

## **EE/CprE/SE 492 WEEKLY REPORT 5**

**Mar 11th 2019 - Mar 17th 2019**

**Group number: 45**

**Project title: IoT environmental monitor**

**Client &/Advisor: Dr. Geiger**

### **Team Members/Role:**

**Tyler Fritz – Software Developer,**

**Dong Xing – Hardware developer,**

**Ahmed Abuhjar – Hardware Developer,**

**Haoyue Ma – Hardware developer,**

**Yuanzhe Wang – Hardware Developer**

### o **Weekly Summary**

This week, we have done the almost work except the API transaction for creating the final readable graph for users on the website by collecting and analyzing the data from nodes. But this does not influence the whole project and we are going to start testing the projects next week during spring break time. We also tested the communication between leaf nodes and worked on the communication between home node and leaf node. There are still some issues in communication between leaf node and home node. We will continue work on that to figure it out.

### o **Past week accomplishments**

**Tyler Fritz:** Worked on system integration. Specifically, Haoyue and I tried to get the home node to receive data from the leaf nodes. This is more challenging than expected because the home node is on a different board with different IO than the leaf nodes.

**Ahmed Abuhjar:** Started testing the radio transceivers using arduinos.

**Dong Xing:** Continue working on new items ordering and resources researching jobs.

**Haoyue Ma:** Tested the communication between leaf nodes. Worked on the on the communication between the leaf node and home node.

**Yuanzhe Wang:** Retested the ratio between sensor resistance vs moisture level.

### o **Pending issues**

- We tested the communication between the leaf nodes successfully. However, we found that there are some issues when home node communicate with leaf node by using NRF24L01 transceiver.

### o **Individual contributions**

| <u>NAME</u>   | <u>Individual Contributions</u>   | <u>Hours this week</u> | <u>HOURS cumulative</u> |
|---------------|---|------------------------|-------------------------|
| Tyler Fritz   | System Integration  | 6                      | 24.5                    |
| Ahmed Abuhjar | Testing the transceivers using arduinos   | 4                      | 26                      |
| Haoyue Ma     | Tested the communication between leaf nodes. Worked on the communication between the leaf node and home node. | 6                      | 20                      |
| Dong Xing     | Get needs from other group members, research items' unit prices online and get contact with Dubert to order.  | 3                      | 16                      |
| Yuanzhe Wang  | Retested the ratio between sensor resistance vs moisture level.   | 3                      | 21                      |

o **Plans for the upcoming week** (Please describe duties for the upcoming week for each member. What is(are) the task(s)?, Who will contribute to it? Be as concise as possible.)

- **Tyler Fritz:** Get the back-end fully up and running and make a simple POC front-end.
- **Ahmed Abuhjar:** Will continue testing radio transceivers and confirm that they are working properly before sending PCB for fabrication
- **Haoyue Ma:** I and Tyler will work on the data transmission from leaf nodes and home node. Test the data transmission from leaf nodes to home node and upload to web server if possible.
- **Dong Xing:** Since it needs 4 to 5 working days shopping items here which start counting on 3/15/2019, I am assuming that if we can receive these items on next Thursday or Friday, it's time to do off campus tests.
- **Yuanzhe:** After new sensors get ready. I will test the new sensors and make a final plot.

### **Summary of weekly advisor meeting**

This week, Gerger mentioned some potential risks for copper layers which might cause the circuits short, and we are planning to buy some golden thin layer for safety.