

Matthew Peterka

Members: Brian McKeowen, Maddie Bird, Anirudh Utagikar

The parts of the design that I did individually were the fetch unit, and implementing the entire combined circuit into one. When we first started the lab, I completed the fetch unit myself with some help from the group but I took this as my own project. I learned a lot of information about the unit, allowing me to implement a working fetch unit that would be used in the bigger picture. I also combined the entire circuit together when we first started after we each completed our own components and after the initial combination of the circuits we all worked together to fix any bugs we encountered. I also individually worked on improving some of the bugs that occurred in other people's units and they did the same as well.

One advantage of doing this as a group is that you can split up the work so that you do not need to implement every component alone. It is also nice because if you are confused about any part of the processor, you can ask your group members and work through it together. This was an important part of the process because sometimes finding the bugs and kinks in the processor are difficult to spot alone and with a group putting their minds together it may be easier. Working as a group also allowed me to learn more about each other units as I asked my group about each of their units and what happens in them. This allowed me to learn about what the processor as a whole actually does and how it does it. One disadvantage of working in a group is that you need to wait for other people's components to be ready and this is because it is in logisim. Using logisim it doesn't update in realtime and this causes each person to have to work on the component separately and integrate it after. It is also hard to test it as a group because you have to be together to do this since only one person can see the same exact problem at the same time. Another disadvantage is that sometimes it is hard to communicate especially since it is getting close to finals, everyone has a lot of work to do and it is hard to find a time to meet and work on it together since you can't work on it together in real time.

One group member's design I thought was superior was Brian's memory unit. After he implemented it, it has very few errors and they were easy to spot and change to fit into the entire processor. He did a good job of getting it done early and testing it to ensure that everything was working before implementing it into the larger processor.

I also thought that Anirudh's implementation of the decoder unit was good and clean as it was easy to follow in the actual circuit. After looking at his implementation I found it easy to get lost if I was doing it and he made it easy to follow and straight to the point. Although he had a few bugs and misaligned wires, after fixing these it looked just as clean and easy to follow and allowed the entire processor to run efficiently.