

# Git Cheat Sheet

The essential Git commands every developer must know



git

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

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## **Table of Content**

Creating Snapshots	6
Browsing History	8
Branching & Merging	10
Collaboration	12
Rewriting History	13

# 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
```