Start Date – End Date:
November 6 - November 19

Group number:
sddec18-17

Project title:
IoT Remote Monitoring for Commercial Appliances

Clients:
Taylor Greiner
Connor Jennings

Advisor:
Goce Trajcevski

Weekly Summary

The goal of our sixth reporting period was to prepare and present the final prototype to our clients, Taylor Greiner and Connor Jennings. To provide the best demo possible, we needed to focus our efforts on fixing any remaining bugs in our prototype that have persisted over the last few weeks. To do so, the backend team completed unit testing of the spring boot service layer and ran happy-path tests on the spring boot repository layer. The mobile team performed usability tests to catch fatal errors that cause application failure when using the mobile app.The hardware team worked on setting up an ip configuration to allow the washing machine to connect to WIFI anywhere on campus. Prior issues prevented the washing machine from connecting to Iowa State University WIFI. Due to the efforts mentioned above, a successful demonstration was given to both our clients and advisor. We will received positive feedback and may now transition our efforts to improving our final report and poster presentation.

Past week accomplishments

Team Member 1 - Name
John Fleiner
Team Member 1 - Role
Android Development Lead
Team Member 1 Contribution
- Setup and Demoed prototype to our clients
- Recorded the live demo for our advisor
- Fixed several android bugs that were causing crashes during use including:
    - Client-side error with handling location identifiers
    - Null values received from the database - not all atm information retrieved from openstreetmap had a name associated to it
    - Issues with historic and future reservation APIs
    - Issues with price API returning price in cents when client was expecting a double
- Code Refactoring and cleanup
    - Converted hardcoded strings and status tags to resource identifiers that allow for localization
    - Code and API documentation

Team Member 1 - Hours Worked
12

Team Member 2 - Name
Ben Young
Team Member 2 - Role
iOS Development Lead
Team Member 2 Contribution
- Demoed a working prototype to the clients
- Fix any major bugs for the prototype demonstration
    - This included checking for nil values from the database, making sure i was checking for the correct values for building ids
- Implemented the last endpoints needed for the demo
    - Total cost endpoint that shows a live update of the price according to the amount of time reserved and number of washers and dryers
    - Credit card endpoint that gets the card of the recently signed in user that is used to create the Stripe token to make a successful payment to our backend

Team Member 2 - Hours Worked
15

Team Member 3 - Name

Thomas Stackhouse

Team Member 3 - Role

AWS & Spring Boot Backend Lead

Team Member 3 Contribution

- Demoed a working prototype to the clients
- Fixed bugs and set up for prototype demonstration
    - Reset database data, helped troubleshoot issues with regions, etc.
    - Helped fix remote database schema issues
- Worked with team to keep AWS up-to-date with API changes
- Troubleshooting hardware connection to server with hardware team

Team Member 3 - Hours Worked

12

Team Member 4- Name

Hongyi Bian

Team Member 4 - Role

Hardware Engineering Lead

Team Member 4 Contribution

- Demo of the prototype
    - Had demo with client, showed a working prototype
- Network configuration
    - Try to set up an IP presenting case which will help us during the final demo in different networking environments
- Hardware prototype completion
    - Prepare for the final demo and presentation. Wrap up the hardware portion in terms of component fixation
- Final Report
    - Write up the hardware portion of the final report
- Poster
    - Start designing and putting together the poster with team

Team Member 4 - Hours Worked

12

Team Member 5 - Name
Yuanbo Zheng
Team Member 5 - Role
Hardware Engineer
Team Member 5 Contribution
- Demo the whole project for our client
  - Meet in TLA and connect portable washing machine there
  - Enable to turn on/off washing machine with reservation code
- Finish the hardware prototype : LCD Screen, Keypad, Raspberry Pi, Portable Washing Machine
- Work with our hardware lead to set up the IP configuration, it will enable the connection during our final presentation
- Add more details in the Final Report
- Start to work with teams for the final **Poster** : format, graphs with each team

Team Member 5 - Hours Worked
14

Team Member 6 - Name
Casey Gehling
Team Member 6 - Role
Spring Boot Backend Developer
Team Member 6 Contribution
- As development on the project has wrapped up at the request of our advisor, there was no dev work done in this period
- Finished testing of the service layer
  - Completed unit tests for the appliance service
  - Completed unit tests for the reservation service
- Completed happy-path testing of the repo layer
  - Appliance repo
  - Card repo
  - Customer repo
  - Reservation repo

Team Member 6 - Hours Worked
8

Individual contributions

Team Member	Contribution (Quick list of contributions. This should be short).	Hours this reporting period	HOURS cumulative (this semester)
John Fleiner	- Fixed Android Bugs and Errors - Code Refactoring and Cleanup	12	125 (fixed reporting issue from prior status report. Incorrectly added cumulative errors and reported 10 hours less)
Ben Young	- Demo of the prototype to the client - Finished implementing endpoints - Bug fixing	15	107
Thomas Stackhouse	- Fixed bugs and set up for prototype demonstration - Kept AWS up-to-date with API changes - Troubleshooting hardware connection to server - Demoed prototype	12	73
Hongyi Bian	- Demo of the prototype - Network configuration - Hardware prototype completion	12	80

	● Final Report ● Poster		
Yuanbo Zheng	● Demo the whole project for our client ● Finish the hardware prototype : LCD Screen, Keypad, Raspberry Pi, Portable Washing Machine ● Work with our hardware lead to set up the IP configuration ● Add more details in the Final Report ● Start to work with teams for the final **Poster**	14	80
Casey Gehling	● Wrapped up testing of the service layer (started last sprint) ● Completed happy-path testing of the repo layer	8	81

Pending issues

Now that we have completed our prototype, it is essential that we protect the hardware attached to our washing machine. When we transported the washing machine from off-campus to Coover Hall, several of the pins attaching the lcd keypad were bumped which caused our LCD screen to not display the values entered from the keypad. The fix was easy, but is something we want to avoid for the Industry Panel Presentation. We need to find a better method for transporting the Washing Machine on campus so the hardware components remain safe.

Plans for the upcoming weeks

Team Member 1 - Name
John Fleiner
Team Member 1 - Role
Android Development Lead
Team Member 1 Plans
- Final Report
    - Update android design and implementation
    - Add android testing and verification section
        - Unit Testing
        - Integration Testing
- Poster
    - Identify key android highlights and write short, clear, and concise descriptions

Team Member 2 - Name
Ben Young
Team Member 2 - Role
iOS Development Lead
Team Member 2 Plans
- Finish final report based on feedback from Goce
- Create multiple posters to show Goce the week we get back from break
- Prepare the slides for the final project from the finished project
- Practice the final project as a group

Team Member 3 - Name
Thomas Stackhouse
Team Member 3 - Role
AWS & Spring Boot Backend Lead
Team Member 3 Plans
- Work on final report
- Work on poster
- Prepare for final presentation
- Be sure to document several places for improvement when scaling up to production

Team Member 4 - Name
Casey Gehling
Team Member 4 - Role
Spring Boot Backend Developer
Team Member 4 Plans
- Update the final report based on feedback from Goce
- Work on poster
- Prepare for the final presentation

Team Member 5 - Name
Yuanbo Zheng
Team Member 5 - Role
Hardware Engineer
Team Member 5 Plans
- Update final report
- Work on poster
- Prepare for final presentation, have dry run before that

Team Member 6 - Name
Hongyi Bian
Team Member 6 - Role
Hardware Engineering Lead
Team Member 6 Plans
Work on final report
Work on poster
Work on network configuration of RaspberryPi

Summary of Bi-Weekly Advisor Meeting

The goal of our sixth Bi-Weekly status meeting with Goce Trajcevski was to give a demonstration of our prototype that was unable to be demoed in the weeks prior due to last minute integration issues. We presented him with a demo that was recorded while we gave a final presentation to our clients Taylor Greiner and Connor Jennings. We also needed to discuss amendments to our timeline as completion of our prototype caused a 1 week setback. It was agreed upon that we will have the final report due the Monday we get back from Break. It was asked by our advisor that we provide several versions of our poster design on the Wednesday we get back he can help us improve the final design.