**Git and GitHub Introduction**

**1. What is Git?**

Git stands for Global information Tracker. Git is a free and open-source tool used for tracking changes in computer files, source code. It helps developers collaborate on projects and manage versions of their code efficiently.

**2. VCS (Version Control System)**

A Version Control System (VCS) is software that helps track and manage changes to files over time. It keeps a history of file changes, so one can get back to previous versions when needed. It is especially helpful in software development to avoid losing work and collaborate with others.

**3. Why do we use Git?**

Git helps in:

* **Tracking changes**: We can see what has changed in a project over time.
* **Collaboration**: Multiple people can work on the same project without overwriting each other’s work.
* **Backup**: You can get back to earlier versions if something goes wrong.

**4. Functionalities of VCS**

* **Track changes**: Keeps a record of changes made to files.
* **Branching**: Allows developers to work on different parts of a project independently.
* **Merging**: Combines changes from different versions or branches.
* **Collaboration**: Multiple developers can work on the same project without conflict.

**5. Types of VCS**

* **Centralized VCS**: A central server holds the main version, and developers work on copies (e.g., SVN(sub version control system). (or)
* **Local VCS**: Tracks changes on a single computer
* **Distributed VCS**: Every developer has a copy of the entire repository, allowing for more flexibility and offline work (e.g., Git).

**6. What is Cloning in Git?**

Cloning in Git means making a copy of a remote repository (like GitHub) to our local machine. This allows you to work on the project locally before sharing changes with others.

**7. Local Repo, Repo Definition, Remote Repo**

* **Repo (Repository)**: A project’s folder where all files, folders, and the history of changes are stored.
* **Local Repo**: A copy of the repository stored on our computer. It includes all the files and history.
* **Remote Repo**: A version of the repository stored on a server, often hosted on platforms like GitHub or GitLab, accessible to all team members.

**8. Difference Between Git and GitHub**

* **Git**: A tool to track changes and manage versions of files locally on our computer.
* **GitHub**: A platform that hosts our Git repositories online, allowing easy collaboration and sharing of code among developers.