

Git Command History Summary with Explanations

This document summarizes all Git-related commands executed during practice sessions. It covers configuration, repository setup, branching, merging, tagging, version control, and rollback operations — providing a clear reference for Git workflow understanding.

1. Git Setup & Configuration

Command	Explanation
git --version	Check the installed Git version.
git config --global user.name "vallabha-dev"	Set global username for commits.
git config --global user.email "vallabhd60@gmail.com"	Set global email for commits.
git config --list	View current Git configuration details.

2. Repository Initialization & Remote Setup

Command	Explanation
git init	Initialize a new Git repository.
git remote add origin <URL>	Add a remote repository connection.
git branch -M main	Rename current branch to main.
git push -u origin main	Push initial commit and set upstream.
git clone <URL>	Clone an existing remote repository locally.

3. Basic Git Workflow

Command	Explanation
git status	Check the current working directory status.
git add .	Stage all modified and new files for commit.
git commit -m "message"	Commit changes with a message.
git push	Push committed changes to the remote repository.
git pull	Fetch and merge changes from remote repository.

4. Branching & Switching

Command	Explanation
git branch sprint1	Create a new branch named sprint1.
git branch -a	List all local and remote branches.
git switch sprint1	Switch to the sprint1 branch.
git checkout main	Switch to the main branch.

git branch -d sprint5	Delete a local branch named sprint5.
git push origin --delete sprint5	Delete a remote branch named sprint5.

5. Merging & Pulling

Command	Explanation
git merge sprint1	Merge sprint1 branch into the current branch.
git pull origin main	Pull latest updates from main branch.
git push --all origin	Push all local branches to remote.

6. Tagging & Versioning

Command	Explanation
git tag -a v1.0.0 -m "First tag"	Create annotated tag v1.0.0 with a message.
git tag -a v1.0.1 -m "Second patch change"	Create version 1.0.1 tag.
git tag -a v1.0.2 -m "Release v1.0.2"	Tag commit as v1.0.2.
git tag -a v1.0.3 -m "Release v1.0.3"	Create tag version 1.0.3.
git push origin v1.0.3	Push a specific tag to remote repository.
git push origin --tags	Push all local tags to the remote repository.
git tag -d v1.0.4	Delete a local tag.
git push origin --delete tag v1.0.4	Delete a tag from the remote repository.

7. Rollback & Recovery

Command	Explanation
git revert HEAD	Undo the latest commit by creating a new one.
git reset --hard <commit-id>	Reset repository to a specific commit.
git restore --staged <file>	Unstage a file from the staging area.
git checkout .	Revert all files to the last committed state.

8. Viewing Logs & Diffs

Command	Explanation
git log	Display the full commit history.
git log --oneline	View concise commit history.
git show <commit-id>	View details of a specific commit or tag.
git diff	Show differences between working directory and last commit.
git diff --cached	Show staged changes waiting to be committed.
git ls-remote --tags origin	List all tags available on the remote repository.

