**GIT**

**Git: Global Information Tracker**

* It is created by Linus Torvalds in 2005 and it has been maintained by Junio Hamano.
* It is central repository using which we can manage our project source code.
* Git is known as version control system.
* Git is a tool that helps coders track changes in their code.
* It manages the source code, track changes, and facilitates collaboration between development and operation teams.
* It is also known as local server.
* It is used because of versions troubleshooting and fixing bugs is easy.
* In this process any thing goes wrong in the current version we can rollbacks to the previous version.
* It records the modification when someone modified and why they modified that files.

Git is used for two reasons:

1. VCS 🡪 For version control System
2. For collaboration with all

**Why we use Git**

* To maintain the multiple versions of same file. And it doesn’t allow to overwriting each other changes.
* It maintains a history of every version.
* Git is a fast tool when compared to the other version controlling tools.
* It is used for backing up our project code.

**Version Control:** Git tracks of every modification made to the codebase. If an mistake is made then developers can easily rollback to a there previous version.

**Collaboration:** Multiple developers can work on the same project.

**Branching and Merging:** Git allows developers to create branches, enabling them to work on new features or bug fixes without affecting the main codebase. These changes can then be merged into the main branch once they are tested and ready.

**Speed:** Git is designed to handle large projects with speed and efficiency.

**Open Source:** Git is open-source software, which means it is free to use and modify the errors.

There are two types of VCS:

1. CVCS 🡪 Centralized Version Control System
2. DVCS 🡪 Distributed Version Control System/ Decentralized VCS

**Centralized Version Control System (CVCS**): It is a single central server stores all the versions of the files, and clients they access the central repository to retrieve the latest files or commit changes.

SVN 🡪 Sub version control system

* SVN means centralized server
* It consists of current version data.
* Each and every developer needs to connect to this server & then need to developer their code.

Disadvantages of SVN:

* In git servers can be access by anyone and anyone access can copy the code and rewrite the code and they do the change in them.
* If the server will be destroyed then every thing will be lost in that

**Distributed Version Control System/Decentralized VCS (DVCS):**

* In DVCS every developer has a full copy of the repository including with the complete history of changes and developers can work independently.
* Every developer need not want to connect to the github.