



# Raspbian: The Basics



# Origins

Raspbian is a derivative of Linux, which itself stemmed from a very early system called UNIX.

The Linux/Raspbian community has a long tradition of sharing ideas and code, and helping each other learn

Raspbian customized specifically for Raspberry Pi, but very similar dialect to other Linuxes



# What does an Operating System do?

An operating system sits between applications and the computer itself, handling such boring details as creating, organizing and moving files around, checking security, communicating with external devices and computers.

For most of us, MacOS and Windows hides much of the operating system. Raspberry Pi also has a windowing system that is more convenient for many users.





# The command line

Everything done by keyboard. Sometimes keyboard is quicker and easier, sometimes a GUI is easier.



## Handy tips

The [tab] key will often complete a command-line statement automatically, even if you're typing a filename or directory name

\* and ? are wildcards, which will match any character(s). So *ls \** will match all filenames, and *ls abc\** will match filenames that start with 'abc'



# "Yeah great. How can I get help?"

There are two basic ways to get help with commands. We'll show an example, with the *ls* command:

`man ls` : show the manual pages for the `ls` command

`ls --help` : show a quick summary of the `ls` command

Almost all Raspbian commands can access help either way. The *man* command gives you very thorough help, *--help* is shorter.





# What is the file structure?

There are many folders based off of the “root” of the drive, which we call /  
(NOTE: different than a folder called /root)

/

/etc

/bin and /sbin

/boot and /lib

/home ← If you want to go HOME, just cd ~

[Linux file structure](#)



# Directory-based commands

- ~ : shortcut for the user's home directory (e.g. usage: `cd ~`)
- .. : shortcut for the current directory's *parent*
- / : separates directories along a path
- `pwd` : show the current directory
- `cd` : change to a different directory
- `mkdir` : make a new directory
- `rmdir` : remove an empty directory





# File-based commands

`touch` : create a new file, or update an existing file's date and timestamp

`cp` : copy a file

`mv` : move a file to a new location, or rename it in the same directory

`rm` : delete (*remove*) a file

`cat` : print a file's content on the display screen

`find` : look for a file in the current directory



# Miscellaneous commands

`du` : disk usage (sample usage: `du -hs`)

`df` : show free space on disk (sample in human form: `df -h`)

`free` : free memory available (note: try `top` to see lots of cool stuff)

`more` : used after a pipe ( `|` ) to pause the display one screenful at a time

`less` : same as `more`, but with a little extra functionality



## Other commands

`nano` : edit a file

`sort` : sort a file to the console. If following a pipe ( `|` ) will sort the output before displaying it to the screen

`wc` : count the words in a file