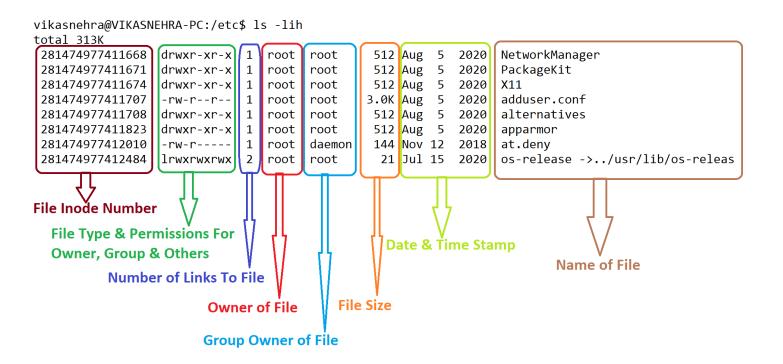
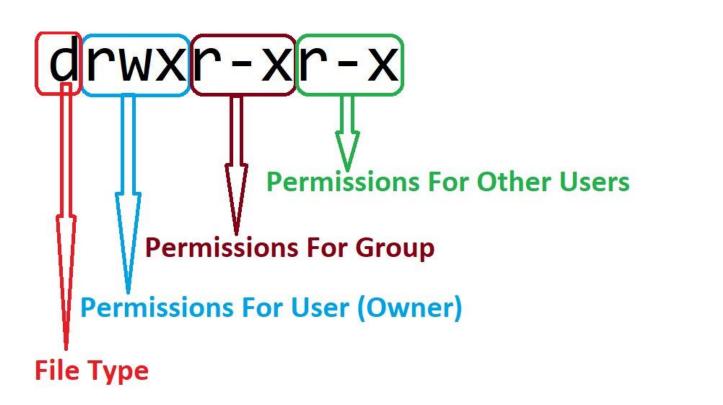
## File Security: Standard File Permissions in Linux





first character	file type
-	normal file
d	directory
1	symbolic link
р	named pipe
b	block device
С	character device
S	socket

permission	on a file	on a directory
r (read)	read file contents (cat)	read directory contents (ls)
w (write)	change file contents (vi)	create files in (touch)
x (execute)	execute the file	enter the directory (cd)

## **Permissions Bit Weightage:**

Read Permission  $\rightarrow$  r = 4

Write Permission  $\rightarrow$  w = 2

Execute Permission  $\rightarrow x = 1$ 



Maximum Permissions (Full Permission)  $\rightarrow$  rwx = 4+2+1 = 7

Minimum Permissions (No Permission)  $\rightarrow$  --- = 0+0+0 = 0

Permissions can be represented by 8 numbers starting from number 0 to number 7, Which means by Octal number system having a base of 8.

Octal Number System → (0-7)<sub>8</sub>

We need three binary bits to represent Octal numbers. These three bits can be used to represent permission, here first bit represent read (r), second bit represent write (w) and third bit represents execute (x) permissions.

Octal Number	Binary	Permissions
0	000	
1	001	X
2	010	-W-
3	011	-wx
4	100	r
5	101	r-x
6	110	rw-
7	111	rwx