EE 491 WEEKLY REPORT 4   *Date: 02-21-17*

Group number: 28

Project title: IoT Monitor

Client &/Advisor: Geiger

Team Members &/Role:
Ian Harris: Team Leader - Web Role
Tim Lindquist: Key Idea - Leafnode Role
Gregory Steenhagen: Webmaster -Web Role
Steven Warren: Communication -Leafnode Role
Terver Ubwa - 3G Node
Khoi Cao - 3G Node

o Weekly Summary

Worked on testing hygroscopic material properties and seeing how conductivity and resistance changes with moisture level. Also examined the rate of degradation for the materials. Met with Jake from ABE to discuss how to go about 3D printing and constraints on modeling in Autodesk and 'porting' it into the real world. Set up an endpoint on our web-application that allows us to send test data to it. It will validate if the sent data is proper json, and we have another endpoint where we can view a log of the last 4 requests sent to it. Began construction of the database to store sensor data in.

o Past week accomplishments

- **Ian Harris:** Set up the echo end-point for our project, so our hardware guys will be able to test sending data to our app. Cleaned up our web app a bit.
- **Gregory Steenhagen:** Began constructing the database to store sensor data in.
- **Khoi Cao:** Finished the http post with Json format. Started implementing the hardware to transmit the data via 3G module.
- **Terver Ubwa:** Looked up AT command for programming the 3G module
- **Tim Lindquist:** Talked to Jake from ABE. Learned about the printing materials available for us. PLA is structural, Soy makes it degradable, and CONFIDENTIAL MATERIAL makes it conductive. Received samples of PLA and CONFIDENTIAL MATERIAL and measured resistivity of material in and out of water. Received machine shop training with Steve.

- **Steven Warren:** Met with Jake from ABE. Tim and I discussed with him how PLA printing works and what we would need to do if we needed to print. We received some samples from him that we then performed some testing on. We measured the resistance of our PLA samples and even soaked one in water to see if there was a change in its hygroscopic properties.

Pending issues
- **Ian Harris:** Still haven't heard from our professor contact, that may be a dead end.
- **Gregory Steenhagen:** Getting the database hosted on a live server.
- **Khoi Cao:** Just received the parts on Monday(2/20). Beginning implementing the prototype for 3G node.
- **Terver Ubwa:** waiting on the 3G module and other parts we ordered for
- **Tim Lindquist:** Need to receive parts and order a scale and containers.
- **Steven Warren:** Waiting to receive parts from Parts Shop. ordered about 2 weeks ago.

o   **Individual contributions**

NAME	Individual Contributions	Hours this week	HOURS Cumulative
Ian Harris	Programming	4	13
Gregory Steenhagen	Programming	2.5	7.5
Khoi Cao	Programmed arduino to output data in JSON format	3	8
Terver Ubwa	Programmed Arduino	2	7
Tim Lindquist	Tested materials for electronic properties.	6	16
Steven Warren	Met with Jake, performed testing on PLA materials.	6	17

o   **Plan for coming week**
- **Ian Harris:** Work with Charlie to get our web-app deployed to a publicly accessible URL. Get Angular into our project and start building our frontend.
- **Gregory Steenhagen:** Get database hosted on live server, and resume work on interface for viewing data.
- **Khoi Cao:** Make a prototype of the 3G-module-integrated-transmitter. Test my program on the actual hardware. Sync up with Terver to send the data to the host machine utilizing AT command.
- **Terver Ubwa:** finish up the 3G AT command. Start setting up the parts if we get them.
- **Tim Lindquist:** Make 3D model REV2 and get it printed. If parts come start assembling pieces and working out how everything operates.
- **Steven Warren:** Remodel the Hygroscopic material with some suggestions made by Jake. If receive the parts, we will begin programming for the project.

o   **Summary of weekly advisor meeting**

Called Dr. Grewell and spoke to him about the 3D printing. He referred us to his lab assistant Jake. Showed Geiger our 3D model and he suggested improvements to be made for REV2. We discussed capacitance issues and sizing issues for reaching steady state. Updated Geiger on our status with each part of the project. Geiger let us know he will try to get into contact with prof. Kaleita-Forbes to help out the software group. Geiger gave the 3g group some advice on how to handle power issues. Told them they could use one power source instead of two if they are using the same voltage.