

# Git Cheat Sheet



## Git Basics

<code>git init</code> <code>&lt;directory&gt;</code>	Create empty Git repo in specified directory. Run with no arguments to initialize the current directory as a git repository.
<code>git clone &lt;repo&gt;</code>	Clone repo located at <code>&lt;repo&gt;</code> onto local machine. Original repo can be located on the local filesystem or on a remote machine via HTTP or SSH.
<code>git config</code> <code>user.name &lt;name&gt;</code>	Define author name to be used for all commits in current repo. Devs commonly use <code>--global</code> flag to set config options for current user.
<code>git add</code> <code>&lt;directory&gt;</code>	Stage all changes in <code>&lt;directory&gt;</code> for the next commit. Replace <code>&lt;directory&gt;</code> with a <code>&lt;file&gt;</code> to change a specific file.
<code>git commit -m</code> <code>"&lt;message&gt;"</code>	Commit the staged snapshot, but instead of launching a text editor, use <code>&lt;message&gt;</code> as the commit message.
<code>git status</code>	List which files are staged, unstaged, and untracked.
<code>git log</code>	Display the entire commit history using the default format. For customization see additional options.
<code>git diff</code>	Show unstaged changes between your index and working directory.

## Undoing Changes

<code>git revert</code> <code>&lt;commit&gt;</code>	Create new commit that undoes all of the changes made in <code>&lt;commit&gt;</code> , then apply it to the current branch.
<code>git reset &lt;file&gt;</code>	Remove <code>&lt;file&gt;</code> from the staging area, but leave the working directory unchanged. This unstages a file without overwriting any changes.
<code>git clean -n</code>	Shows which files would be removed from working directory. Use the <code>-f</code> flag in place of the <code>-n</code> flag to execute the clean.

## Rewriting Git History

<code>git commit</code> <code>--amend</code>	Replace the last commit with the staged changes and last commit combined. Use with nothing staged to edit the last commit's message.
<code>git rebase &lt;base&gt;</code>	Rebase the current branch onto <code>&lt;base&gt;</code> . <code>&lt;base&gt;</code> can be a commit ID, a branch name, a tag, or a relative reference to HEAD.
<code>git reflog</code>	Show a log of changes to the local repository's HEAD. Add <code>--relative-date</code> flag to show date info or <code>--all</code> to show all refs.

## Git Branches

<code>git branch</code>	List all of the branches in your repo. Add a <code>&lt;branch&gt;</code> argument to create a new branch with the name <code>&lt;branch&gt;</code> .
<code>git checkout -b</code> <code>&lt;branch&gt;</code>	Create and check out a new branch named <code>&lt;branch&gt;</code> . Drop the <code>-b</code> flag to checkout an existing branch.
<code>git merge &lt;branch&gt;</code>	Merge <code>&lt;branch&gt;</code> into the current branch.

## Remote Repositories

<code>git remote add</code> <code>&lt;name&gt; &lt;url&gt;</code>	Create a new connection to a remote repo. After adding a remote, you can use <code>&lt;name&gt;</code> as a shortcut for <code>&lt;url&gt;</code> in other commands.
<code>git fetch</code> <code>&lt;remote&gt; &lt;branch&gt;</code>	Fetches a specific <code>&lt;branch&gt;</code> , from the repo. Leave off <code>&lt;branch&gt;</code> to fetch all remote refs.
<code>git pull &lt;remote&gt;</code>	Fetch the specified remote's copy of current branch and immediately merge it into the local copy.
<code>git push</code> <code>&lt;remote&gt; &lt;branch&gt;</code>	Push the branch to <code>&lt;remote&gt;</code> , along with necessary commits and objects. Creates named branch in the remote repo if it doesn't exist.

## Additional Options +

### git config

<code>git config --global user.name &lt;name&gt;</code>	Define the author name to be used for all commits by the current user.
<code>git config --global user.email &lt;email&gt;</code>	Define the author email to be used for all commits by the current user.
<code>git config --global alias. &lt;alias-name&gt; &lt;git-command&gt;</code>	Create shortcut for a Git command. E.g. <code>alias.glog log --graph --oneline</code> will set <code>git glog</code> equivalent to <code>git log --graph --oneline</code> .
<code>git config --system core.editor &lt;editor&gt;</code>	Set text editor used by commands for all users on the machine. <code>&lt;editor&gt;</code> arg should be the command that launches the desired editor (e.g., vi).
<code>git config --global --edit</code>	Open the global configuration file in a text editor for manual editing.

### git log

<code>git log -&lt;limit&gt;</code>	Limit number of commits by <code>&lt;limit&gt;</code> . E.g. <code>git log -5</code> will limit to 5 commits.
<code>git log --oneline</code>	Condense each commit to a single line.
<code>git log -p</code>	Display the full diff of each commit.
<code>git log --stat</code>	Include which files were altered and the relative number of lines that were added or deleted from each of them.
<code>git log --author="&lt;pattern&gt;"</code>	Search for commits by a particular author.
<code>git log --grep="&lt;pattern&gt;"</code>	Search for commits with a commit message that matches <code>&lt;pattern&gt;</code> .
<code>git log &lt;since&gt;..&lt;until&gt;</code>	Show commits that occur between <code>&lt;since&gt;</code> and <code>&lt;until&gt;</code> . Args can be a commit ID, branch name, HEAD, or any other kind of revision reference.
<code>git log -- &lt;file&gt;</code>	Only display commits that have the specified file.
<code>git log --graph --decorate</code>	<code>--graph</code> flag draws a text based graph of commits on left side of commit msgs. <code>--decorate</code> adds names of branches or tags of commits shown.

### git diff

<code>git diff HEAD</code>	Show difference between working directory and last commit.
<code>git diff --cached</code>	Show difference between staged changes and last commit

### git reset

<code>git reset</code>	Reset staging area to match most recent commit, but leave the working directory unchanged.
<code>git reset --hard</code>	Reset staging area and working directory to match most recent commit and <b>overwrites all changes</b> in the working directory.
<code>git reset &lt;commit&gt;</code>	Move the current branch tip backward to <code>&lt;commit&gt;</code> , reset the staging area to match, but leave the working directory alone.
<code>git reset --hard &lt;commit&gt;</code>	Same as previous, but resets both the staging area & working directory to match. <b>Deletes uncommitted changes, and all commits after &lt;commit&gt;</b> .

### git rebase

<code>git rebase -i &lt;base&gt;</code>	Interactively rebase current branch onto <code>&lt;base&gt;</code> . Launches editor to enter commands for how each commit will be transferred to the new base.
---	---

### git pull

<code>git pull --rebase &lt;remote&gt;</code>	Fetch the remote's copy of current branch and rebases it into the local copy. Uses git rebase instead of merge to integrate the branches.
---	---

### git push

<code>git push &lt;remote&gt; --force</code>	Forces the <code>git push</code> even if it results in a non-fast-forward merge. Do not use the <code>--force</code> flag unless you're absolutely sure you know what you're doing.
<code>git push &lt;remote&gt; --all</code>	Push all of your local branches to the specified remote.
<code>git push &lt;remote&gt; --tags</code>	Tags aren't automatically pushed when you push a branch or use the <code>--all</code> flag. The <code>--tags</code> flag sends all of your local tags to the remote repo.