

CPRE 491 WEEKLY REPORT

MAY15-25

Week 4 Report

Advisor: Lee Harker

Client: Lee Harkin / Department of Electrical and Computer Engineering

Project Title: CyLocker Access System

Group Roles

Team Leader ->	Castek
Team WebMaster ->	Corey
Team Communicator ->	Lafferty
Team Key Concept ->	Priyank
Team Technical Leader ->	Mohammad

Weekly Summary

Individuals performed research into specialization areas

Met, discussed individual accomplishments

Planned out following week

Selected a battery to power the device, AA (energizers)

Discovered Arduino FPGA circuit elements, will using in future designs

- Very cheap

- Should be reliable

- Should be easy to program

Received the existing hardware from Lee

Assigned Project Plan duties to individuals

Weekly Accomplishments

Chose a specific battery.

Discovered arduino FPGA elements.

Meeting Minutes

Duration: 60 minutes

Attendance: 100%

Summary:

Did not meet with Lee formally. Discussed battery usage, decided upon Energizer AA batteries (cheap and reliable). Discussed locking unit. Discussed Arduino. Discovered arduino FPGA element, incorporating into future designs.

<https://docs.google.com/a/iastate.edu/document/d/1Zrfa7eqH4G0VjeZPw3OQKZQBSOb4fWbcNzMUySMOESI/edit>

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.

Lafferty requires USB to MicroSD card converter.

Corey requires the Arduino Bootloader to load the FPGA with code

Individual Contributions

(Name) (this week, total)

Castek: 5.5, (22.4)

- Continued to watch Autodesk Inventor tutorial videos (1.5)
- Hosted meeting (1)
- Specified four different scenarios to calculate power and current consumptions and calculated numbers for servo and LED (1.5)
- Created Part Justification folder and started writing up justifications for why we chose each specific part over another(1.5)

Corey: 1, (19.5)

- No Report Given
-

Lafferty: 6.5, (21.5)

- Installed OS onto Pi (1)
- Got HDMI connector properly working (0.5)
- Basic pin support / mapping (0.5)
- Project Plan writeup (1)
- Project Plan Editing (2)
- Weekly Meeting (1)
- Weekly Report (0.5)

Priyank: 6.5, (21.5)

- Continue with circuitry to power on Atmega328 (2)
- Worked on current/voltage/power consumptions (2)
- Battery numbers and information (1.5)
- Meeting (1)

Mohammad: 5.5, (23.5)

- attended meeting - 1.0 hour
- did calculation on current/power/voltage consumption - 2.0 hours
- pcb design practice - 1.0 hour
- researched on step-up regulator - 1.5 hours

Weekly Plans

Mohammad

- Continue practice with PCB design , incorporate new FPGA element

- Math for power consumption of circuits

Priyank

- Circuitry to power atmega embedded processor
- Math for power consumption of circuits

Castek

- Design complete locking unit circle, draft drawing
- Do mechanical design

Corey

- Research pins on new fpga board
- Research new fpga board
- Print out very simple circuit diagram, potential connections
- Talk to Lee about ordering Arduino + FPGAs (5-10 fpga)

Lafferty

- Install OS onto Pi (clear roadblock)
- Hookup numpad to circuit board to read input
- Hookup USB card reader
- Finalize/Submit project plan