to generate compost.

Problem

- Because of this nonpattern garbage filling, sometimes the effort and energy are wasted.
- Fuel consumption for the garbage vehicles can be reduced using this.
- Some people find it hard to make compost
- People are avoiding home gardening due to lack of fertilizer

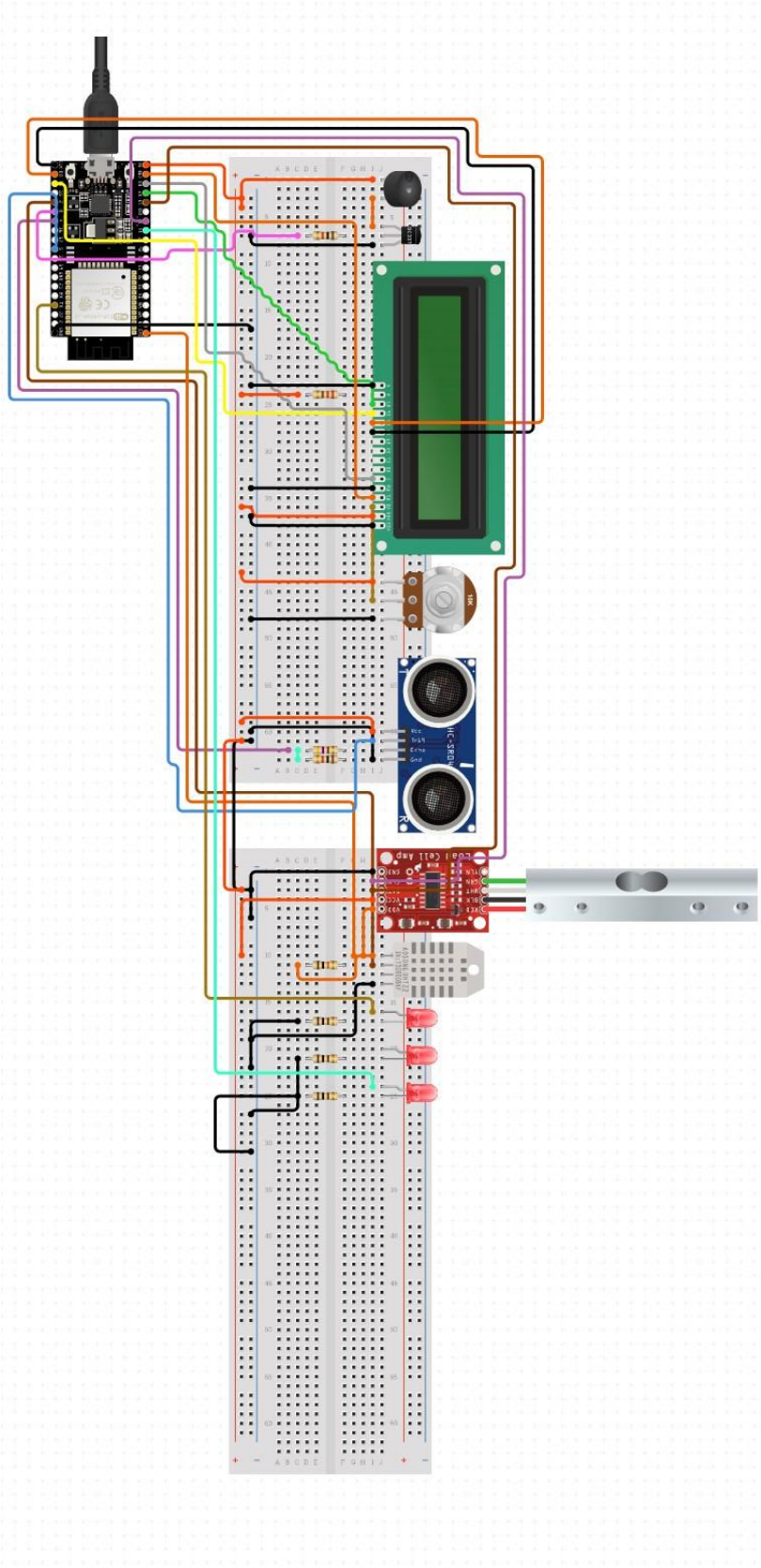
Solution

This system monitors the garbage bins and informs about the level of garbage collected in the garbage bins to a thingspeak channel. Also, moisture and temperature are collected through a humidity sensor and will be sent to the channel. The result will be shown in a web view with instructions to improve the quality of the compost. System uses ultrasonic sensors located with the bin's lid to detect the garbage level and relate it with the garbage bins deepness. We also use weight sensors attached below the garbage bins to identify its weight. The advantage of this is that the garbage bin lifting weight can also be known by the owner. The system also uses ESP32, LCD screen and a buzzer. The LCD screen is used to display the status of the level and weight of garbage collected in the bins. Whereas a thingspeak channel to show the status to the user monitoring it. Also, the weight of the individual bins will be shown along with the level of the garbage bin. The LCD screen shows the status of the garbage level, moisture and temperature. The system puts on the buzzer when the level of garbage collected crosses the set limit.

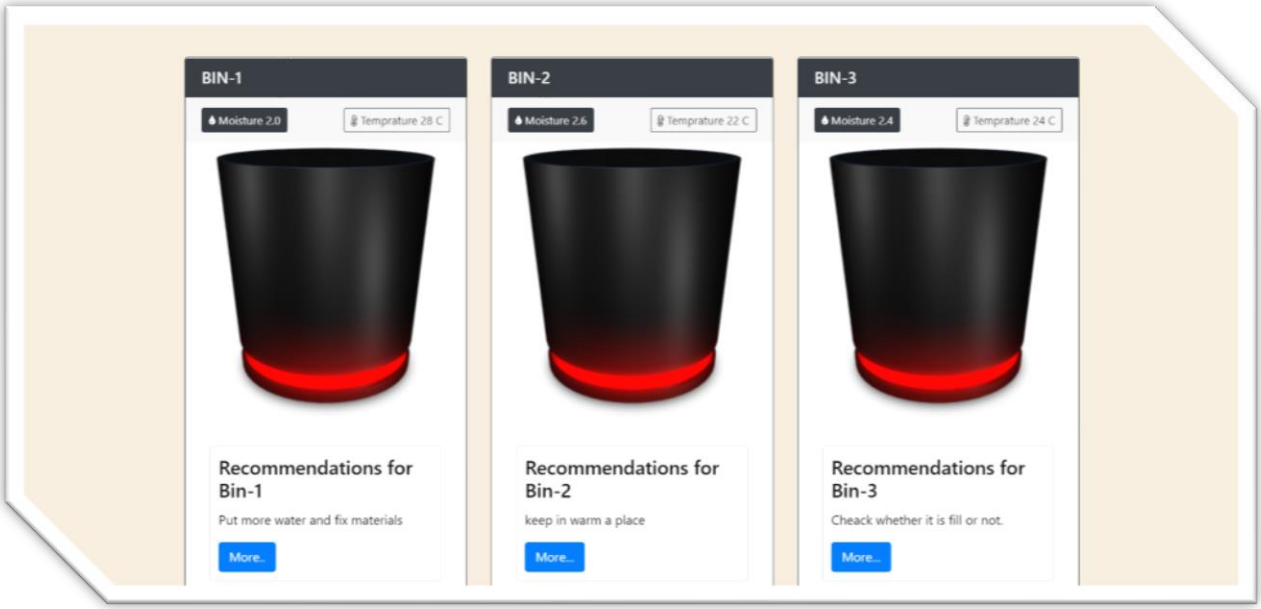
Components

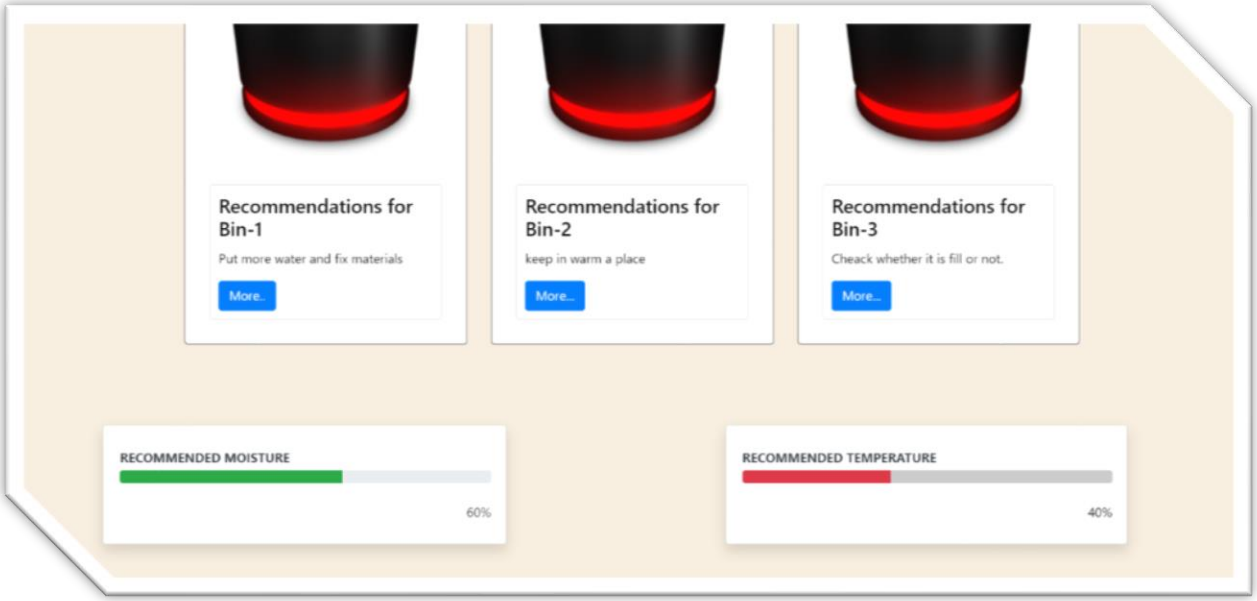
- ESP32
- HC-SR04 Ultrasonic
- Humidity Sensor
- Weight Sensor
- Buzzer
- LCD's
- Resistors
- Capacitors
- Transistors
- Cables & Connectors
- Diodes
- LED's
- Supporting frame

Circuit Diagram

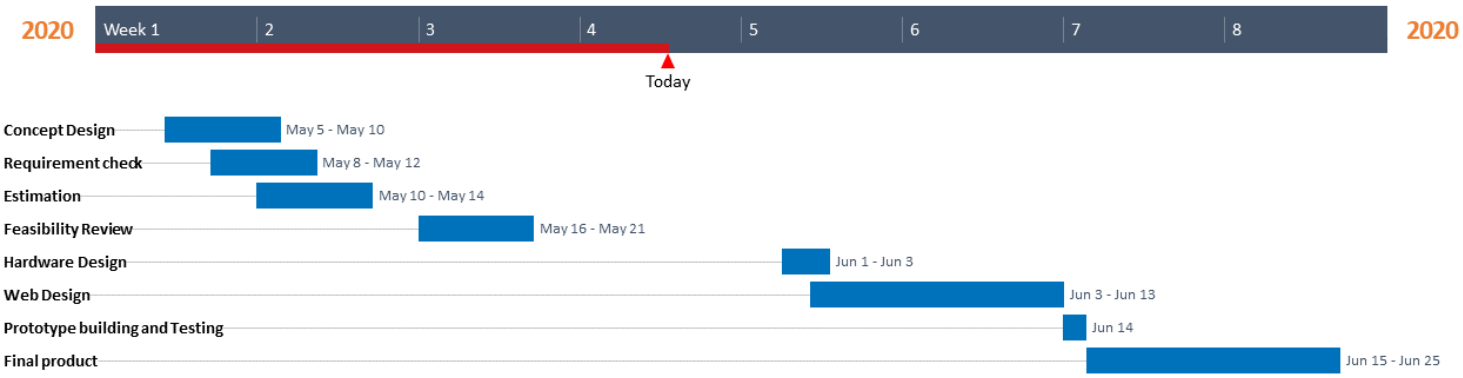


Interfaces


BIN-1
Moisture 2.0
Temprature 28 C
Recommendations for Bin-1
Put more water and fix materials
More..
BIN-2
Moisture 2.6
Temprature 22 C
Recommendations for Bin-2
keep in warm a place
More...
BIN-3
Moisture 2.4
Temprature 24 C
Recommendations for Bin-3
Cheack whether it is fill or not.
More...


Recommendations for Bin-1
Put more water and fix materials
More..
Recommendations for Bin-2
keep in warm a place
More...
Recommendations for Bin-3
Cheack whether it is fill or not.
More...
RECOMMENDED MOISTURE
60%
RECOMMENDED TEMPERATURE
40%

Project Timeline



Teamwork

Kasuri	Nipuna	Malinga
▪ Concept Design ▪ Feasibility Review ▪ Web Design ▪ Connection to Web portal ▪ Prototype building and Testing ▪ Final Product	▪ Concept Design ▪ Feasibility Review ▪ Prototype building and Testing ▪ Final Product ▪ Estimation	▪ Developing the circuit ▪ Concept Design ▪ Feasibility Review ▪ Prototype building and Testing ▪ Final Product ▪ Requirement check

Team Members

- Nipuna Munasinghe (Team Leader)
- Kasuri Abhilashini
- Malinga Shenal