

# CPRE 491 WEEKLY REPORT

**MAY15-25**

## Week 3 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>	Castek
<b>Team WebMaster -&gt;</b>	Corey
<b>Team Communicator -&gt;</b>	Lafferty
<b>Team Key Concept -&gt;</b>	Priyank
<b>Team Technical Leader -&gt;</b>	Mohammad

### Weekly Summary

Individuals performed research into specialization areas

Met, discussed individual accomplishments

Planned out following week

Discussed Battery usage/design

Noticed several flaws in our previous approach

Discussed LCU CPU design

Dedicated Circuit vs Arduino for controlling board

Assigned tasks for individuals to carry out, come up with solution next week

### Weekly Accomplishments

Made significant progress on general design

Battery Tradeoffs

Locking Tradeoffs

Sensor/Timing Tradeoffs

Arduino/Dedicated Circuit Tradeoffs

Noticed several flaws in original design

### Meeting Minutes

**Duration:** 60 minutes

**Attendance:** 100%

#### Summary:

Met with Lee on tuesday, discussed minor things. On Wednesday (main) meeting, discussed accomplishments of prior week, set up goals for following week, addressed flaws in our design. In particular,

realized there were several additional topics of discussion for battery choice, may not be able to make a hard decision until more concrete circuit has been chosen.

<https://docs.google.com/a/iastate.edu/document/d/17IAq9RqB3sdJQuCbhvdcAlZcrl2GKknU-iuIOTFtFMc>

Meeting Minutes are recorded in google doc format. Rather than copying and pasting them, they will be viewable by anyone with the link above.

## Progress Impediments

Access to the senior design room, locker, and lab. Will coordinate with Lee to obtain access.

No additional progress impediments.

## Individual Contributions

(Name) (this week, total)

**Castek:** 5, (11.4)

- Researched different Servo types (1.5)
- Explored power issue with batteries (2)
- Hosted meeting (1)
- Researched locking unit mechanism (0.5)

**Corey:** 5, (11.5)

- Researched different type of Arduinos - 2 hours
- Began learning how to code Arduino - 1 hour
- Team meeting - 1 hour
- Researched XBee - 1 hour

**Lafferty:** 4.5, (10.5)

- Additional Xbee Research (1)
  - Should be using the "2007" model
  - Considered Upgrade
- Raspberry Pi Research (0.5)
  - Supported OS List
  -
- Built weekly report (1.0)
- Began research on project design document (1)
- Attended Meeting (1.0)

**Priyank:** 4.5, (9.5)

- Additional Research on battery design (4.5)
  - Individual Battery Comparison
  - Built graphs for detailed analysis

**Mohammad:** 5.5, (12.5)

- designed schematic diagram for XBee, arduino, keypad, servo - 1.5 hours
- practiced with PCB software and design - 1.0 hours
- conducted research on battery usage, choice of battery, cost of battery - 2.0 hours
- learnt on soldering - 1.0 hours

## Weekly Plans

**Mohammad**

- continue practice with PCB design

**Priyank**

- Research to choose one specific battery to build project on

**Castek**

- Talk with Lee about power issue, LED cost tradeoff, locking unit, mechanical program to use.
- Lock down potential options for battery and servo options
- Prep for weekly meeting
- Learn what fellow team members found about their systems

**Corey**

- Choose processing unit
- Go more indepth about Arduino programming
- Learn what fellow team members found about their systems

**Lafferty**

- Get Pi hardware from Lee
- Get model # of USB Card Reader from Lee
- Get model # of USB Keypad from Lee
- Research XBEE upgrade potential
- Load OS onto Pi