


Beyond the GUI - Working with the bash Shell



Week 5
Data Science Workshop for
NGA LTER REU Students



Review of Last Week

1. Tour of data archives
2. Data Citations
3. Persistent digital object identifiers (DOIs)

Goals for Today

- Introducing the bash shell
- Interactive lesson working with files and directories
- Brief overview of other things you might like to try on your own
 - Combining commands
 - Loops
 - Scripts
 - Finding things

Some definitions:

- Shell: outermost layer around the operating system
 - Computer program
 - Allows humans to interact with the computer
- GUI: Graphical User Interface
 - Menus
 - Point and click
- CLI: Command Line Interface
 - Commands to the computer as lines of text
- bash: a UNIX CLI shell
 - Specific syntax for commands
 - Allows scripting
 - zsh is different shell now default in later MacOS computers

Back in the old days ...



Advantages

- Originated with UNIX/LINUX computers
 - Used by supercomputers
 - UNIX-y tools like git developed in CLI environment
- Remote computer via ssh
 - Don't have to mirror screen
- Repetitive tasks

Let's try it out.

What did we do?

- ls : list
- cd : change directory
- mkdir : make a new directory
- nano : text editor
- cat : print contents of a file to the screen
- mv : move a file or directory
- cp : copy a file or directory
- rm : remove a file

What could we do?

- Pipes and Filters : combine commands to do new things
- Loops : perform the same actions on many different files
- Shell Scripts : save and re-use commands
- Find files
- Find things in files

<http://swcarpentry.github.io/shell-novice/>

Finish-up

- Assignment #5 on GitHub - [Install git](#)
- Next week we will be at a this Zoom Link again