

EE/CPRE/SE 492 - sdmay19-29

Automating Inventory Management & Routing through Sensor Networks

Week 2 Report

2/4/19 - 2/11/19

Client: Jimmy Paul

Faculty Advisor: Goce Trajcevski

Team Members:

David Bis - *Meeting Facilitator*

Hanna Moser - *Meeting Scribe*

Adam Hauge - *Report Manager*

Sam Guenette - *Public Relations*

Ben Gruman - *Resource Acquisition*

Noah Bix - *Documentation Manager*

Past Week Accomplishments

This week the team focused on preparing our project for entry into the [IEEE Mobile Data Management \(MDM\) 2019 Conference](#) in Hong Kong, China. Along with our faculty advisor, the team discussed algorithmic techniques for the automated routing system that were used in the making of our conference proposal and will be implemented into our final product.

Adam was out of town most of this week on family emergency and will make up hours later in the semester.

- **Created routing screen sketches** - Hanna
 - Screen sketches for both Crafty and Client view for routing were created
- **Completed tabs and page routing for front-end** - Hanna
 - Finished the navigation bar for the front-end application
- **Fixed errors in routing proposal** - Hanna, David, Sam, Noah, Ben
 - Performed a spelling, grammar, and logic check on the routing proposal
- **Routing Screen Sketches Client Views** - Adam
 - Implemented populated map data for viewing on screen sketches
 - Map view is implemented differently for both Crafty and their clients
 - Crafty can see every truck route and the ETA for all locations
 - Client can only see their delivery truck with their ETA
- **Update Team Website** - Adam
 - Reorganized team website in order to separate reports and documentation from 491 and 492 in a more meaningful way.
 - Updated website's main page.
 - Uploaded all new 492 documents including conference proposal material.
- **Prepared Revised Architecture Diagrams for MDM Conference Proposal** - David
 - Improved architecture diagrams for MDM Conference proposal based on feedback for project adviser
- **Researched GPS API** - Sam

- Researched gps APIs to implement into the NodeJS architecture to calculate routes
- **Improved Database for Order Management System** - David, Sam
 - Improved logic for order batch processing, ties orderItem to orderLog tables
 - Integrated database alterations into backend with Sequelize API
- **Researched Existing Solutions to Vehicle Routing Problem (VRP)** - David
 - Read and took notes on multiple academic papers about solving VRP provided by project adviser
- **Retrieved Incoming Part Order** - Ben
 - Collected and inventoried delivered parts
- **Built Sonar Sensor Prototype** - Noah
 - Built sonar sensor prototype using an Arduino in place of the ESP chip
 - Should be able to transfer data to ESP when chip arrives

Pending Issues

- **New Hardware**
 - Currently Waiting for new hardware to arrive so it can be implemented into the project.

Plans for Upcoming Reporting Period

- **Implement device registration page**
 - Create page on front-end for registering devices on the back-end
- **Calibrate Sonar Sensor** - Noah
 - Researched equations for calibration
 - Will test on our sensor
 - If equations are not accurate, will use calibrate using a form of regression

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
David Bis	Improved Database for Order Management System Prepared Revised Architecture Diagrams for MDM Conference Proposal Researched Existing Solutions to Vehicle Routing Problem (VRP) Fixed errors in routing proposal	8	14
Hanna Moser	Created routing screen sketches Completed tabs and page routing front-end Fixed errors in routing proposal	8	13
Adam Hauge	Routing Screen Sketches Map Implementation	4	9

	Update team website		
Sam Guenette	Research gps APIs Fixed errors in routing proposal Order Log backend testing Improved Database for Order Management System	7	13
Ben Gruman	Report and Proposal Editing Part Acquisition	3	7
Noah Bix	Built SonarSensor Prototype Researched calibration equations for sonar sensors	7	13