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by @masukomi

Pre-requisites

(make the current branch show up in your prompt)

- Google git prompt
 - You should end up here: [https://github.com/git/git/
blob/master/contrib/completion/git-prompt.sh](https://github.com/git/git/blob/master/contrib/completion/git-prompt.sh)
- Click “RAW” & Download it.
- follow the instructions under “To enable”

Terminology

- git - a distributed version control system that lives on your computer
- GitHub - a company that hosts git repositories in the cloud

One Time Config:

Tell git who to credit your commits to

```
$ git config --global user.name "John Doe"
```

```
$ git config --global user.email johndoe@example.com
```

On a work computer this should be your work email and the name you use at work.

One Time Config:

Go to

<https://github.com/settings/emails>

and make sure GitHub knows about the email address
you just told git about.

Why use Version
Control Systems?

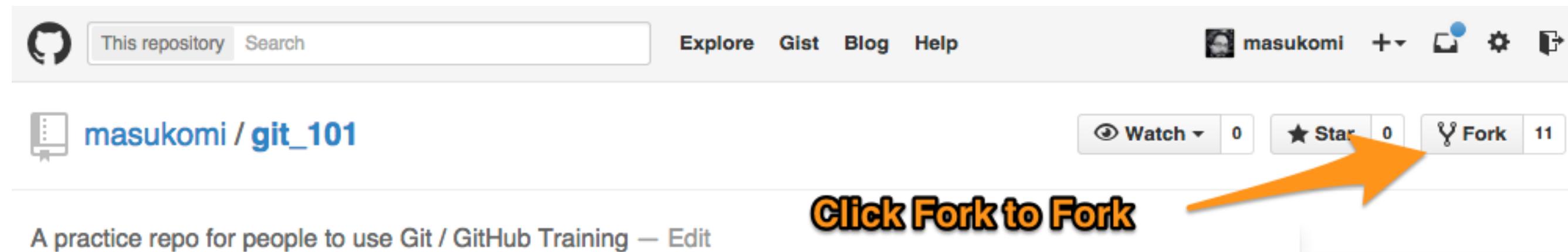
Working With Existing Code

Let's do it!

- I. go to http://github.com/masukomi/git_101

Let's do it!

1. Go to http://github.com/masukomi/git_101
2. Fork the repo



Let's do it!

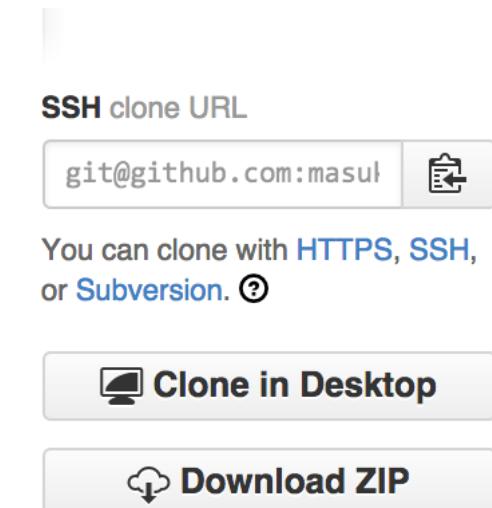
1. Go to [http://github.com/
masukomi/git_101](http://github.com/masukomi/git_101)

2. Fork the repo

3. Clone it locally

Get the SSH url from your fork on
GitHub

Don't click the buttons!

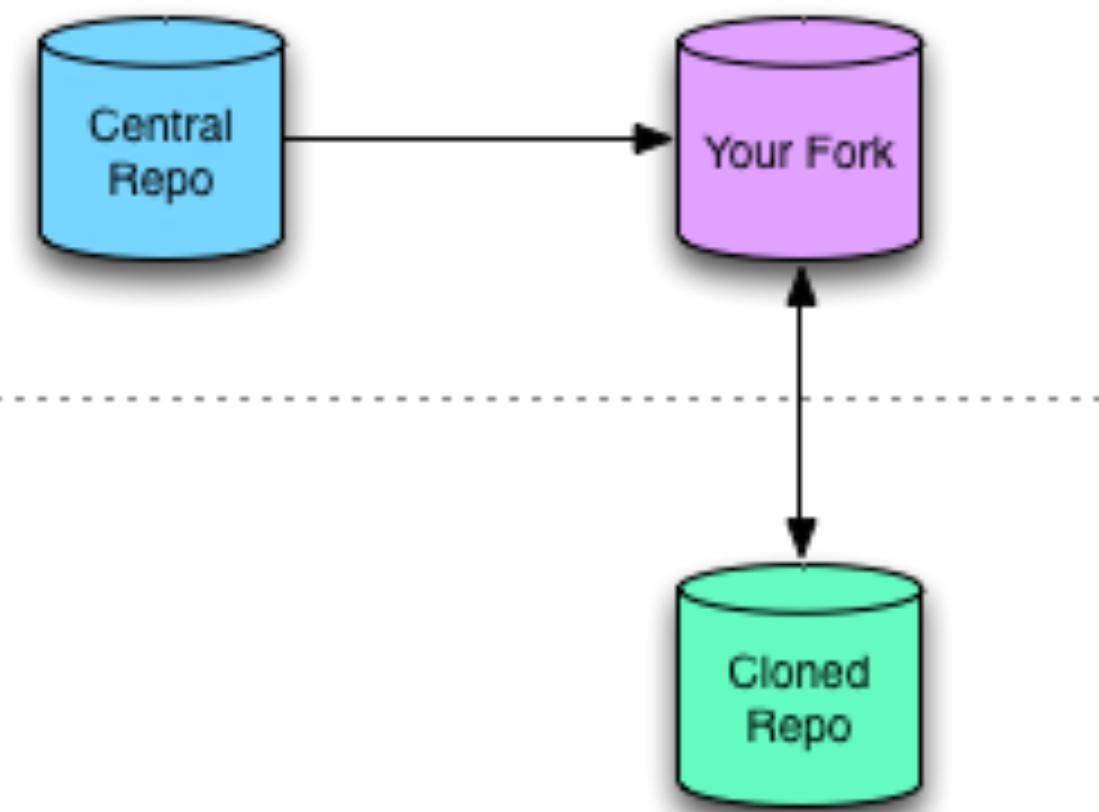


Status Check

Right now, this is how the repos are configured.

On GitHub

On Your
Computer



Terminology

- (git) repository (A.K.A. repo) - a place that stores your changes.
- (git) branch - a series of commits that have diverged from other branches (typically to be merged back later)

A git repo is just a big Directed Acyclic Graph of commits.

Let's do it!

4. Make a topic branch

```
git checkout -b adding_myself_to_alumni_file
```

This will create a topic branch and check it out
(switch to it).

Don't Use this:

git branch <branchname>

It leaves open the possibility of working on the wrong
branch.

Q: Why use topic branches?

Let's do it!

1. Go to http://github.com/masukomi/git_101
2. Fork the repo
3. Clone it locally
4. make a topic branch
5. Add yourself to the alumni.md file

Let's do it!

I. Prep your commit

- git status
- to see what's changed in your repo

telling git about changes / additions

git add . # never use this

git add -u # adds all changes to files already tracked

git add path/to/file.md

adds changes to that file

OR simply tells git to start tracking new file

git add -i

much interactive coolness

Let's do it!

I. Prep your commit

- git status
 - to see what's changed in your repo
- run the git add variant of your choice

One time (optional) config:

The default editor

git commit will open up your default editor (usually vim). Override by:

- * changing \$EDITOR
- * leveraging the global git config:
 - * git config --global core.editor open
- * “open” is a system app on OS X. Replace with whatever you want.

Note:

If you're using a non-terminal editor like Sublime you'll make your changes, save, and then close the window.

Closing the window causes git to ingest your changes.

Before we commit...

What are the key parts
of a commit message?

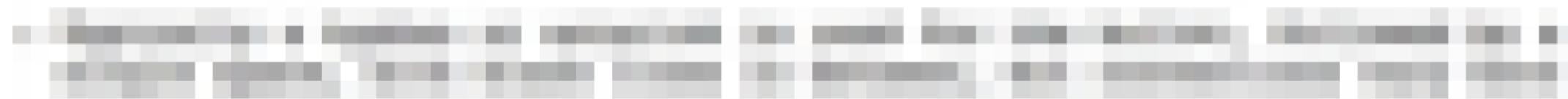
Short Subject Line (shoot for 50 chars)

CRITICAL WHITESPACE

Description Of Change (wrapped at 72 chars)



Bullet Points



Read Tim Pope's "A Note About Git Commit Messages"

Key aspects of
the subject line?

Subject should:

1. Give coworkers enough info to determine if your changes have any impact on them.
2. Never force coworkers to look at code to have a clue what you did.
3. Be useful when trying to figure out what change broke things.

Body should:

- Explain and or / fill in the details not addressed in the subject.
- Be wrapped at ~74 chars.

and should not

- include a list of all the changed files

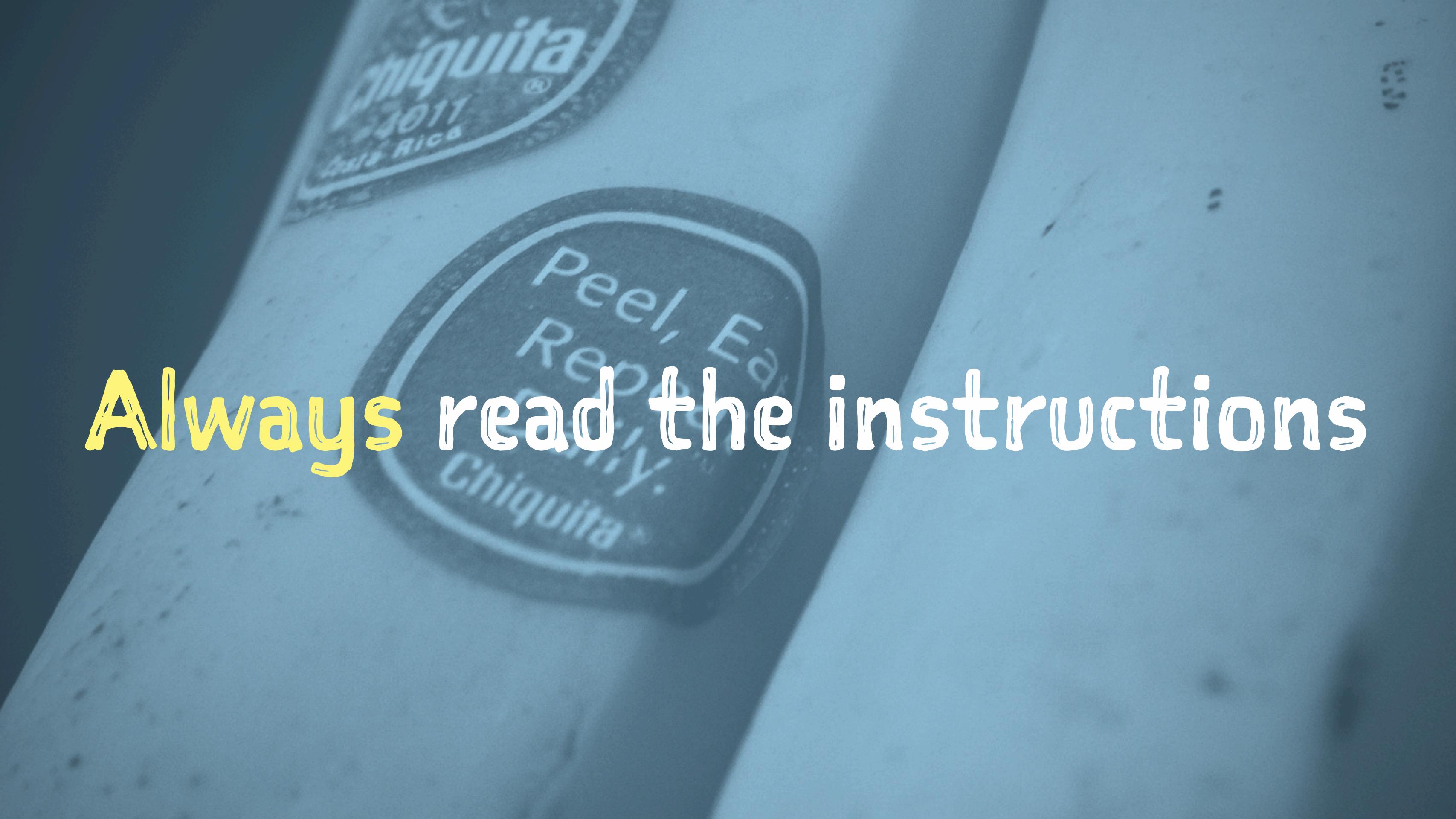
Back to our changes

```
git status  
    # to double check what's about to be committed  
git commit  
    # to commit it  
    # *not* `git commit -m` (that leads to bad habits)
```

Things to watch out for:

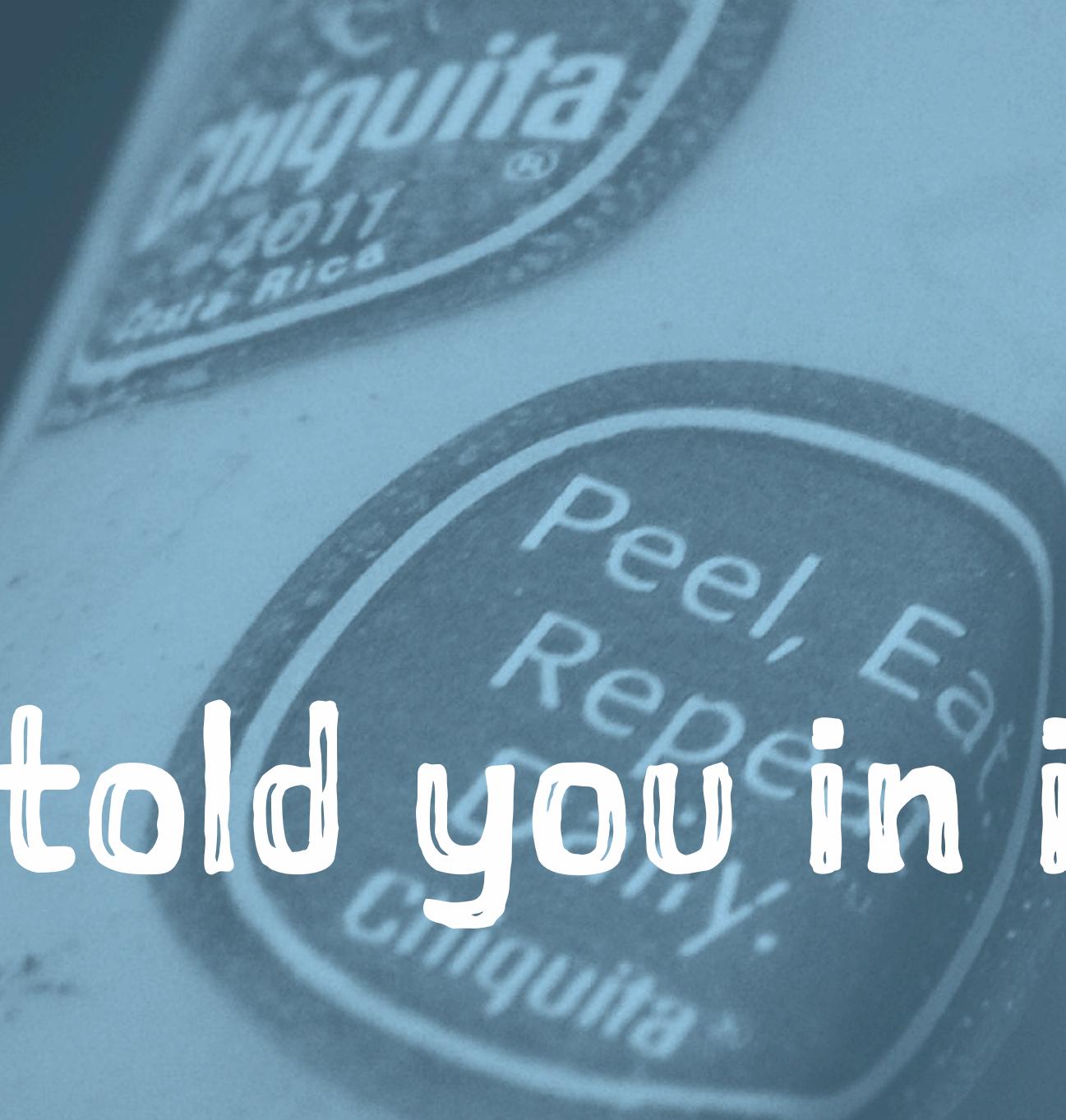
- “Changes not staged for commit”
- “Changes to be committed” <-- it should show up there

Did it work?



Always read the instructions

git told you in its response



check the log.

Git History

(the most underappreciated bit of git)

Default Behavior

git log

```
1. krhodes@rmbp15-2013-08.local: /Users/krhodes/workspace/reference/rails (git)
commit 4b4dca48a590fe9380cc0b727788a36a8c40296f
Merge: 48f2620 3e296e7
Author: Abdelkader Boudih <terminale@gmail.com>
Date:   Sat Nov 15 07:10:35 2014 +0000

    Merge pull request #17626 from y-yagi/queue_adapters_doc

    [ci skip] add "Qu" to Backends Features list

commit 3e296e7a3a43099321d80c6d92a326e738b8322a
Author: yuuji.yaginuma <yuuji.yaginuma@gmail.com>
Date:   Sat Nov 15 13:48:03 2014 +0900

    [ci skip] add "Qu" to Backends Features list

commit 48f2620df98e6926d38b8951087ab1bbc512580c
Author: Sean Griffin <sean@thoughtbot.com>
Date:   Fri Nov 14 12:37:25 2014 -0700

    Don't freeze the same hash we use for memoization

commit 895a53e7161e9bdc6285fe03f16b49ec74972416
Author: Sean Griffin <sean@thoughtbot.com>
Date:   Fri Nov 14 12:02:05 2014 -0700

    Allow `LazyAttributeHash` to be marshalled

    `default_proc` makes a hash unmarshallable, and adds unnecessary
    overhead. Since we control all access to the hash, let's just handle it
:[]
```

Just the subjects

git log --oneline

```
2. krhodes@rmbp15-2013-08.local: /Users/krhodes/workspace/reference/javascript/jquery-pjax (less)
08a785d Merge pull request #353 from bfrohs/fileFields
c7b4457 Switch comparison of method so "PATCH" is included
5089a18 Merge pull request #376 from VesQ/patch-1
318724b Indicate MIT license in source code
137733f Have minifiers retain the copyright notice in source
e7c6462 Fix handling `<script src>` tags with no `type` attribute
863b802 Fix pjax on iOS Simulator
e3a93c9 Merge pull request #410 from brigade/trim-cache
a62cc86 Document `$.pjax.reload` function
efe7c5c Merge pull request #433 from defunkt/options-docs
ab71fed Improve pjax function synopsis and :memo: the options
c7fc4fc Fix curl download instructions
e4fed72 Split up and simplify maxCacheLength tests
d6156db Trim cache length in cachePop, not just cachePush
cc0dd17 pjax 1.9.2
299587e Merge pull request #403 from defunkt/before-replace-event-tweaks
9baf0ac Fix previousState scope to success closure
5e563fb Move state and previousState to event props
85656fd Add previous state to beforeReplace event
ee0887c Ensure pjax.state is consistent before pjax:beforeReplace event
fc4b710 pjax 1.9.1
a1dedc4 Ignore gemfile
716efd5 pjax 1.9.0
a200310 Merge branch 'before-replace'
:[]
```

What files changed?

git log --stat

```
1. krhodes@rmbp15-2013-08.local: /Users/krhodes/workspace/reference/rails (less)
commit 0f29c216074c5da6644feddb5184c4881c078b0d
Author: Sean Griffin <sean@thoughtbot.com>
Date:   Fri Nov 14 11:20:28 2014 -0700

    Reduce the amount of work performed when instantiating AR models

    We don't know which attributes will or won't be used, and we don't want
    to create massive bottlenecks at instantiation. Rather than doing *any*
    iteration over types and values, we can lazily instantiate the object.

    The lazy attribute hash should not fully implement hash, or subclass
    hash at any point in the future. It is not meant to be a replacement,
    but instead implement its own interface which happens to overlap.

    activerecord/lib/active_record/attribute_methods/primary_key.rb |  1 +
    activerecord/lib/active_record/attribute_set.rb                 | 14 +-----
    activerecord/lib/active_record/attribute_set/builder.rb        | 78 ++++++-----+
    activerecord/lib/active_record/core.rb                         |  2 --
    activerecord/lib/active_record/model_schema.rb                |  2 +-+
    activerecord/test/cases/attribute_set_test.rb                 |  9 +++++
6 files changed, 79 insertions(+), 27 deletions(-)

commit 70d1b5a7f8e25b077168deaf592e0e58c3f2bdd1
Author: Sean Griffin <sean@thoughtbot.com>
Date:   Fri Nov 14 10:45:53 2014 -0700

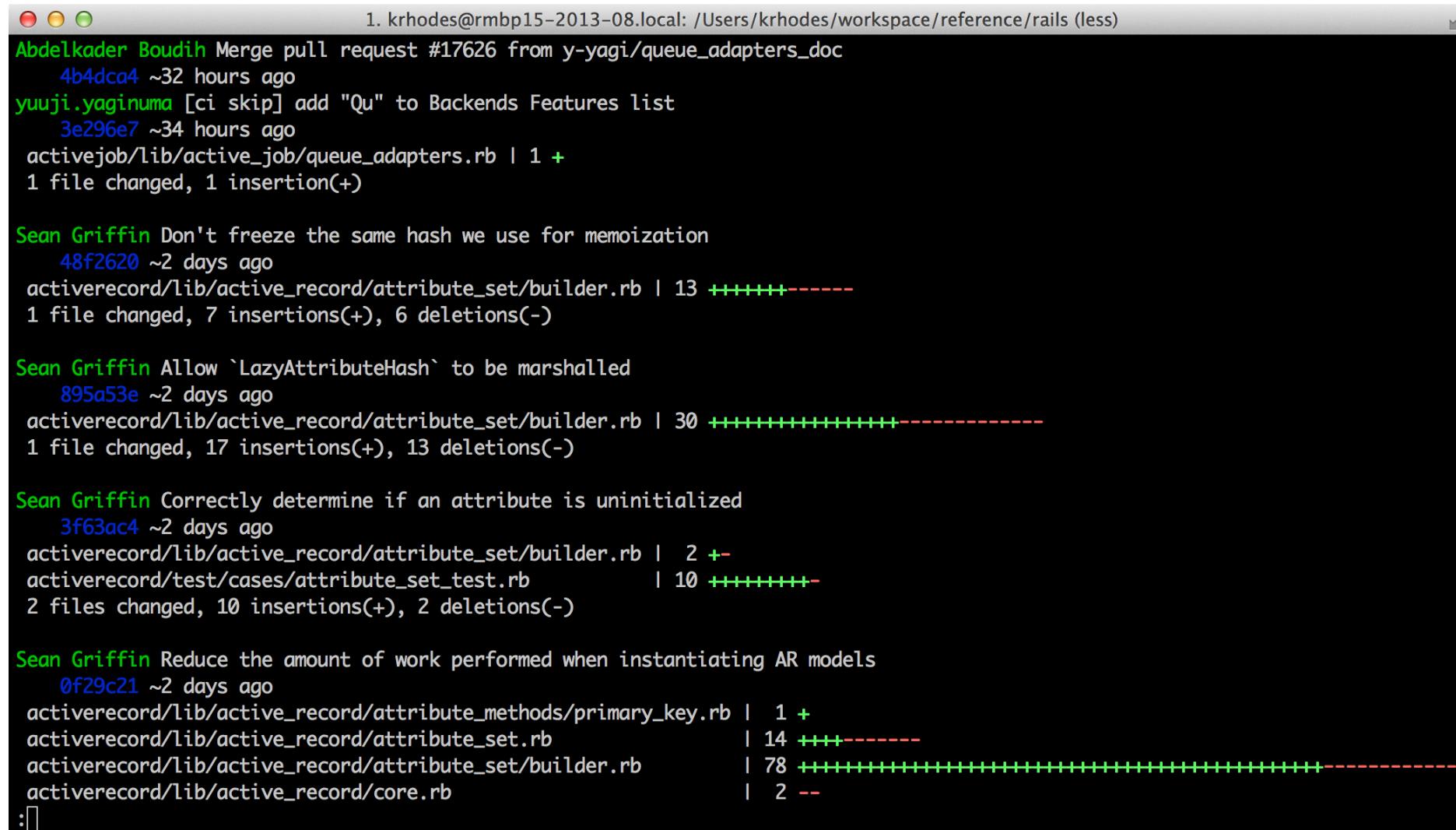
    Revert "Improve performance of AR object instantiation"

    This reverts commit 8fee923888192a658d8823b31e77ed0683dfd665.

:[]
```

Something totally custom:

```
git log --pretty=format:'%Cgreen%an%Creset %s%n      %Cblue%h%Creset %<(20)~%ar'\n--stat
```



1. krhodes@rmbp15-2013-08.local: /Users/krhodes/workspace/reference/rails (less)

```
Abdelkader Boudih Merge pull request #17626 from y-yagi/queue_adapters_doc
  4b4dca4 ~32 hours ago
yuuji.yaginuma [ci skip] add "Qu" to Backends Features list
  3e296e7 ~34 hours ago
activejob/lib/active_job/queue_adapters.rb | 1 +
1 file changed, 1 insertion(+)

Sean Griffin Don't freeze the same hash we use for memoization
  48f2620 ~2 days ago
activerecord/lib/active_record/attribute_set/builder.rb | 13 +++++-----
1 file changed, 7 insertions(+), 6 deletions(-)

Sean Griffin Allow `LazyAttributeHash` to be marshalled
  895a53e ~2 days ago
activerecord/lib/active_record/attribute_set/builder.rb | 30 ++++++-----+
1 file changed, 17 insertions(+), 13 deletions(-)

Sean Griffin Correctly determine if an attribute is uninitialized
  3f63ac4 ~2 days ago
activerecord/lib/active_record/attribute_set/builder.rb |  2 +-+
activerecord/test/cases/attribute_set_test.rb           | 10 ++++++-
2 files changed, 10 insertions(+), 2 deletions(-)

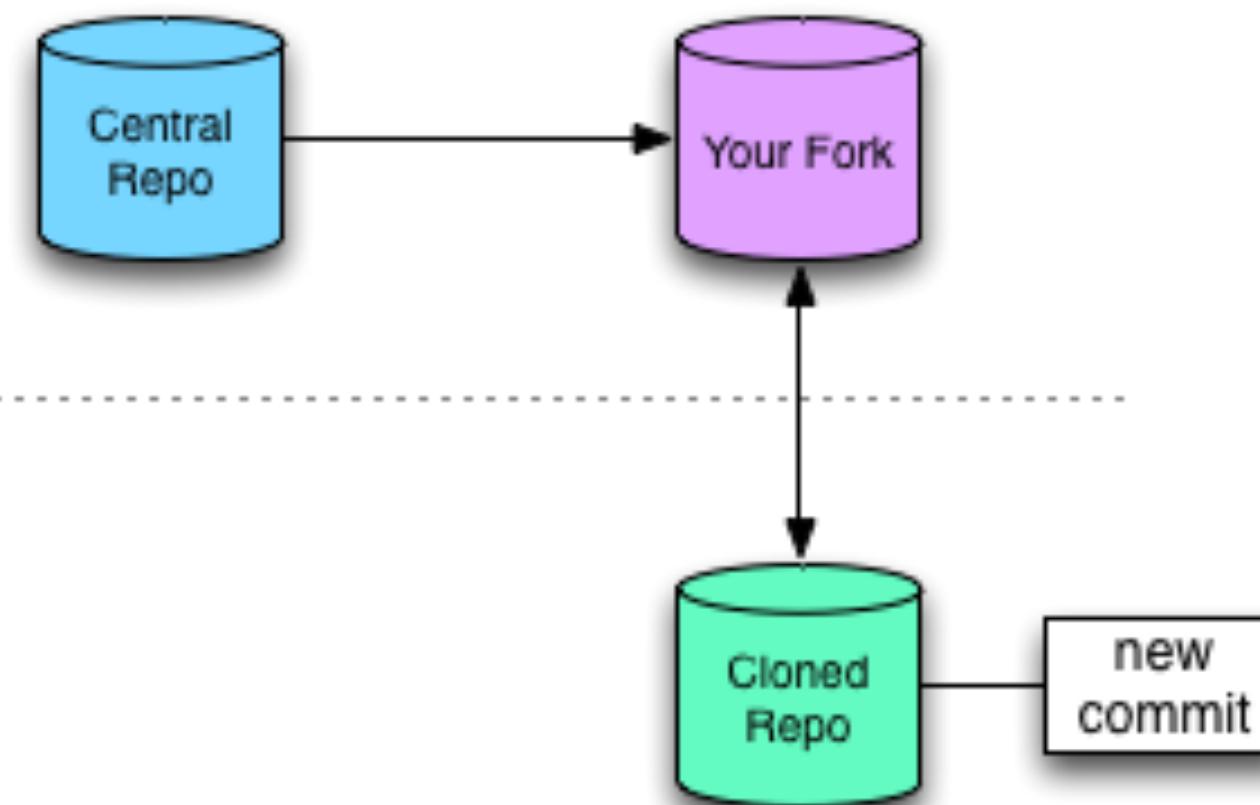
Sean Griffin Reduce the amount of work performed when instantiating AR models
  0f29c21 ~2 days ago
activerecord/lib/active_record/attribute_methods/primary_key.rb |  1 +
activerecord/lib/active_record/attribute_set.rb           | 14 +-----
activerecord/lib/active_record/attribute_set/builder.rb     | 78 ++++++-----+
activerecord/lib/active_record/core.rb                  |  2 --
:|
```

Status Check

Right now, this is the state of things

On GitHub

On Your
Computer





Git never goes outside without your
say-so

Push it!

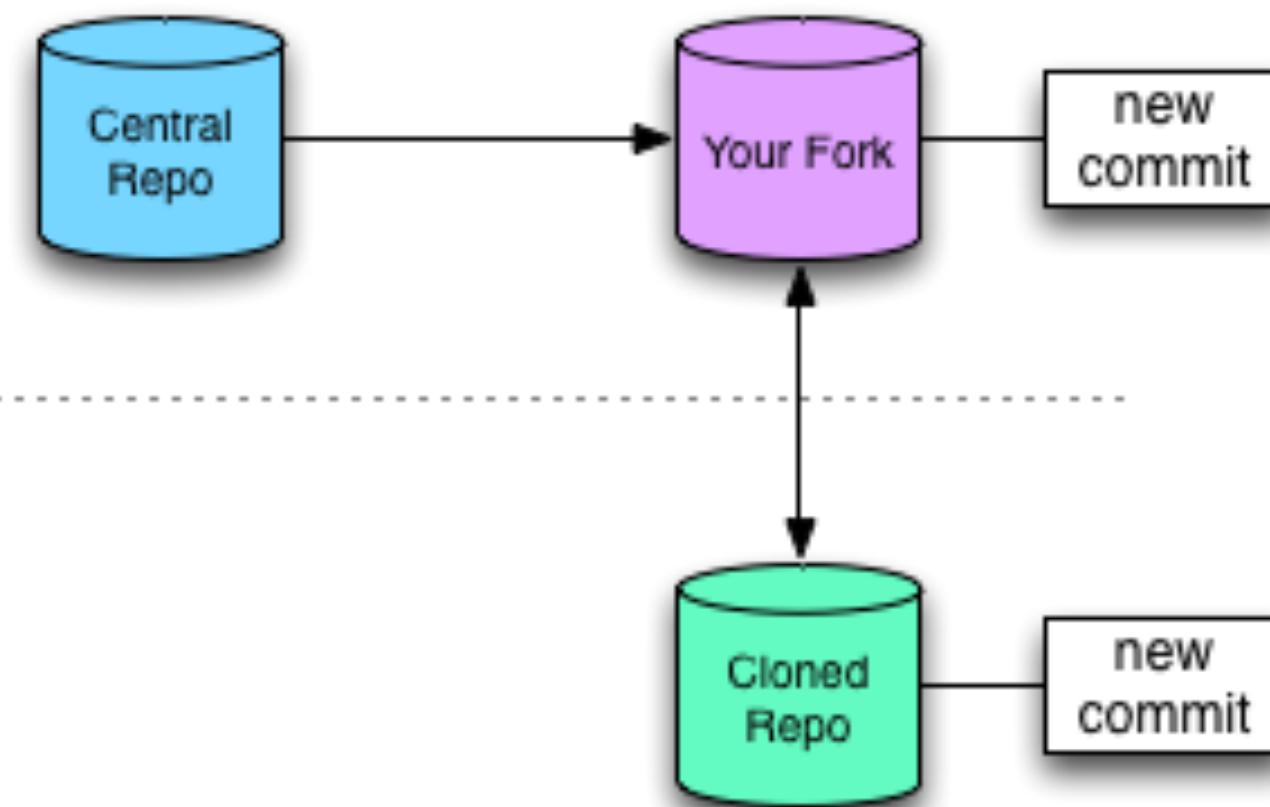
```
git push origin <my_branch_name>
```

Status Check

Right now, this is the state of things

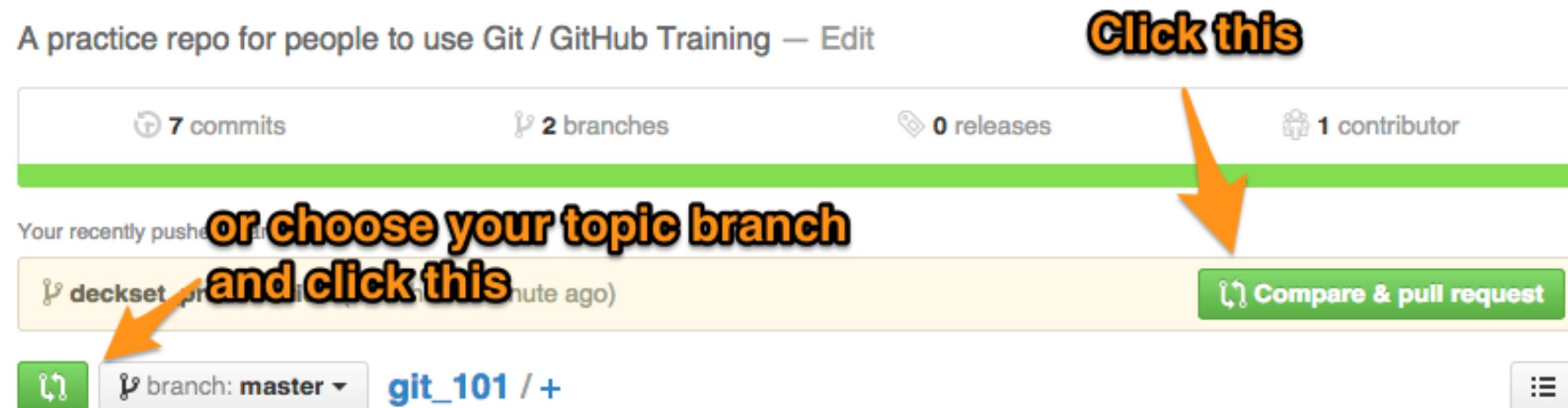
On GitHub

On Your
Computer



Now Make a Pull Request

Go to your fork on GitHub



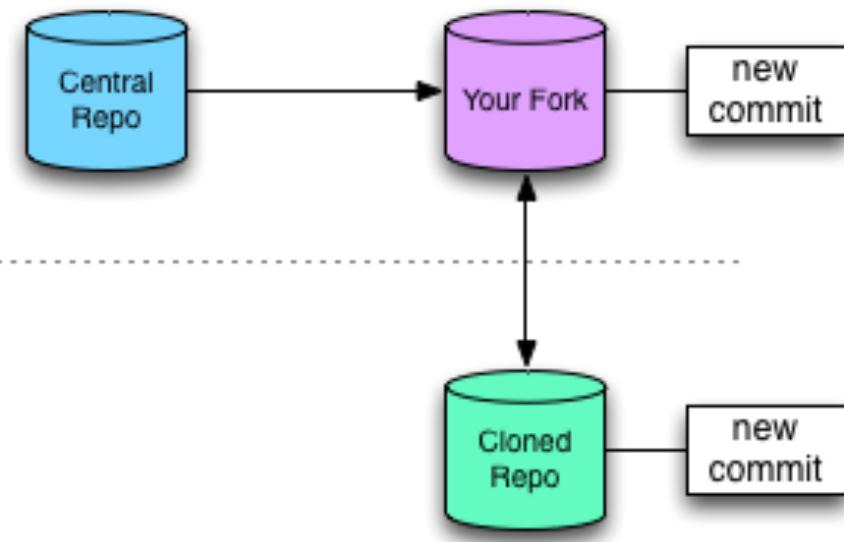
(docs are here)

Q: How do you know your changes
don't conflict with others?

A: merge them
& see what happens.

Q: How do we get other people's changes?

On GitHub



On Your
Computer

First we need to connect your local repo with the upstream.

Terminology

- **remote repository** - any repo that is connected to the current repo



All Repos Are Created Equal

run this

```
git remote -v
```

You'll see something like

```
$ git remote -v
origin  git@github.com:my_username/git_101.git (fetch)
origin  git@github.com:my_username/git_101.git (push)
```

Adding a second remote

```
git remote add <name for remote> <SSH url of remote>
```

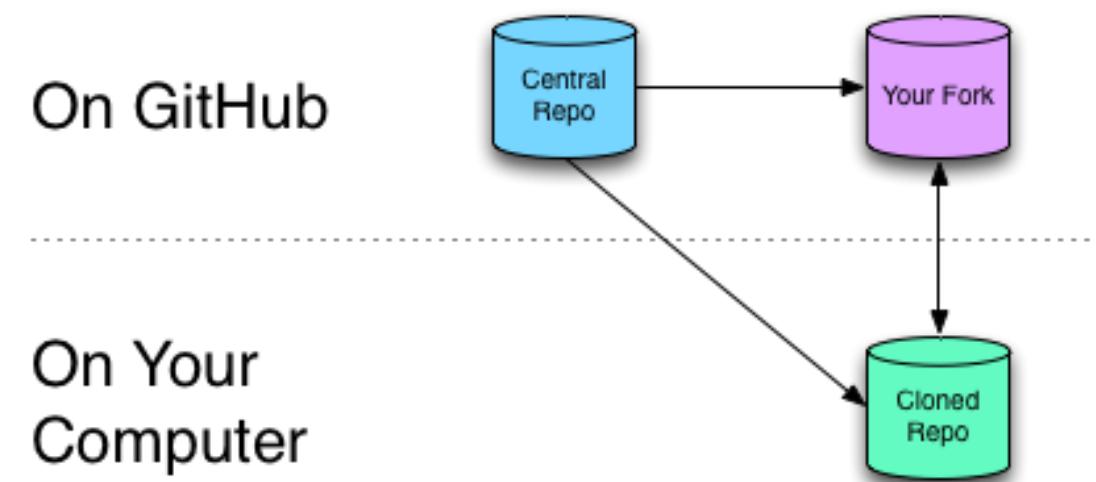
Let's do this

```
git remote add upstream git@github.com:masukomi/git_101.git
```

Don't type that SSH url. Copy it from the repo you want to be "upstream".

Status Check

Right now, this is how the repos are configured.



Even if you have permission to push to the “central” repo you never should. Use a PR instead.

Pulling Down changes

```
git fetch <repo or --all>  
git pull <repo> <branch>
```

Note:

This is one of the 2 times when git will talk to the outside world.

never
git push upstream <anything>

Moving / Renaming a file

```
git mv path/to/file.txt new_path/to/files_new_name.txt
```

That moves / renames the file, & adds it to the index.

You still need to commit the change.

Removing a file

```
git rm path/to/file.txt
```

That deletes the file, and tells git about the deletion.

You still need to commit the change.



Git is very careful with your data



Git will police your actions

Things that can hurt others:

- pushing to the "central" repo with force (-f)

Things that can hurt you:

- git reset --hard <anything>
- general stupidity

If your coworkers have pulled
recently anything is recoverable.

thank you

Questions?

@masukomi on twitter

Image Credits

- Bubbles on her fingers by cc-nd 2.0 Rachel
- silence by nc-nd-2.0 Alberto Oritz
- equality by nc-nc-nd 2.0 Paul Simpson
- Instructions for monkeys by cc-by-2.0 Jackie
- Motorcycle Police by-nc-2.0 Bill Dickinson

