

## What is Git?

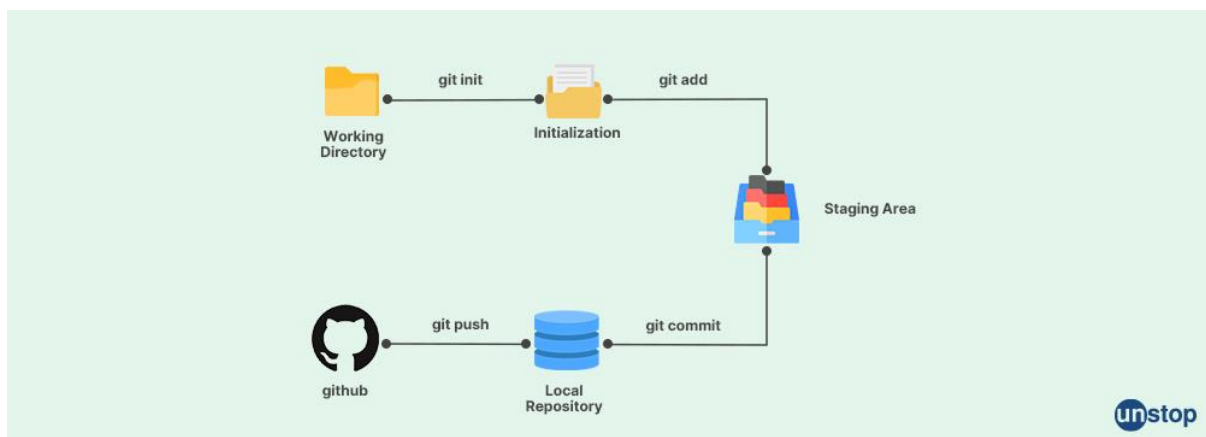
Git is a distributed version control system for tracking changes in source code during software development. It is designed for coordinating work among programmers, but it can be used to track changes in any set of files. Its goals include speed, data integrity, and support for distributed, non-linear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

## What is GitHub?

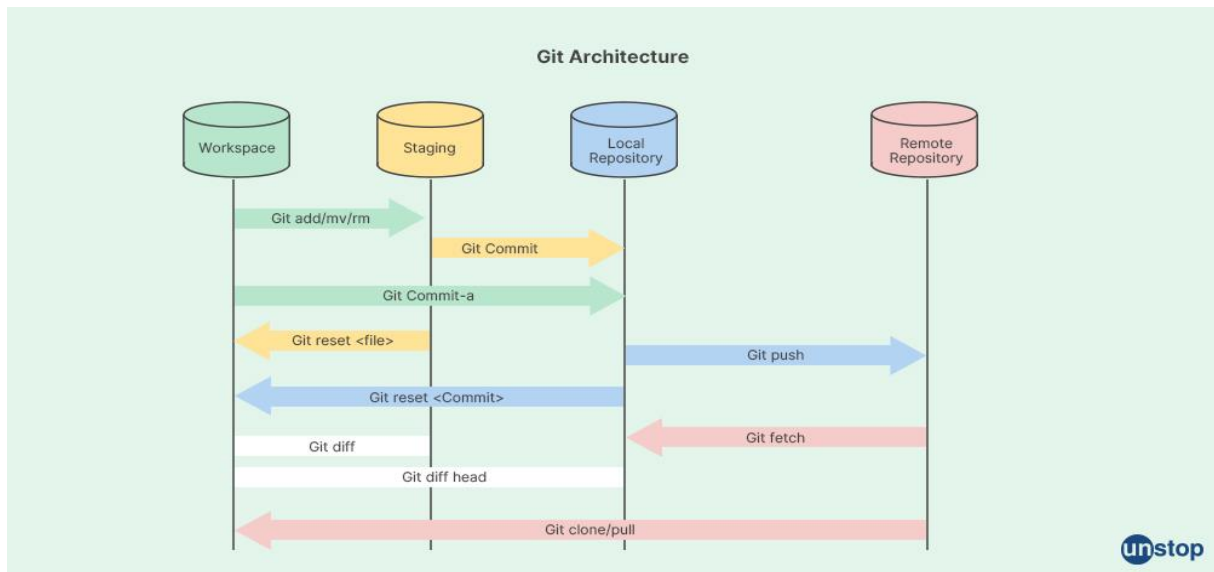
GitHub is a web-based Git repository hosting service, which offers all of the distributed revision control and source code management (SCM) functionality of Git as well as adding its own features.

- Git is not the same as GitHub.
- GitHub makes tools that use Git.
- GitHub is the largest host of source code in the world, and has been owned by Microsoft since 2018.
- In this tutorial, we will focus on using Git with GitHub.

## The Git Lifecycle



## Git architecture



## Steps

```

MINGW64/d/Wad_Practical1
oshn@del1 MINGW64 /d/Wad_Practical1
$ git init
initialized empty Git repository in D:/Wad_Practical1/.git/

oshn@del1 MINGW64 /d/Wad_Practical1 (master)
$ git clone https://github.com/Roshni814/Wad_Practical1.git
Cloning into 'Wad_Practical1'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
receiving objects: 100% (3/3), done.

oshn@del1 MINGW64 /d/Wad_Practical1 (master)
$ git status
On branch master

no commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Text.txt
    Wad_Practical1/

nothing added to commit but untracked files present (use "git add" to track)

oshn@del1 MINGW64 /d/Wad_Practical1 (master)
$ git add *

oshn@del1 MINGW64 /d/Wad_Practical1 (master)
$ git status
On branch master

no commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
    new file:   Text.txt

oshn@del1 MINGW64 /d/Wad_Practical1 (master)
$ git commit -m "Added Text.txt"
[master (root-commit) b8709ec] Added Text.txt
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 Text.txt

oshn@del1 MINGW64 /d/Wad_Practical1 (master)
$ git push
fatal: No configured push destination.
Either specify the URL from the command-line or configure a remote repository using

    git remote add <name> <url>

and then push using the remote name

    git push <name>
  
```

```

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git remote add origin https://github.com/RoshniB14/Wad_Practical.git
bash: remote: command not found

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git remote add origin https://github.com/RoshniB14/Wad_Practical.git

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git push
fatal: The current branch master has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin master

To have this happen automatically for branches without a tracking
upstream, see 'push.autoSetUpRemote' in 'git help config'.

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git push --set-upstream origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 222 bytes | 111.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Create a pull request for 'master' on GitHub by visiting:
remote:   https://github.com/RoshniB14/Wad_Practical/pull/new/master
remote:
remote:   https://github.com/RoshniB14/Wad_Practical.git
* [new branch]      master -> master
branch 'master' set up to track 'origin/master'.

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git config --list
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
http.sslbackend=openssl
http.sslcainfo=C:/Program Files/Git/mingw64/etc/ssl/certs/ca-bundle.crt
core.autocrlf=true
core.fscache=true
core.sylmlinks=false
pull.rebase=false
credential.helper=manager
credential.https://dev.azure.com:usehttppath=true
init.defaultbranch=master
core.editor=D:\Microsoft VS Code\bin\code" --wait
user.name=Roshni_Bhamare
user.email=roshnibhamare14@gmail.com
core.repositoryformatversion=0
core.filemode=false
core.bare=false
core.logallrefupdates=true
core.sylmlinks=false

```

```

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git config --global user.name "Roshni_Bhamare"

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git config --global user.email "roshnibhamare14@gmail.com"

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git config --list
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
http.sslbackend=openssl
http.sslcainfo=C:/Program Files/Git/mingw64/etc/ssl/certs/ca-bundle.crt
core.autocrlf=true
core.fscache=true
core.sylmlinks=false
pull.rebase=false
credential.helper=manager
credential.https://dev.azure.com:usehttppath=true
init.defaultbranch=master
core.editor=D:\Microsoft VS Code\bin\code" --wait
user.name=Roshni_Bhamare
user.email=roshnibhamare14@gmail.com
core.repositoryformatversion=0
core.filemode=false
core.bare=false
core.logallrefupdates=true
core.sylmlinks=false
core.ignorecase=true
remote.origin.url=https://github.com/RoshniB14/Wad_Practical.git
remote.origin.fetch=+refs/heads/*:refs/remotes/origin/*
branch.master.remote=origin
branch.master.merge=refs/heads/master

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git commit -m "changed Text.txt"
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean

oshn@De11 MINGW64 /d/Wad_Practical1 (master)
$ git checkout main
error: pathspec 'main' did not match any file(s) known to git

```

```

user.name=Roshni_Bhamare
user.email=roshnibhamare14@gmail.com
core.repositoryformatversion=0
core.filemode=false
core.bare=false
core.logallrefupdates=true
core.symlinks=false
core.ignorecase=true
remote.origin.url=https://github.com/roshni1814/wad_practical.git
remote.origin.fetch=refs/heads/*:refs/remotes/origin/*
branch.master.remote=origin
branch.master.merge=refs/heads/master

roshni@DELL MINGW64 /d/Wad_Practical1 (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean

roshni@DELL MINGW64 /d/Wad_Practical1 (master)
$ git commit -m "changed Text.txt"
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean

roshni@DELL MINGW64 /d/Wad_Practical1 (master)
$ git checkout main
error: pathspec 'main' did not match any file(s) known to git

roshni@DELL MINGW64 /d/Wad_Practical1 (master)
$ touch Text.txt

roshni@DELL MINGW64 /d/Wad_Practical1 (master)
$ git push
Everything up-to-date

roshni@DELL MINGW64 /d/Wad_Practical1 (master)
$ git pull
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 873 bytes | 62.00 KiB/s, done.
From https://github.com/roshni1814/wad_practical
* [new branch]    main -> origin/main
Already up to date.

roshni@DELL MINGW64 /d/Wad_Practical1 (master)
$ git log
commit b8709ecf7ae6249136d9d008fe2a1b020eed6cb2 (HEAD -> master, origin/master)
Author: Roshni_Bhamare <roshnibhamare14@gmail.com>
Date:   Mon Mar 17 14:30:16 2025 +0530

    Added Text.txt

roshni@DELL MINGW64 /d/Wad_Practical1 (master)
$

```