

Git Commands Explained

From Installation to Advanced Usage

Installation & Verification

```
git --version
```

Configuration

```
git config --global user.name "Your Name"
git config --global user.email "you@example.com"
git config --global init.defaultBranch main
git config --list
git config --global --unset user.name
git config --global --unset user.email
```

Repository Setup

```
git init
git clone <repo-url>
git clone -b branch-name <repo-url>
```

Basic Workflow

```
git status
git add file.txt
git add .
git commit -m "message"
git commit -am "message"
```

Viewing History & Changes

```
git log
git log --oneline
git log --graph --all
git diff
git diff --staged
git show <commit-hash>
```

Branching & Merging

```
git branch
git branch new-branch
git branch -d branch-name
git checkout branch-name
git switch branch-name
git checkout -b new-branch
git switch -c new-branch
git merge branch-name
git merge --abort
```

Remote Repositories

```
git remote -v  
git remote add origin <url>  
git push origin main  
git push -u origin main  
git pull  
git fetch
```

Undoing Changes

```
git restore file.txt  
git restore --staged file.txt  
git reset --soft HEAD~1  
git reset --hard HEAD~1  
git revert <commit-hash>
```

Stashing

```
git stash  
git stash list  
git stash pop  
git stash apply  
git stash drop
```

Tags

```
git tag  
git tag v1.0  
git tag -a v1.0 -m "version 1.0"  
git push origin --tags
```

Rebasing

```
git rebase main  
git rebase -i HEAD~3  
git rebase --abort
```

Cleaning & Maintenance

```
git clean -n  
git clean -f  
git gc  
git fsck
```

Submodules

```
git submodule add <repo-url>  
git submodule init  
git submodule update
```

Inspection & Debugging

```
git blame file.txt  
git reflog
```

```
git shortlog  
git describe
```

Help

```
git help  
git help commit  
git commit --help
```