**FPGA Implementation**

1. **What did you learn from this project?**

We learned the fundamental steps involved in the design and implementation of a processor. We acquired the knowledge of individual components that a processor consists of and how they interact with one another. Throughout this project we used various simulation and design tools giving us extensive experience with them and how they are used in the overall design process.

1. **What would you do differently next time?**

We would perhaps attempt a multi-cycle design rather than a single-cycle. From speaking with other classmates who designed a multi-cycle the code and simulation becomes easier to debug and edit later in the design process. Also, being that we had the majority of our simulation and implementation problems originating from the memory we would involve it earlier on in the design process rather than tacking it on towards the end. This would give us more time to debug it and avoid potential problems.

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

Our most important advice is to start early. The earlier the students start on the project the more time they will have to debug problems and meet with the professor if they run into problems they cannot fix. Also, a lot of unpredictable problems arise when integrating the various parts of the processor together so put extra emphasis on making sure every component works individually before integrating. This can save a lot of headaches when trying to debug the top model that ties all the parts together. Finally, when creating the instruction set and program to be implemented on the board keep them simple. The simpler they are the easier they are to debug. Plus they are easy to go back and update if you wish to make them more robust. As a side note to them, we would remind them to change the .mif file to a .hex file.