

EE / CprE / SE 492 – SdDec21-20

IoT Smart Lights

Bi-weekly Report

10/25 – 11/08

Client: Dr. Manimaran Govindarasu

Faculty Advisor: Dr. Gelli Ravikumar

Team Members:

Hamza Mostafa Sayed Mahmoud	habdul@iastate.edu	Hardware Design
William Gavins	wpgavins@iastate.edu	Hardware Design
Xinlei Yu	xinleiyu@iastate.edu	Software Design
Nathan Orts	njorts@iastate.edu	Software Design

Summary:

- Integrating the GUI with the controller software.
- Binary Simulation files from PowerCyber Lab simulation can be stored locally with MySQL
- PCB first revision completed. Some issues with design and assembly have been identified for second revision. Completed initial design of the 2nd revision but upon further review it still needs several changes based on information acquired from the first revision.

Past Week Accomplishments

- GUI software
 - Created a bash script to launch the GUI on the VM without using shell commands.
 - Worked on integrating with the control script.
- Software Scripts
 - Reconfigured database to adapt to integration. Added field “Relay”, “Parent_Relay”.
 - Modified mysql function to errors handling.
 - Moved the scripts and database to VM provided by Client and Advisor. Program can run on the VM.
- Hardware
 - Fixed Config issues with Xbee s2c wireless devices
 - Shrunk down footprint for PCB.
 - Redesigned PCB with assembly in mind, JLCPCB is able to do smd assembly to some degree, meaning we can avoid hand soldering many components.

Pending Issues

- Hardware
 - PCB BOM for Rev B
 - Find more compact alternatives to parts.
- Software
 - GUI
 - Light configuration page incomplete.
 - View simulation page incomplete.
 - Software
 - N/A

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
William Gavins	Changed PCB design, fixed hardware issues from pcb rev A, corrected schematic, added battery protection, fixed driver script.	19	68
Hamza Mostafa Sayed Mahmoud	Out due to personal circumstances.	0	10
Xinlei Yu	Python app development - Software/Hardware interfacing.	6	29
Nathan Orts	Python app development - GUI	10	51

Plans for Coming Week

- Nathan - Continue GUI development.
 - Complete light configuration page.
 - Continue integrating with other software components.
- Xinlei
 - Integrate with UI and Xbee coordinators
- Hamza - N/A
- William- BOM for PCB RevB, figure out serial in/out for vsphere client.