

What is Git?

Git is a Version Control System (VCS) that tracks changes in files and coordinates work among multiple developers. It allows you to see who made what changes and when, revert changes, and manage both local and remote repositories.

Basic Commands:

Initialize Repository

`git init`

Initializes a new Git repository.

Add Files

`git add <file>`

Stages a file for commit.

Check Status

`git status`

Displays the current status of the repository.

Commit Change

`git commit -m "<message>"`

Commits staged changes with a message.

Push Changes

`git push`

Pushes changes to the remote repository.

Pull Changes

`git pull`

Fetches and integrates changes from the remote repository.

Show Git Version

`git --version`

Displays the installed Git version.

Branching Commands:

List Branches

`git branch`

Lists all branches in the repository.

Create New Branch

`git branch <new-branch-name>`

Creates a new branch.

Create and Switch to New Branch

`git checkout -b <new-branch-name>`

Creates a new branch and switches to it.

Switch Branch

`git checkout <branch-name>`

Switches to an existing branch.

Delete Branch

`git branch -D <branch-name>`

Deletes a branch.

Merging and Remote Commands:

Merge Branches

`git merge <branch-name>`

Merges the specified branch into the current branch.

Add Remote Repository

`git remote add origin <repository-url>`

Links a remote repository.

List Remote Repositories

`git remote`

Shows the remote repositories linked.

Push Changes to Specific Branch

`git push -u origin <branch-name>`

Pushes local changes to the specified remote branch.

Clone Remote Repository

`git clone <repository-url>`

Clones a remote repository.

Commit History Commands:

View Commit Log

`git log`

Displays the commit history.

View Latest Commit

`git log -n 1`

Shows the most recent commit.

View Commits in One Line

`git log --oneline`

Displays commits in a compact format.

Tagging Commands:

Create Tag

`git tag <tag-name>`

Creates a simple tag.

Annotated Tag

`git tag -a <tag-name> -m "<message>"`

Creates a tag with a message.

List Tags

`git tag`

Lists all tags.

Show Tag Details

`git show <tag-name>`

Displays details of a specific tag.

Push Tag to Remote

```
git push origin <tag-name>
```

Pushes a specific tag to the remote repository.

```
git push --tags
```

Pushes all tags.

Delete Tag

```
git tag -d <tag-name>
```

Deletes a local tag.

Rollback Changes:

Revert Last Commit

```
git revert <commit-id>
```

Reverts a specific commit.