CSSE 120 DAY 1

Intro to Software Development

Outline

- Roll call
- Introductions
- Introduction to course
- Hands-on Introduction to Python

Roll Call & Introductions

- Name (nickname)
- Hometown
- Local residence
- Major
- Something exciting that you did during the summer

Administrivia

- Background
- Syllabus
- Schedule
- First assignment due at start of next class
  - Note: please put your **name** in your python file
  - Otherwise, you will earn 0 points
  - Style requirements will be added as course progresses.

Exams and Break

- Mark your Calendar!
- Exam 1: Tuesday, September 23, 7:00-9:00 PM
- Exam2: Thursday, October 23, 7:00-9:00 PM
- We **will** have class on the day before Fall Break: Wednesday, October 15.
  - It will be a very important class day
  - You should be here!

Basic Definitions

- Computer
  - Device for manipulating data
  - Under control of a changeable program
- Program
  - Detailed set of instructions
  - Step by step
  - Meant to be executed by a computer

The two ends of programming

1. See the Big Picture
2. Get the Details Right

Many important programming techniques are methods of getting from #1 to #2.

Some Computer Science Questions

- What can be computed?
- How to do it efficiently?
- What is the best way to turn a mass of raw data into usable information?

What is an Algorithm?

- Step-by-step procedure for accomplishing something
- Presented at the right level of detail (and in the right language) for the one who will execute it

Algorithm Analogy -- Recipe

- Bake a cake
  - Instructions for an experienced cook
  - Instructions for a 7-year-old
  - Instructions in French

Algorithm for a very simple task

- For a student to execute.
- For a robot to execute.

Four important CS skills

- Design algorithms
- Analyze algorithms
- Evaluate algorithms
- Adapt algorithms

Human Languages vs. Programming Languages

- Ambiguous *vs.* very precise
- Syntax (form) must exactly match …
  - CaSe MAtterS
- Semantics (meaning)
- Translation
  - High-level language (Maple, Java, Python, C) to
  - Low-level language (machine language)
  - Compiler, interpreter

PYTHON: A PROGRAMMING LANGUAGE!