**Git**

Repository (Remote)

Branches

Staging area

Working directory (Local)

Add

Commit

Log

Status

Graph

Checkout

Merge

Reset

Reset

Git is a tool used for controlling file version. Git takes a snapshot of state of all files into a commit. In the other word, a commit is a version of files. Each commit is independent, so any change made in one commit will not affect the others. Commits are arranged in an order called a branch. Several branches can be in a single repository and Master branch must be there at least. “Origin/master” is an index pointing to a commit which is known by the last Pull or Clone from Git host.

Origin/master

Master branch

Branch B

A branch is a series of commits of which a pointer points to the previous commit. This allows tracing back file history. Branches can be merged together to combine changes.

**GitHub**

GitHub is a cloud storage hosting Git repositories. GitHub provides tools used for people collaborating on the same work or project. GitHub communicates with a repository in Git.

GitHub (Cloud)



Git (Local)

Origin/upstream

Remote

Push

Pull

Fetch

Clone

Fork

Pull request

Pull request

**Sync forked repository with upstream repository**

When the local repository get updated then pushed to forked repository, both of the repositories are in sync and have the same changes and updates. However, this changes and updates have no effect on the upstream repository. Additionally, any updates on the upstream repository will not affect on forked repository and local repository. To get all of them updated, the following process shows sequential steps of updating them.

Upstream repository

Forked repository

Local repository

1. Fork
2. Clone
3. Push updates
4. Pull request
5. Pull master
6. Push master
7. Accept update

3. Update and commit