Task: Create a tutorial for Git and GitHub with the Commands.

1. Git Setup

- Sets your Git username.
- **--global** makes it apply to all your repositories on your system.

git config --global user.name"Dipyaman Sahu"

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (main|MERGING)
$ git config --global user.name "Dipyaman Sahu"
```

- Sets your Git email globally. This is important for associating commits with your GitHub account.

git config --global user.email "dipyamansahu2021@gmail.com"

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (main|MERGING)
$ git config --global user.email "dipyamansahu2021@gmail.com"
```

2. Initialize a Repository

- Initializes a new Git repository in the current directory, allowing version control to begin.
- Creates a **.git** folder to track changes:

git init

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (main|MERGING)
$ git init
Initialized empty Git repository in C:/Users/DIPYAMAN SAHU/Desktop/Task/.git/
```

3. Check Repository Status

- Displays the current status of the repository, showing which files are staged, modified, or untracked.

git status

4. Add Files to Staging

- Stages a specific file to be committed. Only staged files are included in the next commit.

git add filename

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (master)
$ git add file.txt
```

5. Commit Changes

- Creates a snapshot of the staged changes with a descriptive message.
- Save the staged changes to the repository:

git commit -m "Your commit message"

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (master)
$ git commit -m " First commit with file.txt. "
[master (root-commit) 9805abe]  First commit with file.txt.
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 file.txt
```

6. View Commit History

- Displays a history of commits, including commit IDs, authors, dates, and messages.

git log

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (master)
$ git log
commit 9805abe6b6eb5282bcde4f33aa018918c8c17263 (HEAD -> master)
Author: Dipyaman Sahu <dipyamansahu2021@gmail.com>
Date:   Wed Apr 9 13:31:30 2025 +0530

    First commit with file.txt.
```

- Shows each commit in one line (useful for quick reference).

git log –oneline

This tool is very useful to connect

7. Connect to GitHub

- Links the local repository to a remote one, usually on GitHub, for pushing and pulling code.

*git remote add origin **https://github.com/username/repo-name***

8. Push Code to GitHub

- Pushes local commits to the remote master branch and sets the upstream tracking reference
- **-u** sets upstream tracking so future **git push** commands can be used without specifying the branch.

git push -u origin master

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (master)
$ git push -u origin master
```

9. Clone a Repository

- Creates a local copy of a remote repository by downloading its contents and history

*git clone **https://github.com/username/repo-name.git***

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (master)
$ git clone https://github.com/Dipyaman2/Wipro.git
Cloning into 'Wipro'...
remote: Enumerating objects: 15, done.
remote: Counting objects: 100% (15/15), done.
remote: Compressing objects: 100% (11/11), done.
remote: Total 15 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (15/15), 5.99 KiB | 682.00 KiB/s, done.
Resolving deltas: 100% (1/1), done.
```

10. Pull Changes

- Fetches and integrates changes from the remote master branch into the local branch.

git pull origin master

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (master)
$ git pull
There is no tracking information for the current branch.
Please specify which branch you want to merge with.
See git-pull(1) for details.

    git pull <remote> <branch>

If you wish to set tracking information for this branch you can do so with:

    git branch --set-upstream-to=<remote>/<branch> master
```

11. Create a New Branch

- Creates a new branch from the current HEAD. Useful for feature development without affecting the main code.

git branch<new-branch>

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (master)
$ git branch wipro
```

12.Checkout

- Switches the working directory to the specified branch.

git checkout<new-branch>

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (master)
$ git checkout wipro
Switched to branch 'wipro'
```

13. Merge Branches

- Combines the specified branch into the current branch, integrating changes made in the other branch.

git merge new-branch

```
DIPYAMAN SAHU@Dipyaman MINGW64 ~/desktop/task (wipro)
$ git merge wipro
Already up to date.
```