

# CPRE 491 WEEKLY REPORT

**MAY15-25**

## Week 6 Report

**Advisor:** Lee Harker

**Client:** Lee Harkin / Department of Electrical and Computer Engineering

**Project Title:** CyLocker Access System

### Group Roles

<b>Team Leader -&gt;</b>	Nathan Castek
<b>Team WebMaster -&gt;</b>	Corey Coazzato
<b>Team Communicator -&gt;</b>	Nathan Lafferty
<b>Team Key Concept -&gt;</b>	Priyank Patel
<b>Team Technical Leader -&gt;</b>	Mohammad Syazwan

### Weekly Summary

Additional Circuit Math (continued)

Brief Circuit Designs

Circuit Scenarios Defined

Toy with hardware circuitry (Pi/Arduino)

### Weekly Accomplishments

Started evaluating sleep functions on Arduino, save power

Circuit Scenarios Defined

Locker is not open

LCU 5 seconds, Battery status 2 hours

Locker opens one time / week

same status..

Locker opens twice / week

same status..

Locker opens once / day

same status...

### Meeting Minutes

**Duration:** 60 minutes

**Attendance:** 100%

#### Summary:

Discussed last weeks accomplishments

Discussed next week's goals

Briefly discussed merits of using full QWERTY keyboard for Pi

Security and usability benefits for users  
Potentially cheaper  
Easier to maintain

Discussed scenarios of Circuit Power Usage

<https://docs.google.com/a/iastate.edu/document/d/1cn7wbhqW5XaIL8qB-XveWA4gsDHroEygOmhfNbQJRBI/edit>

## Progress Impediments

Waiting for Corey to do integration testing with the ATMEGA to find out current draw of servo – scheduled for wed. before meeting

## Individual Contributions

(Name) (this week, total)

**Castek:** 5, (27.4)

- Researched how to measure current draw from servo (0.5)
- Hosted meeting (1)
- Reviewed electrical calculations from other team members (0.5)
- Researched and drew up circuitry to power LED and Servo (1.5)
- Reviewed how transistors can be used to save power (0.5)
- Writing up justifications for why we chose each specific part over another(1)

**Corey:** 5, (28.5)

- Testing AtMega328 without arduino board- 2 hours
- XBee software- 1 hour
- Team meeting - 1 hour
- Continued various resting of breadboard and arduino- 1 hour

**Lafferty:** 5, (27)

- Toyed with LCD Display (1)
- Keyboard Research (1)
  - Keyboard Decision Document (1)
- Weekly Report (1)
- Weekly Meeting (1)

**Priyank:** 5.5, (26)

- attended meeting - 1.0 hour
- designed circuitry to power atmega - 2.0 hours
- designed circuitry to connect Xbee and atmega - 1.5 hours
- Looked into voltage drop and step up voltage converter - 1.0 hours

**Mohammad:** 5, (28.5)

- attended meeting - 1.0 hour
- designed circuitry to power atmega - 1.5 hours
- designed circuitry to power XBee - 1.5 hours
- designed circuitry to connect Xbee and atmega - 1.0 hour

## Weekly Plans

**Mohammad**

- test the circuitry on breadboard

**Priyank**

- test the circuitry on breadboard

**Castek**

- Further research transistors
- Perform servo integration testing with Corey
- Finalize power and current consumption numbers and circuit design
- Prep for weekly meeting
- Learn what fellow team members found about their systems

**Corey**

- Create bigger circuit testing with AtMega
- Continue with functionalities of the arduino

**Lafferty**

- Work with Xbee arriving on Tuesday