COMP 200 Elements of Computer Science
COMP 130 Elements of Algorithms & Computation

John Greiner
Stephen Wong

Our Goals for You

- Become a better problem solver.
- Solve problems using Python programming.
- Have a broad understanding of what computer science is.

A person well-trained in computer science knows how to deal with algorithms: how to construct them, manipulate them, understand them, analyze them. This knowledge prepares him for much more than writing good computer programs; it is a **general purpose mental tool** which will be a definite aid to his understanding of other subjects, whether they be chemistry, linguistics, or music, etc. The reason for this may be understood in the following way: **It has often been said that a person does not *really* understand something until he can teach it to a *computer*, i.e., express it as an algorithm**. – Donald Knuth

Courses’ Structure

Organized into *modules* – motivating examples

- Emphasize examples related to social science & humanities or of current popular interest
- Introduce programming ideas as needed.

Expected Background

Programming: None

Math: High school; calculus helpful, but not req’d

Courses’ Materials

Textbook:

- None
- Required & recommended readings online

Web:

- Schedule, notes, assignments, policies, …
- www.clear.rice.edu/comp200/
- www.clear.rice.edu/comp130/

OWL-Space:

- Turn in assignments, get grades
- Separate areas for each course

Class time

COMP 200:

- MWF @ 10 in Symonds II

COMP 130:

- MWF @ 10 in Symonds II or Sewall 207
- Pay attention to schedule on web!
- Plus, one extra time slot TBD

Interleave “class” / lecture+discussion with “lab” / programming.

Attendance expected.

Next Class – Wednesday 1/11

Bring laptop to class to install Python software.

“Finger Exercises”

- Simple programming & math exercises to do on your own
- Background for class exercises
- Part of the **required** readings

Graded Work

~8-10 Assignments, not including #0 due Friday

3 Exams

1 Project (COMP 130) ?

COMP 130 work = COMP 200 work, plus more

Computational Thinking

Problem description

Abstraction

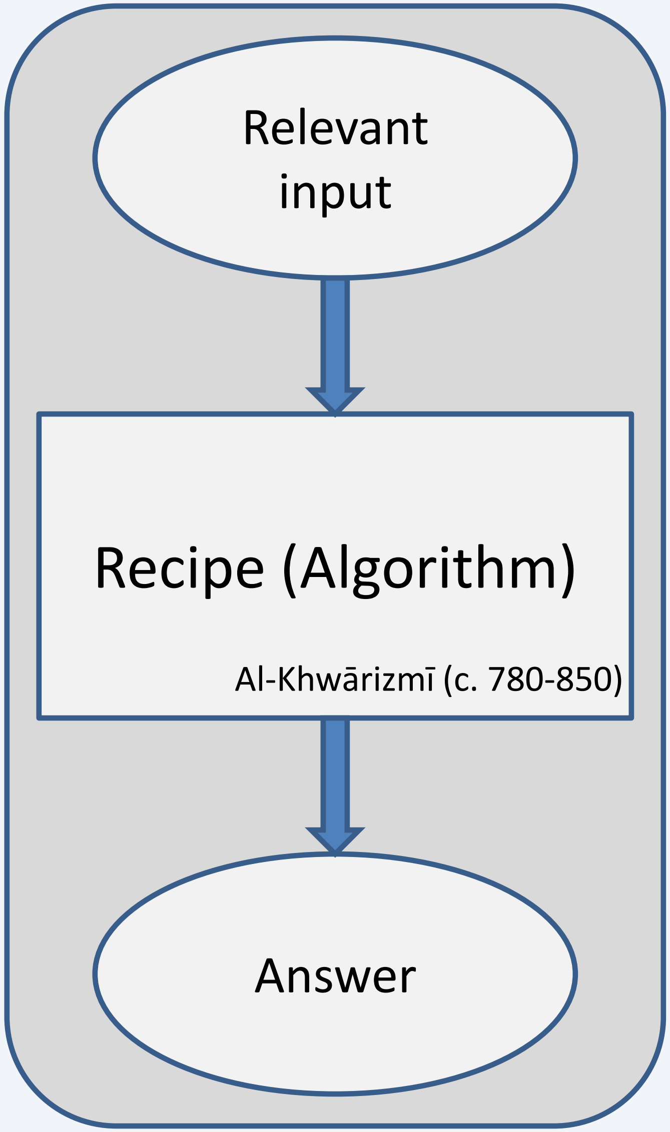
Automation

Computational goal

Information extraction

Algorithm design

Algorithm implementation



Relevant input

Recipe (Algorithm)

Al-Khwārizmī (c. 780-850)

Answer