

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 over the break

Administrivia

- Background
- Syllabus
- Schedule
- First assignment due at start of next class

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!

