

How to use ~~GitHub~~ git

Let's look into it at KIT

What do I use git for?

To track changes on:

- a source code
- a LaTeX manuscript
- a PDF presentation

What do I use git for?

To collaborate with others

- work on a presentation with collaborators
- work on a source code with your coworkers
- ask for a review of your article to your co-authors

What do I use git for?

To share my work

- public sharing on a public GitHub repository (with a license! Mandatory in Germany)
- private sharing to some collaborators

Vocabulary¹

¹ All of it here: <https://git-scm.com/docs/gitglossary>

git

An open source, distributed version-control system.

GitHub

A platform for hosting and collaborating on Git repositories.

Alternatives: GitLab, Bitbucket, SourceForge, Google Cloud Source Repositories...

(git) repository

Where all your changes are stored.

commit

A state of changes. Every commit is identified by a reference (the sha1).

A commit contains a lot of information such as:
author, commiter, message, description, dates...

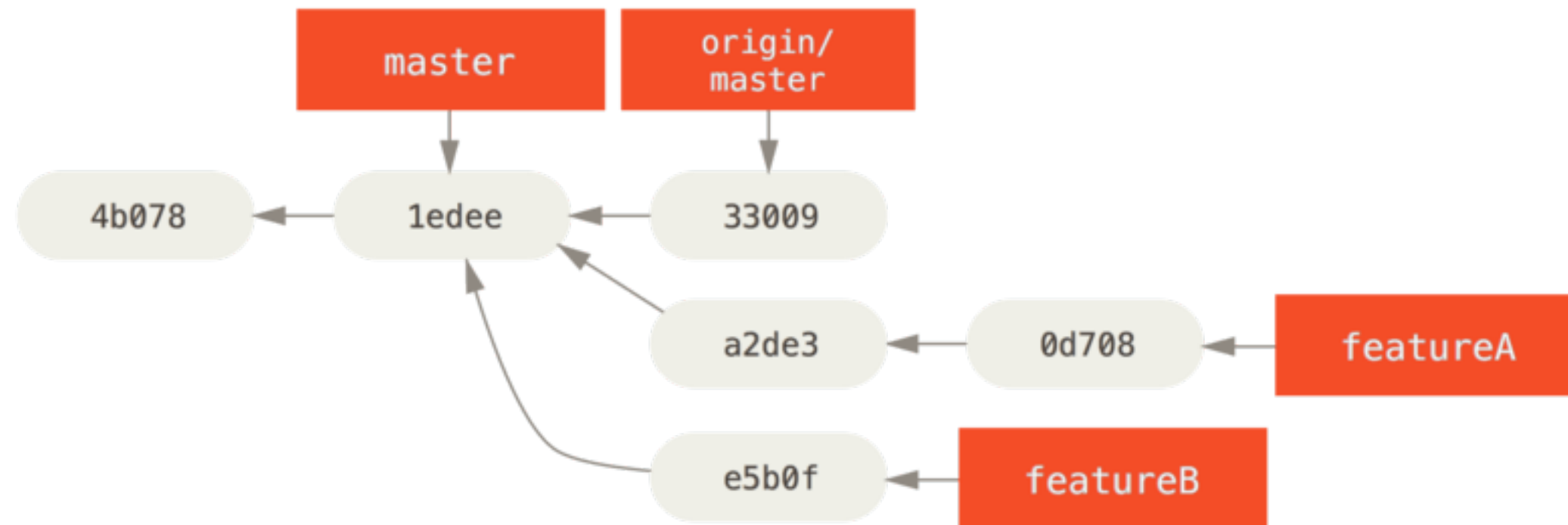
tree

The stored representation of your git repository.

```
c0bafa5 11 months ago Ilyaçe Regaibi      |   o Change perfume attribute type to textarea & display it in the product details
53840a3 11 months ago Jacques Bodin-Hullin | M-|   o Merge pull request #349 from monsieurbiz/MDB-correct-header-translation
a5a7a4b 11 months ago Ilyaçe Regaibi      |   |   o Correct MDB header translations
2c7e4dd 11 months ago Jacques Bodin-Hullin | M-|   o Merge pull request #346 from monsieurbiz/feature/5569-mailchimp-webhooks
8ca3edd 11 months ago Ilyaçe Regaibi      |   |   o Handle the data received from a mailchimp webhook
4abb751 11 months ago Ilyaçe Regaibi      |   |   o Create command to create mailchimp webhooks
a240fcc 11 months ago Ilyaçe Regaibi      | M-|   o Merge pull request #343 from monsieurbiz/feature/pull-docker-during-deploy
8e58f52 11 months ago Jacques Bodin-Hullin |   |   o Pull docker in prod
1d30e20 11 months ago Jacques Bodin-Hullin | M-|   o Merge pull request #345 from monsieurbiz/feature/6968-translate-navigation
6bc440d 11 months ago Guirec Lefort       |   |   o Add translation for main navigation
9cd3dba 11 months ago Jacques Bodin-Hullin | M-|   o Merge pull request #344 from monsieurbiz/feature/seo-logo
984f956 11 months ago Guirec Lefort       |   |   o Update logo tag in templates to only use `<h1>` on homepage
cfb7d6c 11 months ago Jacques Bodin-Hullin | M-|   o Merge branch 'release/1.0.23' into develop
40f8baa 11 months ago Jacques Bodin-Hullin | M-|   o <1.0.23> Merge branch 'release/1.0.23'
c9914fc 11 months ago Jacques Bodin-Hullin |   |   o Delete node_modules after compiling theme
4bdbd15 11 months ago Jacques Bodin-Hullin | M-|   o Merge pull request #342 from monsieurbiz/feature/6515-footer
96c3424 11 months ago Ilyaçe Regaibi      |   |   o Create custom footer file for channels Maisons-de-bricourt & famille-roellinger to remove
d6e220e 11 months ago Jacques Bodin-Hullin | M-|   o Merge pull request #340 from monsieurbiz/improve-mailchimp-apicall-message
104926f 12 months ago Ilyaçe Regaibi      |   |   o Improve the rendering of response's message from mailchimp api call
290f4b1 11 months ago Jacques Bodin-Hullin | M-|   o Merge pull request #333 from monsieurbiz/feature/6646-vent-de-vanille
32b5f9a 11 months ago Ilyaçe Regaibi      |   |   o {origin/feature/6646-vent-de-vanille} Set default values for position & isLastInGroup
b92b199 11 months ago Ilyaçe Regaibi      |   |   o Update places rendering depending on their position & isLastInGroup values
6739461 11 months ago Ilyaçe Regaibi      |   |   o Update fixtures by adding position & is_last_in_group attributes
f6855cb 11 months ago Ilyaçe Regaibi      |   |   o Return places orders by position ASC
62f0a53 11 months ago Ilyaçe Regaibi      |   |   o Update PlaceType by adding position & isLastInGroup fields
147e042 11 months ago Ilyaçe Regaibi      |   |   o Update Place entity by adding attributes position & isLastInGroup
```

branch

An active line of development. The most recent commit on a branch is referred to as the tip of that branch.



"master" branch

Common used name for the default branch.

You could use `main` as well if you don't want to use `master`, or any name you want².

² We'll use `master` here as it's easier because I use `master` for ~12 years now.

local repository

The repository on your machine.

remote repository

Identifies your repository on a remote server (like GitHub).

There is *almost always* a local and a remote repositories. It's rare (and dangerous) to only have a local repository. You use the remote as a backup server! What a nice feature! 💪

"origin"

The most common used default remote name. 99% of the time the default remote will be named origin.

master or origin/master?

master ***alone is your local branch named*** master.
origin/master ***is the master branch on the*** origin
remote.

HEAD or head?

HEAD

commit

clone

Visualization

Example repository

tig

module load git/2.27.0-gcc-9.1.0

Mistral DKRZ: /sw/rhel6-x64/vcs/tig-2.2.1

<https://github.com/jonas/tig/releases>

Initialization

git config

ssh key generation

git init

git clone

git status

git log

Protocol

git add

git commit

git push

git fetch

git full

.gitignore

git reset

git checkout

git branch

Safety rules

Do not delete your .git directory!

**Simple
example**

Step 1. Log in to github and create your own private repository.

Step 2. Clone the repository locally and create a .txt
(or .py or .f90) file to add.

Step 3. Adjust the file and make a second commit.

Step 4. Make some changes on github and pull these to your local machines.