

* GIT & GITHUB

" Version Control System, is a tool that helps to track changes in code

GIT is a Version Control System. (it is

popular)

free & Open Source

fast & Scalable

Track the history of code

Collaborate.

GITHUB:

Website that allows developer to store and merge their code using Git.

↳ Repository (project folder).

Setting up Git:-

i) Visual Studio Code

ii) Windows (Git Bash)

iii) Mac (Terminal)

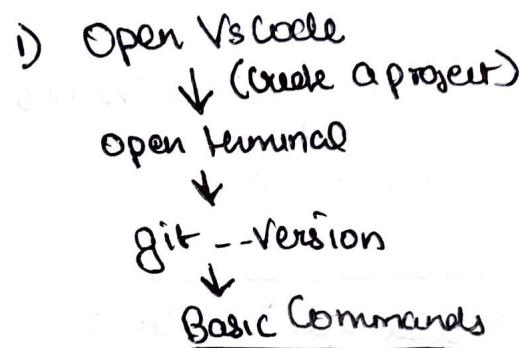
To check: # git --version

Configuring GIT:-

git config --global user.name "MyName"

git config --global user.email "-----"

git config --list



Git Basic Commands

1) Clone & Status

Clone a common repo on our local machine
* local → laptop
* Remote → GitHub

git clone <link>

Eg: Go to GitHub

↓ Select Repo

↓ Get HTTPS link

↓ Copy the link

↓ Go to VsCode terminal

git clone <link>

Accessing the folder inside the demo and cheeky folder

↓ terminal

cd demoRepo/ (Tab auto-completes)

↓

ls (no of files int)

↓

ls -a (hidden files)

S Status

git status display status of the code
msg → nothing to commit, working...

Problem: Changed file in VSCode
but not showing changes in GitHub.

Solution: Can detect by

- i) **M** logo on the file when it's modified & yellow colour
- ii) go to terminal type `git status`

Solution 2 After modify:

① Add → ② Commit

4 types of GIT Status.

- i) Untracked (U)
new files Git doesn't have
- ii) modified (M)
changed
- iii) staged
file is staged, need to commit
- iv) unmodified
unchanged

Change / new file

modified unchanged

↓
add (staged)

↓
Commit (unchanged)

↓
Push

2] Add & Commit

Add [eg Engagement]

i) one file

git add <filename>

ii) all file

git add .

Commit [eg wedding]

git commit -m "Some message"

3] Push

PC → GitHub

upload local repo to remote repo

git push origin main

TO CREATE

A Repo from local machine

- 1) # cd .. (To come out to main directory)
- 2) # mkdir <name> (make new directory)
- 3) # cd <newRepo> (Enter into the directory)
- 4) # ls -a (Show all files in directory + hidden files)
- 5) # git init (Create .git file in there)
- 6) add a file, then add it, Commit it
- 7) ~~#~~ make a repo on github
- 8) # git remote add origin <link> (Add the steps of github to local means)
- 9) # git remote -v (To verify remote)
- 10) # git branch (to check branch)
- 11) # git branch -M main (to rename branches)
- 12) # git push origin main

Workflow

Github steps



Clone



Changes



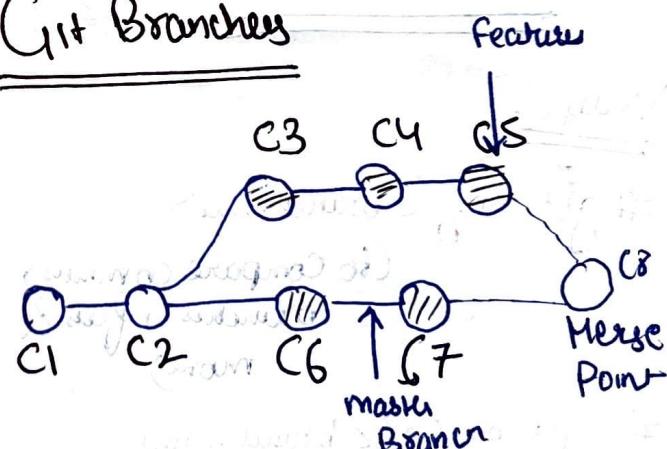
Add



Commit



Push

Git Branches

If I'm working on big project then at the time we can't wait for one developer to finish his job we shift to other branches and simultaneously both developer do their work and at end if the work is good then merge the work.

Branch Commands

- i) `# git branch` (to check branches)
- ii) `# git branch -M main` (to rename branch)
- iii) `# git checkout <branch name>` (to switch)
- iv) `# git checkout -b <new branch>` (to create new branch)
- v) `# git branch -d <branch name>` (to delete branch)

Merge Code

- Way 1:
- `# git diff <branch name>` (to compare commits, branches, files & more)
 - `# git merge <branch name>` (to merge 2 branches)
- Way 2: Create a Pull request from GitHub

Problem:-

If the feature available on GitHub but not in VS Code.

To get remote changes → local.

Use Pull Command

`# git pull origin main`

Resolving Merge Conflicts

Take two branches feature & main. For example, if there is code: `cout < hello world;` in main branch but in feature branch changed it to `cout < hello people;` while merging it will create conflict. To resolve it VS Code provides certain ones. (Remove both / Keep one / keep both)

Undo Changes

Case 1: Staged Changes (added or not committed)

`# git reset <file name>`
or
`# git reset`

Case 2: Committed Changes (for one commit)

`# git reset HEAD~1`

Case III:-

Committed changes (formerly
Commits)

git reset <Commit hash>

git reset --hard
<Commit hash ->

To git check Commit Hash

git log

hash code of all commits

Fork (to work on
Open Source or
work in the repo.
We can fork the project)

~~A group
Copy~~

Search the code

click fork & check it
↳ unselect
'Copy the main branch'

edit it

Commit on your acc

New Pull request

bare repos → mygit