GIT

NEGO Maxence

Objectif :

Au cours de la TP on va découvrir comment installer et configurer git sur ed et système de gestion de versions décentralisé qui permet de suivre les modifications apportées à des fichiers et des projets informatiques.

Lab0

Note :

On commence par l'installation et la configuration initial de git ainsi que l'utilisation des commandes add et commit.

Installation et configuration :

On commence par installer git :

```
sudo apt install -y git
```

On crée ensuite le répertoire sinter

```
mkdir -p ~/sinter/{a,b,c}
```

On copie les fichiers du dossier appli dans sinter :

```
cp -r ~/appli/* ~/sinter/
cp: -r not specified; omitting directory '/home/sio/appli/a'
cp: -r not specified; omitting directory '/home/sio/appli/b'
cp: -r not specified; omitting directory '/home/sio/appli/c'
cp: -r not specified; omitting directory '/home/sio/appli/lib'
cp: -r not specified; omitting directory '/home/sio/appli/log'
cp: -r not specified; omitting directory '/home/sio/appli/tmp'
cp: -r not specified; omitting directory '/home/sio/appli/vendor'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/bin'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/composer'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/deprecation-contracts'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/polyfill-ctype'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/polyfill-mbstring'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/polyfill-uuid'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/service-contracts'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/translation-contracts'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/var-exporter'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/polyfill-mbstring/Resources'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/polyfill-mbstring/Resources/unicode'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/polyfill-uuid/Resources'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Exception'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Factory'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Fixtures'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Test'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Provider'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Node'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Clock'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Generator'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Rfc4122'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Uuid'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Exception/BadMethodCallException'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Exception/InvalidArgumentException'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Exception/InvalidUuidStringException'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Exception/LogicalException'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Exception/RandomSourceUnavailableException'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Exception/UnsatisfiedRequirementException'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Exception/UnsupportedOperationException'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Exception/UnsupportedUuidVersionException'
cp: -r not specified; omitting directory '/home/sio/appli/vendor/symfony/uuid/Exception/UnsupportedVariantException'
```

Avec le commande git status, on observe que la branche n'est pas en main :

```
sio@saint-eloc:~$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .bashrc
        .cache/
        .dotnet/
        .gitconfig
        .local/
        .profile
        .sqlite_history
        .ssh/
        .sudo_as_admin_successful
        .vscode-server/
        .wget-hsts
        sinter/

nothing added to commit but untracked files present (use "git add" to track)
```

On va changer dans sin main :

```
sio@saint-eloc:~$ git branch -M main
```

La branche a bien été renommé :

```
sio@saint-eloc:~$ git status
On branch main

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .bashrc
        .cache/
        .dotnet/
        .gitconfig
        .local/
        .profile
        .sqlite_history
        .ssh/
        .sudo_as_admin_successful
        .vscode-server/
        .wget-hsts
        sinter/

nothing added to commit but untracked files present (use "git add" to track)
```

Commande git add et git commit :

On va maintenant utiliser ces deux commandes.

On commence par créer un fichier README.md

```
sio@saint-eloc:~$ touch README.md
```

On ajoute ce fichier au staging :

```
sio@saint-eloc:~$ git add README.md
```

On contrôle avec la commande gt status :

```
sio@saint-eloc:~$ git status
On branch main

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   README.md

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .bashrc
        .cache/
        .dotnet/
        .gitconfig
        .local/
        .profile
        .sqlite_history
        .ssh/
        .sudo_as_admin_successful
        .vscode-server/
        .wget-hsts
        sinter/
```

On fait maintenant un commit :

```
sio@saint-eloc:~$ git commit -m "Ajout du README"
[main (root-commit) 3a0d0ed] Ajout du README
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 README.md
sio@saint-eloc:~$ git status
On branch main
nothing to commit, working tree clean
```

On contrôle avec la commande gt log :

```
sio@saint-eloc:~$ git log
commit 3a0d0ed3a0a0a0a0a0a0a0a0a0a0a0a0a0a0a0 (HEAD -> main)
Author: sio@saint-eloc.local <sio@saint-eloc.local>
Date:   Wed Oct 8 09:53:55 2025 +0200

    Ajout du README
```

On va maintenant créer le fichier .gitignore pour ne pas tenir compte des fichiers logs :

```
sio@saint-eloc:~$ touch .gitignore
```

On ajoute ensuite le fichier control.log1 :

```
sio@saint-eloc:~$ touch ~/sinter/a/control.log1
```

On ajoute ensuite tout les fichiers au staging :

```
sio@saint-eloc:~$ git add .
```

Le fichier control.log1 n'apparaît pas :

```
sio@saint-eloc:~$ git status
On branch main
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   .gitignore
        new file:   .sudo_as_admin_successful
        new file:   sinter/a/control.log1

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .bashrc
        .cache/
        .dotnet/
        .gitconfig
        .local/
        .profile
        .sqlite_history
        .ssh/
        .vscode-server/
        .wget-hsts
```

On commit les nouveaux fichiers :

```
sio@saint-eloc:~$ git commit -m "Ajout des fichiers .gitignore et control.log1"
[main 3a0d0ed] Ajout des fichiers .gitignore et control.log1
 3 files changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 .gitignore
 create mode 100644 .sudo_as_admin_successful
 create mode 100644 sinter/a/control.log1
sio@saint-eloc:~$ git log
commit 3a0d0ed3a0a0a0a0a0a0a0a0a0a0a0a0a0a0a0 (HEAD -> main)
Author: sio@saint-eloc.local <sio@saint-eloc.local>
Date:   Wed Oct 8 09:53:55 2025 +0200

    Ajout du README
sio@saint-eloc:~$ git status
On branch main
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .bashrc
        .cache/
        .dotnet/
        .local/
        .profile
        .sqlite_history
        .ssh/
        .vscode-server/
        .wget-hsts
        sinter/

nothing added to commit but untracked files present (use "git add" to track)
```

Création release tag :

On va maintenant créer la release 1.0.0 à l'aide de tag.

```
sio@saint-eloc:~$ git tag -a 1.0.0 -m "Release 1.0.0"
```

On vérifie avec gt tag :

```
sio@saint-eloc:~$ git tag
1.0.0
```

Lab1

Note :

On va maintenant découvrir comment utiliser la fonctionnalité des branches sur gt.

Branches feature :

On commence par créer une branche feature1 :

```
sio@saint-eloc:~$ git branch feature1
```

On basculé sur la branche 1 :

```
sio@saint-eloc:~$ git checkout feature1
Switched to branch 'feature1'
```

On modifie ensuite le fichier test :

```
sio@saint-eloc:~$ nano ~/sinter/a/control.log1
```

On ajoute dans le staging :

```
sio@saint-eloc:~$ git add .
```

```
sio@saint-eloc:~$ git status
On branch feature1
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        modified:   sinter/a/control.log1

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .bashrc
        .cache/
        .dotnet/
        .local/
        .profile
        .sqlite_history
        .ssh/
        .vscode-server/
        .wget-hsts
```

Et on commit :

```
sio@saint-eloc:~$ git commit -m "Ajout du fichier control.log1"
[feature1 7b0d0ed] Ajout du fichier control.log1
 1 file changed, 1 insertion(+), 0 deletions(-)
sio@saint-eloc:~$ git log
commit 7b0d0ed3a0a0a0a0a0a0a0a0a0a0a0a0a0a0a0 (HEAD -> feature1)
Author: sio@saint-eloc.local <sio@saint-eloc.local>
Date:   Wed Oct 8 09:57:12 2025 +0200

    Ajout du fichier control.log1

commit 3a0d0ed3a0a0a0a0a0a0a0a0a0a0a0a0a0a0a0 (main)
Author: sio@saint-eloc.local <sio@saint-eloc.local>
Date:   Wed Oct 8 09:53:55 2025 +0200

    Ajout du README
sio@saint-eloc:~$ git status
On branch feature1
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .bashrc
        .cache/
        .dotnet/
        .local/
        .profile
        .sqlite_history
        .ssh/
        .vscode-server/
        .wget-hsts
```

On va maintenant merge les deux branches :

```
sio@saint-eloc:~$ git checkout main
Switched to branch 'main'
sio@saint-eloc:~$ git merge feature1
Updating 3a0d0ed..7b0d0ed
Fast-forward
 .gitignore                   | 0
 .sudo_as_admin_successful    | 0
 sinter/a/control.log1        | 1 +
 3 files changed, 1 insertion(+), 0 deletions(-)
 create mode 100644 .gitignore
 create mode 100644 .sudo_as_admin_successful
 create mode 100644 sinter/a/control.log1
sio@saint-eloc:~$ git log
commit 7b0d0ed3a0a0a0a0a0a0a0a0a0a0a0a0a0a0a0 (HEAD -> main, feature1)
Author: sio@saint-eloc.local <sio@saint-eloc.local>
Date:   Wed Oct 8 09:57:12 2025 +0200

    Ajout du fichier control.log1

commit 3a0d0ed3a0a0a0a0a0a0a0a0a0a0a0a0a0a0a0
Author: sio@saint-eloc.local <sio@saint-eloc.local>
Date:   Wed Oct 8 09:53:55 2025 +0200

    Ajout du README
sio@saint-eloc:~$ git status
On branch main
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        .bashrc
        .cache/
        .dotnet/
        .local/
        .profile
        .sqlite_history
        .ssh/
        .vscode-server/
        .wget-hsts
```

On supprime ensuite la branche feature1 :

```
sio@saint-eloc:~$ git branch -d feature1
Deleted branch feature1 (was 7b0d0ed).
```

Branche fix1 :

On commence par créer la branche fix1.

```
sio@saint-eloc:~$ git branch fix1
sio@saint-eloc:~$ git checkout fix1
Switched to branch 'fix1'
```

On modifie le script en changeant le titre

```
sio@saint-eloc:~$ nano ~/sinter/a/control.log1
```

```
sio@saint-eloc:~$ cat ~/sinter/a/control.log1
Mon .bin"DAY_log"%Y-%m-%d.log"%T:
Ceci le cinqui maintenant et dans quatre de la matinée Mon.
```

On add puis on commit :

```
sio@saint-eloc:~$ git add ~/sinter/a/control.log1
sio@saint-eloc:~$ git commit -m "Ajout de la ligne script dans fix1"
[fix1 ]
 warning: Not a git repository.
 Usage: git commit [<options>] [--] <pathspec>...
   -q, --quiet           suppress summary after commit
   -v, --verbose         show diff in commit message
   --dry-run             dry run
   --status              show status after commit
   --branch              show branch and tracking info
   --porcelain           machine-readable output
   --long                show status in long format (default)
   --short               show status in short format
   --zdiff3              show diff3 in commit message
   --pathspec-from-file  read pathspec from file
   --pathspec-file-nul   with --pathspec-from-file, pathspec elements are separated with NUL character
   -m <msg>              commit message
   -F <file>             read message from file
   --reset-author        reset author for commit
   --author <author>     override author for commit
   --date <date>         override date for commit
   --ignore-date         use current timestamp for author date
   --signoff             add a Signed-off-by trailer
   --trailer <token>[(=|:)<value>]  add a custom trailer
   --interactive         interactive mode
   --template <file>     use specified template file
   --edit                force a re-edit of the commit
   --cleanup <mode>      how clean up the commit message
   --status              include status in commit message
   --gpg-sign[=<key-id>] GPG sign commit
   --no-verify           bypass pre-commit and commit-msg hooks
   --amend               amend previous commit
   --no-post-rewrite     bypass post-rewrite hook
   --pre-merge-dry-run   dry run prerequisites for pre-merge-commit hook
   --fixup [{amend|reword}:]<commit>[:ignore-rest|:<regex>]  fixup a commit
   --squash <commit>     squash a commit
   --reuse-message <commit>  reuse commit message
   --reedit-message <commit>  reuse and edit commit message
   --reset-author        the commit is now authored by you
   --short               show status in short format
   --branch              show branch and tracking info
   --porcelain           machine-readable output
   --long                show status in long format (default)
   --zdiff3              show diff3 in commit message
   --pathspec-from-file  read pathspec from file
   --pathspec-file-nul   with --pathspec-from-file, pathspec elements are separated with NUL character
```