



# Lecture 10: Bash Shell, Command Line

LING 1340/2340: Data Science for Linguists

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# Objectives

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- ▶ Finally, Bash shell
- ▶ Running things in command line
- ▶ Interacting with text files in command line

# Bash shell

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- ▶ What is a "shell"?
  - ◆ [https://en.wikipedia.org/wiki/Shell\\_\(computing\)](https://en.wikipedia.org/wiki/Shell_(computing))
  - ◆ Usually refers to the command-line interface (CLI) as opposed to graphical user interface (GUI).
  - ◆ **Bash** is the most common flavor of shell in Unix-like OS.
- ▶ Mac users
  - ◆ Mac OS is a Unix-type OS.
  - ◆ **Terminal** is a built-in shell, operates on Bash.
- ▶ Windows users
  - ◆ We installed "**git bash**": a bash environment for running command-line git.
  - ◆ As a bonus, it came with pretty much all of **popular Unix command-line tools**!

# Resources

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## ▶ Learning resources section:

- ◆ <http://www.pitt.edu/~naraehan/ling1340/resources.html#bash>
- ◆ Software Carpentry, The Unix Shell:
  - ◆ <http://swcarpentry.github.io/shell-novice/>
- ◆ Thirty Useful Unix Commands:
  - ◆ <http://www.maths.manchester.ac.uk/~pjohnson/resources/unixShort/examples-commands.pdf>
  - ◆ Ones you do not need:
    - compress, finger, lpr, talk
    - (Windows) "more" is not supported. Use "less" instead.

# Shell introduction, navigating

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- ▶ Introducing the shell
  - ◆ <http://swcarpentry.github.io/shell-novice/01-intro/>
- ▶ Navigating & working with files and directories
  - ◆ <http://swcarpentry.github.io/shell-novice/02-filedir/>
  - ◆ <http://swcarpentry.github.io/shell-novice/03-create/>
- ▶ We've been doing some of these already, as part of our git routine. You should know:
  - ◆ `.` `..` `~`
  - ◆ `pwd`
  - ◆ `cd`
  - ◆ `ls`
  - ◆ Command-line history with **▲** and **▼**
  - ◆ Using TAB for file name completion
  - ◆ Using Control+C to quit

# Settling in, customizing

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- ▶ You can customize your shell.
  - ◆ `.bashrc`
  - ◆ `.bash_profile`
  - ← These files store your customization.
- ▶ In your **home directory**:
  - ◆ `your_editor .bash_profile &`
  - ◆ After adding entries or editing, you should either log back in, or execute `source .bash_profile`.
- ▶ Aliasing is the most common customization method:
  - `alias calc='/c/windows/system32/calc.exe'`
  - `alias ls='ls -hF --color=tty'`
  - ← Your favorite shortcuts and command-line options

# PATH, which, where

- ▶ We have been occasionally using `pip` to install Python libraries. Where is this `pip`? Which `pip` are you using?

```
MINGW64:/c/Users/narae

narae@T450s MINGW64 ~
$ which pip
/c/ProgramData/Anaconda3/Scripts/pip

narae@T450s MINGW64 ~
$ which pip3
/c/Program Files (x86)/Python35-32/Scripts/pip3

narae@T450s MINGW64 ~
$ which -a pip
/c/ProgramData/Anaconda3/Scripts/pip
/c/Program Files (x86)/Python35-32/Scripts/pip

narae@T450s MINGW64 ~
$ echo $PATH
/c/Users/narae/bin:/mingw64/bin:/usr/local/bin:/usr/bin:/bin:/mingw64/bin:/usr/b
in:/c/Users/narae/bin:/c/WINDOWS/system32:/c/WINDOWS:/c/WINDOWS/System32/wbem:/c
/WINDOWS/System32/WindowsPowerShell/v1.0:/c/ProgramData/Oracle/Java/javapath:/c/
Program Files (x86)/PDFtk Server/bin:/c/Program Files (x86)/Windows Live/Shared:
/c/Program Files (x86)/Skype/Phone:/c/ProgramData/Anaconda3:/c/ProgramData/Anaco
nda3/Scripts:/c/ProgramData/Anaconda3/Library/bin:/c/Program Files (x86)/Pandoc:
/c/Program Files/Intel/WiFi/bin:/c/Program Files/Common Files/Intel/WirelessComm
on:/c/Program Files (x86)/Windows Kits/8.1/Windows Performance Toolkit:/c/Progra
m Files (x86)/Python35-32:/c/Program Files (x86)/Python35-32/Scripts:/c/Users/na
rae/AppData/Local/Microsoft/WindowsApps:/c/Program Files/Intel/WiFi/bin:/c/Progr
am Files/Common Files/Intel/WirelessCommon:/c/Users/narae/AppData/Local/atom/bin
:/usr/bin/vendor_perl:/usr/bin/core_perl
```

*1st hit in PATH*

# Wrapping up

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- ▶ Project 2<sup>st</sup> report due on Thursday.
  - ◆ 20 (data) - 10 (analysis) - 10 (presentation).
  - ◆ You should be done with data acquisition. Data processing + reorganization should also be mostly done.
  - ◆ Make an attempt at analysis.
  - ◆ Details posted on the Project Guidelines page.
  
- ▶ Practice Unix tools and bash shell!