CSE 351: The Hardware/Software Interface

Section 6

Midterm review

Non-inclusive topic list

- Addressing data in memory
  - Pointers, byte ordering
- Bit-level operators
  - &, |, ^, ~, +, !, <<, >>
- Integer representations
  - Two's complement
- Floating point numbers
  - Representation, conversion

Non-inclusive topic list

- Program state representation
  - How registers, stack, heap, and text segment are used
- Assembly instructions
  - mov, lea, add, and so forth. Moving data between registers and memory
- Control flow
  - cmp, test, conditional jumps, and how they are used to represent if/then, for, and do-while
- Calling conventions
  - Passing arguments in x86 versus x86-64, recursive function calls
- Arrays
  - Representation in memory, accesses using assembly instructions
- Buffer overflows
  - What they are, how they can be used maliciously, how to prevent against them

Questions

* Question time!
* Please make requests, otherwise we'll just go over a sampling of past midterm problems