

CS 50: Software Design and Implementation

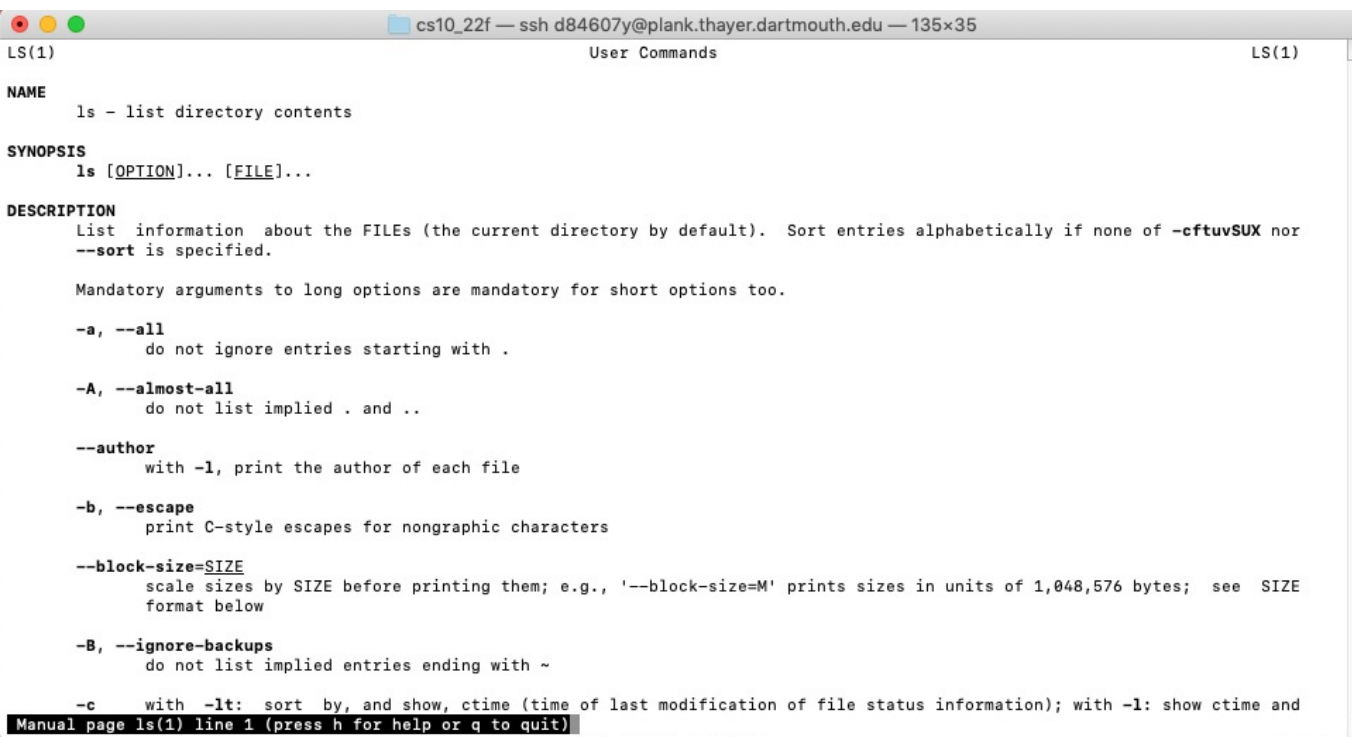
Intro to bash

Agenda

- 
1. Creating our own commands
 2. Creating files
 3. File-related commands
 4. Activity

In case you forget, man (manual) command provides access to documentation

plank:~\$ **man ls**



```
LS(1)                                User Commands                                LS(1)

NAME
  ls - list directory contents

SYNOPSIS
  ls [OPTION]... [FILE]...

DESCRIPTION
  List information about the FILES (the current directory by default). Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

  Mandatory arguments to long options are mandatory for short options too.

  -a, --all
      do not ignore entries starting with .

  -A, --almost-all
      do not list implied . and ..

  --author
      with -l, print the author of each file

  -b, --escape
      print C-style escapes for nongraphic characters

  --block-size=SIZE
      scale sizes by SIZE before printing them; e.g., '--block-size=M' prints sizes in units of 1,048,576 bytes; see SIZE format below

  -B, --ignore-backups
      do not list implied entries ending with ~

  -c      with -lt: sort by, and show, ctime (time of last modification of file status information); with -l: show ctime and
```

Manual page ls(1) line 1 (press h for help or q to quit)

Common commands

↑	Up 1 line
↓	Down 1 line
Space	Page down
b	Page up
/	Search
n	Next search
N	Prev search
q	Quit

Commands are the same as less

You can create variables

To create variable:

<name>=<value>

No spaces

```
plank:~$ c=hello
```

```
plank:~$ echo c  
c
```

Echo prints to screen c,
not hello

```
plank:~$ echo $c  
Hello
```

Use \$ to tell echo to
use the value of c

Convenient way to jump to directory

```
plank:~$ loc=/thayerfs/courses/22fall/cosc050/workspace/
```

```
plank:~$ cd $loc
```

```
plank:/thayerfs/courses/22fall/cosc050/workspace$ pwd  
/thayerfs/courses/22fall/cosc050/workspace
```

Built-in variables

- \$PATH – checks these locations for executables
- \$USER – name of current user
- \$SHELL – name of shell (/bin/bash for us)

Values are strings (even if string representation of number “0”, not 0)

If values have spaces, uses double quotes

Variables are lost when terminal closed (add to .bashrc or bash_profile to keep)

alias allows you to create your own commands

Now each time `ls` is called, "`ls -F --color=auto`" runs

```
plank:$ alias ls="ls -F --color=auto"
```

```
plank:$ ls
```

atoi-template.c	client-server/	intersect/	passwd	students.txt
backup.sh*	fileIO-template.c	iterator/	querier*	unittest.h
bagsimple/	guessprime4.c	jhash.c*	readline.c	vaccine.csv
bagsimple-gdb/	guessprime.c	jhash.h*	readline.h	webpage/
buggybag/	guessprimeclass.c	names5.c	stringcopy.c	

```
plank:$ which ls
```

```
ls is aliased to `ls -F --color=auto`
```

```
ls is /bin/ls
```

Which command gives executable's location and info about aliases

Agenda

1. Creating our own commands



2. Creating files

3. File-related commands

4. Activity

touch creates an empty file

No file called test4.txt

```
plank:~/cs50$ ls
activities/  labs/  test2.txt  test3.txt  test.txt  workspace/
```

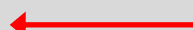
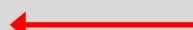
Create empty file called test4.txt

```
plank:~/cs50$ touch test4.txt
plank:~/cs50$ ls
activities/  labs/  test2.txt  test3.txt  test4.txt  test.txt
workspace/
```

Confirm file is empty

```
plank:~/cs50$ cat test4.txt
plank:~/cs50$
```

vi creates and edits files, use it to edit .bashrc and .bash_profile

```
plank:~$ cd ~  cd to home directory  See if .bashrc and .bash_profile exist (will create if not)  
plank:~$ ls -a  Use -a flag to see these hidden files  
./      .bash_history  .bashrc  cs50/      .lessht     .ssh/      .vscode-server/  
../     .bash_profile  .cache/  .gnupg/    .notfsquota .viminfo  
  
plank:~$ vi .bashrc  Start vi editor on .bashrc file (do this also for .bash_profile)
```

aliases used for cs50

alias mygcc='gcc -Wall -pedantic -std=c11 -ggdb'

alias myvalgrind='valgrind --leak-check=full --show-leak-kinds=all'

safety aliases

alias rm='rm -i'

alias cp='cp -i'

alias mv='mv -i'

convenience aliases

alias ls="ls -F --color=auto"

alias mkdir="mkdir -p"

alias which="type -all"

location

shopt -u progcomp

loc=/thayerfs/loc=/thayerfs/courses/22fall/cosc050

Paste in these lines to both .bashrc and .bash_profile

- .bashrc runs when terminal opened

- .bash_profile runs on log in

This text in

/thayerfs/courses/22fall/cosc050/

workspace/aliases.txt

In vi

- **Type i to enter insert mode (otherwise in command mode)**

- **Paste in lines (can copy from course web page)**

- **Type escape to exit insert mode**

- **Type :wq to write and quit**

```
plank:~$ source .bashrc 
```

Run .bashrc now using source command

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-  3. File-related commands
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Ls command lists files in a directory

```
tjp@plank:~$ cd $loc
tjp@plank:~cosc050$ ls
workspace/
tjp@plank:~cosc050$ cd workspace/
tjp@plank:~cosc050$ ls
activities/  passwd      tse/
aliases.txt  resources/  vaccine.csv
tjp@plank:~workspace$ cd resources/
tjp@plank:~resources$ ls
97_Things_Every_Programmer_Should_Know.pdf
DougMcIlroy.pdf
Homebrew.md
Homebrew0.png
Homebrew1.png
NoSilverBullet.pdf
RC13972-C-Programming.docx
RC13972-C-Programming.pdf
StartingSublime.pdf
Xquartz
... <snip> ...
```

Ls command lists files in alphabetical order

Does not give much information about files

Unclear which (if any) are directories

-a flag shows all files, including hidden files

```
tjp$ ls -a
```

```
.  
..  
97_Things_Every_Programmer_Should_Know.pdf  
DougMcIlroy.pdf  
Homebrew.md  
Homebrew0.png  
Homebrew1.png  
NoSilverBullet.pdf  
RC13972-C-Programming.docx  
RC13972-C-Programming.pdf  
StartingSublime.pdf  
XQuartz  
future  
index.md  
regex.pdf  
searchingtheweb.pdf  
toomey-unix.pdf  
why-core-dumped.pptx
```

-a flag shows all files

Includes hidden files (start with period)

There is always an entry for:

. Current directory

.. Parent directory

These are normally hidden

-l flag gives long details about files

```
tjp$ ls -l
total 19304
-rw-r--r--@ 1 tjp  staff  2111426 Apr 12 12:07 97_Things_Every_Programmer_Should_Know.pdf
-rw-r--r--@ 1 tjp  staff   436728 Apr 12 12:07 DougMcIlroy.pdf
-rw-r--r--@ 1 tjp  staff    2387 Apr 12 12:07 Homebrew.md
-rw-r--r--@ 1 tjp  staff   459210 Apr 12 12:07 Homebrew0.png
-rw-r--r--@ 1 tjp  staff    86023 Apr 12 12:07 Homebrew1.png
-rw-r--r--@ 1 tjp  staff   186070 Apr 12 12:07 NoSilverBullet.pdf
-rw-r--r--@ 1 tjp  staff  1006586 Apr 12 12:07 RC13972-C-Programming.docx
-rw-r--r--@ 1 tjp  staff  2829912 Apr 12 12:07 RC13972-C-Programming.pdf
-rw-r--r--@ 1 tjp  staff    55813 Apr 12 12:07 StartingSublime.pdf
drwxr-xr-x@ 7 tjp  staff     224 Apr 12 12:07 XQuartz
drwxr-xr-x@ 3 tjp  staff      96 Apr 12 12:07 future
-rw-r--r--@ 1 tjp  staff   12092 Apr 12 12:07 index.md
-rw-r--r--@ 1 tjp  staff   65650 Apr 12 12:07 regex.pdf
-rw-r--r--@ 1 tjp  staff  1749627 Apr 12 12:07 searchingtheweb.pdf
-rw-r--r--@ 1 tjp  staff   110775 Apr 12 12:07 toomey-unix.pdf
-rw-r--r--@ 1 tjp  staff   739774 Apr 12 12:07 why-core-dumped.pptx
```

d = directory

File name

Permissions

Owner, group, world

R = read

W = write

X = execute

- = none

File
owner

Size in bytes

Group

Last modified date and time

Flags can be combined

all (a), long (l), sorted by time (t), in reverse order (r)
ls -altr same as ls -a -l -t -r

```
tjp$ ls -altr
total 19320
-rw-r--r--@ 1 tim  staff   110775 Apr 12 12:07 toomey-unix.pdf
-rw-r--r--@ 1 tim  staff  1749627 Apr 12 12:07 searchingtheweb.pdf
-rw-r--r--@ 1 tim  staff   186070 Apr 12 12:07 NoSilverBullet.pdf
-rw-r--r--@ 1 tim  staff   436728 Apr 12 12:07 DougMcIlroy.pdf
-rw-r--r--@ 1 tim  staff  2111426 Apr 12 12:07 97_Things_Every_Programmer_Should_Know.pdf
-rw-r--r--@ 1 tim  staff    2387 Apr 12 12:07 Homebrew.md
-rw-r--r--@ 1 tim  staff   459210 Apr 12 12:07 Homebrew0.png
-rw-r--r--@ 1 tim  staff    86023 Apr 12 12:07 Homebrew1.png
-rw-r--r--@ 1 tim  staff  1006586 Apr 12 12:07 RC13972-C-Programming.docx
-rw-r--r--@ 1 tim  staff  2829912 Apr 12 12:07 RC13972-C-Programming.pdf
-rw-r--r--@ 1 tim  staff    55813 Apr 12 12:07 StartingSublime.pdf
drwxr-xr-x@ 7 tim  staff     224 Apr 12 12:07 XQuartz
drwxr-xr-x@ 3 tim  staff      96 Apr 12 12:07 future
-rw-r--r--@ 1 tim  staff   12092 Apr 12 12:07 index.md
-rw-r--r--@ 1 tim  staff   65650 Apr 12 12:07 regex.pdf
-rw-r--r--@ 1 tim  staff  739774 Apr 12 12:07 why-core-dumped.pptx
-rw-r--r--@ 1 tim  staff    6148 May  9 16:32 .DS_Store
drwxr-xr-x@ 19 tim  staff     608 May 24 14:08 .
drwxr-xr-x@ 38 tim  staff   1216 Jun 24 14:30 ..
```

Consult man command for details on flags

Wildcards can identify files matching a pattern

```
tjp$ ls -l Home*
-rw-r--r--@ 1 tim  staff   2387 Apr 12 12:07 Homebrew.md
-rw-r--r--@ 1 tim  staff 459210 Apr 12 12:07 Homebrew0.png
-rw-r--r--@ 1 tim  staff  86023 Apr 12 12:07 Homebrew1.png

tjp$ ls -l Homebrew0.*
-rw-r--r--@ 1 tim  staff 459210 Apr 12 12:07 Homebrew0.png

tjp$ ls -l Homebrew[01].*
-rw-r--r--@ 1 tim  staff 459210 Apr 12 12:07 Homebrew0.png
-rw-r--r--@ 1 tim  staff  86023 Apr 12 12:07 Homebrew1.png
```

*** Matches any characters**

? Matches any single character

[characters] matches set of characters

[!characters] matches not characters

Ls can list files located in directories other than the current working directory

List files in parent directory

```
tjp$ ls -l ..  
..  
total 500976  
drwxr-sr-x 3 d84xxxx thayerusers      22 Sep  6 17:29 activities/  
-rw-r--r-- 1 d84xxxx thayerusers      403 Sep  6 17:07 aliases.txt  
-rw-r--r-- 1 d84xxxx thayerusers 67938 Aug 10 14:59 passwd  
drwxr-sr-x 4 d84xxxx thayerusers      581 Sep 13 10:22 resources/  
drwxr-sr-x 3 d84xxxx thayerusers       83 Aug 20 13:18 tse/  
-rw-r--r-- 1 d84xxxx thayerusers 401427061 Aug  4 15:41 vaccine.csv  
drwxr-sr-x 3 d84xxxx thayerusers       53 Aug 26 17:03 webpage/  
  
...
```

cp command makes copies of files or directories

```
tjp$ cp Homebrew0.png Homebrew2.png
tjp$ ls -l Homebrew*
-rw-r--r--@ 1 tim  staff    2387 Apr 12 12:07 Homebrew.md
-rw-r--r--@ 1 tim  staff  459210 Apr 12 12:07 Homebrew0.png
-rw-r--r--@ 1 tim  staff   86023 Apr 12 12:07 Homebrew1.png
-rw-r--r--@ 1 tim  staff  459210 Jun 25 10:45 Homebrew2.png
```

Use `-r` (recursive) flag to also copy subdirectories in a directory

mv command moves or renames files

```
tjp$ ls -l Homebrew*
```

```
-rw-r--r--@ 1 tim  staff    2387 Apr 12 12:07 Homebrew.md  
-rw-r--r--@ 1 tim  staff  459210 Apr 12 12:07 Homebrew0.png  
-rw-r--r--@ 1 tim  staff   86023 Apr 12 12:07 Homebrew1.png  
-rw-r--r--@ 1 tim  staff  459210 Jun 25 10:45 Homebrew2.png
```

List only
Homebrew
files

```
tjp$ mv Homebrew2.png Homebrew3.png
```

Move (rename) Homebrew2.png to
Homebrew3.png

```
tjp$ tim$ ls -l Homebrew*
```

```
-rw-r--r--@ 1 tim  staff    2387 Apr 12 12:07 Homebrew.md  
-rw-r--r--@ 1 tim  staff  459210 Apr 12 12:07 Homebrew0.png  
-rw-r--r--@ 1 tim  staff   86023 Apr 12 12:07 Homebrew1.png  
-rw-r--r--@ 1 tim  staff  459210 Jun 25 10:50 Homebrew3.png
```

List only Homebrew
files, now no
Homebrew2.png

```
tjp$ mv Homebrew3.png ../
```

Move Homebrew3.png to parent directory

```
tjp$ ls -l Homebrew*
```

```
-rw-r--r--@ 1 tim  staff    2387 Apr 12 12:07 Homebrew.md  
-rw-r--r--@ 1 tim  staff  459210 Apr 12 12:07 Homebrew0.png  
-rw-r--r--@ 1 tim  staff   86023 Apr 12 12:07 Homebrew1.png
```

List only Homebrew
files, now no
Homebrew3.png

```
tjp$ ls -l ../Homebrew*
```

```
-rw-r--r--@ 1 tim  staff  459210 Jun 25 10:50 ../Homebrew3.png
```

List only Homebrew
files in parent
directory

rm deletes (removes) files, rmdir deletes directories

```
tim$ rm ../Homebrew3.png    Delete Homebrew3.png in parent directory  
tim$ ls -l ../Homebrew*     Confirm it was deleted  
ls: ../Homebrew*: No such file or directory
```

Use **rmdir -r** (recursive) flag to delete directory and subdirectories

Be careful!

rm *.html will remove all html files

but

rm * .html (space between * and .html) will remove all files (then complain there are no .html files)!

PRO TIP: run command with **ls** instead of **rm** first

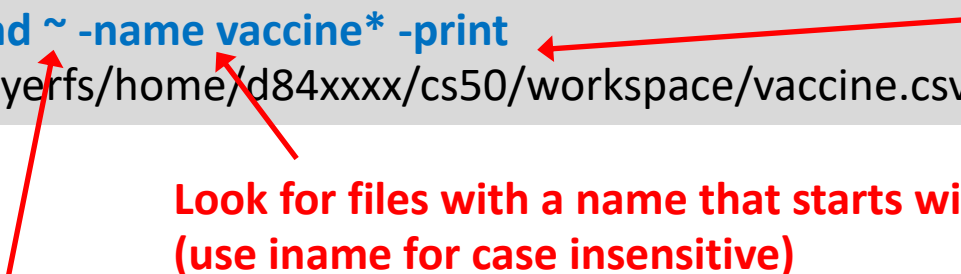
Will see the files that will be removed

If everything looks ok, issue same command but with **rm instead of **ls****

find locates files

find searches a directory structure to locate files

```
$ find ~ -name vaccine* -print  
/thayerfs/home/d84xxxx/cs50/workspace/vaccine.csv
```

A diagram with three red arrows pointing from explanatory text to parts of the command. One arrow points from 'Start looking in my home directory' to '~'. Another arrow points from 'Look for files with a name that starts with vaccine (use iname for case insensitive)' to 'vaccine*'. A third arrow points from 'Print directory of file if found' to '-print'.

Print directory of file if found

**Look for files with a name that starts with vaccine
(use iname for case insensitive)**

**Start looking in my home directory
Also search subdirectories**

wc counts how many lines, words, and bytes are in a file

```
$ cd ..  
$ wc vaccine.csv  
1545766 3210694 294299243 vaccine.csv
```

Line
count

Word
count

Byte count
(can double check with ls -l)

Add flags to only output a single value

-l or --lines only outputs line count

-w or --words only outputs word count

-c or --bytes only outputs byte count

-m or --chars only outputs character count

Example:

```
$ wc -l vaccines.csv
```

```
1545766
```

file, head, and tail show what the file holds

```
plank:~/cs50/workspace$ file vaccine.csv  
vaccine.csv: ASCII text, with very long lines
```

file gives details of type of file

```
plank:~/cs50/workspace$ head -n3 vaccine.csv
```

Head gives starting lines (here first 3 lines)

```
03/28/2022,08083,13,Montezuma  
County,CO,97.1,20911,79.9,20905,84.4,20157,89.8,18950,92.3,5641,94,17923,68.5,17923,72.3,17408,77  
.5,16360,79.7,5126,85.4,8934,49.8,8933,51.3,8740,53.4,6190,64.4,3669,71.6,B,7,7,7,7,8,Non-  
metro,7,7,7,7,8,26183,24782,22452,20524,6004  
03/28/2022,12115,13,Sarasota  
County,FL,98.6,356279,82.1,356091,85,351522,88.9,338693,90.8,174499,95,300547,69.3,300521,71.8,29  
6795,75.1,286102,76.7,147209,90.9,144513,48.1,144505,48.7,142624,49.9,122532,56.1,88223,59.9,B,7,  
7,7,7,8,Metro,3,3,3,3,4,433742,418704,395340,372818,161948  
03/28/2022,UNK,13,Unknown  
County,GU,75.1,45217,,45209,,42835,,39205,,5957,,34413,,34411,,32918,,30362,,4192,,11282,32.8,112  
79,34.3,10811,35.6,6135,54.6,2575,61.4,,,,,,,,,,,,,,,,,,,,,
```

```
plank:~/cs50/workspace$ tail -n3 vaccine.csv
```

Tail gives ending lines (here last 3 lines)

```
12/13/2020,27141,51,Sherburne  
County,MN,0,0,0,,,0,0,0,0,0,0,0,0,0,,,0,0,0,0,0,0,,,,,,,,,,,,A,,,,,,Metro,,,,,,97238,,80847,71767,  
12/13/2020,47073,51,Hawkins  
County,TN,0,0,0,,,0,0,0,0,0,0,0,0,0,,,0,0,0,0,0,0,,,,,,,,,,,,C,,,,,,Metro,,,,,,56786,,49903,45701,  
12/13/2020,15003,51,Honolulu  
County,HI,0,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,B,,,,,,Metro,,,,,,974563,,833474,769692,
```

grep returns lines in a file that match a pattern

Search text

File to search

Use **-i** flag for case insensitive



```
plank:~/cs50/workspace$ grep "Grafton County" workspace/vaccine.csv
03/28/2022,33009,13,Grafton
County,NH,94,84888,94.4,84817,95,82242,95,77371,95,23844,95,66554,74,66537,77.1,64625,80,60747,80
.4,18501,95,26131,39.3,26130,40.4,24871,40.9,15692,45.1,8416,45.5,A,3,3,4,4,4,Non-
metro,7,7,8,8,8,89886,86291,80794,75544,19181
03/27/2022,33009,13,Grafton
County,NH,94,84884,94.4,84813,95,82238,95,77367,95,23840,95,66551,74,66534,77.1,64623,80,60745,80
.4,18499,95,26125,39.3,26124,40.4,24865,40.9,15687,45.1,8412,45.5,A,3,3,4,4,4,Non-
metro,7,7,8,8,8,89886,86291,80794,75544,19181
03/26/2022,33009,12,Grafton
County,NH,94,84878,94.4,84807,95,82235,95,77364,95,23839,95,66550,74,66533,77.1,64623,80,60745,80
.4,18499,95,26122,39.3,26121,40.4,24863,40.9,15687,45.1,8412,45.5,A,3,3,4,4,4,Non-
metro,7,7,8,8,8,89886,86291,80794,75544,19181
03/25/2022,33009,12,Grafton
County,NH,94,84854,94.4,84783,95,82215,95,77348,95,23838,95,66513,74,66496,77.1,64592,79.9,60724,
80.4,18497,95,26087,39.2,26086,40.4,24829,40.9,15669,45.1,8405,45.4,A,3,3,3,4,4,Non-
metro,7,7,7,8,8,89886,86291,80794,75544,19181
03/24/2022,33009,12,Grafton
County,NH,94,84847,94.4,84776,95,82209,95,77344,95,23837,95,66507,74,66490,77.1,64587,79.9,60720,
80.4,18495,95,26077,39.2,26076,40.4,24822,40.9,15666,45.1,8403,45.4,A,3,3,3,4,4,Non-
metro,7,7,7,8,8,89886,86291,80794,75544,19181
<snip>
```

Less is an interactive way to look at file contents

```
plank:~/cs50/workspace$ less vaccine.csv
```

```
cs10_22f — ssh d84607y@plank.thayer.dartmouth.edu — 13
03/28/2022,33009,13,Grafton County,NH,94,84888,94.4,84817,95,82242,95,77371,95,23844,95,66554,
5,26131,39.3,26130,40.4,24871,40.9,15692,45.1,8416,45.5,A,3,3,4,4,4,Non-metro,7,7,8,8,8,89886,
03/28/2022,36087,13,Rockland County,NY,97.6,239148,73.4,239108,79.9,231033,87.5,212978,91.3,53
8,183713,78.8,44770,86.5,85645,41.4,85619,42.8,81795,44.5,51589,54.3,26223,58.6,C,10,11,11,11,
33221,51769
03/28/2022,72031,13,Carolina Municipio,PR,97.1,141605,95,141577,95,134306,95,124199,95,33843,9
374,85.6,27982,82.3,63053,53.1,63025,55.8,58637,56.2,33675,62.5,17504,62.6,A,4,4,4,4,4,Metro,4
8
03/28/2022,72053,13,Fajardo Municipio,PR,97.1,27287,92.6,27283,95,25754,95,23702,95,6213,93.5,
.8,5115,77,10933,48.5,10933,51.1,10087,51.4,5960,59.4,3136,61.3,C,11,11,12,12,11,Metro,3,3,4,4
03/28/2022,72067,13,Hormigueros Municipio,PR,97.1,13913,89.7,13911,92.2,13203,95,12282,93.5,39
057,84.2,3470,78,7879,63,7878,66.2,7387,66.8,4370,70.5,2417,69.7,C,12,12,12,12,11,Metro,4,4,4,
03/28/2022,72103,13,Naguabo Municipio,PR,97.1,18634,72.3,18631,75.2,17553,76.4,16112,78.9,4199
68,3634,75.3,8122,50.5,8115,53.5,7460,53.7,4196,61.5,2317,63.8,B,6,6,7,7,7,Metro,2,2,3,3,3,257
03/28/2022,46011,13,Brookings County,SD,96.7,21452,61.2,21449,65.2,20679,68.7,19345,69.5,4463,
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03/28/2022,46119,13,Sully County,SD,96.7,757,54.4,757,57.5,746,62,714,65.3,264,72.7,617,44.4,6
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03/28/2022,47093,13,Knox County,TN,97.8,312453,66.4,312406,70.4,303460,74.8,285893,76.8,73513,
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036
03/28/2022,48049,13,Brown County,TX,99,17830,47.1,17823,49.7,17629,53.7,16954,57.1,5878,76.1,1
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03/28/2022,48153,13,Floyd County,TX,99,2927,51.2,2927,54.8,2900,61.1,2761,65.7,926,86.5,2611,4
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03/28/2022,48501,13,Yoakum County,TX,99,4143,47.5,4137,52.2,4044,59.6,3790,64.6,879,85.1,3500,
.9,1096,31.3,1096,31.8,1086,33.4,775,44.3,418,52.6,B,5,5,6,6,7,Non-metro,5,5,6,6,7,8713,7930,6
03/28/2022,49007,13,Carbon County,UT,97.6,11422,55.8,11405,59.4,11041,64.6,10268,67.5,3384,91.
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03/28/2022,51670,13,Hopewell city,VA,79.2,8594,38.1,8594,41.2,8547,46.1,8042,48.2,2525,71.4,70
.6,68,1,67,1,67,1,46,1.1,23,1.1,D,13,13,13,13,14,Metro,1,1,1,1,2,22529,20846,18533,16678,3538
03/28/2022,51810,13,Virginia Beach city,VA,79.2,325900,72.4,325641,77.2,315458,82.2,293008,83.
:
```

Common commands

↑	Up 1 line
↓	Down 1 line
Space	Page down
b	Page up
/	Search
n	Next search
N	Prev search
q	Quit

**Use / to find text
(Grafton here)**

Agenda

1. File-related commands
2. Creating our own commands
3. Creating files
-  4. Activity

Activity

Meet your group

- Introductions
 - Name
 - Year
 - Experience with CS, Linux, C
- Choose a group name

Summary of commands

Command	Name	Use
man	<u>man</u> ual	Gives description of commands man ls
ls	<u>l</u> ist	List files -a all, -l long, -t sorted by time, -r sort reversed ls -altr ~
cp	<u>c</u> op <u>y</u>	Copy file or directory, use -r for recursive copy of subdirectories cp text.txt text2.txt
mv	<u>m</u> ov <u>e</u>	Move file or directory, use -r for recursive move of subdirectories mv text2.txt text3.txt
rm/rmdir	<u>r</u> em <u>ov</u> e/ <u>r</u> em <u>ov</u> e <u>d</u> irect <u>o</u> ry	Remove (delete) a file or directory, use -r for recursive delete rm text3.txt
find	find	Locates file whose names match pattern find ~ -name vaccine* -print
wc	<u>w</u> ord <u>c</u> ount	Count the number of lines, words, bytes in a file wc vaccine.csv
head/tail	head/tail	List the first or last lines in a file head -n5 test.txt
grep	<u>G</u> lobal <u>r</u> egular <u>e</u> xpression <u>p</u> rint	Find lines in a file matching pattern grep "Grafton County" workspace/vaccine.csv

Summary of commands

Command	Name	Use
less	less	Interactive way to look at file contents (improved version of old more command)
alias	alias	Create shortcut for command alias ls="ls -F --color=auto"
touch	touch	Create empty file touch test.txt
vi	<u>V</u> isual <u>I</u> nstrument	File editor (others include emacs, vim, nano) • i to enter insert mode (otherwise command mode) • Escape to exit insert mode • /chars to search for text • n for next search find • N for prev search find • 0 (zero) start of file • \$ end of file • u undo • Ctrl-r to redo • :wq to save (write) and quit • :q! to quit without saving

