# Git

Monday, 1 August 2022 1:00 PM

Git is a Devops tool used for sourse code management and version Control.

It also used to tracking changes in the sourse code, enable multiple developer to work together on a project.

## Benefits of Git.

Every developer has an entair copy of the code on their local systems.
Any changes made to the sourse code can be treated by others.
There is a regular communication between the developer.


## Features of Git.

Tracking history.
Free and opensourse
Create Bakups
scalable
support collaboration
Easly creat branch
Distributed development

## Git workflow.

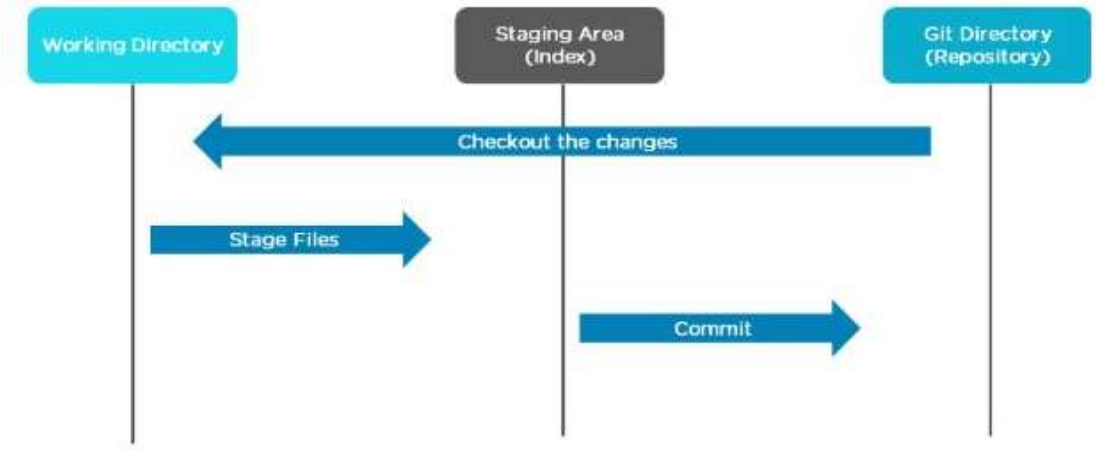
Git workflow is divided into 3 types:-

1) Working directorey → Write your code and modify file stored in this directory.

2) Staging area → Stage the file and add snapshots of them to your staging area. then you can commit the file.

⇒ Git directory → Perfoorm a commit that stores the snapshots permanently to your git directory.

Check out any existing version, make changes, stage them and commit.




## Branch in Git

Branch in git is used to keep your changes until code are ready. You can do your work on a branch while the main branch which is called master branch remain stable.

After you are done with your work you can merge it with the main branch.

## Common git command

→ git init → You can create local repository using this command. (Initilize the folder where you write your code)

→ git status → Once the directory has been initilized you can check the status of the file whether they are being tracked by git or not.

→ git add → This command add all file working directory to stage area.

Ex:- git add <filename> → for single file

git add . → For all file present inside this directory.

→ git commit → This command help to move file from stage area to local repository.

Ex:- git commit -m "message"

The git only working on local machine. To make it available in world wide we have to host all code on a central platform like → GitHub.

## Git Hub

Github is a cloud based source that helps developer to store and manage their code, as well as track and and control changes to their code.

## Common git command

→ git remote add origin "url .git" → Once everything is ready on our local, we can start pushing our changes to the remote repository.
Copy your repository link and paste it in the command.

→ git push origin master → It upload your code present inside local repository to remote repo which is github repository.
Ex :- git push origin <branch-name>

→ git clone <url> → It download remote repository to local system.

→ git pull <url> → It also download remote repository to local system
Ex :- git pull origin master
This command sync remote repo with local repo
git pull <url>
This command download all code with latested version.

→ git branch → It create multiple branch in same repository. And branch is use for handle the workspace of multiple developer.
Ex :- git branch version2

→ git branch -D <branch name> → It delete the branch.
Ex :- git branch -D version2

→ git checkout <branch name> → It switch between one branch to another branch.
Ex :→ git checkout version2
This command switch workspace master branch to version2 branch.
git checkout master
This command switch workspace version2 branch to master branch.

→ git log → To check the log for every commit details in repository.

→ git stash → This can be helpful when you want to switch branch, but donot want to save your work to your git repository

→ git stash -u → It stash all untracked file.

→ git stash pop → It back to working file which is not saved.

→ git revert → It reverting commit to a previous version.
Ex :- git revert <commit id>

→ git diff → It helps us in checking the differance between two version of a file.
Ex :- git diff <1st commit id> <2nd commit id>

## Git vs GitHub

| Git | GitHub |
| --- | --- |
| → It is a software | → It is a cloud storage service |
| → It is a version control system to manage code history | → It is a hosting service for git repository. |
| → Git is maintained by linux | → Git is maintain by microsoft. |
| → Git is installed locally on the system | → Github is hosted on the web. |
| → Git has no user management feature | → It has a builtin user management feature |
| → It is open source | → It is free tier and pay for use tier. |