Midterm Review

The exam for this class will have roughly ten questions on it that will cover all the material that we have talked about in class and that can be found in chapters 1-4 of the book, plus what has been mentioned from appendix A and B. The format of the questions will closely mirror the quizzes. You will have the full 50 minute class period to work on the exam. It will be open book. That is primarily intended to help you with little details so you don't have to memorize all the MIPS commands. If you have to be looking much stuff up, the 50-minute time limit will cause you significant problems. Below is a list of the topics we have discussed that could appear on the test. I won't promise that it is complete, nor will I promise that everything on the list will be on the test. For all of the things on this list, you should understand then and why the choice to do them certain ways was made, whether that choice was specific to MIPS or more general.

Basics
- Components of a Computer
- Integrated Circuits
- Manufacturing of ICs

Computer Performance
- Metrics
- Fallacies

Assembly and Machine Language
- Different instruction types and packaging them
- Different instructions
- "Agreements" for calling functions
- Use of the stack for "local variables"
- Array vs. pointer notation for accessing blocks of memory
- Different addressing styles (why and how)
- Be able to write MIPS assembly code

Computer Arithmetic
- Binary numbers
- Computer logic and logic circuits
- Boolean algebra and how to use it to figure out some logic circuits
- Integer addition, subtraction, multiplication, and division and how they done on the computer
- Floating point numbers (representation and well as how addition and multiplcation are done)