

# Git Cheat Sheet

The essential Git commands every developer must know



# git

This cheat sheet covers all of the Git commands.

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

## **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.

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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
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## 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
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# 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
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## 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

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

## Reverting commits

<code>git revert 72856ea</code>	# Reverts the given commit
<code>git revert HEAD~3..</code>	# Reverts the last three commits
<code>git revert --no-commit HEAD~3..</code>	

## Recovering lost commits

<code>git reflog</code>	# Shows the history of HEAD
<code>git reflog show bugfix</code>	# Shows the history of bugfix pointer

## Amending the last commit

`git commit --amend`

## Interactive rebasing

`git rebase -i HEAD~5`