CS 161
Intro to CS I

What is programming?
Chap. 1
Computers Are Everywhere

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

• What is the difference b/w these?
  – Complexity
  – Size
What is a computer?

• A Computational Device
  – It computes (input-> processing -> output)
  – Modern: device that can be programmed to carry out an algorithm.

• Computer Science
  – The study of devices that can be programmed
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
  - natural language
- Algorithm -> Computer Language

• Why do we teach programming 1st?
  probably to test our algorithm
  boring otherwise
Hardware vs. Software

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

- Hardware
  - CPU (central processing unit)
  - RAM (random access memory, prog running uses this)
  - Hard Disk (prog saved here, but not used when running / writing to a file)

- Software
  - Programs
Software/Programs

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

- operating system

interface between software and hardware

anything that uses OS
Reading/Assignments

• Read/Start Assignment 1
• Read Chap. 1 & begin Chap. 2
• Exercise Groups, Labs, and Office Hours are happening this week.
• Labs are posted on Canvas.
• Laptop required for Lab.
• Sign-up for exercise group on Exercises page.
• Assignments must compile and run on ENGR!
• Demos start next week (no laptop required).
• Sign-up for demo on home page, after you submit your assignment.
• Don’t be scared!!!!