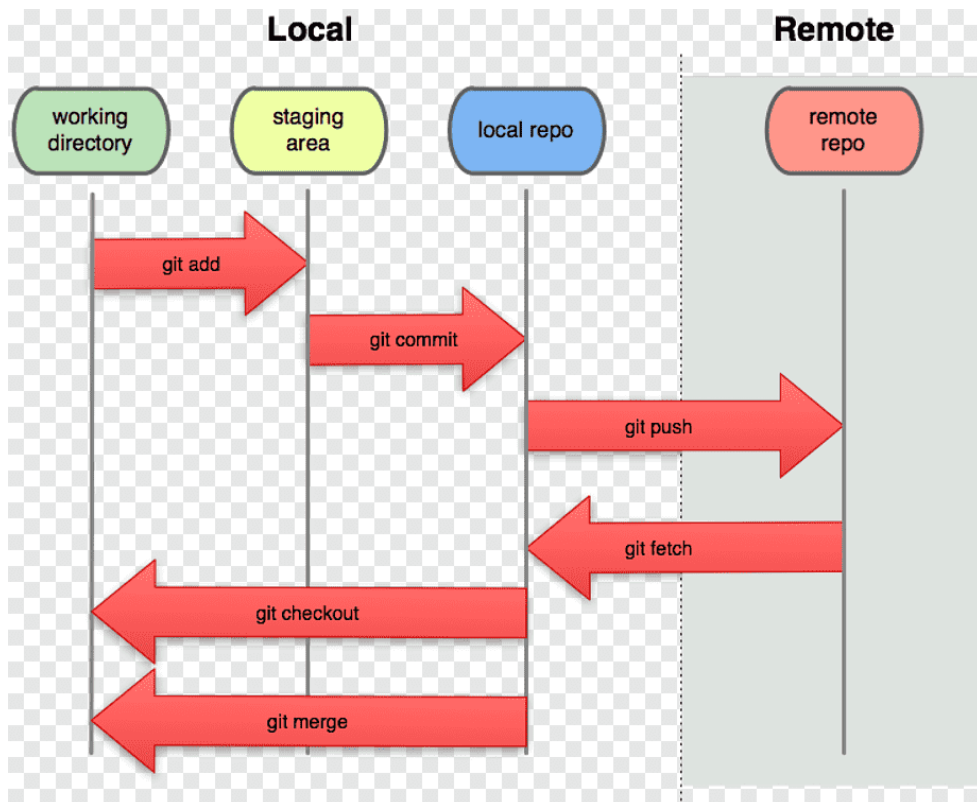


Atelier GIT



Installation de l'outil GIT, TP effectué sur Ubuntu 20.04 LTS#

```
devasc@labvm:~$ sudo apt install git
devasc@labvm:~$ git --help
usage: git [--version] [--help] [-C <path>] [-c <name>=<value>]
        [--exec-path[=<path>]] [--html-path] [--man-path]
[...etc.]
```

Configuration des paramètres global sur GIT

```
devasc@labvm:~$ git config --global user.name "MrAli"
devasc@labvm:~$ git config --global user.email
"ali_n@hotmail.com"
```

Working Directory : Zone de travail Local

Création d'un projet GIT

```
devasc@labvm:~$ mkdir gitapp && cd gitapp
devasc@labvm:~/gitapp$ # creation de quelques fichiers #####
devasc@labvm:~/gitapp$ touch file1 file2
devasc@labvm:~/gitapp$ echo "premiere ligne" >> file1
devasc@labvm:~/gitapp$ more file1
premiere ligne
```

Initiation d'un projet git vide

```
devasc@labvm:~/gitapp$ ls -la
total 12
drwxrwxr-x  2 devasc devasc 4096 Sep 23 14:26 .
drwxr-xr-x 16 devasc devasc 4096 Sep 23 14:26 ..
-rw-rw-r--  1 devasc devasc   15 Sep 23 14:27 file1
-rw-rw-r--  1 devasc devasc    0 Sep 23 14:26 file2

devasc@labvm:~/gitapp$ git init
Initialized empty Git repository in /home/devasc/gitapp/.git/
devasc@labvm:~/gitapp$ ls -la
total 16
drwxrwxr-x  3 devasc devasc 4096 Sep 23 14:28 .
drwxr-xr-x 16 devasc devasc 4096 Sep 23 14:26 ..
-rw-rw-r--  1 devasc devasc   15 Sep 23 14:27 file1
-rw-rw-r--  1 devasc devasc    0 Sep 23 14:26 file2
drwxrwxr-x  7 devasc devasc 4096 Sep 23 14:28 .git #création d'un répertoire caché .git. Quel est son rôle ? #
```

Indexation des fichiers dans gitapp (staging area)#####

```
devasc@labvm:~/gitapp$ git add file1
devasc@labvm:~/gitapp$ git status
On branch master
No commits yet
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
    new file:   file1
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    file2
```

Annuler l'indexation si l'on désire

```
devasc@labvm:~/gitapp$ git rm --cached file1
rm 'file1'
devasc@labvm:~/gitapp$ git status
On branch master
No commits yet
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    file1
    file2

nothing added to commit but untracked files present (use "git add" to track)
devasc@labvm:~/gitapp$ git add . #le point indique all#
devasc@labvm:~/gitapp$ git status
On branch master
No commits yet
Changes to be committed:
```

```
(use "git rm --cached <file>..." to unstage)
new file:   file1
new file:   file2
devasc@labvm:~/gitapp$ touch file3
devasc@labvm:~/gitapp$ git status
On branch master
No commits yet
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
    new file:   file1
    new file:   file2
Untracked files:
  (use "git add <file>..." to include in what will be committed)
file3
```

faire un snapshot ou instantané (commit) en indiquant un message

```
devasc@labvm:~/gitapp$ git commit -m "file1 et file2 added"
[master (root-commit) 28bba39] file1 et file2 added
2 files changed, 1 insertion(+)
create mode 100644 file1
create mode 100644 file2
```

#Ici on remarque un seul commit représenter par un hashcode qui commence par 28bba39 #

```
devasc@labvm:~/gitapp$ git log
commit 28bba392592c70c87aad55beb1f490c72a159324 (HEAD -> master)
Author: Mrali <ali_n@hotmail.com>
Date:   Thu Sep 23 14:34:36 2021 +0000
    file1 et file2 added    #le message #
```

modification de file1

```
devasc@labvm:~/gitapp$ echo "second ligne" >> file1
devasc@labvm:~/gitapp$ 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:   file1
Untracked files:
  (use "git add <file>..." to include in what will be committed)
file3
no changes added to commit (use "git add" and/or "git commit -a")
```

Revenir à l'état précédent

```
devasc@labvm:~/gitapp$ git restore file1
devasc@labvm:~/gitapp$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    file3
nothing added to commit but untracked files present (use "git
add" to track)
```

```
devasc@labvm:~/gitapp$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    file3
nothing added to commit but untracked files present (use "git
add" to track)
```

```
devasc@labvm:~/gitapp$ git log
commit 28bba392592c70c87aad55beb1f490c72a159324 (HEAD -> master)
Author: Mrali <ali_n@hotmail.com>
Date: Thu Sep 23 14:34:36 2021 +0000
    file1 et file2 added
```

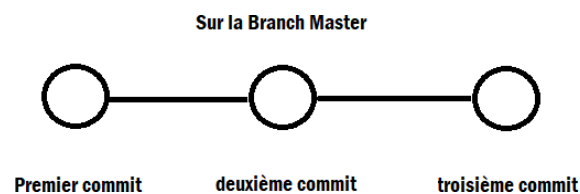
```
devasc@labvm:~/gitapp$ git add file3
devasc@labvm:~/gitapp$ git commit -m "file3 added"
[master 0a13a28] file3 added
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 file3
```

#Ici on remarque deux commit avec deux hashcodes différents #

```
devasc@labvm:~/gitapp$ git log
commit 0a13a28c331d8dae185d3afead634ebbc397bc12 (HEAD -> master)
Author: Mrali <ali_n@hotmail.com>
Date: Thu Sep 23 14:40:43 2021 +0000
    file3 added #deuxième commit#
commit 28bba392592c70c87aad55beb1f490c72a159324
Author: Mrali <ali_n@hotmail.com>
Date: Thu Sep 23 14:34:36 2021 +0000
    file1 et file2 added #premier commit#
```

```
devasc@labvm:~/gitapp$ touch file4 file5
devasc@labvm:~/gitapp$ git add .
devasc@labvm:~/gitapp$ git commit -m "reste des fichiers added"
[master 09c500a] reste des fichiers added
2 files changed, 0 insertions(+), 0 deletions(-)
create mode 100644 file4
create mode 100644 file5
```

```
devasc@labvm:~/gitapp$ git log
commit 09c500aede323a89811ada11c5f3912350783437 (HEAD -> master)
Author: Mrali <ali_n@hotmail.com>
Date: Thu Sep 23 14:41:56 2021 +0000
    reste des fichiers added  #troisième commit#
commit 0a13a28c331d8dae185d3afead634ebbc397bc12
Author: Mrali <ali_n@hotmail.com>
Date: Thu Sep 23 14:40:43 2021 +0000
    file3 added  #deuxième commit#
commit 28bba392592c70c87aad55beb1f490c72a159324
Author: Mrali <ali_n@hotmail.com>
Date: Thu Sep 23 14:34:36 2021 +0000
    file1 et file2 added  #premier commit#
```



voici une représentation graphique de nos commits sur une seule branche qui est la branche Master

```
devasc@labvm:~/gitapp$ git status
On branch master
nothing to commit, working tree clean
```

####Creation de gitapp sur un dépôt distant (ex:Github)###

Prérequis : Allez sur Github et créer un compte

```
devasc@labvm:~/gitapp$ git branch
master #je m'assure que je suis sur la branche Master#
```

voici quelques captures pour vous aider à créer un repository sur Github#

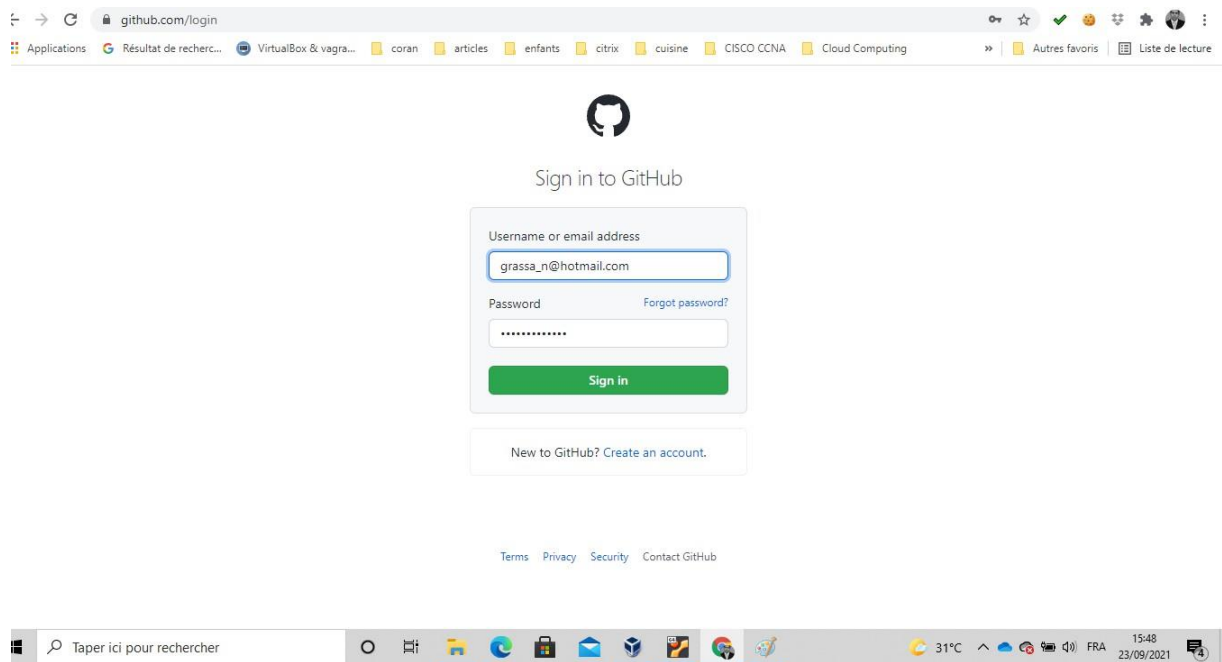


Fig1 : Se connecter avec le compte

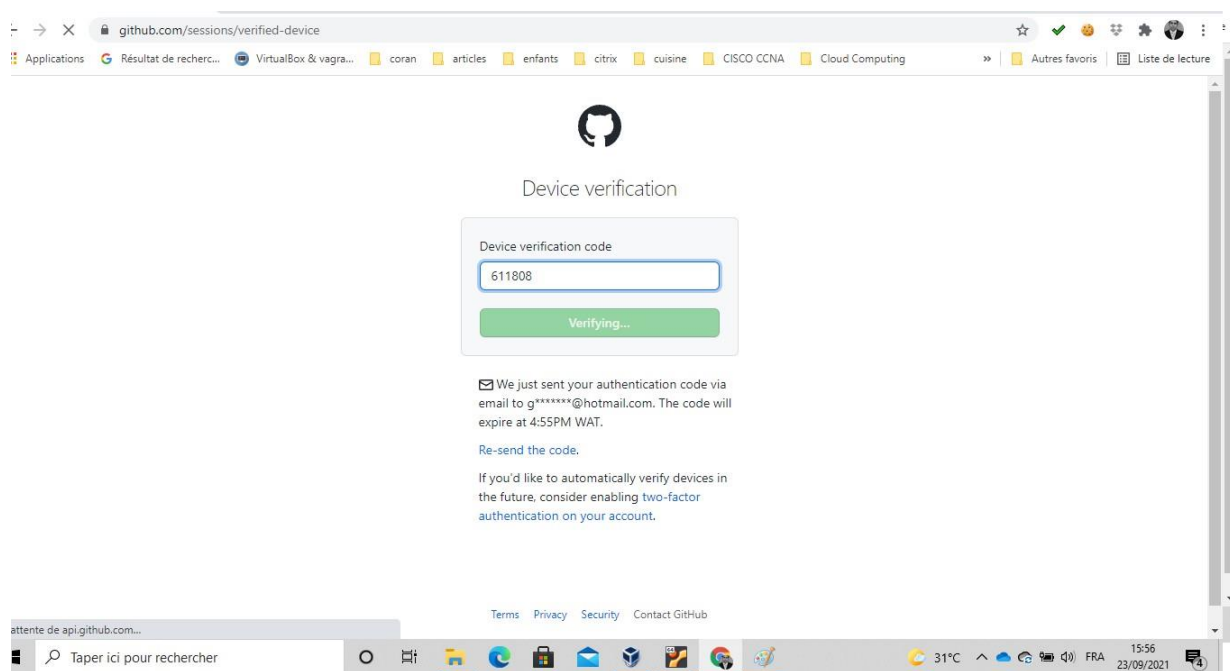


Fig2 : Vérifier le digitalcode en consultant votre mail

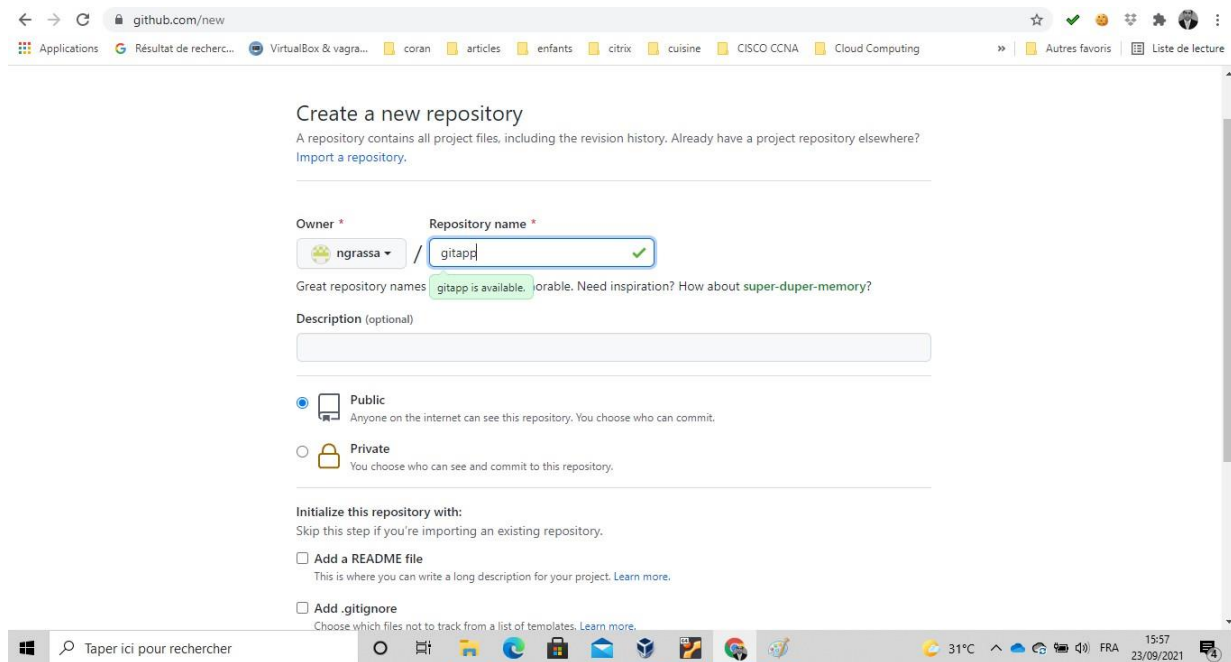


Fig3 : Création d'un repository : gitapp

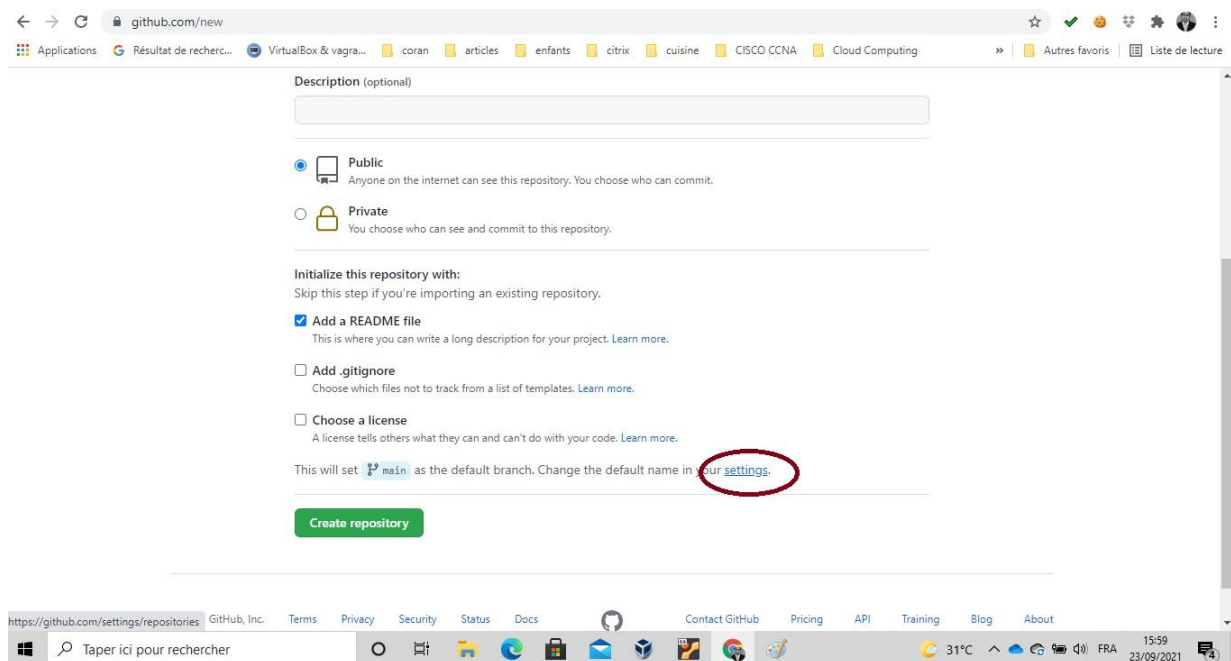


Fig 4 : Changement de Branche par défaut de main à Master

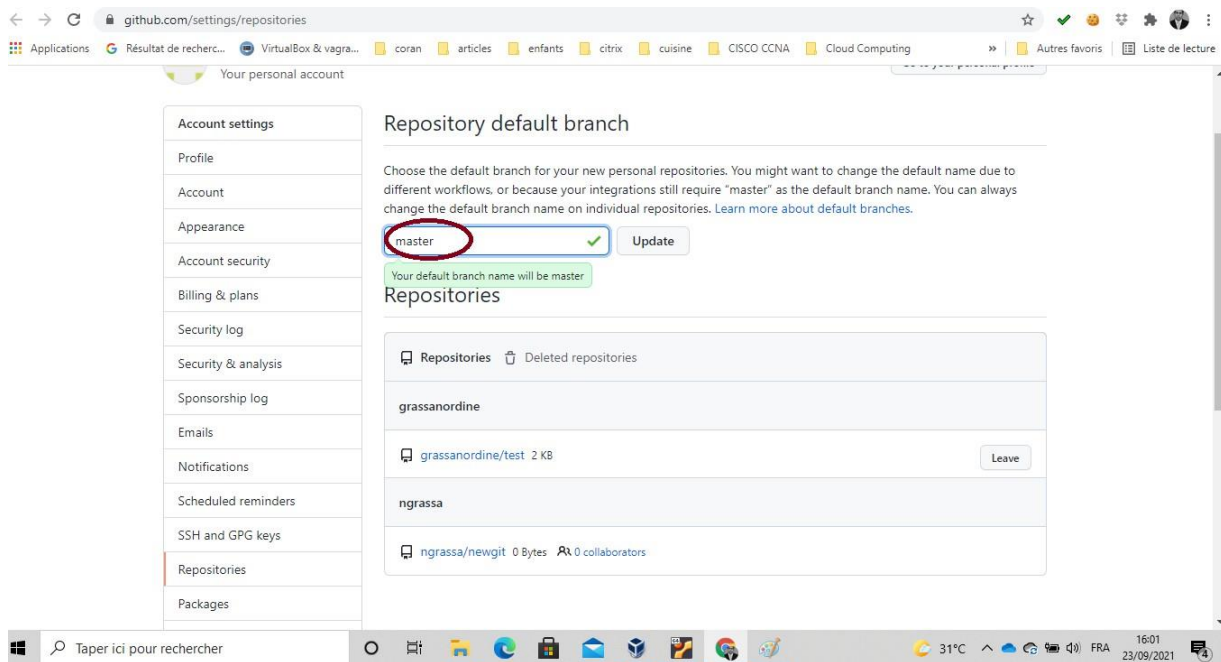


Fig 5 : Changer la branche par défaut et créer le repository

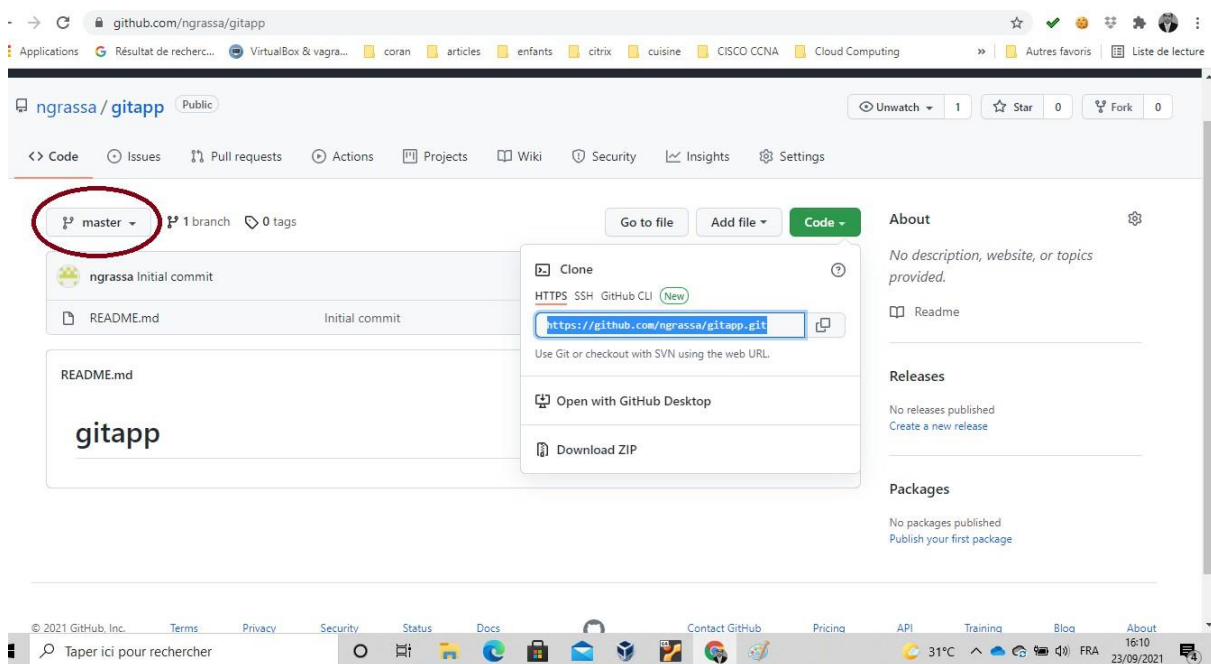


Fig 6 : Vérifier la bonne branche et récupérer l'URL

#On va utiliser l'URL pour faire le push vers Github (mettre le dernier commit) ###

```
devasc@labvm:~/gitapp$ git remote add origin
https://github.com/nali/gitapp.git
```

```
devasc@labvm:~/gitapp$ git push -u origin master
```



```
Username for 'https://github.com': nali
Password for 'https://nali@github.com':
remote: Support for password authentication was removed on August 13, 2021. Please use a personal access token instead.
remote: Please see https://github.blog/2020-12-15-token-authentication-requirements-for-git-operations/ for more information.
fatal: Authentication failed for 'https://github.com/nali/gitapp.git/'
```

#En mettant le mot de passe il se peut que vous ayez le message ci-dessus : chercher sur internet comment peut-on le résoudre !#

Puisqu'on a fait plusieurs commit, il est probable que le push ne s'effectue pas donc voici une solution pour résoudre cela.

```
devasc@labvm:~/gitapp$ git fetch origin master:tmp
From https://github.com/nali/gitapp
* [new branch]      master      -> tmp

devasc@labvm:~/gitapp$ git rebase tmp
First, rewinding head to replay your work on top of it...
Applying: last commit files
devasc@labvm:~/gitapp$ git push origin HEAD:master
Username for 'https://github.com': nali Password
for 'https://nali@github.com': Enumerating
objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 2 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (4/4), 349 bytes | 349.00 KiB/s, done.
Total 4 (delta 0), reused 0 (delta 0)
To https://github.com/nali/gitapp.git
 67db993..bfb4ce7 HEAD -> master

devasc@labvm:~/gitapp$ git branch -D tmp
Deleted branch tmp (was 67db993).
```

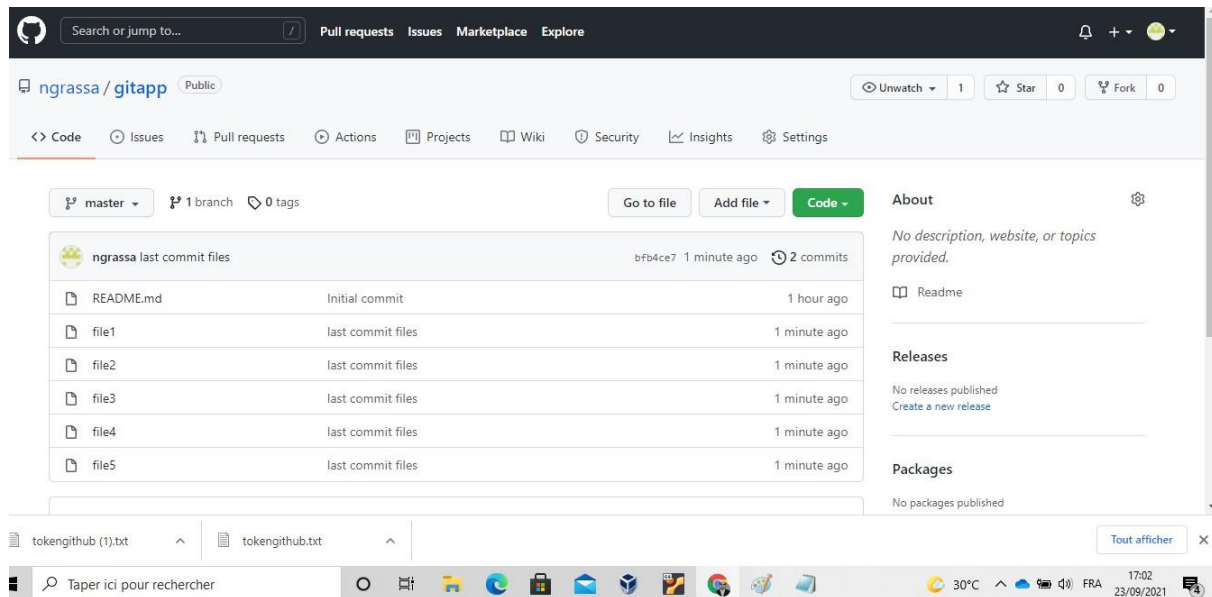


Fig 7 : Visualisation de mes fichiers sur gitapp dans Github

#####Utiliser le repository gitapp (cloner) avec un autre utilisateur afin de travailler en équipe par exemple #####

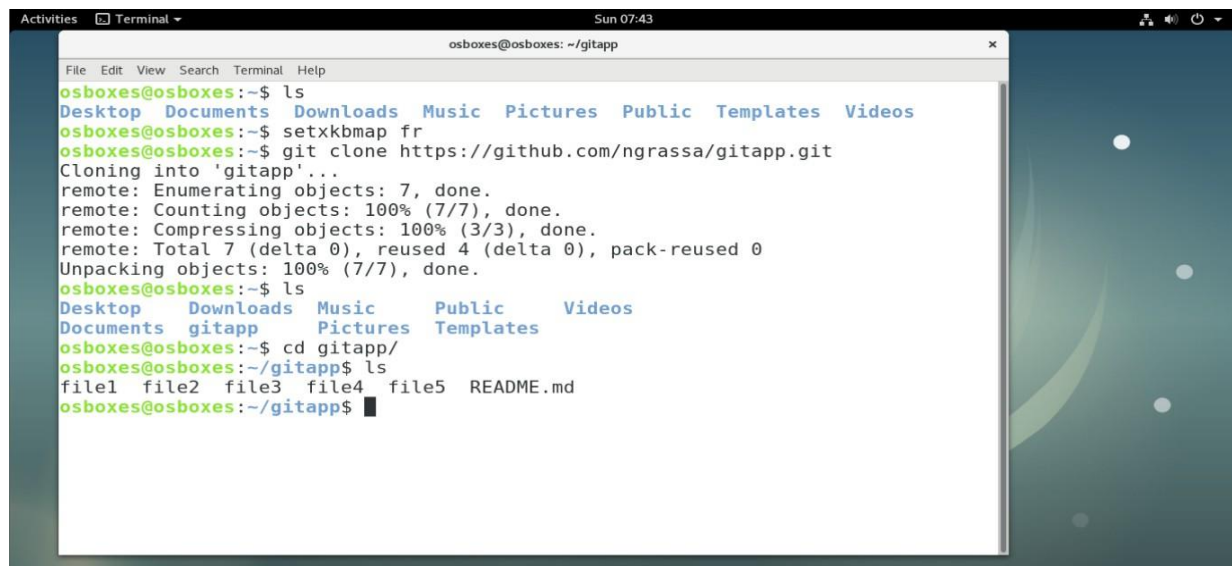


Fig 8 : Cloner le dépôt distant gitapp sur un autre pc