

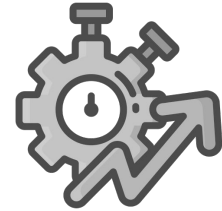
MAE 6291- Midterm project presentation

Smart Monitoring & Waste Management

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Motivation & Steps Taken



Connected System of
Sensors and Displays
to Raspberry Pi



Implement python
code to gather data
and display



Gathered
experimental data in
CSV for analysis

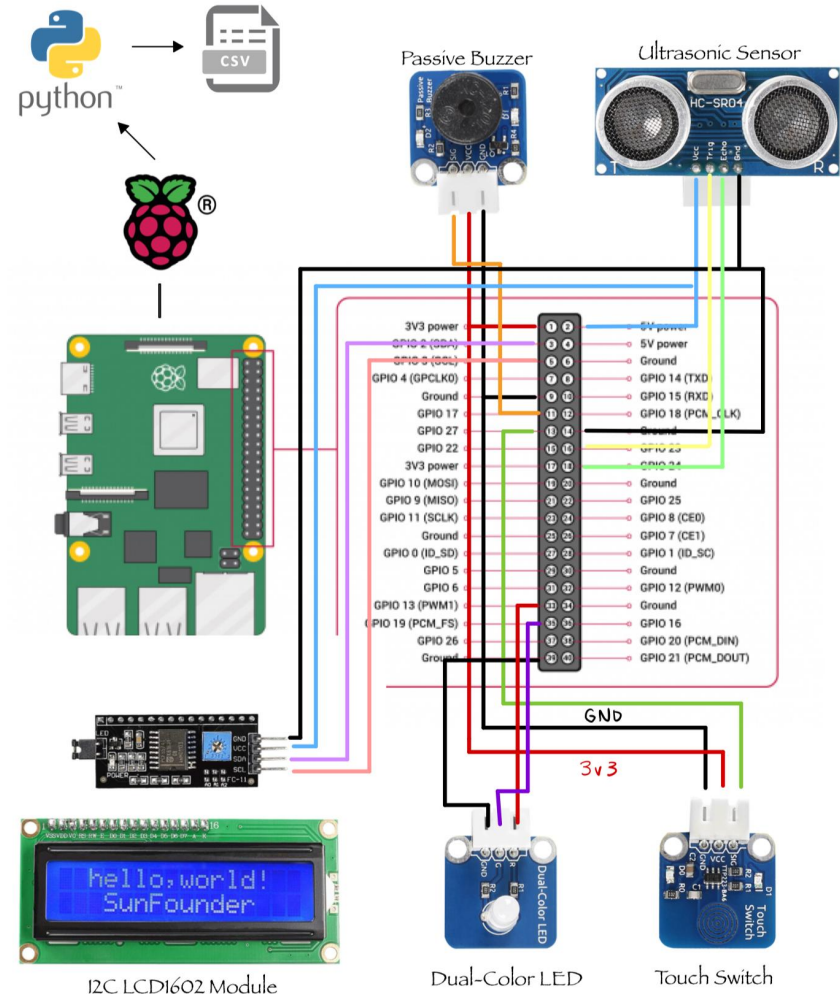
System Setup

Materials and hardware used:

1. Ultrasonic Sensor
2. Touch Switch
3. Passive Buzzer
4. LCD Display
5. LED Lights
6. Raspberry Pi 4 Model B
7. Python + CSV

Source: Sunfounder Raspberry Pi
Sensor Kit

Schematics



The “thing” & 3 layer IoT model

The “thing” - smart trash can

- Self contained & Operates within the confines of a box
- Thing has a computer inside
- Thing has firmware
- Thing connects with each other
- Thing computes

IoT Structure -



Information Layer

CSV + Python + LCD + LED + Buzzer



Communication Layer

Raspberry Pi

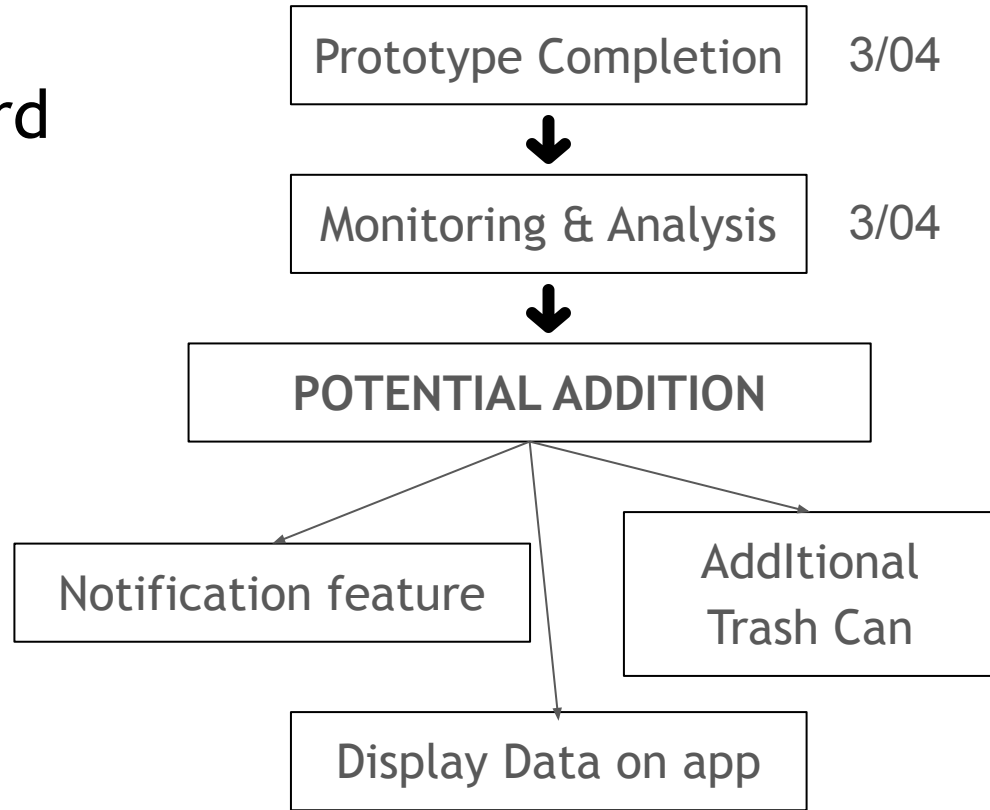


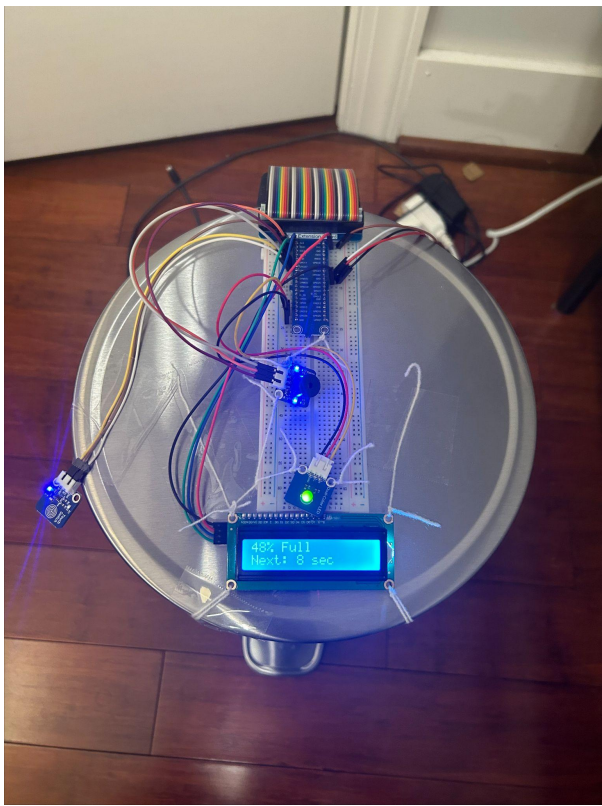
Sensor Layer

Sensor & Components

Conclusion & Moving Forward

In conclusion I can now monitor trash cans for how full they are and use the information to make educated decisions of efficient waste management schedules. I was able to learn many new Raspberry Pi components and implementation of python codes and CSV files.





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Only consider the 5 pages please