

Git Cheat Sheet

The essential Git commands every developer must know



This cheat sheet covers all of the Git commands I've covered in my Ultimate Git Mastery course.

- ✓ Creating snapshots
- ✓ Browsing history
- ✓ Branching & merging
- ✓ Collaboration using Git & GitHub
- ✓ Rewriting history



Hi! My name is Mosh Hamedani. I'm a software engineer with two decades of experience. I've taught millions of people how to code or how to become a professional software engineer through my YouTube channel and online coding school. It's my mission to make software engineering simple and accessible to everyone.

Check out the links below to master the coding skills you need:

<https://codewithmosh.com>

<https://youtube.com/user/programmingwithmosh>

<https://twitter.com/moshhamedani>

<https://facebook.com/programmingwithmosh/>

Want to master Git?

Stop wasting your time memorizing Git commands or browsing disconnected tutorials. If you don't know how Git works, you won't get far.

My **Ultimate Git Mastery** course teaches you everything you need to know to use Git like a pro.

- ✓ Learn & understand Git inside out
- ✓ Master the command line
- ✓ Version your code and confidently recover from mistakes
- ✓ Collaborate effectively with others using Git and GitHub
- ✓ Boost your career opportunities

Click below to enroll today:

<https://codewithmosh.com/p/the-ultimate-git-course/>

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Creating Snapshots

Initializing a repository

git init

Staging files

| | |
|---------------------------|--|
| git add file1.js | # Stages a single file |
| git add file1.js file2.js | # Stages multiple files |
| git add *.js | # Stages with a pattern |
| git add . | # Stages the current directory and all its content |

Viewing the status

| | |
|---------------|----------------|
| git status | # Full status |
| git status -s | # Short status |

Committing the staged files

| | |
|-------------------------|---|
| git commit -m "Message" | # Commits with a one-line message |
| git commit | # Opens the default editor to type a long message |

Skipping the staging area

git commit -am "Message"

Removing files

| | |
|--------------------------|---|
| git rm file1.js | # Removes from working directory and staging area |
| git rm --cached file1.js | # Removes from staging area only |

Renaming or moving files

git mv file1.js file1.txt

Viewing the staged/unstaged changes

| | |
|-------------------|--------------------------|
| git diff | # Shows unstaged changes |
| git diff --staged | # Shows staged changes |
| git diff --cached | # Same as the above |

Viewing the history

| | |
|-------------------|---|
| git log | # Full history |
| git log --oneline | # Summary |
| git log --reverse | # Lists the commits from the oldest to the newest |

Viewing a commit

| | |
|-----------------------|--|
| git show 921a2ff | # Shows the given commit |
| git show HEAD | # Shows the last commit |
| git show HEAD~2 | # Two steps before the last commit |
| git show HEAD:file.js | # Shows the version of file.js stored in the last commit |

Unstaging files (undoing git add)

| | |
|------------------------------|---|
| git restore --staged file.js | # Copies the last version of file.js from repo to index |
|------------------------------|---|

Discarding local changes

| | |
|-------------------------------|---|
| git restore file.js | # Copies file.js from index to working directory |
| git restore file1.js file2.js | # Restores multiple files in working directory |
| git restore . | # Discards all local changes (except untracked files) |
| git clean -fd | # Removes all untracked files |

Restoring an earlier version of a file

| |
|-------------------------------------|
| git restore --source=HEAD~2 file.js |
|-------------------------------------|

Browsing History

Viewing the history

`git log --stat` # Shows the list of modified files
`git log --patch` # Shows the actual changes (patches)

Filtering the history

`git log -3` # Shows the last 3 entries
`git log --author="Mosh"`
`git log --before="2020-08-17"`
`git log --after="one week ago"`
`git log --grep="GUI"` # Commits with "GUI" in their message
`git log -S"GUI"` # Commits with "GUI" in their patches
`git log hash1..hash2` # Range of commits
`git log file.txt` # Commits that touched file.txt

Formatting the log output

`git log --pretty=format:"%an committed %H"`

Creating an alias

`git config --global alias.lg "log --oneline"`

Viewing a commit

`git show HEAD~2`
`git show HEAD~2:file1.txt` # Shows the version of file stored in this commit

Comparing commits

`git diff HEAD~2 HEAD` # Shows the changes between two commits
`git diff HEAD~2 HEAD file.txt` # Changes to file.txt only

Checking out a commit

| | |
|----------------------|--------------------------------|
| git checkout dad47ed | # Checks out the given commit |
| git checkout master | # Checks out the master branch |

Finding a bad commit

| | |
|-------------------------|--|
| git bisect start | |
| git bisect bad | # Marks the current commit as a bad commit |
| git bisect good ca49180 | # Marks the given commit as a good commit |
| git bisect reset | # Terminates the bisect session |

Finding contributors

git shortlog

Viewing the history of a file

| | |
|--------------------------|---|
| git log file.txt | # Shows the commits that touched file.txt |
| git log --stat file.txt | # Shows statistics (the number of changes) for file.txt |
| git log --patch file.txt | # Shows the patches (changes) applied to file.txt |

Finding the author of lines

| | |
|--------------------|---|
| git blame file.txt | # Shows the author of each line in file.txt |
|--------------------|---|

Tagging

| | |
|----------------------|--------------------------------|
| git tag v1.0 | # Tags the last commit as v1.0 |
| git tag v1.0 5e7a828 | # Tags an earlier commit |
| git tag | # Lists all the tags |
| git tag -d v1.0 | # Deletes the given tag |

Branching & Merging

Managing branches

| | |
|----------------------|--------------------------------------|
| git branch bugfix | # Creates a new branch called bugfix |
| git checkout bugfix | # Switches to the bugfix branch |
| git switch bugfix | # Same as the above |
| git switch -C bugfix | # Creates and switches |
| git branch -d bugfix | # Deletes the bugfix branch |

Comparing branches

| | |
|-------------------------|--|
| git log master..bugfix | # Lists the commits in the bugfix branch not in master |
| git diff master..bugfix | # Shows the summary of changes |

Stashing

| | |
|-----------------------------------|--|
| git stash push -m "New tax rules" | # Creates a new stash |
| git stash list | # Lists all the stashes |
| git stash show stash@{1} | # Shows the given stash |
| git stash show 1 | # shortcut for stash@{1} |
| git stash apply 1 | # Applies the given stash to the working dir |
| git stash drop 1 | # Deletes the given stash |
| git stash clear | # Deletes all the stashes |

Merging

| | |
|---------------------------|--|
| git merge bugfix | # Merges the bugfix branch into the current branch |
| git merge --no-ff bugfix | # Creates a merge commit even if FF is possible |
| git merge --squash bugfix | # Performs a squash merge |
| git merge --abort | # Aborts the merge |

Viewing the merged branches

git branch --merged # Shows the merged branches

git branch --no-merged # Shows the unmerged branches

Rebasing

git rebase master # Changes the base of the current branch

Cherry picking

git cherry-pick dad47ed # Applies the given commit on the current branch

Collaboration

Cloning a repository

git clone url

Syncing with remotes

git fetch origin master

Fetches master from origin

git fetch origin

Fetches all objects from origin

git fetch

Shortcut for "git fetch origin"

git pull

Fetch + merge

git push origin master

Pushes master to origin

git push

Shortcut for "git push origin master"

Sharing tags

git push origin v1.0

Pushes tag v1.0 to origin

git push origin --delete v1.0

Sharing branches

git branch -r

Shows remote tracking branches

git branch -vv

Shows local & remote tracking branches

git push -u origin bugfix

Pushes bugfix to origin

git push -d origin bugfix

Removes bugfix from origin

Managing remotes

git remote

Shows remote repos

git remote add upstream url

Adds a new remote called upstream

git remote rm upstream

Removes upstream

Rewriting History

Undoing commits

`git reset --soft HEAD^` # Removes the last commit, keeps changed staged
`git reset --mixed HEAD^` # Unstages the changes as well
`git reset --hard HEAD^` # Discards local changes

Reverting commits

`git revert 72856ea` # Reverts the given commit
`git revert HEAD~3..` # Reverts the last three commits
`git revert --no-commit HEAD~3..`

Recovering lost commits

`git reflog` # Shows the history of HEAD
`git reflog show bugfix` # Shows the history of bugfix pointer

Amending the last commit

`git commit --amend`

Interactive rebasing

`git rebase -i HEAD~5`