

Unix Commands Basics

Overview

- Unix Commands Basics
- Q & A
- Quiz (10 minutes)

Navigation

- Navigate through the directory.
- `cd /path/to/go`
- Go to parent directory: `cd ..`
- Show current working directory: `pwd`

Ls

- List file/directory information
- Examples:
 - ls
 - ls -l
 - ls -h
 - ls -a
 - ls *.JPG

Find

- Search files or directories.
- `find /Users/dihong/Desktop/example -type file -exec ls {} \;`
- `find /Users/dihong/Desktop/example -type file -name "*.JPG" -exec ls {} \;`
- `find /Users/dihong/Desktop/example -maxdepth 1 -name "*.JPG" -exec ls {} \;`

File Operations

- Detailed info of a file: `ls -hl /Users/dihong/Desktop/example/knn.txt`
- First N lines: `head -10 /Users/dihong/Desktop/example/knn.txt`
- Last N lines: `tail -10 ...`
- Count lines: `wc -l /Users/dihong/Desktop/example/knn.txt`
- Display all the lines: `cat /Users/dihong/Desktop/example/knn.txt`

Pipe: |

- Redirect output streams
- Example:
 - `echo 'abc' | cat > tmp.txt`
 - `cat tmp.txt | wc -l`

Sort: sort lines of text files.

Example: Sort by size in reverse order.

```
ls -l | sort -r -k 5 -n
```

```
Dihongs-MacBook-Pro:example dihong$ ls -l | sort -r -k 5 -n
-rwxrwxrwx@ 1 dihong  staff  418878 Aug 27 20:25 0M0A9633.JPG
-rwxrwxrwx@ 1 dihong  staff  301280 Aug 27 20:24 0M0A9634.JPG
-rw-r--r--  1 dihong  staff    8118 May  7 20:50 knn.txt
drwxr-xr-x  4 dihong  staff    136 Aug 28 15:59 dir
drwxr-xr-x  2 dihong  staff     68 Aug 29 17:59 tmp
-rw-r--r--  1 dihong  staff     37 Aug 29 15:59 example.py
-rw-r--r--  1 dihong  staff     35 Aug 29 16:01 example-cleaned.py
```


Cut: Select output columns

Example: `ls -l`

Outputs:

```
Dihongs-MacBook-Pro:example dihong$ ls -l *.JPG
-rwxrwxrwx@ 1 dihong  staff  418878 Aug 27 20:25 0M0A9633.JPG
-rwxrwxrwx@ 1 dihong  staff  301280 Aug 27 20:24 0M0A9634.JPG
```

If we only want the owner information of these files, then:

```
Dihongs-MacBook-Pro:example dihong$ ls -l *.JPG | cut -d' ' -f3
dhong
dhong
```

Grep

- Search contents by regular expression!
- All lines containing laptop in knn.txt: `grep 'laptop' knn.txt`
- If you want the line number: `grep -n 'laptop' knn.txt`
- Find all lines in python files containing import: `grep -r 'import' --include=*.py .`

Sed: stream editor!

```
sed -i 's/original/new/g' file.txt
```

Explanation:

- `sed` = Stream Editor
 - `-i` = in-place (i.e. save back to the original file)
 - The command string:
 - `s` = the substitute command
 - `original` = a regular expression describing the word to replace (or just the word itself)
 - `new` = the text to replace it with
 - `g` = global (i.e. replace all and not just the first occurrence)
 - `file.txt` = the file name
-
- `echo 'Sed is a great tool!' | sed 's/Sed/sed/g'`
 - `echo 'Sed is a great tool!' | sed 's/!/\\/g'`

Q & A

Quiz!

Passcode: ds110