sdmay19-25: Handheld Emulation Station
Week 7 Report
10/29 - 11/2

Team Members
Jacob Nachman — *Meeting Facilitator*
Nick Lang — *Meeting Scribe*
Nic Losby — *Chief Engineer*
Sean Hinchee — *Test Engineer*
Matthew Kirpes — *Report Manager*

Summary of Progress this Report
The big accomplishments of this week include the PCB design redo. We decided to use two PCB boards in order to keep cost lower as it was cheaper to make two smaller ones rather than a larger one. One contains the parts for the joysticks and buttons and the other contains the surge protection circuit, USB port, and setting for the Raspberry pi zero.

Pending Issues
Still need to familiarize ourselves with emulation design a bit better and make sure our surge protection works properly through testing in the lab. Get ready to order our parts so we can be ready to design a prototype at the beginning of 492.

Plans for Upcoming Reporting Period
Jacob Nachman: Work on the dock design in TinkerCAD and read the gameboy CPU manual.
Sean Hinchee: Discuss and begin finalizing designs for an emulator implementation; begin finalizing design of a kernel module.
Nick Lang: Look into specifications and documentation for game boy advance and attempt to synthesize the data so it can easily be referenced.
Matthew Kirpes: Work on creating an emulator for us to use rather than a third party one.
Nic Losby: Add traces with correctly calculated trace width and order PCB parts along with ordering circuit parts.

Past Week Accomplishment
Jacob Nachman: Worked on the PCB redesign and skimmed the gameboy CPU manual.
Sean Hinchee: Explored more kernel module features; investigated further kernel solutions.
Nick Lang: looked into emulation design and looked into breakdowns of the design into manageable pieces.
Matthew Kirpes: Looked into emulator specifications to understand design.
Nic Losby: Deleted the first design and redid it. This new layout is much better and gives us plenty of room for speakers. We also now have daughterboards for the buttons.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Jacob Nachman	• Started PCB design with Nic. We have two PCB boards made due to it being cheaper to order smaller boards in bulk. One board contains peripherals and the other contains a place for the raspberry pi to sit and surge protection for USB-C charging.	6.5	47
Nick Lang	• Read the Cinoop writing a game boy emulator to gain a better perspective on how to go about using the strategy in it to work with game boy advance	7.5	44.5
Nic Losby	• First PCB and design redone but no traces have been added. We now have two child boards what hold the buttons because it was 1/10th the cost of having a larger PCB.	6.5	49.5
Sean Hinchee	• Studied the Cinoop documentation for implementing a gameboy emulator and examined more information related to the usb module implementation	6.5	46
Matthew Kirpes	• Looked at the initial PCB design that was made to understand and make necessary changes • Continued looking at other emulation examples and guides online	8	47

Gitlab Activity Summary

Nothing to report.