

sdmay19-18: Real time Route Optimization

Week 5 Report

October 13 - October 19

Team Members

Junjie Wen — *Core Software/Algorithm Developer*

Zhanghao Wen — *Product Manager/App Developer/Tester*

Yuhang Xie — *Backend Developer*

Xinhe Yang — *Web Developer*

Tianhao Zhao — *App Developer/Communication Leader*

Summary of Progress this Report

- Backend server & database now can talk to frontend app/web.
 - Meeting with Client---they demoed to us how their equipment work and how their sensor send real-time data to AWS.
 - Discussion and Adjustment made in Design document and Project Plan.
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Past Week Accomplishments

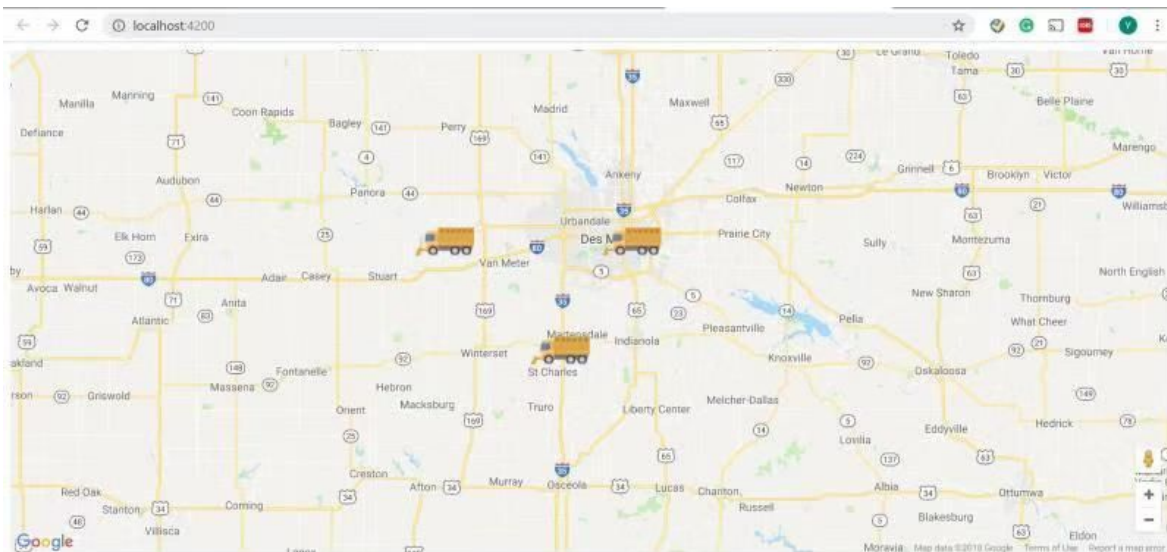
We had a face-to-face meeting with our client and had a better understanding of what a sensing device looks like. We also learned more about actual meaning of our project. They demonstrated to us that how different types of trucks work in snow operation, therefore we can analyze transmitted data from device to know what type of truck is sending signal.

From the drive side, they can setup equipment rate, and change material rate in real time during snow operation. The rate of different materials should be determined by the actual weather condition as well as the road condition.

Human decision and manually adjustment rate maybe not accurate enough which could result in a waste of materials.

Road conditions mainly depend on the position of road. For example, some road segments have more chances of accident so require more salt to dispense. Bridge normally requires more materials to remove snow or ice since the bridge temperature is lower than other road segments. Due to the fact that cold air flows beneath the bridge, it makes the overall bridge temperature lower than surrounding temperatures.





The above figure is mainly what we implemented this week. We generate a simple GPS data in the server and transmit it to the front-end web. We created 3 dataset and so 3 cars are represented in map.

Pending Issues

1. Showing multiple dynamic vehicles in web base front page.
2. Display individual truck's data including GPS, speed, plow position, acceleration, equipment speed, etc.
3. There is no data in the server since the we are implementing our project upon simulation data. We need to build our own simulator which can generate data that matches data type in the future for real practice.

Plans for Upcoming Reporting Period

Currently we have GPS information available. However, we still need to present different data of truck if we click on the truck's icon. Therefore, we are planning to create a simulator which can generate many types of data in each dataset.

We will generate Login page for three different groups of users: public, member/driver, and manager. Those three groups have different access and view of fleets in snow operation.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Junjie Wen	Analyze data type, build database, and connect to server, design features.	5	38
Zhanghao Wen	Connect app to server, assign tasks to group members, design features, re-write design document, re-draw flow diagram, weekly report, and MoM recorder.	9	41
Yuhang Xie	Maintain group website, connect server to frontend and database, design features.	7	41
Xinhe Yang	Build a front-end main page, design features, connect server to Web.	7	41
Tianhao Zhao	Bring up more questions, design features, book room for client meeting.	5	37

Gitlab Activity Summary

Code is committed to local repository.
