Git is a version control system

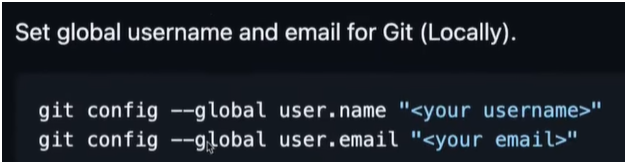
Git stores important data such as author, time stamp, commits and data

Github and Gitlab and bit bucket are source code management system platforms that allows you to store your source code

Git is a CLI whereas Github is an GUI and also provides CI/CD pipelines

To initialize an version control system:  
1. Run git init

This creates an empty git repository



.git folder is generally hidden, to make it visibe:  
ctrl + shift + p in vscode

Search preferences:workspace settings (json)

In that paste this code: {

"files.exclude": {

"\*\*/.git": false

}

} save and reopen ide

To know the status of the git repo: run **git status**

in version control system(vcs) there are 3 stages : untracked, staged and tracked

in file system they are untracked in vcs they are tracked

to move a file from untracked to stages: **git add filename.extension** for specific file

or **git add .** for all files at once

then file is added to staged state

to move back to untracked state run: **git rm --cached** testing.py for specific file

or git rm --cached for all files at once

to move from staged to tracked run: **git commit -m “message to be added”** message is compulsory

before that make sure you set user.name and user.email shown before

now if the files are deleted then you can recover using: **git recover filename**

**Note:** we cannot recover a file from staged mode but only from tracked mode

After making the files tracked now we have to push files from local to github

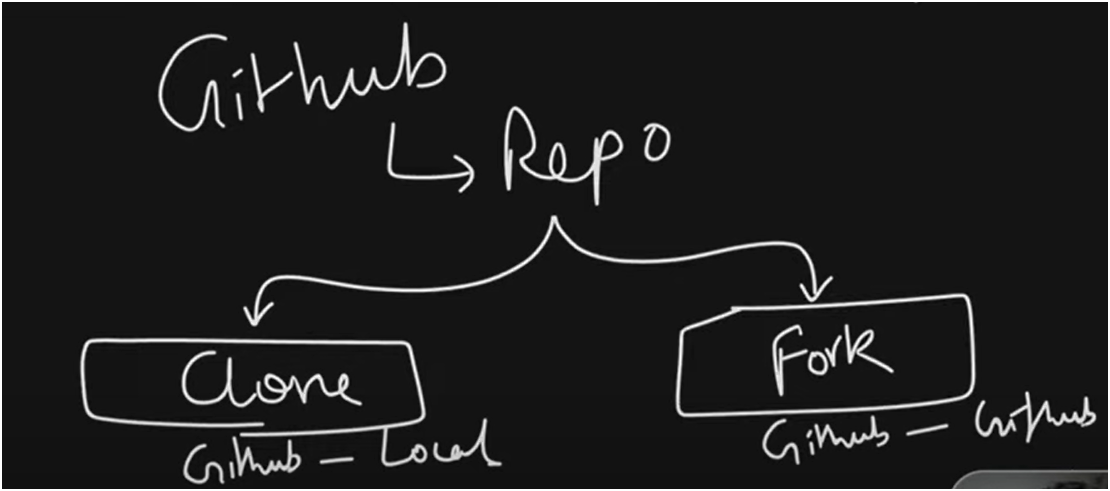
**Steps to move files to github:**

1. Create new repo
2. Same name as given for local workspace folder
3. Make as public
4. To get access to github account we use Personal Access Token **(PAT)**
5. git remote add origin <https://github.com/Im-Inevitable007/gitworkshop.git> paste this in terminal and run, this command will be given when we create a repo
6. git remote -v to check the status of remote repo

local repo is called master, remote repo is called main

Before pushing the repo we have to generate a PAT:

1. Go to profile settings
2. Developer Settings as last
3. Personal access tokens
4. Tokens (classic)
5. Generate new token
6. New token classic
7. Check the field repo
8. Generate
9. Copy the token
10. In local terminal run: git remote set-url origin <https://(paste> the token here) @github.com/Im-Inevitable007/gitworkshop.git
11. Run **git push origin master** this will create a new branch named master in the github repo



Fork is a copy of a repo

To do this you can go to any other persons repo and click on fork this will create a copy of that repo in your github account which you can directly manage

**Note: If you run ‘history’ in terminal it will show you the list of commands you have run for that session**

To clone a repo from github to local machine:

1. Navigate to any folder
2. Go to any repo you want in github
3. Click on code
4. Https
5. Copy the link
6. Run : git clone <https://github.com/Im-Inevitable007/gitworkshop.git>

Alternatively we can also connect to github using SSH keys instead of PAT:  
1. Run: ssh-keygen -t ed25519 -C [your\_email@example.com](mailto:your_email@example.com) in terminal

2. When asked for path click enter for default path same for phrase

3. This creates 2 files at location C:\Users\ASUS/.ssh open this in file manager

4. Copy the key in .pub file

5. Navigate to profile settings in github

6. Go to SSH and GPG settings

7. Add new SSH

8. Provide name , Key type: Authentication, paste the key and save

9. Open powershell run as Admin

10. Run: Set-Service -Name ssh-agent -StartupType Automatic

11. Run: Start-Service -Name ssh-agent

12. In vscode run: ssh-add C:\Users\ASUS\.ssh\id\_ed25519

13. Now change the git terminal to use SSh connection instead of https: git remote set-url origin [git@github.com:Im-Inevitable007/gitworkshop.git](mailto:git@github.com:Im-Inevitable007/gitworkshop.git)

14. git remote -v

Now if we make changes in github to any file and to reflect those changes in local machine:

**git pull origin master**