EE / CprE / SE 491 Weekly Report
April 3 - April 9
sddec24-16
Designing a Smart Plant Nurturing System Enabled by IoT Technology
Faculty Advisor / Client: Md Maruf Ahamed

Team Members:
- Tejal Devshetwar - Frontend
- Holden Brown - Frontend/backend
- Blake Hardy - Backend
- Cameron Jones - Backend
- Cayden Kelley - Hardware
- Chase O'Connell - Hardware

Weekly summary:

Within the past week the hardware team focused on creating a test setup using MicroPython in the Thonny IDE to test functionality for the pumps and moisture sensor. The hardware team also gained a basic understanding of how to work with the Pi Pico, its hardware documentation, and more. The frontend team began working on a scrolling feature for the different plant "cards" on the home page. The backend team has decided to use MongoDB and now has a running server. Additionally, the backend team has continued researching potential implementations of the Requests library to be used on the Pi Pico.

Past Week Accomplishments:
- The backend is working for registering an account and signing into it.
- The backend has also been changed to MongoDB and has a running server.
- Hardware Testing
  - Tested soil temperature and moisture sensor functionality with Pi Pico.
  - Tested liquid pump functionality with Pi Pico.
  - Set up relay circuit for pump control.
  - Pushed test code to the team's Git repository.
- Set up a framework for the frontend scrolling feature.

Plans for Coming Week + Action Items:
- Holden Brown - Continue organizing the app files and adding extra functionality to the backend.
- Tejal Devshetwar - Set up screens for each card and add a display section for data from sensors.
- Blake Hardy - get pi talking to a simulated rest endpoint

- Cameron Jones - Figure out how to format Uart for Rs485 to Uart conversion module, study and maybe write code for Request library.
- Cayden Kelley - I would like to get the NPK sensor to communicate with the microcontroller. Create test code to monitor the moisture sensor's output over a prolonged period of time to ensure accuracy and for the creation of graphs.
- Chase O'Connell - Achieve basic functionality of communication between NPK sensor and Pi Pico. Set up code framework to have all sensors and actuators be able to function simultaneously on the microcontroller.

Pending Issues:
- Tejal Devshetwar
  - No issues
- Holden Brown
  - No issues
- Blake Hardy
  - No issues
- Cameron Jones
  - No issues
- Cayden Kelley
  - No issues
- Chase O'Connell
  - No issues

Individual Contributions:

Team Member	Contribution	Weekly Hours	Total Hours
Tejal Devshetwar	Started setting up a scrolling feature for the cards so that we can have more than 4 of them.	1	25
Holden Brown	Started work on the backend and got basic functionality working in addition to a working server. Organized project files into files and folders to improve modularity.	3.5	33.8
Blake Hardy	Looked into ways to send data from the microcontroller to the server using micropython. Will work on implementing when I get a chance to use the hardware.	3	24
Cameron Jones	None-Went to hospital	0	22
Cayden Kelley	Set up Pi Pico for testing, including basic test code for the moisture sensor and liquid pump activation. Continued researching and working with the moisture sensor Python code to	7	39.5

	understand how to program the NPK sensor. Researched protection methods to prevent current back feed to a host device (computer) when using multiple power supplies.		
Chase O'Connell	Set up Pi Pico for testing including basic test code for the moisture sensor and liquid pump activation.	2	23