Git and Github Date:16/8/2020

What is git?

Git is a distributed version-control system for tracking changes in source code during software development. It is designed for coordinating work among programmers, but it can be used to track changes in any set of files. Its goals include speed, data integrity, and support for distributed, non-linear workflows.

What is version control system?

In software engineering, version control is a class of systems responsible for managing changes to computer programs, documents, large web sites, or other collections of information. Version control is a component of software configuration management.Version control is a system that records changes to a file or set of files over time so that you can recall specific versions later.

What are the different version control systems?

The various types of the version control systems are:

* Local **Version Control System**.
* Centralized **Version Control System**.
* Distributed **Version Control System**.

What is local version control system?

Local Version Control Systems: It is one of the simplest forms and has a database that kept all the changes to files under revision control. All the data are stored within the computer. Ones the desktop got damaged, all the data will not be restored again.

What is Centralized version control system?

. In this system, data are stored at a server and all work regarding data push or pull is done on this server which is at center. If server get damaged then all the will lost fot ever and data can not be recover again

What is Distributed version control system ?

* In this system, data are stored at server but all the data are distribured to all the participant computer and data are managed. If the server get damaged then, server can again established by taking the data from participant computer. By this way this is the best way to operate data and github is the best example.
* Git command line tools are followings:- Github is developed by the linus who had their great contribution in making of linux kernel. He made github when he and his team member was facinig the problem .
* For downloading git ,you have to search “git install” on google ,then go to the first website that are appearing on the screen and download it.
* While installing, do not manipulate any thing but when appear for git bash then check only git bash and do uncheck other option.
* Git has its own terminal(command prompt ) called git bash.
* Since, it was made by linus so, linux command will run on git bash.
* There is power shell like command prompt in window which provide a medium which looks like window and linux portable.

**Git bash command:**

We can run terminal command prompt on git bash .

* 1. Change directory=cd
  2. Present working directory=pwd
  3. Git installation confirmation=git
  4. For zooming=(ctrl)+( +)
  5. For minusing=(ctrl)+(-)
  6. List the content=ls

For confirmation that change was done by you:-

* + Name confirmation=git config --global user.name “shubham”
  + Email confirmation=git config --global user.email [shubhamkumar070701@gmail.com](mailto:shubhamkumar070701@gmail.com)

For editing purpose:-

* + Editing=git config --global core.editor vim
  + For checking your name=git config user.name
  + For checking your email=git config user.email
  + For checking list=git config --list
  + For cheking the status of git repositiory=git status
  + For making a folder as a git repositiory=git init
  + For adding all folder to staging area=git add --a
  + For commiting folder=git commit –m “<m means message>” (here – is single)
  + For checking the git folder log or record=git log

When you change the commited folder then it will show modified and folder will appear in red color.

* Moving a specific folder to staging area=git add <folder name with extension>
* For commiting a specific file= in order to do that we have to move a specific file to stage area then by using (git commit –m <with message>) this command we can commit a specific file.
* For deleting a git repository=rm –rf .git (in linux this command is used for deleting the content of a folder and here .git is all that makes a git repository)
* If you want to make a clone a git repository from internet then this is the command:git clone <url (shift+insert)> <name that you want of git repository>

Stage area

Unmodified

*Untracked file*

Edit the file

Add the file

Stage the file

Remove the file

Commit the file

Above is the example of File status lifecycle.

A file with .log extension has large data so it usually ignored .

* Generating a file=touch <file name with extension>
* For ignoring a file in a git repository=make a folder name of <.gitignore> and put the file name ( with extension that you want to be ignored in running git repository ) in the .gitignore folder
* When there are number of .log file then for ignoring all in a single step=\*.log (put this command inside .gitignore file)
* For ignoring a whole folder=put the folder name after with (/) slash inside (.gitignore) file. If put (/) slash before the folder name inside the (.gitignore) file then only single file will be ignored otherwise if we don’t put (/) slash before the folder name then, all file named with ignoring folder will be ignored.

A folder having no content is by default is not untracked.

* For staging a file=git add .
* For finding the difference between working file and staging area=git diff
* For finding the difference between last commited and current staged area=git diff --staged
* For skipping staged area of tracked file to direct to commit=git commit –a –m “message”(not work with untracked file) (for untracked file, you have to use [git add .] command)
* For clearing the screen=clear

When you are checking log of commited file then press “q" for coming out from the log.

Red color for untracked file.

Green color for tracked file.