UNIX COMMANDS

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Contents

1 Exploration commands

Command	Meaning
`ls`	what's there
`ls -1`	with an option
`ls -t -h`	with more options
`ls -thor`	with even more options
`man ls`	what are the options (q = quit; d = next page; ; arrows = scrolling; h = list of all possible commands)
`pwd`	where are we
`cd`	move somewhere else (default to home)
`cd ..`	move back
`cd ../Applications`	move back, then forward
`cd ~`	move home
`cd /`	move to root

2 General principles

- All commands are short, perform simple tasks & are highly optimized (fast)
- Commands can take (many) options
- Commands can be combined (the pipe |)

- Many commands don't require any argument
- 'command' -option1 -option2 -optionN. . . parameter object

3 The main commands

Command	Meaning
echo	Print message to screen
cat	Print file content to screen
head	Print first 10 lines to screen
tail	Print laste 10 lines to screen
less	Print file line by line (use arrows + fn arrows to move up/down)
sort	Sort a file
uniq	unique lines in a file
clear	clear terminal
mkdir	create empty directory
touch	create empty file
mv	move
cp	copy
rm	careful remove
rmdir	*careful* remove empty directory
rm -r	*VERY careful..* remove recursiveLY
chmod	change mode of file
ssh	secure shell (remote connection)
scp	secure copy (remote connection)
sudo	superuser do
top	who is running what?
kill	kill a process
wc	wordcount
curl	get stuff from web (MACOS native) or wget (MACOS non-native)
history	see recent history
open	open a file
ln	symbolic link
which	where is that command

3.1 Text editing

Command	Meaning
nano	edit text (whole file loaded in memory)
nano +123	specify location

3.2 Compression

Command	Meaning
gzip	compression/decompression of files
gunzip	compression/decompression of files
tar	compression/decompression of archives

3.3 Regular expressions

Command	Meaning

`grep` -options 'pattern' file #regular expressions

4   Tricks

Command	Meaning
`>`	the redirect
`|`	the pipe
`*`	anything (special character: for literal `*`, use `\*`)
`?`	anyone character (special character)
`Ctrl+A`	go to beginning of line in terminal
`Ctrl+E`	end of line
`tab key`	autocomplete
`alias`	create own commands

5   Combining commands

- Let's look at the file `examples/sequence.fasta`
- print line 17 piping `head` and `tail`
- Count lines starting with '>'
- Count unique lines starting with '>'

6   Profile

- Let's look at .bash_profile (e.g. `nano ~/.bash_profile`)

7   More stuff

`grep` -options 'pattern' file #regular expressions

8   Install and run command line programs

- Let's look at this example: https://github.com/rec3141/rec-genome-tools/blob/master/bin/fastagrep.pl
- It is a short `perl` script that greps sequences in a *.fasta* file
- Copy-paste the text in a new file (e.g. `touch fastagrep.pl`,`nano fastagrep.pl`,paste and save)
- Make it executable (`chmod +x`)
- Let's look at it (`./fastagrep.pl`)
- Let's try it (`./fastagrep.pl 'deserticola' examples/sequence.fasta`)
- Let's symbolic link it so the computer knows where to find it (`ln /Users/jerry/Dropbox/CSBQ/workshop/unix_workshop_2` `/usr/local/bin/fastagrep.pl`)

9   bash

`bash` (let's look at an example `less examples/bash_cmd2`)