**GIT Commands**

1. Basic Git Commands

* git init – Initializes a new Git repository in the current directory.
* git clone <repository-url> – Clones an existing Git repository to your local machine.

1. Staging & Committing

* git add <file> – Stages a specific file for commit.
* git add . – Stages all changes (new, modified, and deleted files).
* git commit -m "message" – Commits staged changes with a descriptive message.
* git commit --amend -m "new message" – Modifies the last commit message.

1. Branching & Merging

* git branch – Lists all branches in the repository.
* git branch <branch-name> – Creates a new branch.
* git checkout <branch-name> – Switches to the specified branch.
* git switch <branch-name> – Alternative to git checkout for switching branches.
* git merge <branch-name> – Merges the specified branch into the current branch.
* git rebase <branch-name> – Reapplies commits on top of another base branch.

1. Viewing History & Changes

* git log – Shows commit history.
* git log --oneline --graph – Displays a compact commit history.
* git status – Shows the current status of the working directory and staging area.
* git diff – Shows differences between working directory and staged changes.
* git diff --staged – Shows differences between staged changes and the last commit.

1. Undoing Changes

* git reset <file> – Unstages a file while keeping changes.
* git reset --hard <commit-hash> – Resets repository to a specific commit, discarding changes.
* git revert <commit-hash> – Creates a new commit that undoes changes from a previous commit.

1. Working with Remote Repositories

* git remote -v – Lists remote repositories.
* git remote add <name> <url> – Adds a new remote repository.
* git pull origin <branch-name> – Fetches and merges changes from the remote branch.
* git push origin <branch-name> – Pushes changes to the remote repository.
* git push -u origin <branch-name> – Sets the upstream branch for future pushes.

1. Stashing & Cleaning

* git stash – Saves uncommitted changes for later use.
* git stash pop – Applies stashed changes and removes them from the stash.
* git clean -f – Removes untracked files from the working directory.

1. Tagging

* git tag <tag-name> – Creates a lightweight tag.
* git tag -a <tag-name> -m "message" – Creates an annotated tag.
* git push origin <tag-name> – Pushes a tag to the remote repository.

1. Advanced Commands

* git cherry-pick <commit-hash> – Applies a specific commit to the current branch.
* git bisect start – Starts a binary search to find a faulty commit.
* git reflog – Shows a log of recent changes, even deleted ones.