File Commands

`ls` – directory listing
`ls -la` – formatted listing with hidden files
`cd dir` - change directory to *dir*
`cd` – change to home directory (e.g. `/home/nfitzkee`)
`pwd` – show current directory
`mkdir dir` – create a directory *dir*
`rm file` – delete *file*
`rm -r dir` – delete directory *dir*
`rm -f file` – force remove *file*
`rm -rf dir` – force remove directory *dir* * **(see warning below!)**
`cp file1 file2` – copy *file1* to *file2*
`cp -r dir1 dir2` – copy *dir1* to *dir2*; create *dir2* if it doesn't exist
`mv file1 file2` – rename or move *file1* to *file2*
if *file2* is an existing directory, moves *file1* into directory *file2*
`ln -s file link` – create symbolic link *link* to *file*
`touch file` – create or update *file*
`cat > file` – places standard input into *file*
`more file` – output the contents of *file* (alternatively: `less file`)
`head file` – output the first 10 lines of *file*
`tail file` – output the last 10 lines of *file*
`tail -f file` – output the contents of *file* as it grows, starting with the last 10 lines

Process Management

`ps` – display your currently active processes
`top` – display all running processes
`kill pid` – kill process id *pid*
`killall proc` – kill all processes named *proc* *
`bg` – lists stopped or background jobs; resume a stopped job in the background
`fg` – brings the most recent job to foreground
`fg n` – brings job *n* to the foreground

File Permissions

`chmod octal file` – change the permissions of *file* to *octal*, which can be found separately for user, group, and world by adding:
- 4 – read (r)
- 2 – write (w)
- 1 – execute (x)

Examples:
`chmod 777` – read, write, execute for all
`chmod 755` – rwx for owner, rx for group and world
For more options, see `man chmod`.

SSH

`ssh user@host` – connect to *host* as *user*
`ssh -p port user@host` – connect to *host* on port *port* as *user*
`sftp user@host` – connect to *host* as *user* for file transfer
`gftp` – graphical file transfer client

Searching

`grep pattern files` – search for *pattern* in *files*
`grep -r pattern dir` – search recursively for *pattern* in *dir*
`command | grep pattern` – search for *pattern* in the output of *command*
`locate file` – find all instances of *file*
`find . -name "pattern"` – search for the file named *pattern* in the current directory (or below); *pattern* can contain wildcards (e.g. "*")

System Info

`date` – show the current date and time
`cal` – show this month's calendar
`uptime` – show current uptime
`w` – display who is online
`whoami` – who you are logged in as
`finger user` – display information about *user*
`uname -a` – show kernel information
`cat /proc/cpuinfo` – cpu information
`cat /proc/meminfo` – memory information
`man command` – show the manual for *command*
`df` – show disk usage
`du` – show directory space usage
`free` – show memory and swap usage
`whereis app` – show possible locations of *app*
`which app` – show which *app* will be run by default

Compression

`tar cf file.tar files` – create a tar named *file.tar* containing *files*
`tar xf file.tar` – extract the files from *file.tar*
`tar czf file.tar.gz files` – create a tar with Gzip compression
`tar xzf file.tar.gz` – extract a tar using Gzip
`zip -r file.zip files` – create a Windows-compatible zip archive
`unzip file.zip` – extract zip archive
`gzip file` – compresses *file* and renames it to *file.gz*
`gzip -d file.gz` – decompresses *file.gz* back to *file*

Network

`ping host` – ping *host* and output results
`whois domain` – get whois information for *domain*
`dig domain` – get DNS information for *domain*
`dig -x host` – reverse lookup *host*
`wget file` – download *file*
`wget -c file` – continue a stopped download

Lab Utilties

NMR Viewers: `sparky` or `nmrDraw` or `nvj` or `analysis`
`pipe2ucsf file.ft2 file.ucsf` – convert NMRPipe spectrum to UCSF format
`/home/databases/pdb/` – location of all PDB structures
PDB Viewers: `pymol` or `molmol` or `rasmol` or `vmd`
Text editors: `xemacs` or `emacs` or `gedit` or `vi`
All can be invoked with a file, e.g. `xemacs file`
`./script` – run an executable file *script* in the current directory

Shortcuts

`Ctrl+C` – halts the current command
`Ctrl+Z` – stops the current command, resume with `fg` in the foreground or `bg` in the background
`Ctrl+D` – log out of current session, similar to `exit`
`Ctrl+W` – erases one word in the current line
`Ctrl+U` – erases the whole line
`Ctrl+R` – type to bring up a recent command
`!!` - repeats the last command
`exit` – log out of current session

* use with extreme caution.