

EE/CprE/SE 492 STATUS REPORT sdmay25-29

April 4, 2025 - April 17, 2025

Group number: 29

Project title: Implementation of the ABC using modern technology

Client &/Advisor: Professor Alexander Stoychev

Team Members/Role:

Connor Hand - Client Interaction and Team Organization

William Mayer - Meeting Time Tracking and Note-Taking

Peter Hurd / Noah Butler / Zach Scurlock - Testing and Individual Component Design

Peter Hurd - Budget Handling

Bi-Weekly Summary

We have officially decided to complete our project using breadboards instead of PCBs. Our team has ordered parts for our breadboards to build our modules. We've determined circuit designs have been building them ever since. We nearly have a full-fledged small scale implementation of our computer, currently without strict control logic and incomplete input output methods. We have made significant progress on our Java simulation, Android apps, and ESP32 programs. We are becoming more confident that we will have a finished project using breadboards.

Past week accomplishments

- Connor Hand: Added significant amount of functionality and bluetooth communication between Android apps and ESP32s. Used breadboards to ensure our Android input output methods will work in conjunction with a clocked ESP32.
- Zach Scurlock: Created 6-bit counter breadboard, adder breadboard, debugged buggy designs
- Peter Hurd: Built breadboard implementations for the memory drums, address shifter, registers, and ASM muxes. Began piecing together all breadboard modules and debugging issues.
- William Mayer: Low-level abc-emulator. Showing binary bits and proper drum storage, with decimal to binary conversion.
- Noah Butler: Finished breadboarding the binary to decimal module, began designing a 3d printed mount for the tablets

Individual contributions

<u>NAME</u>	<u>Individual Contributions</u> (Quick list of contributions. This should be short.)	<u>Hours this week</u>	<u>HOURS cumulative</u>
Connor Hand	Added more modes and QOL functionality to Android input/output apps. Added clocking to ESP32 programs.	16	114
Zach Scurlock	Created 6-bit counter breadboard, adder breadboard, debugged buggy designs	15	109
Peter Hurd	Built breadboard modules for memory drums, address shifter, registers, and ASM muxes	16	123
William Mayer	abc-emulator with functionality.	15	116
Noah Butler	Finished breadboarding the binary to decimal module, began designing a 3d printed mount for the tablets	16	110

Plans for the upcoming weeks

- Connor Hand: I will be interfacing the Android read and write apps so that the write app is able to send data to the read app. I will also continue adding functionality to the ESP32 programs so that they work within our system.
- Zach Scurlock: Continue debugging system
- Peter Hurd: Build a clock module to provide a clock to the system, continue the debugging process for the entire machine.
- William Mayer:
- Noah Butler: Continue designing the tablet mount, debug current breadboards

Summary of weekly advisor meetings

During our meetings this week we worked on building circuits, the Java simulation, ESP32 programs, and the Android apps. We have gone through significant discussion with each other, including Stoytchev, to make sure we all understand where the project is headed and how our distinct pieces will come together. We also acquired a piece of plywood to put our breadboarded computer on. At this point in the semester, all of our big decisions have been made and our meetings will be filled with getting work done.