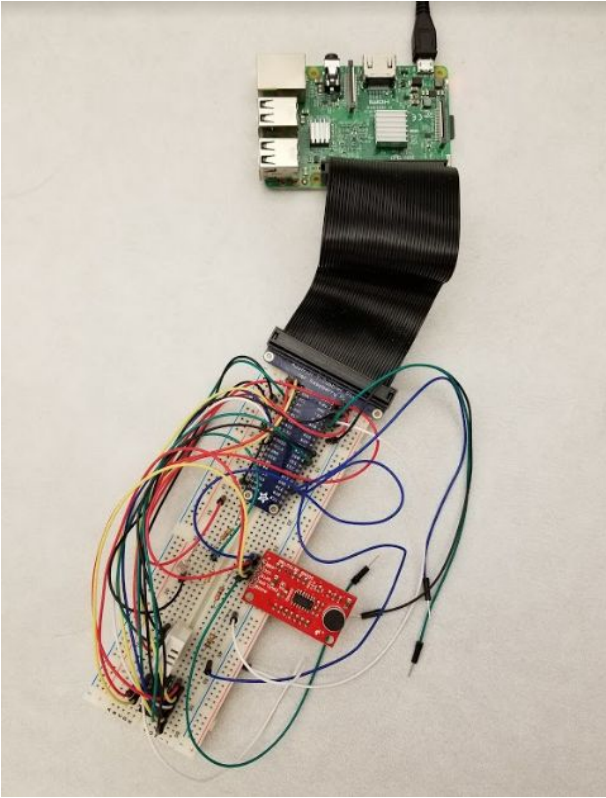# PLANT MONITOR
# Final Report

Pictured left: Full Raspberry Pi configuration. Contains temperature/humidity sensor, Adafruit T-Cobbler SPI, sound detector, MCP3008 Analog to Digital Converter (ADC), and a Raspberry Pi 3 Model B.

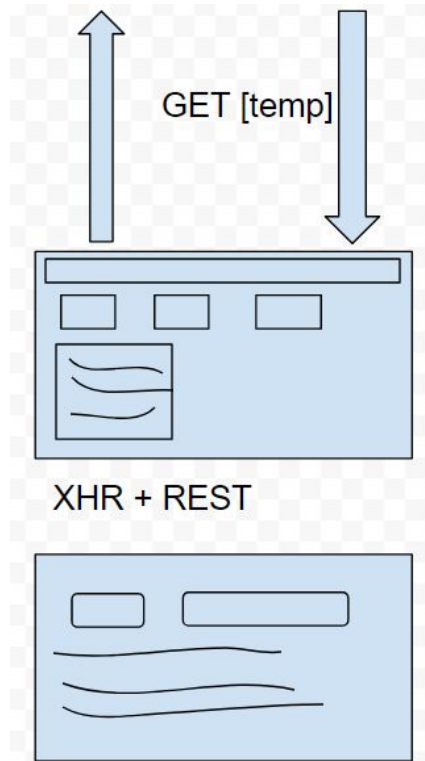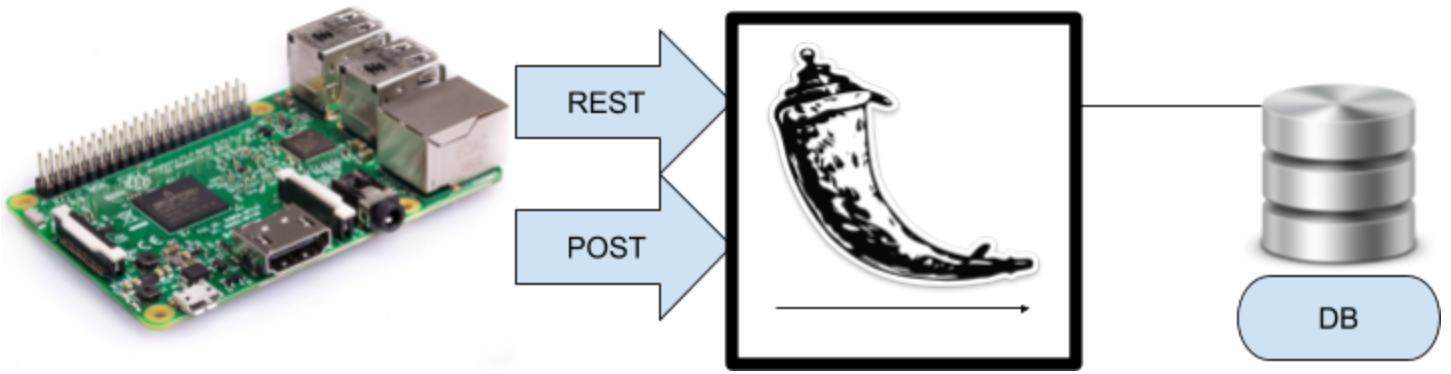REST = Representational State Transfer
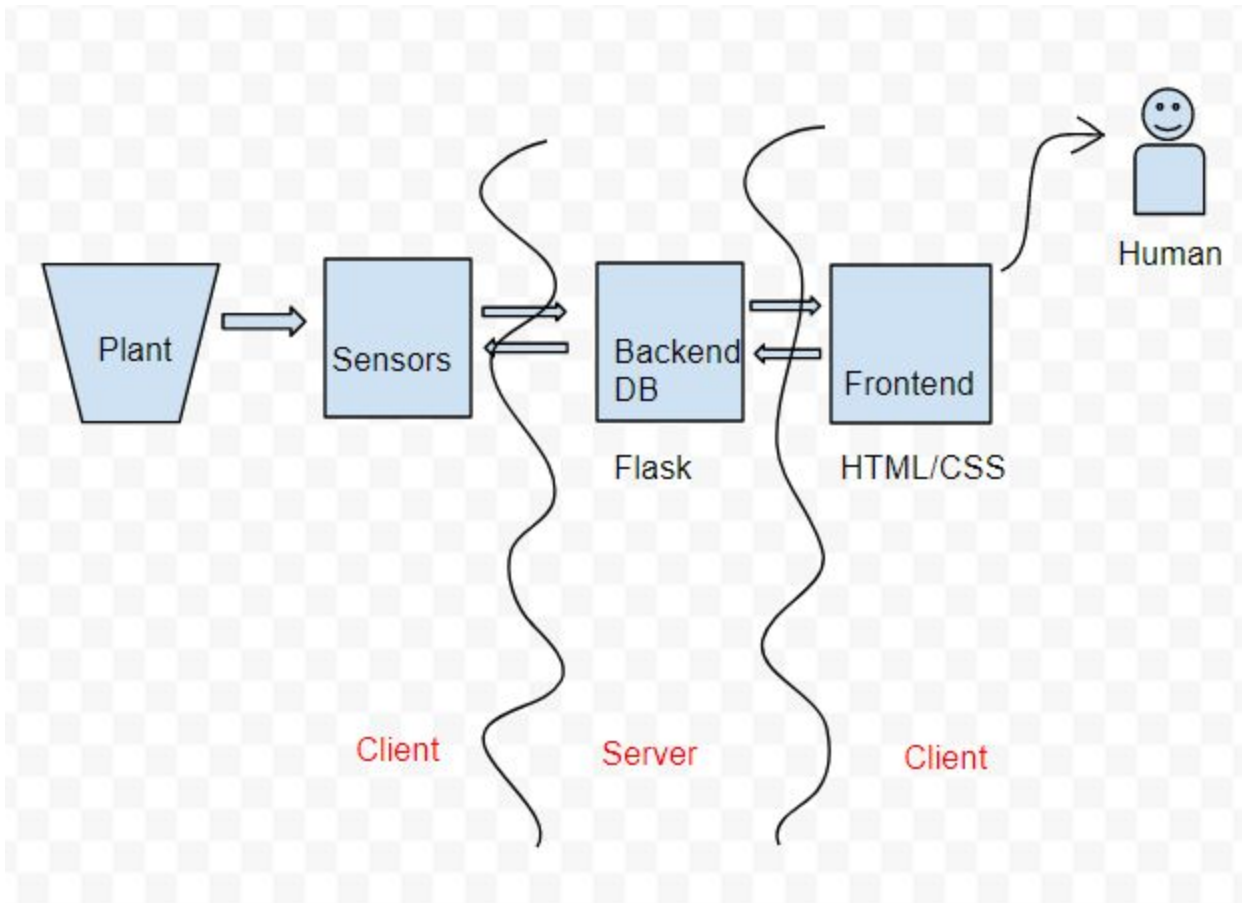SPI = Serial Peripheral Interface Bus

DHT Pin = 2
MCP Pin = 4

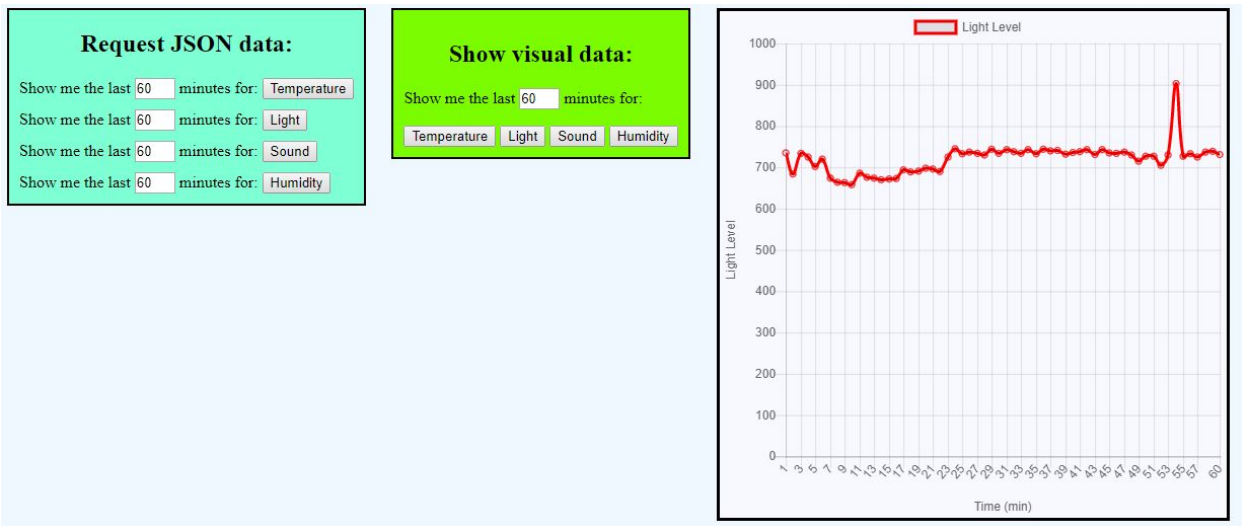A voltage divider was used to get the correct outputs on the circuit.
Sensors receive information, then the information is then stored on SQLite Database. Finally this information is uploaded and displayed on a Flask web app.

REST

POST

GET [temp]

XHR + REST

DB

Plant → Sensors ⇄ Backend DB (Flask) ⇄ Frontend (HTML/CSS) → Human

Client | Server | Client

Screenshot of app:

Site contains buttons to display the appropriate data along with its corresponding graph



**Request JSON data:**

Show me the last 60 minutes for: Temperature
Show me the last 60 minutes for: Light
Show me the last 60 minutes for: Sound
Show me the last 60 minutes for: Humidity

**Show visual data:**

Show me the last 60 minutes for:

Temperature | Light | Sound | Humidity

Light Level
Time (min)

**UX/UI Considerations:**

- ❖ Put all buttons on a single page to reduce number of clicks needed to access data.
- ❖ Created two colored regions for requesting raw data values and visual data to create a high contrast theme. This makes it easier to locate and navigate to a desired location.
- ❖ The graph is shown to the right and dynamically changes as the "show visual data" buttons are pressed
- ❖ Allows the user to select the time duration of data and the type of data displayed