Git Commands with Detailed Explanations

git init

Initializes a new Git repository in the current directory. Creates a .git subdirectory that contains all necessary metadata.

git clone <repo_url>

Creates a local copy of a remote repository. Downloads all files, branches, and commits.

git status

Displays the current state of the working directory and staging area. Shows which changes are staged, unstaged, or untracked.

git add <file>

Stages a specific file to be committed. Tells Git to include updates to this file in the next commit.

git add .

Stages all modified and new files in the current directory and its subdirectories.

git commit -m 'message'

Records the staged changes in the repository with a short, descriptive message.

git log

Shows a list of all commits in the current branch's history, starting with the most recent.

git diff

Displays the differences between files or commits. Useful for reviewing changes before committing.

git branch

Lists all local branches. Highlights the current active branch with an asterisk.

git branch <name>

Creates a new branch but does not switch to it.

git checkout <branch>

Switches to the specified branch and updates the working directory.

git checkout -b <branch>

Creates a new branch and switches to it immediately.

git merge <branch>

Integrates changes from the specified branch into the current branch.

git pull

Fetches changes from the remote repository and merges them into the current branch.

git push

Uploads all local branch commits to the remote repository.

git remote -v

Displays the URLs of the remote repositories linked to your local repository.

git fetch

Downloads changes from the remote repository without merging them automatically.

git reset <file>

Unstages a file while keeping the changes in the working directory.

git rm <file>

Removes a file from the working directory and stages the removal.

git stash

Temporarily saves modified tracked files and reverts them to the last commit.

git stash pop

Restores the most recently stashed changes and removes them from the stash list.

git rebase <branch>

Moves or combines a sequence of commits to a new base commit. Useful for streamlining history.

git tag

Lists all tags, which are references to specific points in Git history.

git tag <name>

Creates a new tag for a specific commit.

git config --global user.name 'Name'

Sets the Git username globally.

git config --global user.email 'email@example.com'

Sets the Git email globally.

git show <commit>

Shows various types of objects, including commits and tags.

git revert <commit>

Creates a new commit that reverses the changes of a previous commit.

git log --oneline

Displays the commit history in a compact form.

git clean -fd

Removes untracked files and directories from the working directory.