What is Git?

Git is an application that keeps track of changes (text changes) that are made and move back and forth to utilize a particular version. It is referred as Version control System and Source code management. Git is similar to undo and redo mechanism.

Other version control Systems

* Source Code Control System (SCCS) - Unix only

In this mechanism changes are not saved as whole document. It just saves the snapshots of changes. To retrieve any particular version of document, Snapshot is applied to original document.

Version 2 Doc

Original Doc

Version 1 Doc

Snapshot 1 Snapshot 2

Latest

Document

* Revision Control System (RCS) – Cross platform

It is quite opposite to SCCS, rather than original document snapshots are applied on latest version of document to obtain previous versions of document.

Original Doc

Latest Doc(v2)

Version 1 Doc

Snapshot 2 Snapshot 1

Both SCCS and RCS are single file version control systems and one person can access a file at an instance.

* Concurrent Versions System (CVS)

Documents are stored in a remote server and more than one user can access the file concurrently.

* Apache Subversion(SVN)

Also keeps track of non-text such as images. Not only keeps track of multiple files, but also the whole directory by taking the snapshots of the directories. Above systems are not directory oriented systems.

* BitKeeper SCM

Closed source, proprietary, distributed version control.

* Git was developed in April 2005 by Linus Torvalds

Distributed version control, open source and free software, cross-platform.

**Distributed version control:**

Different users maintain their own repositories, instead of working from a central repository. No single master repository but many working copies. No need to communicate with any central server which makes the system faster.

**Git Architecture:**

Git uses three-tree architecture. Repository, Staging index, working directory are the three entities of three-tree architecture.

Repository

2. git commit file.txt ↑

Staging index

1. git addfile.txt ↑

Working