

## **SHELL REFERENCE SHEET**

Compiled by Kathy Chung, Feb 2017, for TPL Software Carpentry Workshop, with thanks to the SWC Shell Reference page <<https://swcarpentry.github.io/shell-novice/reference/>>

### **Syntax**

`command -option argument`

- Options (or flags) modify the behaviour of a command. They are usually prefaced by a hyphen. Many commands allow multiple options to be strung together. Many versions of unix allow for “long options” in the format of two hyphens followed by a word (rather than a hyphen followed by a letter).
- Arguments are things (often files) which the command acts upon.

### **Pathname Syntax**

- absolute pathname      Begins from root directory. E.g. /c/User/kathy/libcarp/rawdata
- relative pathname      Begins from your current working directory.

### **Navigation**

- “\$”                      The command prompt
- `whoami`                Print user’s current identity
- `pwd`                    Print working directory
- `cd`                     Change directory, by itself will take you to your home directory
- `/`                        Root directory
- `~`                        Home directory
- `..`                      Parent directory (directory one level above current directory)
- `.`                        Current working directory

### **Exploring Files and Directories**

#### **Looking at Directory Contents**

- `ls`                      List files
- `ls -l`                   Long form display
- `ls -a`                   All, show hidden files
- `ls -F`                   Flag, indicate which are directories, files, symbolic links (shortcuts)
- `ls -aF`                  You can combine options/flags
- `ls -lh`                  Long form, human readable units

#### **Determining File Types**

- `file Somedatafile` Returns information about what type of file Somedatafile is.

## Basic File and Directory Manipulation

- `mkdir path` Make directory
- `rm path` Remove directory. Caution: the shell has no undelete.
- `rm -i path` Remove using interactive mode. Asks permission before action.
- `touch filename` Creates empty file with given name
- `cp source target` Copy file or directory. Caution: will overwrite target of same name.
- `cp -i source target` Copy using interactive mode.
- `mv old new` Move/Rename file or directory

## Redirection, Pipes, and Filters

- `first | second` Pipe out put of first command as input of second command
- `> file` Direct command's output into a file
- `>> file` Append command's output to file
- `wc` Count lines, words, characters of input
- `cat file1` Concatenate. Print file1 to screen.
- `cat file1 file2` Append file2 to file1 and print.
- `less` Pager function. Print file to screen.
- `head` Print first few lines (default number is 10).
- `tail` Print last few lines (default number is 10).
- `sort` Sort the input.
- `uniq` Report or omit repeated lines. Often used in conjunction with sort command.

## Finding Things

- `find` Finds files with specific properties that match patterns.
- `grep` General Regular Expression Print (finds lines containing specific patterns)
- `-- help` A flag in many bash commands to show information on how to use the command
- `man command` Shows the manual page for a given command. Is not available

## Other References:

SWC Shell Reference <https://swcarpentry.github.io/shell-novice/reference/>  
SWC Shell Lesson <https://swcarpentry.github.io/shell-novice/>  
Shotts, William E., Jr. *The Linux Command Line*. San Francisco: No Starch Press, 2012.