

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

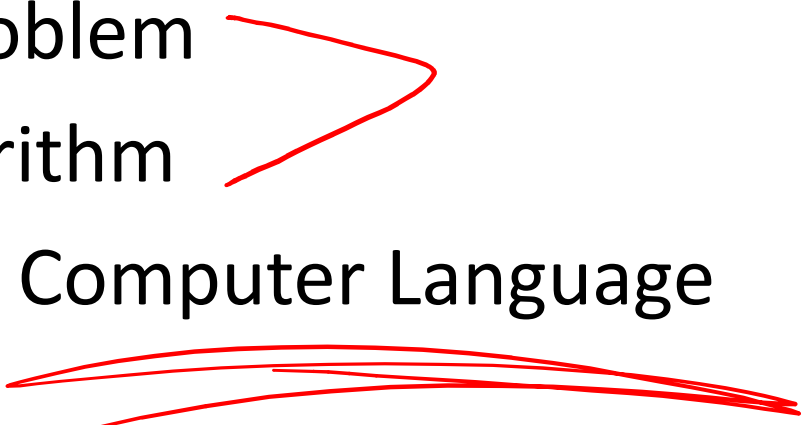
What is an algorithm?

sequence matters

- Step-by-step description of how to accomplish a task, i.e. recipe
- Algorithmic thinking = computational 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 ← math op
registers

Software/Programs

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

OS
interface
apps/
other
progs
↓
hardware

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

— prior

Slow