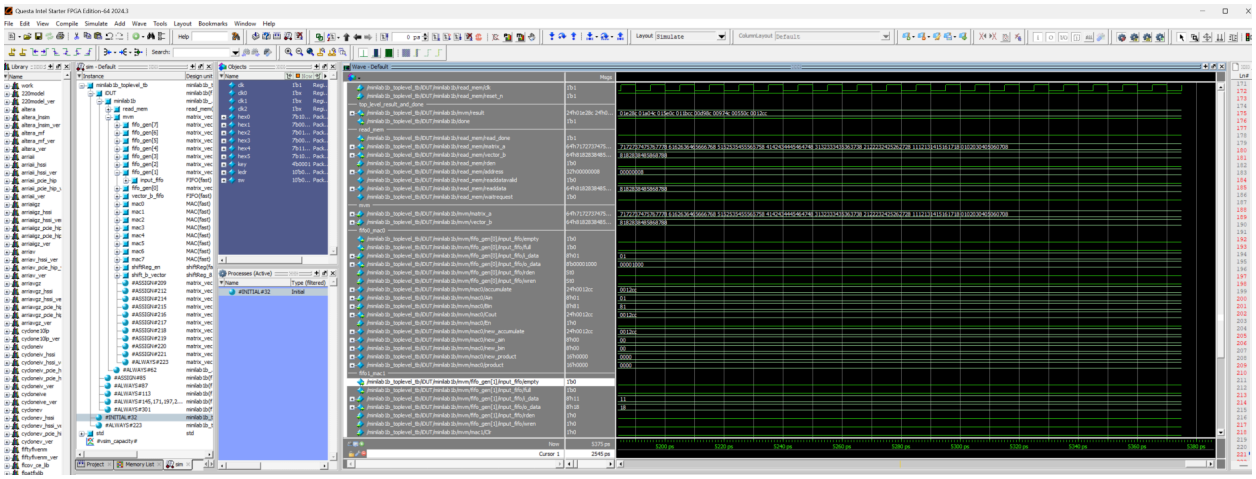
Git Repository

https://github.com/xenox-xillia/ECE554SP26Minilabs.git

Git details

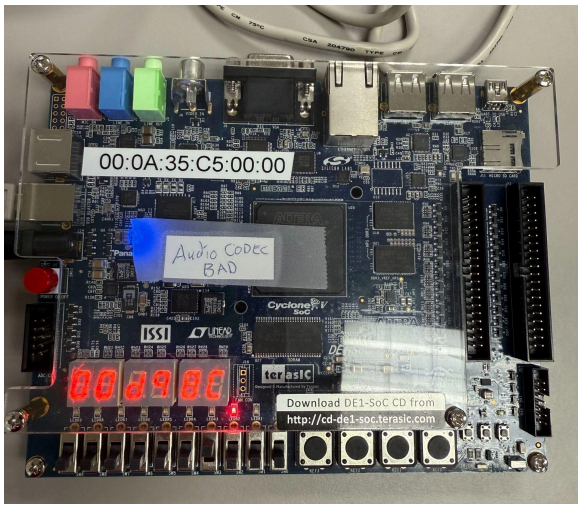
After creating the repository on github, I cloned into it from my terminal with https, and from there I could simply copy and paste the necessary files into the directory, then add, commit, and push.

Testbench Screenshot



To test the implementation we calculated what the correct C vector would be, ran the simulation to completion and checked the result to what was expected.

Board Picture

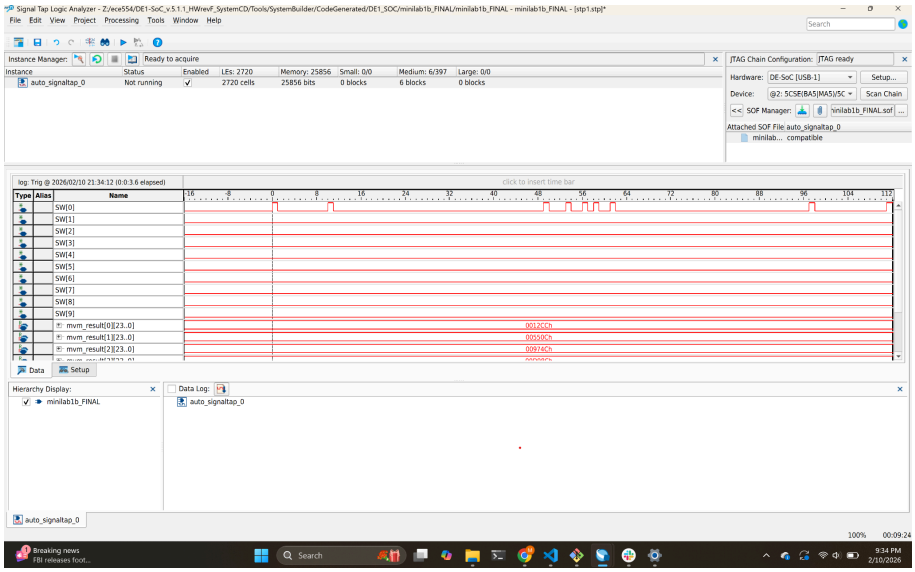


Similar to the testbench we checked the values to what they should be from calculation. In order to compile and run on the board we had to instantiate our original top level in the Quartus project top level and make the ports standard Verilog compatible as we were using System Verilog only features.

Timing Fix

Many of the timing fixes came in pipelining the addition and multiplication operations of the MAC unit.

SignalTap



Difficulties

Our main difficulty was with board execution. In simulation our end result worked perfectly fine but on the board it wouldn't. At first we simply didn't flop the MAC outputs and that fixed it, but after using the IPs we then had to revert back to flopping the MAC outputs in order for it to work.