**Computer Architecture and Design**

Fall 2012

CPU Design Project

Final Report

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What we have learned from this project?

The CPU design project required MIPS data path and architecture which was taught in the class and this was very helpful in designing the project. We did not have much knowledge in VHDL and ModelSim prior to this project but got to learn a lot while working on the project. We also learnt how the processor uses various components. It was a good learning process.

What we would do differently?

If we were to do this project again we would plan it in a better manner and start earlier because the hardware implementation of the processor took a lot of time and we would want to spend more time on every stage and go through the process in detail because the later stages are depended on the previous stages. And we had to update the previous stages to accommodate the changes made as we were progressing through the project. We were unable to execute memory type instructions like store word (sw) and load word (lw) successfully. We would like to implement all the instructions.

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Advice to others:

Start the project as early as possible and have a thorough knowledge on the datapath as the entire project mainly relies on the data path. Another advice is that you test your individual parts before putting it together in top level design. This will help you in trouble shooting your code easily.