Day 2

Saturday, July 9, 2022 12:21 PM

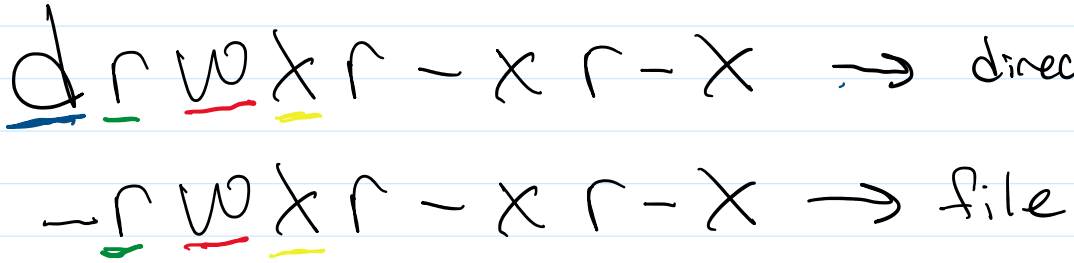
File permissions
- The most important thing to remember is that everything is a file
  - Including folders

Ownership of files
- permissions of a file are dependent on the ownership
- Three levels of ownership

1. Owner Permissions
   - Permission of the user who created the file
2. Group Permissions
   - Permission of users in a specific group on the file
3. Other
   - Anyone else who has an account on the machine

View permissions of files with ls -l

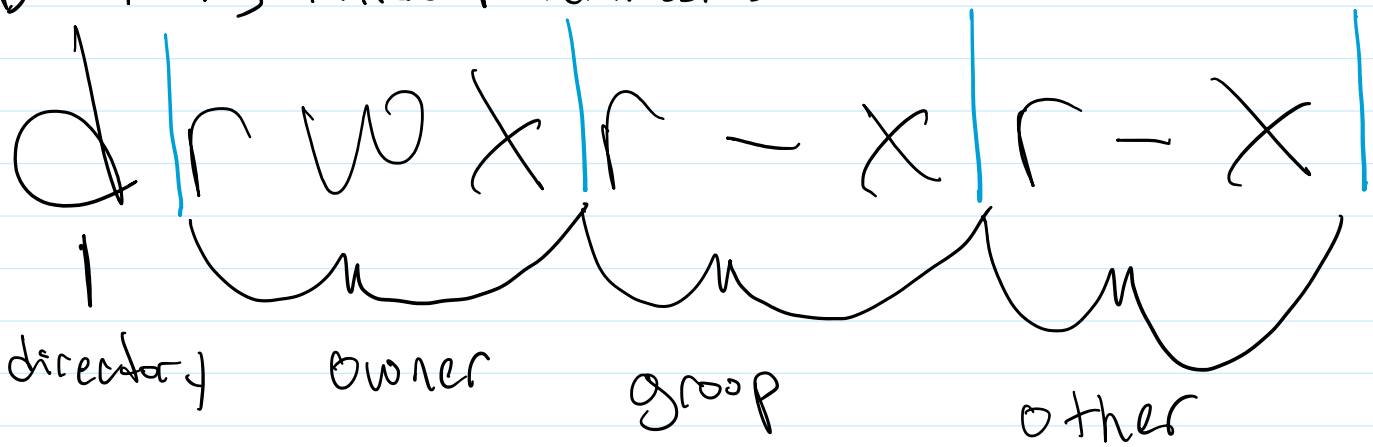
When using ls -l you will see something like this



- the random letters are our permissions
  - 10 characters long
  - d stands for directory
  - r stands for read permissions
    - for a file allows cat
    - for a directory allows for ls
  - w stand for write permissions
    - allow for modification of the file

- allow for modification of the file
- x stands for execute
  - files allows you to run the file
  - directory allows you to cd

Determining Different Permissions



directory
- owner: read write execute
- group: read execute
- other: read execute

Changing file Permissions In Unix
- You can change the permissions of a file with chmod

2 ways of using chmod:

first way with absolute permissions
- each permission is assigned a value
- to set permissions you add all the permission values for each individual group

0	No permission	---
1	Execute	--x
2	write	-w-
4	read	r--

} Combine these to get any combination of permissions

4 read combination of permissions

Example usage

chmod permissions file

chmod 777 file.txt
- first number applies permissions to owner
- second number applies permission to group
- third number applies permissions to other

Grant all access to owners
Grant read acces to group
Grant no access to other

chmod 740 file.whatever

Second way is called symbolic mode
- Instead of a sum of permissions
  uses symbols
+ to add permissions
- to subtract permissions
= to set permissions
u to set owner permissions
g to set group permissions
o to set other permissions

Examples:

chmod o-x remove the ability for other users to execute

chmod g+w file: group write permissions

chmod u=rwx file: owner full permissions

Command Line Text Editors

Command Line Text Editors
- Allows users to open files in terminal to either view or edit the contents

Two most popular:

Vim:
- more advanced text editor
- default for distributions
- use configuration files to modify your experience
- less beginner friendly

To enter vim use the vim command with the file you want to open

To insert text press the i key
- this will put you in insert mode

To exit insert mode press the esc key

To write to the file use :w

To leave the file use :q

To write and leave :wq

The other command line text editor is nano
- some distributions may not come with this
- more beginner friendly
- less powerful than vim

Environment Variables
- Imagine you have some secret credentials
  - probably not a good idea to have these in your code

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Value stored on your machine/server, these are accessible throughout your entire environment

In UNIX these are set in the shell

If you have a variable you can view the value with $VariableName
- In UNIX there is an environment variable called $HOME
- We can use echo or cat to view the value of the variable

two ways to set environment variables in UNIX

1. The export command
   - The variable will only last as long as the terminal is alive

2. Creating a script in ~/.bashrc file
   - The scripts in this directory are automatically run on startup
   - This means you can create a script with export called inside of it and recreate the variable every time you boot up

Removing Environment Variables
- to remove environment variables you can use unset
- unset DB_USERNAME

Package Managers
- In Unix based systems if you want to install a program or software, you must use a package manager

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The Redhat Package Manager (RPM): Linux distribution
- built for redhat
- used on other distributions
- manages .rpm packages

Advanced Package Tool (APT)
- used on many distributions
- retrieve, configure, install/uninstall packages

Yellowdog Updater/Modifier: (YUM)
- general purpose package management utility

Debian Package
- package manager for debian linux distributions
- manage .deb files