**What is Git?**

* 🡪 Git is a **version control system** used to track changes in source code.
* 🡪 It allows **multiple people to work** on a project and helps maintain a history of all changes.

**What is GitHub?**

* 🡪 GitHub is a **cloud-based platform** that hosts Git repositories.
* 🡪 It provides a **web interface** for Git and enables **collaboration, issue tracking, and more**.

**Key Terms**

* **Repository (repo):** where your project/code lives.
* **Commit:** a snapshot of your changes saved to Git.
* **Push:** sending your local commits to GitHub.
* **Pull:** getting the latest changes from GitHub.
* **Branch:** a separate version of your code used for development.
* **Merge:** combining changes from different branches.
* **Clone:** copying a GitHub repository to your local machine.
* **Fork:** creating a personal copy of someone else’s repo on GitHub.
* **Pull Request (PR):** proposing changes to be merged into a repository.

**Basic Git Configuration**

**Set up Git with your name and email:**

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

**Create or Clone a Repository**

**To clone a repo from GitHub:**

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

**To initialize a new Git repo:**

* git init

**Making Changes**

**After editing files, stage changes with:**

* git add .

**Commit the staged changes:**

* git commit -m "Your commit message"

**Push Changes to GitHub**

**Send your commits to GitHub:**

* git push origin main

**If pushing for the first time or to a new branch:**

* git push -u origin branch-name

**Pull Latest Changes**

**To update your local repo with changes from GitHub:**

* git pull origin main

**Branching**

**Create a new branch:**

* git branch feature-branch

**Switch to a branch:**

* git checkout feature-branch

**Create and switch in one command:**

* git checkout -b feature-branch

**Merging Branches**

**First, switch to the main branch:**

* git checkout main

**Merge another branch into main:**

* git merge feature-branch

**Checking Status and History**

**Check the current state of your repo:**

* git status

**View the commit history:**

* git log

**Undoing Changes**

**Undo staged changes:**

* git reset

**Undo last commit but keep changes:**

* git reset --soft HEAD~1

**Other Useful Commands**

**Check remote repositories:**

* git remote -v

**Add a remote repository:**

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

**Remove a file from Git tracking:**

* git rm --cached filename