











Using git

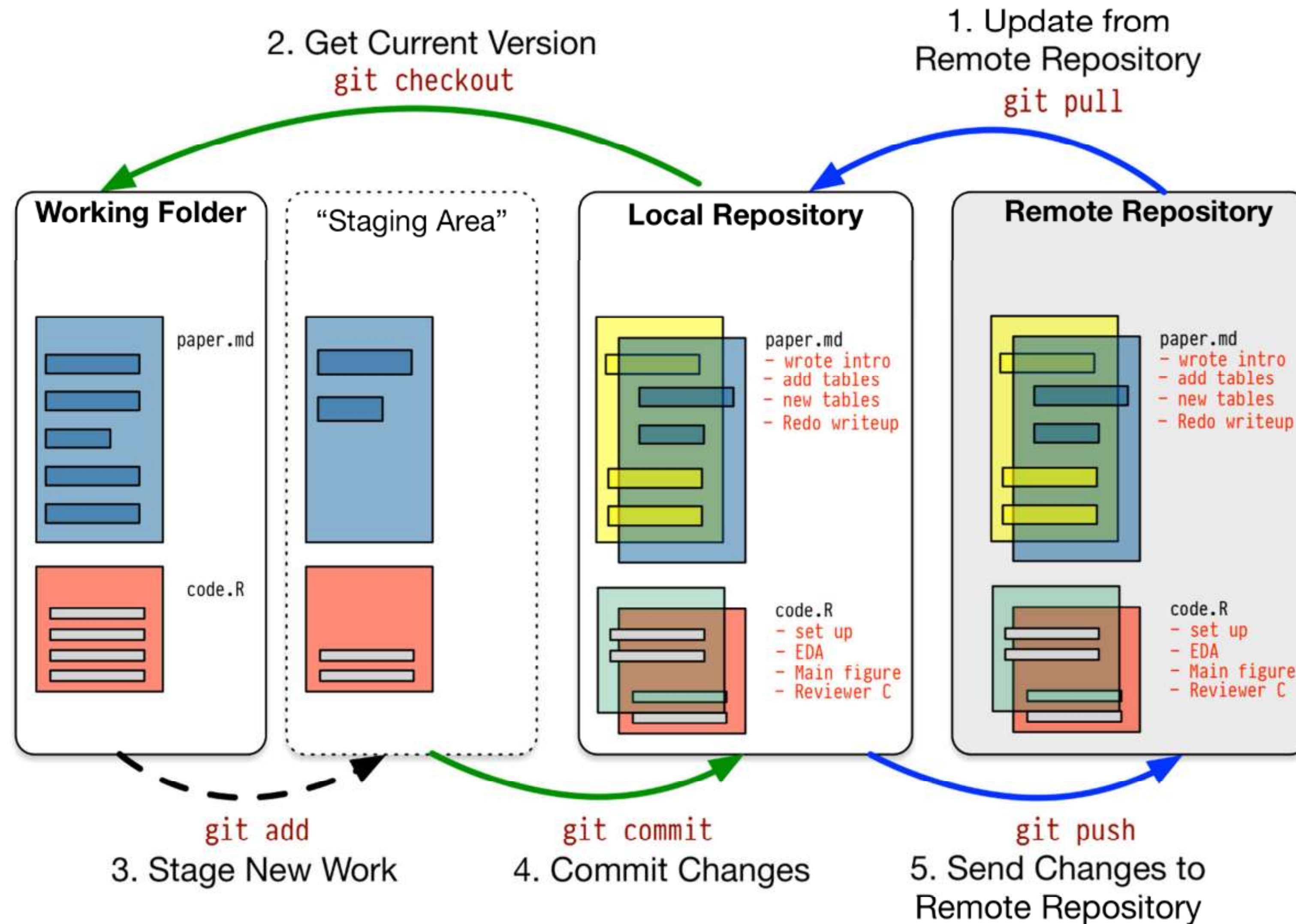
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[@TWlyY29](https://twitter.com/TWlyY29)

Looking familiar?

Name
 Press release for approval.doc
 Press release final.doc
 Press release FINAL VERSION.doc
 Press release FINAL FINAL VERSION.doc
 IMPROVED FINAL PRESS RELEASE.doc
 REVISED APPROVED FINAL PRESS RELEASE.doc
 REVISED APPROVED FINAL PRESS RELEASE v. 2.doc
 !! NEW REVISED APPROVED FINAL PRESS RELEASE v. 2.doc
 !!! REVISED NEW REVISED APPROVED FINAL PRESS RELEASE v. 2.doc
 !!!! Press release as sent.doc

A schematic git workflow



Trunks and Branches

Trunk

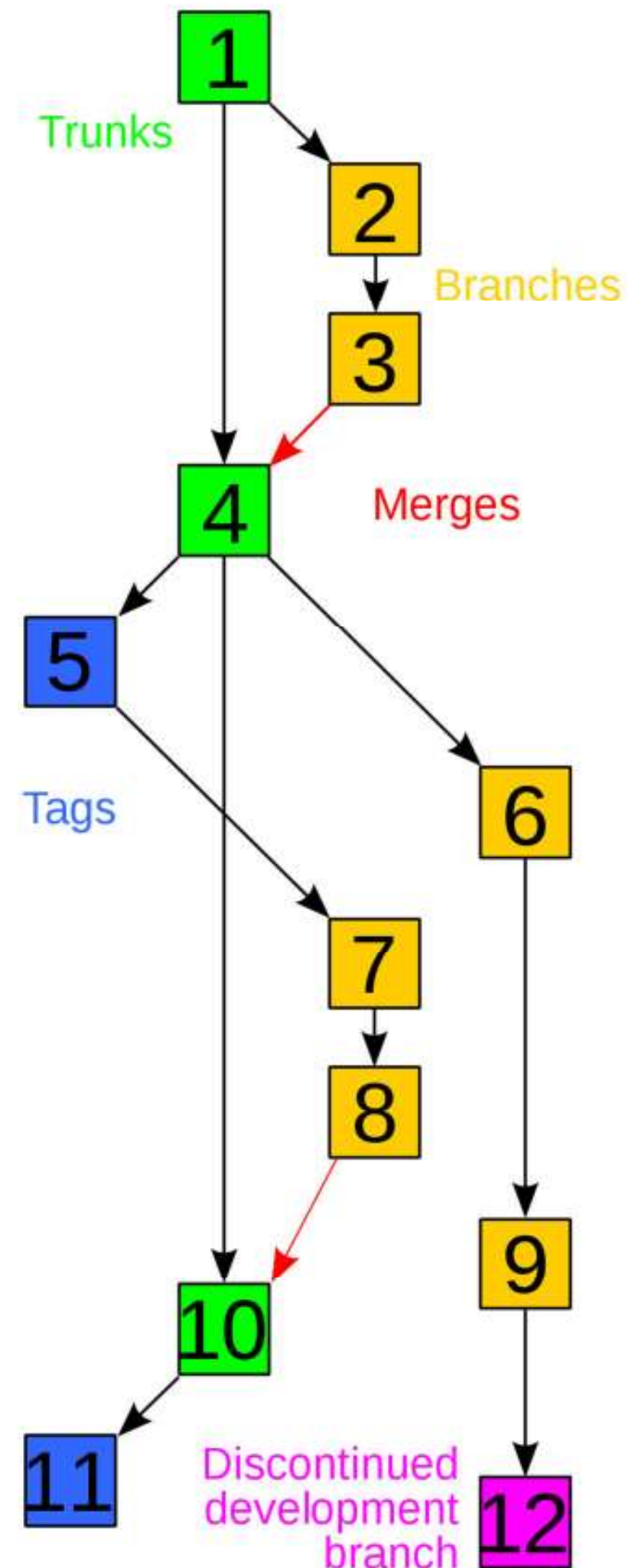
Unnamed branch of a file tree under revision control

Structure

The structure of the revisions is not a tree (although it is often referred to as the revision tree) but a directed acyclic graph.

Tag

A tag assigns a label to a revision (including many files) allowing to directly jump to that revision. Often used to label a specific version of a software.



Branching

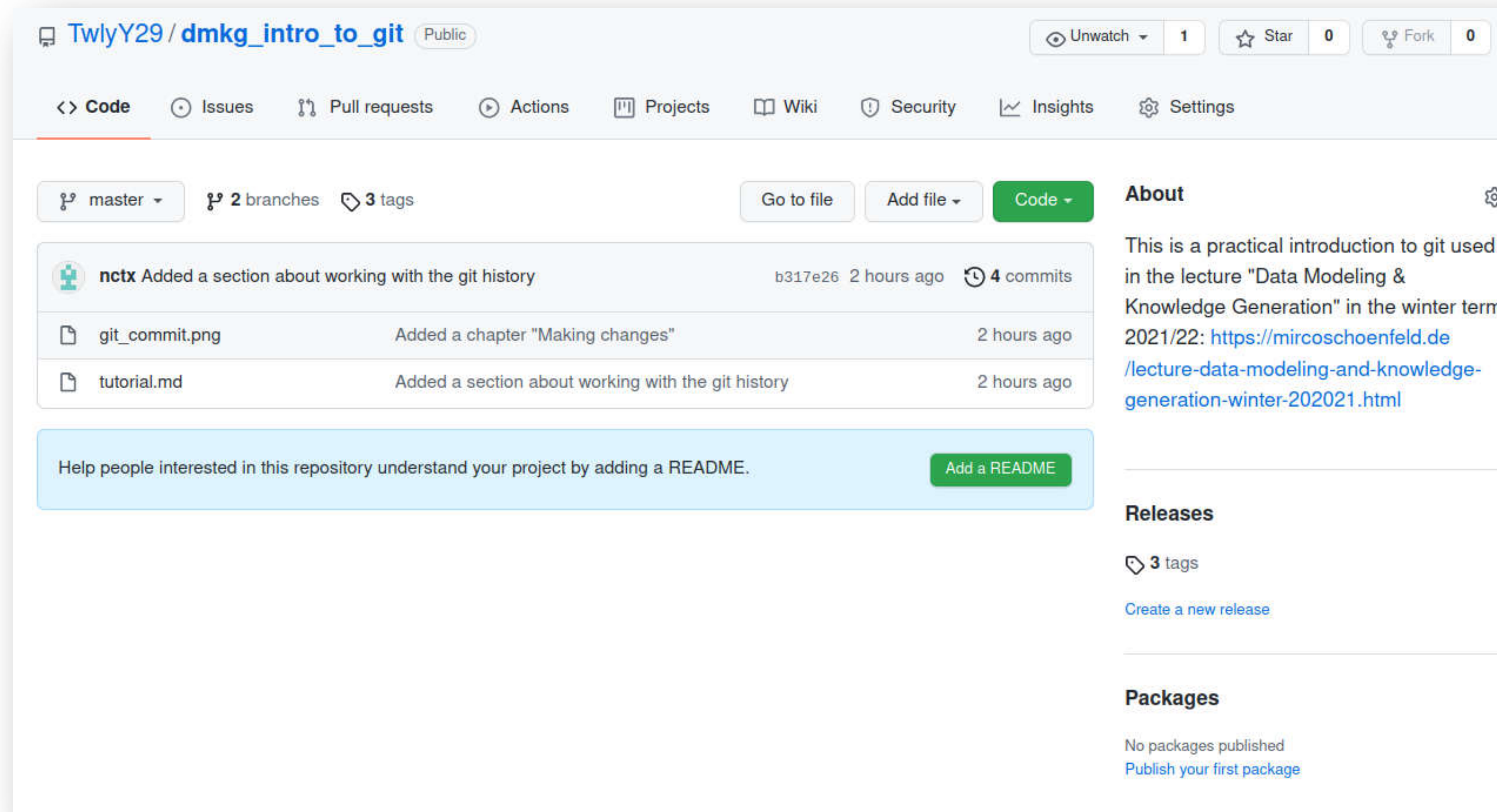
Duplication of an object under version control. Objects can then be modified separately and in parallel so that they become different. These objects are called branches.

Merge

A fundamental operation that reconciles multiple changes made to a version-controlled collection of files. Necessary when files are modified on two independent branches. The result is a single collection of files that contains both sets of changes.

Let's check (g)it out!

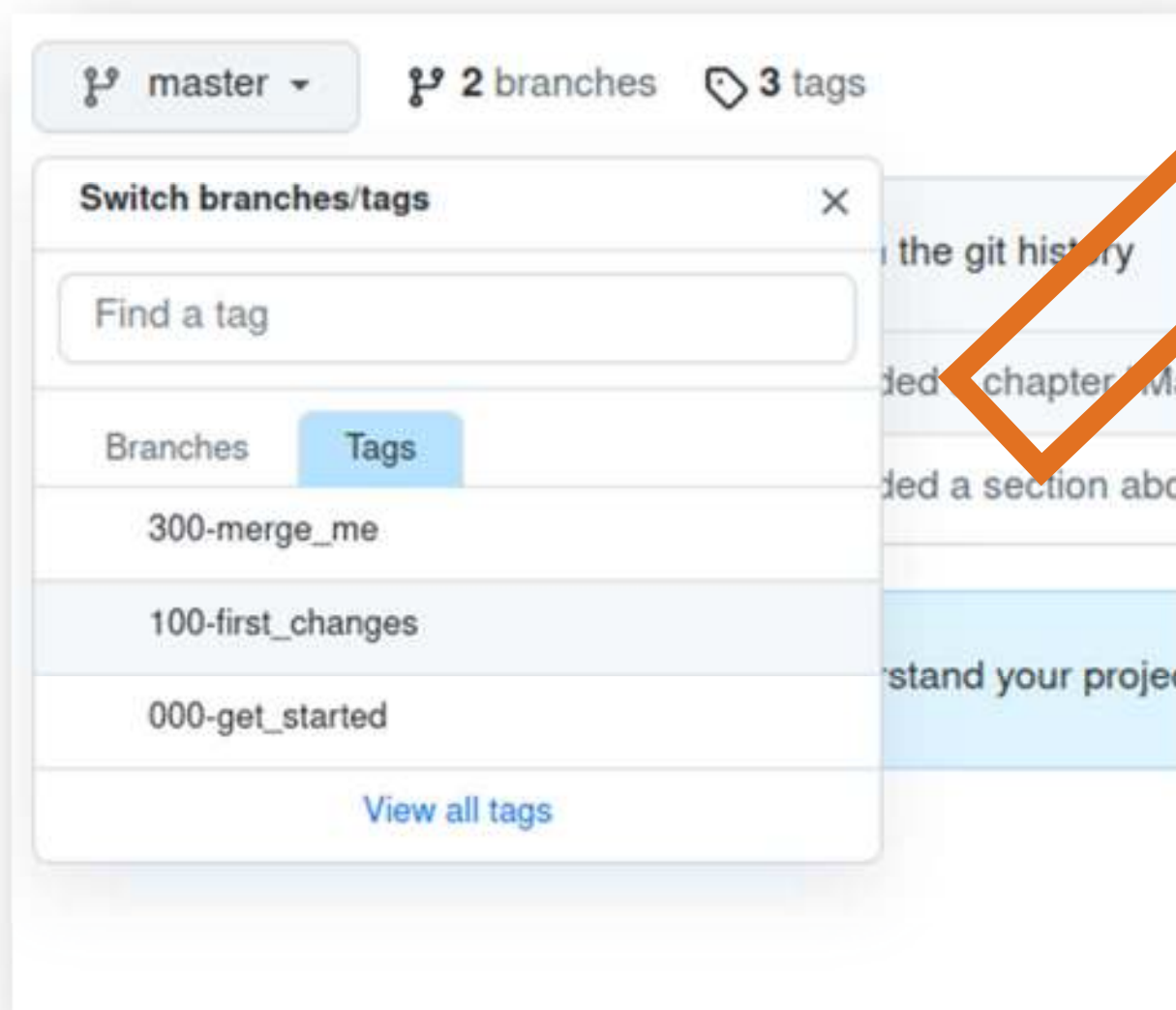
https://github.com/TwlyY29/dmkg_intro_to_git



The screenshot shows the GitHub interface for the repository `TwlyY29/dmkg_intro_to_git`. The repository is public and has 1 watch, 0 stars, and 0 forks. The navigation menu includes Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. The repository is currently on the `master` branch, with 2 branches and 3 tags. The commit history shows three recent commits by user `nctx`:

- Commit `b317e26` (2 hours ago) with 4 commits: "Added a section about working with the git history".
- File `git_commit.png` (2 hours ago): "Added a chapter 'Making changes'".
- File `tutorial.md` (2 hours ago): "Added a section about working with the git history".

A blue banner prompts the user to "Add a README". The right sidebar contains an "About" section with a description of the repository's purpose, a "Releases" section with 3 tags and a link to "Create a new release", and a "Packages" section with no published packages and a link to "Publish your first package".



master 2 branches 3 tags

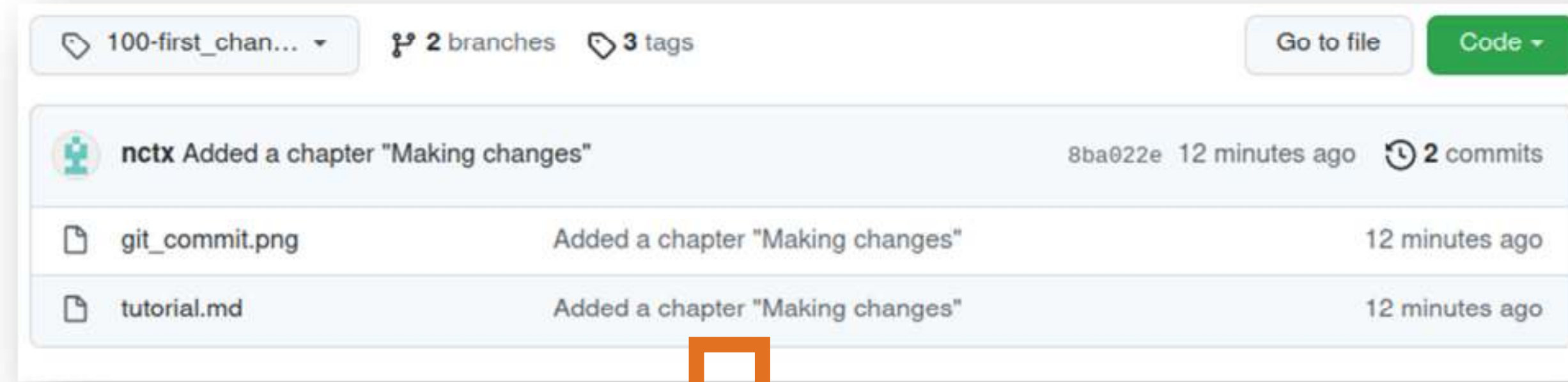
Switch branches/tags

Find a tag

Branches Tags

- 300-merge_me
- 100-first_changes
- 000-get_started

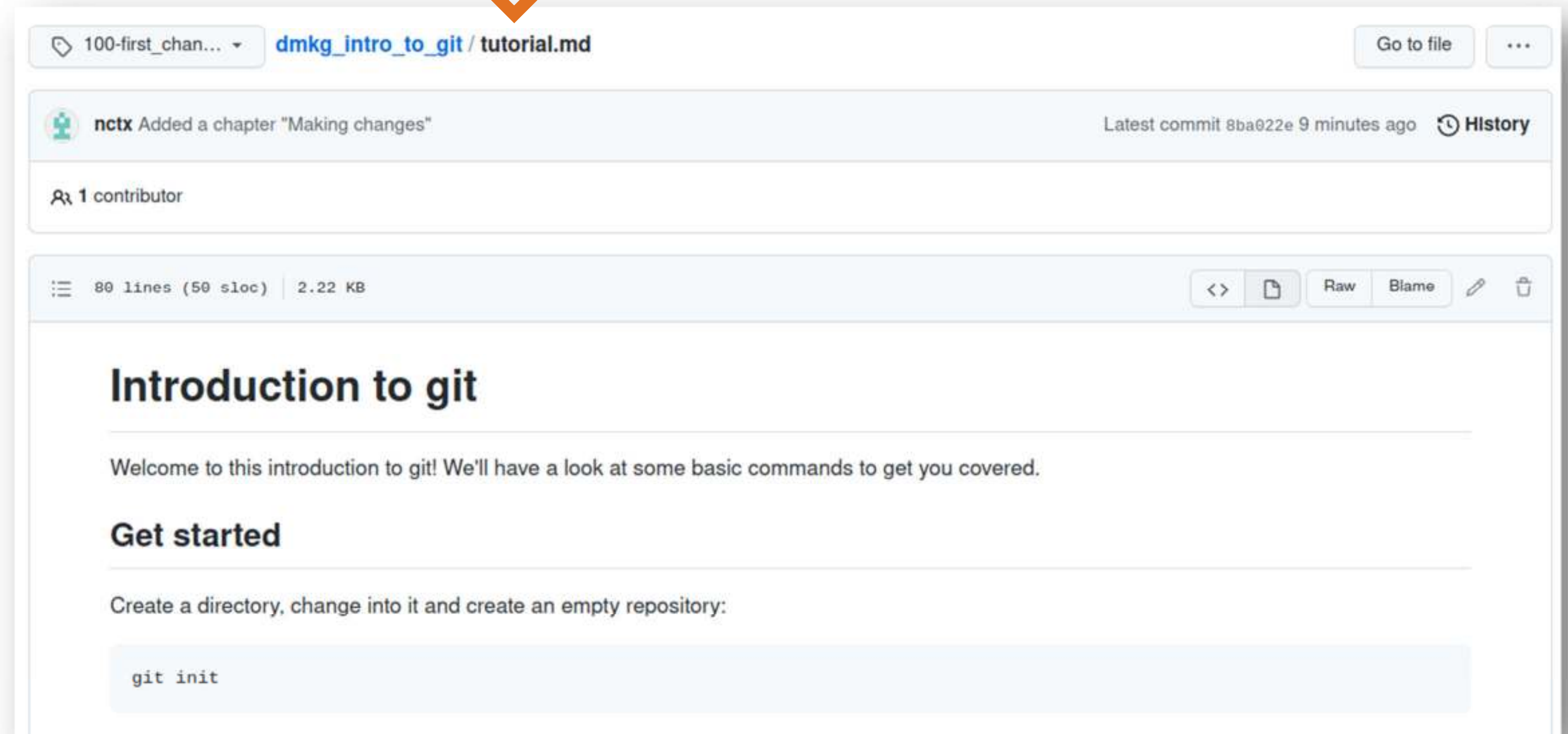
View all tags



100-first_chan... 2 branches 3 tags Go to file Code

nctx Added a chapter "Making changes" 8ba022e 12 minutes ago 2 commits

- git_commit.png Added a chapter "Making changes" 12 minutes ago
- tutorial.md Added a chapter "Making changes" 12 minutes ago



100-first_chan... dmkg_intro_to_git / tutorial.md Go to file ...

nctx Added a chapter "Making changes" Latest commit 8ba022e 9 minutes ago History

1 contributor

80 lines (50 sloc) | 2.22 KB <> Raw Blame

Introduction to git

Welcome to this introduction to git! We'll have a look at some basic commands to get you covered.

Get started

Create a directory, change into it and create an empty repository:

```
git init
```

```
mirco@breadbox: ~  
File Edit View Search Terminal Help  
mirco@breadbox:~$ git --version  
git version 2.25.1  
mirco@breadbox:~$
```

```
mirco@breadbox: ~  
File Edit View Search Terminal Help  
mirco@breadbox:~$ git --version  
git version 2.25.1  
mirco@breadbox:~$ git clone git@github.com:TwlyY29/dmkg_intro_to_git.git
```



```
mirco@breadbox: ~/dmkg_intro_to_git
File Edit View Search Terminal Help
mirco@breadbox:~$ git --version
git version 2.25.1
mirco@breadbox:~$ git clone git@github.com:TwlyY29/dmkg_intro_to_git.git
Cloning into 'dmkg_intro_to_git'...
remote: Enumerating objects: 19, done.
remote: Counting objects: 100% (19/19), done.
remote: Compressing objects: 100% (14/14), done.
remote: Total 19 (delta 6), reused 17 (delta 4), pack-reused 0
Receiving objects: 100% (19/19), 59.55 KiB | 717.00 KiB/s, done.
Resolving deltas: 100% (6/6), done.
mirco@breadbox:~$ cd dmkg_intro_to_git/
mirco@breadbox:~/dmkg_intro_to_git$ ls
git_commit.png  tutorial.md
mirco@breadbox:~/dmkg_intro_to_git$
```

```
mirco@breadbox: ~/dmkg_intro_to_git
File Edit View Search Terminal Help
mirco@breadbox:~/dmkg_intro_to_git$ git checkout 000-get_started
Note: switching to '000-get_started'.

You are in 'detached HEAD' state. You can look around, make experimental
changes and commit them, and you can discard any commits you make in this
state without impacting any branches by switching back to a branch.

If you want to create a new branch to retain commits you create, you may
do so (now or later) by using -c with the switch command. Example:

  git switch -c <new-branch-name>

Or undo this operation with:

  git switch -

Turn off this advice by setting config variable advice.detachedHead to false

HEAD is now at 2c4ca58 initial commit
mirco@breadbox:~/dmkg_intro_to_git$ ls
tutorial.md
mirco@breadbox:~/dmkg_intro_to_git$
```

```
mirco@breadbox: ~/dmkg_intro_to_git
File Edit View Search Terminal Help
mirco@breadbox:~/dmkg_intro_to_git$ git checkout 100-first_changes
Previous HEAD position was 2c4ca58 initial commit
HEAD is now at de8e3cf Added a chapter "Making changes"
mirco@breadbox:~/dmkg_intro_to_git$
```

```
mirco@breadbox: ~/dmkg_intro_to_git
File Edit View Search Terminal Help
mirco@breadbox:~/dmkg_intro_to_git$ git checkout 300-merge_me
Previous HEAD position was de8e3cf Added a chapter "Making changes"
HEAD is now at b317e26 Added a section about working with the git history
mirco@breadbox:~/dmkg_intro_to_git$ git branch -a
* (HEAD detached at 300-merge_me)
  master
  remotes/origin/HEAD -> origin/master
  remotes/origin/branching
  remotes/origin/master
mirco@breadbox:~/dmkg_intro_to_git$ git checkout remotes/origin/branching
Previous HEAD position was b317e26 Added a section about working with the git history
HEAD is now at 987ced0 Added a new section about merging branches
mirco@breadbox:~/dmkg_intro_to_git$ git branch
* (HEAD detached at origin/branching)
  master
mirco@breadbox:~/dmkg_intro_to_git$ git switch master
Previous HEAD position was 987ced0 Added a new section about merging branches
Switched to branch 'master'
Your branch is up to date with 'origin/master'.
mirco@breadbox:~/dmkg_intro_to_git$
```

```
mirco@breadbox: ~/dmkg_intro_to_git
File Edit View Search Terminal Help
mirco@breadbox:~/dmkg_intro_to_git$ git merge origin/branching
Auto-merging tutorial.md
CONFLICT (content): Merge conflict in tutorial.md
Automatic merge failed; fix conflicts and then commit the result.
mirco@breadbox:~/dmkg_intro_to_git$ git mergetool tutorial.md
```

```
mirco@breadbox: ~/dmkg_intro_to_git
File Edit View Search Terminal Help
mirco@breadbox:~/dmkg_intro_to_git$ git commit -am "merged"
```

dmkg_intro_to_git: All files - gitk

File Edit View Help

master merged
remotes/origin/branching Added a new section about merging branches
Added a new section about branching in a new branch called 'branching'
300-merge me remotes/origin/master Added a section about working with
Added documentation of advanced features. Most importantly, this includes rev
tag... Added a chapter "Making changes"
tag... initial commit

Mirco Schoenfeld <mirco.schoenfeld@uni-bayreuth.de> 2021-11-25 09:52:53
 Mirco Schoenfeld <mirco.schoenfeld@uni-bayreuth.de> 2021-11-25 09:24:31
 Mirco Schoenfeld <mirco.schoenfeld@uni-bayreuth.de> 2021-11-25 09:24:28
 Mirco Schoenfeld <mirco.schoenfeld@uni-bayreuth.de> 2021-11-25 09:24:30
 Mirco Schoenfeld <mirco.schoenfeld@uni-bayreuth.de> 2021-11-25 09:24:30
 Mirco Schoenfeld <mirco.schoenfeld@uni-bayreuth.de> 2021-11-25 09:24:25
 Mirco Schoenfeld <mirco.schoenfeld@uni-bayreuth.de> 2021-11-25 09:24:25

SHA1 ID: `2bf676365cfb16a4009d7468aaaec7621090bc33` Row 1 / 7

Find commit containing: Exact All fields

Search Patch Tree

Diff Old version New version Lines of context:

Author: Mirco Schoenfeld <mirco.schoenfeld@uni-bayreuth.de>
 Committer: Mirco Schoenfeld <mirco.schoenfeld@uni-bayreuth.de>
 Parent: [0a7aa9cdd58f563912f02685244080d273497181](#) (Add)
 Parent: [da68a3bff3e942349597ddab2143d1d4499e8ded](#) (Add)
 Branch: [master](#)
 Follows: [300-merge_me](#)
 Precedes:

merged

----- tutorial.md -----

index 0d105a2,0ec2fe9..b543ce2

@@@ -77,131 -77,129 +77,257 @@@ This automatically ad

-

-

+++
 +## Reverting last changes
 +
 +In case you want to undo all the most recent change
 +
 +1. Make sure that your changes are not staged for c
 +
 +2. You have three options:
 + 1. To overwrite local changes:

Thanks.

mirco.schoenfeld@uni-bayreuth.de