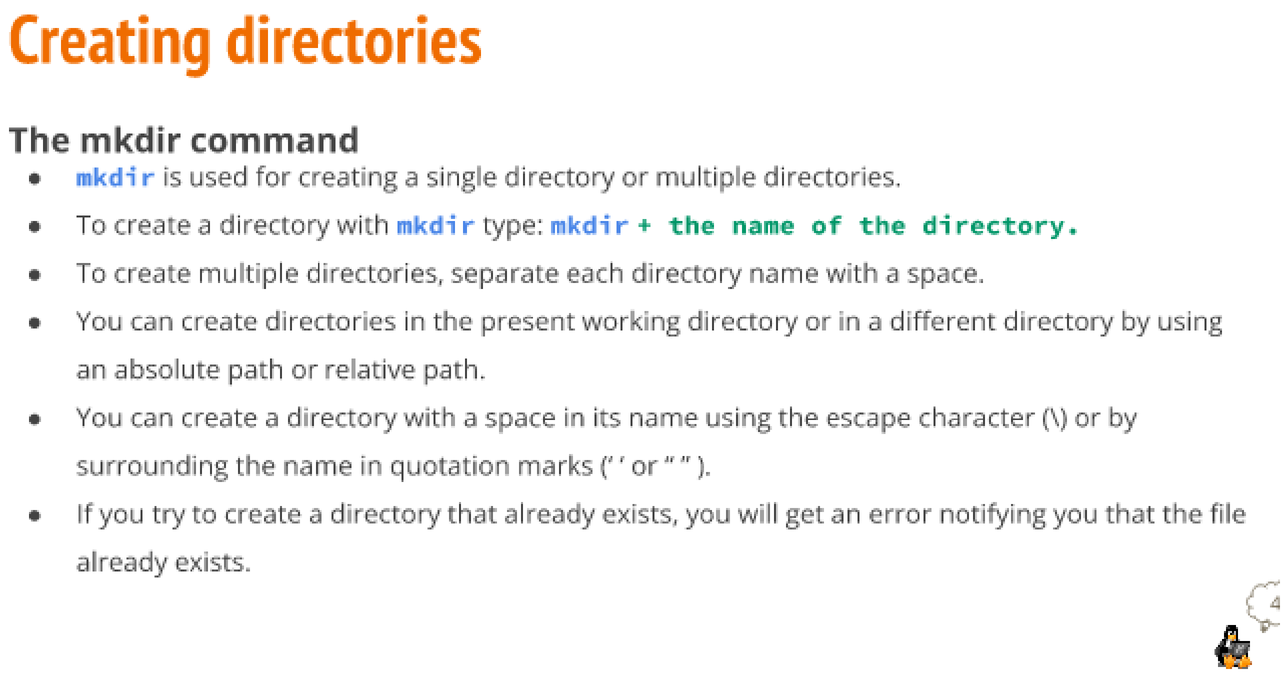
Lecture 4 | Managing Files and Directories

Creating Files and Directories

- MKDIR Command is used for creating a single directory or multiple directories.

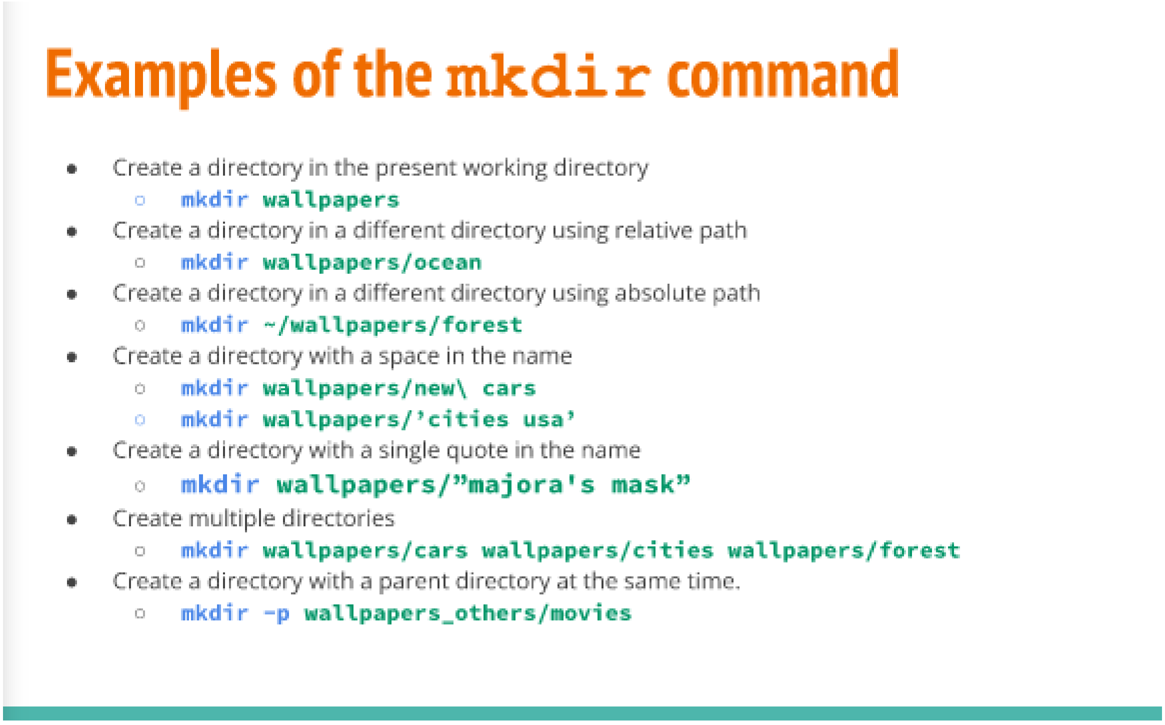


Creating directories

The mkdir command

- `mkdir` is used for creating a single directory or multiple directories.
- To create a directory with `mkdir` type: `mkdir + the name of the directory.`
- To create multiple directories, separate each directory name with a space.
- You can create directories in the present working directory or in a different directory by using an 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 " ").
- If you try to create a directory that already exists, you will get an error notifying you that the file already exists.

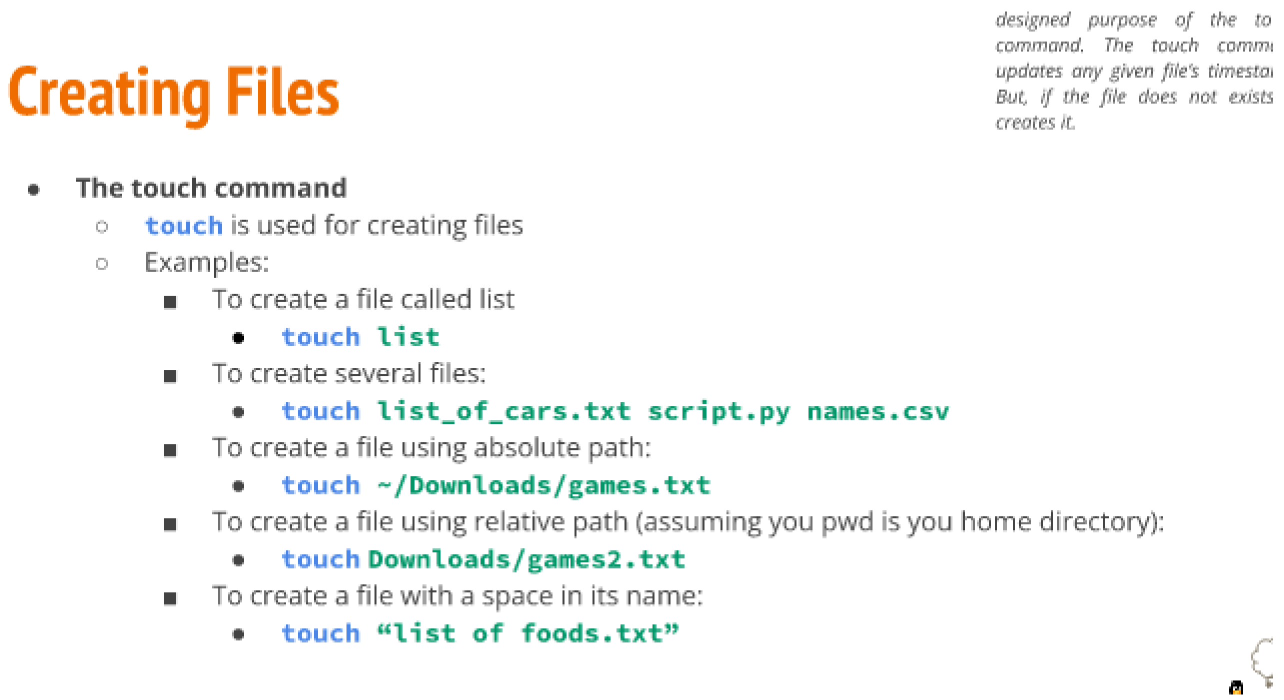
Examples



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`

Creating files

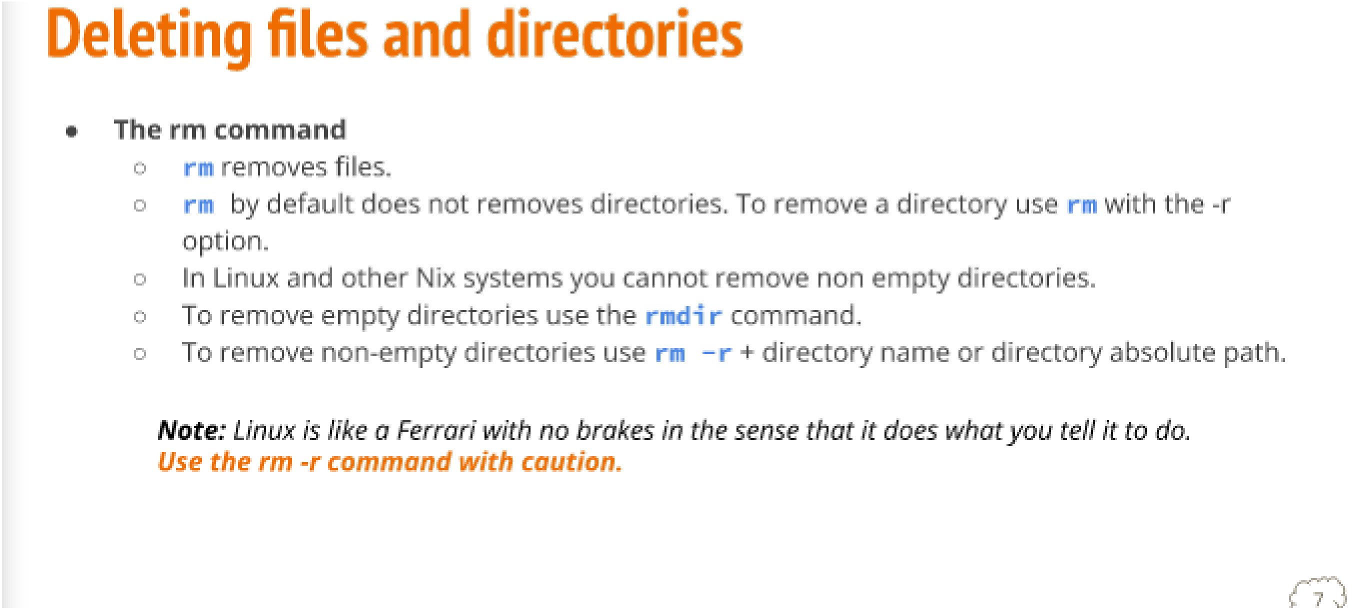


designed purpose of the to command. The touch comm updates any given file's timesta But, if the file does not exists creates it.

Creating Files

- **The touch command**
  - `touch` 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”`

Deleting Files and directories

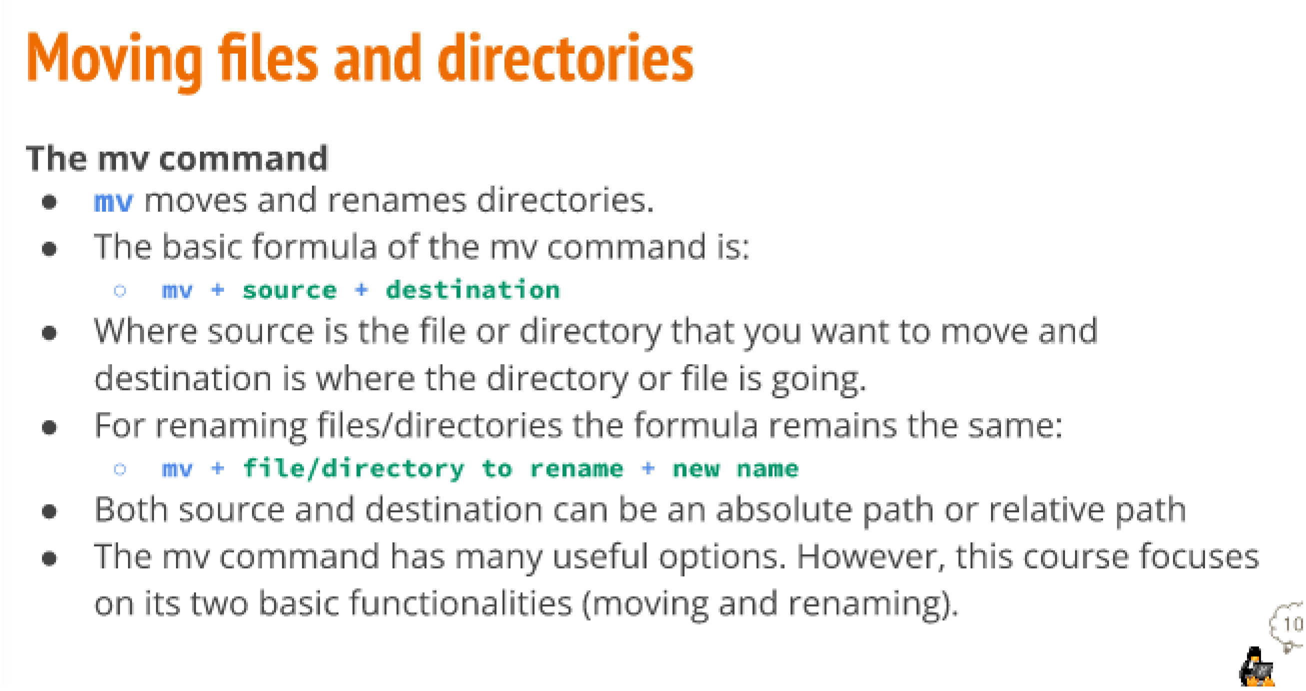


Deleting files and directories

- **The rm command**
  - `rm` removes files.
  - `rm` by default does not removes directories. To remove a directory use `rm` with the -r option.
  - In Linux and other Nix systems you cannot remove non empty directories.
  - To remove empty directories use the `rmdir` command.
  - To remove non-empty directories use `rm -r` + directory name or directory absolute path.

Note: *Linux is like a Ferrari with no brakes in the sense that it does what you tell it to do.*
Use the rm -r command with caution.

Moving Files and directories



Moving files and directories

The mv command

- `mv` moves and renames directories.
- The basic formula of the mv command is:
  - `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:
  - `mv + file/directory to rename + new name`
- Both source and destination can be an absolute path or relative path
- The mv command has many useful options. However, this course focuses on its two basic functionalities (moving and renaming).

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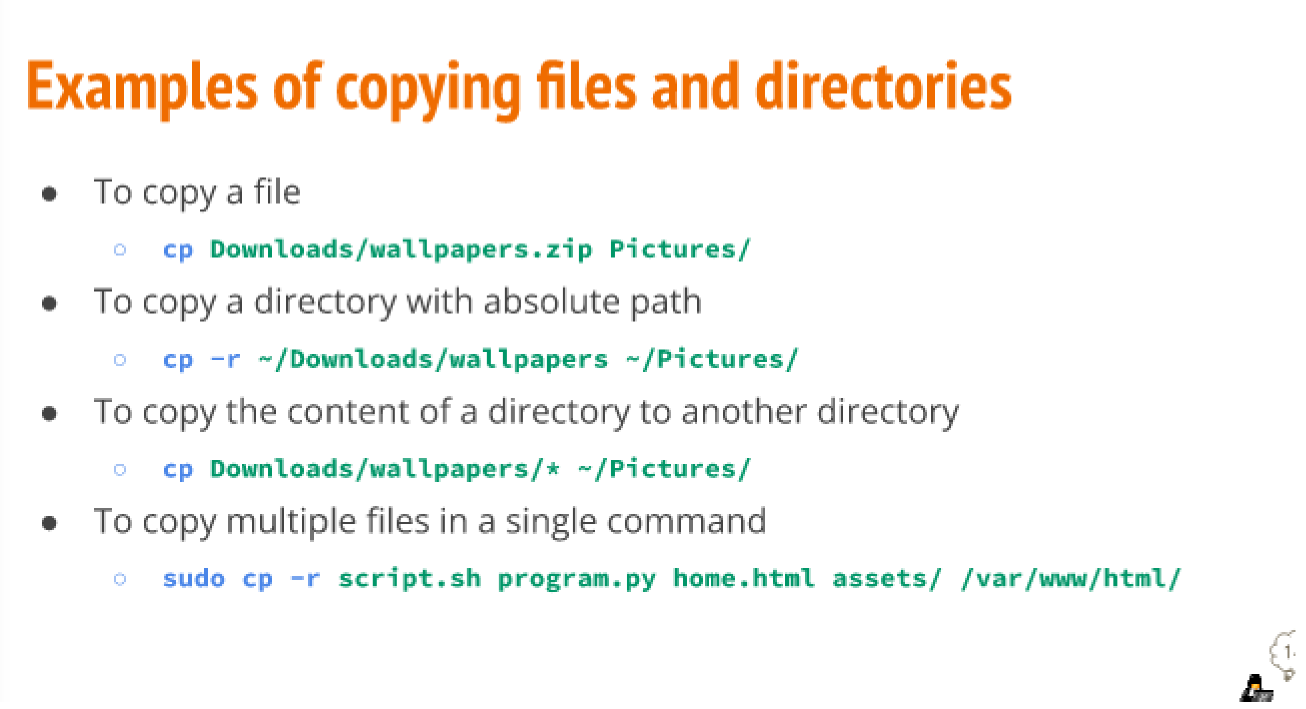
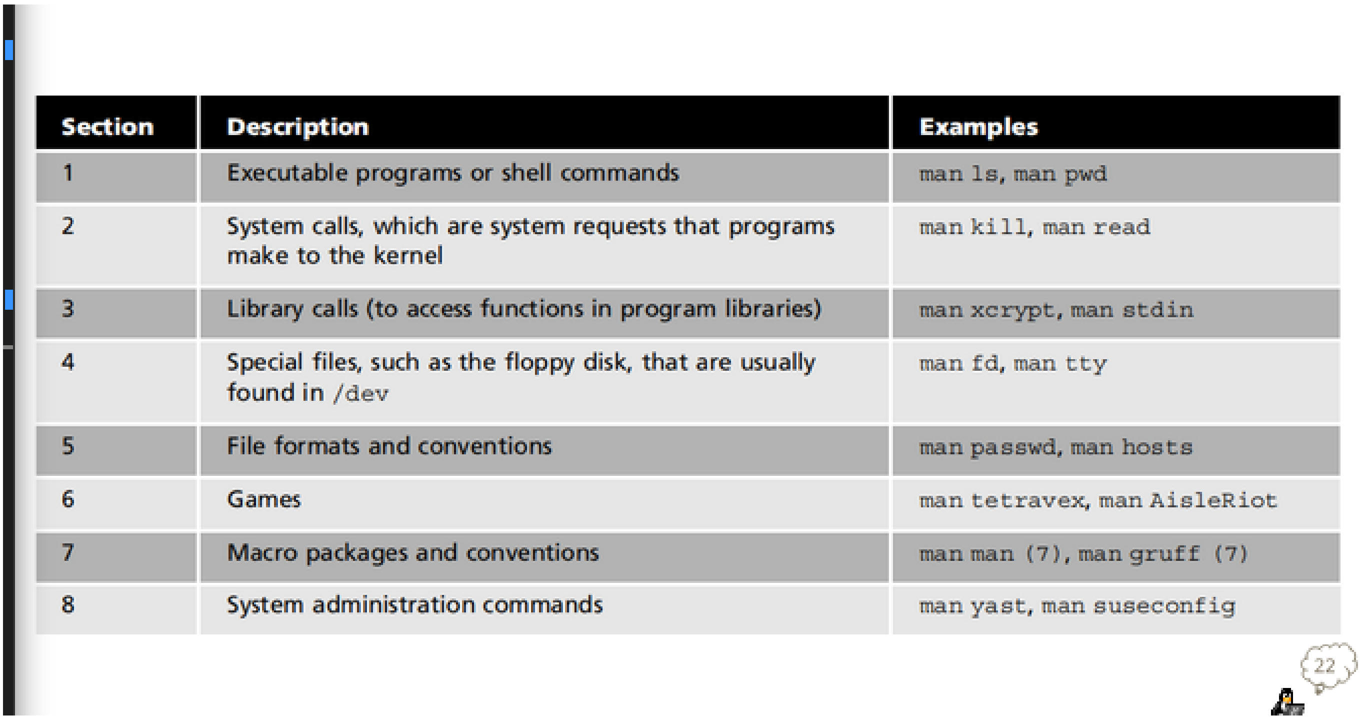
Copying files and dirextories Examples



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/`



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

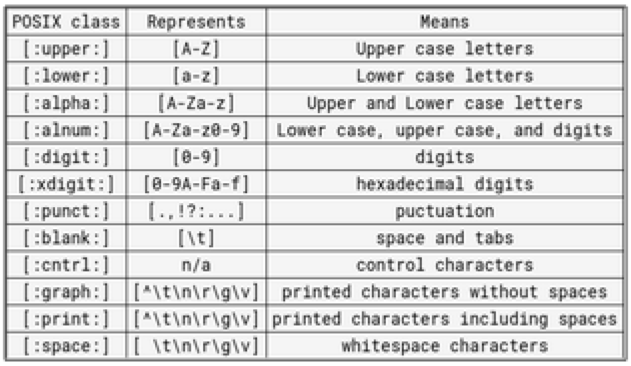
Wildcard

The * Wildcard

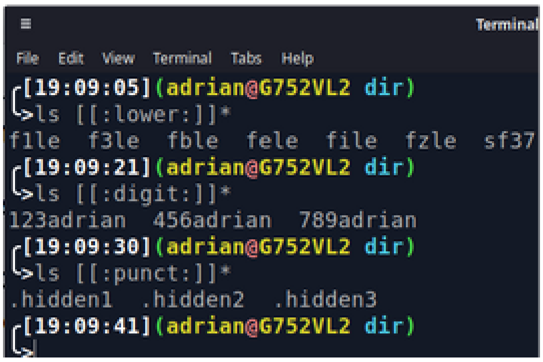
- The main wildcard is a star, or asterisk (*) character.
- A star alone matches anything and nothing and matches any number of characters.
- For example, `ls *.txt` will match all files that end in .txt regardless of the size of the file name.
- Examples of when to use the * wildcard:
  - When you want to list all files with a particular file extension
  - When you do not remember the complete name of a file but you remember a portion of the name.
  - When you want to copy, move, or remove all files that match a particular naming convention.

The [] wildcard with Regex Character Classes

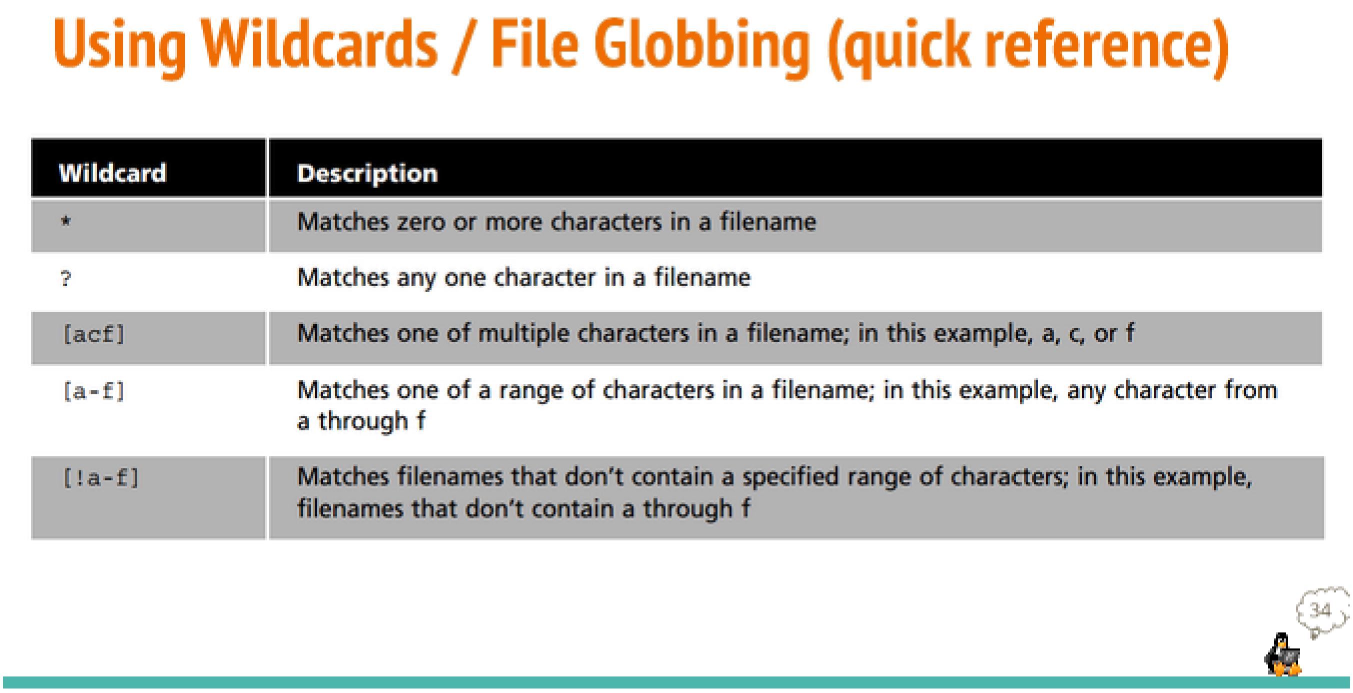
You can use POSIX or Character Classes with the [] wildcard



POSIX class	Represents	Means
[:upper:]	[A-Z]	Upper case letters
[:lower:]	[a-z]	Lower case letters
[:alpha:]	[A-Za-z]	Upper and Lower case letters
[:alnum:]	[A-Za-z0-9]	Lower case, upper case, and digits
[:digit:]	[0-9]	digits
[:xdigit:]	[0-9A-Fa-f]	hexadecimal digits
[:punct:]	[.,!?:...]	puctuation
[:blank:]	[\t]	space and tabs
[:cntrl:]	n/a	control characters
[:graph:]	[^\t\n\r\g\v]	printed characters without spaces
[:print:]	[^\t\n\r\g\v]	printed characters including spaces
[:space:]	[\t\n\r\g\v]	whitespace characters



```
┌[19:09:05](adrian@G752VL2 dir)
└>ls [[:lower:]]*
f1le  f3le  fble  fele  file  fzle  sf37
┌[19:09:21](adrian@G752VL2 dir)
└>ls [[:digit:]]*
123adrian  456adrian  789adrian
┌[19:09:30](adrian@G752VL2 dir)
└>ls [[:punct:]]*
.hidden1  .hidden2  .hidden3
┌[19:09:41](adrian@G752VL2 dir)
└>
```



Using Wildcards / File Globbing (quick reference)

Wildcard	Description
`*`	Matches zero or more characters in a filename
`?`	Matches any one character in a filename
`[acf]`	Matches one of multiple characters in a filename; in this example, a, c, or f
`[a-f]`	Matches one of a range of characters in a filename; in this example, any character from a through f
`[!a-f]`	Matches filenames that don't contain a specified range of characters; in this example, filenames that don't contain a through f