What is Git?

Free & Open Source **Version Control System**
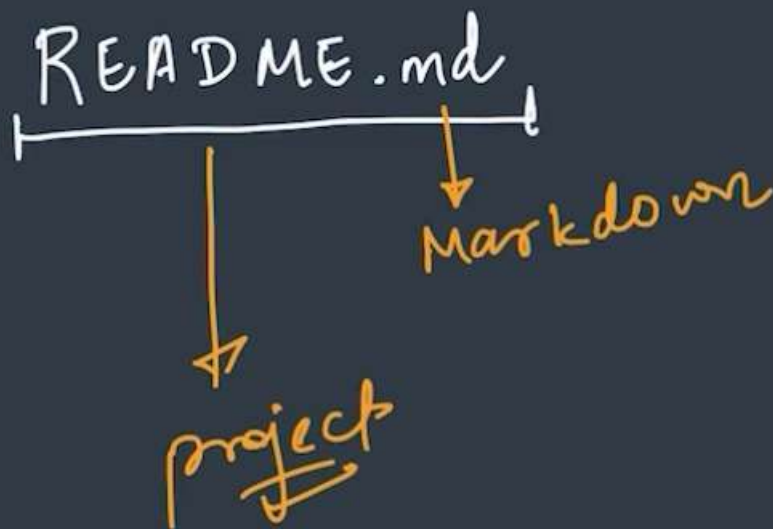
tools that help to tracks changes in code

What is Github?

Website where we host **repositories online**

Let's Create our Github Account

- Create a new account or Log in

- Create a new repository : delta-demo

READ ME.md

Markdown

project

Using Git

- **Command Line (Most Popular)**

- IDE / Code Editors (like VSCode)

- Graphical User Interface (like GitKraken)

Configuring Git

git config --global user.name "My Name"
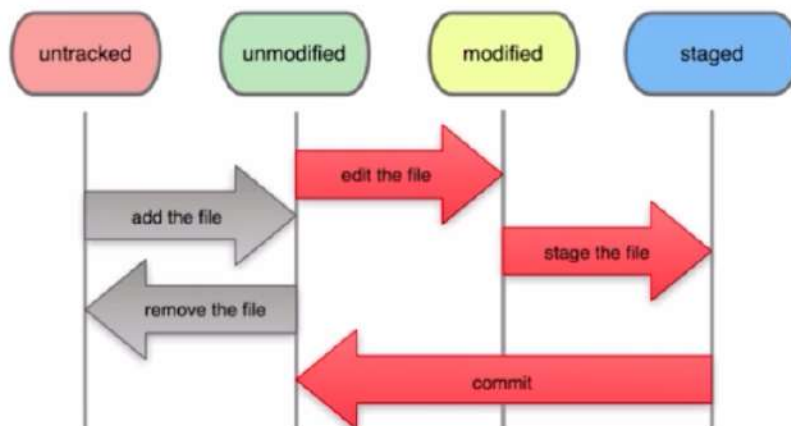
git config --global user.email "someone@email.com"

Basic Commands

- **Clone** - **Cloning a repository on our local machine**   *git clone <- some link ->*

- **status** - **displays the state of the code**   *git status*

File Status Lifecycle

untracked   unmodified   modified   staged

add the file
edit the file
stage the file
remove the file
commit

Basic Commands

- **add** - adds new or changed files in your working directory to the Git staging area.   *git add <- file name ->*

- **commit** - it is the record of change

  git commit -m "some message"

- **push** - upload local repo content to remote repo

  git push origin main

Basic Commands

- **init** - **used to create a new git repo**   *git init*

  git remote add origin <- link ->

  git remote -v   (to verify remote)

  git branch   (to check branch)

  git branch -M main   (to rename branch)

  git push origin main
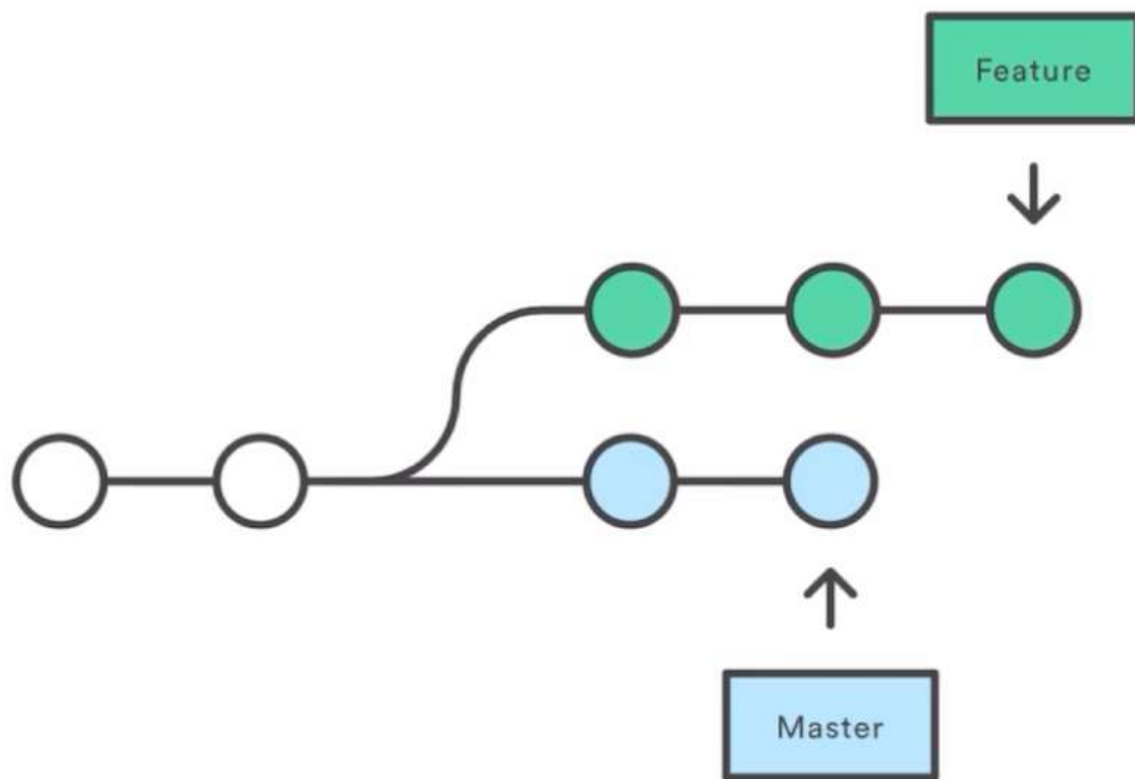
WorkFlow

Github

code
changes
↓
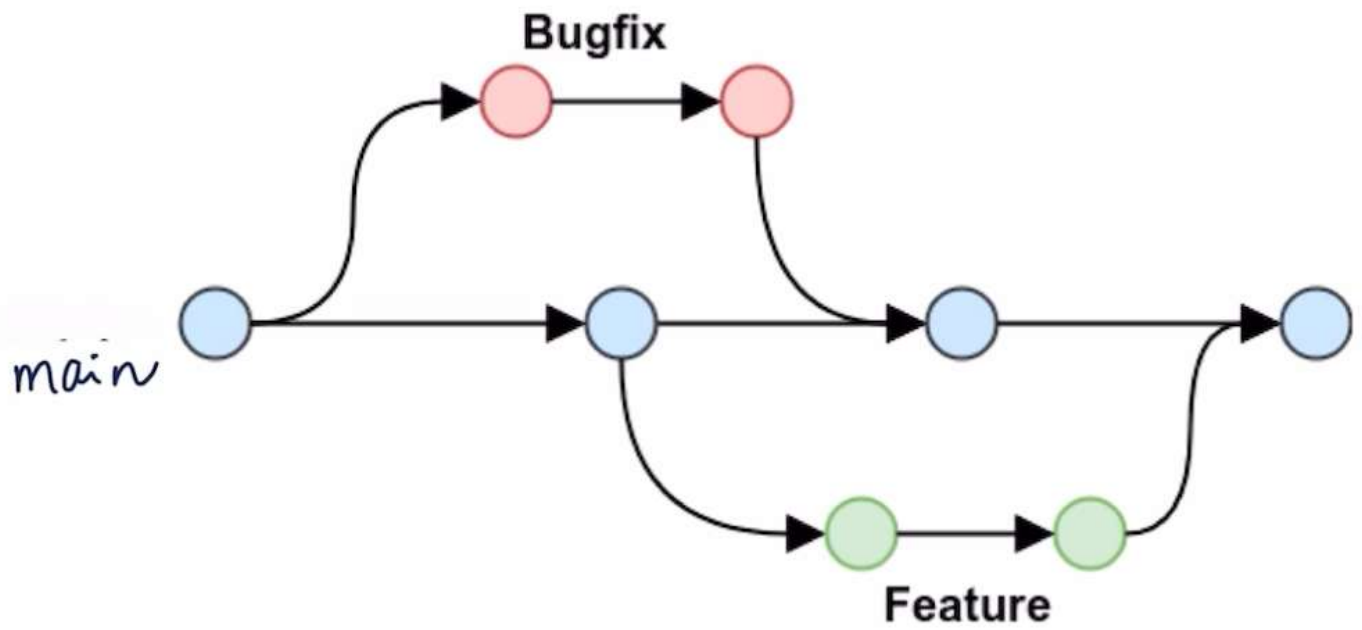commit

Local Git

code
changes
↓
"add"   stage a change
↓
"commit"   commit changes
↓
"push"

Git Branches

Git Branches

Branch Commands

git branch   (to check branch)

git branch -M main   (to rename branch)

git checkout <- branch name ->   (to navigate)

git checkout -b <- new branch name ->   (to create new branch)

git branch -d <- branch name ->   (to delete branch)

Merging Code

git diff <- branch name->   (to compare commits, branches, files & more)

git merge <- branch name->   (to merge 2 branches)

    OR

Create a PR

Pull Request

It lets you tell others about changes you've pushed to a branch in a repository on GitHub.

Basic Commands

git pull origin main

used to fetch and download content from a remote repo and immediately update the local repo to match that content.

push

local →

co

Merge Conflicts

An event that takes place when Git is unable to automatically resolve differences in code between two commits.

```
Accept Current Change | Accept Incoming Change | Accept Both Changes | Compare Changes
3   <<<<<<< HEAD (Current Change)
4   Adding a new change-feature
5   =======
6   Adding a new change-main
7   >>>>>>> main (Incoming Change)
8
```

Fixing Mistakes

Case 1 : staged changes

git reset <- file name ->

git reset

Case 2 : commited changes (for one commit)

git reset HEAD~1

Case 3 : commited changes (for many commits)

git reset <- commit hash ->

git reset --hard <- commit hash ->

What is Forking?

A fork is a new repository that shares code and visibility settings with the original "upstream" repository.

Fork is a rough copy.