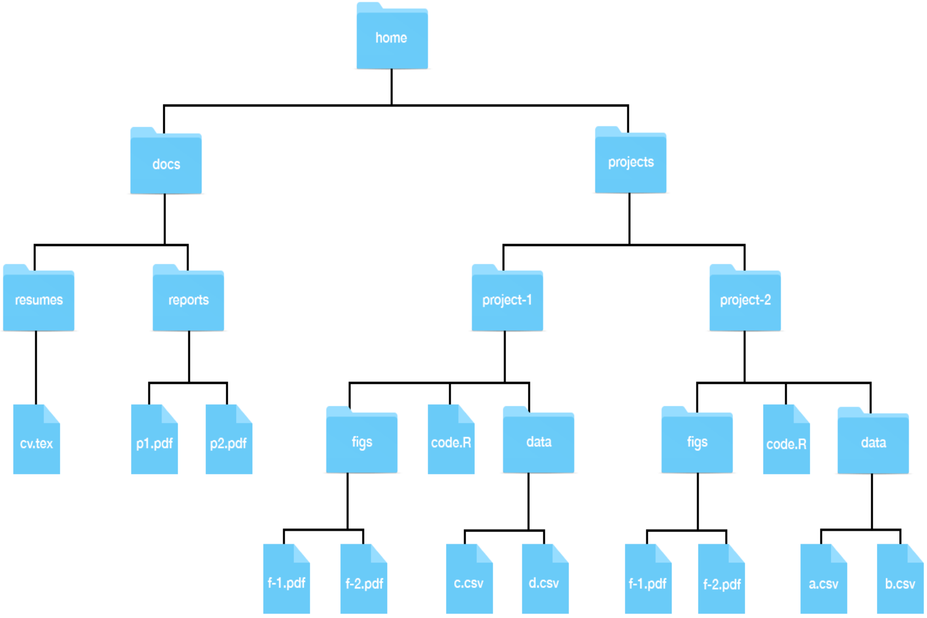
Unix Overview

The Unix section discusses the basics of managing your filesystem from the terminal with Unix commands such as mv and rm.

There are graded comprehension checks after some, but not all, of the videos.

If you get stuck, we encourage you to search the discussion boards for the answer to your issue or ask us for help!

Below, you will find a summary of unix commands that will be covered in this section and the advanced unix section. The examples here and in videos refer to this hypothetical file system. You can download a copy of the image.



Command	**Description**	**Examples**
ls	List directory content	
mkdir *dir*	Make a directory	“mkdir projects” –make the directory projects “mkdir docs” –make the directory docs “mkdir junk” –make the directory junk
rmdir *dir*	Remove a directory (directory must be empty; otherwise use “rm”)	“rmdir junk” –remove the directory junk
cd *dir*	Change directory	“cd ~/projects” – move to the “projects” directory (an absolute path) “cd projects” – move to the “projects” directory, assuming we are already in the home directory (a relative path)
cd ..	Go up one directory to the parent directory	“cd ../..” – move up two parent directories from our current directory
cd ~	Go to the home directory	
cd -	Go to whatever directory you just left	
pwd	Print the present working directory	
tab	Autocomplete	“cd d” + tab – autocompletes to “docs” if it is the only directory that begins with d; or list the different options.
mv *file1 file2*	Move or rename files *Warning –this is permanent, and you will not get a warning message if you are overwriting files.*	“mv ~/docs/resumes/cv.tex ~/docs/reports/” – move the “cv.tex” file from the resume folder to the reports folder “mv cv.tex resume.tex” – rename cv.tex to resume.tex “mv ~/docs/resumes ~/docs/reports/” - move the resume folder into the reports folder
cp *file1 file2*	Copy file1 to file2	“mv ~/docs/resumes/cv.tex ~/docs/reports/” – make a copy of the “cv.tex” file from the resume folder in the reports folder
rm *file*	Delete file *Warning – this is permanent! You cannot retrieve files from the recycling bin!*	“rm ~/docs/resumes/cv.tex” – delete the file “cv.tex”
less *file*	View file	“less ~/docs/resumes/cv.tex” –open cv.tex in the less text viewer
rm -r *dir*	Remove recursively all folders in directory *dir* and the directory itself.	
ls -a	List all directory content, including hidden files	

Command	Description	Examples
ls -l	List all directory content in long form (including permissions, size and date)	
ls -t	List all directory content in chronological order	“ls -lart” – show more information for all files in reverse chronological order for your current directory
man *command*	Show the manual for the command. Note – this does not work for GitBash	“man ls” – show the manual instructions for the command ls.
command --help	Show the manual for the command in GitBash	“ls --help” – show help instructions for the command ls
command1 | *command2*	Pipe the results of command 1 to command 2	“man ls | less” – show the help instructions for the command ls in the less viewer
* (wildcard)		“ls *.html” –list all the files ending in html in your current directory “rm *.html” – remove all files ending in html in your current directory
? (any character)		“rm file.???.html” – remove all files whose names follow the pattern; eg file-001.html, file-002.html etc. “rm file.???.*” – remove all files whose names follow the pattern regardless of their extension; eg file-001.html, file-002.csv, file-any.R, etc.
$*var*	$ identifies a variable	“echo $HOME” – print your home directory “echo $SHELL” – print your shell name
export *val=value*	Change the value of the variable *val* (Bash shell specific)	
open *file* (mac) start *file* (windows)	Opens a file or program	“open Report.Rmd” – open Report.Rmd in RStudio

Absolute path vs. relative path

A full path specifies the location of a file from the root directory. It is independent of your present directory, and must begin with either a “/” or a “~″. In this example, the full path to our “project-1” file is:
/home/projects/project-1

A relative path is the path relative to your present working directory. If our present working directory is the “projects” folder, then the relative path to our “project-1” file is simply:
project-1

Path shortcuts

One period “.” is your current working directory
Two periods “..” is the parent directory (up one from your present working directory)
A tilde “~” is your home directory.

More path examples

1. Your current working directory is “~/projects” and you want to move to the “figs” directory in the “project-1” folder

   - Solution 2: cd ~/projects/project-1/figs (absolute)

   - Solution 2: cd project-1/figs (relative)

1. Your current working directory is “~/projects” and you want to move to the “reports” folder in the “docs” directory

   - Solution 1: cd ~/dos/reports (absolute)

   - Solution 2: cd ../docs/reports (relative)

2. Your current working directory is “~/projects/project-1/figs” and you want to move to the “project-2” folder in the “projects” directory.

   - Solution 1: cd ~/projects/project-2 (absolute)

   - Solution 2: cd ../../project-2 (relative)