**Shell**

* pwd: Show current directory
  + Syntax: pwd
* ls: list the contents of the current directory
  + Syntax:
    - ls (lists contents of current directory)
    - ls . (lists contents of current directory)
    - ls .. (lists contents of parent directory)
    - ls ~ (lists contents of home directory)
    - ls ~user (lists contents of user’s home directory)
    - ls / (lists contents of root directory)
    - ls -l (list of details | long listing format)
    - ls -a (shows hidden files as well)
    - ls -h (show human readable format)
    - ls -R (print all files recursively)
    - ls -S (sort by size in decreasing order)
    - ls -la (list of details including hidden files)
    - ls <directory\_name> (lists contents of the directory)
    - ls <dir\_name1> <dir\_name2> <dir\_name3> (lists contents of all directory)
* chmod: change permissions
  + Syntax:
    - chmod <who>=<mode> <file>
    - chmod <who>+<mode> <file>
    - chmod <who>-<mode> <file>
    - chmod <num><num><num> <file>
      * Leftmost bit is the read bit: 0 or 4
      * Middle bit is the write bit: 0 or 2
      * Rightmost bit is execute bit: 0 or 1
  + Only owner of file or superuser can run it
* less: only see contents of the file
  + Syntax: less <filename>
* more: see contents of the file
  + Syntax: more <filename>
* touch: make a file
  + Syntax: touch <filename>
* mkdir: make a directory
  + Syntax: mkdir <directory\_name>
* rmdir: remove a directory
  + Syntax: mkdir <directory\_name>
* cd: change directory
  + Syntax:
    - cd <path>
    - cd .. (Parent directory)
    - cd ~ (Home directory)
    - cd <dir\_name> (Change directory to sub-directory
    - cd ~user (change to user’s home directory)
* vi: launch vi text editor to create/edit a file
  + Syntax: vi
* nano: read and write a file from the terminal
  + Syntax : nano <filename>
* cp: copy a file
  + Syntax:
    - cp <src\_file1> <src\_file2> <src\_file3> <dest\_dir> (Copies src files to dest\_dir)
    - cd <path>/\* . (Copies all files in path into current directory)
    - cp ~user/\* ~ (Copies files in user’s home to the current user’s home)
    - cp <file1> <file2> .. (Copies the files into parent directory)
* mv: move or rename a file
  + Syntax:
    - mv <src\_file> <dest\_file> (Rename src\_file to dest\_file)
    - mv <src\_file> <dest\_dir> (Move src\_file to dest\_dir)
    - mv <src\_file1> <src\_file2> <src\_file3> <dest\_dir> (Move src files to dest\_dir)
* rm: remove a file
  + Syntax:
    - rm <file> (Remove the file)
    - rm -f (Remove the file forcefully)
    - rm -fi (Remove file forcefully but with prompt)
    - rm -if (Same as rm -f)
    - rm -R (delete the folder and the files within)
* man: display a manual of all the commands
  + Syntax:
    - Man <command\_name> (displays the manual page for command)
* cal: calendar of the current month
  + Syntax:
    - cal (Calendar for the current month)
    - cal2019 (Display the calendar of 2019)
* scp: securely copy the file
  + Syntax:
    - scp <file> <dir\_name> (Securely copy the file to the directory)
* wc: print # of newlines, words, and bytes in the file
* gzip: compress file using gnu zip
  + Syntax:
    - gzip <filename> (produces <filename>.gz)
* gunzip: decompresses the file
  + Syntax:
    - gunzip <filename> (decompresses the file)
* \* : Wildcard
  + Syntax:
    - \* (all content)
    - \*.\* (all content with dot in their names)
    - \*-\* (all content with dash in their names)
    - \*.py (all Python source files | all content that ends with .py)
    - \*~ (all content that ends with ~)
* head: displays the first few lines of a file
  + Syntax:
    - head <file> (shows first 10 lines of the <file>)
    - head -n<num> <file> (Shows the first <num> lines of text in <file>)
    - head -c <num> <file> (Shows the first <num> bytes of text in <file>)
    - head <myFile> <yourFile> <ourFile> (Prints first 10 lines of all 3 files)
    - head - -help (displays brief usage description and command line options)
* tail: displays the last few lines of a file
  + Syntax:
    - tail <file> (shows last 10 lines of the <file>)
    - tail -n <num> <file> (Shows the last <num> lines of text in <file>)
    - tail -c <num> <file> (Shows the last <num> bytes of text in <file>)
    - tail <myFile> <yourFile> <ourFile> (Prints last 10 lines of all 3 files)
    - tail - -help (displays brief usage description and command line options)
* Redirection:
  + Syntax:
    - < : connects a command’s STDIN to the content of a file instead
    - > : redirects STDOUT to replace an output file’s existing content
    - >> : redirect STDOUT and append to a file
    - >& :redirects both STDOUT and STDERR to the same place
    - 2> :redirects STDERR only
* Pipes:
  + Syntax: command A | Command B
* find: locates a file within a given directory
  + Syntax:
    - find <start\_directory> <criteria>
* grep: searches for a specific patter within a file or a list of files
  + Syntax:
    - Grep <pattern> <file1> <file2>
* sort: sorts the contents of a file into alphabetical or numerical order
  + Syntax:
    - sort <filename>
    - sort -r <filename> (Sorts in reverse)
* cat: displays the contents to STDOUT
  + Syntax:
    - cat <file> (displays contents of file)
    - cat > <file> (creates <file> and writes STDIN to <file>)
    - cat <file1> > <file2> (Copies content of file1 to file2)
    - cat <file1> >> <file2> (appends content of file1 to file2)
* ps: displays processes started by the user
  + Syntax:
    - ps (shows processes started by the user)
    - ps e (lists all processes running on the system)
    - ps u (lists user’s processes running in user format)
    - ps x (lists processes currently executing)
    - ps ax (lists all processes currently executing)
    - ps wx (lists user’s processes currently executing with full name)
* kill: ends a running process
  + Syntax:
    - kill -9 <process\_id> (kills the process by the process\_id)
* ctrl-z: suspends the current process
* jobs: returns suspended processes with id number
* fg: returns suspended job to foreground
  + Syntax:
    - fg <job\_id> (Returns the process with the job\_id to the foreground)
* man: opens the man pages
  + Syntax: man <command or method name>
* tree: Shows the directories and sub-directories of the current folder
  + Syntax: tree
* sudo: Root user
  + Syntax:
    - sudo <command> (Command done as the root)
    - sudo -i (Log in as root)
* adduser: Let’s you add a new username
  + Syntax: adduser <username>
* login : Lets you log in to another user
  + Syntax : login <username>

If working with names with spaces, putting them in double quotes will not require using ‘\ ’.

**Perl**

* File access modes
  + ‘r’ : read only
  + ‘w’ : create, write, and truncate
  + ‘a’ : write, append, and create
  + ‘r+’ : read and write
  + ‘w+’ : read, write, create, and truncate
  + ‘a+’ : read, write, append, and create
* Reserved names:
  + $\_ : Wildcard for each element
  + @\_ : array of arguments passed in
  + $! : IO Error messages
  + $. : Current line number in file
* File checks:
  + -e : Exists
  + -w : Writable
  + -l : Symlink
  + -r : Readable
  + -x : Executable
  + -T: Text file