PFC

lec 21

git & github

Lecture Flow

1. what is version control
2. what is git
3. what is github
4. installation & setup
5. push code in github

version control

Version control is a system that:

✓ Tracks changes in files
✓ Helps restore previous versions
✓ Supports collaboration among multiple developers

git

Git is a distributed version control system used to track changes in source code. **Must have skill for every developer.** You need to know at least the basics (add commit push etc.)

1. Version Tracking
2. Collaboration
3. Open Source & free
4. Speed

github

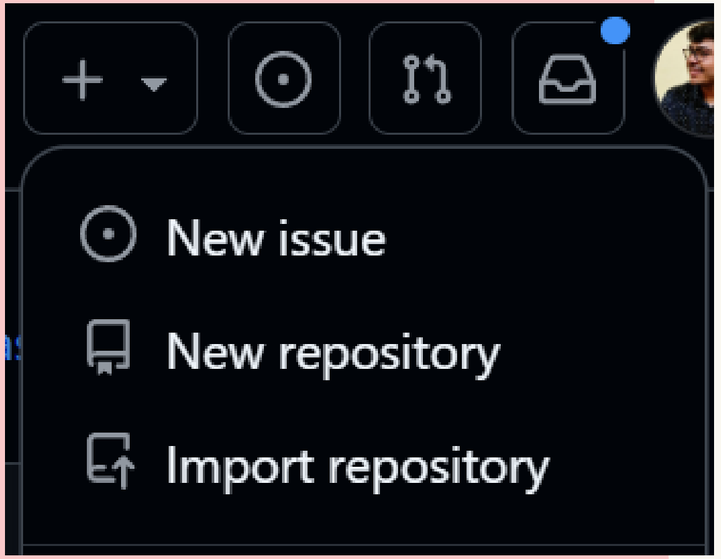
GitHub is a cloud platform that hosts Git repositories and enables sharing, teamwork, and project management.
Git = Tool
GitHub = Storage + Collaboration platform

HOSTING - STORING IT AT A PLACE WHERE OTHERS CAN ACCESS IT [ONLINE]

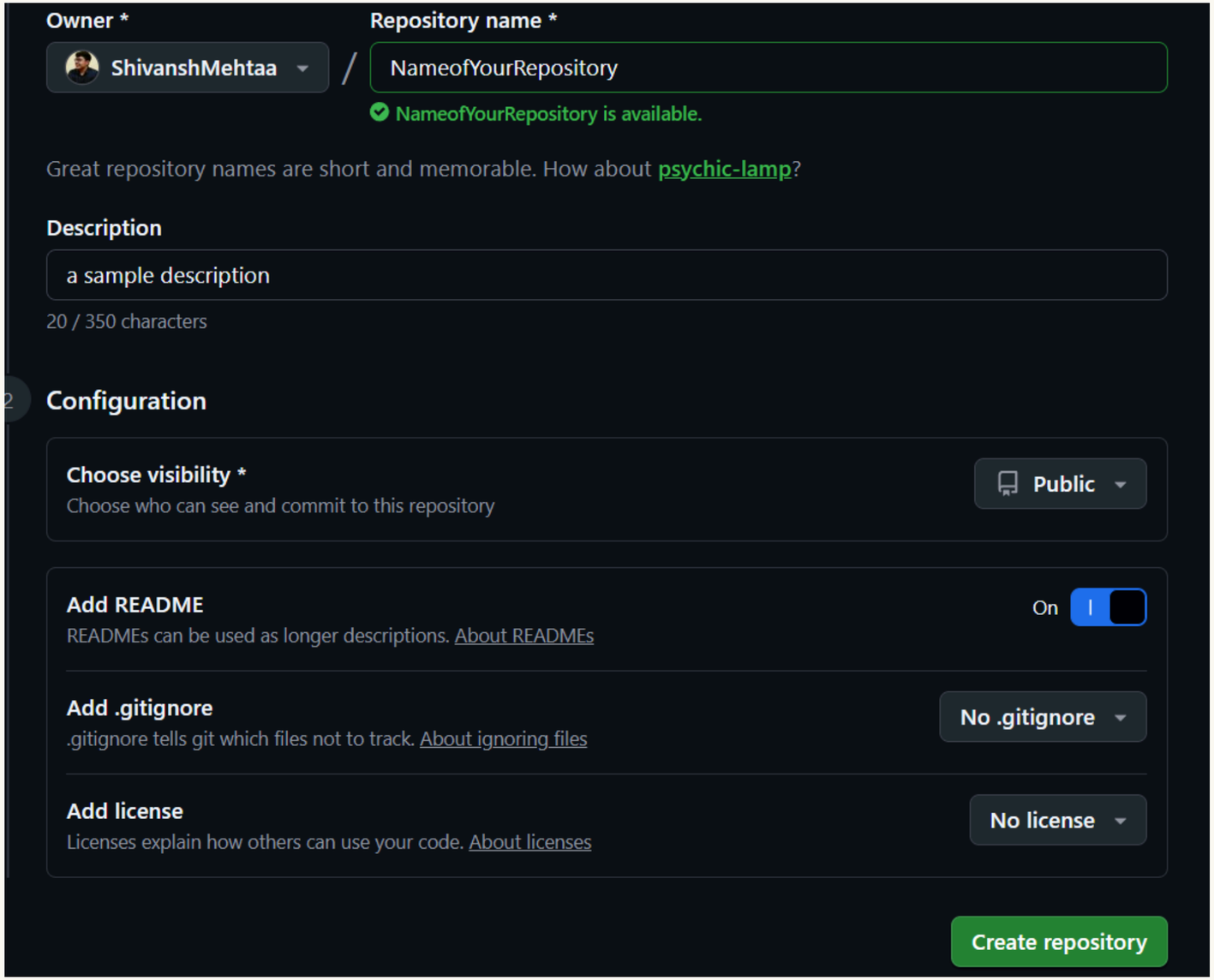
add code via upload

click on the plus icon on top bar

choose the new repository button

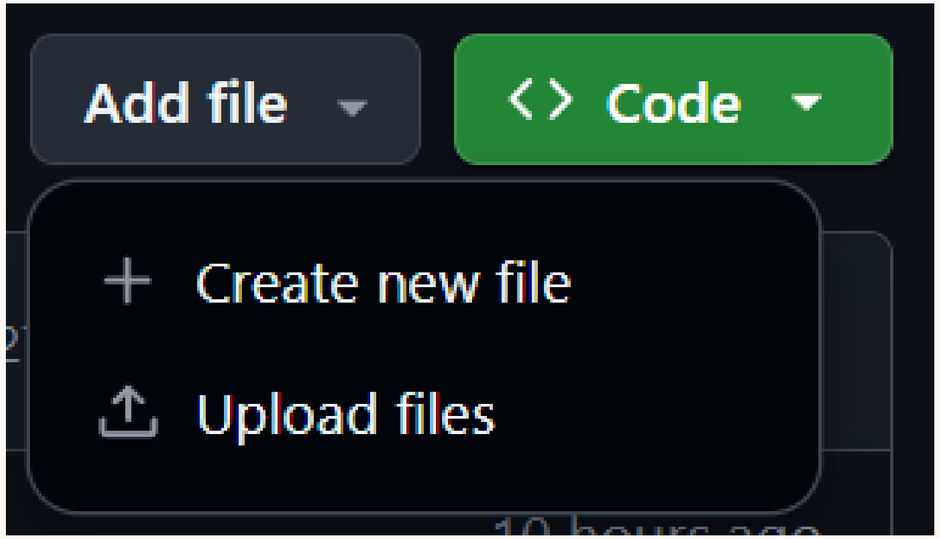


add code via upload

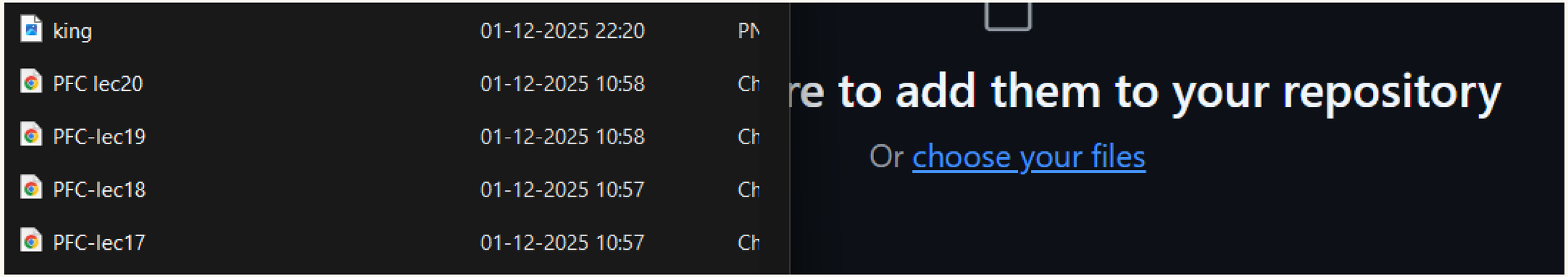


make sure it is public and you click on add a Readme.md file

add code via upload

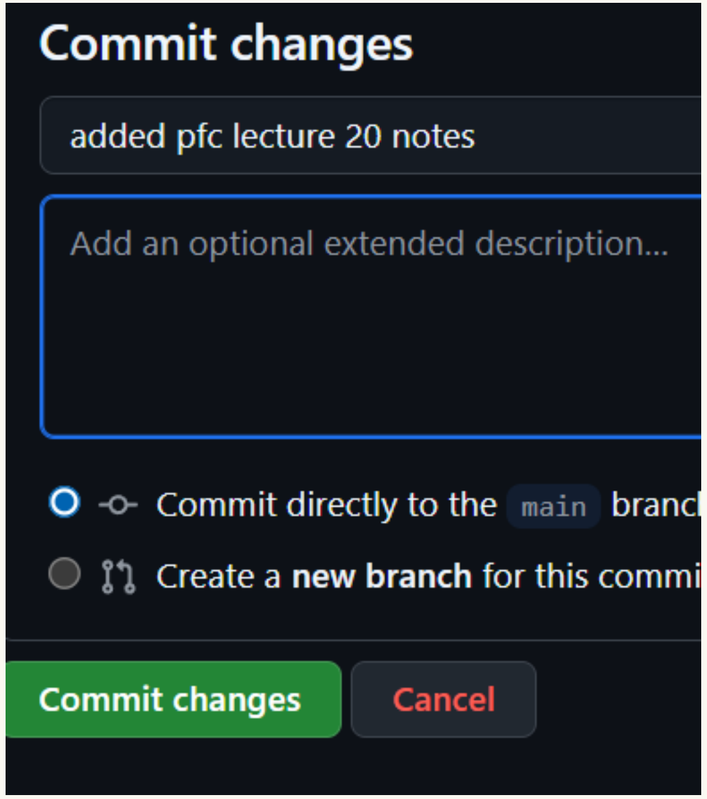


click on add files then the upload files button



drag and drop the file you want to upload

add code via upload



add an appropriate message and then click on commit changes

here you'll be able to see the newly added file

installing


```
git config --global user.name "Your Name"
git config --global user.email "your.email@example.com"
```

imp. terms

1. **Repository** - folder where git tracks project files
2. **Working Directory** - your project files on your computer
3. **Staging Area** - safe checkpoint for your code, prepares your code for commit step
4. **Commit** - staging area to local repository
5. **Remote Repository** - online repository like github

git init

Initializes a new Git repository in your project folder. **It tells Git to start tracking this folder.**

eg- *Mera project ready hai, ab ise track karo ki mai kya changes ya karta jaa rha hu*

command - git init

git add

Moves files from working directory to staging area.
It prepares them for commit.
eg- *Yeh homework final ho gaya, ab notebook me chipka do.*

command - git add index.html [single file add karne ke liye]
command - git add . [multiple files add karne ke liye]

git status

Shows the current state of the repository —
Which files are **modified, untracked, or staged.**
eg- ***Abhi project ki kya condition hai? Kaunse files pending hain? Kaunse ready hain?***

command - git status
red - unstaged
green - staged

git commit

Saves tracked/staged changes permanently in the local repository with a message.

eg- ***“Aaj ka kaam complete hua.” [diary enry bana di ki aaj kya kya hua hai]***

command - git commit -m "homepage completed" [“Message likh kar save kar diya — homepage complete.”] [inside “ we write the message“]

git remote add origin

With this command you are telling git where i have to store/send the code online?

REMOTE-URL **-** *the GitHub link of your repository*

After running this command, Git knows where to push your code online.

git branch -M main

this command creates a **“main”** timeline in your application, this **“main”** branch is then divided into other parts depending on code/project

git branch **- creates a branch**

-M **-used for renaming**

main **- required by github [rule]**

git push

Uploads your local commits to a **remote repository** (e.g., GitHub).
eg- ***Assignment/Lab Record ki photocopy teacher ko submit kardo***

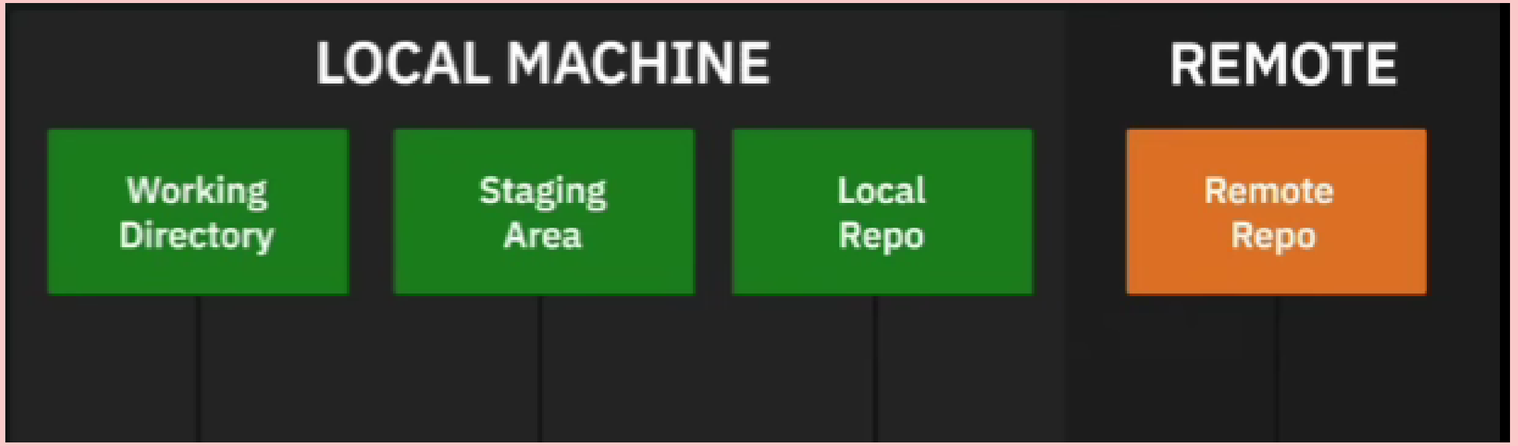
command - git push origin main [“mera project github pe upload ho gaya”]

git clone

git clone is used to copy an existing repository from the internet (GitHub) to your local computer.
eg- ***“Kisi doosre project ki copy apne computer par le aao.”***

command -
git clone https://github.com/user/project.git
now you can do anything to that project

WORKFLOW


LOCAL MACHINE
REMOTE
Working Directory
Staging Area
Local Repo
Remote Repo