

TASK5: CREATE A TUTORIAL FOR GIT AND GITHUB WITH THE COMMANDS.

What is Git?

Git is a popular version control system. It is used for:

Tracking code changes, tracking who made changes, coding collaboration.

What does Git do?

- Manage projects with Repositories.
- Clone a project to work on a local copy.
- Control and track changes with Staging and Committing.
- Branch and Merge to allow for work on different parts and versions of a project.
- Pull and push the latest updates to the main project.

What is GitHub??

- Git is not the same as Github.
- GitHub makes tools that use Git.
- GitHub is the largest host of source code in the world, and has been owned by Microsoft since 2018.

Commands

1. Initialize a repository

git init – This command creates a new Git repository in your project directory.

```
nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/assgn2
$ git init
Initialized empty Git repository in C:/Users/nandi/OneDrive/Desktop/assgn2/.git/
```

2. Git Setup

git config --global user.name "Your Name"

3.git config --global user.email "Your email"

Change the user name and e-mail address to your own.

```
nandi@VivoBook15 MINGW64 ~ (main)
$ git config --global user.name "Nandita"

nandi@VivoBook15 MINGW64 ~ (main)
$ git config --global user.email "nandita5511@gmail.com"
```

4. Making new repository

mkdir myproject- Makes a new directory

5.cd-changes the current working directory

```
nandi@VivoBook15 MINGW64 ~ (main)
$ mkdir proj1

nandi@VivoBook15 MINGW64 ~ (main)
$ cd proj1

nandi@VivoBook15 MINGW64 ~/proj1 (main)
$
```

6.touch-it creates new file

7.Remove file

git rm filename-removes a file from your working and stages the deletion for commit

```
nandi@VivoBook15 MINGW64 ~/proj1 (main)
$ git rm newfile.txt
rm 'proj1/newfile.txt'
```

8.Check repository status

git status- shows the current status of your working directory. It tells you which files are untracked, modified, or staged for commit.gi

```
nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/Git (main)
$ git status
On branch main
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    clone/
    clone1/
    file4.txt
```

9.Add Files to staging

git add filename-Stages a specific file for the next commit

```
nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/assgn2 (main)
$ git add file1.txt
warning: in the working copy of 'file1.txt', LF will be replaced by CRLF the next time Git touches it
```

10.Commit Changes

git commit -m "Your commit message" – Saves a snapshot of your staged changes to the git history.

```
nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/assgn2 (new-branch)
$ git commit -m "Updated file1.txt"
[new-branch a0a943c] Updated file1.txt
1 file changed, 1 insertion(+)
```

11. View commit History

git log-displays the commit history

```
nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/assgn2 (main)
$ git log
commit 1911488e326c33a9298d81a06cd1f4d74e73d0e3 (HEAD -> main)
Merge: 28bb8cd a0a943c
Author: Nandita Singh <nandita5511@gmail.com>
Date: Thu Apr 3 12:38:48 2025 +0530

    resolved merge conflict

commit 28bb8cd056e20a231cb31a3e8769468e6377bf54
Author: Nandita Singh <nandita5511@gmail.com>
Date: Thu Apr 3 12:36:56 2025 +0530

    Updated file1.txt again in main
```

13. Create a new branch

git branch new-branch -list all branches

```
nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/Git (main)
$ git branch new-assgn

nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/Git (main)
$ git branch
Wipro
* main
new-assgn
```

14. Checkout

git checkout new-branch-switch to this branch

```
nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/assgn2 (main)
$ git checkout -b new-branch
Switched to a new branch 'new-branch'
```

15. Merge Branches

git merge new-branch-combines changes from new-branch into main.

```
nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/assgn2 (main)
$ git merge new-branch
Auto-merging file1.txt
CONFLICT (content): Merge conflict in file1.txt
Automatic merge failed; fix conflicts and then commit the result.
```

16.Delete Branches

git branch -d branch-name – Deletes a branch after it's been merged.

```
nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/Git (main)
$ git branch -d new-assgn
Deleted branch new-assgn (was b8b4a59).

nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/Git (main)
$ git branch
  Wipro
* main
```

17. View commit history

git log --oneline- compact history

```
nandi@VivoBook15 MINGW64 ~/OneDrive/Desktop/assgn2 (main)
$ git log --oneline
1911488 (HEAD -> main) resolved merge conflict
28bb8cd Updated file1.txt again in main
a0a943c (new-branch) Updated file1.txt
bff2593 Initial commit file1.txt
```

18.Clone a Repository

git clone <repo url> -Downloads a GitHub repository to your computer with its full history.

```
nandi@VivoBook15 MINGW64 ~/proj1 (main)
$ git clone https://github.com/username/repo-name.git
```