RAPPELS
ligne de commande

Linux on windows

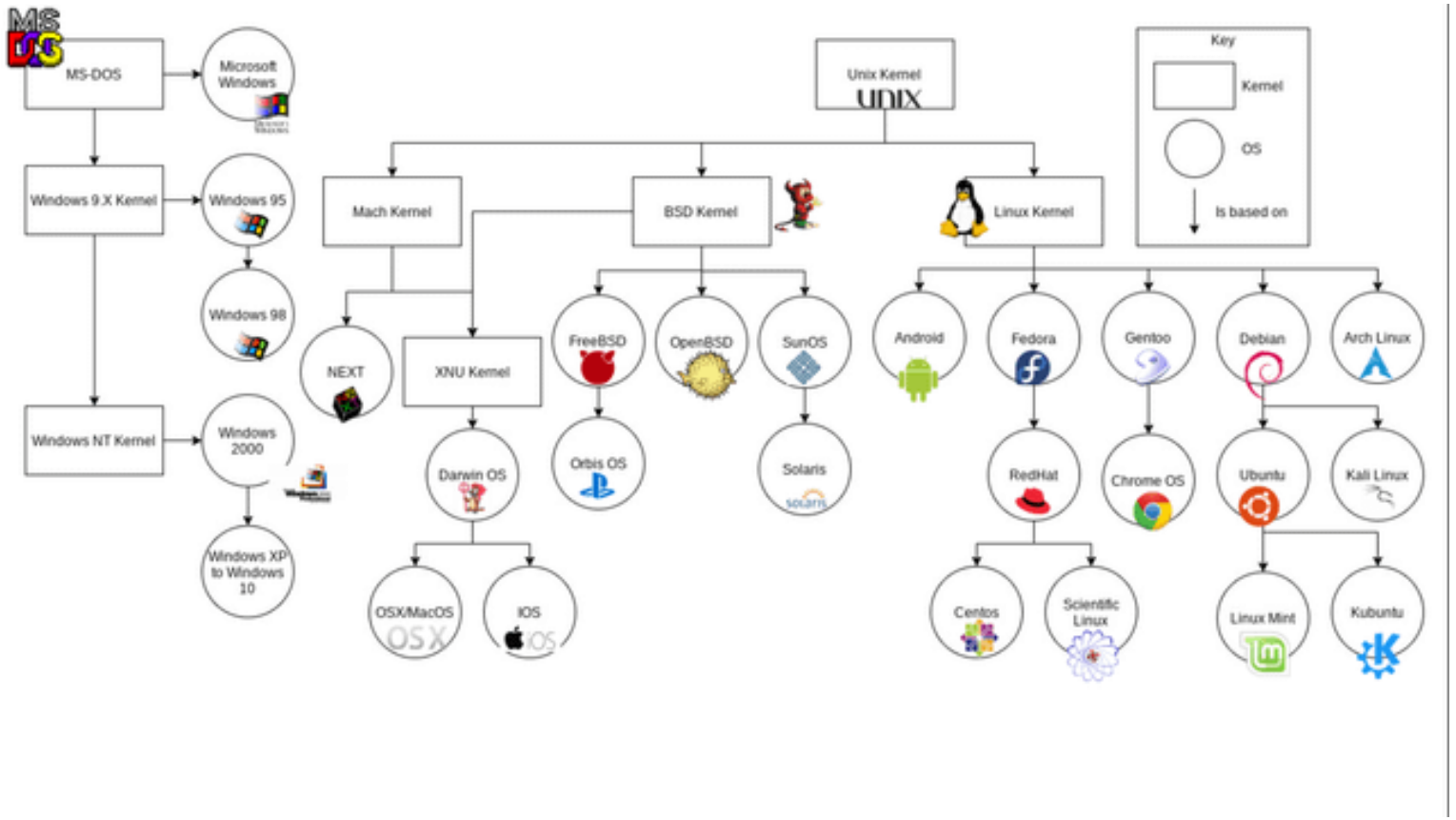
- https://learn.microsoft.com/fr-fr/windows/wsl/install
- Im sure there are better options out there however…

Why master the linux comand line?

- Better control over the machine
- Faster (once you get the hang of it)
- You can automate a lot of things (create 1000 files in one go for example)
- Available everywhere (linux, mac, and windows with a bit of work)
- => Basically a requirement if for computer science

Operating Systems

- Basically 2 groups:
  - Microsoft descendants
  - Unix descendants
- Family Tree:



What is linux ?

- Linux is a kernel (noyau)
- Kernel connects the software to the hardware (HD, RAM, CPU…), you can see it as a piece of the operating system
- Different ‘flavors’ of Linux (linux distributions)
  - Ubuntu
  - Debian
  - Kali
- Open source => main reason why it’s so popular

The Shell

- Shell is the interface we use to interact with the operating system
- It takes our commands and gives them to the OS to perform
  - It’s named ‘shell’ because it forms an outer layer around the OS

- Different shells:
  - bash => Bourne-Again Shell
  - Zsh => Z shell

The terminal

- A terminal is what we use to run the shell
- Originally those were physical devices, but now we work with software terminals

VT100, 1978

- Terminal Emulator is what we use to interact with the shell
- Terminal (physical device) → Shell (user interface)

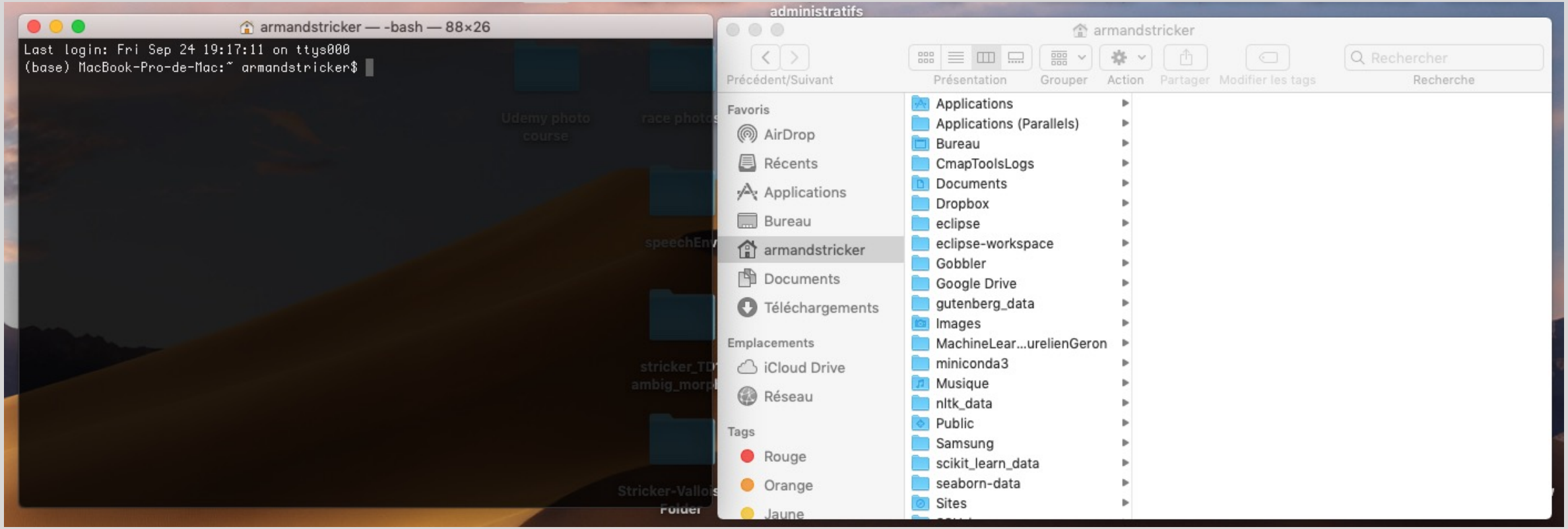
How to open the terminal

- Easy on mac and linux

In case you need help

- Can’t remember what a command is for ?
  - Consult the man
    - man (manual) try ‘man man’
    - Or **-h**
    - Or **--help**
  - Search for something you would like to do:
    - Apropos => does a keyword search through the manual
    - Apropos apropos

Command line/terminal vs GUI (Graphical User Interface)



Command line/terminal vs GUI (Graphical User Interface)

- Moving around your directories:
  - GUI advantage => always know where we are
  - How do we see where our current location using the terminal ?
  - How do we see what's in a folder ?
  - How de we change folders ? (and go back to the previous directory ?/go back to home ?)

    Absolute vs. Relative paths

Basic/ Command line/terminal vs GUI (Graphical User Interface)

- pwd => print working directory
- cd => change directory (cd .. To go back)
- ls => list contents in directory (-a and –l)
- cat => concatenate : print file content in terminal

Folder Structure

- Keep in mind : everything is a file inside a directory ! (even the commands) cf. bin file

Options syntax

- Examples:
  - Clear –x (see man)
  - Ls -al

Create a file or directory

- Mkdir => create a directory (-p option)
- Touch => create any file (.txt, .pdf, .pptx etc…)
- Display a line of text: echo

Redirecting Standard output

- Dump content into a file: >
- Write something into a file: echo ‘my favorite band is’ > file1.txt
- What happens when you try to add the band name ?
- To concatenate : >> (-n option with echo, use quotation marks)
- Other examples
  - date > today.txt
  - pwd > directory.txt

See contents of a file

- Cat
- Less
- Head

Command line/terminal vs GUI (Graphical User Interface)

- Manipulating files/directories:
  - Copy a file ?
  - Remove a file ?
  - Rename or move a file into a directory?

- Cp (-r)
- Rm (-r)
- Mv (-r)

Piping

- Pass the output of 1 command to another command
- Cat hello.txt | wc -w (wc : word count, returns # lines, # words, #bytes)

Useful Keyboard shortcuts

- Ctrl L to clear (or type clear -x)
- Ctrl A to get to the start of a line
- Ctrl E to get to the end of a line
- Tab for autocomplete
- Ctrl ➡ to skip a word | option key ➡ on mac

Quick Recap

- Everything is a file !
- Important to know where things are and moving them to where you want them to go
- Practice being comfortable switching directories with the terminal => better grasp on your machine + what is actually stored on your computer

Done

- Resources:
  - https://www.freecodecamp.org/news/the-linux-commands-handbook/
  - https://www.youtube.com/watch?v=ZtqBQ68cfJc

Installing Packages

- A package can contain anything someone wants to install => firefox, minecraft etc.
- To install them we need package managers :
  - Dpkg
  - Apt (advanced package tool)
  - Brew for mac
  - All rely on repositories : a server/storage location that contains a collection of the software we might want to use

Create a virtual environment

- Miniconda is *recommended* (https://docs.conda.io/projects/miniconda/en/latest/miniconda-install.html)

- Venv is also an option you should be aware of

Installing Packages

- Install python if you haven’t already => go to python website

Exercise – use the command line to set up a project

- Using the command line:
  - Create a directory
  - Create and open a python file

2 basic commands so you can download the class material and stay up to date

- Copy the online repository with the command:
  - ‘git clone git@github.com:armandstrickernlp/NLP_Inalco.git’
- Before each class, simply run :
  - ‘Git pull origin main’ to update your local copy of the github repository