EE/CprE/SE 491 Weekly Report 4

10/25/19 - 11/1/19

Group Number sdmay20-23

Project Title: Multi-Context Shopping Optimization

Client & Advisor: Goce Trajcevski, Ashfaq Khokhar

Team Members/Role: Max Garton - Meeting Lead, Arnoldo Montoya-Gamez - Deadline Manager, Ethan Shoemaker - Issue Tracker, Karla Montoya - Testing Specialist, Jesrik Gomez - Public Relations, Nate Wernimont - Meeting Scribe

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Weekly Summary

This week, the team finalized the majority of our design decisions. We formalized the main architecture and interprocess communication of the hardware, services, data storage, and the Android application. Next week we will begin prototyping the sensor modules (once our parts arrive from ETG) and we will begin software development of the designs that we have finalized. We plan to iteratively prototype each component separately until we have high quality, functioning components. Then we will begin to integrate each component into the combined system.

Past Week Accomplishments

Accomplishments during the week of 10/28-11/1:

- Finalized system diagrams
    - Overall system diagram (everyone)
    - Sensor module diagram (Ethan and Max)
    - Android application
    - Database schema diagrams

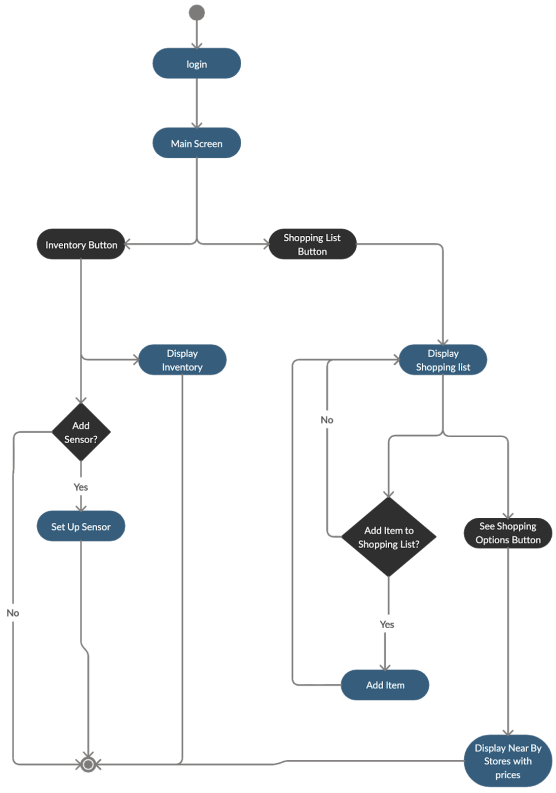
Pending Issues

- Max Garton: Waiting on parts from ETG.
- Arnoldo Montoya-Gamez: N/A
- Ethan Shoemaker: Test R/T modules and weight sensors
- Karla Montoya: N/A
- Jesrik Gomez: N/A
- Nate Wernimont: N/A

Individual Contributions

Arnoldo:

- Worked on Android application activity diagram.
  Start researching google maps platform and places SDK



Ethan:

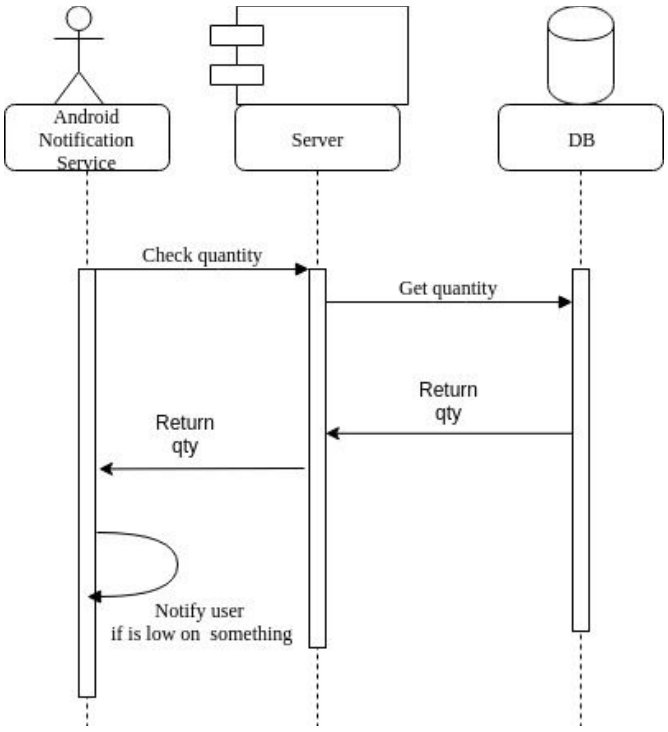
- Presented different data collection heuristics to the whole team and decided on a method to pursue
- Drafted diagram detailing the connection scheme for the sensor modules
- Updated projected timeline for tasks for the whole team
    - Created new smaller Gitlab Issues for each subsystem

Jesrik:

- Worked on the basic, high-level design of the API
- Worked on the design document
- Created overall system diagram and services diagram
- Created technical challenges lightning talk video

Karla:

- Created a notification service sequence diagram.
- Started working on the class diagram.



Max:

- Finalized system design for the sensor module after discussion with the rest of the team
- Corresponded with ETG to order parts
- Worked with the team to organize documentation
- Scheduled our design review session

Nate:

- Worked on the design of the API
- Sought feedback from various groups in order to discuss needs and limitations
- Worked on the design document
- Created technical challenges lightning talk video

Name	Individual Contributions (Quick list of contributions. This should be short.)	Hours This Week	Cumulative Hours
Arnoldo	Created Lightning Talk Video, Researched Matching Algorithms.	5	27
Ethan	Presented and decided which data collection method should be pursued, updated Gitlab Issues	8	28
Jesrik	Started designing API, created system and service diagrams, created technical challenges lightning talk video	9	27

Karla	Worked on notification service sequence diagram	5	24
Max	Worked with ETG to order parts, organized team documentation on individual components, scheduled design review	8	38
Nate	Started on the design of the API, worked on the design document, and created the technical challenges lightning talk video	7	27

Plans for Next Week

- **Arnoldo**: Continue researching google maps platform and places SDK
- **Ethan**: Research Python RPi BT libraries for connecting the RPi to the user's WiFi. Look into setting up the RPi WiFi with a similar strategy to other smart home devices.
- **Nate:** Iterate on the API design and standup the databases
- **Max:** Prototype inventory sensor modules (assuming parts arrive from ETG). Work with Ethan to develop automatic raspberry pi wifi setup (allowing the user to connect the pi to their wifi network via the Android application)
- **Karla:** Start working on the skeleton project and continue working on the class diagram.
- **Jesrik:** Start implementing API services

Summary of Weekly Adviser Meeting

In our meeting with Goce on 10/24/19, we discussed ordering parts and the necessary steps to do so, followed by immediately ordering the parts. We also discussed more specifics about our design review presentation for the end of the semester. In specific how to approach mentioning security as far as since we will not have implemented much by the end of this semester. He also recommended that each sub team of our project should draw up a diagram of the *entire* system and then come together and discuss the minute differences between our drafts. We also were made aware of the importance of our data sources and the assumptions we make about them. As we near the end of the semester, it becomes more important that we have a better idea of what this data will look like. Lastly, we discussed what should be ready for demo by the end of the semester and that we should more thoroughly describe our test cases. On 10/30/19, Goce provided us with a thorough review of the second revision of our design document, highlighting changes we needed to make.