UNIVERSITY OF PADOVA
DEPARTMENT OF INFORMATION ENGINEERING

Biomedical Wearable Technologies
for Healthcare and Wellbeing

Terminal primer

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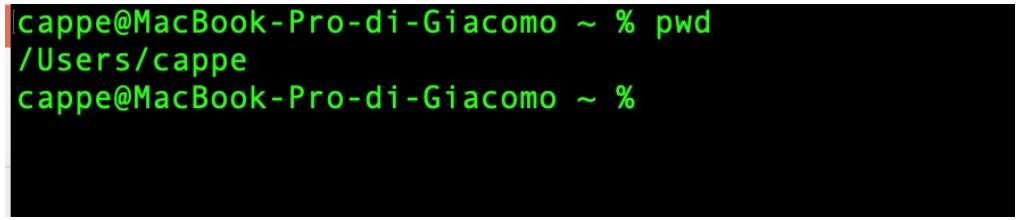
Intro

- **Terminal** is the software that allows to send UNIX Shell commands to the operating system through the command line.
- This very brief primer lists some useful UNIX Shell commands that you will need to use during this course in order to work with GIT.
- UNIX (Mac and Linux) users have **Terminal** already installed.
- Windows users must install and use **git-bash** instead of Terminal since the latter is not available for Windows (to install it, follow step 4b in the "**Setup the development environment**" guide you can find in the moodle page of the course).
- In the following, and during the course, I will always refer to both Terminal and git-bash as "Terminal"

UNIX Shell - Directories

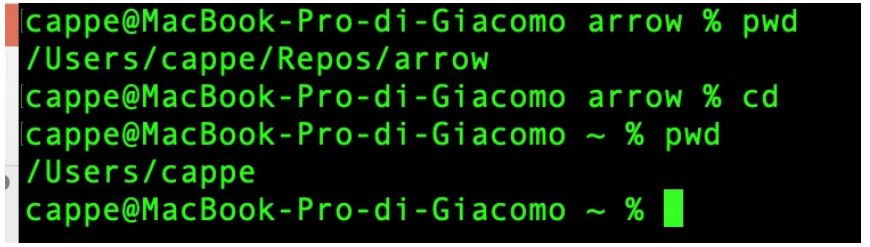
- When you open the Terminal, it should start in your home directory. This is your individual space on the system for your files. You can find out the name of your current working directory using the `pwd` (parent working directory) command:

  `pwd`



- No matter where in the directory structure you are, you can always get back to your home directory by using the `cd` (change directory) command without any arguments:

  `cd`



UNIX Shell - Directories

- To create a folder you can use the `mkdir` (make directory) command followed by the name of the directory you want to create:

`mkdir primer`

```
cappe@MacBook-Pro-di-Giacomo ~ % mkdir primer
cappe@MacBook-Pro-di-Giacomo ~ %
```

- You can remove an empty subdirectory with the `rmdir` (remove directory) command (but don't do this right now):

`rmdir primer`

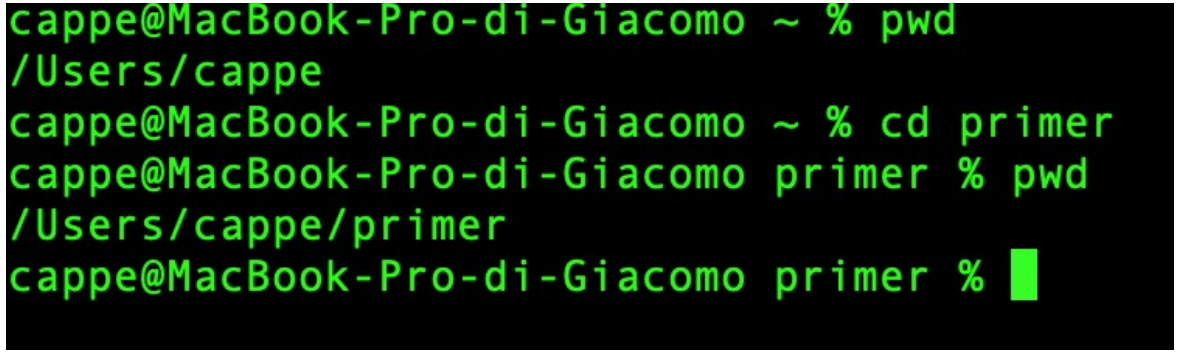
```
cappe@MacBook-Pro-di-Giacomo ~ % rmdir primer
cappe@MacBook-Pro-di-Giacomo ~ % mkdir primer
cappe@MacBook-Pro-di-Giacomo ~ %
```

(Note: if you do remove "primer", please create it again since all examples will refer to it.)

UNIX Shell - Directories

- To move into a directory you can use the `cd` command this time followed by the name of the directory you want to move into:

```
cd primer
```



UNIX Shell - Directories

- To move into a directory you can use the `cd` command followed by the name of the directory you want to move into, e.g.:

```
cd primer
```

```
cappe@MacBook-Pro-di-Giacomo ~ % pwd
/Users/cappe
cappe@MacBook-Pro-di-Giacomo ~ % cd primer
cappe@MacBook-Pro-di-Giacomo primer % pwd
/Users/cappe/primer
cappe@MacBook-Pro-di-Giacomo primer %
```

- To move back into the parent folder use ".." as directory name:

```
cd ..
```

```
cappe@MacBook-Pro-di-Giacomo primer % pwd
/Users/cappe/primer
cappe@MacBook-Pro-di-Giacomo primer % cd ..
cappe@MacBook-Pro-di-Giacomo ~ % pwd
/Users/cappe
cappe@MacBook-Pro-di-Giacomo ~ %
```

UNIX Shell - Files

- To create a file (for example a .txt file) you can use the `nano` text editor, e.g.:

  ```
  nano myfile.txt
  ```

- A blank window will open where you can write and edit the myfile.txt file.

- To exit, use “CTRL+X” on your keyboard. You will be asked to save the changes you made to the file:
  - Use “Y” on your keyboard to save and exit
  - Use “N” on your keyboard to exit without saving

- If you choose “Y”, the editor will ask you to choose a file name. Choose it and press enter to exit.

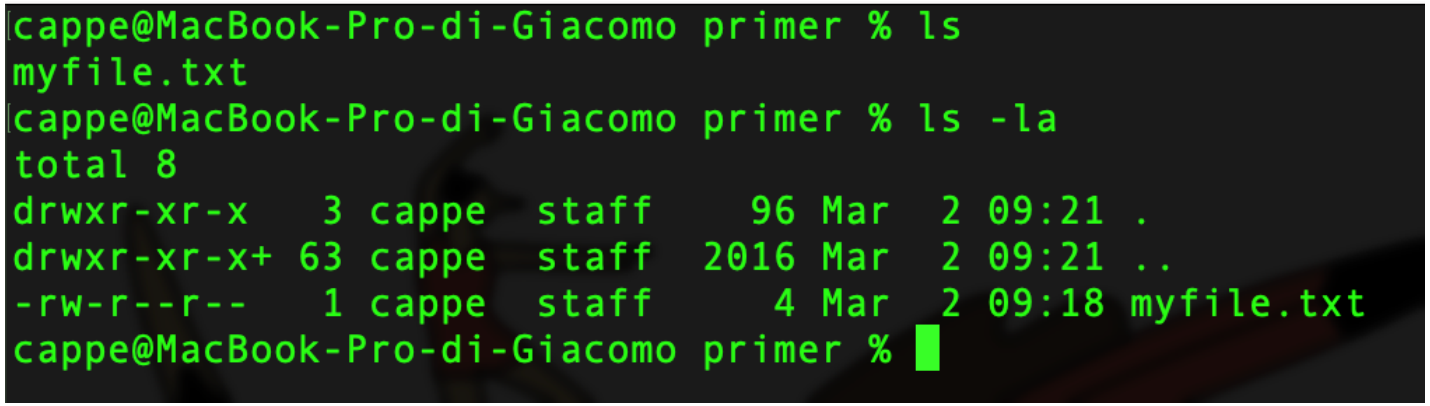
UNIX Shell - Files

- To list the content of a directory, use the ls (list) command:

  `ls`

- If you want to also see all the details of each files and also the hidden folders, use the `–la` option:

  `ls –la`

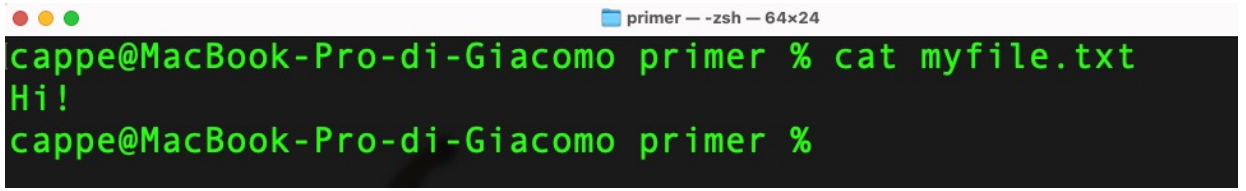


- Note: I won't cover what are those details since this is not necessary for the course. If you want to know more about it, you can find some useful resources at the end of the document.

UNIX Shell - Files

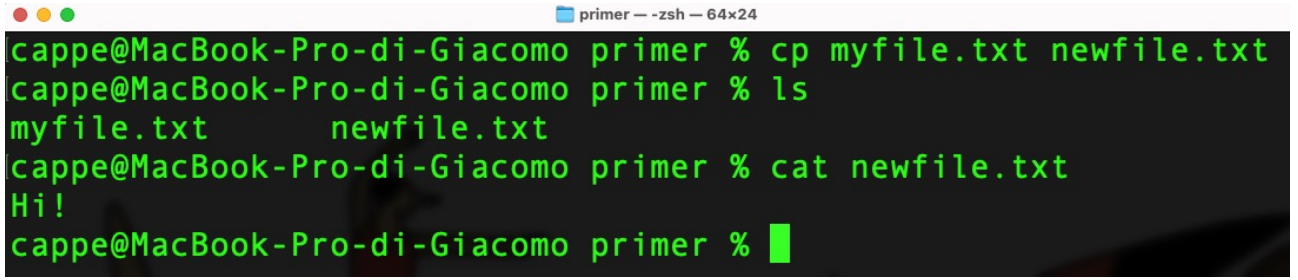
- To show the content of a file use the `cat` command followed by the name of the file you want to show, e.g.:

```
cat myfile.txt
```



- To copy a file into another use the `cp` (copy) command followed by the name of the source file and the name of the destination file, e.g.:

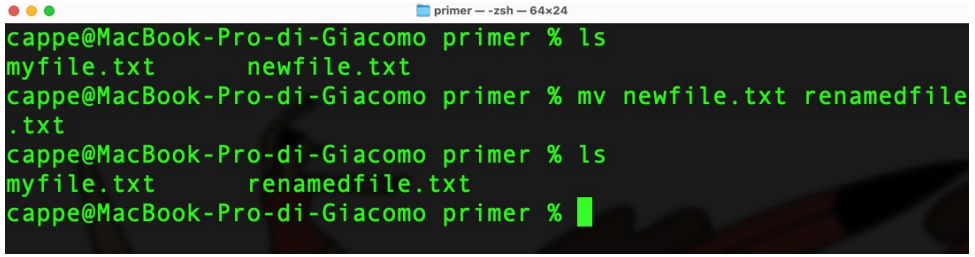
```
cp myfile.txt newfile.txt
```



UNIX Shell - Files

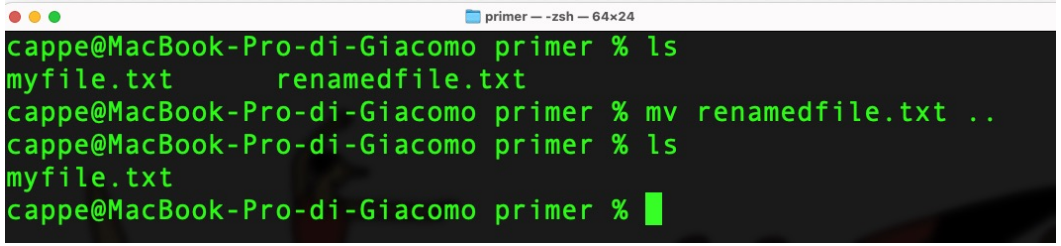
- To rename a file use the `mv` (move) command followed by the name of the file you want to rename and the new file name, e.g.:

```
mv newfile.txt renamedfile.txt
```



- To move a file into another directory, use the `mv` command followed by the name of the file you want to move and the name of the destination directory, e.g. (this moves the file into the parent directory):

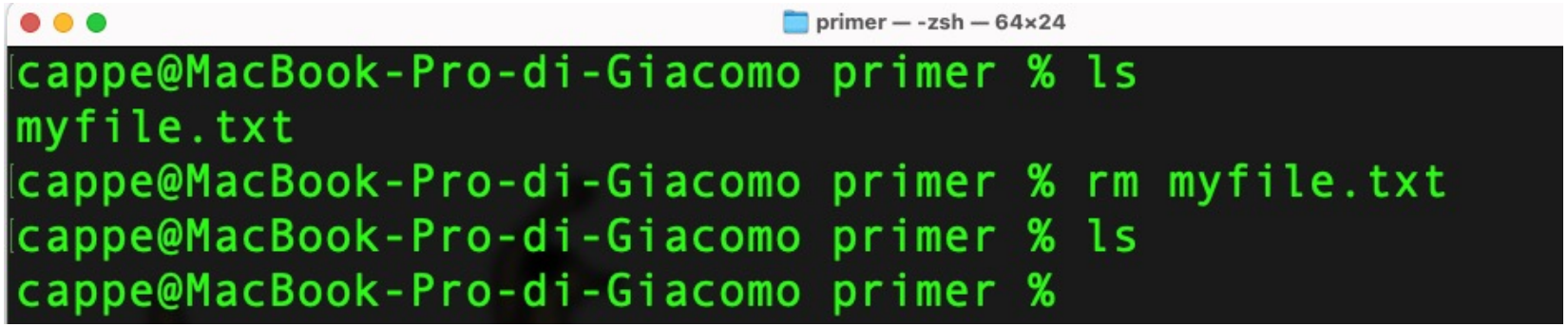
```
mv renamedfile.txt ..
```



UNIX Shell - Files

- To remove a file use the `rm` (remove) command followed by the name of the file you want to remove, e.g.:

```
rm myfile.txt
```

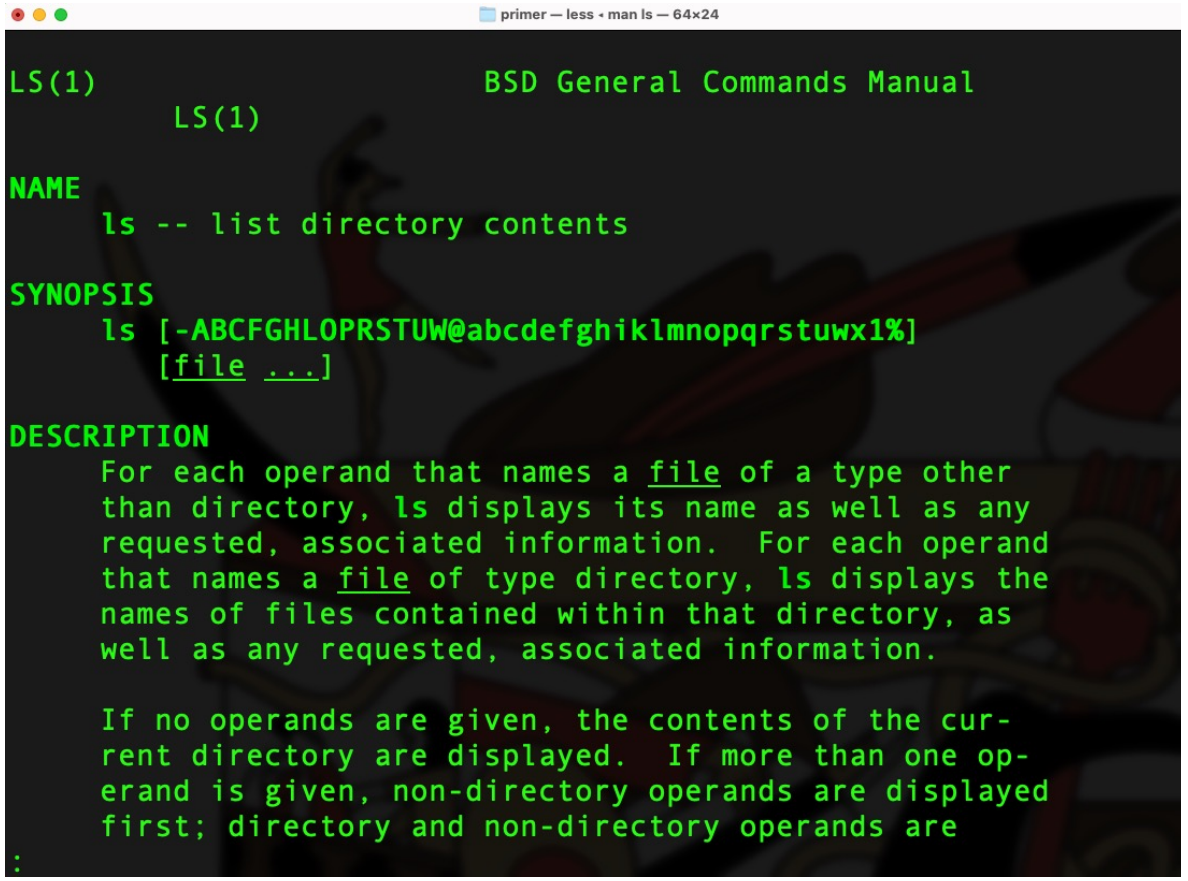


UNIX Shell - Help

- To show the online help for a specific command use the man (manual) command, e.g. (this will show the online help for the ls command):

```
man ls
```

- To exit press “q” on the keyboard



UNIX Shell - Summary

`nano myfile.txt`	*text edit file "myfile.txt"*
`ls`	*list files in current directory*
`ls -la`	*long format listing with also hidden things*
`cat myfile.txt`	*view contents of text file "myfile.txt"*
`more myfile.txt`	*paged viewing of text file "myfile.txt"*
`less myfile.txt`	*scroll through text file "myfile"*
`cp srcfile destfile`	*copy file "srcfile" to new file "destfile"*
`mv oldname newname`	*rename (or move) file "oldname" to "newname"*
`rm myfile.txt`	*remove file "myfile.txt"*
`mkdir dirname`	*make new directory called ”dirname"*
`cd dirname`	*move into ”dirname"*
`rmdir dirname`	*remove (empty) directory ”dirname"*
`pwd`	*display current working directory*
`man command`	*display man page for "command"*

Useful resources

- UNIX Shell Crash Course by swcarpentry
  - https://www.youtube.com/watch?v=8c1BL5b47kg&ab_channel=Geek%27sLesson
- UNIX Shell docs by swcarpentry
  - https://swcarpentry.github.io/shell-novice/