

EE/Cpr E/ SE 492 BI-WEEKLY REPORT 2

9/10/18-9/24/18

Group 8 - Smart Garbage Management

Advisor: Prof. Goce Trajcevski

Team Members: Colin McAllister, Nick Pecka, Robert "RJ" Duvall, Steven Brown,
Brendan Finan, Sam Johnson

BI - Weekly Summary

Over the last two weeks, we focused on construction of the physical device, and the accommodations that the device needed to interact with our system. Pin selection for the microcontroller was completed, and code for interfacing with our system was written.

Development on the mobile app continued. Our garbage truck routing algorithm continues to struggle with routes with over 1,000 stops, but a new approach we created this week aims to solve it by finding optimal starting points.

Completed Deliverables

- Nicholas Pecka - Continued on documentation for Open Street Map API and meeting with team to discuss plans moving forward as well as meeting with client (6 hours).
Touched base with Garmin to get information of OSM but was turned away due to NDA reasons.
- Colin McAllister - Met with Steven to finalize pin assignment for FiPy microcontroller (2 hours), started researching accelerometer datasheet and developing code to interface chip with microcontroller (3 hours), started reformatting code created for spring semester prototype (2 hours)
- Brendan Finan - Created final list of functionalities for mobile app (2h), reconfigured an issue with Android Studio (1h) , implemented last of the main activities (3h), researched Google Maps Directions API (2 hours) (8 hours total)
- Robert “RJ” Duvall
 - Finished up testing the MQTT call simulators and sent the results to the rest of my team (3 hours).
 - Decided to go with the MQTT Lens since we already have a helpful tutorial that tells you how to probably use it with AWS and it’s easy to use (1 hour).
 - Met with Goce for an hour or so to discuss the future of the project and where we currently stand (1 hour).
- Steven Brown - (10 hours)
- Sam Johnson - Continued work into debugging clustering code. Little progress on fixing the root cause. (4 hours). Researched alternative clustering methods (4 hours). Began

work on High Density Clustering algorithm (2 hours). Code Housekeeping (2 hours).

Organized remaining backend software tasks (3 hours).

Name	Hours This Week	Total Hours
Colin McAllister	7	47.5
Nick Pecka	6	51
Robert "RJ" Duvall	5	57.5
Steven Brown	12	72.5
Brendan Finan	8	58
Sam Johnson	15	73

Plans for Upcoming Week:

- Display Open Street Maps on App - Robert
 - Design a way to display the Open Street Maps route on our App.
 - Implement the above design fully.
- Construction of the device - Steven
 - Create a holder for the PCB; attach the power source
 - Add the accelerometer to the can
- Continue to develop microprocessor code - Colin
 - Implementing functions on the circuit board as they are added.
 - Finish interfacing accelerometer with FiPy using i2c

- Work on views for web/mobile app - Nicholas
 - Get with Brendan to discuss what needs to be done for the teams web/mobile application
 - Continue work on creating more views for the application
- Work on new clustering algorithm- Sam
 - Develop way to find high density clusters
 - Build efficient routes for those high density clusters
- Finish activity implementations - Brendan
 - Finish implementing the activities as specified in the documentation.