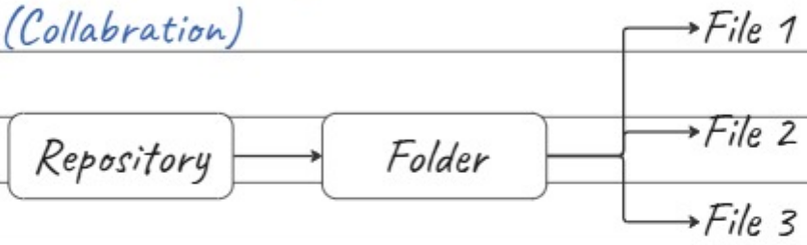
Date 25 - 04 - 2025

1 What is Version Control → Undo

- Make save Points that saves your project
- provides total development freedom ← Tracks changes
- eg. git, subversion, perforce — save them / commit
- Git is version control tool
- github is a service that hosts get repositories, (Collabration)



2 How to install Git

git official website - https://git-scm.com/

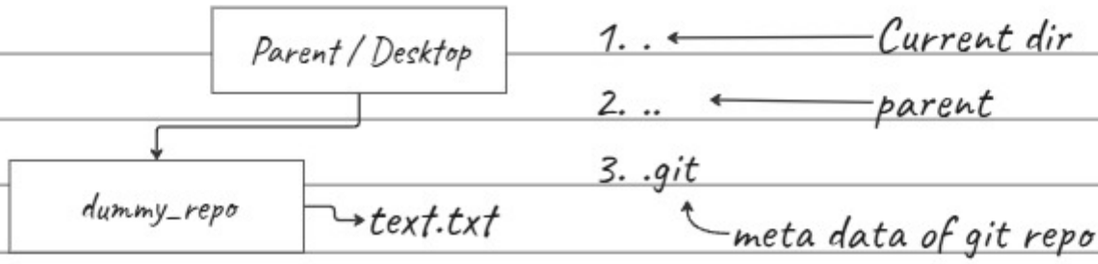
Sign up on github.com

```
> git config --global user.name username
> git config --global email.name user@gmial.com
> git config --list
```

Install GitHub desktop

3 Creating a git repo

- git init — current dir -> pwd / cd
- git clone — list dir items -> ls / dir
- git stage — > git status
- git log — > git init → intialte git, creates .git folder



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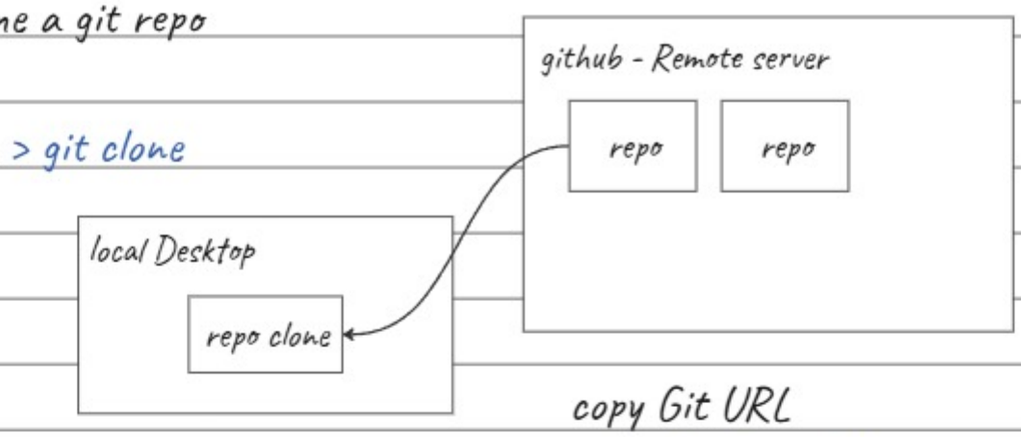
Clone a git repo



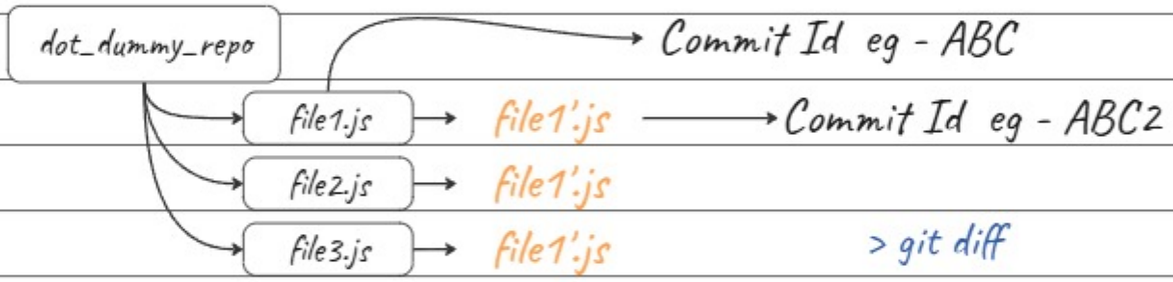
copy Git URL

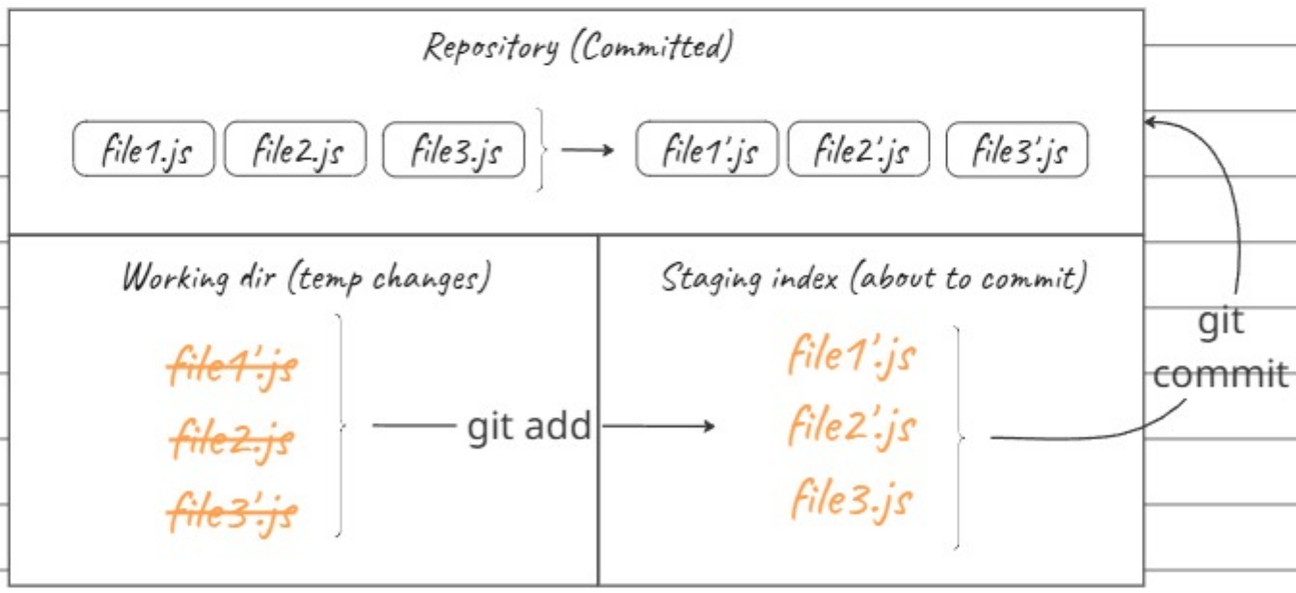
> git clone {url} newName

do some change

→ git tacks

4 Life Cycle of a Change





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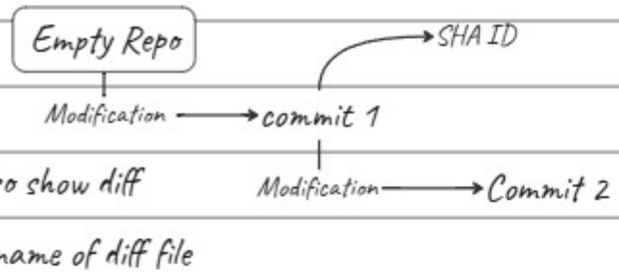
5 Review a Repo History

- Git log
- Git log -p
- Git log --stat
- Git show



> git log -3

> git log --oneline

> git show {SHA ID} ⟶ examines particular commit

6 Doing a first Commit

mkdir myrepo

git init ⟶ Do Something

git add filename ⟶ add file to track (new file), old file -> staging environment

git commit -m "message"

head ⟶ point to latest commit

discard change ⟶ git restore main.cpp

.gitignore ⟶ *.txt

⟶ assets/images/*.png

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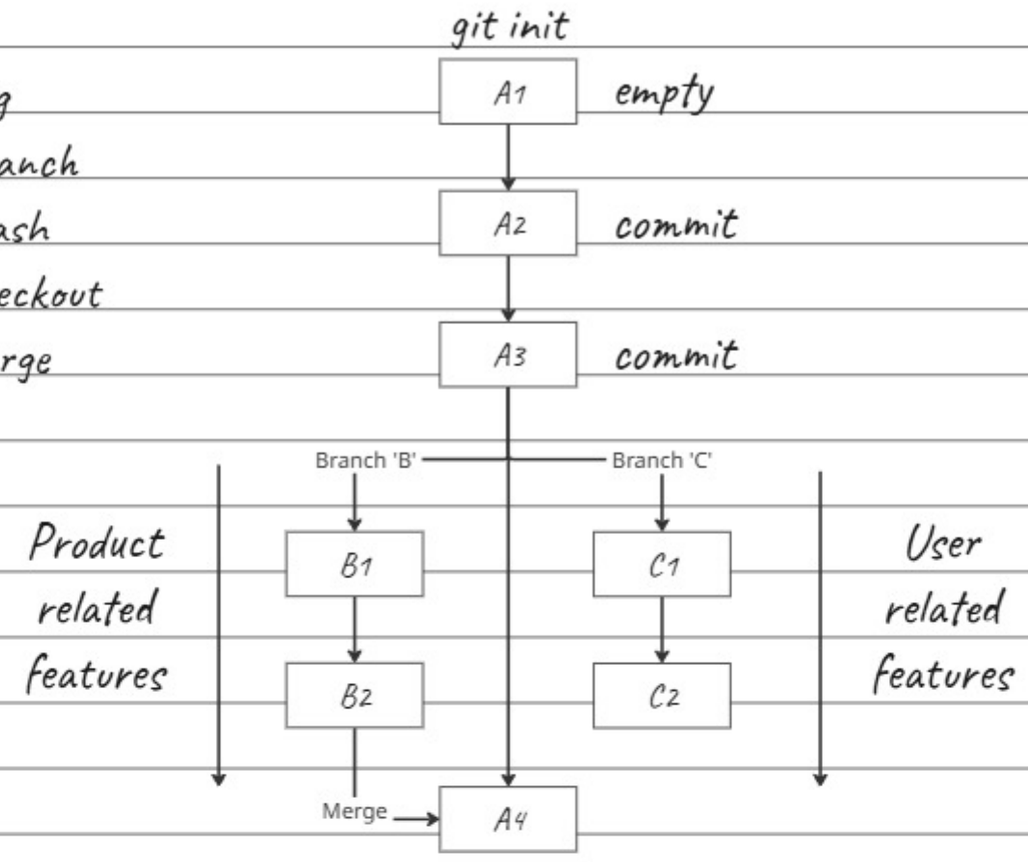
7 Branching, Tagging, Merging

- Git tag
- Git branch
- Git stash
- Git checkout
- Git merge



git branch branch_name

git checkout -b bubblesort ⟶ create branch and move into it

git commit -am "something" ⟶ adds and commits

git merge bubblesort ⟶ merges branches

git branch -d bubblesort ⟶ deletes branch

Merge conflict — Resolve ⟶ Do manual changes

→ Abort

Tag a specific commit ⟶ like tag with betav1.0

git tag -a tag_name {SHA Id} -m "my beta release"

git tag -d tag_name ⟶ remove tag

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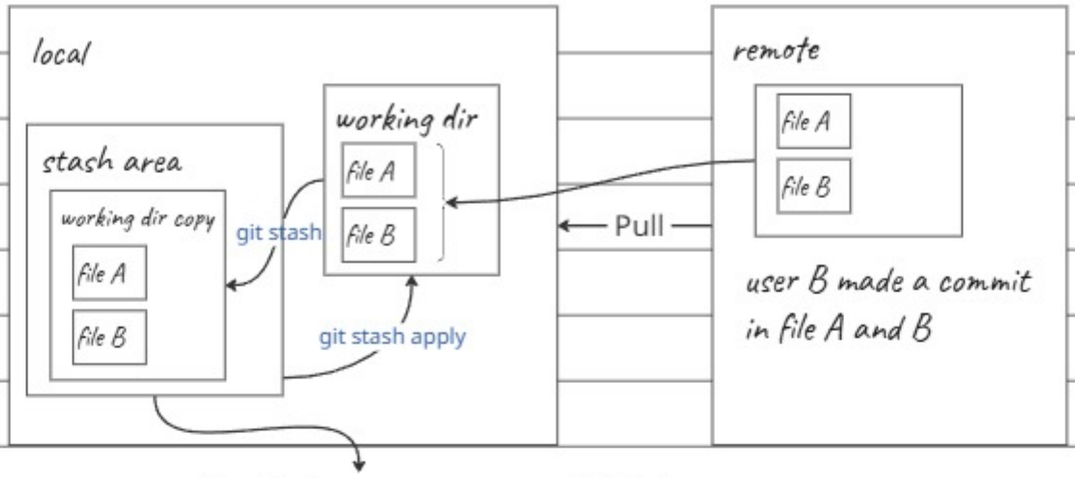
git stash



save your work in stash area so you can pull latest file from remote and then merge your work

git push -u origin master

8 Undo Commit

- Git commit --amend ⟶ amend the most recent commit
- Git revert ⟶ revert given commit
- Git reset ⟶ delete commit (dangerous command)

git revert {SHA Id} ⟶ Esc ⟶ :wq

git reset --soft {SHA Id} ⟶ move head to that commit

- --soft ⟶ diff will show as staged
- --mixed ⟶ working dir show as modification
- --hard ⟶ discard all local changes/changes in working dir

git diff HEAD~

git commit --amend ⟶ press i ⟶ Esc ⟶ :wq

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9 Push to remote and Git GUIs

create a new repo → readme.md → setup config

git remote add origin https://github/myrepo/git

git push -u origin branch_name=master → create a token

GitHub Desktop

Sublime Merge

Pull request → create pull request from myBranch to main

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git config user.name if working with multiple ids