### Senior Design Meeting Minutes

### Date: 10/01/23

### Agenda (Updates/Things to Discuss)

* PDR Topics to Discuss Together
  + Go through whatever has been done together
  + Finish to sections 3-5
  + Practice speaking once or twice
  + Potential questions preparation
  + Appendix Slides
  + Formatting
* ***TIMELINE*** 
  + w/ PDR in mind
  + w/ Hall of Fame in Mind
    - What do we need to decide on as a group to get started on our individual tasks?
    - When do we need to decide on an MCU
  + w/ Tech Demo 1 in mind
  + What tools should we start learning (if applicable?)
    - Fusion 360 vs. SolidWorks
    - KiCad
      * I found some PCB trainings with Mr. Nguyen ([link](https://my.ece.ncsu.edu/makerspace/training/))
  + Detailed breakdown of all the tasks (w/i each subsystem)
* Next Meeting
* Just so we don’t forget, do we need to talk to Josh? (Deal with this Post PDR)
* Fix the product requirements?? **(Kelly-Mae)**

### Upcoming Deadlines

* 10/3 PDR
* 10/13 Hall of Fame
* 10/20 Update Project Name + Guest Lecture Feedback Form

### Minutes

* We should be using the team charter document more
  + Action Items w/ assignment
  + Keep a list of the things we accomplish (for motivation and for documentation)
* Atlassian + Jira for timeline and project management
* Maybe the image detection algorithm can detect color
* IC subsystem→switch to circuit design
* For PDR

### Action Items

* Find new work for Will (post Wednesday)
* Meet on Sunday @ 5pm
  + Review slide deck and make sure everyone is on the same page
  + Practice presentation
  + TIMELINE + way to stay organized
* Find components
  + Look for ones with a breakout board
  + Sensors (audio
* Make a list of parts we might want to make
* Draw i/o components (pdf, jpeg)

Each subsystem:

* Proof of concept
* Potential technical barriers
* Breakdown of everything that needs to be done
* What does each subsystem need from the other subsystems
* How far can you go without needing another subsystem

Idea for PDR demo:

* Serial Communication IC and physical connection (Abisha, Nida)
  + Build i2c bus and slide about how i2c works
  + Talk about future of making parts work with i1c with IC
  + How does it interface with the larger project
  + What is feasible with a custom IC?
  + What are the limits of serial communication?
  + I need top Level Pins
  + How does the GPIO pin expander work without MCU and mostly digital block (buy extra memory)
  + Look at some more FPGA dev boards, figure out what is the difference and make the table
* Software and website to design digital UI (Will, Parker)
  + Online? Demo showing non functional frontend of how user builds UI
  + Barriers w/ drag and drop feature
* Custom PCB design (Nida, Parker)
  + Arduino shield building into I2C
  + Schematic of the parts we are using now
* Embedded software integration and design (Parker, Kelly- Mae)
  + Functional example of a user interface on touchscreen
  + What components/lead-times
  + Get LED screen working
* Enclosure modeling for frame and components + Design/Branding (Kelly-Mae, Abisha)
  + Example in enclosure
  + Custom Mag-safe port\*