06 - Intro to {Scripting,Customizing,Text Editors}

CS 2043: Unix Tools and Scripting, Spring 2016 [1]

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Cornell University

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- (poll) The `assignments` repository on GitHub.

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- Drop deadline is Wednesday 2/10/2016.

Scripting

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What is a Script?

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  - E.g. you are using a `bash` shell, and could execute a `bash` script and be safe.
- You should *always* include the shebang.
- If you are executing using a non-standard program, just include the executable name.
  - Other users may have installed this elsewhere.
- With the shebang, I don't have to do `python script.py`, I can just do `./script.py`.

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- This is just like Python, for those of you who know it already.
- Bad code inside an `if` statement?
    - You may only realize it when that `if` statement executes.

- Use the shebang:
  `#!/bin/bash`

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#! /bin/bash
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# declare some variables
NAME="Sven Nevs"
MSK_ID=`id -u`
#
# A simple if statement
if [[ $MSK_ID -eq 0 ]]; then
    echo "Executing as root."
else
    echo "Executing as normal user."
fi
#
# A simple string concat
# Note the $ works regardless
echo "You are: $NAME"
#
# A simple for loop using a {} range
for n in {1..11}; do
    echo $n
done
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# recall that $ needs to be escaped
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Bash Scripting

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- If statements and loops.
- NEVER use aliases in bash scripts. EVER.

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- Not a `#` commentable language?
  - Official answer: just don't use a shebang.
  - Unofficial answer: technically it doesn't matter, since the shebang is a hack on the first 8 bits, but this would render the file useless except for when it is executed by a shell.

Text Editors

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- Allows you to edit things *quickly*, after the initial learning curve.

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  - l to go right.
- With that in mind, the true VIM folk usually map left caps-lock to be **ESCAPE**.

Useful Commands

`:help`	help menu, e.g. specify `:help v`
`:u`	undo
`:q`	exit
`:q!`	exit without saving
`:e [filename]`	open a different file
`:syntax [on/off]`	enable / disable syntax highlighting
`:set number`	turn line numbering on
`:set spell`	turn spell checking on
`:sp`	split screen horizontally
`:vsp`	split screen vertically
`<ctrl+w> <w>`	rotate between split regions
`:w`	save file
`:wq`	save file and exit
`<shift>+<z><z>`	hold shift and hit `z` twice: alias for `:wq`

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- You can then begin learning the commands, keeping your cheat-sheet[4] handy.
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  - Start with lesson 1. When you are ready for more, continue forward.

Customizing

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- Try changing your **$PS1** using `export` right now to see how you can modify it.
- Play with colors after, since they are tedious to type in the format needed.

Creating Aliases

`alias <new-name> <old-name>`

- Used to create alternative ways of entering things, usually commands.
- e.g. `alias ..="cd .."` means you can just type `..` to go up one directory.
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- Usually stored in the `~/.bashrc` file, though `~/.bash_aliases` is slowly gaining traction.

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alias <new-name> <old-name>
```

- Used to create alternative ways of entering things, usually commands.
- e.g. `alias ..="cd .."` means you can just type `..` to go up one directory.
- Think of it as copy-pasting. You type `new-name` and your terminal pastes `old-name`.
- Should not ever be used in scripts.

- Usually stored in the `~/.bashrc` file, though `~/.bash_aliases` is slowly gaining traction.
- Make your own!

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- You should source your `bash_profile` from your `profile`, and you should source your `bashrc` from your `bash_profile`.

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- Open your text editor and make the changes you want to see. Flip back to your terminal.
- To reload changes immediately, use the `source` command (e.g. `source ~/.bashrc`).
    - The `bashrc` is reloaded when you open a new terminal.
    - The `profile` (and therefore `bash_profile`) is reloaded when you *log in*.
- You *can* `source` the `bash_profile`, but that will only affect the current terminal. In order for all new terminals to get it, you need to log out and log back in.

Customize!!!

Follow the instructions in today's lecture demo:
https://github.com/cs2043-sp16/lecture-demos/tree/master/lec06

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