GITHUB AND GIT OPREATIONS

1. To create a github local repo:

```
Sanjay@Victus MINGW64 ~ (master)
$ pwd
/c/Users/Sanjay

Sanjay@Victus MINGW64 ~ (master)
$ mkdir Cognizance

Sanjay@Victus MINGW64 ~ (master)
$ cd Cognizance

Sanjay@Victus MINGW64 ~/Cognizance (master)
$ git init
Initialized empty Git repository in C:/Users/Sanjay/Cognizance/.git/

Sanjay@Victus MINGW64 ~/Cognizance (master)
$ |
```

2. Git add:

It puts our file to stage.

For creating a file use touch<filename> cmd

```
Sanjay@Victus MINGW64 ~/Cognizance (master)
$ touch Git_test

Sanjay@Victus MINGW64 ~/Cognizance (master)
$ git add Git_test
```

3. Git commit:

Commit changes staged files to local branch

```
Sanjay@Victus MINGW64 ~/Cognizance (master)
$ git commit -a
hint: Waiting for your editor to close the file... unix2dos: converting file C:/Users/Sanjay/Cognizance/.git/COMMIT_EDITMSG to DOS format...
dos2unix: converting file C:/Users/Sanjay/Cognizance/.git/COMMIT_EDITMSG to Unix format...
[master (root-commit) 942e5d6] this is a test file
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 Git_test

Sanjay@Victus MINGW64 ~/Cognizance (master)
$ git log
commit 942e5d6c42b704094e03fecab13b1e16469a067c (HEAD -> master)
Author: SanjayKumaar <blacknhacks2004@gmail.com>
Date:   Mon Feb 14 22:44:08 2022 +0530

    this is a test file
```

Git log uses to see the history of the repository

4. Git remote:

Git remote cmd is responsible for syncing changes.

```
Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git remote add origin https://github.com/Sanjay-BlaCkn/Cognizance.git
error: remote origin already exists.
```

5. Git branch: it is like a snapshot for your changes. Instead of copying from 1 dir to other.

```
Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git branch -M main
```

6. Git push:

Upload all changes from local repositories to their respective remote repositorie.

```
Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git push -u origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 224 bytes | 224.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/Sanjay-BlaCkn/Cognizance.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
```

The above 4,5,6 cmds combined are used to change all the files to remote repositories
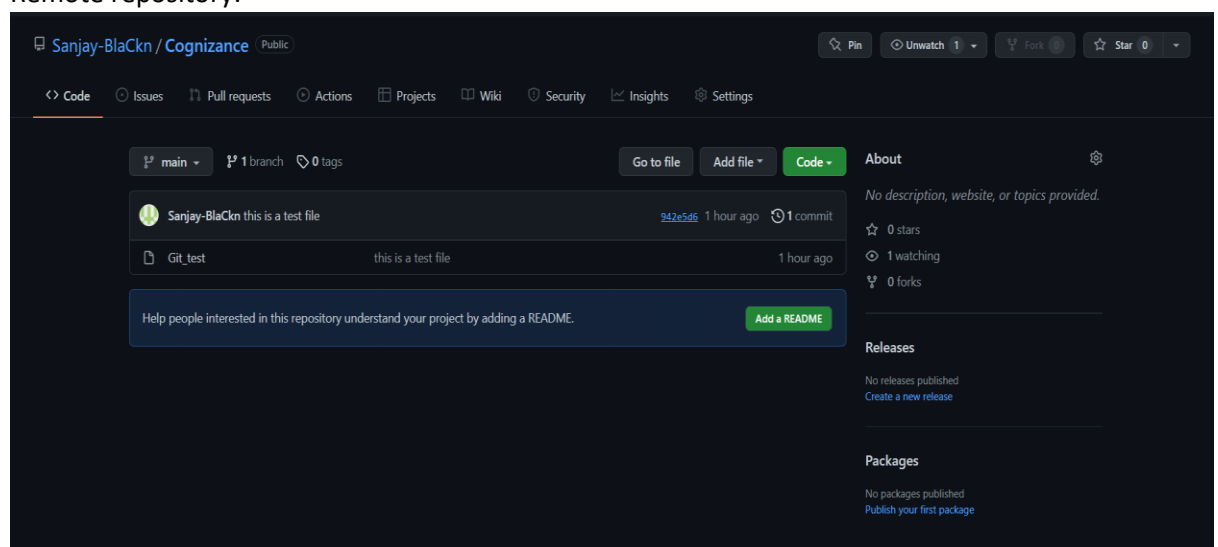Local repository:

```
Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git remote add origin https://github.com/Sanjay-BlaCkn/Cognizance.git
error: remote origin already exists.

Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git branch -M main

Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git push -u origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 224 bytes | 224.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/Sanjay-BlaCkn/Cognizance.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.

Sanjay@Victus MINGW64 ~/Cognizance (main)
$ ls
Git_test   TASK-1/
```

Remote repository:

Git clone:

It helps to bring or copy an existing repository to a new one.

```
Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git clone https://github.com/Sanjay-BlaCkn/Cognizance.git
Cloning into 'Cognizance'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.

Sanjay@Victus MINGW64 ~/Cognizance (main)
$ ls
Cognizance/  Git_test  TASK-1/

Sanjay@Victus MINGW64 ~/Cognizance (main)
$ cd Cognizance

Sanjay@Victus MINGW64 ~/Cognizance/Cognizance (main)
$ ls
Git_test
```

7. Git checkout:

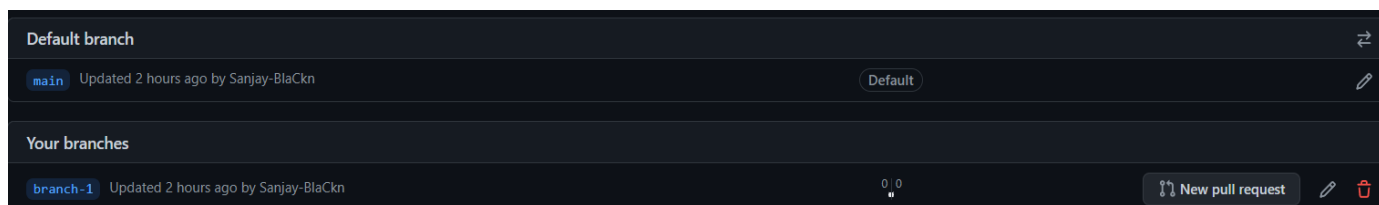   This cmd helps you to replace all files with remote repo from a branch.

```
Sanjay@Victus MINGW64 ~/Cognizance/Cognizance (main)
$ git checkout
Your branch is up to date with 'origin/main'.
```

8. Git checkout -b:

   It creates a new branch from currents branch's tip.

```
Sanjay@Victus MINGW64 ~/Cognizance/Cognizance (main)
$ git checkout -b branch-1
Switched to a new branch 'branch-1'

Sanjay@Victus MINGW64 ~/Cognizance/Cognizance (branch-1)
$ git push origin branch-1
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'branch-1' on GitHub by visiting:
remote:        https://github.com/Sanjay-BlaCkn/Cognizance/pull/new/branch-1
remote:
To https://github.com/Sanjay-BlaCkn/Cognizance.git
 * [new branch]      branch-1 -> branch-1
```

Default branch		
main Updated 2 hours ago by Sanjay-BlaCkn	Default	

Your branches			
branch-1 Updated 2 hours ago by Sanjay-BlaCkn	0 | 0	New pull request	

9. Git fetch:

Downloads changes from remote repo to local repo.

```
Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git fetch
From https://github.com/Sanjay-BlaCkn/Cognizance
 * [new branch]      branch-1   -> origin/branch-1
```

10. Git merge:

Merge files from given branch to current one.

```
$ git merge
Updating db5e181..6913f8e
Fast-forward
 README.md | 1 +
 1 file changed, 1 insertion(+)
```

11. Git pull:

Fetches changes from remote repo to local repo and merges it.

```
Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git pull
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 680 bytes | 61.00 KiB/s, done.
From https://github.com/Sanjay-BlaCkn/Cognizance
   942e5d6..2f86a23  branch-1   -> origin/branch-1
Already up to date.
```

12. Git reset:

Makes the current branch point to some branch.

```
Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git reset

Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git log --oneline
942e5d6 (HEAD -> main, origin/main, branch-1) this is a test file
```

13. Git rebase:

It is a alternative to merge cmd.

```
Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git merge
Already up to date.
```

14. Git status:

Displays the current state of working directoy.

```
Sanjay@Victus MINGW64 ~/Cognizance (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Cognizance/

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

15. Git config –list –show-origin:

```
MINGW64:/c/Users/Sanjay

Sanjay@Victus MINGW64 ~ (master)
$ git config --list --show-origin
file:C:/Program Files/Git/etc/gitconfig diff.astextplain.textconv=astextplain
file:C:/Program Files/Git/etc/gitconfig filter.lfs.clean=git-lfs clean -- %f
file:C:/Program Files/Git/etc/gitconfig filter.lfs.smudge=git-lfs smudge -- %f
file:C:/Program Files/Git/etc/gitconfig filter.lfs.process=git-lfs filter-process
file:C:/Program Files/Git/etc/gitconfig filter.lfs.required=true
file:C:/Program Files/Git/etc/gitconfig http.sslbackend=openssl
file:C:/Program Files/Git/etc/gitconfig http.sslcainfo=C:/Program Files/Git/mingw64/ssl/certs/ca-bundle.crt
file:C:/Program Files/Git/etc/gitconfig core.autocrlf=true
file:C:/Program Files/Git/etc/gitconfig core.fscache=true
file:C:/Program Files/Git/etc/gitconfig core.symlinks=false
file:C:/Program Files/Git/etc/gitconfig core.editor=notepad
file:C:/Program Files/Git/etc/gitconfig pull.rebase=false
file:C:/Program Files/Git/etc/gitconfig credential.helper=manager-core
file:C:/Program Files/Git/etc/gitconfig credential.https://dev.azure.com.usehttppath=true
file:C:/Program Files/Git/etc/gitconfig init.defaultbranch=master
file:.git/config        core.repositoryformatversion=0
file:.git/config        core.filemode=false
file:.git/config        core.bare=false
file:.git/config        core.logallrefupdates=true
file:.git/config        core.symlinks=false
file:.git/config        core.ignorecase=true

Sanjay@Victus MINGW64 ~ (master)
$
```