

* 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

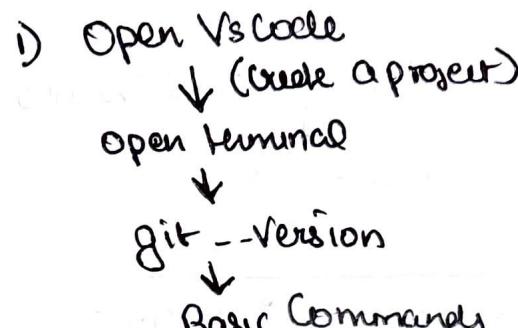
Configuring GIT:-

git config --global user.name "MyName"

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

git config --list

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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)

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Change / new file
modified untracked

↓
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

git push origin main

S Status

git status display status of the code

msg → nothing to commit - wacky!

*Problem: Changed file in VScode
but not showing changes in
GitHub.

Solution: Can detect By

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

Solution 2 After modify:

① Add → ② Commit

4 types of GIT Status.

- Untracked (U)
new file's Git doesn't have
- modified (M)
changed
- Staged
file is staged, need to Commit
- Unmodified
unchanged

TO CREATE

A Repo from local machine

- 1) # cd .. (To come out to main directory)
- 2) # mkdir <name> (make new directory)
- 3) # cd localRepo (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

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Workflow

Github steps



Clone



Changes



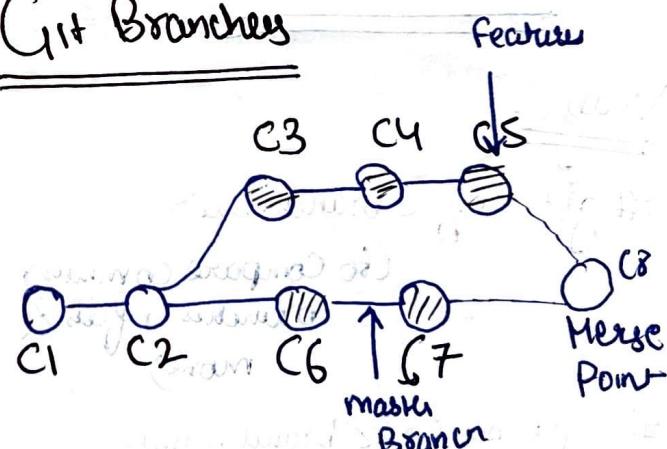
Add



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 name>` (to create new branch)
- v) `# git branch -d <branch name>` (to delete branch)

Merge Code

- Way 1:
- `# git diff <branch name>` (to compare commits between branches, files etc more)
- `# git merge <branch name>` (to merge 2 branches)

Way 2:
Create a Pull request from GitHub

Problem:- Aditya kumar gaur

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 options. (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`

~~A rough copy~~

Open Source or
work in the repo.
(we can fork the project)

Search the code

↓
click fork & check it
↳ uncheck:
'Copy the main branch'

edit it

↓
Commit on your acc

↓
New Pull request

↓
base repo → merge it