GIT AND GITHUB TUTORIAL

 Git is a distributed version control system that helps us track changes in files and coordinate work on those files among multiple people.

 GitHub is a platform that uses Git for version control. It allows us to store our Git repositories remotely, collaborate with others, and manage your codebase.

Git and Github Commands:

1. Initialize a Git repository:

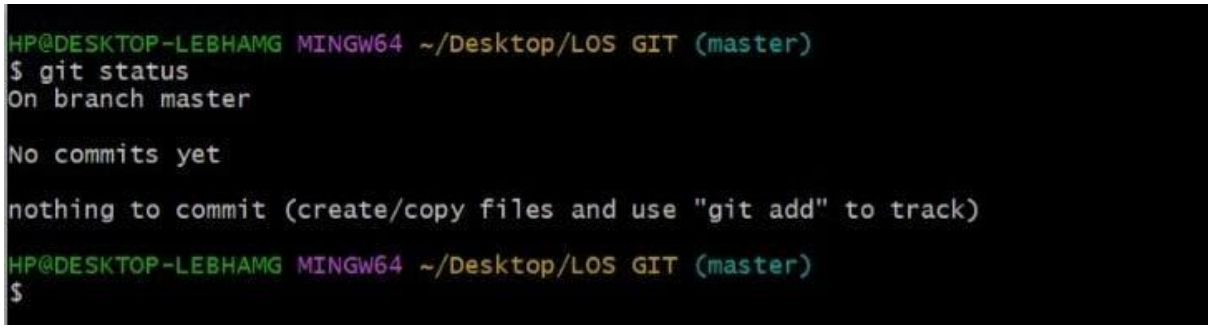
This command initializes a Git repository in the current directory. This will create a .git directory that contains all the necessary metadata for version control.

git init

2. Check the status:

This command shows the status of the files in our repository (whether they're modified, staged for commit, or untracked).

git status

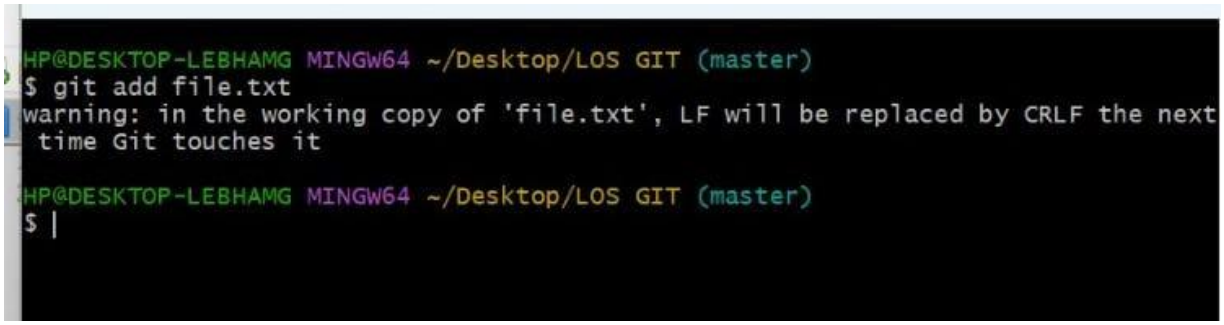


3. Add changes to staging area:

Before committing changes, we need to add them to the staging area.

git add <filename> # Adds a specific file

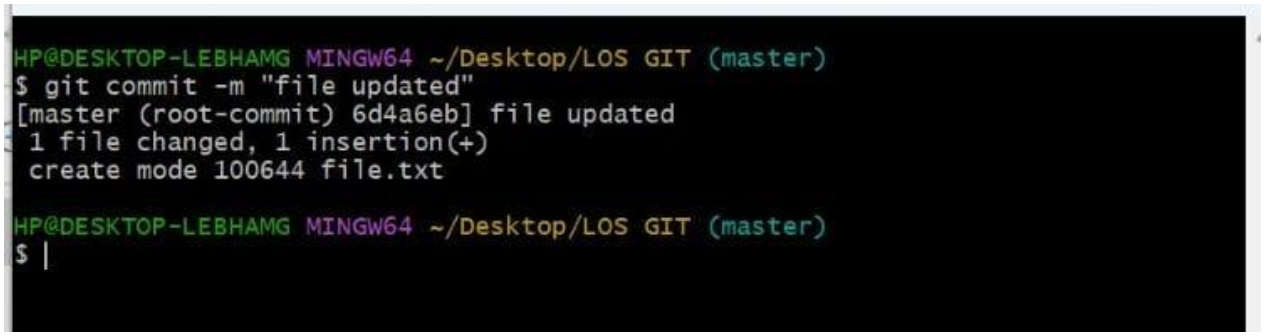
git add # Adds all changes in the current directory



4. Commit changes:

We can commit our changes with a message describing the changes.

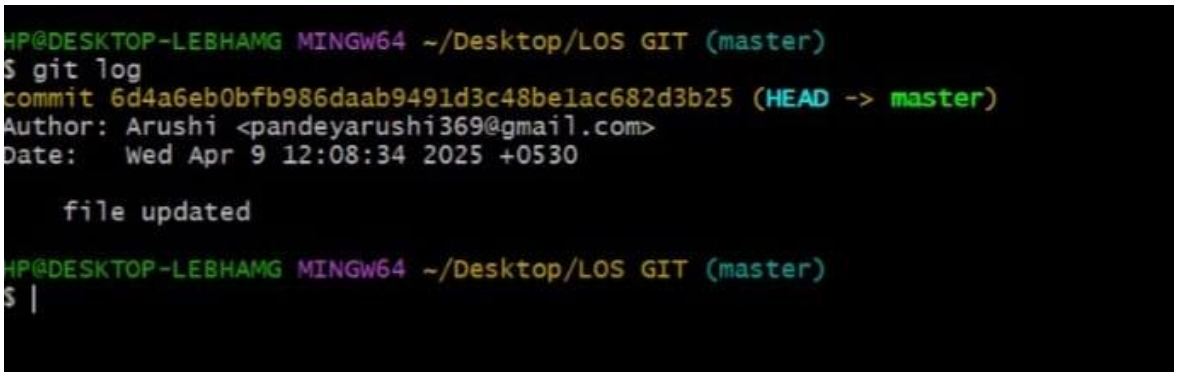
git commit -m "file updated" # "-m" lets you add a message directly



5. View commit history:

We can view the commit history of our repository using:

git log



6. Create a new branch:

Git branches let us work on different versions of our project.

git branch <branch-name> # Creates a new branch

git checkout <branch-name> # Switches to that branch

git checkout -b <branch-name> # Creates and switches to the new branch

7. Merge branches:

When we're ready to bring changes from one branch into another (typically after a feature branch), we can merge it.

git checkout main # Switch to the branch you want to merge changes into

git merge <branch-name> # Merge changes from another branch into the current branch

8. Push changes to remote (GitHub):

Once we're done committing locally,we'll push our changes to a remote GitHub repository.

git push origin <branch-name> # Pushes changes to the remote repository.

9. Pull changes from remote (GitHub):

To get the latest changes from a remote repository (GitHub):

git pull origin <branch-name> # Pulls changes from the remote repository

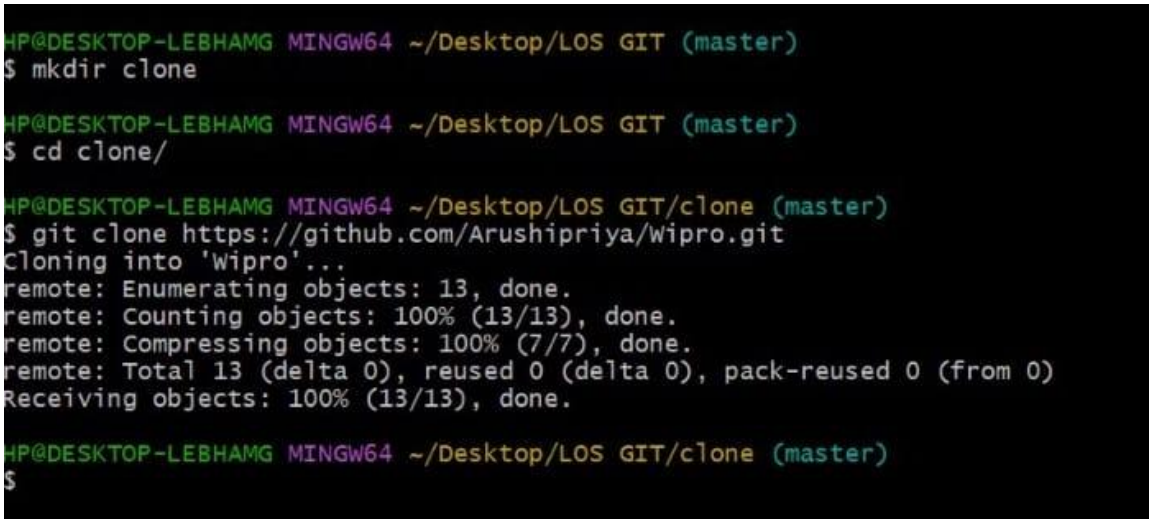
10. Clone a repository:

To copy a remote repository to our local machine, we use:

git clone <repository-url>

Example:

git clone : https://github.com/Arushipriya/Wipro.git

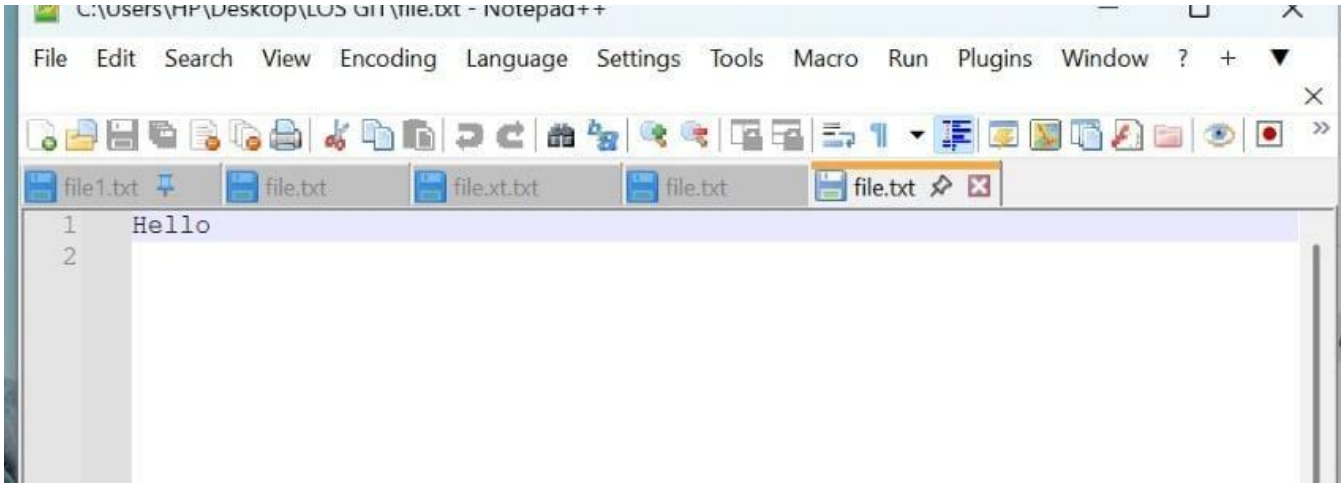


11. Create a new empty file or update the timestamp of an existing file:

touch hello.txt

12. To print text to the terminal or write it to a file.

echo "Hello" > file.txt



GitHub Basics:.

1. Create a new repository on GitHub:

- Go to GitHub and click on **New** repository.
- Fill in the repository name, description, and choose visibility (public or private).
- Click **Create repository**.

2. Link your local Git repository to GitHub:

Once we have a GitHub repository created, we will link it to our local repository by adding a remote URL.

git remote add origin https://github.com/username/repository.git

3. Push your local repository to GitHub:

After linking the remote, push your changes to GitHub:

git push -u origin main # Pushes to the main branch on GitHub

4. Fetch changes from GitHub:

To bring the latest changes from the GitHub repository (without merging them into your local files), we use:

git fetch origin

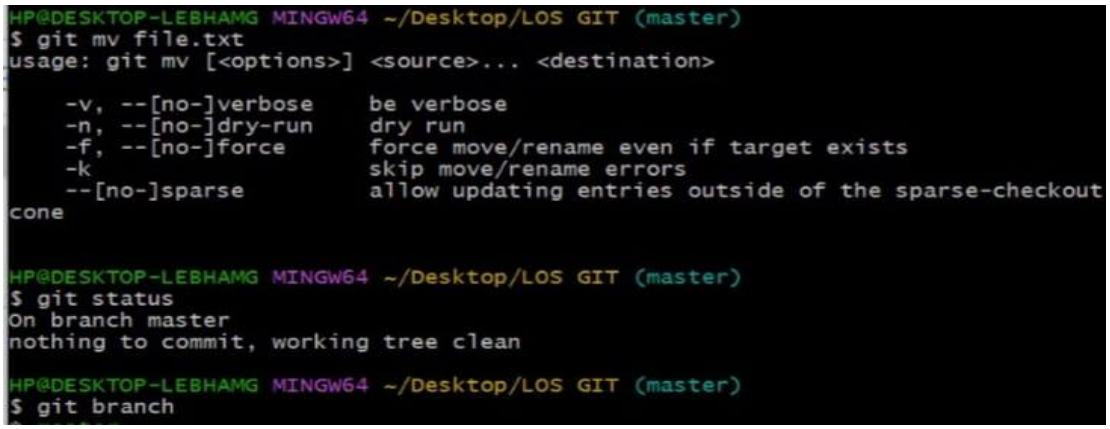
5. Remove a file or folder:

If you want to remove a file or folder from the repository:

git rm <filename> # Removes a file

git rm -r <foldername> # Removes a folder

git commit -m "Removed file/folder"

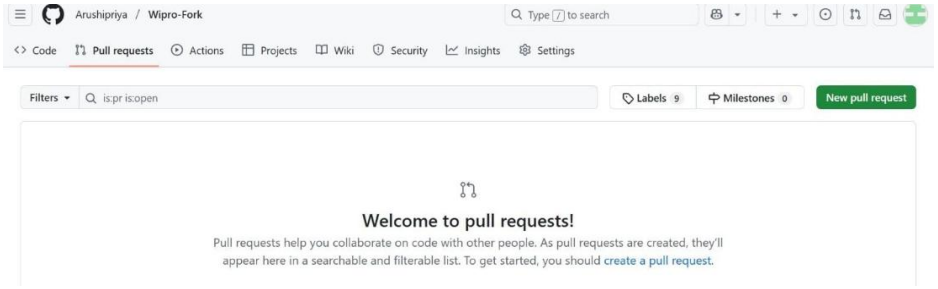


6. Create a pull request:

After pushing your branch to GitHub, you can open a pull request to merge your changes into the main branch. This is done on GitHub's website, not through the command line:

- Go to the repository on GitHub.
- Select the branch you want to merge and click **New Pull Request**.

- Add a description of your changes and create the pull request.

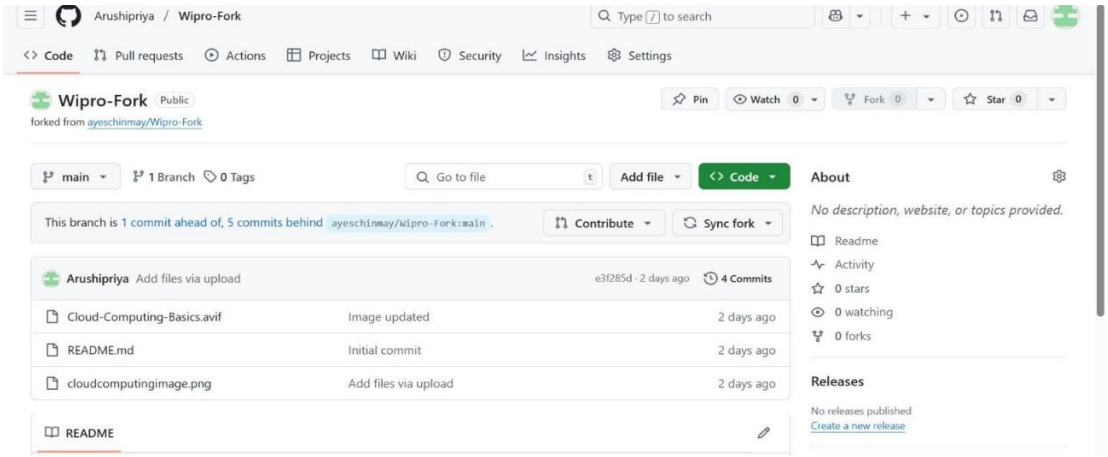


Common GitHub Workflows:

1. Forking a repository:

If you want to contribute to an existing GitHub repository, fork the repository:

- On the GitHub page, click **Fork**.
- This creates a copy of the repository in your account



2. Cloning a fork:

Clone your fork to work on it locally:

git clone https://github.com/yourusername/forked-repository.git

3. Syncing with the original repository:

To keep your fork up-to-date with the original repository:

git remote add upstream https://github.com/original-owner/repository.git # Add the original repository as a remote

git fetch upstream # Fetch changes from the original repository

git merge upstream/main # Merge changes into your local main branch

4. Creating a pull request from a fork:

After making changes to your fork, push them to your GitHub fork and create a pull request to the original repository.

NAME : ARUSHI PRIYA

REGD NO : 2141016384