What is GIT?

Git is a conveyed version control system for following changes in source code amid programming improvement. It is intended for organizing work among software engineers, yet it tends to be utilized to follow changes in any arrangement of documents. Its objectives incorporate speed, information respectability, and backing for appropriated, non-straight workflows.

What is the command you can use

git commit m, m is our message .

What is the variance between GIT and SVN?

GIT : Git is a circulated VCS; . Git has a brought together server and store, The content in Git is put away as metadata, Git branches are simpler to work with than SVN branches.

SVN : SVN is a non-appropriated VCS SVN does not have a unified server or store SVN stores documents of substance

What are the benefits of using GIT?

One of the greatest focal points of Git is its fanning abilities. Not at all like incorporated adaptation control frameworks, Git branches are modest and simple to combine. This encourages the component branch work process prevalent with numerous Git clients. Highlight branches give a confined domain to each change to your code base.

What language is used in GIT?

Commonly the languages used in Git Git gives you a ton of approaches to allude to a commit however for most purposes you ll simply utilize the name of a branch with git push

Why GIT better than Subversion?

Designers like Git on account of its successful spreading model. In Git, branches are just references to a certain commit, making them lightweight yet ground-breaking. Git enables you to create, erase, and change a branch whenever without influencing the commits

What is the Production Area or Index in GIT?

The git index is the place you place documents you need committed to the git vault. The index is otherwise called store, registry reserve, current catalog reserve, organizing territory, arranged documents. Before you commit (checkin) records to the git storehouse, you have to initially put the documents in the git index .

What is GIT stash?

Stashing takes the filthy condition of your working registry that is, our adjusted tracked documents and organized changes and spares it on a heap of incomplete changes that we can reapply whenever.

What is GIT stash drop?

Git stash is a transitory s Pikacode Visual Studio Online GitEnterprise net

What is the function of git clone?

git clone is a Git direction line utility which is utilized to focus on a current archive and make a clone, or duplicate of the objective vault.

What is the function of git config ?

The git config direction is a comfort work that is utilized to set Git setup esteems on a worldwide or neighborhood venture level. These design levels relate to .gitconfig content documents. Executing git config will alter an arrangement content document.

What does the commit object contain?

The commit object contains the index tree object hash, parent commit hash, creator, committer, date and message.

How can you make a repository in Git?

In Git, to generate a repository, create a directory for the project if it does not exist, and then run command git init. By running this command . git directory will be generated in the project directory, the directory does not need to be empty.

What is head in git and how many heads can be generated in a repository?

There can be any number of heads in a GIT vault. As a matter of course there is one head known as HEAD in every store in Git.

How to resolve merge conflicts?

- Open Terminal Git Bash the terminal.
- Navigate into the local Git archive that has the consolidation conflict.
- Produce a rundown of the records influenced by the consolidation conflict.
- Open your preferred content tool, for example, Atom, and navigate to the record that has consolidated conflicts.

How do we push a branch to github?

Make another branch: git checkout b feature_branch_name. Alter, include and submit your records. Push your branch to the remote repository: git push u source feature_branch_name.

What is Release Branch in Git

The master and develop branches structure the base of any vault in Git. The master branch contains a version of the code that is underway, and the develop branch contains a version that is expected to be discharged in a forthcoming version.

What is a conflict in git?

Merge conflicts happen when you merge branches that have contending commits, and Git needs your assistance to choose which changes to fuse in the last merge.Usually, the progressions are on various lines, or even in various documents, which makes the merge basic for PCs to get document, or in the event that one designer erased a record while another engineer was altering it. & Git will check the document as being tangled and end the blending procedure. It is then the designers duty to determine the contention.

How to remove a file from Git Tracking ?

We need to remove it from your tracked records (all the more precisely, remove it from your arranging territory) and afterward submit. The git rm order does that, and furthermore removes the document from your working catalog so you don't consider it to be an untracked record whenever around.

What is an alternative option for merging in git?

Git rebase is the alternate option for merging in Git

What is the syntax for Rebase in git ?

git rebase [-i | interactive] [] [exec] [onto][[]]

What is the variance between git remote and git clone?

The main difference between git clone and git remote is that git clone is utilized to make another nearby repository while git remote is utilized in a current repository.

What is GIT version control / Benefits of Version Control ?

Version control systems are a classification of programming apparatuses that assistance a product group to oversee changes to source code after some time. Version control programming

What is SubGit?

Subgit is a device for a smooth, tranquil SVN to Git movement. Subgit is an answer for an organization wide movement from SVN to Git that is:

Why to use Subgit?

It is vastly improved than git svn No prerequisite to change the foundation that is as of now put Allows to utilize all git and all sub adaptation highlights Provides authentic tranquil relocation experience.

What is the meaning of git different in git?

Git (/ajt/) is a circulated adaptation control framework for following changes in source code amid programming advancement. & Git was made by Linus Torvalds in 2005 for improvement of the Linux part, with other portion engineers adding to its underlying advancement.

What is git status used for?

git status. The git status order shows the condition of the working registry and the organizing region. It gives you a chance to see which changes have been arranged, which haven t, and which documents are not being followed by Git.

What is the variance between the git diff and git status ?

Distinction between git status a In Git terms, a checkout is the demonstration of exchanging between various adaptations of an objective element. The git checkout direction works upon three particular substances: records, submits, and branches.

What is the function of git rm?

The essential capacity of git rm is to expel followed documents from the Git list. Furthermore, git rm can be utilized to expel documents from both the arranging file and the working index.

What is the meaning of git stash apply?

git stash briefly retires (or stashes) transforms you ve made to your working duplicate so you can take a shot at something different, and after that return and re-apply them later on.

What is the use of git log?

Git logs enable you to audit and peruse a background marked by everything that happens to a vault. The history is constructed utilizing git-log , a basic apparatus with a huge amount of alternatives for showing submit history.

What is git add used for?

At the point when utilized without anyone else, git include will advance pending changes from the working catalog to the arranging territory. The git status order is utilized to analyze the present condition of the vault and can be utilized to affirm a git include advancement.

What is the meaning of git reset?

It resets the record, yet not the work tree. This implies every one of your records are flawless, however any contrast between the first submit and the one you reset to will appear as neighborhood adjustments (or unmanaged documents), with git status.

What is Git ls Tree?

The Working Tree in Git is a catalog (and its records and subdirectories) on your document framework that is related with a vault. & When you open the records for a task that is being overseen as a Git archive then you are get to the Working Tree.

How is git instaweb used?

The internet browser that ought to be utilized to see the gitweb page. This will be passed to the git web{litdd}browse aide content alongside the URL of the gitweb.

What does hooks consist of in git?

Git hooks are contents that Git executed previously or after occasions, for example, submit, push, and get. Git snares are a work in highlighting no compelling reason to download anything. Git hooks are run locally. These hooks’ contents are just restricted by an engineer’s creative ability.

Explain what the commit message is?

We will in general pound the subject of a submit message with the body: Writing a subject of a submit together with the body of that submit message is the incorrect approach. When you see your submit message is getting too long to even think about explaining this implies submit is doing such a large number of things separate it

What is the bare repository in GIT?

An exposed Git repository is commonly utilized as a Remote Repository that is sharing a repository among a few unique individuals. You don t do work directly inside the remote repository so there is no Working Tree (the documents in your project that you alter), simply uncovered repository information.

What is the use of the Version Control System?

Version Control System can be defined as a software which allows several developers to work simultaneously and also keeps the entire history of the tasks performed. This software won't allow developers to overwrite other's work. There are two types of version control systems available: Distributed or Decentralized Version Control System Centralized Version Control system.

Explain centralized version control system and state its disadvantages.

CVCS or Centralized Version Control System allows a centralized server to save files in it and allows access to several people. The main advantage of CVCS is, it allows whole team to communicate at a time in a centralized server. But, CVCS fails with the central server. If the centralized server shuts down for a period of time, communication to the central server completely stops. Sometimes, there is a risk of data loss and through which the data stored in the central server may gets lost. This sometimes happens due to a corrupted or non-functional drive in the central server.

What is GIT?

GIT is basically a version control system and is a DVCS. GIT uses revised version control system of DVCS. It is also a scripts management system which manages source codes with enhanced speed. GIT is available open source with General Public License Version II of GNU. Since GIT follows DVCS strategy, it never relies on a centralized server. GIT allows its users to perform several functions offline. User can perform the changes he wishes, he can visualize the logs, can form branches and so many functions offline itself. Users need network connection alone to modify the content he wishes to do and can consider the current change he made.

What are the advantages of GIT?

GIT has so many advantages as follows:

- GIT is available as Open source software with GNU license and is available free.
- Since GIT performs its functions locally, users will get good speed. Since GIT follows DVCS strategy, it does not depend on a central server.
- Users are able to perform several operations offline.
- GIT scripts depend on C language and therefore runtime overheads that occur in high level languages can be prevented.
- Since GIT takes a duplicate copy, a mirror of the complete depository, it saves storage space because the size of the data will be much smaller.
- GIT does not require any powerful hardware.
- GIT provides enhanced security to the stored contents in the database using a secure hash function called SHA1.
- The branch management in GIT is quite simple.
- GIT takes seconds to build, merge and delete branches.

What is the Local Repository in GIT?

Generally version control software contains a separate working space. In that space, developers modify the scripts. Once they finalize, that will be stored in the repository. GIT tool provides a replica copy of the entire repository. Developers can make changes as per their requirement in that repository itself. They can add a file, rename a file, delete a file, move a file, make modifications etc.,

State the differences between SVN and GIT.

SVN GIT SVN allows users to handle many projects to be stored in the same repository. GIT users don’t prefer to handle many projects from the same repository. SVN follows Centralized version control system GIT follows Decentralized version control system SVN allow only online commits GIT allows commits even in offline Slow Push/Pull operation Quicker Push/Pull operation SVN does not share anything automatically Commit automatically shares all the works.

Explain the basic workflow of GIT.

The basic workflow of GIT can be divided into three steps. They are: User can alter a file from the current directory User can add those files into the staging area User can do commit operation. Commit transfers

What do you mean by blobs ?

Blob refers to Binary Large Object. In GIT, every version of a file is called a blob. Generally, a blob will contain file data whereas it will not store any metadata about a particular file. Simply, blob is a binary file. In the DB of Git, blob is named as SHA1(Secured hash function) hash of that particular file. Generally, GIT won t address its files by names whereas they are content addressed.

What is a tree in GIT?

Tree refers to an object which means a directory. Tree keeps blobs and sub directories in it. A tree is nothing but a binary file which saves the references of blobs. A tree is a SHA1 hash of a tree object.

Explain commit in GIT.

Commit keeps the working state of the repository. A commit can also be named by the secure hash function, SHA1. A commit object can be considered as a node of the linked list. Each of these commit objects will contain a pointer to the parent commit object. To track the history of a commit object, we can look into the parent pointer to get the same. If a commit object contains several parent commits, that commit can be built by combining two branches together.

What do you mean by branches in GIT?

Branches were meant to build yet another line of development. Git contains a master branch by default similar to trunk in subversion. Generally, branches were built to work on something new. Once the meant work is completed, that particular branch is merged to the master branch and that particular branch is deleted. Further, each branch is referenced by Head, which is a pointer that points to the current commit in the branch. If a user makes a commit, Head is upgraded with the current commit. present in the repository. Tags and branches look alike, but tags are permanent. So, tag is a branch but no one can make changes to it. If a user builds a tag for a specific commit, though he creates yet another commit, the same will not be updated. Developers generally build tags for product releases.

Explain Clone operation in GIT.

The purpose of clone operation is to build a specimen or a mirror of the repository. Clone verifies the current working copy and also creates a mirror of the entire repository. It allows users to perform various functions in the local repository. All these operations can be performed offline without even a network connection. But, if the user needs to sync the repository specimens, a network connection is required to perform synchronization.

Explain Push operation in GIT.

A push copy the changes made from a local repository instance into a remote repository. This saves the changes into the Git repository permanently. A Push operation is similar to a commit operation in subversion.

Explain Pull operation in GIT.

A pull copy the changes made from a remote repository to a local repository. Generally, if we need to synchronize between two repository instances, pull operation can be performed. A Pull operation is similar to update in the subversion.

What do you mean by Head ?

Head refers to a pointer which points to the current commit in the branch. If a user makes a commit, Head is upgraded with the current commit.

What do you mean by revision in Git?

Revision refers to the version of the source code which is written by a developer. Generally revisions in Git amount to commits. Users can identify the commits through the SHA1 secure hashes.

What is an URL in the Git?

URL in Git is used to save the config file and it represents the place where the Git repository is located.

What is git config in Git?

Git supports a tool to set configuration variables, called as git config tool. All the global configurations in the. gitconfig file present in the current working directory or home directory are stored by Git. But, the user has to set the variables as global otherwise, by default it is stored in the local directory. For that, the user has to set the configuration parameters to global by adding the global option.

How do you install a Git client in a machine?

The installation of Git client varies according to the corresponding linux platform you are using. The syntax varies between various linux platforms. For an instance, if the user uses RPM based Linux/GNU distribution, use yum command : yum y install git-core To identify the git version, you can check using: git version

What is the first step to establish connection to Git?

Like every setup, initialization is the first step to establish connection to Git. Once you finish the initialization of git, do push/pull source code. The command to initialize Git is: $git init

What is the command to get the source code from Github?

The command is: $git remote add origin git url $git pull origin repository name

What is the command to clone the github repository?

The command is: git clone url project-name/foldername -b develop

What do you mean by git bash?

Git bash us a source controller which is used to save the source code developed by the developer.

What is the command to check git status?

The following is the command to check git status: $git status

How do you add new files to the git directory?

The command to add new files is: $git add A

What is the command to make a commit?

The command to make commit is : $git commit -b Commit description This command will commit the files.

How will you push the committed source code to the server?

The command to push the committed source code to server is: git push -u origin master

Write the syntax to do rebasing in Git.

The syntax for rebasing is $ git rebase [new-commit]

What is the use of Git instaweb?

Git instaweb lets a web browser automatically and runs the web server through an interface to the user s local repository.

Explain the life cycle of Git?

- User has to clone the Git repository as a current/working copy.
- Users can alter the current/working copy by editing/adding files.
- It is also possible to consider changes from other developers and the same can be updated.
- Before commit, the user has to review the changes performed.
- After review, commit. Later push the changes to the repository.
- If something goes wrong, make corrections to the last commit and then push that changes to the repository.

How do you get a Git Repository?

Git repository can be obtained in any of the following two ways: User can use a local directory which is not under version control that time. Convert that to a Git Repository. User can take an existing Git Repository and can clone it. Both these options will create a Git Repository in the user’s local machine.

How do you view the commit history?

After creating various commits or by cloning a repository using an existing commit history, the user can check the commit history using the git log command. Git hub contains simple examples in a basic project folder called simple Git. We have to run this command.

```
$git clone git_url.git
 $git log
```

The output could looks like this:

1. $git log Commit dg56agghbx34987ahj4567845z67a4765az790dc43
2. Author: & & & & & & & & & & & & &..
3. Date & & & & & & & & & & & & & &..
4. Version number changed Commit 76545adgg745a564dg7421j45690xcz3679axcvbn6
5. Author: & & & & & & & & & & & & &.. Date & & & & & & & & & & & & & &..
6. Removed unwanted test
7. Commit 124adhkk468900afcjlll129kk480837adcv4689axny8
8. Author: & & & & & & & & & & & & &..
9. Date & & & & & & & & & & & & & &..
10. First commit

The git log command lists the commands present in that repository in the reverse order by default. The most recent commit will be shown first. `In the command list present above, it contains commits along with the secured hash SHA1 checksum, name of the author, his e-mail id, date authored and the commit message.

What is the difference between author and a committer in Git?

Author is the person who authored the project i.e., who originally wrote the project. Committer is the person who committed changes to the project recently. Therefore, if a user sends a patch to a project and if any of the members in the group applies the patch, both the author and the committer will be credited.

How will you undo things in Git?

Generally, humans were prone to errors. Git allows some basic tools to undo changes which are made by a user. But, we can t undo everything. So, the user has to be cautious while doing a work or he may suffer in loss of the work in Git. Commonly, we use this undo option while we commit very early and forget to add some files to it. Sometimes, the commit message might go wrong. In those cases, the user can redo that commit. User can change what he actually wanted to do and then he can commit again through the amend option. $git commit amend This command uses your staging for the commit.

What do you mean by remote repository in Git?

If the user wishes to combine or merge on any Git project, he must know about managing the remote repositories. Remote repository refers to a version of a project which is hosted over the internet or in a network elsewhere. We may find various remote repositories and every repository among them will perform read/write operations or read-only operations. Merging with some other s work needs to manage these remote repositories. User has to push/pull data to and fro from them while sharing our work to others.

Managing remote repositories will perform many of the following tasks: user has to know the manner to add remote repositories, delete some remote repositories which are not valid, has to manage several branches by defining every branch whether they are tracked or not.

How will you list your tags in Git?

Git has support to add tags to some particular points in the history of the repository which we feel are important. Adding tags is one of the most common features present in Version control systems. Generally, users use this feature to spot release points. Users can list the existing tags quite easily in Git. The command git tag will list the tags. $git tag V1.0 V2.0 This command will list the tags used in the alphabetical order.

What are the types of tags that Git supports? Explain them.

There are two types of tags supported by Git. They are: Lightweight tag Annota Annotated tags were stored as entire objects in the Git DB. These types of tags were check summed and consisted of the name of the tagger, date, his mail id, the tagging message. Further, the tag has to be signed and verified by the GPG (GNU Privacy Guard).

How will you create annotated tags?

Users can create an annotated tag in Git quite easily. git tag a will create an annotated tag. The command to create such a tag is: $ git tag a v1.5 m using version 1.5 $ git tag V0.1 V1.3 V1.4 Here, -m will contain a tagging message specified by the tagger, which can be saved with the tag. If you want to see the tag data present and also the commit which is tagged using git, you can use the git show command. This command shows the information of the tagger, the date of the commit tagged and also the tagger message and the commit information.

Write the workflow of branching and merging with some examples?

Branching and Merging in practice requires some stage of operations to be performed. Let’s explain If suppose, some bug occurs at this stage and it is need to be fixed asap, perform the following operations: Move to the user s production branch Build a branch to clear the bug Once you test it, combine the hotfix branch and then push it to production Move to your actual work from where you switched and start working on it.

What do you mean by long running branches?

Because of its enhanced feature support to the users, Git offers three way easy merging of one branch to another branch several times for a long period. Many branches were always open which can be used in various stages of your development cycle which can be merged often from few of them to others. The code in the master branch will be completely stable which is the only possible code which has been released. Developers who use Git generally uses this kind of technique. Developers use yet another parallel branch called next or develop to work or to test the stability but there is no certainty to be stable always. Once it reaches the stable state, it can further be merged to the master. Normally, they are used to pull from topic branches once they are stable which ensures they could clear all the tests without any errors.

What do you mean by topic branches?

As opposed to long running branches, topic branches are short lived branches. If a user needs to create a project of any size, he can go for topic branches. These type of branches can be built and used for one specific feature or task. This particular feature will not be available in any of the version control systems because this feature is not cost effective to build and combine branches. But, Git supports this feature. Using Git, this can be very or Tracking remote branches in Git can be done by checking a local branch. This monitoring will create a branch automatically which is called a tracking branch. The branch tracking branch is called an upstream branch. These tracking branches will establish a direct connection with a remote branch. They are local branches. Tracking a remote branch can be done using git pull . Once you type this command, Git automatically understands which server to be fetched and which branch has to be merged.

Explain the protocols that Git uses to transfer data.

To transfer data, Git mainly uses the following four protocols:

- Local
- HTTP
- SSH
- Git

Local protocol is the generally used protocol by developers and is the very basic protocol. In a local protocol, the remote repository is present in another directory with the same host. This protocol will be used if every member in a team enjoys access to a shared file system like NFS mount or sometimes every person in the team creates logs from the same computer.

The second option might create catastrophic loss generally since all of your code repositories will be present in the same computer and therefore using this option is not advised. Git also uses HTTP protocol for communication using two different modes: Smart HTTP and Dumb HTTP. Smart HTTP protocol functions much similar to SSH or Git protocols but could run in standard HTTP ports using several authentication mechanisms of HTTP.

If the server hasn’t responded with smart HTTP mechanism, the Git client will switch to the simpler Dumb HTTP protocol. Dumb protocol can be set up quite simply. Users have to place a bare Git repository in HTTP or SSH protocol is another common protocol for data transport for Git to self host through SSH. SSH protocol is set up more commonly in most places and it is very simple to do if we didn’t.

It is also an authenticated network protocol Git protocol contains a special daemon which contains as a package with Git. This protocol works on a dedicated port and does not contain any authentication. This protocol works similar to SSH.

How can you resolve merge conflicts through the command line?

Generally merge conflicts happen while the user alters one line of a file or if one deletes the same file and another edits the same file. To resolve such a conflict, the user has to choose the change we need to make from several branches in a new commit. Before merging branches, the user has to resolve this kind of merge conflict with a new commit. Open the terminal window : TerminalGit Bash the terminal Move to the local Git repository which contains the merge conflict cd REPOSITORY NAME

Create a list of files which contains merge conflicts?

Open the text editor of your wish (namely Atom) and move to the file which contains merge conflicts. To identify the starting point of the merge conflict from your file, search that file for a conflict marker. If the user likes to retain his b $ git add Then, commit your changes using some comment. $ git commit m Merge Conflict is resolved

What do you mean by a bare repository?

Generally a bare repository in Git will contain details about the version control and the idle files (files not working) and also it won’t have the special Git subdirectory. But, the repository will contain the Git subdirectory contents in its main directory and the current working directory will contain i) a Git subdirectory comprising of Git connected history of user s repository and ii) verified copies of user s project file(working tree).

Explain the steps to resolve a conflict in git?

The following are the steps to resolve a conflict in Git: Locate the files which generated the conflict. Carry out required changes in the file and then use

$ git add, this adds files

Using $ git commit, commit the changes