

Git quick reference for beginners

Kevin Markham

<http://www.dataschool.io/>

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The guide below is organized by task, with an emphasis on basic tasks and common command line arguments. It begins with the workflow for cloning, updating, and syncing with a remote repo because that's a common way to get started with Git and GitHub.

Note that this is only a reference guide, and will not teach you Git. It does not explain the difference between staged and committed, what to do with a .gitignore file, or when to create a branch. But if you are already familiar with those concepts, this guide will hopefully refresh your memory and help you to discover other commands you might need.

Cloning a remote repo (that you created or forked on GitHub)

- `git clone <your-repo-URL>`: copies your remote repo to your local machine (in a subdirectory with the repo's name), and automatically creates an "origin" handle
- `git remote add upstream <forked-repo-URL>`: adds an "upstream" handle for the repo you forked
- `git remote -v`: shows the handles for your remotes
- `git remote show <handlename>`: inspect a remote in detail

Tracking, committing, and pushing your changes

- `git add <name>`: if untracked, start tracking a file or directory; if tracked and modified, stage it for committing
- `git reset HEAD <name>`: unstage a changed file

- `git commit -m "message"`: commits everything that has been staged with a message
 - `-a -m "message"`: automatically stages any modified files, then commits
 - `-amend -m "new message"`: fixes the message from the last commit
- `git push origin master`: pushes your commits to the master branch of the origin

Syncing your local repo with the upstream repo

- `git fetch upstream`: fetch the upstream and store its master branch in "upstream/master"
- `git merge upstream/master`: merge that branch into the working branch

Viewing the status of your files

- `git status`: check which files have been modified and/or staged since the last commit
- `git diff`: shows the diff for files that are modified but not staged
 - `-staged`: shows the diff for files that are staged but not committed

Viewing the commit history

- `git log`: shows the detailed commit history
 - `-1`: only shows the last 1 commit
 - `-p`: shows the line diff for each commit
 - `-p -word-diff`: shows the word diff for each commit
 - `-stat`: shows stats instead of diff details
 - `-name-status`: shows a simpler version of stat
 - `-oneline`: just shows commit comments
- `gitk`: open a visual commit browser

Managing branches

- `git branch`: shows a list of local branches
 - `git branch <branchname>`: create a new branch with that name
 - `git branch -d <branchname>`: delete a branch
 - `git branch -v`: show the last commit on each local branch
 - `git branch -a`: show local and remote branches
 - `git branch -va`: show the last commit on each local and remote branch
 - `git branch --merged`: list which branches are already merged into the working branch (safe to delete)
 - `git branch --no-merged`: list which branches are not merged into the working branch
- `git checkout <branchname>`: switch the HEAD pointer to a different branch
 - `git checkout -b <branchname>`: create a new branch and switch to it

Removing, deleting, and reverting files

- `git rm <name>`: deletes that file from the disk, then stages its deletion
 - `git rm --cached <name>`: stops tracking a file, then stages its deletion (but does not delete it from the disk)
- `git mv <oldname> <newname>`: renames the file on disk, then stages the deletion of the old name and addition of the new name
- `git checkout -- <name>`: revert a modified file on disk back to the last committed version

Other basic commands

- `git init`: initialize Git in an existing directory
- `git config --list`: shows your Git configuration
- `touch .gitignore`: create an empty .gitignore file