EE/CPRE/SE 491 - sdmay29
Automating Inventory Management & Routing through Sensor Networks
Week 6 Report
10/08/18 - 10/14/18
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, a lot of progress was made in regards to finalizing the database and making contact with the Raspberry Pi. Data can now be pulled from the barcode scanner and manipulated through Python scripts. As per discussion with our faculty advisor, for the next report progress will be focused on improving design documentation.

- **Design Document V1 -** All
    - Completed first draft of design document
    - It has been posted for review on team website
- **Database Access API Implementation** - David
    - Implemented API for getting data from database so that it could be used for data visualization using HTTP GET
    - Implemented endpoint for updating data in the database using HTTP PUT
- **Hardware to Database Connection** - Adam, David, Noah
    - Successfully got python script to run on Raspberry Pi to update values in the database
    - Got barcode scanner to send data to excel file which can be pulled from and put into code
- **Device Registration Refactoring-**Sam
    - Refactored device registration component using API
    - Modified database structure to handle multiple sensors and to make more scalable
    - Developed simple front-end RactJS
    - Experiment with Socket.io API for communication between offices
- **Design Plan Refactoring** - Sam
    - Developed possible prototype design for monitoring device
    - Design Plan Edits
- **Sensor Configuration** - Ben
    - Investigated documentation on operation and interfacing of load cell

- **pyexcel-ods** - Adam
    - Learned how to pull data from the barcode scanner
        - Data gets automatically placed in excel spreadsheet
    - Discovered and read documentation for “pyexcel-ods” python library
        - Library documentation can be found here:
            - https://pypi.org/project/pyexcel-ods/
        - Library allows the transfer of data from excel spreadsheet to python script
        - Data from excel sheet can be converted to string or JSON for use in script
            - This can be used potentially to grab useful data for the database
        - Library also allows for the writing of data to an excel sheet
    - Installed library onto Raspberry Pi
        - Wrote an initial script to grab and print barcode data to console
- **Project Plan Version 2** - Adam, Noah
    - Began reading and revising sections in order to begin improvement for version 2
    - Project Plan v2 will be posted on team website by October 26
    - Edited section 1 of project plan. Sections had grammatical errors and inaccuracies (Noah)
- **Screen Sketches** - Hanna
    - Continued work on screen sketches for use in front-end development
        - Converted several handwritten screen sketches to digital version
    - Continued to learn about ReactJS and complete tutorials regarding technology to be potentially used in project

Pending Issues

- **Hardware to Database Connection** - Noah
    - Would like to get barcode data sent directly to code without having to pull data from excel file
    - Noah is also unfamiliar with the python which is our chosen coding language
- **Barcode Data to Database** - Adam
    - More research needs to happen to make sure correct data is uploaded to database
    - Unfamiliar with working with databases, need to rely on team members for pushing neat and effective data
- **Back-end API Design** - David, Sam, Hanna
    - Waiting on a solid front-end design in order to drive the necessary endpoints for the back-end API design. There is no need making endpoints that will never be used.

Plans for Upcoming Reporting Period

- **Project Plan Version 2** - All
    - Project plan version 2 will be uploaded to team website by October 26
- **Hardware to Database Connection** - Noah

    - Learn python through code academy
        - Course says it takes 10 hours, so task could span over next few weeks
    - Try other methods of acquiring barcode data
        - Main goal is to get barcode data directly into file
        - Other software might be tested as well
- **Uploading Barcode Data** - Adam
    - Try to find methods for uploading useful data to database
        - Will require teamwork with David and Sam
- **Screen Sketches** - Hanna
    - Convert all paper screen sketches to digital format for easier sharing and gathering feedback
    - Search for version control technology for digital screen sketches
    - Continue researching and experimenting with ReactJS technology to be used on the front-end
- **Auto-Order Generatio**n - Sam
    - Begin starting web-component for building orders based on database information and inventory levels
- **Design Plan Refactoring** - Sam
    - Develop context diagram for document
    - Note programming details of monitoring device
    - Note programming details on the web-component architecture
- **Monitoring Device Architecture** -Sam
    - Refactoring DB-Connection in object oriented form for scalability
    - Research socket connection in master-slave architecture using ESP slave-components
    - Develop Unique id registration for device
- **Refine Back-End Requirements** - David
    - Reflect on current design plan for back-end and begin refactoring architecture plan to better satisfy requirements
- **Hardware Architecture** - Ben
    - Begin determining a main hardware architecture layout to use for solution

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
David Bis	Design Document Database API Hardware to Database Connection	7	40

Hanna Moser	Screen Sketches	6	28
Adam Hauge	Hardware to Database Connection pyexcel-ods Project Plan Version 2	8	39
Sam Guenette	Database Refactoring Database API Device Registration	7	39
Ben Gruman	Edited design document Investigated Sensor Operation	4	21
Noah Bix	Design Document Project Plan Edits Hardware to Database Connection Barcode testing	10	33

Gitlab Activity Summary

Action: pushed new branch reactjs_tutorial, Sun Oct 14 2018
Author: guenette

Action: pushed to branch deviceRegBackend, Sat Oct 13 2018
Author: guenette

Action: pushed to branch deviceRegBackend, Sat Oct 13 2018
Author: guenette

Action: opened merge request !4, Sat Oct 13 2018
Author: guenette
Title: Device registration back-end, Type: Issue

Action: pushed to branch deviceRegBackend, Sat Oct 13 2018
Author: guenette

Action: closed, Sat Oct 13 2018
Author: dsbis
Title: Establish Database Connection for Remote Access, Type: Issue
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Action: pushed to branch deviceRegBackend, Fri Oct 12 2018
Author: guenette

Action: closed, Fri Oct 12 2018
Author: guenette

Title: Registering sensors into back-end, Type: Issue

Action: pushed to branch deviceRegBackend, Fri Oct 12 2018
Author: guenette

Action: closed, Fri Oct 12 2018
Author: guenette
Title: Register Company Back-end, Type: Issue

Action: opened, Fri Oct 12 2018
Author: guenette
Title: Register Company Back-end, Type: Issue

Action: pushed to branch deviceRegBackend, Fri Oct 12 2018
Author: guenette

Action: pushed to branch deviceRegBackend, Fri Oct 12 2018
Author: guenette

Action: pushed to branch deviceRegBackend, Wed Oct 10 2018
Author: guenette

Action: pushed to branch deviceRegBackend, Wed Oct 10 2018
Author: guenette

Action: closed, Mon Oct 08 2018
Author: Ben Gruman
Title: Hardware Order, Type: Issue

Action: pushed to branch deviceRegBackend, Mon Oct 08 2018
Author: guenette

Action: opened, Mon Oct 08 2018
Author: guenette
Title: Microcontroller DB Connection, Type: Issue

Action: Closed, Mon Oct 08 2018
Author: guenette
Title: Microcontroller DB Connection, Type: Issue

Action: opened, Mon Oct 08 2018
Author: guenette
Title: Microcontroller DB Connection, Type: Issue
