Version Control System

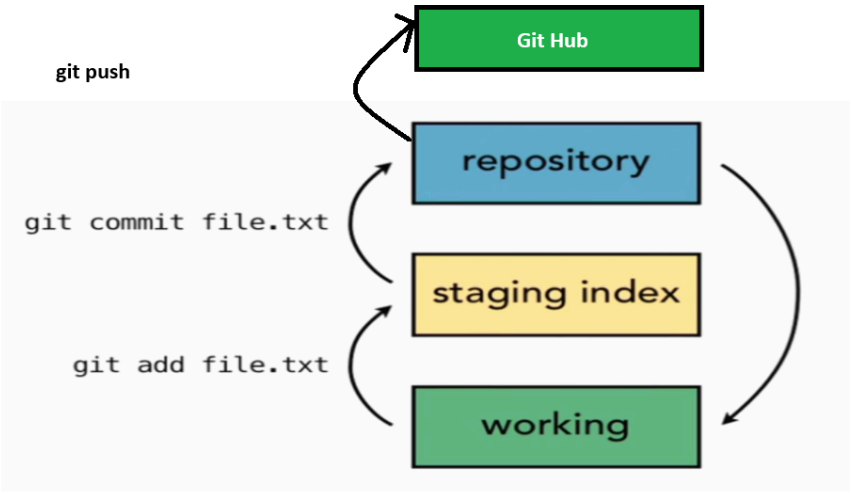
Git and Github

- it is a Distributed Version Control System(VCS).
- Tracks the changes in files and directories over time
- Helps to manage source code for software development

Git Terminology

Repository: A Space Where Code is Stored (Mainly Open Source Code)

commits: every commits creates a snapshot of a given file or directory that we can compare at any time



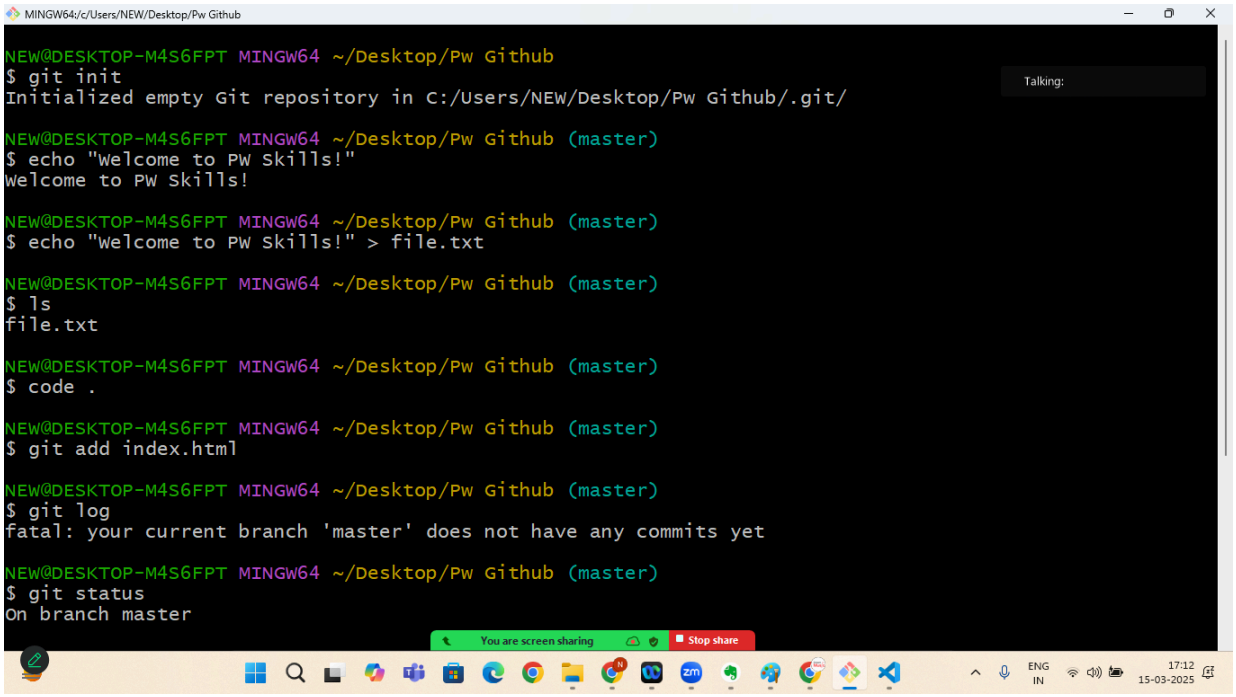
1. **Download the GitBash From :** https://git-scm.com/downloads
2. login to the git hub and create the account note down username,password and email for future reference
3. do the global configuration
    a. check the list of global users
        i. **git config --global --list**
    b. if the username and email is not coming you can set this up using below commands
        i. **git config --global user.name "Your Username"**
        ii. **git config --global user.email "YourEmail@gmail.com"**
4. create folder in your local machine:

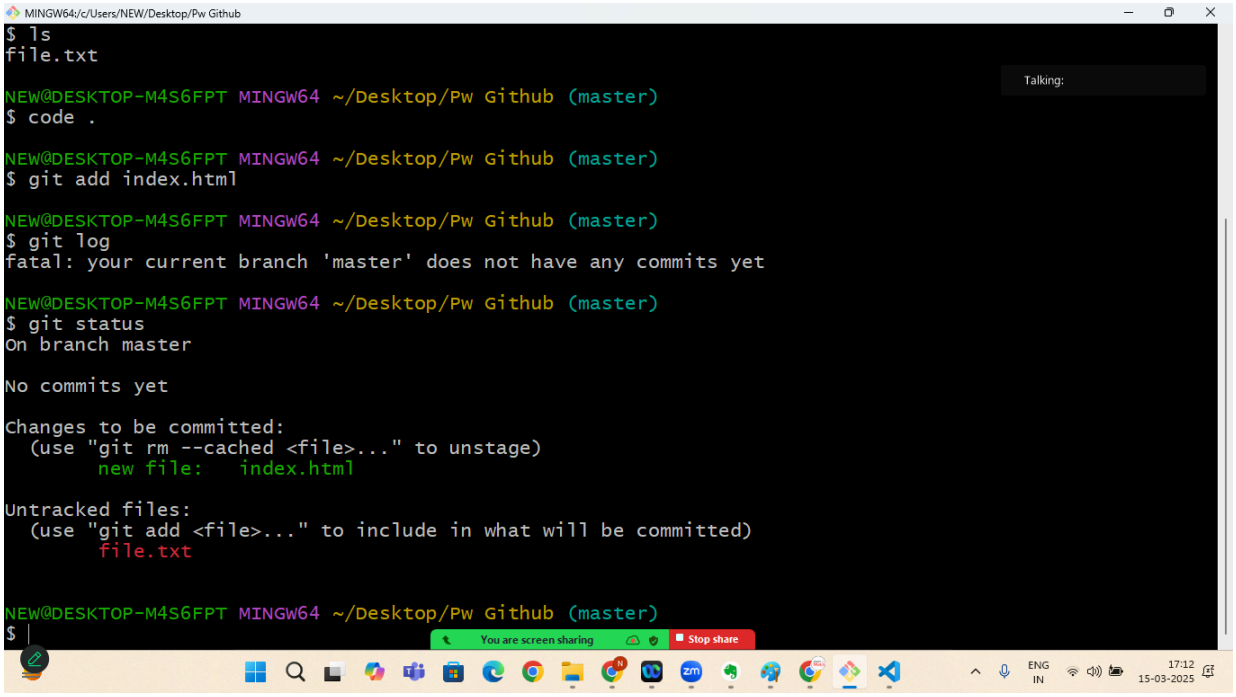
5. open the Git Bash from the same Folder
6. initialize the git repository:
    - **git init**
7. you will see hidden folder **.git** in the folder
8. create one file named:
    a. file.txt
9. Add the file to the stagging:
    a. git add <filename>
10. Add all the files to stagging:
    a. git add .
11. check the status of git using
    a. git status
12. do the commit to get the files ready for upload
    a. git commit -m "your message"
13. check the logs for staging
    a. git log (full detailed logs will be printed)
    b. git log --oneline (one line log will be printed)
14. create another file and add it to the stagging
    a. git add <another file name>

check the status again

12. you can remove the file from stagging using
    a. git rm --cached <filename>

check the screen shots





Master:

- It is a default branch.
- It is used by CI tools for build and deployment.
- It is followed by the other repositories.

Branch:

- It is a light weight working copy.
- It has a staging area.

- It works without impacting the master branch.

Head:

- It is a pointer to the latest commit of the working branch.
- It is present on every repository.
- It will point to the latest commit during branch switch.

Remote Repo:

- It is a git repository on a network outside the local machine.
- It can have more than one remote repositories pointing from the local repository.
- It can be managed and referenced with short names.

Push:

- It pushes changes from the local to the remote repository.
- It is performed after committing the changes to the local repository.
- It syncs the changes with the local and remote repository.

GIT DIFFERENCE COMMND

- git diff **<firstcommit> <second commit>**

CREATING A BRANCH

1. **to get the available branches**
   a. **git branch**
2. **to create a new branch**
   a. **git branch <name of the branch>**
3. **to switch to a particular branch**
   a. **git checkout <name of the branch you want to switch>**

MERGING

1. you can merger existing branch with the master branch
   a. **git merge <NAME_OF_THE_BRANCH_TO_MERGER>**
   b. **SAVE IT**
2. **check the files using**

- **ls**