

# git - the simple guide

just a simple guide for getting started with git. no deep shit ;)

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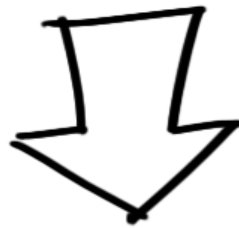
by Roger Dudler

credits to @tfnico, @fhd and Namics

this guide in deutsch, español, français, italiano, nederlands, portugês, русский, türkçe

日本語, 中文, 한국어

please report issues on github



## setup

Download git for OSX

Download git for Windows

Download git for Linux

# create a new repository

create a new directory, open it and perform a

```
git init
```

to create a new git repository.

# checkout a repository

create a working copy of a local repository by running the command

```
git clone /path/to/repository
```

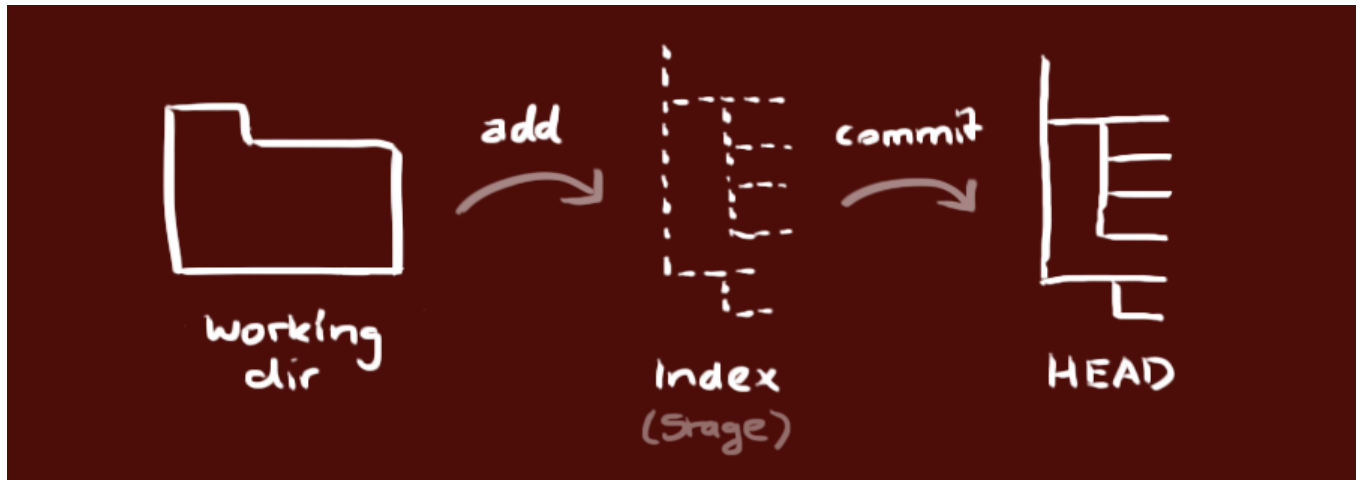
when using a remote server, your command will be

```
git clone username@host:/path/to/repository
```

# workflow

your local repository consists of three "trees" maintained by git. the first

one is your **Working Directory** which holds the actual files. the second one is the **Index** which acts as a staging area and finally the **HEAD** which points to the last commit you've made.



## add & commit

You can propose changes (add it to the **Index**) using

```
git add <filename>
```

```
git add *
```

This is the first step in the basic git workflow. To actually commit these changes use

```
git commit -m "Commit message"
```

Now the file is committed to the **HEAD**, but not in your remote repository yet.

# pushing changes

Your changes are now in the **HEAD** of your local working copy. To send those changes to your remote repository, execute

```
git push origin master
```

Change *master* to whatever branch you want to push your changes to.

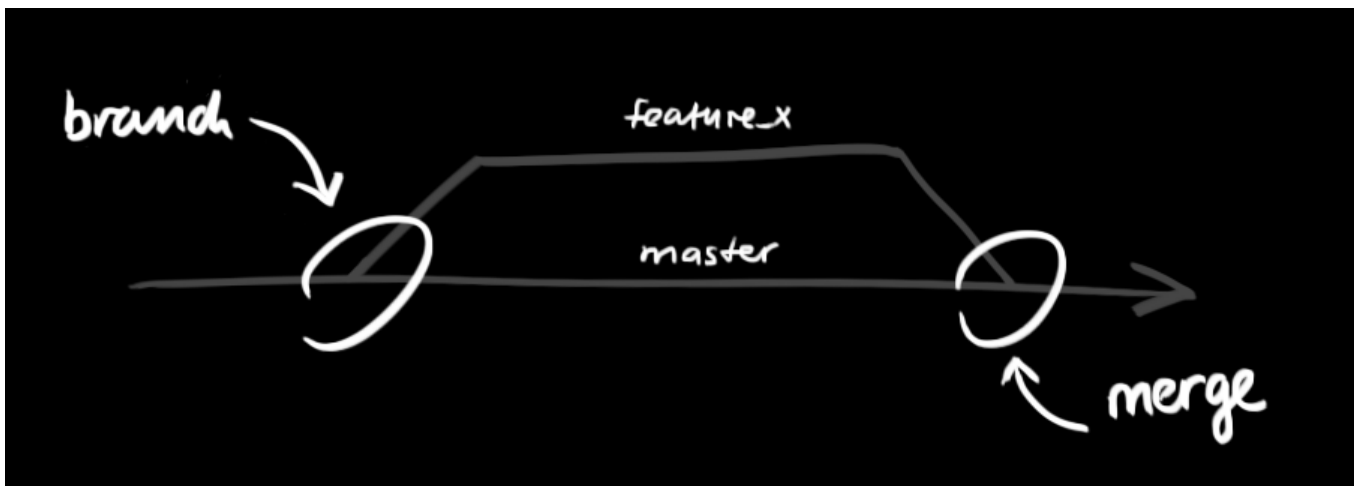
If you have not cloned an existing repository and want to connect your repository to a remote server, you need to add it with

```
git remote add origin <server>
```

Now you are able to push your changes to the selected remote server

## branching

Branches are used to develop features isolated from each other. The *master* branch is the "default" branch when you create a repository. Use other branches for development and merge them back to the master branch upon completion.



create a new branch named "feature\_x" and switch to it using

```
git checkout -b feature_x
```

switch back to master

```
git checkout master
```

and delete the branch again

```
git branch -d feature_x
```

a branch is *not available to others* unless you push the branch to your

remote repository

```
git push origin <branch>
```

## update & merge

to update your local repository to the newest commit, execute

```
git pull
```

in your working directory to *fetch* and *merge* remote changes.

to merge another branch into your active branch (e.g. master), use

```
git merge <branch>
```

in both cases git tries to auto-merge changes. Unfortunately, this is not always possible and results in *conflicts*. You are responsible to merge

those *conflicts* manually by editing the files shown by git. After

changing, you need to mark them as merged with

```
git add <filename>
```

before merging changes, you can also preview them by using

```
git diff <source_branch> <target_branch>
```

## tagging

it's recommended to create tags for software releases. this is a known concept, which also exists in SVN. You can create a new tag named *1.0.0*

by executing

```
git tag 1.0.0 1b2e1d63ff
```

the *1b2e1d63ff* stands for the first 10 characters of the commit id you

want to reference with your tag. You can get the commit id with

```
git log
```

you can also use fewer characters of the commit id, it just has to be unique.

## replace local changes

In case you did something wrong (which for sure never happens ;) you can replace local changes using the command

```
git checkout -- <filename>
```

this replaces the changes in your working tree with the last content in HEAD. Changes already added to the index, as well as new files, will be kept.

If you instead want to drop all your local changes and commits, fetch the latest history from the server and point your local master branch at it like this

```
git fetch origin
```

```
git reset --hard origin/master
```

# useful hints

built-in git GUI

`gitk`

use colorful git output

`git config color.ui true`

show log on just one line per commit

`git config format.pretty oneline`

use interactive adding

`git add -i`

## links & resources

graphical clients

GitX (L) (OSX, open source)

Tower (OSX)

Source Tree (OSX, free)

GitHub for Mac (OSX, free)

guides



Git Community Book  
Pro Git  
Think like a git  
GitHub Help  
A Visual Git Guide

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Kate • a month ago

Thank you very much for this. The workflow and the two following sections made me understand clearly how git worked on a basic level, something no other guide for beginners had done.

0 • Reply • Share ›



Abra • 4 months ago

very useful for the beginner. basic concepts have been explained very clearly without unnecessary detail.

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