**Source Code Management Tools, Git, Github and Software Setup, Command of Git Tools Part- 2**

* **SAYALI YADAV**

**Basic Git Commands**

**1. git config**

This command will set up your identity - Name and Email address. And this information will be used with every commit.

**Usage**

$ git config --global user.name "Your name"

$ git config --global user.email "Your email"

**2. git version**

As its name implies, it's just to check which version of Git you are using. **Usage**

$ git version

**3. git init**

This is probably the first command you use to start a new project in Git. This command will create a blank new repository, and then you can store your source code inside this repo.

**Usage**

$ git init

Or you can use the repository name with your git init command.

$ git init <your repository name>

**4. git clone**

The git clone command will use an existing repository to copy. There is one main difference between the git init and git clone.

**Usage**

git clone <your project URL>

**5. git add**

The Git add command will add all the new code files or modified files into your repository. This command offers different options to add files and folders.

**Usage**

$ git add your\_file\_name (it will add a single file to your staging area)

$ git add \* ( this option will add all the modified and new files to the staging area)

**6. git commit**

This Git command is essential. Your project quality may drop if you will not use this command appropriately.

In simple words, the Git commit will add your changes to your local repository.

**Usage**

$ git commit -m “your useful commit message”

**7. git status**

This Git command is convenient to see how many files are there which need your attention. You can run this command at any time.

**Usage**

$ git status

**8. git branch**

Most of the time, you have multiple branches in your Git repository. In simple terms, the branch is an independent line of code development.

With the Git branch command, you can manage your branches effectively.

**Usage**

(i) To list all branches:

$ git branch

(ii) To create a new branch:

$ git branch <branch\_name>

(iii) To delete a branch:

$ git branch -d <branch\_name>

**9. git checkout**

This Git command is used to switch between branches.

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**Usage**

$ git checkout <branch\_name>

Also, you can create and checkout to a branch in a single like, here is the usage for that

$ git checkout -b <your\_new\_branch\_name>

**Intermediate Level Git Commands**

**10. git remote**

This command will connect your local repository to the remote.

**Usage**

$ git remote add <shortname> <url>

**Example**

$ git remote add origin https://dev.azure.com/aCompiler/\_git/DemoProject

**11. git push**

Once you are connected with the remote repository (with the help of the git remote command), it's time to push your changes to that repository.

**Usage**

$ git push -u <short\_name> <your\_branch\_name>

**Example**

$ git push -u origin feature\_branch

**Usage**

$ git push --set-upstream <short\_name> <branch\_name>

**Example**

$ git push --set-upstream origin feature\_branch

**13. git fetch**

This command will download all information for commits, refs, etc., so you can review it before applying those changes in your local repository.

**Usage**

$ git fetch

**14. git pull**

The Git pull command downloads the content (and not the metadata) and immediately updates your local repository with the latest content.

**Usage**

$ git pull <remote\_url>

**15. git stash**

This Git command temporarily stores your modified files. You can work in stashed with the following Git command.

**Usage**

$ git stash

And you can view all of your stashes with the following command

$ git stash list

And if you need a apply a stash to a branch, simply use apply

$ git stash apply

**16. git log**

With the help of the Git log, you can see all the previous commits with the most recent commit appear first.

**Usage**

$ git log

$ git log --all

**17. git shortlog**

This command is helpful to see who worked on what as it group author with their commits.

**Usage**

$ git shortlog

**18. git show**

Compared to the Git log, this command git show will show you details about a specific commit.

**Usage**

$ git show <your\_commit\_hash>

**19. git rm**

Sometimes you need to delete files from your codebase, and in that case, you can use the Git rm command.

It can delete tracked files from the index and the working directory.

**Usage**

$ git rm <your\_file\_name>

**20. git merge**

Git merge helps you to integrate changes from two branches into a single branch.

**Usage**

$ git merge <branch\_name>

This command will merge the <branch\_name> into your current selected branch.

**Advanced Level Git Commands**

And now the time to up one more level. In this section, you will learn the advanced Git commands. These commands will take time and practice.

Once you know the basics of these commands, it will be easy to use them every day.

**21. git rebase**

Git rebase similar to the git merge command. It integrates two branches into a single branch with one exception. A git rebase command rewrites the commit history.

You should use the Git rebase command when you have multiple private branches to consolidate into a single branch. And it will make the commit history linear.

**Usage**

$ git rebase <base>

**22. git bisect**

The Git bisect command helps you to find bad commits.

**Usage**

i) To start the git bisect

$ git bisect start

ii) let git bisect know about a good commit

$ git bisect good a123

iii) And let git bisect know about a bad commit

$ git bisect bad z123

With Git bisect you can narrow down the broken code within a few minutes.

**23. git cherry-pick**

Git cherry-pick is a helpful command. It's a robust command and allows you to pick any commit from any branch and apply it to any other branch.

**Usage**

$ git cherry-pick <commit-hash>

Git cherry-pick doesn’t modify the history of a repository; instead, it adds to the history.

**24. git archive**

Git archive command will combine multiple files into a  single file. It's like a zip utility, so it means you can extract the archive files to get individual files.

**Usage**

$ git archive --format zip HEAD > archive-HEAD.zip

It will create a zip archive of the current revision.

**25. git pull --rebase**

Most of the time, you need to do rebase (and no merge) when you use Git pull.

In that case, you can use the option

**Usage**

$ git pull --rebase

It will help you to keep the history clean. Also, you can avoid multiple merges.

**26. git blame**

If you need to examine the content of any file line by line,  you need to use git blame. It helps you to determine who made the changes to a file.

**Usage**

$ git blame <your\_file\_name>

**27. git tag**

In Git, tags are helpful, and you can use them to manage the release. You can think of a Git tag like a branch that will not change. It is significantly more important if you are making a public release.

**Usage**

$ git tag -a v1.0.0

**28. git verify-commit**

The git verify-commit command will check the gpg signature. GPG or “GNU Privacy Guard” is the tool used in sign files and contains their signatures.

**Usage**

$ git verify-commit <commit>

**29. git verify-tag**

In the same way, you can confirm a tag.

**Usage**

$ git verify-tag <tag>

**30. git diff**

Most of the time, you need to compare two git files or branches before you commit or push. Here is a handy command to do that.

**Usage**

i) to compare the working directory with the local repo:

$ git diff HEAD <filename>

ii) to compare two branches:

$ git diff <source branch> <target branch>

**31. git citool**

Git citool is a graphics alternative of the Git commit.

**Usage**

$ git citool

Use image from *https://acompiler.com/wp-content/uploads/2020/06/git-citool-productivity-tool-768x431.png*.

**32. git mv**

To rename a git file. It will accept two arguments, source and target file name.

**Usage**

$ git mv <old-file-name> <new-file-name>

**33. git clean**

You can deal with untracked files by using the Git clean command. You can remove all the untracked files from your working directory by using this command. In case you want to deal with tracked files you need to use the [Git reset command](https://acompiler.com/git-head/).

**Usage**

$ git clean

**34. git help**

There are many commands in Git, and if you need more help with any command, you can use git help at any time from the terminal.

**Usage**

$ git help <git\_command>

**35. git whatchanged**

This command does the same thing as git log but in a raw form. And it’s in the git because of historical reasons.

**Usage**

$ git whatchanged