ownership
- every file has an associated owner or account

permissions
- what the owner, and members of the files group and other users can do with the file
- user
- group
- other

ownership also applies to running programs
everything in linux is treated as a file

specification occurs because of user identifier and group ID number

directories have ownership as well

Chown - change ownership
- pass username and filename

chgrp - change groups
- group name and file or directory

can only give ownership if have correct permissions, ie as root user

ls -l
- permissions
- number of links
- username
- Group name
- file size
- time stamp
- file name

permissions order
file type code
- the character represents the files type and is often omitted from descriptions when the file type is not relevant
- normal data file (-)
- Directory file (d)
- Symbolic link (l)
- Named pipe (p)
- Socket (s)
- Bblock device (b)
- character device (c)

owner permission
- determine what the files owner can do with the file

group permissions
- determine what members of the files group who are not its owner can do with the file

world or other permissions
- determine what users who are not the files owner or members of its group can do with the file

last three sets of permission string identify as the presence or absence of 3 types of access
- (read
- write
- execute

if execute is set, file can run as program

absence of permission is denoted by a dash -

Directories use execution bit to grant permission to search the directory

permissions on Symbolic links are always 777

most permission rules don't apply to root

user mask (umask)
- Determines the default permissions for new files
- new directories default to 777
- new files default to 666
- umask cmd to change default

Sticky bit
- user may only delete own files or files stored in own directory
- set using chmod cmd
- code for sticky bit is 1 - octal code
- Setting to 0 will remove
- use Symbolic code - chmod o-t

Set user ID (SUID)
- tell linux to run the program with the permissions of whoever owns the file rather than the user who runs the program

Set group ID (SGID)
- sets the group of the running program to the group of the file

octal
4 to set the SUID bit
2 to set the SGID bit
6 to set both bits

symbolic
u+s = SUID bit
g+s = SGID bit
ug = both bits

hidden files
- file naming convention
- dot files .myfile

ls -a
- See hidden files
. current directory
.. parent directory

renaming a file will also make the file inaccessible to programs that uses it

ls -d
- get info from the subdirectories rather than the content

chmod
- change file mode bits

read 4 - write - 2 executed