**Lesson 16 – Command Line Summary**

The big ideas behind Unix-like systems:

* Everything is text!
* There are many simple tools that do **one thing** very well.
* Many commands are 2-letter acronyms (e.g, cd, ls, mv, rm) because the designers did not like to type.
* All tools read from stdin and write to stdout and stderr. (File descriptors 0, 1, and 2, respectively)
* A *pipe* connects the stdout of one process to the stdin of another process.
* The tools are easily chained together to create an infinite number of possible work flows.
* Each tool is highly configurable using optional command line flags (e.g. –a, -type f, -o abc.txt)
* The tools can be executed on multiple files using a single command.

Reasons why the command line is intimidating (and how to overcome the intimidation):

* *"I've always used a graphical user interface (GUI) and I don't see any need to change."*
  + If you want to be a "power user" you must learn the command line.
  + The command line, once learned, makes your IT problem solving easier.
* *A GUI gives you visual cues on what is possible. A command line gives you no cues at all.*
  + Every command will print help information if given the –h or –-help option.
  + man cmd will give you a full description of a command.
  + info cmd will give you a more comprehensive description broken into sections and hyperlinked.
  + man -k topic will give you a list of commands related to a particular topic.
* *The command names are abbreviations and hard to remember.* (e.g., cd, ls, mv, rm)
  + Memorize what a command name stand for. E.g., cd stands for "change directory"
  + Keep a "cheat sheet" by your side at all times.
* *Each tool is highly configurable and it is hard to remember how a particular tool changes for each option.*
  + Keep a "cheat sheet" by your side at all times.
  + Create aliases in your .bashrc configuration file for things you want to remember and add comments so you don't have to remember the details.
* *"I'm afraid I will change my computer in ways that are unrecoverable."*
  + This is a valid concern. You have to be careful with the command line. (E.g. rm –r /\* will delete every file on your hard drive and there is no "trash" directory to get them back.)
  + For command lines that filter data, don't re-direct the output to the disk until you have verified that your command is doing what you expect.
  + Always make a copy of configuration files before you change them.  
    (E.g., cp .bashrc .bashrc.save before editing your .bashrc file.)

Examples:

* ls -la --sort=size | tr -s ' ' | cut -d ' ' -f 5,9
* ls -la --sort=size | tr -s ' ' | cut -d ' ' -f 5,9-

Check out: https://www.quora.com/What-are-some-useful-bash\_profile-and-bashrc-tips