

EE / CprE / SE 491 Weekly Report 4

Feb 21 - Feb 27

sddec24-16

Designing a Smart Plant Nurturing System Enabled by IoT Technology

Faculty Advisor / Client: Md Maruf Ahamed

Team Members:

- Tejal Devshetwar - Frontend / Backend
- Holden Brown - Frontend / Backend
- Blake Hardy - HW / SW Integration
- Cameron Jones - HW / SW Integration
- Cayden Kelley - PCB Design
- Chase O'Connell - PCB Design

Weekly Summary:

This week, we spent our time researching and finalizing several portions of our project. We have continued to research server options for the algorithm computing power and data storage location for our app. We are leaning more towards the use of AWS because of its availability and massive user base. This user base should provide us with ample resources when we are unsure how to do different things or run into roadblocks. This week, we have also put together an order for a soil moisture sensor, pot, and potting soil. We are hoping these items will arrive sometime this next week. We have also had further discussions on topics such as the plants to be used later on in this project, the next sensors to be ordered, and further supplies for the fertilizer dispensing portion of this project.

Past Week Accomplishments:

- Met with advisor Maruf to discuss
 - Suggested egg plant and tomatoes for our test plants in the future.
 - 3 or 4 different plants for the future moving the sensor between them to test.
 - Start with a soil that has known nutrient levels.
 - 10-12 inch diameter pot size.
- Researched sensors and added them to our ETG list of ordering products.
- Researched and found supplies for our plant that our product will be tested on.
 - Added them to a list along with their link.
 - Plant will be kept with Blake or Tejal because they have high light apartments.
 - Plant can also be transferred to who ever is currently testing hardware.
- Decided to use AWS to host our server.
 - Springboot is the backend deployed on AWS.

Plans for Coming Week + Action Items:

- Holden Brown - Work on UI more and make adjustments for incorporating the sensors we are getting in the next few weeks.
- Tejal Devshetwar - Start working on setting up the server setup and create a working plan for how each part shall be made and linked with the other.
- Blake Hardy - Investigate REST on raspberry pi to get data to server, maybe try to simulate server
- Cameron Jones - Investigate REST on raspberry pi, potentially start working on server
- Cayden Kelley - Will continue to investigate the research done by the ISU professor on electronic nitrogen sensors and attempt to find research on other nutrients. The goal is to find a viable option for our project to begin to pull together the power requirements of the sensors.
- Chase O'Connell - Begin testing basic functionality of the moisture sensor with the Raspberry Pi (assuming the sensor arrives this week). Setting up the low-level data handling for the Pi. Beginning more in depth research on actuators to use.

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	Researched about which server to use and how to deploy the app on AppStore.	3	5
Holden Brown	Took notes for the weekly meeting. Worked on the weekly report. Attended the weekly meeting.	1.3	19.3
Blake Hardy	Investigated arduino cloud, decided not to use it, investigating REST api on rpi	3	15

Cameron Jones	Investigated arduino cloud	4	9
Cayden Kelley	Investigated the widely available NPK sensors for data sheets and data to back up their accuracy. Discovered some research by an ISU professor for a nitrogen sensor and I am continuing to research this project.	3.5	11.5
Chase O'Connell	Researched various plants to use as initial test cases for our device. Determined initial testing conditions. Added testing items to the list of things to be ordered.	4	13