Project Members:
ERYU SU  
ZIXI HU  
KUAI YU

What did you learn from this project?

This project gave us the opportunity to learn how to design a CPU. It is a good experience for us to use the knowledge which learned from the course to do this project. First of all, we need to design our instruction to set architecture for a new microprocessor which help us understand deeply about ISA. Second, we learned the architecture about the different types of datapath and control signals and try to learn how to design a multi-cycle datapath. Finally, we learned the VHDL to write codes designing the every part of CPU and modelsim software to do simulation.

What would you do differently next time?

We may try a different type of data path. In this project we use multi-cycle data path. Although pipeline is more efficient than multi-cycle data path in sometimes. To finish all the part of this project is a huge task for us. We failed to make the last part come true. Next time, if we have enough time we will try our best to make it come true. In the fist part, we think it is the most important part, we had some problems, because at the beginning of the project. We had nothing in our mind. After taking the class, we have some ideas. We try to make our project better and better. From this course, we know we should have good ideas at the first before starting a project, and then, we can have the chance to finish a hard project. It may make our project much better.

What is your advice to someone who is going to work on a similar project?

Getting started early. If you have a lot time at the beginning of the semester, you should review the VHDL ahead of time. It will be much easier if you are good at it. It’s really difficult for us to work on this project since we have not used Quartus before. Debugging this project will take longer than you ever planed. There are problems that you are unable to solve, it will take much time to google it, and learn it. So if you encounter the problem that you can’t solve, you better ask the TA for help, this would save you a lot of time.