This semester-long project was very enlightening for me. As a whole it bridged the gap between understanding how to program and what I did of digital systems with how a program is actually compiled and then assembled for a particular processor. I understand that some details of the architecture can be different between different architectures, but the basic responsibilities of a processor are the same throughout. Processors became a lot less of a black box for me through this assignment. I understand a lot better how discrete and logical the process must be for a processor to work properly.

Unfortunately, I was not able to devote as much time as I needed to at the tail end of the project, so I did have some issues closer to demo time that I wish would have been resolved. If I had done it again though, I would have spent a little more time verifying my processor as a whole. I did not get to go through and check to make sure each and every instruction operated as expected through every stage.

My advice for someone going through this project would be to start early, and divide and conquer. Break the project into small goals, which the assignments help with already, but do so with even higher resolution if necessary.

This is a project that will give the student what they put into it. With so many areas for optimization and improvement in the processor datapath, a student can very easily take a lot away from this assignment by making it as complex and efficient as possible. If the student wanted to take a lot away from the project, I would suggest trying pipelining.