

MODÈLES STATISTIQUES EN SANTÉ
- M2 SNS -
LET'S START

Exercice 1 - Github beginners

Est-ce que git marche sur les machines de la salle de TD ?

Step 0 : First we need to install Git. Visit <https://git-scm.com/downloads>, download the package for your system and install.

After you install Git, the 'git' command should be available to you in the terminal :

```
$ git
usage: git [--version] [--help] [-C <path>] [-c <name>=<value>]
        [--exec-path[=<path>]] [--html-path] [--man-path] [--info-path]
        [-p | --paginate | -P | --no-pager] [--no-replace-objects] [--bare]
        [--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
        <command> [<args>]
...
```

Step 1 : Let's say you have started with a hobby mini project and wrote a simple script in a file greeter.py. You can use Spyder or vscode as a Python editor.

```
def main():
    print("Ehlo World!")
```

```
main()
```

Now you would like to save it in a Git repository.

Step 2 : Move to the folder where greeter.py is located and create an empty Git repository using a command git init.

```
$ git init
Initialized empty Git repository in /Users/vmonbet/BIOSTATS/TP/TP0
```

```
$ ls -a
.
..
.git
```

To check the status of your repo, issue

```
$ git status
On branch main
```

No commits yet

Untracked files:

(use "git add <file>..." to include in what will be committed)
greeter.py

Step 3 : Let's tell Git to track our greeter.py file and add it to the list for the next commit.

```
$ git add greeter.py
```

```
$ git status
```

On branch main

No commits yet

Changes to be committed:

(use "git rm --cached <file>..." to unstage)
new file: greeter.py

Now the current version of the greeter.py is staged for commit and we can add it to our repository.

```
$ git commit -m "Initial version of greeter function."
```

```
$ git status
```

[main (root-commit) 86474e9] Initial version of greeter function.

Step 4 : In the greeter script we have a typo, so we change the text "Ehlo World!" to "Hello BioStatistics!". We must save the file in our text editor so the changes are written to disk, before we proceed!

```
$ git status
```

On branch main

Changes not staged for commit:

(use "git add <file>..." to update what will be committed)
(use "git restore <file>..." to discard changes in working directory)
modified: greeter.py

```
$ git commit -a -m "Hello text update."
```

[main dca6083] Hello text update.

1 file changed, 1 insertion(+), 1 deletion(-)

```
$ git status
```

On branch master

nothing to commit, working tree clean

Step 5 : We would now like to provide a more personal script, so we change the greeter.py as follows :

```
def main():
    student = input("Please enter your name: ")

    print(f"Dear {student}, we are happy to have you in the BioStistics track!")

main()
```

Again, add the file to stage and commit it to the repo.

```
$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   greeter.py

no changes added to commit (use "git add" and/or "git commit -a")
```

```
$ git commit -a -m "Personal update."
[master 29710cc] Personal update.
 1 file changed, 3 insertions(+), 1 deletion(-)
```

```
$ git status
On branch master
nothing to commit, working tree clean
```

Step 6 : Now our project has some history,

```
$ git log
commit 6f1e32e19aebab631a1728f984527c81fbea2d3c (HEAD -> main)
Author: Valerie Monbet <valerie.monbet@univ-rennes.fr>
Date:   Sun Aug 10 12:46:51 2025 +0200
```

Personal update.

```
commit dca608385f2d75958afa36a7b20630447a656ed2
Author: Valerie Monbet <valerie.monbet@univ-rennes.fr>
Date:   Sun Aug 10 12:42:41 2025 +0200
```

Hello text update.

```
commit 86474e907f4a5d4cb652bb1a5871c635cbbdbe02
Author: Valerie Monbet <vmonbet@RT7F232XKJ.local>
Date:   Sun Aug 10 12:27:47 2025 +0200
```

Initial version of greeter function.

Exercise 2 - Start your first project In this project, we will study liver steatosis. For that, we use a mice model as described in [Martin et al., 2025].

1. Create a directory for the project. The directory will contains a least a paper, a dataset and some python codes. You can create sub-directories for a better reproducible research.
2. Download the dataset **David** and the compagnion paper.
3. Start writing a python code for
 - (a) Read the data (use `pandas.read_csv`)
 - (b) Remove lines with missing data (use `pandas.dropna`)
 - (c) Identiy the numbre of samples, the number of treatment groups, the number of samples per treatment groups
 - (d) Compute descriptive statistics for the observed variables as in Table 1 in [?]. See https://pandas.pydata.org/docs/dev/user_guide/style.html for table visualisation.
4. Let's tell Git to track the files (paper, dataset and code(s)).

Références

[Martin et al., 2025] Martin, D., Monbet, V., Leroyer, P., Oliviero, N., Turlin, B., Salim, Z., Fautrel, A., Ropert, M., Sire, O., and Loréal, O. (2025). Sequential integration of multi-modal data from serum improves the predictive performance of hepatic lipid accumulation in mice.