Working with Files

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Working with Files and Directories

Typical Actions

Creating Files

Moving Files

Renaming Files

Copying Files

Deleting Files

Inspecting Files

Some Remarks

Avoid using spaces in file names

If you use spaces you have to scape them: e.g.

some\ file

Underscores or dashes are better than spaces

Avoid spaces in file names

```
data set 1.csv X
file with long name.txt X
dataset1.csv 🗸
file-with-long-name.txt <
file_with_long name.txt <
```

UNIX file naming

UNIX doesn't care about file extensions

(... but many other programs do)

File extensions not required but helpful (e.g. .txt, .csv, .html, .md, .pdf, .jpg)

Extensions help differentiate from commands and directories

Hidden files

File names beginning with a period are hidden:

- .bash_profile
- .Rprofile
- .gitconfig
- .gitignore

In summary: UNIX file naming

Maximum of 255 characters

Avoid most symbols: \ / * & % ? \$ | ^ ~ < >

Use A-Z, a-z, 0-9, period, underscore, hyphen

Don't use a hyphen as the first character

Prefer lower case letters: MyFile vs myfile

Good idea to use extensions

Creating Files

Creating files

3 main ways to create files:

- Using a text editor
- Direct output (from command) to a file
- Using the command touch

Text editor # Word processor

UNIX text editors

ed (Text Editor): earliest Unix editor, not user friendly.

vi (visual editing mode), vim (vi improved): modal, fingers rarely leave keyboard home row

GNU Emacs (editor macros): macros to automate work, swiss army knife

pico (pine composer), nano: basic features, easy to use

Built-in Text Editors in Mac OS X

vi, vim	creates empty file
emacs	removes file (deletes it) (rm - r)
nano	see contents



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Other text editors

- Textmate
- Sublime text
- Text wrangler
- Notepad ++
- Atom
- Gedit

Inspecting Files

Reading the contents of files

cat: concatenate, good for short files

more: paginated output, doesn't go backwards

less: paginated output, scrolls backwards; better memory use.

In Mac, more is replaced by less.

Reading portions of files

head: displays lines from beginning of a file

tail: displays lines from end of a file

tail -f: "follow" the tail of a file

In Mac, more is replaced by less.

Commands for less

b or page up	move back one page
space or page down	move forward one page
G	go to the end of the file
1G or g	got to the beginning of the file
/character	search forward for an occurrence of character
n	repeat the previous search (next)
h	display list of less commands and options
q	quit (exit)

Directories

Creating directories

```
mkdir testdir
mkdir testdir/test1
mkdir -p testdir/test1/test1a
-p is the option to create parent directories
```

Listing the contents of a directory

ls path/to/directory

Listing Contents

ls (default)	list files and dirs in current directory
ls /	list files and dirs in the root directory
ls -1	list files in current directory in long format
ls -a	list all files and dirs in current directory
ls -r	list contents in reversed order
ls -t	list contents by modification time
ls -lh	list contents (long) display size in human readable
ls -la	list all files in long format

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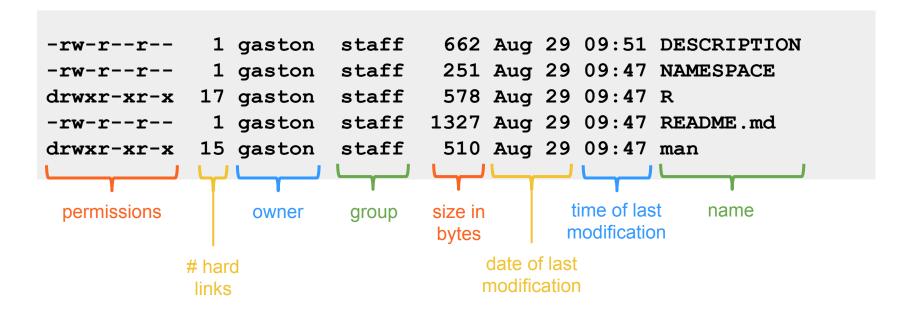
Contents in long format

ls -1

```
-rw-r--r-- 1 gaston staff 662 Aug 29 09:51 DESCRIPTION
-rw-r--r-- 1 gaston staff 251 Aug 29 09:47 NAMESPACE
drwxr-xr-x 17 gaston staff 578 Aug 29 09:47 R
-rw-r--r-- 1 gaston staff 1327 Aug 29 09:47 README.md
drwxr-xr-x 15 gaston staff 510 Aug 29 09:47 man
```

Contents in long format

ls -1



change working directory

cd path/to/directory

Changing Directories

cd	(default)	change to home directory
cd	~	change to home directory
cd	/	change to root
cd	_	change to previous directory
cd	•	change to current directory (i.e. does nothing)
cd	• •	change to parent directory

Create directory

mkdir path/to/directory

Commands for files

Commands for files

wc	size of a file (lines, words, bytes)
file	type of file
touch	creates empty file

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Manipulating Files



Manipulating Files

ср	copy files
mv	move and rename files
rm	delete files

Copy file

cp file1 file2

Rename file

mv file1 file2

Move file

mv file1 path/file1

Delete file

rm file1

Note: rm removes a file permanently (won't put it in the Trash)