

# 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 Thanksgiving break

# 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: Thursday, December 18, 7:00-9:00 PM  
No class on December 19
- Exam2: Thursday, January 29, 7:00-9:00 PM  
No class on January 30

# 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

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

# Four important CS skills

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- 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!