

EE/CprE/SE 491 Weekly Report 4

Group 18

3/2/19 - 3/8/19

IoT Elderly Care Solution

Client: Andrew Guillemette **Advisor:** Daji Qiao

Team Members:

Jared Griffin:	Web App Engineer and GitLab Administrator	Siyuan Zeng:	Behavior Logic and Testing Engineer
Nidhi Dalvi:	Meeting Facilitator and Hardware Engineer	Robert Guetzlaff:	Hardware/Software Engineer
Tyler Borchert:	Hardware and Testing engineer		

Weekly Summary:

This week we were finally able to meet with Bob. After many delays due to weather we finally got to take a look at the testing environment. Here we familiarize ourselves with the current implementation and where everything is located. We discovered that one of the Pi's was not operating correctly and rebooted. Then, we reset the passwords on all of the Pi's to remote in to make pushing code more convenient. Now the current implementation is reporting correct data. Also, we created a data logger for the sensors to better understand what sensor is doing what. This will help us decide where issues are arising.

Past Week's Accomplishments:

Tyler:

- Reconfigured existing Raspberry Pi's with new credentials to remote into the testing environment.
 - Reset the passwords and documented what the password is.
- Deployment of new sensor code that produces good data to be reported. This code was installed on three separate Raspberry Pi's.
 - This was done at our testing environment at Green Hills.

- Tested all of the sensors to ensure that they were reporting to the local pi server correctly. This consisted of opening each applicable door and cross checking with the local server pi.
 - Each sensor is reporting correctly, but as a group we determined an issue with the sensors on the fridge.
 - Currently testing current sensors on my personal fridge to see if there is a way to negate the issue.
- Continued research on possible wireless solutions.
 - Looking into off the shelf sensors at the clients request.
 - Moving away from solutions that require set up.
 - This makes it easier to set up in a different environment with minimal setup.
- Created a logger to monitor the data that is reported by the sensors.
 - I have this write to a file with credentials associated with the report.
 - This also led me to a small change into the code by creating a pass or fail variable.
 - The file is always appended to and is refreshed each time it a new log is created.

Robert:

- Assisted Tyler in configuring raspberry pi's.
- Outlined wireless sensor prototype.
- Outlined and started to implement a data analysis tool for test environment data.
 - Defined time for morning meal event.
 - Pulled data from server showing test environment activity.

Siyuan Zeng:

- Check the sensors and pi's at Bob's apartment.
- Discussed the logic implementation with Andrew.
- Start to set up the platform for logic implementation.
 - Write some pseudo-algorithm for the logic.

Nidhi:

- Helped tyler to test the code.
 - This was done at our testing environment at Green Hills.

Jared helped me in uploading the status on website.

Currently researching for wireless solution with tyler.

Jared:

- Worked with ETG to resolve issues with the GitLab runners.
 - ETG did not have a runner configured on GitLab, so I worked with one of their people to address this issue over the course of the last couple of weeks

- We were able to confirm the runner was working on Thursday
- Helped Nidhi upload status report 3
- Discussed domains for the web app with Greg
 - Greg is Andrew's main engineer as things pertain to software
 - Greg and I decided that in the future, when security certificates are needed, we can setup a time to meet and discuss the best way to obtain those

Pending Issues:

- After setting up the new sensor code in the testing environment we noticed an issue with the fridge sensors. Since these sensors are magnetic reed switches the fridge magnets may be interfering with it.

Individual Contributions:

Member Name	Individual Contributions	Hours this Week	Cumulative Hours
Jared Griffin	Worked through CI issues with ETG, helped Nidhi upload status report 3, discussed domains with Greg.	7	26
Siyuan Zeng	Check the previous work status at Bob's apartment. Talked about the logic implementation with Andrew. Wrote pseudo-algorithm for logic.	6	23
Nidhi Dalvi	Helped tyler to test the code at Bob's apartment. Worked on Status report 3 and also Jared helped me in updating the website.	6	18
Robert Guetzlaff	Reset VNC account for use with deployed raspberry pi's. Started development of a data analysis tool.	3	
Tyler Borchert	Reconfigured the Pi's to a known password to remote in. Installed new sensor code in the testing environment. Did some testing while we were all at the apartment. Continued research of possible wireless solutions.	9	28

Plans for the Upcoming Week:

Troubleshooting fridge sensors - Tyler & Nidhi

- Try to find a solution to negate issues with the magnetic interference from the fridge itself.

- This solution may lead us to a new sensor to implement.

Test and deploy logger to the test environment - Tyler

- Test the logger to make sure if the info is reported correctly.
- Once testing is complete run it by group members and deploy.

Research possible Wireless solutions- Tyler & Nidhi

- Continue our research on wireless sensors to replace old implementation.
- Try to have a list of good solutions to present to client in meeting later next week.
- Look into a possible solution that can help negate our fridge sensor issue.

Data analysis tool for logic development- Robert

- Display meal event data for comparison.

Create and deploy a build of the web app to AWS - Jared

- Finish building out the continuous integration pipeline
- Set Up an S3 bucket on AWS
- Configure the continuous integration pipeline to automatically deploy the web app to S3

Design a mockup for the web app - Jared

- Mockup should display data being collected from Bob's apartment in a meaningful way
- Access to the raw data has to be persisted somehow

Summary of Weekly Advisor/Client Meeting:

The client meeting not postponed this week. After two weeks of delays we finally met up with Bob and reconfigure the testing environment. With our client we also discussed about the logic implementation we are planning to create. Then, we asked questions on what he wants out of our wireless solution.

At the Advisor meeting we discussed the things we accomplished that week. A big point was that we finally had good weather and went out to see Bob. Another big point that was mention was a possible problem with the sensor data on the fridge. Here we discussed with our advisor on how to negate this problem. We set a goal to find a solution to this problem.