

## EE / CprE / SE 492 – SdDec21-20

### IoT Smart Lights

### Bi-weekly Report

09/06 – 09/13

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:

- Worked on interoperable system design and learned PCB design.
- Began programming Xbee2 Packet frame generator.
- Met in PowerCyberLab to clarify confusions and collect any needed hardware.

#### Past Week Accomplishments

- App page mockups complete.
- Updated Gantt chart timeline.
- Identified some pitfalls to avoid
- Figured out individual tasks.

#### Pending Issues

- Hardware Scripting Serial Programming for Remote lights and coordinator
  - Remote GPIO button triggers
  - Receiving packets on coordinator
  - Packet frame generation for interfacing with remote lights on the coordinator
    - Specifically: checksums
- Hardware PCB Design and Schematic
  - Add tp4056 Circuit to schematic
  - Find a source for tp4056 IC or an alternative power charging module.
- Software side

- Finding out a way to connect with the PowerCyberLab simulation.
- Actual GUI with specified functionality.

### Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
William Gavins	Worked on PCB Design, scripting Xbee2 Packet frame generation Worked on moving XTCU configuration to script to avoid extra software requirements	8	8
Hamza Mostafa Sayed Mahmoud	Reached out to the ETG	3	3
Xinlei Yu	Python app development - Software/Hardware interfacing.	4	4
Nathan Orts	Python app development - GUI	5	5

### Plans for Coming Week

- Nathan - Start development on GUI.
  - Find suitable libraries.
  - Brush up on Python.
- Xinlei - Figure out how to interface with the simulation hardware and connect with the database located at the PowerCyber Lab.
  - Start coding and give a demo on connecting with the database.
- Hamza - Reach out to Lee in the ETG.
- William- Finish hardware design and XBee endpoint to coordinator subsystem

