# Is Unix a Penguin or What?

A Short Introduction

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What Is Unix?

`tobi@LAPTOP-92UHTLAT:~/dev$ Lets talk to the kernel!`

Unix is an operating system, with 3 main parts

- The kernel.
    - The center of operating system
    - Allocates time and memory to programs
    - Handles filestore and communication in response to system calls
- The shell
    - Interface between user and kernel
    - Command line interface
- The programs
    - Set of instructions
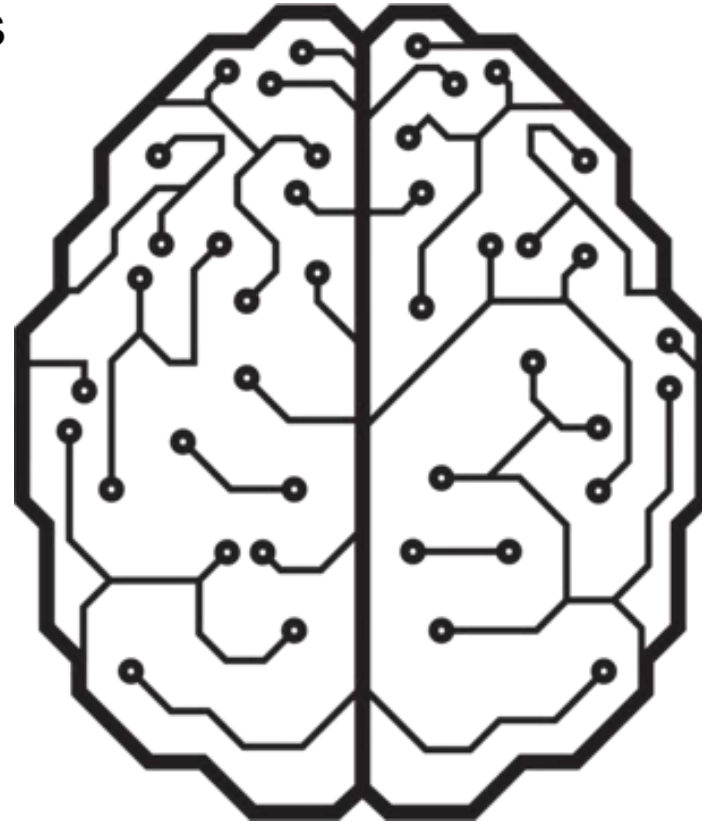
Example

```
tobi@LAPTOP-92UHTLAT:~/dev$ ls
beautiful.txt  ugly.txt
tobi@LAPTOP-92UHTLAT:~/dev$ rm ugly.txt
tobi@LAPTOP-92UHTLAT:~/dev$ ls
beautiful.txt
```

1. User types "rm ugly.txt" in the shell
2. The shell searches for the program "rm"
3. The shell communicates to the kernel with system calls
4. Tells the kernel to perform "rm" program on ugly.txt
5. The kernel allocates resources for "rm" program
6. ugly.txt gets removed
7. And the shell is ready for the next command

The Manual Command

man 'topic' - prints a manual for 'topic' in terminal. Useful if you are not sure how a C function, or Unix command works!

Navigation Commands

- **pwd**   writes the path of current directory
- **ls**   list contents of current directory
- **cd**   changes Directory
  - **cd 'path'**   go to 'path' directory
  - **cd ..**   go to parent directory / "go back"
  - **cd**   go to home directory

File Manipulating Commands

- **mkdir 'name'**   creates directory 'name'
- **touch 'name'**   creates file 'name'
- **rmdir 'name'**   removes EMPTY directory 'name'
- **rm 'name'**   removes file 'name'
- **mv**   moves or renames file
  - **mv 'file' 'path/to/directory'**   move 'file' to 'path/to/directory'
  - **mv 'filename' 'newname'**   renames file

Permissions

```
tobi@LAPTOP-92UHTLAT:~/dev$ ls -l
total 4
drwxrw---x 2 tobi tobiCult 4096 Sep  5 03:01 directory
-rw-r--r-- 1 tobi tobiCult    0 Sep  5 03:01 file
```
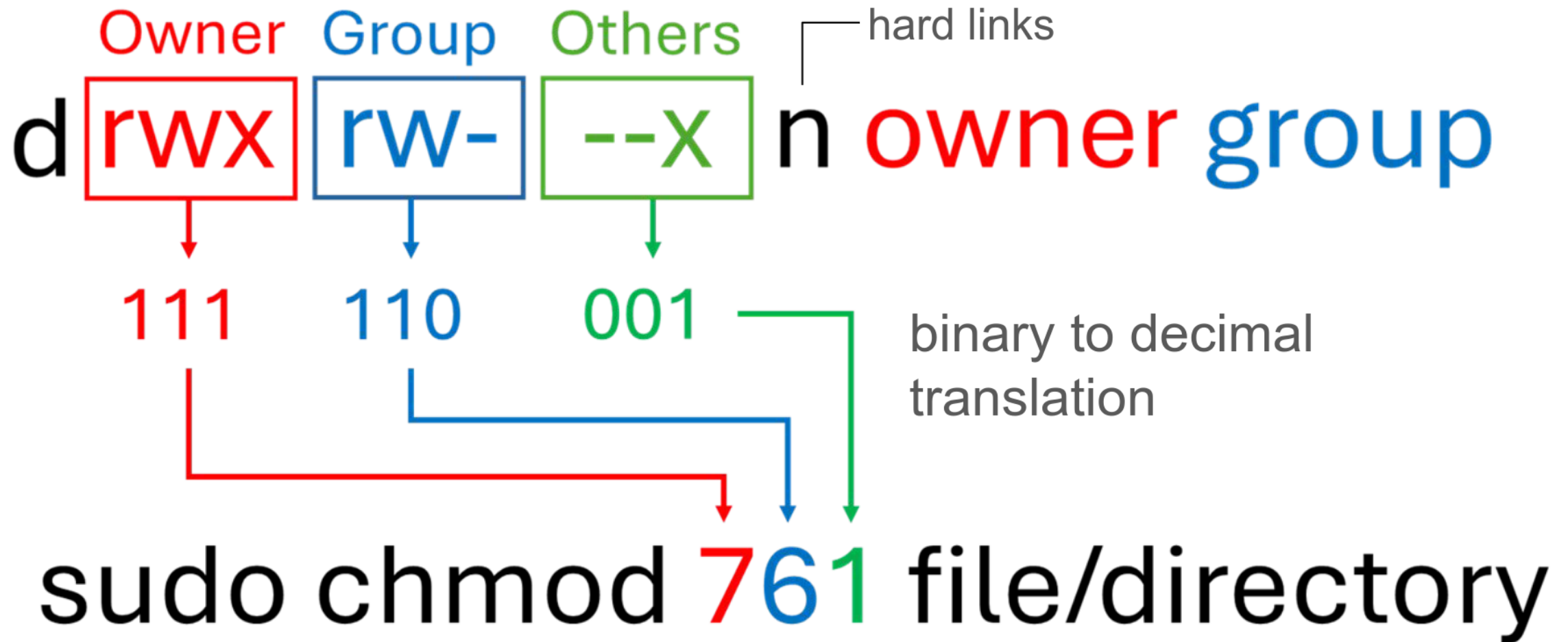
Owner Group Others — hard links

d rwx rw- --x n owner group

'd' if it's a directory

'-' if it's a file

r = read, w = write, x = execute

Permissions