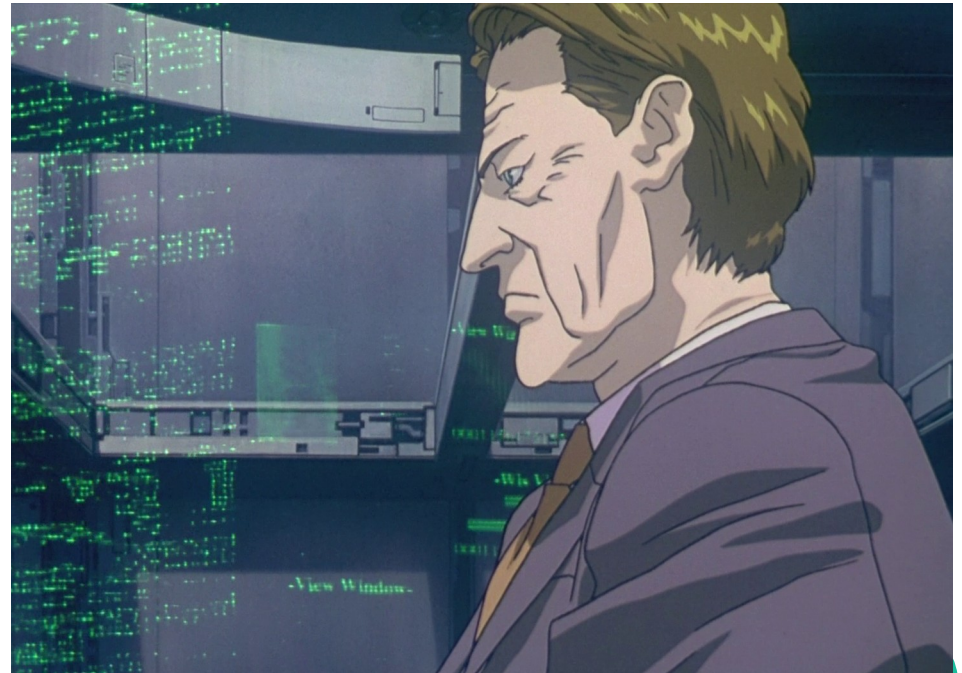


SIG Linux

April 27, 2018

The Shell

- **Program that interprets commands**
- **Provides a CLI**
- **Command Prompt**
- **Terminal**



Shell scripting

- **Series of commands writing in plain text file**
- **Similar to a .bat file on Windows but better**
- **Permissions**
 - 755
- **Use shebang line to invoke shell**
- **Different shells:**
 - <https://stackoverflow.com/a/31801862>



Why use Shell Scripts

- **Automate tasks**
- **Save times**
- **Create your own commands**
- **SysAdmin**



BASH

- **Created 28 years ago**
- **Part of the GNU project**
- **Available on most platforms**
- **Cool features like pattern matching, globbing,**

```
#!/bin/bash
```

```
~root: env X="() { :; } ; echo shellshock" /bin/sh -c "echo completed"  
> shellshock  
> completed
```



ZSH

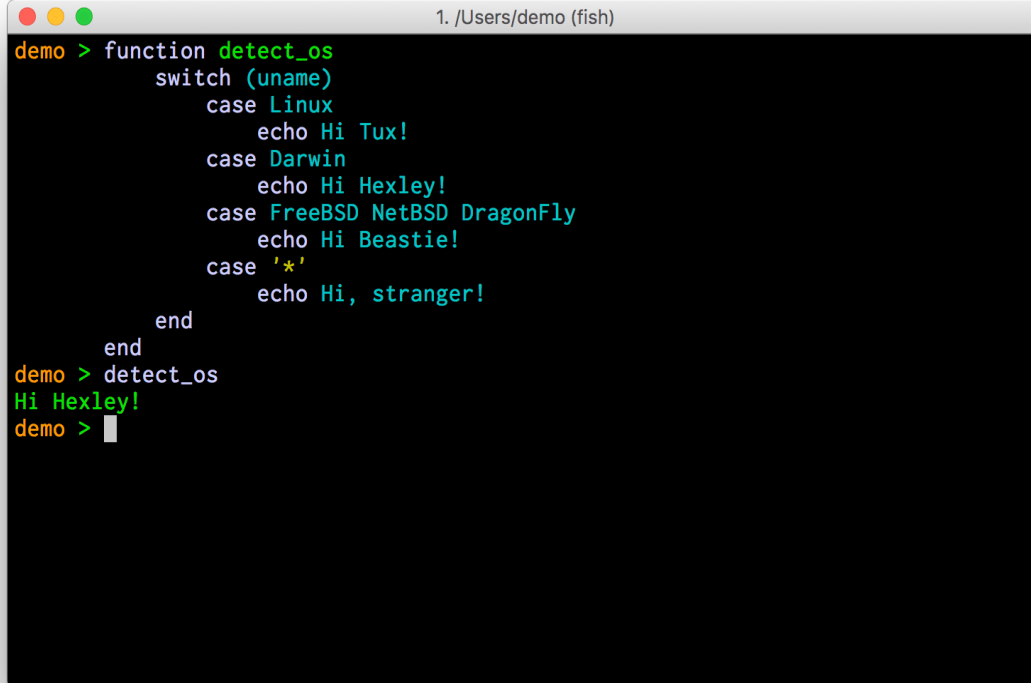
- More advanced tab completion features
- Autocompletion is like a dropdown
- Oh-my-szh is pretty cool

```
~ > cd testproject
~/testproject > master gco detached-head-state -q
~/testproject > fdffaf6 touch dirty-working-directory
~/testproject > fdffaf6± cd
~ > ssh milly
Welcome to Ubuntu 11.04 (GNU/Linux 2.6.18-308.8.2.el5.028stab101.1 x86_64)
Last login: Wed Sep 26 03:42:49 2012 from 71-215-222-90.mpls.qwest.net
agnoster@milly > ~
Connection to milly.agnoster.net closed.
~ > sudo -s
Password:
$ root@Arya > ~ top &
[1] 34523
[1] + 34523 suspended (tty output) top
$ root@Arya > ~ rm no-such-file
rm: no-such-file: No such file or directory
$ root@Arya > ~ kill %%
[1] + 34523 terminated top
$ root@Arya > ~
~ > |
```



Fish

- **User friendly shell**
- **Man page completions**
- **Web based configuration**
- **Reads more like Python than C**



```
1. /Users/demo (fish)
demo > function detect_os
  switch (uname)
  case Linux
    echo Hi Tux!
  case Darwin
    echo Hi Hexley!
  case FreeBSD NetBSD DragonFly
    echo Hi Beastie!
  case '*'
    echo Hi, stranger!
  end
end
demo > detect_os
Hi Hexley!
demo > |
```



Alternative to shell scripts

- **Python**
- **Go tools**
- **Perl**
- **C/C**



BASH aliases

- **Keyboard shortcuts or abbreviation for commands**
- **Very useful if you repeatedly run a command with multiple arguments**



Bashrc

- **It's a file that stores your BASH settings**
- **Make aliases permanent by storing them here**
- **Set environment variables**
- **Add directories to PATH**



Shell script

- **Learn the basics of shell script here:**
- **<https://www.shellscript.sh/>**
- **Variables**
- **Functions**
- **Loops**

