Computing in Ling571

Scott Farrar
CLMA, University of Washington
farrar@uw.edu

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Today’s lecture

1. Languages
   - Resources
   - Python cmds, etc

2. The NLTK
   - Intro
   - Using the NLTK

3. Class Discussion and Assignments
   - GoPost
   - Patas
   - Condor
   - Assignments
   - CollectIt
You can use any language you like for assignments, well sort of.

Some require the NLTK and certain Java packages.
Choice of Programming Language

You can use any language you like for assignments, well sort of.

Some require the NLTK and certain Java packages.
Focus on Python

For the lecture, I’ll focus on Python because the first assignment requires it.

You should get used to using the NLTK as well. More later on the NLTK.
Main resources

- Python hub: http://www.python.org. start here
- Python 2.6 Docs: http://docs.python.org/
- A general Python code repository, including NLP code: http://www.vex.net/parnassus/
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Books

- Lutz & Ascher *Learning Python* O’Reilly. *(beginner)*
- Chun *Core Python Programming* Prentice Hall. *(beginner/intermediate)*
- Martelli *Python in a Nutshell* O’Reilly. *(beginner/intermediate)*
- Beazley *Python Essential Reference* Developer’s Library, 4th edition. *(intermediate)*
- Goldwasser & Letscher *Object-Oriented Programming in Python*. *(advanced)*

See this list for other (and multilingual) recommendations: http://wiki.python.org/moin/PythonBooks
Python tutorials

- For the simplest kind of tutorial for non-programmers, see http://programming-crash-course.com/
- For linguists, you might start first with the Natural Language Took Kit: http://www.nltk.org.
- For programmers, see the tutorials that already assume prior CS knowledge: http://docs.python.org/tutorial/index.html http://www.diveintopython.org/.
Scenario for Ling571

What’s the best way to tinker with the code, and to do an assignment?

- Have the API documentation open.
- Do a Web search to solve specific issues.
- Work through a tutorial or book.
- Test short code snippets using ‘interactive’ mode.
- For longer programs, use your favorite editor to create .py files and execute the interpreter over that file.
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Handy template

sample.py

#write your test code here
def myfunc(x):
    print x*2

if __name__=='__main__':
    #call test code from here
    myfunc('moin')
Python in Vim and Emacs

Program Vim or Emacs to execute the code. For example for Vim, add this to `.vimrc` on Patas:

```
map <f2> :w\|!python2.6 %<cr>
```

For Emacs, see http://www.emacswiki.org/emacs/PythonMode
**dir(...)** Returns a list of names comprising the attributes of a given object:

```python
>>> dir(nltk.chat)
['Chat', '__builtins__', '__doc__', '__file__', '__name__', '__path__',
 'demo', 'eliza', 'eliza_chat', 'iesha',
 'iesha_chat', 'random', 're', 'reflections',
 'rude', 'rude_chat', 'string', 'suntsu',
 'suntsu_chat', 'util', 'zen', 'zen_chat']
```
**help(...):** a built function to show documentation for some object:

```python
>> help(nltk.chat.rude)
```

Help on module nltk.chat.rude in nltk.chat:

NAME
nltk.chat.rude

FILE
/usr/lib/python2.5/site-packages/nltk/chat/rude.py

DESCRIPTION
# Natural Language Toolkit: Zen Chatbot
#
# Copyright (C) 2001-2008 NLTK Project
# Author: Peter Spiller <pspiller@csse.unimelb.edu.au>
# URL: <http://www.nltk.org/>
# For license information, see LICENSE.TXT
Many versions of Python on Patas

- Be sure to use `python2.6` to execute your code
- By default, `$ python` runs Python2.5
- Python versions are installed in `/opt`
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The NLTK is a bundle of NLP modules, mostly designed for learning computational linguistics:

- parsers
- taggers
- corpus readers
- evaluation modules
- semantic processors
- chatbots

The NLTK comes with copious documentation, demos, tutorials and data.

It’s *all* integrated (demos, code and data).

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- Only use links from www.nltk.org (some old stuff lying around in other sites)
- Go to: http://www.nltk.org/documentation
- The NLTK Book: use this for specific reading assignments (linked from the on-line course schedule).
- API Doc: to see source code and the API
- HOWTOs: go here when the Book and API aren’t enough (can be out of date)
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* cp specific data sets to your home to inspect, or import with the NLTK and use API.
**NLTK on Patas**

- The NLTK is usable with your Patas acct
- test this with:

```
farrar@patas:~$ python2.5
Python 2.5.2 (r252:60911, Dec 4 2008, 14:21:22)
Type "help", "copyright", "credits" or "license"
for more information.
>>> import nltk
``` 

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GoPost discussion

- Please use GoPost for after-hours class discussions. Steve or I will try our best to get back to within a day. (Don’t expect us to spend our evenings stalking you on GoPost.)
- Send specific questions about your grade to Scott.
- Use GoPost for: coding issues, specific NLP questions, homework questions.
- Post useful code to GoPost (not your whole assignment, but parts are fine). A good example is code that gets around a bug in the NLTK.
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  - See the CLMA Wiki for more info.
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Homeworks and Condor

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- You are asked to submit a Condor script with each assignment.
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How to organize homeworks

- Create a top-level folder called `hw1` to contain your work. At the top level in that folder, create a Condor script called `hw1.cmd`. Include all other files within that directory, or in a subdirectory of your choosing.

- For more involved assignments, this will give you flexibility in design while allowing us to run everyone’s code in the same way, that is, by issuing a single command, `condor_submit hw1.cmd`. 

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- We’ll be using the CollectIt system for assignments.
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