

Weekly Status Report 4

2/24/19-3/2/19

Senior Design Dec19 Group 16

Wireless-enabled Smart-Lights Hub Prototype

Advisor/Client - Manimaran Govindarasu

Team Members

Alex Beaver

Ryan Bush

Aaron Ramsey

Logan Zasada

Past Week Accomplishments

- Client/Adviser Meeting
 - Discussed Parts lists
 - Re-discussed systems level diagram of project
- Team Meeting
 - Finalized part order, sent to be ordered
 - Started assembling part order 2, to fix errors in our design
 - Delegated tasks for the week, got everyone started on specialized roles in the team
- Outside of meetings
 - Began thinking about our server-side infrastructure
 - Designed finalized schematic for relay-to-server communication
 - Researched how the Zigbee protocol communicates
 - Researched possible ways to hack into Zigbee hubs and other wireless lights

Weekly Adviser Meeting Summary

This week we ran into an issue where the only lights we could find that had the Zigbee capabilities were powered by AC. Since we want the lights to be battery powered and rechargeable, this isn't exactly what we were looking for. In the meeting we discussed a few possible solutions like converting the energy from AC to DC, continuing research to see if we can find a DC light, or even just making our own rechargeable DC powered light module that can last as long as 10 hours.

Personal Contributions

Name	Personal Contributions	Hours this week	Cumulative Hours
Alexander Beaver	<ul style="list-style-type: none">• Began thinking about our server-side infrastructure• Began planning out initial server-side infrastructure on paper.	4	17
John (Ryan) Bush	<ul style="list-style-type: none">• Researched how the Zigbee protocol communicates• Researched potential ZigBee hubs to communicate with each individual light unit	5	21
Aaron Ramsey	<ul style="list-style-type: none">• Designed finalized schematic for relay-to-server communication• Researched IOT protocol basics	5	20
Logan Zasada	<ul style="list-style-type: none">• Researched how to connect to Zigbee lights• Found more possibilities for purchased lights	4	18

Tasks in Progress

- Designing each module of the project
 - Designing server infrastructure
 - Creating schematics and planning out relay-to-server communication
 - Learning how the server-to-light communication will work
- Waiting on parts to build a first prototype

Pending Issues

- Still unsure of how exactly Zigbee works
- Can't find purchasable lights that fit our exact requirements
- Discussing whether Zigbee will be the communication method or if we'll switch to Wi-fi
 - Although Wi-fi can only support 32 devices per router
- Waiting for parts means we can't do a lot of work yet