EE 491 Weekly Report 1
September 11th 2018

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Group number: May19
Project: IoT Environmental Monitoring
Client & Advisor: Dr. Geiger
Team Members and Roles

Ahmed Abuhjar/ Communication

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Summary:
This week we met with the client and decided on a weekly time meeting. We have looked over the project, understood the details, and sat some goals we want to accomplish for the project. We have with the teaching assistant Tim to clarify the project for us little more and to answer any questions we had. We have conducted some research to see what utilities could benefit us in this project and to determine an effective approach on how to solve problems.

Past week accomplishments:
- **Ahmed Abuhjar:** Conducted a research to determine whether is better to have a separate analog to digital convertor. Decided to stick with the microcontroller ADC since it will be cheaper than having one designed from us. Have met with Dr.Chen to clarify some points regarding the transceiver (radio signal transmission unit).
- **Tyler Fritz:** Started breaking the project into milestones and issues on GitLab. Also researched other algorithms to use for node communication to fix reliability issues Tim's group was having.
- **Haoyue Ma**: Met with Dr. Geiger to discuss about the project which help us break the project into small issues. Talked with Tim about the reliability issues of the node communication and tried to find a way to solve it. Determined whether we need a temperature sensor and radio signal transmitter in this project.
- **Yuanzhe Wang:** We met with Dr.Geiger and TA. Dr. Geiger told us the general outline of the project. We figure out why we design this environment monitor and how to reduce the cost. TA told us how this environment monitor work generally.
- **Dong Xing:**
  - **1.** I Compared this environmental monitoring sensors project with the one I am working on about the "Temperature measurement/indicator circuit" and get some inspirations about how to focus on the temperature measurements staff.
  - **2.** I went through some past projects, concepts and some other online materials for designing this wireless sensor network for environmental monitoring, compared their abilities and uses, also tried to figure out a way to get to our main purpose for

designing this project which is how to lower down the cost while keeping these sensors' work well.

- **3.** In order to compare these different types of project under a standard method, I had to consider about their volumes, ranges, service lifes, etc. But I still have not figure out a accurate equation or place to distinguish the relationships between their different properties and performances yet.

Plans for the upcoming week:
- **Ahmed Abuhjar:** Test the prototype we had for the homenode and determine a way to start debugging.
- **Tyler Fritz:** Get access to the prototypes and start development work on the gateway and nodes. Finish breaking project into milestones and issues.
- **Haoyue Ma**: Find an acceptable price for radio signal transmitter so that we can improve the reliability of the node communication and reduce the cost at the same time. Be familiar with the prototype and check it. Do the peer review of other teammates' development work to make sure that there is no error in the design.
- **Yuanzhe Wang:** We have set the work for everyone. My work is to develop the sensors communication protocol and implements it. I will figure out what kind of microcontroller we should use and buy one as soon as possible.
- **Dong Xing:** As I said before, our group have to make sure with everyone's agreement which will include group members and customers' ideas to figure out a way about which aspect shall be our secondary purpose: volume, service life or range, as lowering down the cost becomes our primary order by finishing comparing different references and materials.

Name	Individual Contributions	Hours Worked this Week	Cumulative Hours
Tyler Fritz	Gitlab project management, project research, met with last semester group member	4	4
Ahmed Abuhjar	researched radios, the effort required to make an ADC, and project meetings	4	4
Haoyue Ma	project research, communicate with Dr. Geiger and Tim	4	4
Yuanzhe Wang	Read related materials. Find information about microcontroller.	3	3
Dong Xing	reference and analyze some online resources to	3	3

	get some information about this project		

Summary of weekly advisor meeting:

We decided to meet every week on Wednesday at 4:00pm, have a presentation for the project updates and discussing what we should accomplish the following work week.