EE/CPRE/SE 492 - sdmay19-29
Automating Inventory Management & Routing through Sensor Networks
Week 3 Report
2/11/19 - 2/18/19
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 has been tasked with preparing a brief overview presentation of the current status of the project. Time was taken this week in an effort to reflect on project aspects such as project documentation and design plans. As the submission for the IEEE MDM conference has been submitted, this week was spent returning to standard project development.

- **Updated Project Status** - David, Sam, Adam
    - Recorded and updated current project status into presentation format
        - Documentation includes segments of project plan, diagrams, and project schedule.
        - Presentation has been uploaded to team website. - Adam
- **Software Design & Proposal Document Edit** -David, Sam, Hanna, Noah, Ben
    - Edited proposal document for MDM Conference before submission
- **Timer & Auto-Ordering System Reimplementation** -David
    - Added code for combining auto-ordering and order determination logic
    - Restructured existing code for better organization
- **Finalized Device Registration Backend** -Sam
    - Finished device registration with newly refactored architecture and account for sensors monitoring the same device.
    - Began testing device registration component
- **Product Registration Backend Implementation** -Sam
- **Crafty User Registration Backend Implementation** -Sam
- **Network Maintenance** - Adam
    - Updated Raspberry Pi server code to utilize new static IP address
    - Updated Weight Sensor client coded to utilize new static IP address
        - Tested using SSH through PuTTY
- **Frontend Organization and Development** - Hanna
    - Started using react-tabs for tabs on navigation bar

- ○ Created routing for navigation bar on the frontend
- ○ Started developing device registration page
- **Sonar sensor calibration** - Noah
  - ○ Calibrated sensor using tape measure and testing distances from 1" to 13' (sensors range)
- **Weight Sensor Calibration** - Ben
  - ○ Derived linear regression for ADC with cans of soda

Pending Issues
- **New Hardware** - Adam
  - ○ The network may behave differently once work begins with the new hardware.
    - ■ Transitioning to new hardware may take more time than originally planned.
- **Network Implementation** - Adam
  - ○ Need to talk to ETG about getting the static IP to work better in the Coover Hall TLA.
- **Routing Implementation** - David, Sam, Hanna
  - ○ Need to prepare data to be easily accessible from orders to determine stops for each day of deliveries
- **Sonar calibration** - Noah
  - ○ Calibration may be different for other sensors considering I had to manually calibrate
  - ○ It shouldn't be a big factor since the sonar sensor is only for error checking the weight sensor
- **Weight Sensor Calibration** - Ben
  - ○ Weight sensor tares negative, which wraps in the binary to a very large number
  - ○ Need to remap ADC output

Plans for Upcoming Reporting Period
- **Implementing New Hardware** - Adam
  - ○ The network will be implemented with the new hardware once it is received.
- **Prepare Data for Routing Implementation** - David
  - ○ Based on orders for a given day, prepare a list of stops that need to be considered for the delivery routes that day
  - ○ Include information regarding each stops demand (i.e. the amount each stop is ordering)
- **Finish Device Registration Page** - Hanna
  - ○ Completely finish development of device registration page
    - ■ Modal pop-up
    - ■ Setup communication with backend
    - ■ Toast pop-ups
    - ■ Grid layout
- **Sensor communication with database** - Noah

- ○ Sonar sensor is ready to communicate with database or be implemented with weight sensor
- **Finish calibrating weight sensor** - Ben
  - ○ Devise mathematical function to address data wrapping
- **Retrieve remaining ordered parts** - Ben
  - ○ Acquire parts from ETG when they arrive

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
David Bis	Updated Project Status Software Design & Proposal Document Edit Timer & Auto-Ordering System Reimplementation	6	20
Hanna Moser	Software Design & Proposal Document Edit Frontend Organization and Development	6	19
Adam Hauge	Updated Project Status Network Maintenance	7	16
Sam Guenette	Finalized Device Registration Backend Product Registration Backend Crafty User Registration Backend	6	19
Ben Gruman	Weight Sensor Calibration	7	14
Noah Bix	Sonar sensor calibration Software Design & Proposal Document Edit	5	18