

sdmay19-25: Handheld Emulation Station

Semester 2 Week 1 Report

2/4 - 2/8

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

Summary of Progress this Report

Got a start on the gameboy emulator as well as got another version of our PCB ordered. Fiddled with the configs in order to get good framerate out of the screen, set up digital infrastructure to mimic the Z80 microprocessor, started ROM parsing.

Pending Issues

Opcode implementation, GPIO kernel module code, build with new PCB.

Plans for Upcoming Reporting Period

Jacob Nachman: Got cpu structure set up. Continue opcode implementation and work on some methods for bitwise operations.

Nic Losby: Get a screen ordered and working with the Raspberry Pi.

Nick Lang: Complete gameboy cartridge emulation by implementing Memory Banks.

Sean Hinchee: Ensure the kernel module is completed to the point where it is just lacking gpio source code.

Matthew Kirpes: Continue working on emulation instructions and interpreter for memory values

Past Week Accomplishment

Jacob Nachman: Worked with team on a forward plan and met with our faculty advisor to discuss future meetings and soft deadlines.

Nic Losby: Redesign the GPIO layout and traces on the PCB.

Nick Lang: Completed update of 3D case design. Also started working on gameboy cartridge emulation.

Sean Hinchee: Continued work on organization and forward planning. Re-factored the kernel module specification.

Matthew Kirpes: Discussed plans with team on what would be best to start working on for the semester.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Jacob Nachman	Implemented the gameboy CPU structure for our emulator and started opcode implementation.	10	10
Nick Lang	Updated the 3D design for the case to prepare for printing. As well as began setting up cartridge emulation for the gameboy.	10	10
Nic Losby	Added in a ground plane and ordered PCB and redid the BOM in order to get a quote for PCBA.	8	8
Sean Hinchee	Set up working raspberry pi build toolchain and a testing pi image with gpio set up. Refactored emulator software base. Identified gpio kernel interfaces.	12	12
Matthew Kirpes	Worked on emulation instructions and interpreter for memory values .	8	8