CS 241, Lecture 1 - Introduction and Binary Encoding

1 Review

- A word is 4 bytes in 32-bit, 8 bytes in 64-bit. We focus on 32-bit, so 4 byte words.
- We use hexadecimal (base 16, 0-9, a-f) for ease of reading and use.
- Each hexadecimal character is a nibble.
- Prefix with 0x or subscript with 16.
- ie: 10011101 $\rightarrow$ 0x9d
- Dec $\rightarrow$ Bin - divide by 2 repeatedly.
- We use twos complement over signed magnitude for signed numbers due to the latter's issue with double zeros and arithmetic problems.
- ASCII is a 7-bit representation of a character.