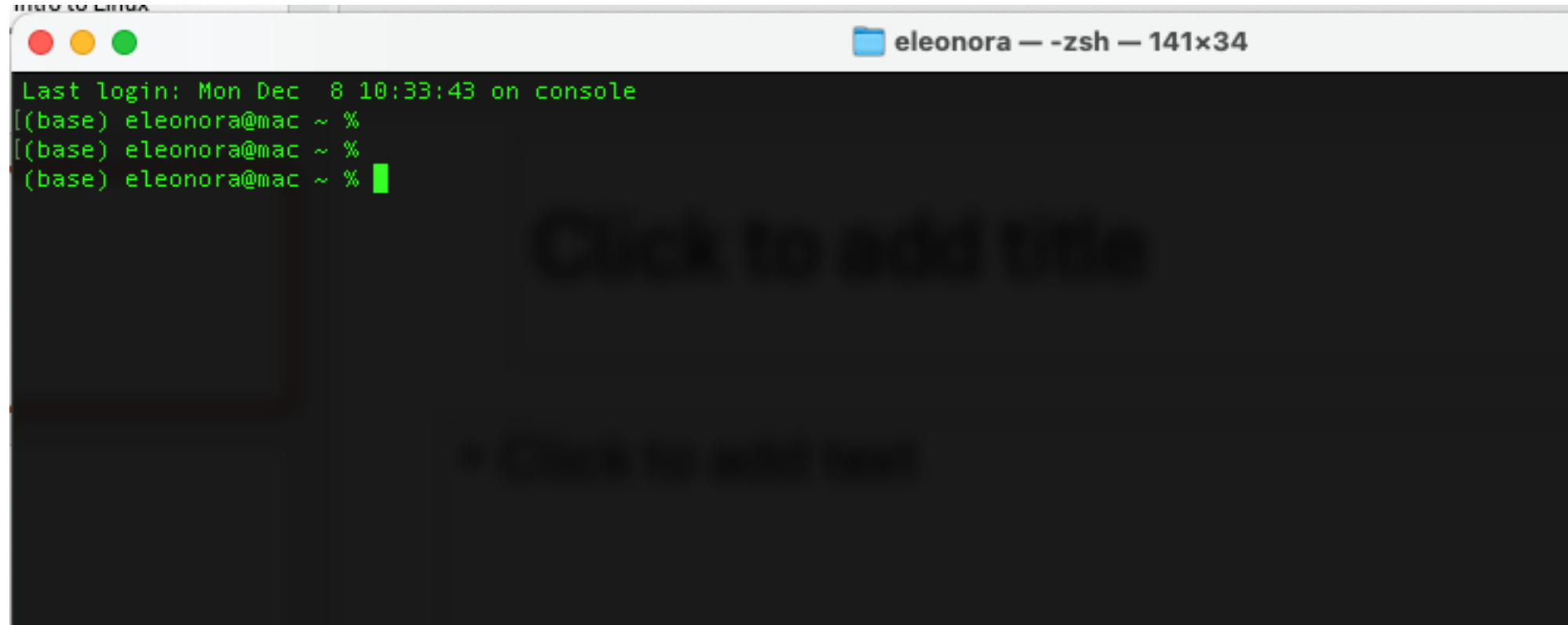


Intro to Unix/Bash

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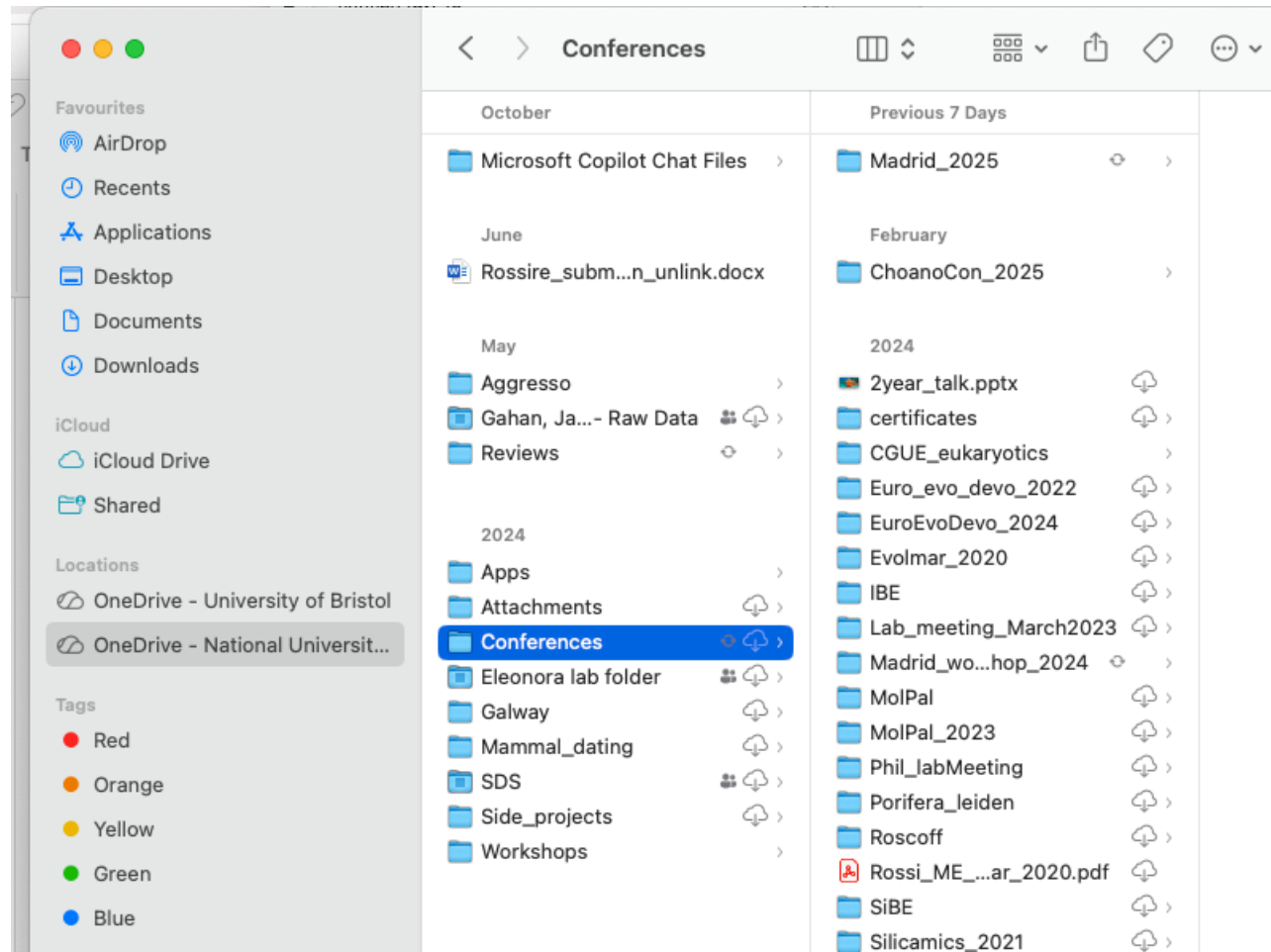
- **Unix/Linux** is the operating system
- **Bash** is a specific command-language interpreter (the shell) that runs on Unix-like systems
- **Bash** is one of the most common shells used in bioinformatics

The terminal

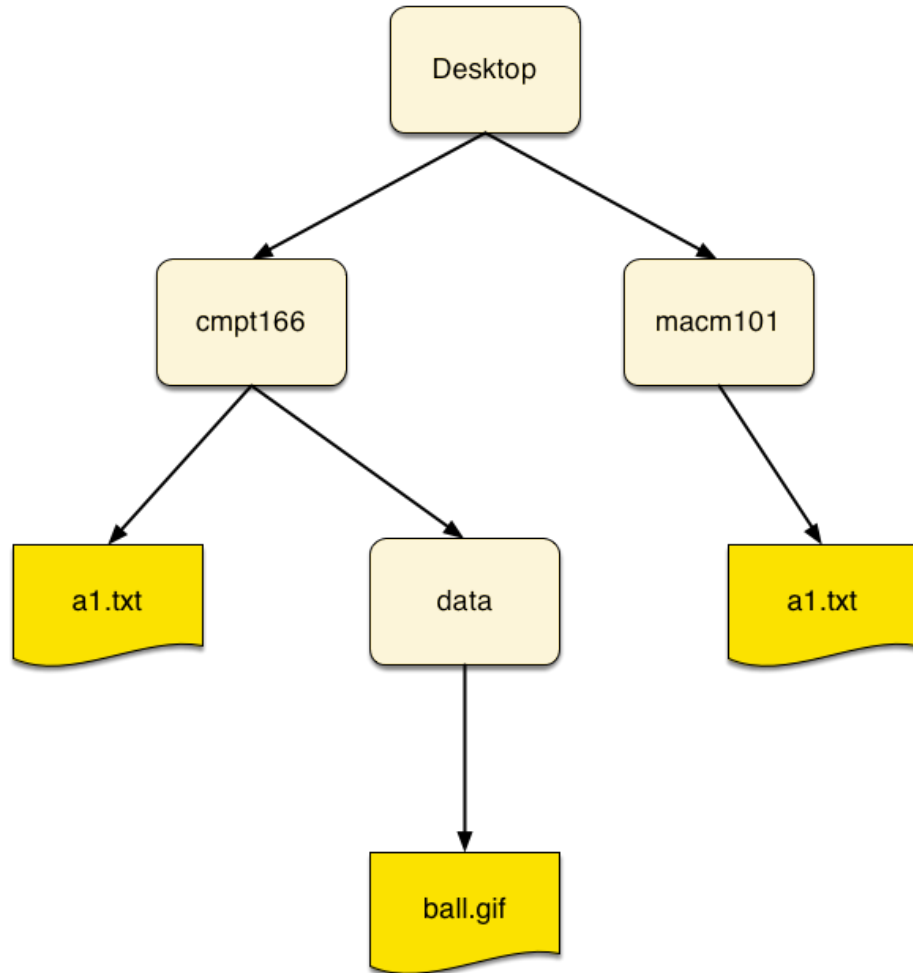


```
macOS -> Linux
Last login: Mon Dec  8 10:33:43 on console
(base) eleonora@mac ~ %
(base) eleonora@mac ~ %
(base) eleonora@mac ~ %
```

Navigating the file system



Navigating the file system



Useful commands to navigate the file system

pwd (print working directory)

ls (list)

cd (change directory)

cd .. (change directory moving up)

cd ~ (change directory and go to home directory)

mkdir <name directory> (make a new directory)

Example of path:

/Users/Eleonora/Documents/data.txt/

Working with files

Copying files

cp original.txt. duplicate.txt

cp <path to file you want to copy/filename> <path where you want to copy the file>

cp Phylogenomics/data/fasta.txt /results/fasta.txt

cp Phylogenomics/data/fasta.txt .

Shortcuts

Up arrow key = moves back from your previous command history

Tab key = auto-completion button

Working with files

Viewing files

less <file-name> allow to visualize the file , very useful if you need to take a quick look at a huge file

head <file-name> visualize the start of the file, using the `-n` flag we can specify the number of lines we want to see e.g. `head -n file.txt` it will show us the first 10 lines of file.txt

tail <file-name> visualize the end of the file

Let's start with the practical!!



Bash Cheat Sheet

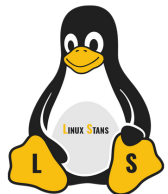


Navigating the File System

cd [directory]	Change directory
pwd	Print working directory
ls [options] [directory]	List directory contents
mkdir [directory]	Create a new directory
rmdir [directory]	Remove a directory
cp [source] [destination]	Copy files or directories
mv [source] [destination]	Move or rename files or directories
rm [options] [file]	Remove files or directories
touch [file]	Create an empty file

Archiving and Compression

tar [options] [files/directories]	Create or extract tar archives
gzip [file]	Compress a file
gunzip [file.gz]	Decompress a gzipped file
zip [archive.zip] [files/directories]	Create a zip archive
unzip [archive.zip]	Extract files from a zip archive



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other Linux content at
[LinuxStans.com](https://linuxstans.com)

File Manipulation

cat [file]	Output the contents of a file
head [options] [file]	Output the first lines of a file
tail [options] [file]	Output the last lines of a file
less [file]	View the contents of a file interactively
grep [pattern] [file]	Search for a pattern in a file
wc [options] [file]	Count the number of lines, words, or characters in a file

Permissions

chmod [permissions] [file]	Change the permissions of a file or directory
chown [user:group] [file]	Change the owner and group of a file or directory
chgrp [group] [file]	Change the group of a file or directory
umask [mask]	Set the default file permissions for newly created files

Process Management

ps [options]	Display information about active processes
kill [process_ID]	Terminate a process
top	Display and manage the top processes
bg [job_ID]	Move a job to the background
fg [job_ID]	Bring a background job to the foreground