CSCI 2321 (Computer Design), Spring 2019

Review for Exam 1

The exam will be in class March 6. You will have 75 minutes. Like the quizzes, it is "open book / open notes", which means you can consult paper or electronic copies of the textbook and your notes, sample solutions *from this year only*, your own graded work, and anything on the course Web site. You may not use other books, materials from this course from previous years, a calculator or computer (except as needed to consult allowed sources), or (of course) each other's papers. *Notice the restriction on computer use. In particular you're not allowed to try things using SPIM.*

Questions will mostly be similar in format to the ones in quizzes, non-opinion minute essays, and homeworks; difficulty/length will mostly be somewhere between quiz questions and homework problems. There will also likely be a few multiple-choice or true/false questions.

1 Lecture topics to review

You are responsible for all material covered in class or in the assigned reading from Chapters 1 and 2 and Appendix A of the textbook. You should review in particular the following topics. It would probably also be helpful to review sample solutions for the quizzes, assignments, and any minute essays that have well-defined answers.

- Terminology/concepts from Chapter 1 (machine language, instruction set architecture, assemblers, etc.).
- Defining and measuring performance; relationship among execution time, clock rate, cycle time, and cycles per instruction.
- Idea of "instruction set architecture" (as the interface between hardware and software).
- MIPS instructions described in Chapter 2 — usage and binary (machine-language) representation.
- Compilers, assemblers, linkers, and loaders — what each phase does, a little about how they work together.
- MIPS conventions for procedure calls.

2 Reading to review

You should have read, or at least skimmed, all of the assigned reading from Chapters 1 and 2 and Appendix A, but the focus will be on material presented or at least mentioned in class.