

01 - September - 2021

Git / Github

Git - Git is a distributed version control system that helps to keep track of files.

- Fairly recover files.
- Who introduced an issue and when?
- Rollback to previously working state.

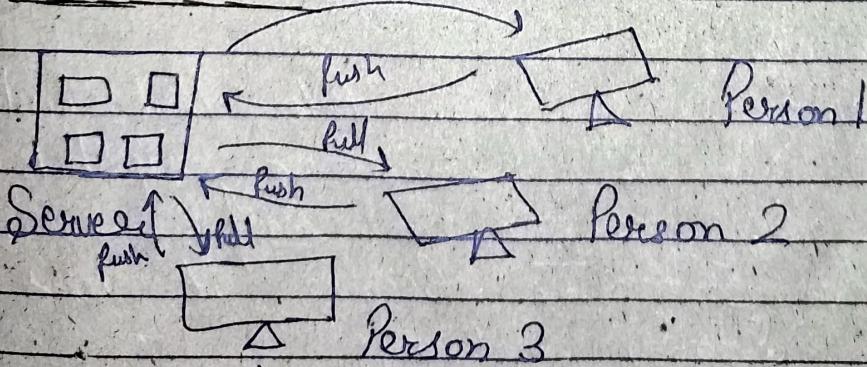
History - Linus Torvalds created Git & Linux kernel.

→ Local VCS : In this, we use DB to keep track of files.

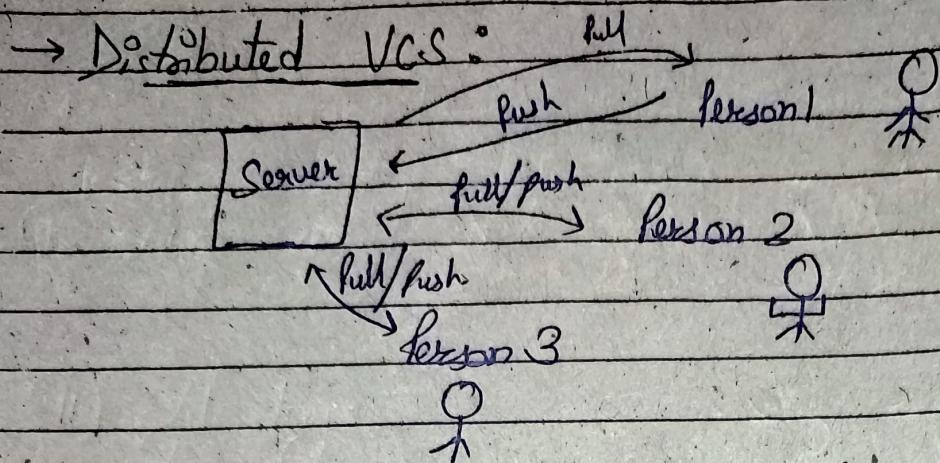
Pros - can track files & rollback

Cons - If you lose your hard disk, everything is lost.
• No collaboration also.

→ Centralized VCS : Pull



Cons - if server crashes, you can't rollback to previous state. But you can get the latest copy of sha from the others.



pros - all persons get full backup or logs of files or project if server crashes.

Github: Github is a git repository hosting service website whereas Git itself is a svr. (free)

Features :-

→ Capture snapshots.

'git' is a hidden file that contains all the versions or snapshots.

→ Almost every operation is local.

→ Git has Integrity. Because it uses SHA-1, checksum.

→ Git generally only adds data.

Git Installation

Git Command Line Tool

Git Bash

Basic Linux Commands -

cd / ls / pwd / touch / echo / cat

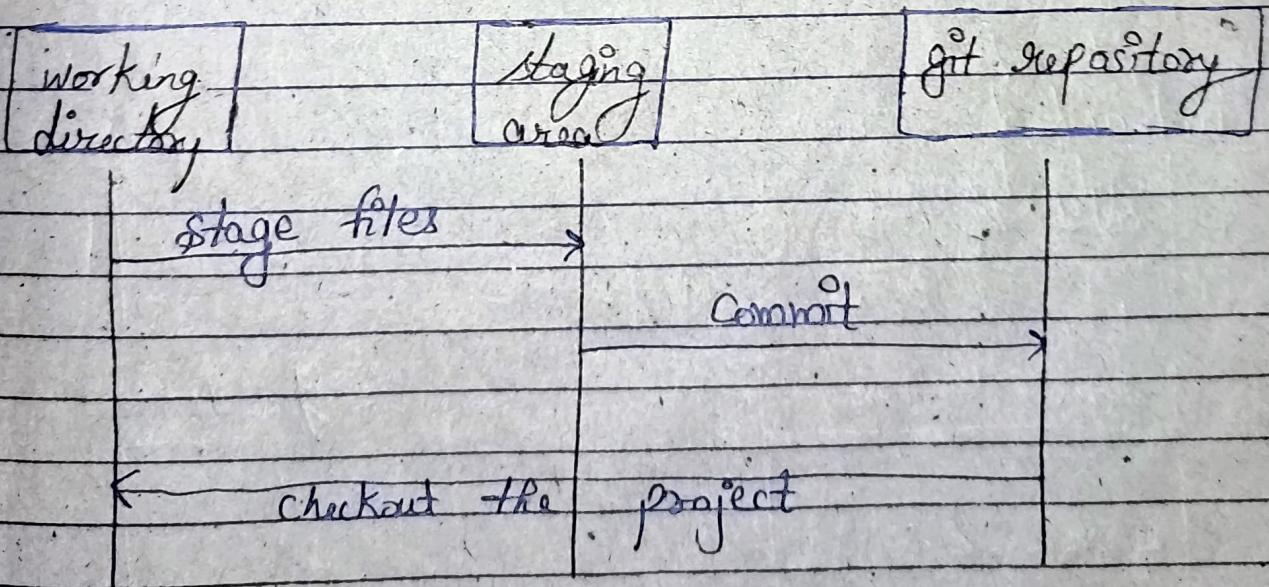
Git Version - 2.33.0.windows.2

Commands -

- ① git config --global user.name "Aakash Gang"
- ② git config --global user.email "aakashgang289@gmail.com"
- ③ git config --list
- ④ git config --global core.editor emacs vim

Git - Three Stage Architecture

Local Operations



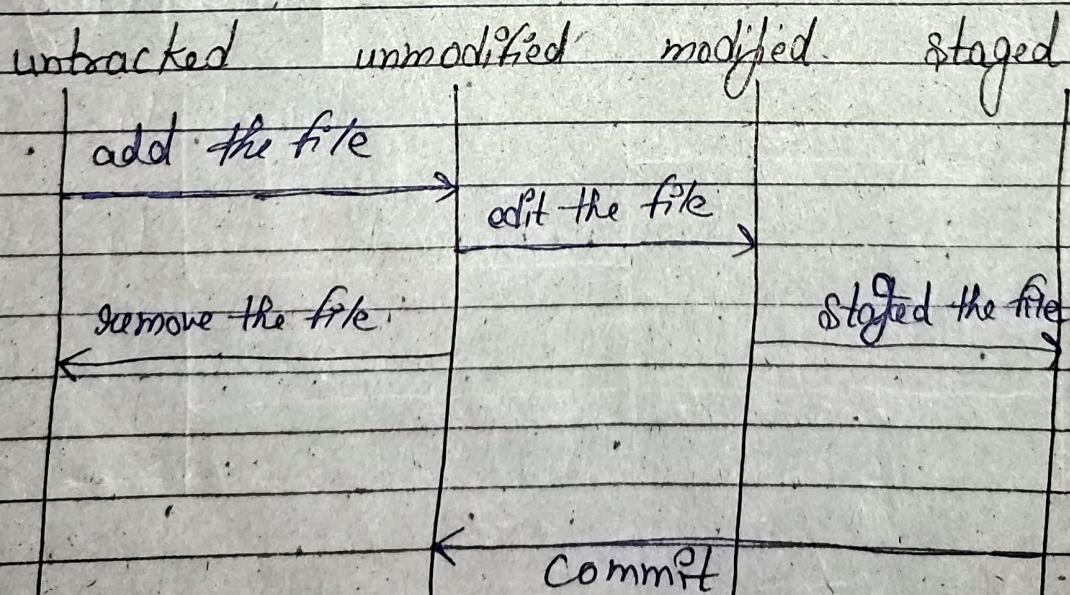
⑤ git status

⑥ git init

⑦ git add --a (untracking files → staging area)

- (8) `git rm --cached first.txt` (staging area → untracking state)
- (9) `git commit -m "Initial Commit"`
- (10) After modify file `git add -a`
`git restore first.txt`
- (11) `git log`
- (12) `rm -rf .git` (delete git repository or .git file)
- (13) `git clone https://github.com/tensorflow/tensorflow`

File Status Lifecycle -



- staging area with
- (14) `git diff` (compare working directory)
- (15) `git diff --staged` (compare last commit with staging area)
- (16) `git commit -a -m "Direct Commit"` (tracked file → commit [skip staging area])
- (17) `git rm third.txt` (remove/delete file & add to staged automatically)
- (18) `git mv first.txt first_renamed.txt` (rename file)
- (19) `git log -p` (show log with difference)
- (20) `git log -p -3`
- (21) `git log --stat`
- (22) `git log --pretty=oneline`
- (23) `git log --pretty=short`
- (24) `git log --pretty=full`
- (25) `git log --since=2.days / 2.weeks / 2.months / 2.years`
- (26) `git log --pretty=format "%h -- %an"`
- (27) `git commit --amend` (change commit and add)

Vim

I - Insert
Esc
wq - exit

(28) `git checkout -- firstrenamed.txt` (get your
diff back with
the last commit)

(29) `git checkout -f`

(30) `git remote add origin` (will)

(31) `git remote`

(32) `git remote -v`

Add SSH Key

>> ssh key github (search)

(33) `git push -u origin master`

(34) `git config --global alias.st status`

(35) `git checkout -b develop` (creating new branch)

(36) `git branch`

(37) `git checkout master`

(38) `git merge develop`

<<<<< conflict resolution markers

>>>>>

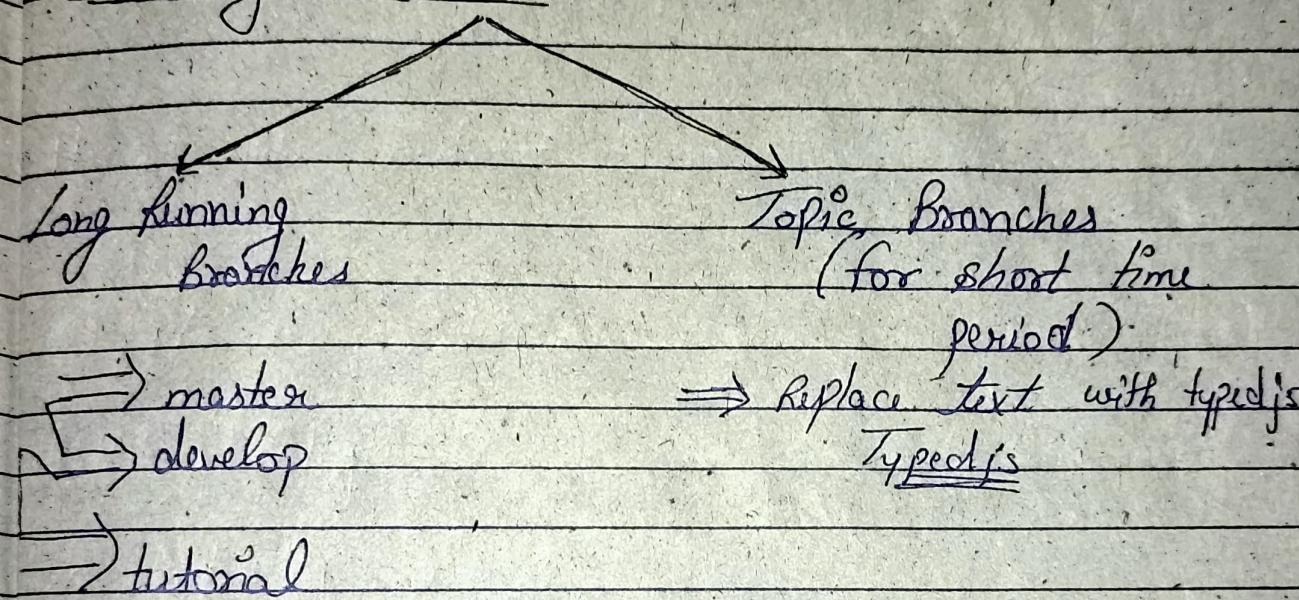
(39) `git branch -r`

(40) `git branch --merged` (already merged
branches)

(41) git branch --no-merged

(42) git branch -d develop (gives error if develop
-D is not merged)

Branching Workflow



• `.gitignore` is a file that contains untrackable files & folders (directories) -

(43) git push origin develop:mydevelop

(44) git push -d origin mydevelop

→ In UNIX systems, the end of a file is represented with a LF (Line Feed).

→ In Windows, a line is represented with a CR (Carriage Return).