**GIT(Global Information Tracker)**

* It is a central repository using which we can manage our project source code.
* Git is a version control system.It helps you keep track of code changes and it is used to collaborate on code.
* It is also called a VCS(version control system).
* It maintains all modifications happening to a specific file.
* It records the modifications when it is modified and why it is modified.

It is used for 2 reasons:

1.VCS(Version control system)

2. Easy to collaborate

**Why do we use Git:** To maintain multiple versions of the same file.

**Functionality**

* It allows multiple developers to develop the code simultaneously.
* It does not allow overwriting of each other's changes.
* It maintains a history of every version.
* Git is fast when compared to other version-controlling tools.
* Multiple developers can easily collaborate when doing the same project.
* It also works as a backup up our project code.

There are 2 types of VCS:

1. **CVCS**(Centralized Version Control System)--🡪SVN(Subversion control system)

2.**DVCS**(Decentralized/Distributed Version control system)--🡪git

SVN is an older version of Git.

**Centralized VCS**

* It consists of the current version data
* In this, every developer needs to connect to this server and they need to develop the code.

**Disadvantages:**

* Servers can be accessed by anyone so there can be chance of coping the data directly.
* If the server is destroyed, data will be lost.

**Decentralized VCS:**

* In this, every developer does not have to connect with the server.
* Instead of that, they will create a repository in GitHub(remote repository)
* In GitHub, we have an option of cloning the code
* Git is a version control system whereas GitHub is a server

**Important Terminologies**

**Repository:** Group of project files to store in a single area.GitHub can have many repositories.Each project will have one repository.

**Local Repository(Laptop/System):** Getting the remote repository to our local repository(our laptop/systems)

**Cloning:** We can bring our code from a remote repository to local repository.

**Remote Repository(server/github):**A **remote repository** in Git is a version of your project’s repository that is hosted on a server or a platform (like GitHub, GitLab) and can be accessed over a network.

**Fork**:Projects are copied from one’s github account to another github account

**Push**:Used to send our files from local repo to remote repo

**Pull**:Taking files from remote repo to local repo.

Git will follow 2 types of protocols:

1. HTTPS
2. SSH

**Github Commands**

1. **Open**
2. **git --version**
3. **git config**
4. **git config --global --list**
5. **git config --global user.name “shailaja”**
6. **git config --global user.email “shailajapuropale@gmail.com”**

**For adding the files to the git is**

**Git add .**

**Git add -A**

**Git add file1**

**Git add file1,file2,file3**

**Git diff -🡪to show the changes happened before**

**Git -rm –catched filename 🡪to remove the file from local or remote repo**

Creating ssh

Mkdir ssh

Cd ssh

Ssh-keygen -o

Cat ~/.ssh/id\_ed25519.pub