

Introductions

CS105 : Saelee

Welcome!

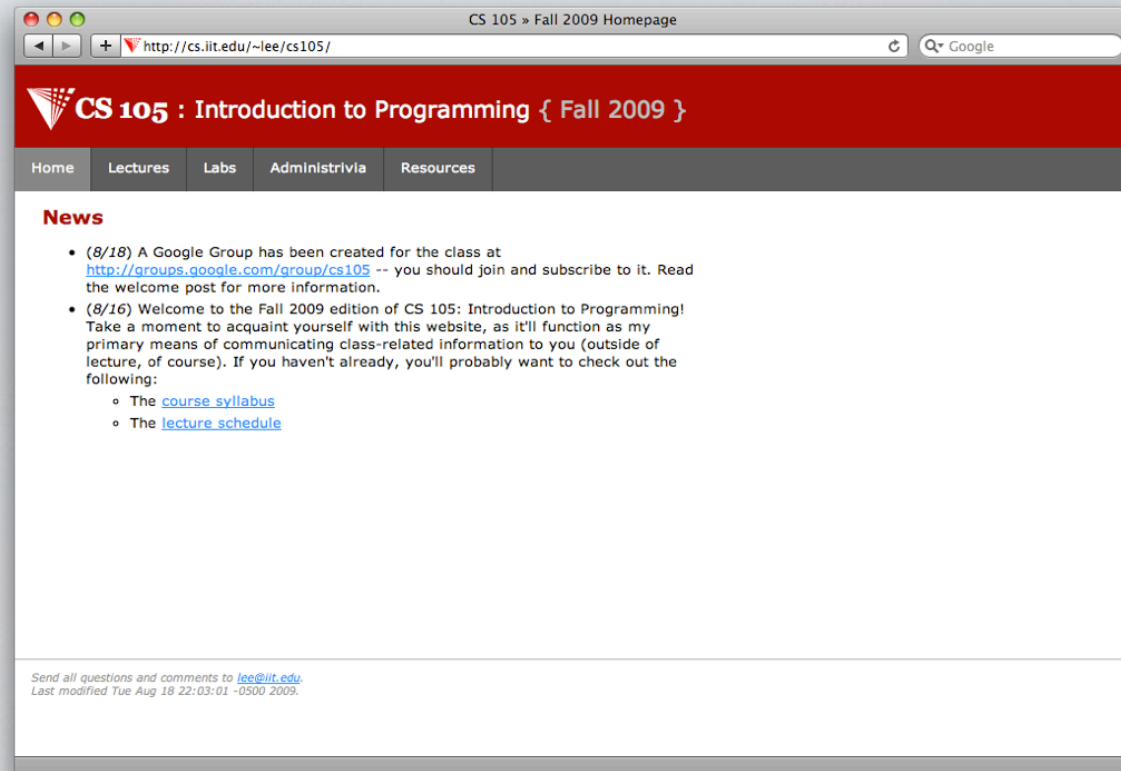
Michael Saelee

Agenda

- Syllabus
- “Computer Science”
- Intro to programming

Prerequisites

- High school level math competency
- Fluency in English



Course website

<http://cs.iit.edu/~lee/cs105>

reading (before lecture)

labs

useful links

lecture slides

Blackboard Academic Suite

http://blackboard.iit.edu/webapps/portal/frameset.jsp?tab=courses&url=/bin/col... Google

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COURSES > INTRO COMPUTER PROGRAM > ANNOUNCEMENTS

VIEW TODAY VIEW LAST 7 DAYS VIEW LAST 30 DAYS VIEW ALL

May 28, 2008 - June 04, 2008

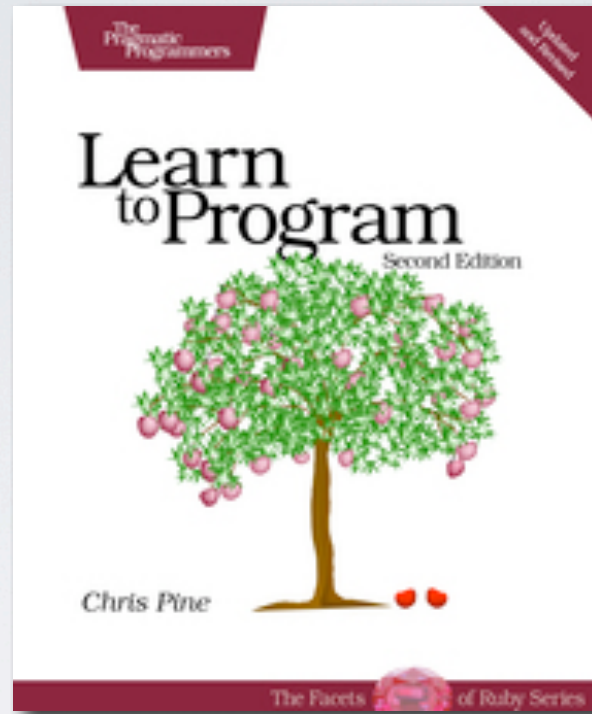
Tue, May 27, 2008 -- Registration Information Posted by Hugh Arsdale

Due to the Banner Student conversion, students will not be able to make any online registration changes from June 10 - June 23. As of June 23, you will use the new registration tools in your MyIIT portal. If changes absolutely must be made between June 10 and 23, please contact registrar@iit.edu.


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Textbook

Grading

- 35% Labs
- 15% Quizzes (lowest dropped)
- 15% Midterm exam 1
- 15% Midterm exam 2
- 20% Final exam

exams are **normalized**

Absolute Grade Scale

- A: 90-100%
- B: 80-89%
- C: 70-79%
- D: 60-69%
- E: < 60%

how it works...

reading before lecture

ask questions!

(attendance mandatory)

examples

theory

new lab every week

practicum

online quizzes

</syllabus>

Computer Science

“

Computer Science is
no more about computers
than astronomy is
about telescopes.

- E. Dijkstra

“

Computer Science is
not a science,
and its ultimate significance has
little to do with computers.

- H. Abelson & G. Sussman

what do we do?

tools

software, not hardware

2 Things

1. Teach you to **program**

2. Teach you to **think** like a
programmer

programming **language**

multilingual?

“

... it occurred to me that a **computer is a stupid machine** with the ability to do incredibly smart things, while **computer programmers are smart people** with the ability to do incredibly stupid things. They are, in short, a perfect match.

- B. Bryson

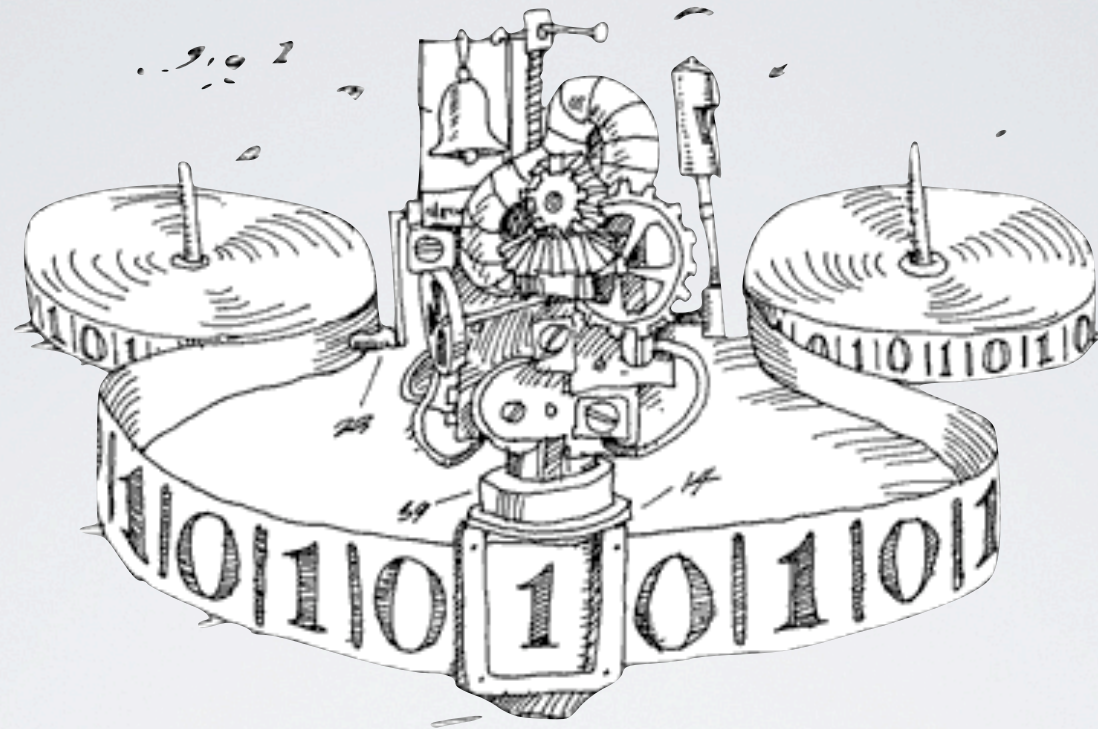
silly machine

</CS>

Programming

in the **abstract**

Turing Machine



simple setup, simple operations

anything that can be computed

Turing “Complete”

“

It can be shown that **a single special machine** of that type **can be made to do the work of all.**

It could in fact be made to work as a model of any other machine. The special machine may be called **the universal machine.**

- Alan Turing, 1947

Turing equivalent

theory vs. practice

“

In theory, there is
no difference between
theory and practice.
But in practice, **there is.**

- Yogi Berra

some languages
are better than others
(at certain tasks)

Our Language: Ruby



“

A programming language is a **tool**
that has **profound influence** on
our thinking habits.

- E. Dijkstra

relatively young (1995)

free

“natural”

Position Aug 2009	Position Aug 2008	Delta in Position	Programming Language	Ratings Aug 2009	Delta Aug 2008	Status
1	1	=	Java	19.527%	-2.04%	A
2	2	=	C	17.220%	+1.04%	A
3	4	↑	C++	10.501%	+0.44%	A
4	5	↑	PHP	9.390%	+0.04%	A
5	3	⇓	(Visual) Basic	8.486%	-2.37%	A
6	6	=	Python	4.489%	-0.49%	A
7	8	↑	C#	4.443%	+0.75%	A
8	7	↓	Perl	4.028%	-0.67%	A
9	10	↑	JavaScript	2.812%	-0.08%	A
10	9	↓	Ruby	2.490%	-0.43%	A
11	11	=	Delphi	2.337%	-0.39%	A
12	13	↑	PL/SQL	0.982%	+0.30%	A
13	14	↑	SAS	0.817%	+0.27%	A
14	27	↑↑↑↑↑↑↑↑↑↑	RPG (OS/400)	0.752%	+0.52%	A
15	26	↑↑↑↑↑↑↑↑↑↑	ABAP	0.739%	+0.51%	A
16	16	=	Pascal	0.675%	+0.26%	A-
17	12	⇓⇓⇓⇓	D	0.662%	-0.69%	B
18	17	↓	Lisp/Scheme	0.630%	+0.25%	B
19	41	↑↑↑↑↑↑↑↑↑↑	Objective-C	0.612%	+0.51%	B
20	25	↑↑↑↑↑	MATLAB	0.560%	+0.32%	B



Language Popularity

writing code

“plain” text vs. “rich” text

choosing a text editor

Features

- Minimally:
 - Search / Replace
 - Auto-indentation (more about this later)
- Nice to have:
 - Syntax highlighting
 - Macros / Templates / Autocompletion



Recommended Editors

- **OS X**

- TextEdit, TextMate, BBEdit, SubEthaEdit

- **Windows**

- TextPad, Komodo Edit, e Text Editor, SciTE, jEdit

- ***nix**

- vim, emacs, nano

a **lot of time**

efficient

</intro>