
PlantEmote

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April, 2024

https://github.com/Jingyii800/TECHIN515_PlantEmote



Problem Statement

While plants cannot communicate emotions like humans or animals, they exhibit changes in physiological states that can indicate their health and well-being. Traditional methods of monitoring plant health can be invasive or require close observation.

Intended User Group: For home gardening enthusiasts, schools, green office environments, and all those who want to build a stronger connection with natural plants through technology.



Solution Description

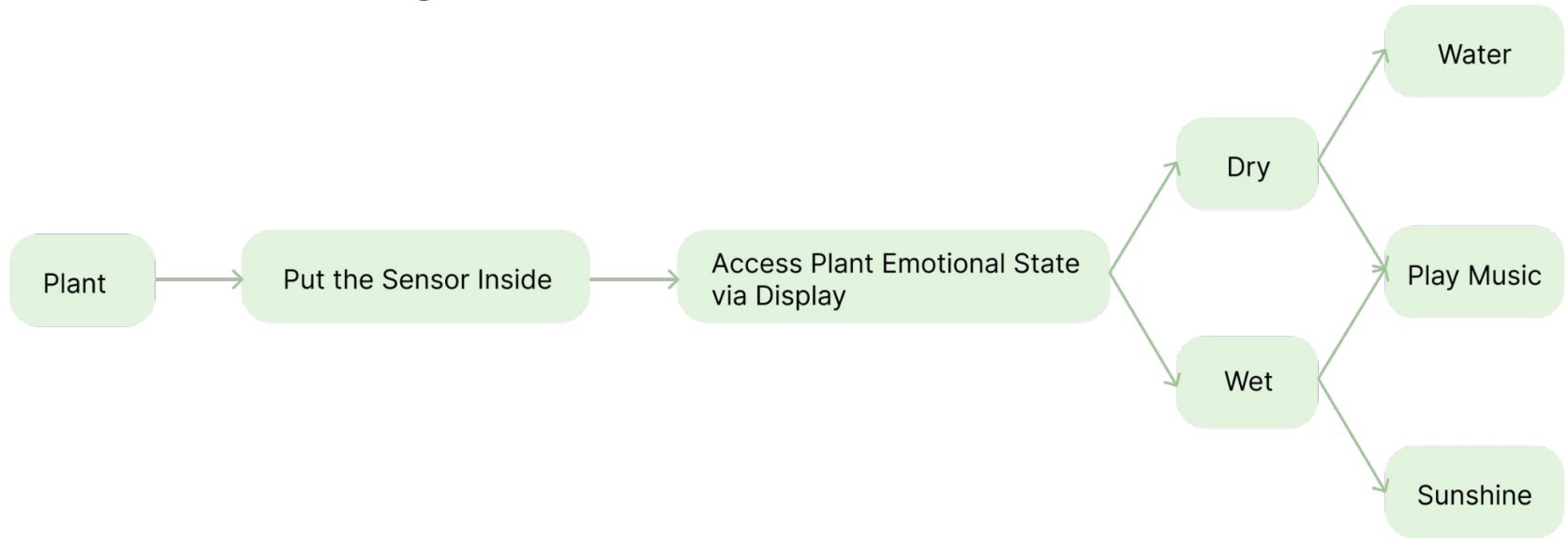
The PlantEmote project seeks to provide a novel, non-invasive approach to monitor and visualize the "mood" of plants, using biometric and electrical signals to interpret their health status, which is then creatively displayed through an AI-generated interpretation of the plant's "mood" on a web UI.

Key Features:

- Non-Invasive Technology: Ensures plant integrity while monitoring.
- Real-Time Data: Provides immediate updates on plant health.
- AI Interpretation: Translates biometric signals into understandable visuals.
- User-Friendly Interface: Easy navigation and interaction with plant data.



User Flow Diagram



Hardware Architecture

Sensor

- Soil Moisture Sensor

MCU

- Raspberry Pi 4B

Display

- 3.5inch RPi Display



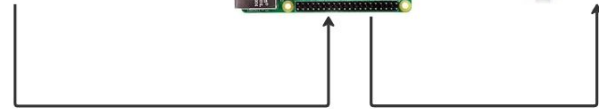
Soil Moisture Sensor



Raspberry Pi 4B



Screen Display



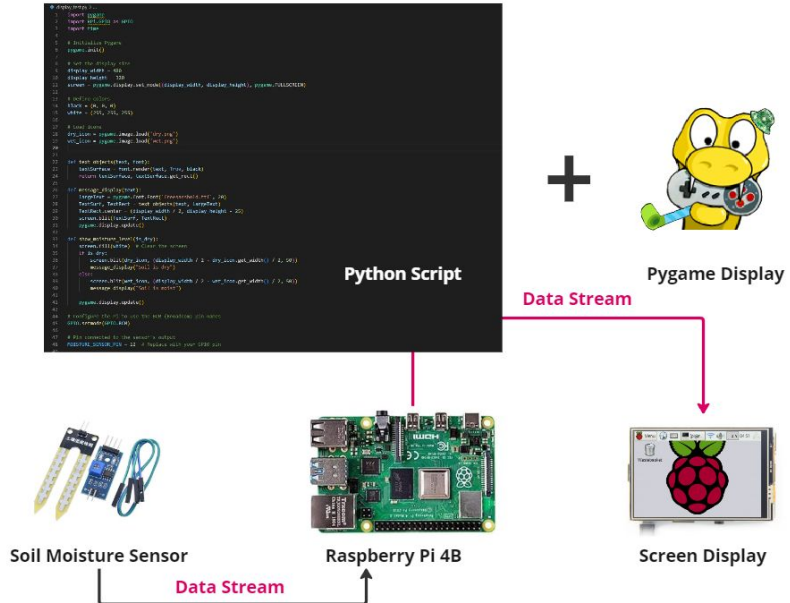
Software Architecture

Data Processing & Analysis

- Script in Raspberry Pi 4B
- Binary Signal -> facial image + text

FrontEnd

- Pygame for screen display



Budget Update

Date	Item Name/Description	Qty	Total Price
4/15/2024	MakerHawk Raspberry Pi UPS Power Supply	1	\$37.46
4/15/2024	Plant SpikerBox	1	\$164.99
4/15/2024	Sensitive Plant (Mimosa pudica)	1	\$37.36

Course Budget \$350.00

Amazon Purchases \$37.46

Non-Amazon Purchases \$202.35

Total Spent \$239.81

Remaining \$110.19

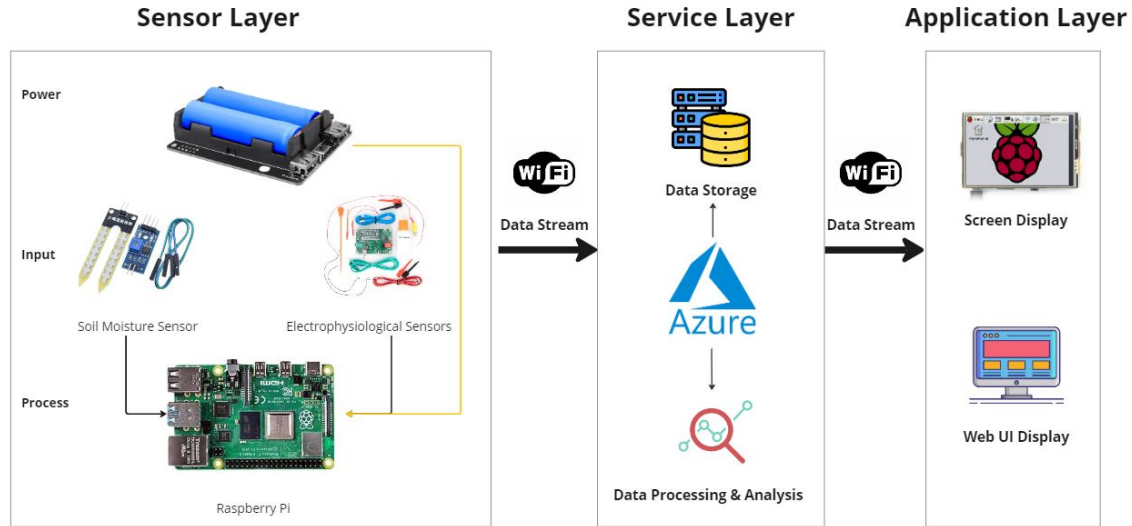
Future Work

Hardware Goals:

- Power Module
- Sensor Integration
- Process Optimization

Software Goals:

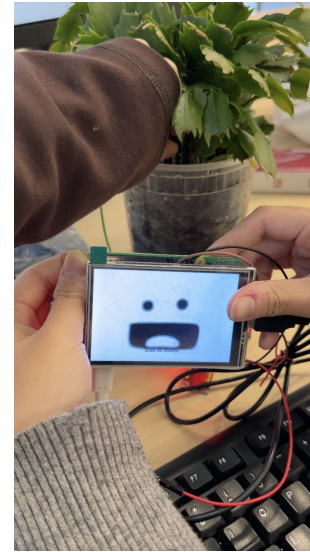
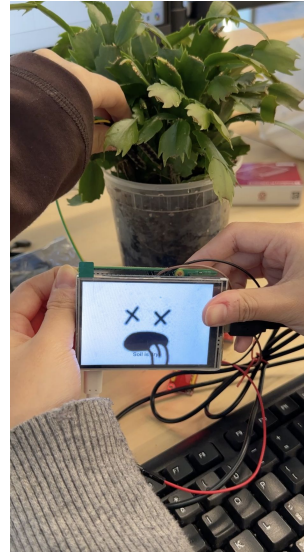
- Data Stream: Wi-Fi-based
- Cloud Processing
- Application Development



Pictures

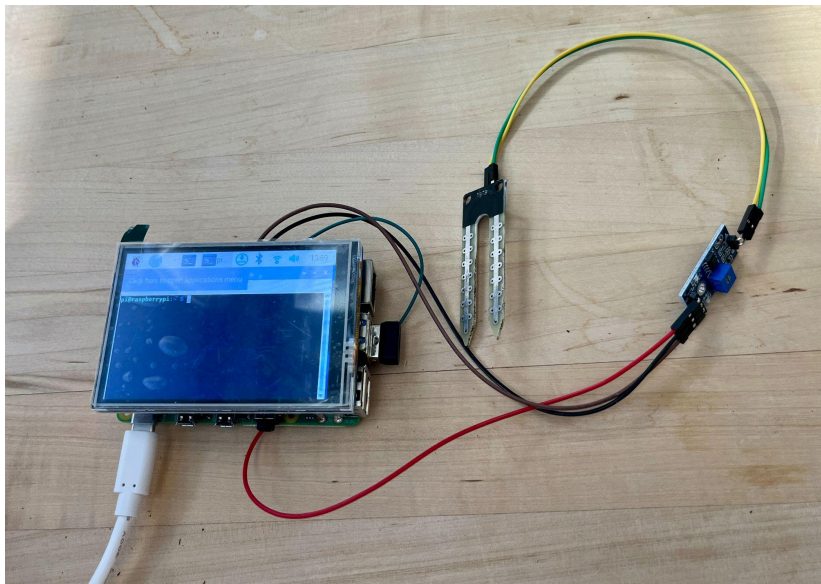


Pictures of Sensor transmitting plant data

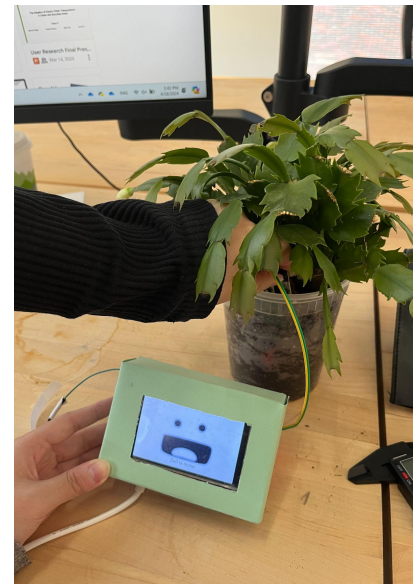
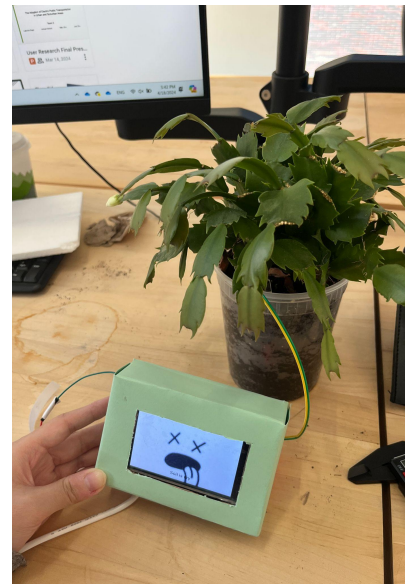


Pictures of Screen Display

Pictures



Pictures of Hardware



Pictures of Enclosure