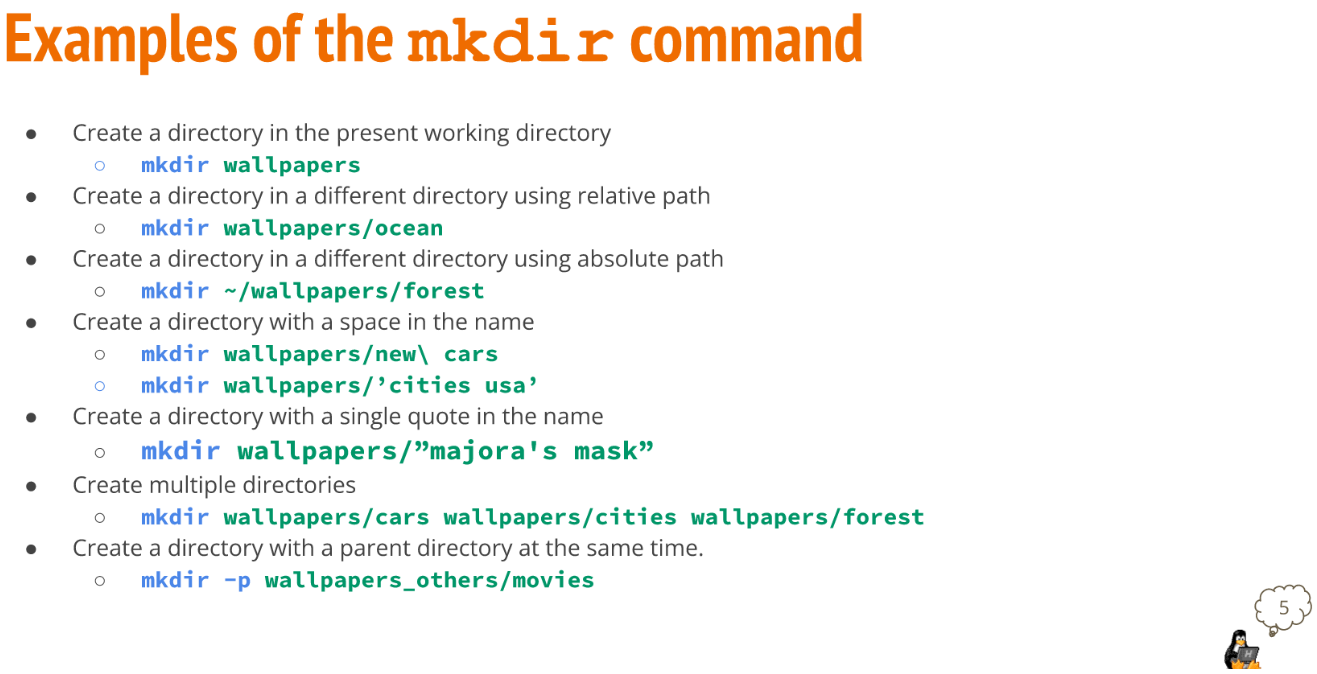
Weekly Report 5

Handling Text Files

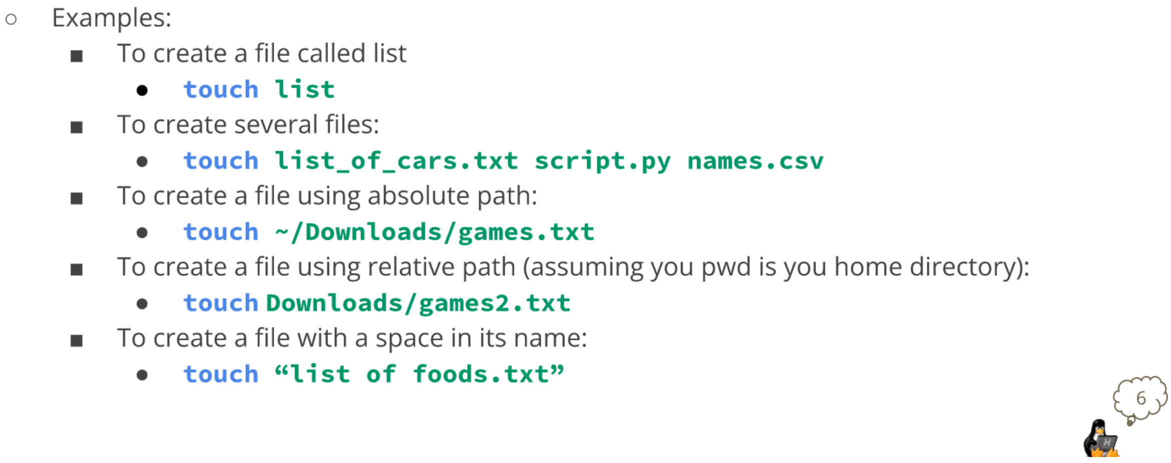
- **mkdir command** is used for creating a single directory or multiple directories
  - To create a directory with mkdir type:
    - Formula: **mkdir + name of the directory**.
  - To create *multiple* directories, separate each directory name with a space.
  - You can create directories by using absolute path or relative path.
  - You can create a directory with a space in its name using the escape character () or by surrounding the name in quotation marks ('' or " ").



Examples of the `mkdir` command

- Create a directory in the present working directory
  - `mkdir wallpapers`
- Create a directory in a different directory using relative path
  - `mkdir wallpapers/ocean`
- Create a directory in a different directory using absolute path
  - `mkdir ~/wallpapers/forest`
- Create a directory with a space in the name
  - `mkdir wallpapers/new\ cars`
  - `mkdir wallpapers/’cities usa’`
- Create a directory with a single quote in the name
  - `mkdir wallpapers/”majora's mask”`
- Create multiple directories
  - `mkdir wallpapers/cars wallpapers/cities wallpapers/forest`
- Create a directory with a parent directory at the same time.
  - `mkdir -p wallpapers_others/movies`

- **touch command** is used for creating files.

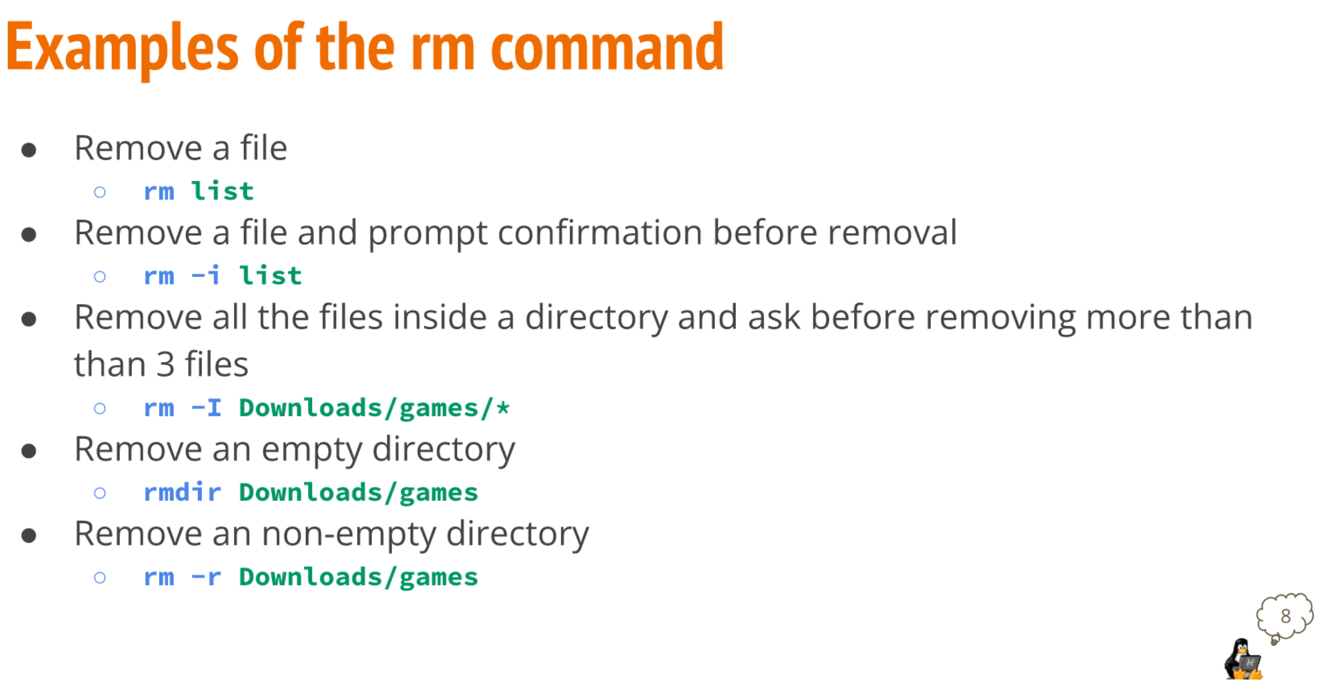


- Examples:
  - To create a file called list
    - `touch list`
  - To create several files:
    - `touch list_of_cars.txt script.py names.csv`
  - To create a file using absolute path:
    - `touch ~/Downloads/games.txt`
  - To create a file using relative path (assuming you pwd is you home directory):
    - `touch Downloads/games2.txt`
  - To create a file with a space in its name:
    - `touch “list of foods.txt”`

- **rm command** removes files.

  - rm by default does not remove directories. To remove a directory, you must use rm with the -r option.
  - In Linux and other Nix systems you cannot remove non empty directories.

- **rmdir command** is to remove empty directories.
  - To remove non-empty directories use rm -r + directory name or directory absolute path.



Examples of the rm command

- Remove a file

  -
    ```
    rm list
    ```
- Remove a file and prompt confirmation before removal

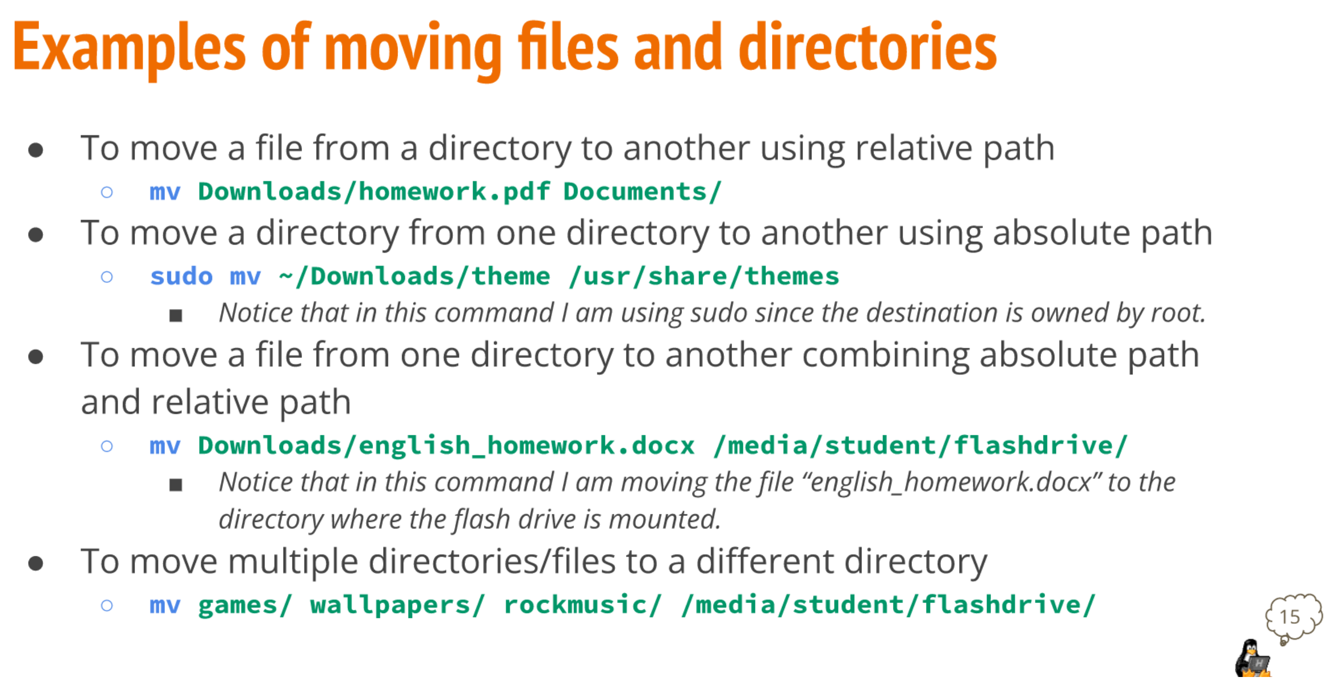
  -
    ```
    rm -i list
    ```
- Remove all the files inside a directory and ask before removing more than than 3 files

  -
    ```
    rm -I Downloads/games/*
    ```
- Remove an empty directory

  -
    ```
    rmdir Downloads/games
    ```
- Remove an non-empty directory

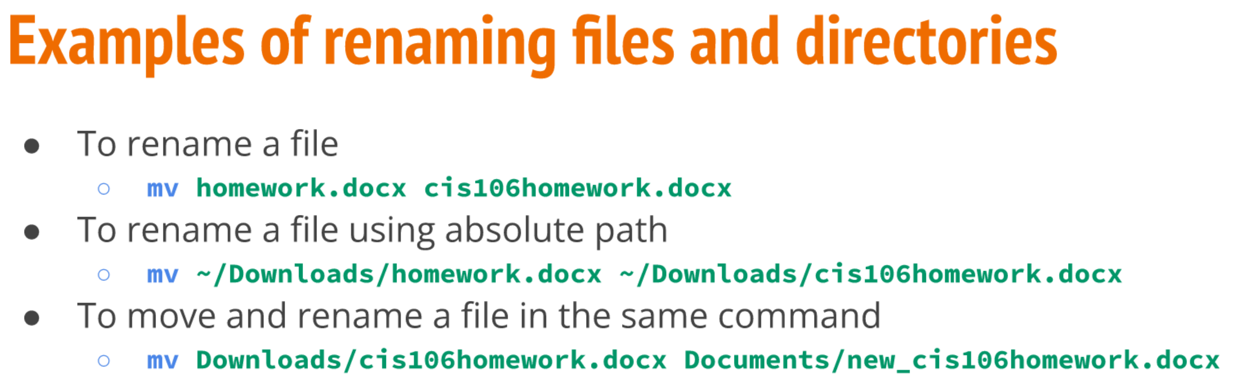
  -
    ```
    rm -r Downloads/games
    ```

- **mv command** moves and renames directories.
  - Formula: **mv + source + destination**
  - Where source is the file or directory that you want to move and destination is where the directory or file is going.
  - For renaming files/directories the formula remains the same:
  - Formula: **mv + file/directory to rename + new name**
  - Both source and destination can be an absolute path or relative path.



Examples of moving files and directories

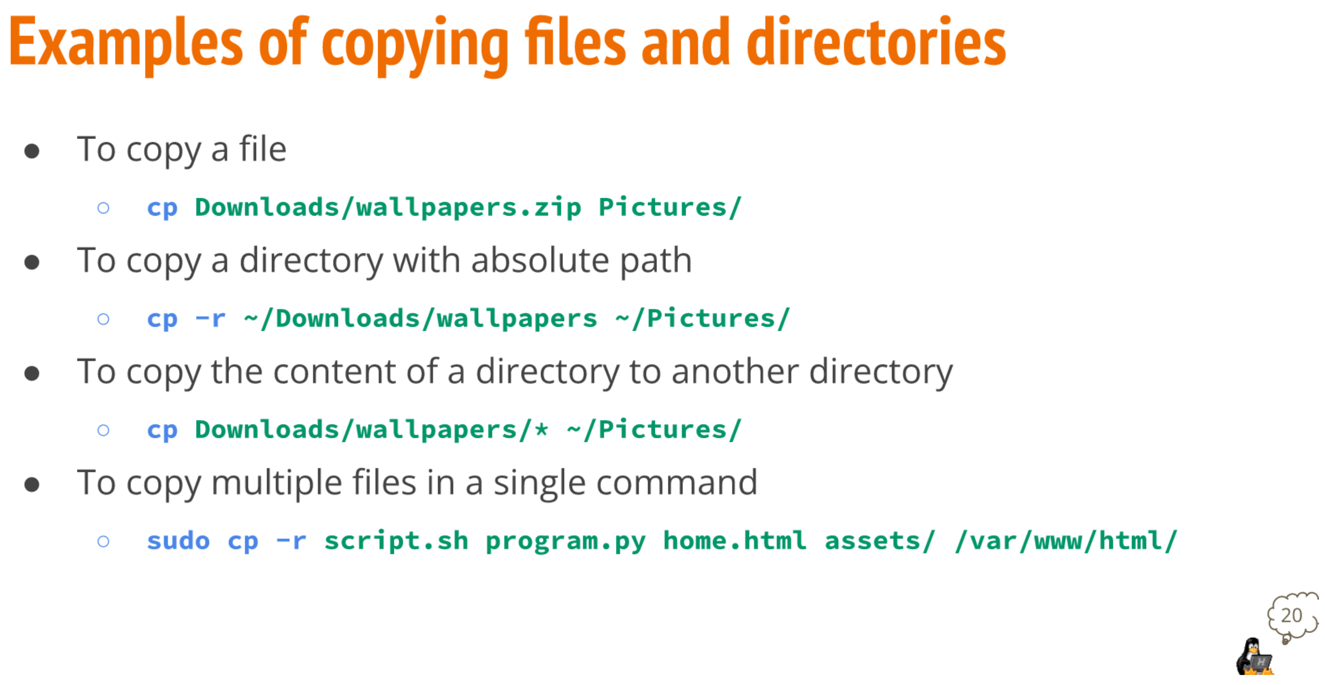
- To move a file from a directory to another using relative path
  - `mv Downloads/homework.pdf Documents/`
- To move a directory from one directory to another using absolute path
  - `sudo mv ~/Downloads/theme /usr/share/themes`
    - *Notice that in this command I am using sudo since the destination is owned by root.*
- To move a file from one directory to another combining absolute path and relative path
  - `mv Downloads/english_homework.docx /media/student/flashdrive/`
    - *Notice that in this command I am moving the file “english_homework.docx” to the directory where the flash drive is mounted.*
- To move multiple directories/files to a different directory
  - `mv games/ wallpapers/ rockmusic/ /media/student/flashdrive/`



Examples of renaming files and directories

- To rename a file
  - `mv homework.docx cis106homework.docx`
- To rename a file using absolute path
  - `mv ~/Downloads/homework.docx ~/Downloads/cis106homework.docx`
- To move and rename a file in the same command
  - `mv Downloads/cis106homework.docx Documents/new_cis106homework.docx`

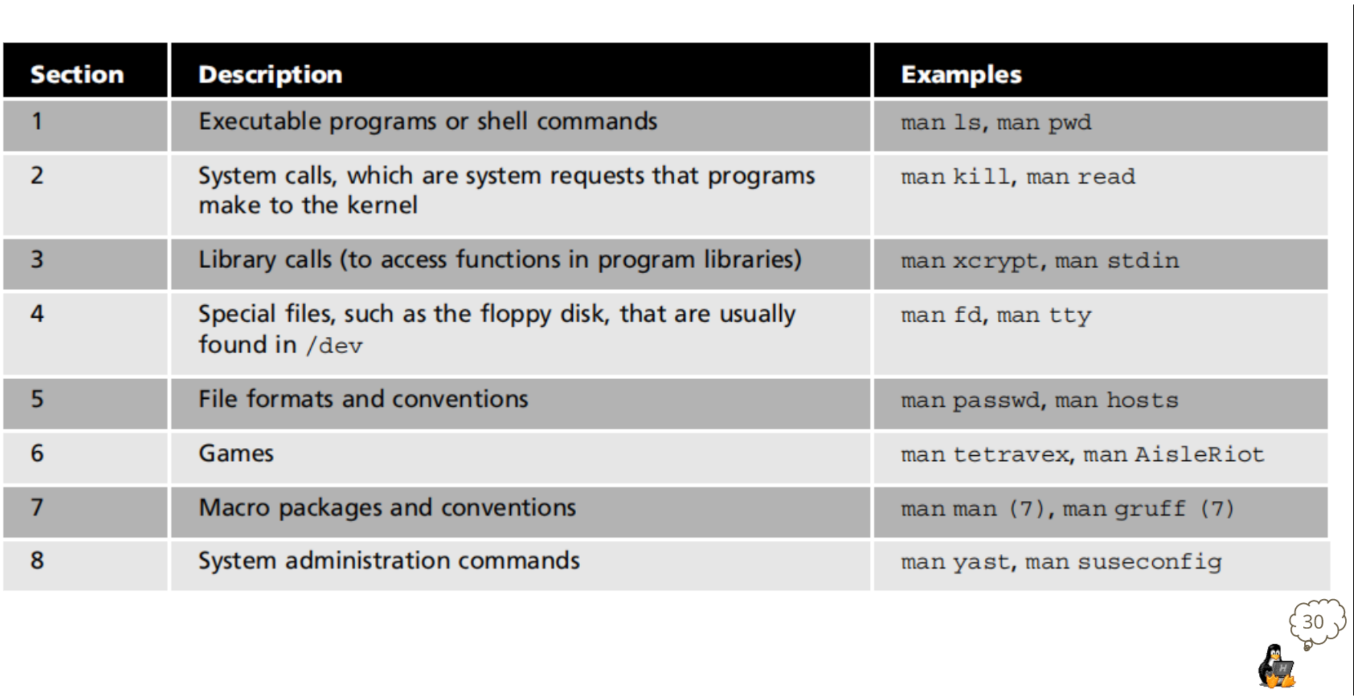
- **cp command** copies files/directories from a source to a destination.
  - Formula: **cp + files to copy + destination**
  - To copy directories you must use the -r option
  - Formula: **cp -r + directory to copy + destination**



Examples of copying files and directories

- To copy a file
  - `cp Downloads/wallpapers.zip Pictures/`
- To copy a directory with absolute path
  - `cp -r ~/Downloads/wallpapers ~/Pictures/`
- To copy the content of a directory to another directory
  - `cp Downloads/wallpapers/* ~/Pictures/`
- To copy multiple files in a single command
  - `sudo cp -r script.sh program.py home.html assets/ /var/www/html/`

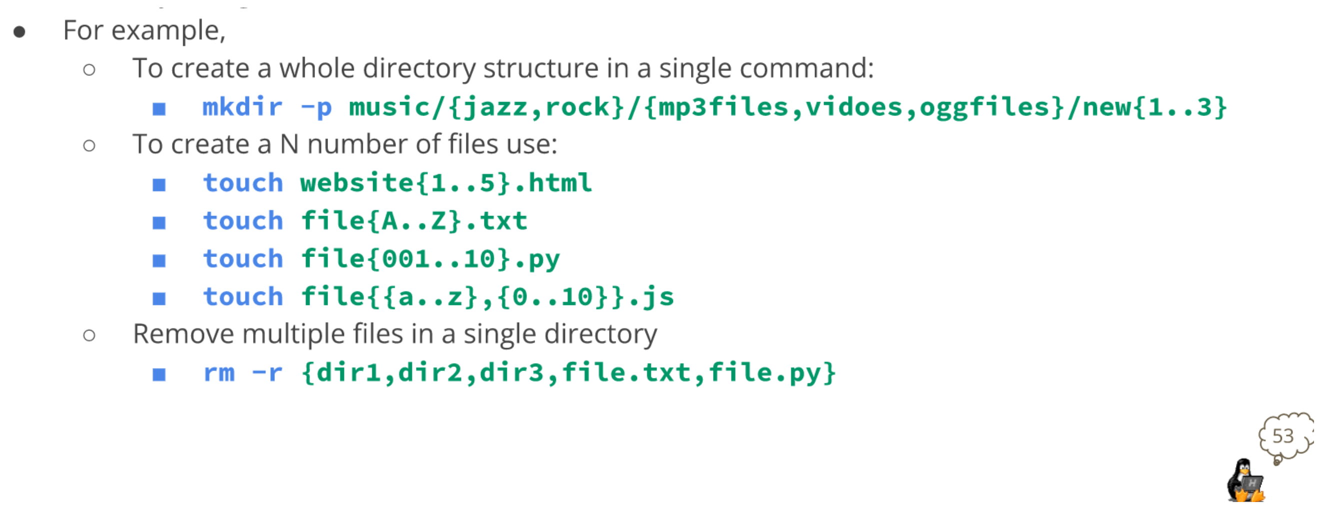
- Hard Links: **Ln command** are files that point to data on the hard drive.
  - When you create a file, it's automatically linked to the data stored in the hard drive and it is assigned an inode number.
  - Hard links must be created on the same partition.
  - If you change data on any link, all hard links are changed because the data on the hard drive was changed.
  - Formula: **ln file ~/Downloads/fileHL**
- Soft Links: **Symbolic links command** are a special type of file that point to other files instead of data in the hard drive.
  - Soft links do not share the same inode number as hard link do.
  - The advantage of soft links is that they can point to files that are stored on different partitions.
  - If you modify a soft link, the target file is modified too.
  - Formula: **ln -s file fileSL**
- **man command** man (manual) pages are documentation files that describe Linux shell commands, executable programs, system calls, special files, and so forth.
  - Man are quick references, not step-by-step guides.
  - Formula: **man + command**
    - Example: man ls
  - To navigate the man page of a command, you can use the arrow key or the man command internal shortcuts.
  - To exit the man page press letter "q".



Section	Description	Examples
1	Executable programs or shell commands	`man ls`, `man pwd`
2	System calls, which are system requests that programs make to the kernel	`man kill`, `man read`
3	Library calls (to access functions in program libraries)	`man xcrypt`, `man stdin`
4	Special files, such as the floppy disk, that are usually found in `/dev`	`man fd`, `man tty`
5	File formats and conventions	`man passwd`, `man hosts`
6	Games	`man tetravex`, `man AisleRiot`
7	Macro packages and conventions	`man man (7)`, `man gruff (7)`
8	System administration commands	`man yast`, `man suseconfig`

Brace Expansion & How To Use It

- **Brace expansion {}** is a feature of bash that allows you to generate arbitrary strings to use with commands.



- For example,
  - To create a whole directory structure in a single command:
    - `mkdir -p music/{jazz,rock}/{mp3files,vidoes,oggfiles}/new{1..3}`
  - To create a N number of files use:
    - `touch website{1..5}.html`
    - `touch file{A..Z}.txt`
    - `touch file{001..10}.py`
    - `touch file{{a..z},{0..10}}.js`
  - Remove multiple files in a single directory
    - `rm -r {dir1,dir2,dir3,file.txt,file.py}`