



Programming as Way of Life

Lecture 7

November 12, 2013

Agenda

- ◆ Logistics, Pre-Feedback
- ◆ Programming in the News
- ◆ Homework 5 Post-Mortem / Timeboxing
- ◆ Split Review
- ◆ Making pictures with pylab and matplotlib
- ◆ Homework 6 / Project Proposals
- ◆ Review, Post-Feedback

Logistics

- ◆ Scribe volunteers for this lecture?
- ◆ Lectures 1-3 scribe notes now posted on course calendar
 - ◆ Lecture 4-6 scribes, please contact me
- ◆ Add colinarobinson as collaborator on github
- ◆ Pre-feedback on Moodle
- ◆ Chat window

Ada Developer's Academy

- ◆ 6 month intensive web programming school for women in Seattle
- ◆ Applications now open for May 2014:
- ◆ <http://adadevelopersacademy.org/>

Bre Pettis, Evergreen '95

- ◆ http://en.wikipedia.org/wiki/Bre_Pettis
- ◆ 3D printing: programmable matter
 - ◆ technology from science fiction (The Diamond Age)
 - ◆ digital manufacturing jobs (Obama's state of the Union Address)
- ◆ <http://www.makerbot.com/>

3D Printing

- ◆ As a tool for democracy
- ◆ open source hardware
- ◆ <http://www.youtube.com/watch?v=ueSmDaZNaTc>
- ◆ <http://www.makerbot.com/blog/2013/05/07/robohand/>

Python Keywords

- and
- del
- from
- not
- while
- as
- elif
- global
- or
- with
- assert
- else
- if
- pass
- yield
- break
- except
- import
- print
- class
- exec
- in
- raise
- continue
- finally
- is
- return
- def
- for
- lambda
- try

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Important Functions

- ◆ `range()`
- ◆ `type()`
- ◆ `dir()`
- ◆ `help()`
- ◆ `len()`

Homework 5

- ◆ 12 / 56 students submitted more than Problem 1
 - ◆ 21.4%
- ◆ 11 / 56 students submitted only Problem 1
 - ◆ 19.6%
- ◆ 33 / 56 students did not submit Problem 1 (or anything)
 - ◆ 58.9%

Timeboxing

- ◆ What is the point?
- ◆ You may not know how difficult something is beforehand.
- ◆ It may feel unsatisfying. You have to make your own rewards.
- ◆ Commit incremental results. If you can't solve the problem asked, or don't even know what it is, make up your own problem and solve that.

Split Review (Advanced)

- ◆ Improve the sorting algorithm from last time https://github.com/ppham/csf/blob/master/lectures/list_sort.py
 - ◆ to use only two parameters in compareAndSwap()
 - ◆ to run in a shorter time
- ◆ import time; d = time.time(); time.time() - d
- ◆ No talking! (Sorry, it's too distracting). Work on paper if necessary.

Split Review (Beginner)

- ◆ <https://github.com/ppham/csf-test/blob/master/homework5/tests.py#L31>
- ◆ <https://github.com/ppham/csf-test/blob/master/homework5/election.py#L32>
- ◆ CHAT WINDOW
 - ◆ Can you identify what concepts you would need in order to solve this problem?
 - ◆ Can you describe in English words what you want to do, even if you can't write the Python code for it?

Possible Concepts

- ◆ assert statement
- ◆ pass statement
- ◆ dictionary appearance
- ◆ iterating over a list
- ◆ indexing a list
- ◆ creating key-value pairs in a dictionary (indexing)
- ◆ inferring a data structure from its usage

Plotting Graphs

- ◆ http://matplotlib.org/users/pyplot_tutorial.html
- ◆ [https://github.com/ppham/csf/blob/master/lectures/
plot big o.py](https://github.com/ppham/csf/blob/master/lectures/plot_big_o.py)

Homework 6

- ◆ Group homework, in teams of two or three
- ◆ Check your e-mails for assignment
- ◆ If you did NOT receive an e-mail, see me in person
- ◆ One person has done more than Problem 1
- ◆ As a group, you will identify concepts and write 5 problems
- ◆ You will exchange problems with another group and solve them.

Homework 6

- ◆ 7 hour timebox, suggested division of effort:
 - ◆ 1 hour catching up on issues / hw5 release
 - ◆ 3 hours identifying concepts and writing problems
 - ◆ 3 hours solving other group's problems
- ◆ All members of a group get credit, or none of them do
- ◆ <http://psi.sagepub.com/content/14/1/4.full.pdf+html?ijkey=Z10jaVH/60XQM&keytype=ref&siteid=sppsi>

Homework 6

- ◆ Due by this Friday, 11/18, 5pm

Project Proposals

- ◆ Examples and suggestions here:
 - ◆ <http://ada.evergreen.edu/csf/python13f/web/projects.html>
- ◆ You still have to do Homework 5 & 6.
- ◆ Write a proposal.txt, commit it, e-mail me and Colin
 - ◆ phamp@evergreen.edu, robcoll15@evergreen.edu
- ◆ Project Proposals are to substitute for Homeworks 7-9.

Review

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