CS 160
CS Orientation

Intro to CS & Number Conversions
Odds and Ends...

• Get Assignment #1 demoed this week!!!
• Assignment #2 posted!
Computers Are Everywhere

• Examples:
  – homes, offices, rooms/servers, phones, pacemakers, cars, etc.

• What is the difference b/w these?
  – Complexity
  – Size
What is an algorithm?

• Step-by-step description of how to accomplish a task, i.e. recipe
• Algorithmic thinking
• Expressed in any language
  – Natural
  – Programming
What is programming?

• Problem Statement
• Solve the Problem
• Specify Algorithm
• Algorithm -> Computer Language
Hardware vs. Software

• Computer: **machine** that manipulates data and carries out **set of instructions**

• Hardware
  – CPU
  – RAM
  – Hard Disk

• Software
  – Programs

ALU \leftarrow \text{math op registers}
Software/Programs

• Primary piece of software on computer?
• What is its purpose?
• What are applications?
Programming

• Writing **code** that a computer can **execute**
  – Does that mean we have to write in binary?

• High-level language
  – Translated **Continuously during runtime**
    • **Interpreted**
    • Just in time compilation/caching
  – Translated Prior/Ahead of time to runtime
    • High-level -> machine language
    • High-level -> intermediate language