

Git Cheat Sheet – from Basics to Advanced

Configure your name & email (first time only)

```
git config --global user.name "Your Name"
git config --global user.email "you@example.com"
```

Initialize a repo or clone existing

```
git init                # Start new repo
git clone <repo-url>    # Clone repo from remote
```

Check status, add changes & commit

```
git status              # Show modified / staged files
git add <file>          # Stage a file
git add .               # Stage all changes
git commit -m "Your commit message" # Commit staged changes
```

View history & logs

```
git log                 # Detailed history
git log --oneline       # Compact view
git diff               # See unstaged changes
git diff --staged      # See staged changes
```

Create, switch & delete branches

```
git branch              # List branches
git branch <branch-name> # Create new branch
git checkout <branch-name> # Switch to branch
git checkout -b <branch-name> # Create + switch
git merge <branch-name>    # Merge into current branch
git branch -d <branch-name> # Delete branch
```

Connect & sync with remote

| | |
|--|--|
| <code>git remote add origin <url></code> | <code># Add remote</code> |
| <code>git remote -v</code> | <code># Show remotes</code> |
| <code>git push -u origin main</code> | <code># Push main branch first time</code> |
| <code>git push</code> | <code># Push commits</code> |
| <code>git pull</code> | <code># Fetch & merge from remote</code> |
| <code>git fetch</code> | <code># Fetch (don't merge)</code> |

Undo, reset & revert

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|---|--|
| <code>git checkout <commit> <file></code> | <code># Restore file from old commit</code> |
| <code>git revert <commit></code> | <code># New commit to undo a commit</code> |
| <code>git reset --hard <commit></code> | <code># Reset branch & working dir</code> |
| <code>git reset --soft <commit></code> | <code># Reset branch, keep staged changes</code> |
| <code>git reset <file></code> | <code># Unstage file</code> |

Stash & clean workspace

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|------------------------------|---|
| <code>git stash</code> | <code># Save uncommitted changes</code> |
| <code>git stash apply</code> | <code># Apply stashed changes</code> |
| <code>git stash pop</code> | <code># Apply & remove</code> |
| <code>git clean -f</code> | <code># Remove untracked files</code> |

Tags & releases

| | |
|---|------------------------------|
| <code>git tag</code> | <code># List tags</code> |
| <code>git tag <tag-name></code> | <code># Create tag</code> |
| <code>git tag -a <tag-name> -m "msg"</code> | <code># Annotated tag</code> |
| <code>git push origin <tag-name></code> | <code># Push tag</code> |
| <code>git push --tags</code> | <code># Push all tags</code> |

Advanced / teamwork

| | |
|---|--|
| <code>git cherry-pick <commit></code> | <code># Apply commit to current branch</code> |
| <code>git rebase <branch></code> | <code># Rebase onto another branch</code> |
| <code>git rebase -i HEAD~3</code> | <code># Interactive rebase last 3 commits</code> |
| <code>git reflog</code> | <code># See all local moves / changes</code> |

Other useful commands

| | |
|-------------------------------------|---|
| <code>git show</code> | <code># Details of commit/tag</code> |
| <code>git blame <file></code> | <code># See who changed each line</code> |
| <code>git shortlog -sne</code> | <code># Contributor summary</code> |
| <code>git remote show origin</code> | <code># Details of remote branches</code> |

Cleanup & remove

| | |
|---|------------------------------------|
| <code>git branch -D <branch></code> | <code># Force delete branch</code> |
| <code>git remote remove origin</code> | <code># Remove remote</code> |