Bowdoin

CSCI 1101B

INTRODUCTION TO COMPUTER SCIENCE

Sean Barker

Bowdoin College

Department of Computer Science

Roster

CSCI 1101 - INTRODUCTION TO COMPUTER SCIENCE

	√	Last Name	First Name	Preferred First Name	Username	Laptop? (yes/no)
1		Barker	Sean		sbarker	
2						
3						
4						
5						
6						
7						
8						

Course Web Page

- Bookmark it!
  http://www.bowdoin.edu/~sbarker/1101

Personnel and Resources

- Instructor (Section B): Sean Barker
- Email: sbarker@bowdoin.edu
- Office: Searles 220
- Interests: smart buildings, distributed systems

- Other instructors: Allen Harper (Section A),
  Clare Bates Congdon (Section C)

- TA battalion (8+)

- Piazza Q&A forum

Course Requirements
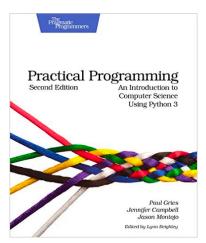
- Lab assignments (weekly)

- Projects (~4)

- Exams (3)

Other Administrivia

- Class/lab meeting times

- Textbook

- Electronic device policy

Collaboration Policy and Honor Code

- We take this <u>seriously!</u>

- Verbal collaboration is allowed on labs/projects
  - Rule of thumb: no written medium

- Sharing code in any form is <u>not</u> allowed
  - Many more details in the CSCI 1101 Collaboration Policy
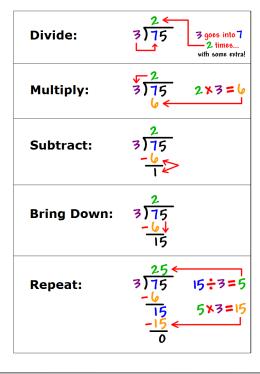
- Plagiarism detection software will be used

First question...

What is computer science?

- "Computer science is no more about computers than astronomy is about telescopes, biology is about microscopes, or chemistry is about beakers and test tubes. Science is not about tools, it is about how we use them and what we find out when we do."

  – Michael Fellows & Ian Parberry

Algorithms!

Divide:	$3\overline{)75}$ 2 3 goes into 7 2 times... with some extra!
Multiply:	$3\overline{)75}$ 2 6 $2 \times 3 = 6$
Subtract:	$3\overline{)75}$ 2 -6 1
Bring Down:	$3\overline{)75}$ 2 -6 15
Repeat:	$3\overline{)75}$ 25 -6 15 -15 0 $15 \div 3 = 5$ $5 \times 3 = 15$

Cooking an Egg

HOW TO BOIL AN EGG

1. Get saucepan
2. Make sure eggs aren't cold
3. Fill saucepan with water. Make sure water just covers egg
4. Bring water to boil. Wearing an oven glove, lower egg gently into pan with spoon
5. Gently boil for at least 4 and half minutes. For hard boiled leave for 6 to 8 minutes
6. Crack open. Cut up bread soldiers
7. ENJOY!!

An Example Algorithm

- Input: two whole numbers

- 1. Name the larger number **X**, smaller number **Y**.

- 2. Divide **X** by **Y** and name the remainder **R**.

- 3. If **R** is *not* 0, then:
  - Change **X** to be the current value of **Y**,
  - Change **Y** to be the current value of **R**,
  - Go back to step 2.

- 4. Otherwise, output **Y**.

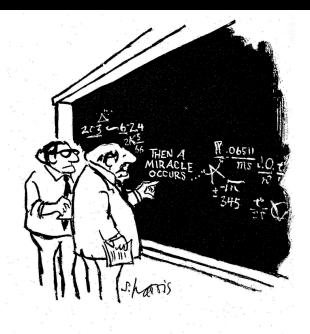| Input	Output
2, 5	1
9, 15	3
10, 5	5
8, 14	2
15, 4	1

Why Learn to Program?

Everybody in this country should learn to program a computer... because it teaches you how to think

Steve Jobs, co-founder and CEO of Apple Inc. (1955 - 2011)

Being Explicit

"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."

Programming Languages