**What are the benefits of using Version Control System?**

* With the Version Control System(VCS), all the team members are allowed to work freely on any file at any time. VCS gives you the flexibility to merge all the changes into a common version.
* All the previous versions and variants are neatly packed up inside the VCS. You can request any version at any time as per your requirement and you’ll have a snapshot of the complete project right at hand.
* Whenever you save a new version of your project, your VCS requires you to provide a short description of the changes that you have made. Additionally, you can see what changes are made in the file’s content. This helps you to know what changes have been made in the project and by whom.
* A distributed VCS like Git allows all the team members to have a complete history of the project so if there is a breakdown in the central server you can use any of your teammate’s local Git repository.

**How can you fix a broken commit?**

In order to fix any broken commit, use the command “git commit --amend”. When you run this command, you can fix the broken commit message in the editor.

**What is the difference between git pull and git fetch?**

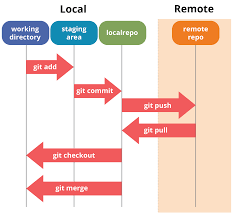
Git pull command pulls new changes or commits from a particular branch from your central repository and updates your target branch in your local repository.

Git fetch is also used for the same purpose but it works in a slightly different way. When you perform a git fetch, it pulls all new commits from the desired branch and stores it in a new branch in your local repository. If you want to reflect these changes in your target branch, git fetch must be followed with a git merge. Your target branch will only be updated after merging the target branch and fetched branch. Just to make it easy for you, remember the equation below:

Git pull = git fetch + git merge

**What is ‘staging area’ or ‘index’ in Git?**

That before completing the commits, it can be formatted and reviewed in an intermediate area known as ‘Staging Area’ or ‘Index’. From the diagram it is evident that every change is first verified in the staging area I have termed it as “stage file” and then that change is committed to the repository.

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**What is the difference between Git and Github?**

[Git](https://bit.ly/31MeW9b) is a version control system of distributed nature that is used to track changes in source code during software development. It aids in coordinating work among programmers, but it can be used to track changes in any set of files. The main objectives of Git are speed, data integrity, and support for distributed, non-linear workflows.

[GitHub](https://bit.ly/2rVhL7Q) is a Git repository hosting service, plus it adds many of its own features. GitHub provides a Web-based graphical interface. It also provides access control and several collaboration features, basic task management tools for every project.

**What is the command you can use to write a commit message?**

The command that is used to write a commit message is “git commit –a”.  The –a on the command line instructs git to commit the new content of all tracked files that have been modified. You can use “git add<file>” before git commit –a if new files need to be committed for the first time.

**What is the difference between GIT and SVN?**

The difference between GIT and SVN is

a)      Git is less preferred for handling extremely large files or frequently changing binary files while SVN can handle multiple projects stored in the same repository.

b)      GIT does not support ‘commits’ across multiple branches or tags.  Subversion allows the creation of folders at any location in the repository layout.

c)        Gits are unchangeable, while Subversion allows committers to treat a tag as a branch and to create multiple revisions under a tag root.

**What are the advantages of using GIT?**

a)      Data redundancy and replication

b)      High availability

c)       Only one.git directory per repository

d)      Superior disk utilization and network performance

e)      Collaboration friendly

f)       Any sort of projects can use GIT

**What language is used in GIT?**

GIT is fast, and ‘C’ language makes this possible by reducing the overhead of runtimes associated with higher languages.

**What is the function of ‘GIT PUSH’ in GIT?**

‘GIT PUSH’ updates remote refs along with associated objects.

**Why GIT better than Subversion?**

GIT is an open source version control system; it will allow you to run ‘versions’ of a project, which show the changes that were made to the code overtime also it allows you keep the backtrack if necessary and undo those changes.  Multiple developers can checkout, and upload changes and each change can then be attributed to a specific developer

**What is “Staging Area” or “Index” in GIT?**

Before completing the commits, it can be formatted and reviewed in an intermediate area known as ‘Staging Area’ or ‘Index’.

**What is GIT stash?**

GIT stash takes the current state of the working directory and index and puts in on the stack for later and gives you back a clean working directory.  So in case if you are in the middle of something and need to jump over to the other job, and at the same time you don’t want to lose your current edits then you can use GIT stash.

**How will you know in GIT if a branch has been already merged into master?**

Git branch—merged lists the branches that have been merged into the current branch

Git branch—-no merged lists the branches that have not been merged

**What is the function of git clone?**

The git clone command creates a copy of an existing Git repository.  To get the copy of a central repository, ‘cloning’  is the most common way used by programmers.

**What is the function of ‘git config’?**

The ‘git config’ command is a convenient way to set configuration options for your Git installation.  Behaviour of a repository, user info, preferences etc. can be defined through this command.

**What does commit object contain?**

a)      A set of files, representing the state of a project at a given point of time

b)      Reference to parent commit objects

c)       An SHAI name, a 40 character string that uniquely identifies the commit object.

**How can you create a repository in Git?**

In Git, to create 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 created in the project directory, the directory does not need to be empty.

**What is ‘head’ in git and how many heads can be created in a repository?**

A ‘head’ is simply a reference to a commit object. In every repository, there is a default head referred as “Master”.  A repository can contain any number of heads.

**What is the purpose of branching in GIT?**

The purpose of branching in GIT is that you can create your own branch and jump between those branches. It will allow you to go to your previous work keeping your recent work intact.

**What is the common branching pattern in GIT?**

The common way of creating branch in GIT is to maintain one as “Main“

branch and create another branch to implement new features. This pattern is particularly useful when there are multiple developers working on a single project.

**How can you bring a new feature in the main branch?**

To bring a new feature in the main branch, you can use a command “git merge” or “git pull command”.

**What is a ‘conflict’ in git?**

A ‘conflict’ arises when the commit that has to be merged has some change in one place, and the current commit also has a change at the same place. Git will not be able to predict which change should take precedence.

**How can conflict in git resolved?**

To resolve the conflict in git, edit the files to fix the conflicting changes and then add the resolved files by running “git add” after that to commit the repaired merge,  run “git commit”.  Git remembers that you are in the middle of a merger, so it sets the parents of the commit correctly.

**To delete a branch what is the command that is used?**

Once your development branch is merged into the main branch, you don’t need

development branch.  To delete a branch use, the command “git branch –d [head]”.

**What is another option for merging in git?**

“Rebasing” is an alternative to merging in git.

The syntax used for rebase is “git rebase [new-commit] “

**What is the difference between ‘git remote’ and ‘git clone’?**

‘git remote add’  just creates an entry in your git config that specifies a name for a particular URL.  While, ‘git clone’ creates a new git repository by copying and existing one located at the URI.

**What is GIT version control?**

With the help of GIT version control, you can track the history of a collection of files and includes the functionality to revert the collection of files to another version.  Each version captures a snapshot of the file system at a certain point of time. A collection of files and their complete history are stored in a repository.

**What is ‘git status’ is used for?**

As ‘Git Status’ shows you the difference between the working directory and the index, it is helpful in understanding a git more comprehensively.

**What is the function of ‘git diff ’ in git?**

‘git diff ’ shows the changes between commits, commit and working tree etc.

**What is the difference between the ‘git diff ’and ‘git status’?**

‘git diff’ is similar to ‘git status’, but it shows the differences between various commits and also between the working directory and index.

**What is the function of ‘git checkout’ in git?**

A ‘git checkout’ command is used to update directories or specific files in your working tree with those from another branch without merging it in the whole branch.

**What is the function of ‘git rm’?**

To remove the file from the staging area and also off your disk ‘git rm’ is used.

**What is the use of ‘git log’?**

To find specific commits in your project history- by author, date, content or history ‘git log’ is used.

**What is ‘git add’ is used for?**

‘git add’ adds file changes in your existing directory to your index.

**Explain what is commit message?**

Commit message is a feature of git which appears when you commit a change. Git provides you a text editor where you can enter the modifications made in commits

**Name a few Git repository hosting services**

* Pikacode
* Visual Studio Online
* GitHub
* GitEnterprise
* SourceForge.net