GIT

Git is a **open source version control system** originally created by **Linus Torvadds** in 2005.It is freely available in internet .It is a **distributed** version control system for tracking changes in source code during software development under the terms of GNU. It is designed for coordinating work among the team or programmers. But it can be used for track changes in any set of files. Its goal include speed,data integrity and support for distributed non linear workflows.Git was designed as a set of programs written in c and several shell scripts that provide wrappers around that programs.

The four areas of git:

- Working directory
- Index (Also known as Staging area)
- Repository
- Stash

In working directory when a file is **untracked** or **modified** its changes are stored in working directory. When a file is **staged** its changes are stored in **index.** When changes in files are **committed** it's stored in **repositories.** Git will automatically perform garbage collection when enough objects have been created in repository. Garbage collection can be called explicitly using,

```
git gc –prune
```

Git has common cryptographic hash function called checksum hash function(SHAI) to name and identify objects. Every file and commit is check ruined & retrieved by its checksum at the file checkout. It is impossible to change file,data,commit message and any other data from the git database without knowing git.

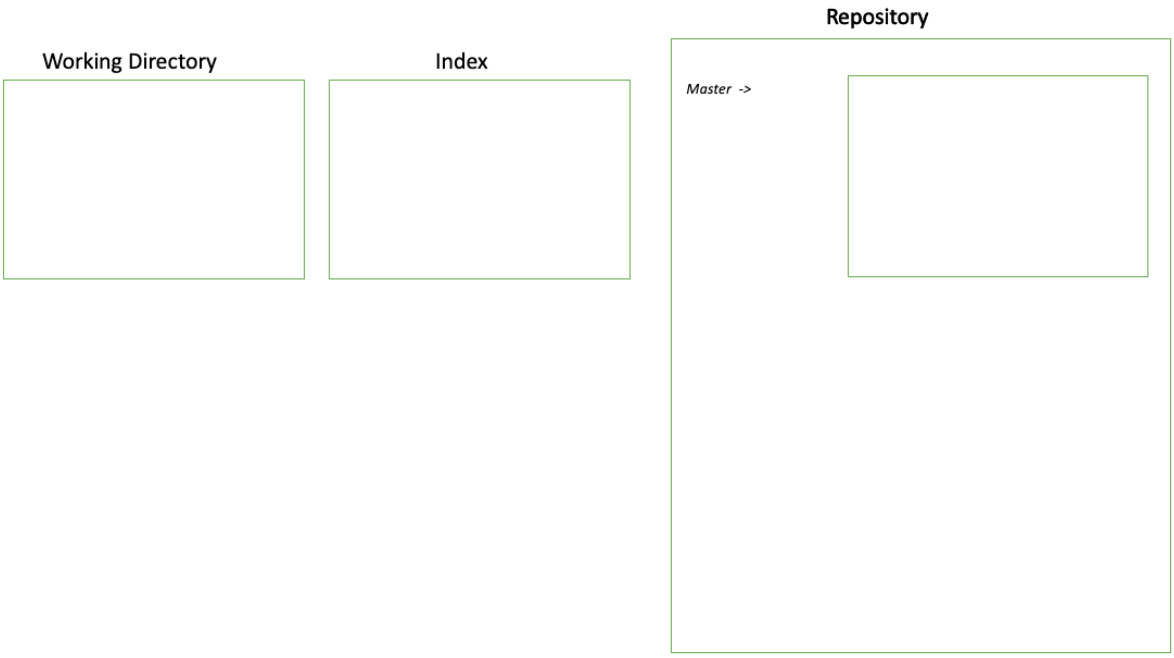
Initialize new repository in git,

Create a new folder on the computer. Assume that this is a folder which we are going to do our projects with the help of git.

Issue this command from the root of this folder to initialize a new git repository

```
git init
```

At the current moment ,this is the state of three areas



We are in the branch master, which is created by default when we initialised git.Copy (or clone) the repository to your local machine there we add files to our projects, and commit the changes.

In git core assumption is that a change will be merged more often that it is written as it is passed around to various reviewers. In git branches are very light weight, a branch is only a reference to one commit with its parental commits, the full branch structure can be constructed, Git gives each develop a local copy of the full development history changes are copied from one such repository to another. These changes are imported as added development branches and can be merged in the same way as a locally developed branch.

Repositories can be published via HTTP/FTP or git protocol over either a plain socket or secure shell. it also has a cvs server emulation, which enables the use of existent cvs clients and IDE plug-in to access git repositories. Fetching version history from a locally stored repository can be one hundred times faster than fetching it from remote server.