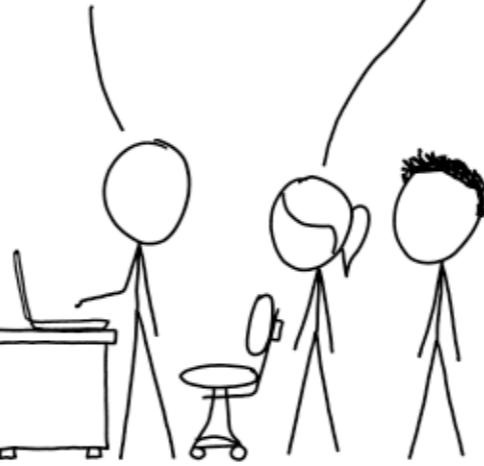


THIS IS GIT. IT TRACKS COLLABORATIVE WORK
ON PROJECTS THROUGH A BEAUTIFUL
DISTRIBUTED GRAPH THEORY TREE MODEL.

COOL. HOW DO WE USE IT?

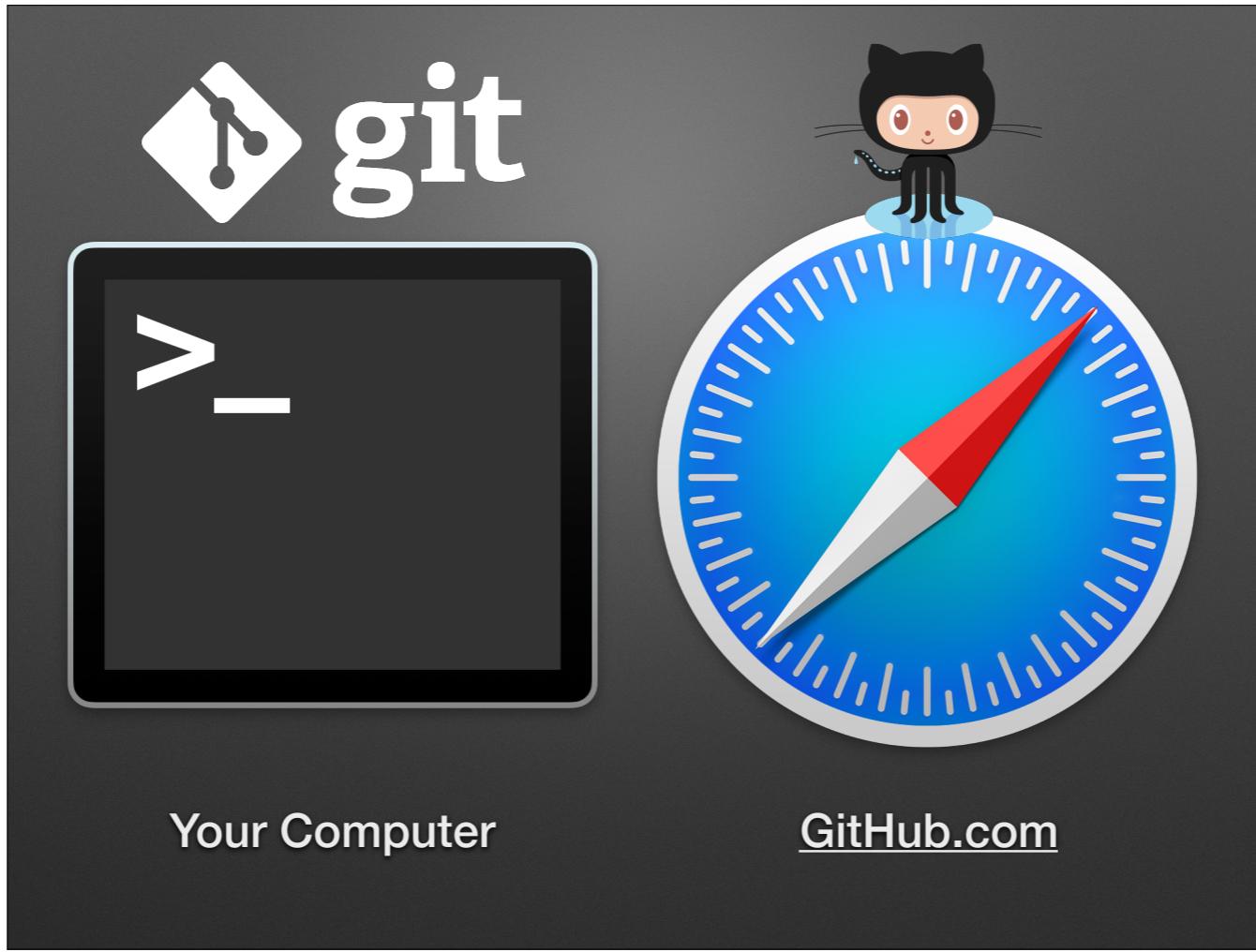
NO IDEA. JUST MEMORIZIZE THESE SHELL
COMMANDS AND TYPE THEM TO SYNC UP.
IF YOU GET ERRORS, SAVE YOUR WORK
ELSEWHERE, DELETE THE PROJECT,
AND DOWNLOAD A FRESH COPY.



Intro slide for humor.



We have Git and GitHub (this is an OctoCat)



Git is a tool, that lives on your computer, like word, or ruby.

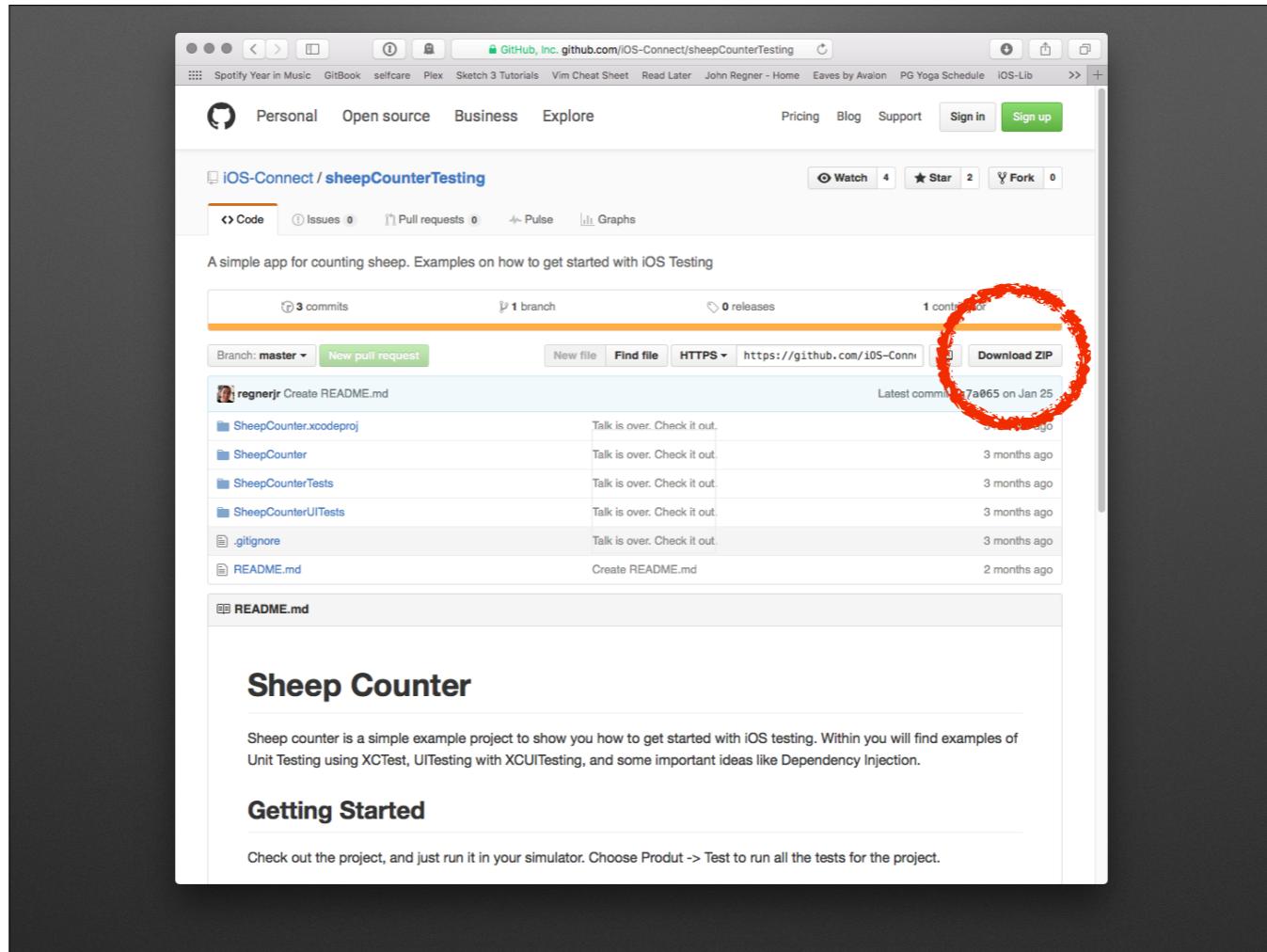
GitHub is a website.

The screenshot shows a GitHub organization page for "Santa Clara iOS Connect". The page has a dark theme. At the top, there's a navigation bar with links like Personal, Open source, Business, Explore, Pricing, Blog, Support, Sign in, and Sign up. Below the navigation, the organization's logo is displayed, followed by the name "Santa Clara iOS Connect" and its location "Santa Clara, CA". A link to their Meetup page is also provided. The main content area is titled "Repositories" and shows three repository cards:

- DragAndDrop**: A drag and drop project to exercise Object Oriented Design Principles. Updated 12 days ago.
- iOS-Developer-Connect-Newsletter**: An archive of the Santa Clara iOS Developer Connect Newsletter. Updated on Feb 14.
- tableViewMultipleSelection**: Shows how to do multiple selection in a table view with built in checkmarks. Updated on Jan 28.

To the right of the repositories, there's a "People" section which states: "This organization has no public members. You must be a member to see who's a part of this organization." A large, semi-transparent "Browse" button is overlaid at the bottom of the page.

Browse code repositories on github



Grab a copy of any project. You can read the code and build the project.
(Depending on the license, you can use the code in your project)

Getting Started

NAME

git - the stupid content tracker

SYNOPSIS

```
git [--version] [--help] [-C <path>] [-c <name>=<value>]
[--exec-path[=<path>]] [--html-path] [--man-path] [--info-path]
[-p|--paginate|--no-pager] [--no-replace-objects] [--bare]
[--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
<command> [<args>]
```

DESCRIPTION

Git is a fast, scalable, distributed revision control system with an unusually rich command set that provides both high-level operations and full access to internals.

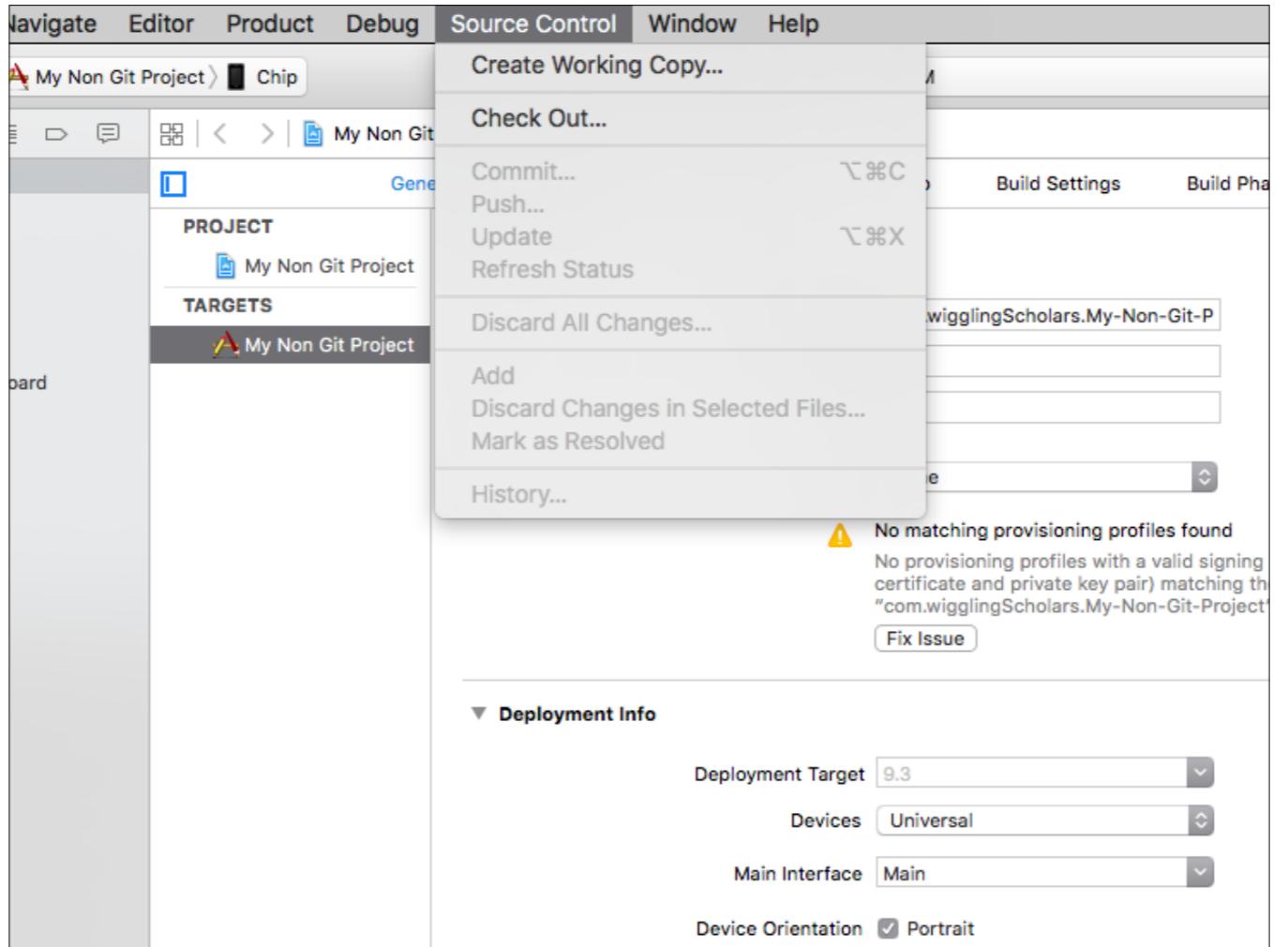
See **gittutorial**(7) to get started, then see **giteveryday**(7) for a useful minimum set of commands. The **Git User's Manual**[1] has a more in-depth introduction.

.

This is the git user manual.
“stupid content tracker”

git init

Run `git init` in any folder to tell git to track it



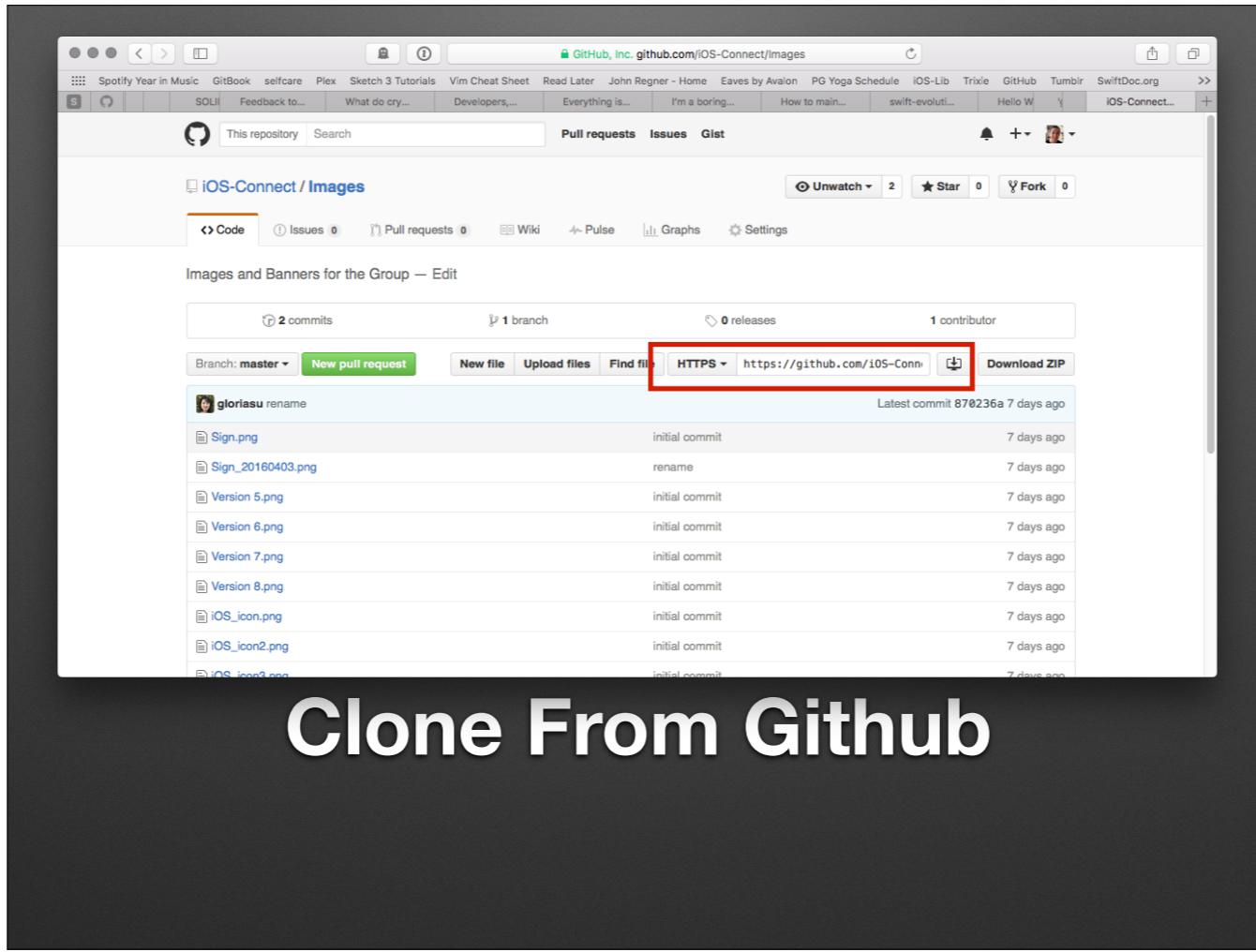
Existing Git Repos

- Fork from GitHub (talk about this later)
- Clone from anywhere, usually a URL
<http://someURL.com/projects/linux.git>

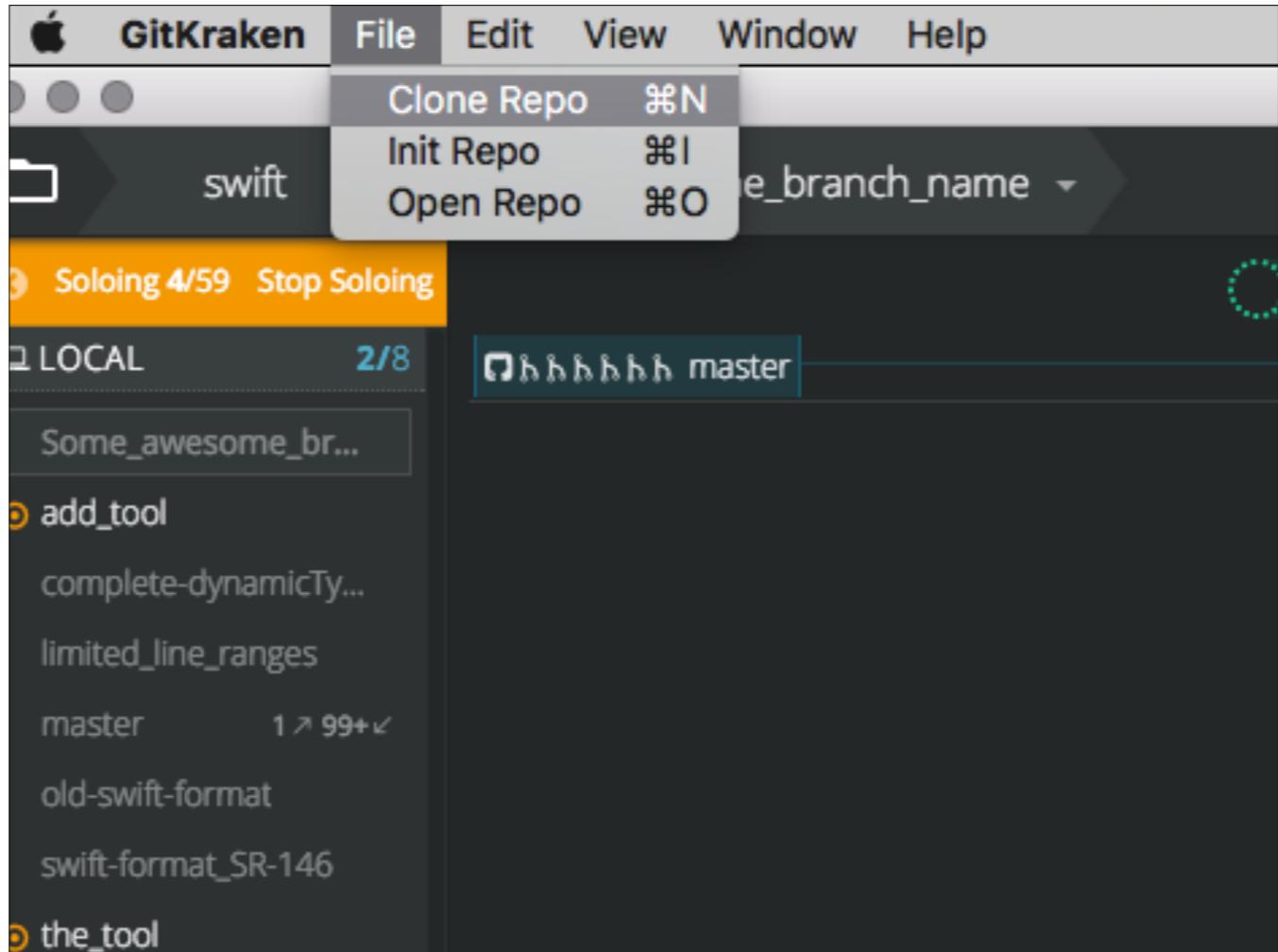
git clone <someURL>

Run `git clone` where you want the project to live

makes you a copy



Clone From Github



`git clone <SomeURL>`

Make a full copy of the project on your computer

- an example project
- a Library you want to use
- a friend's code to help debug

**Since this is a full git copy,
you can continue working just the way
you normally would**

git fork

A server side copy on github.

not a terminal command (this slide is a lie)

GitHub, Inc. github.com/iOS-Connect/sheepCounterTesting

Feedback What do cry... Developers,... Everything is... I'm a boring... How to main... swift-evoluti... Hello World... git io gite iOS-Connect...

This repository Search Pull requests Issues Gist

iOS-Connect / sheepCounterTesting

Unwatch 4 Star 2 Fork 0

A simple app for counting sheep. Examples on how to get started with iOS Testing — Edit

3 commits 1 branch 0 releases 1 contributor

Branch: master New pull request New file Upload files Find file HTTPS https://github.com/iOS-Conn Download ZIP

regnerjr Create README.md Latest commit 8c7a065 on Jan 25

SheepCounter.xcodeproj	Talk is over. Check it out.	4 months ago
SheepCounter	Talk is over. Check it out.	4 months ago
SheepCounterTests	Talk is over. Check it out.	4 months ago
SheepCounterUITests	Talk is over. Check it out.	4 months ago
.gitignore	Talk is over. Check it out.	4 months ago
README.md	Create README.md	3 months ago

README.md

Sheep Counter

Sheep counter is a simple example project to show you how to get started with iOS testing. Within you will find examples of Unit Testing using XCTest, UITesting with XCUITesting, and some important ideas like Dependency Injection.

Getting Started

Check out the project, and just run it in your simulator. Choose Product -> Test to run all the tests for the project.

Test Targets

Looking in the "Project Navigator" (on the left side of the Xcode window) you will see two Testing folders there. One contains the Unit Tests the other the UI Tests.

Unit Test

Review - Setup

- `git init` a local project folder
- `git fork` to make a copy on github
- `git clone <someURL>` to make a copy from somewhere to your local machine

Sweet Success



Sweet Now you have a git repo

What do we do with it?

Everyday Git

More like every hour.

All about the Commits

Write new code or fix bugs. Then you will want to "make a snapshot"
git calls this a commit.

These commits are the main pieces that git works with.

A Commit Object has

- An Author - Git will ask you to configure this
- A complete project
- A unique hash
- A Message

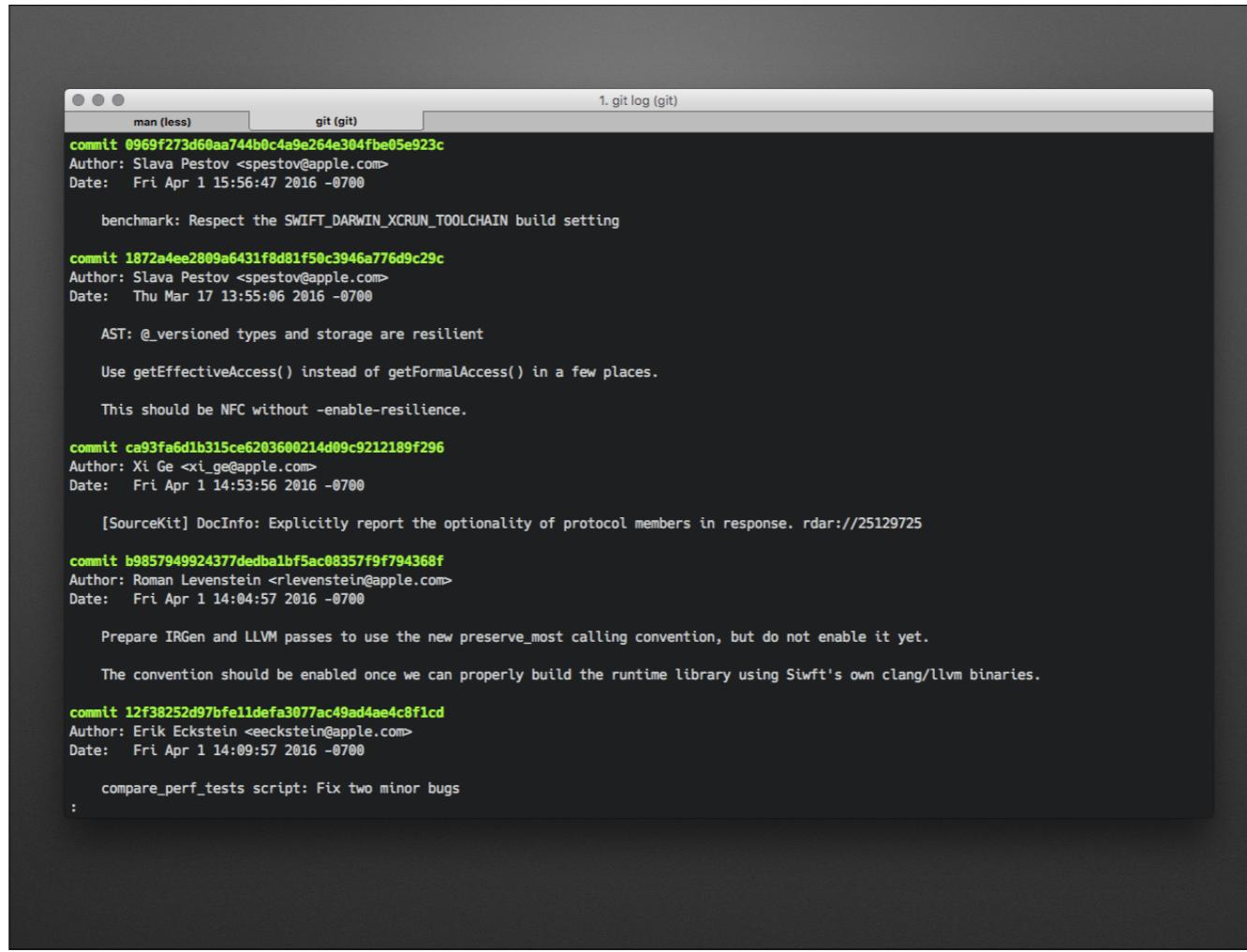
* An author - Git will ask you to set these up if they are not yet configured.

* A complete project - The full source is here (No computed diffs)

* A unique hash

* A message

You probably want a Tool



The screenshot shows a terminal window titled "git log (git)". The window has two tabs at the top: "man (less)" and "git (git)", with "git (git)" selected. The main area displays a list of git commits. The commits are as follows:

```
commit 0969f273d60aa744b0c4a9e264e304fbe05e923c
Author: Slava Pestov <spetsov@apple.com>
Date:   Fri Apr 1 15:56:47 2016 -0700

    benchmark: Respect the SWIFT_DARWIN_XCRUN_TOOLCHAIN build setting

commit 1872a4ee2809a6431f8d81f50c3946a776d9c29c
Author: Slava Pestov <spetsov@apple.com>
Date:   Thu Mar 17 13:55:06 2016 -0700

    AST: @_versioned types and storage are resilient

    Use getEffectiveAccess() instead of getFormalAccess() in a few places.

    This should be NFC without -enable-resilience.

commit ca93fa6d1b315ce6203600214d09c9212189f296
Author: Xi Ge <xi_ge@apple.com>
Date:   Fri Apr 1 14:53:56 2016 -0700

    [SourceKit] DocInfo: Explicitly report the optionality of protocol members in response. rdar://25129725

commit b9857949924377dedba1bf5ac08357f9f794368f
Author: Roman Levenstein <rlevenstein@apple.com>
Date:   Fri Apr 1 14:04:57 2016 -0700

    Prepare IRGen and LLVM passes to use the new preserve_most calling convention, but do not enable it yet.

    The convention should be enabled once we can properly build the runtime library using Swift's own clang/llvm binaries.

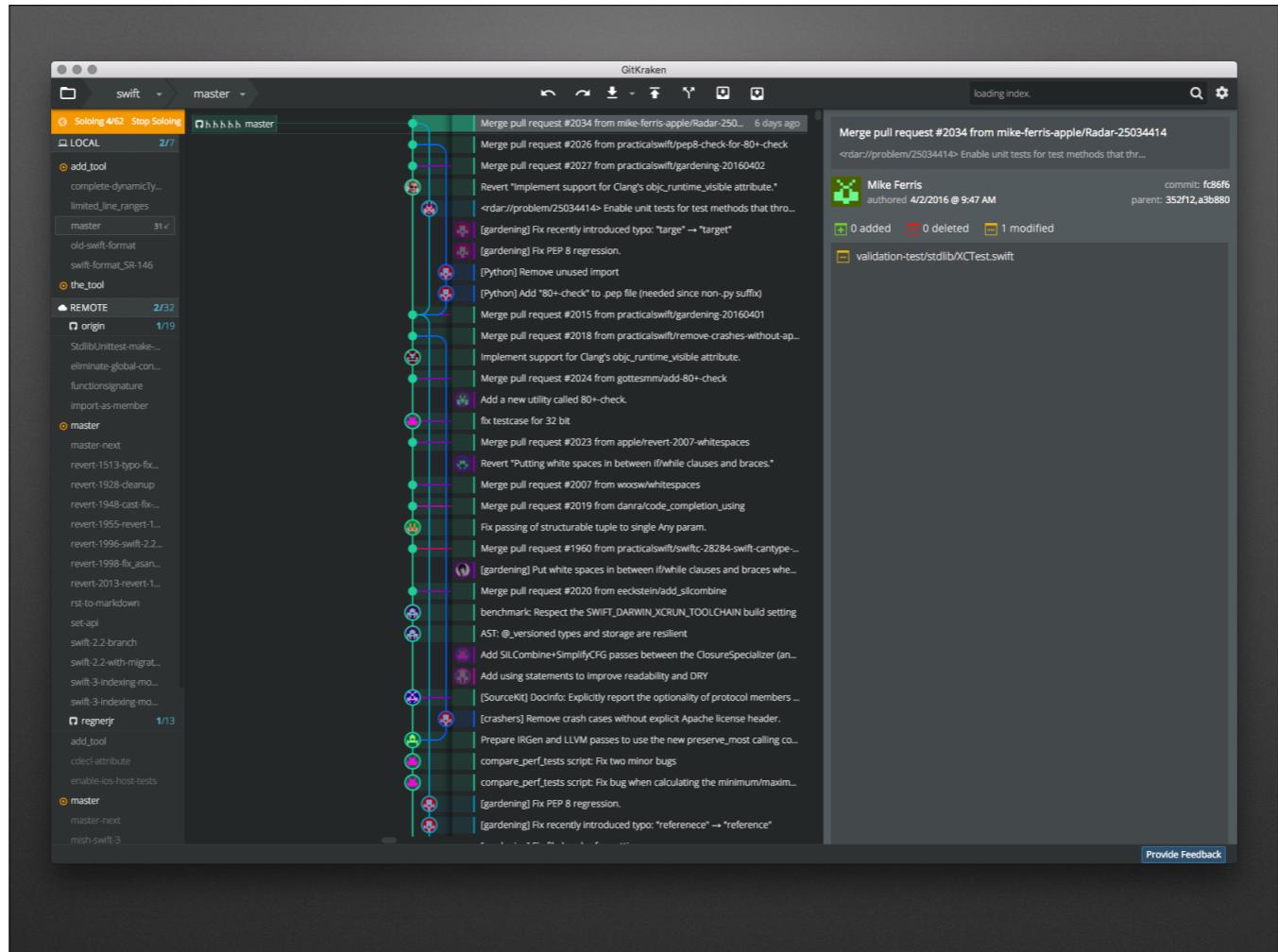
commit 12f38252d97bfe11defa3077ac49ad4ae4c8f1cd
Author: Erik Eckstein <eckstein@apple.com>
Date:   Fri Apr 1 14:09:57 2016 -0700

    compare_perf_tests script: Fix two minor bugs
:
```

git log is not super good for this. There are a ton of commands to change the way this looks.

```
1. git log --graph --abbrev-commit (git)
..t/Hello-World (zsh) ..ev/someFolder (zsh) git (less) ..LeSwift/swift (zsh) ..counterTesting (zsh) glo (git)
* 580a4a3 - (HEAD -> Some_awesome_branch_name, regnerjr/Some_awesome_branch_name, master) I am the code Owner (15 hours ago) <John Regner>
* 0969f27 - benchmark: Respect the SWIFT_DARWIN_XCRUN_TOOLCHAIN build setting (9 days ago) <Slava Pestov>
* 1872a4e - AST: @_versioned types and storage are resilient (9 days ago) <Slava Pestov>
* ca93fa6 - [SourceKit] DocInfo: Explicitly report the optionality of protocol members in response. rdar://25129725 (9 days ago) <Xl Ge>
* b085794 - Prepare IRGen and LLVM passes to use the new preserve_most calling convention, but do not enable it yet. (9 days ago) <Roman Levenstein>
* 12f3825 - compare_perf_tests script: Fix two minor bugs 1) --changes-only didn't have an effect on formats other than html 2) a wrong-format error was printed even if the format name was correct (9 days ago) <Erik Eckstein>
* d628cce - compare_perf_tests script: Fix bug when calculating the minimum/maximum of multiple samples (9 days ago) <Erik Eckstein>
* 4d9c9f6 - Move SourceEntityWalker into libAST NFC (9 days ago) <Ben Langmuir>
* 6db942d - Add test for calling func of type '(Any) -> ()' with () . (9 days ago) <Chris Willmore>
* 8116232 - IRGen: Clean up runtime_calling_convention test (9 days ago) <Slava Pestov>
* 6dd1f0a - [stdlib] Apply @_fixed_layout to various stdlib and overlay types (9 days ago) <Jordan Rose>
* 7b91cbd - stdlib: Add @_versioned attributes needed for resilient build (9 days ago) <Slava Pestov>
* cbdc7bc - [Archetype builder] Typealiases can be found in protocol extensions, too. (9 days ago) <Doug Gregor>
* 49c5487 - Serialization: Auto-linking recursively walks modules imported from -sil-serialize-all modules (9 days ago) <Slava Pestov>
* 56c67f9 - Sema: Visit types of captures to determine if a closure captures the generic signature (9 days ago) <Slava Pestov>
* cd8254f - Merge pull request #2010 from nadavrot/disable_just_built_clang (9 days ago) <swift-ci>
| \
| * 0b1e858 - Make the option of building using the host clang the default (9 days ago) <Nadav Rotem>
| * adc65bf - [SourceKit] DocInfo: Simplify the type parameter names inside fully annotated decls. (9 days ago) <Xl Ge>
| * fa77a7a - Fix race condition in Mutex LockableThreaded test (9 days ago) <Ben Langmuir>
| * 999aceb - stdlib: correct fixits for 'func generator()' (9 days ago) <Omitri Grinenko>
| /
| * 89bc2a4 - Merge pull request #1888 from trentxintong/RLE (9 days ago) <Xin Tong>
| \
| * 63d04a8 - Rename LSBase.cpp to LoadStoreOptUtils.cpp (10 days ago) <Xin Tong>
| * 0e7a889 - Pretty up some SIL test cases and remove some redundant ones. (10 days ago) <Xin Tong>
| * 40fad11 - Remove an empty file. Test case ported to redundant_load_elim.sil (2 weeks ago) <Xin Tong>
| * d163e84 - Merge pull request #1935 from danra/decl_attr_alias_location (10 days ago) <Ted Kremenek>
| \
| * 0860ce5 - Move DECL_ATTR_ALIAS next to its matching DECL_ATTR These were probably unintentionally split in commit 039674b4928c (12 days ago) <Dan Raviv>
| * 630dd38 - Merge pull request #2003 from apple/revert-1998-fix_asan_build (10 days ago) <Ted Kremenek>
| \
| : |
```

Use the right flags we can shorten this a bit.



swift: All files - gitk

master benchmark: Respect the SWIFT_DARWIN_XCRUN_TOOLCHAIN build setting
AST: @_versioned types and storage are resilient
[SourceKit] DocInfo: Explicitly report the optionality of protocol members in response. rdar://25129725
Prepare IRGen and LLVM passes to use the new preserve_most_calling convention, but do not enable it yet.
compare_perf_tests script: Fix two minor bugs
compare_perf_tests script: Fix bug when calculating the minimum/maximum of multiple samples
Move SourceEntityWalker into libAST NFC
IRGen: Add test for calling func of type '(Any) -> ()' with ()
IRGen: Clean up runtime_calling_convention test
stdlib: Apply @_fixed_layout to various stdlib and overlay types
stdlib: Add @_versioned attributes needed for resilient build
[Archetype builder] Typealiases can be found in protocol extensions, too.
Serialization: Auto-linking recursively walks modules imported from -sil-serialize-all-modules
Sema: Visit types of captures to determine if a closure captures the generic signature
Merge pull request #2010 from nadavrot/enable_just_built_clang
Make the option of building using the host clang the default
[SourceKit] DocInfo: Simplify the type parameter names inside fully annotated decls.
Fix race condition in Mutex.LockableThreaded test
stdlib: correct fixits for 'func generatn!'

SHA1 ID: 8969f273d60aa744b0c4a9e264e304fbe05e923c

Find commit containing: Exact All fields

Search

Patch Tree

Diff Old version New version Lines of context: 3 Ignore space change Line diff

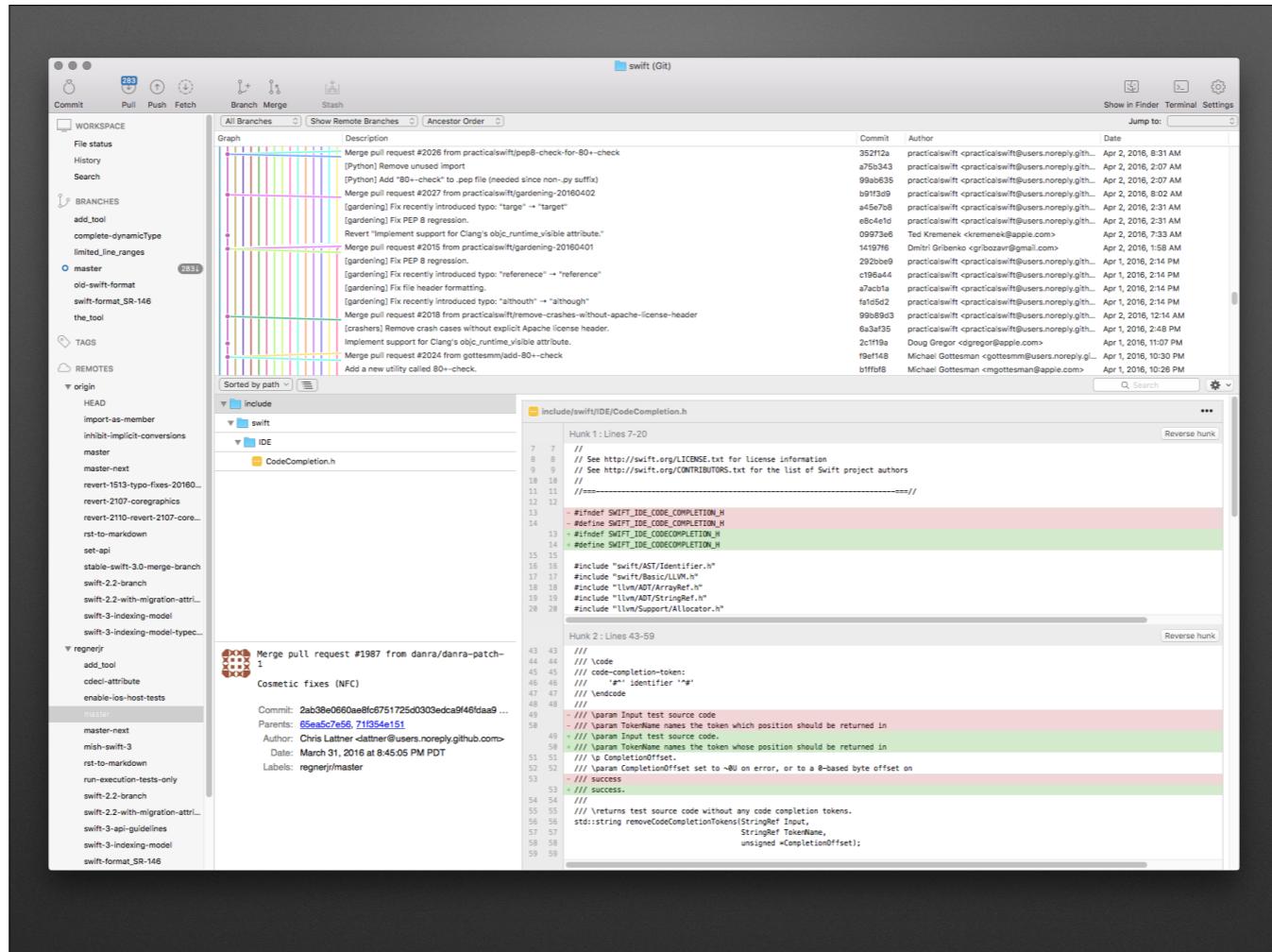
Author: Slava Pestov <spestov@apple.com> 2016-04-01 15:56:47
Committer: Slava Pestov <spestov@apple.com> 2016-04-01 16:17:16
Parent: 1872a4ee2809a6431f8d81f50c3946a776d9c29c (AST: @_versioned types and storage are resilient)
Branches: master, remotes/origin/master
Follows: swift-DEVELOPMENT-SNAPSHOT-2016-03-24-a
Precedes:

benchmark: Respect the SWIFT_DARWIN_XCRUN_TOOLCHAIN build setting

----- benchmark/CMakeLists.txt -----

```
index 3816dc9..2a81d7e 100644
@@ -130,7 +130,7 @@ if(NOT SWIFT_LIBRARY_PATH)
    set(SWIFT_LIBRARY_PATH "${tmp_dir}/lib/swift"
endif()

-runcmd(COMMAND "xcrun" "-f" "clang"
+runcmd(COMMAND "xcrun" "-toolchain" "${SWIFT_DARWIN_XCRUN_TOOLCHAIN}" "-f" "clang"
    VARIABLE CLANG_EXEC
    ERROR "Unable to find Clang driver")
```



“Commits seem cool. How do I make one?”

-You

‘git commit’

but it is actually more complicated than that

Remember Git is stupid

- Can't commit because it does not know what you want to save.
- You need to tell it manually which things are important and which are not.
- Helps you not save stuff that was changed in error.

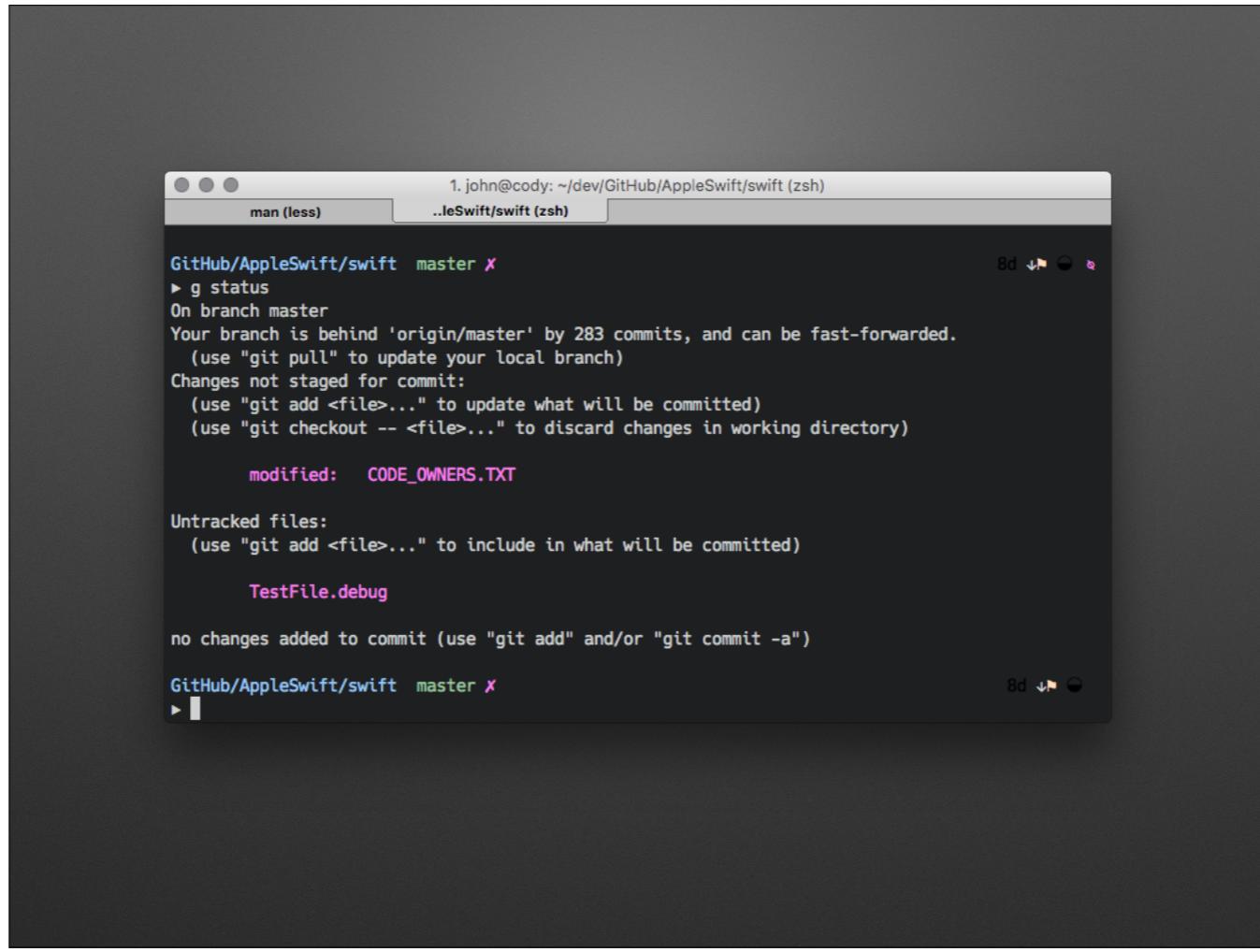
`git commit` but it is actually a bit more complex than that. And this is probably where most people want to quit.

You have to decide, by hand manually, By dragging files or clicking buttons or typing commands

What do you really want to be part of your changes? I often put red boxes everywhere when debugging layouts, I don't want those saved in my projects history.

`git status`

Remind me. What I am doing here again?



A screenshot of a terminal window titled "1. john@cody: ~/dev/GitHub/AppleSwift/swift (zsh)". The window shows the output of the command "git status". The output indicates that the user is on the "master" branch, which is behind the "origin/master" branch by 283 commits. It shows changes staged for commit (including a modified file "CODE OWNERS.TXT") and untracked files ("TestFile.debug"). A message at the bottom says "no changes added to commit (use "git add" and/or "git commit -a")". The terminal has a dark background with light-colored text and uses a standard font.

```
GitHub/AppleSwift/swift  master ✘
▶ g status
On branch master
Your branch is behind 'origin/master' by 283 commits, and can be fast-forwarded.
  (use "git pull" to update your local branch)
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   CODE OWNERS.TXT

Untracked files:
  (use "git add <file>..." to include in what will be committed)

        TestFile.debug

no changes added to commit (use "git add" and/or "git commit -a")

GitHub/AppleSwift/swift  master ✘
▶ █
```

Did you add a new file, or change existing ones or both?

Do you remember what you did? I almost never do.

`git status` is your friend. These visual tools will usually show your status by default.

There you can decide what you want to do.

``git diff``

I changed that file? What did I do again?

```
man (less)          g (git)          1. git diff (git)

diff --git i/CODE OWNERS.TXT w/CODE OWNERS.TXT
index bcc1712..cb4ebd9 100644
--- i/CODE OWNERS.TXT
+++ w/CODE OWNERS.TXT
@@ -8,50 +8,50 @@ beautification by scripts. The fields are: name (N), email (E), web-address
(W), PGP key ID and fingerprint (P), description (D), and snail-mail address
(S).

-N: David Abrahams
+N: John Regner
 E: dabrahams@apple.com
 D: Swift standard library

-N: David Farler
+N: John Regner
 E: dfarler@apple.com
 D: Markup, Swift Linux port

-N: Doug Gregor
+N: John Regner
 :
```

All of this has been a sideshow

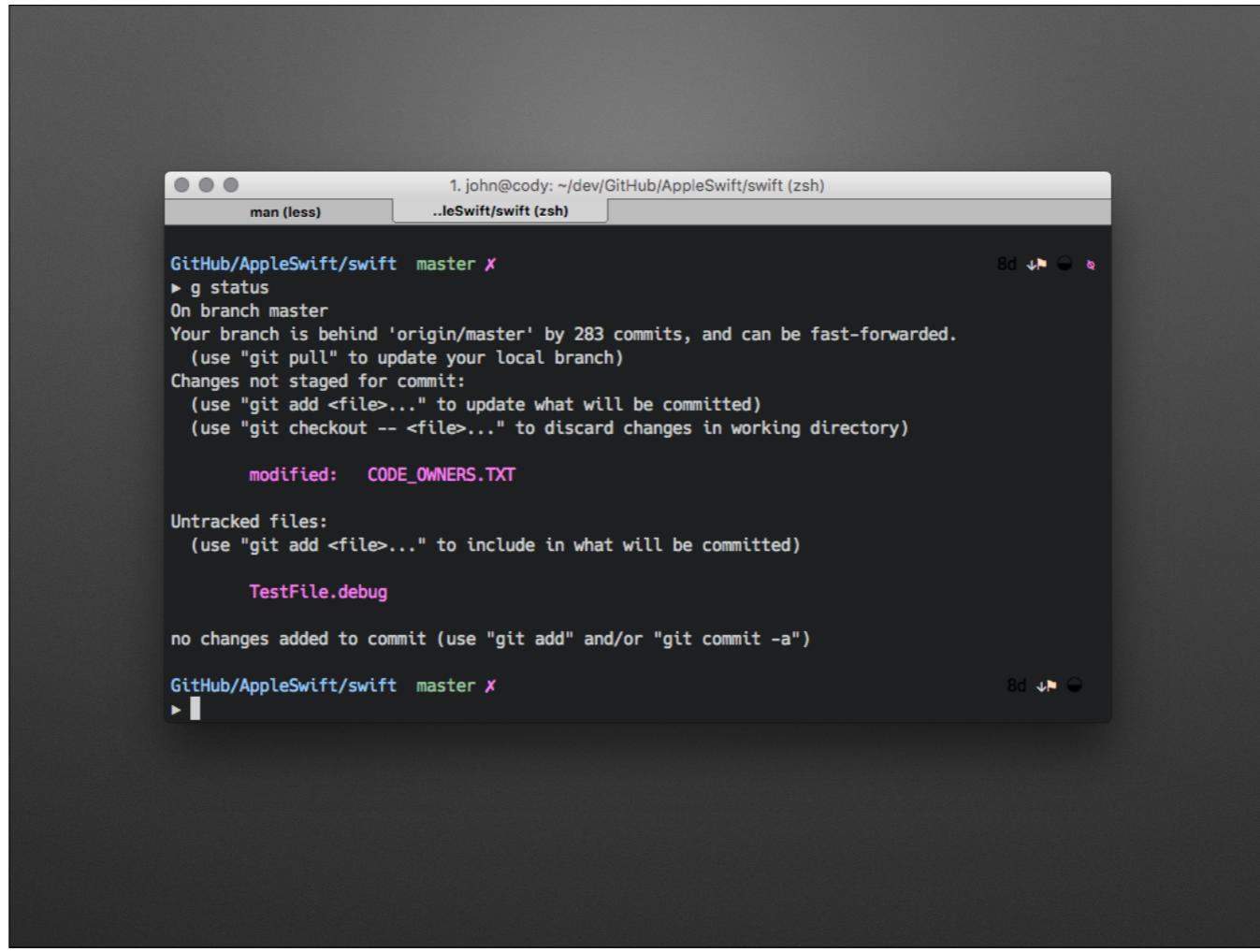
- We still want to make a new commit.
- We can see which files changed with `git status`
- We can see the actual changes with `git diff`
- Now we want to save some of them.

``git add``

Add this to the “staging area”
I am ready to commit these changes.

`git checkout`

Undo the changes to this file.
Checkout the saved version of this file.



A screenshot of a terminal window titled "1. john@cody: ~/dev/GitHub/AppleSwift/swift (zsh)". The window shows the output of a "git status" command. The output indicates that the branch is behind 'origin/master' by 283 commits. It lists a modified file, "CODE OWNERS.TXT", and an untracked file, "TestFile.debug". A message at the bottom says "no changes added to commit (use "git add" and/or "git commit -a")". The terminal has a dark background with light-colored text and a standard OS X-style title bar.

```
GitHub/AppleSwift/swift  master ✘
▶ g status
On branch master
Your branch is behind 'origin/master' by 283 commits, and can be fast-forwarded.
  (use "git pull" to update your local branch)
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   CODE OWNERS.TXT

Untracked files:
  (use "git add <file>..." to include in what will be committed)

        TestFile.debug

no changes added to commit (use "git add" and/or "git commit -a")

GitHub/AppleSwift/swift  master ✘
▶ █
```

Probably look at the status again to make sure everything is as you like it.

Then you are ready to commit.

``git commit``

Now that we have “added” the changes we want to save.
We can commit our changes.

```
man (less) ...leSwift/swift (zsh) 1. john@cody: ~/dev/GitHub/AppleSwift/swift (zsh)

GitHub/AppleSwift/swift Some_awesome_branch_name ✘
▶ git status
On branch Some_awesome_branch_name
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

    modified:   CODE OWNERS.TXT

Untracked files:
  (use "git add <file>..." to include in what will be committed)

    TestFile.debug

no changes added to commit (use "git add" and/or "git commit -a")

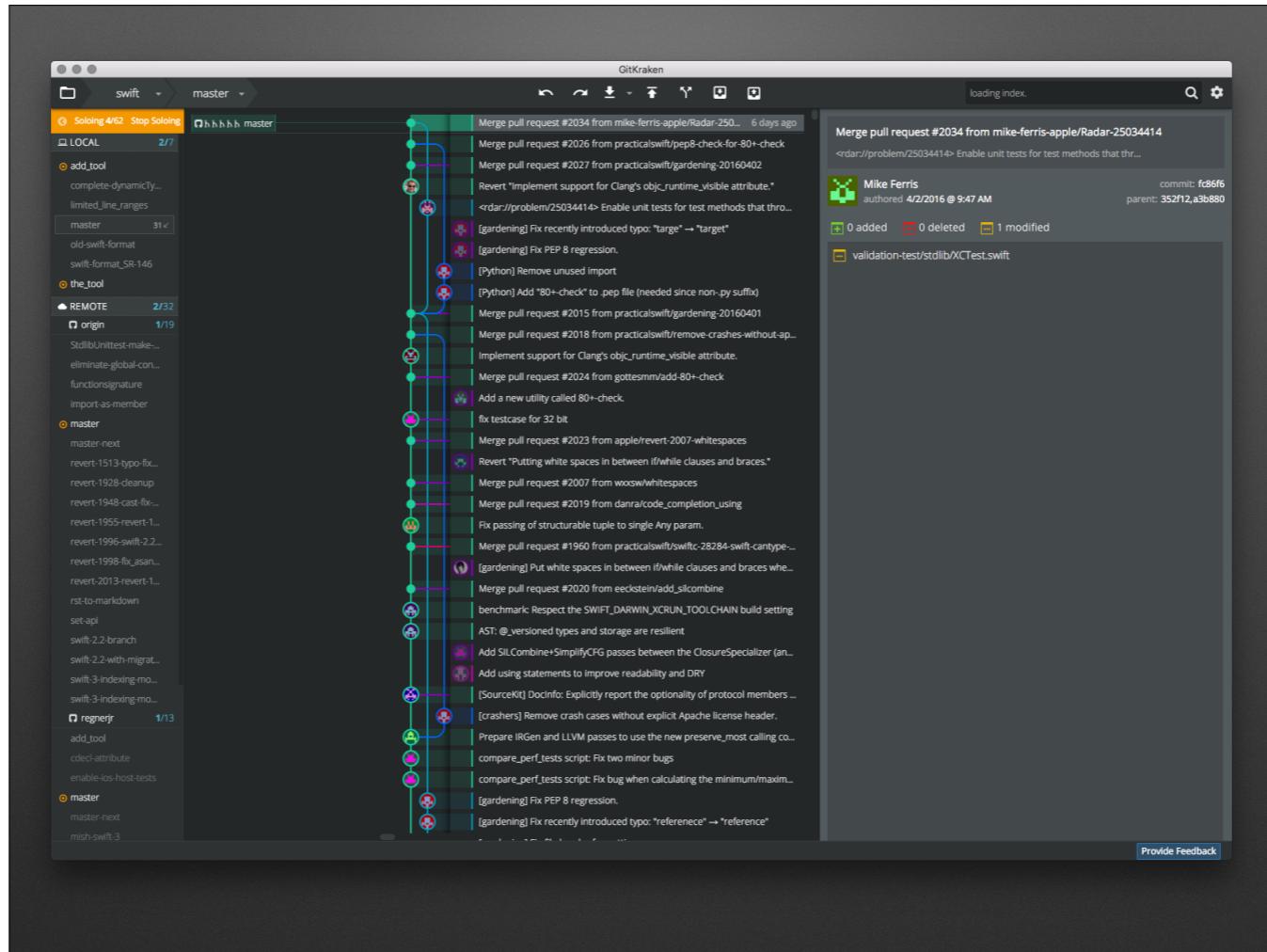
GitHub/AppleSwift/swift Some_awesome_branch_name ✘
▶ git add CODE OWNERS.TXT

GitHub/AppleSwift/swift Some_awesome_branch_name ✘
▶ git commit -m "I am the code Owner"

You need a passphrase to unlock the secret key for
user: "John Regner <jregnerjr@gmail.com>"
4096-bit RSA key, ID 2635CBA4, created 2016-04-06

[Some_awesome_branch_name 580a4a3] I am the code Owner
  1 file changed, 12 insertions(+), 12 deletions(-)

GitHub/AppleSwift/swift Some_awesome_branch_name ✘
▶
```



Hooray You've moved the project forward. This is huge. Be proud. We had to know a ton of commands to get this far!!!!



This is awesome. I know how to use git.

What if I mess up?

Use git's eject button.

`git reset --hard`

Takes you back to the previous commit. And cleans everything.



Sometimes it is nice to think of `git` as a bit of a safety net. You can try things out knowing that you can always get back.

`git reset --hard` is your eject button. Something went horribly wrong, I just want to go back to my last snapshot.

Intermediate Git

Do we need a stretch break?

Get excited I made cool pictures!!!!!!!

Branching

Branches are awesome
And fast
Make lots of them
Make them often

`git branch <name>`

I can name it whatever I want?

```
1. john@cody: ~/dev/GitHub/AppleSwift/swift (zsh)
man (less) ...leSwift/swift (zsh)

GitHub/AppleSwift/swift  master ✘
▶ git branch Some_awesome_branch_name

GitHub/AppleSwift/swift  master ✘
▶
```

Everything is a branch. Most of your initial project work will be commits added to a branch called master.
Branches basically point to one commit and all of their parent commits. Just like branches of a tree.

`git branch Some_awesome_branch_name` to make a new one.

`git checkout <name>`

This is how you change branches.

`git checkout Some_awesone_branch_name` to switch to that branch.

Continue fixing bugs, adding features. Depending on your team, You will probably do one fix or one feature per branch.

```
1. john@cody: ~/dev/GitHub/AppleSwift/swift (zsh)
man (less) ...leSwift/swift (zsh)

GitHub/AppleSwift/swift  master ✘
▶ git checkout Some_awesome_branch_name
M  CODE OWNERS.TXT
Switched to branch 'Some_awesome_branch_name'

GitHub/AppleSwift/swift  Some_awesome_branch_name ✘
▶
```

Notice how my changed files came with me!

Merging

Bring branches together

This will happen on the Github website a lot.

``git merge <name>``

Merge the changes from branch name into your current branch.

Move to the destination branch. Then just ``git merge branch_with_changes_youWant``

You will not use this that often if using a GitHub workflow with pull requests, because there is a merge button on the web interface. But if there are issues the web interface will tell you to do it this way.

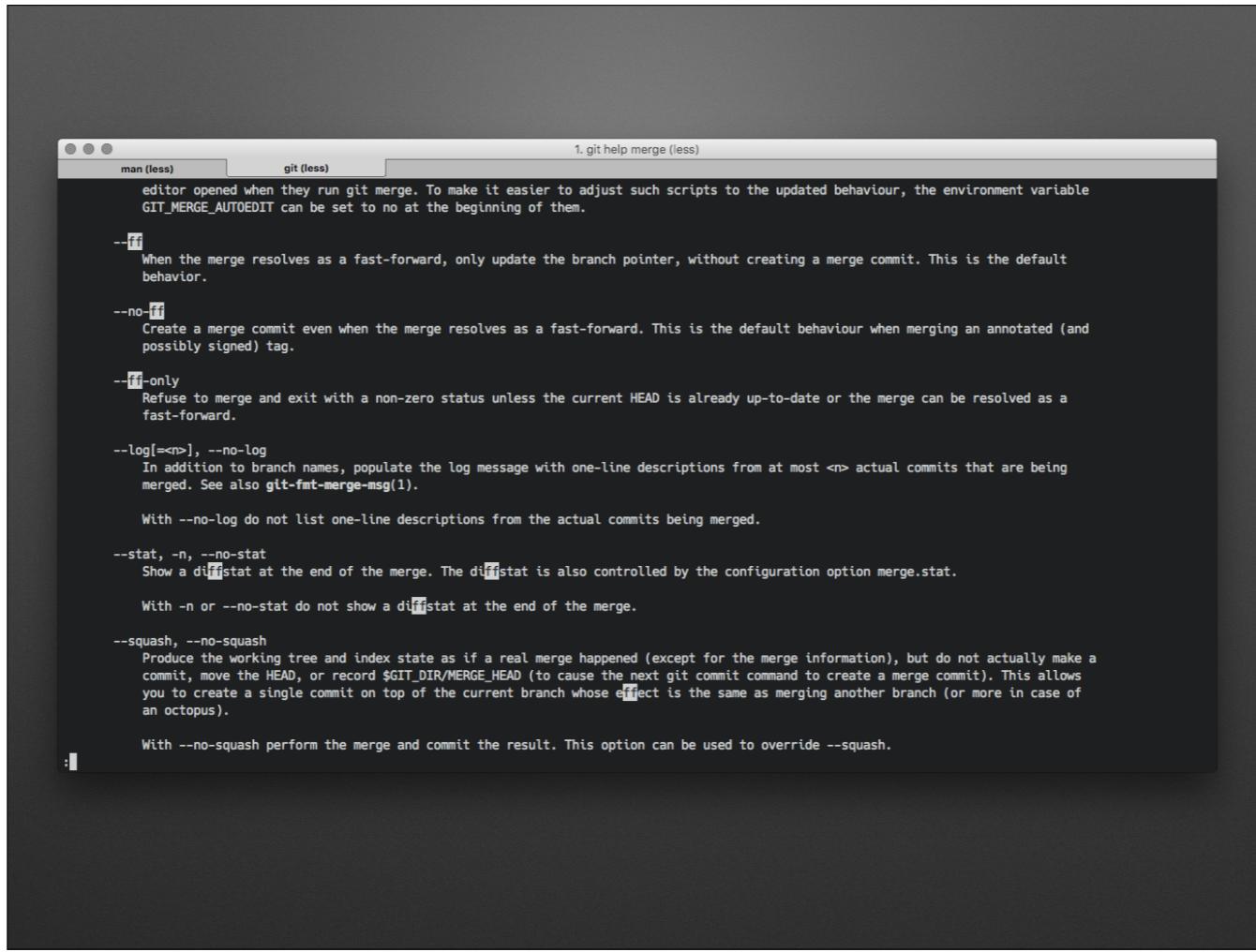
1. john@cody: ~/dev/GitHub/AppleSwift/swift (zsh)

```
man (less) ...leSwift/swift (zsh)

GitHub/AppleSwift/swift  Some_awesome_branch_name ✘
▶ git checkout master
Switched to branch 'master'
Your branch is behind 'origin/master' by 283 commits, and can be fast-forwarded.
(use "git pull" to update your local branch)

GitHub/AppleSwift/swift  master ✘
▶ git merge Some_awesome_branch_name
Updating 0969f27..580a4a3
Fast-forward
  CODE OWNERS.TXT | 24 ++++++-----+
    1 file changed, 12 insertions(+), 12 deletions(-)

GitHub/AppleSwift/swift  master ✘
▶
```



The screenshot shows a terminal window titled "git (less)" displaying the output of the command "git help merge". The output is a man page for the "git merge" command, specifically the "git merge(1)" section. The page describes various options for merging branches, such as --ff, --no-ff, --ff-only, --log, --stat, --no-stat, --squash, and --no-squash. It also discusses the environment variable GIT_MERGE_AUTOEDIT and provides examples of how to use these options to control the merge process.

```
man (less)          git (less)
1. git help merge (less)

editor opened when they run git merge. To make it easier to adjust such scripts to the updated behaviour, the environment variable
GIT_MERGE_AUTOEDIT can be set to no at the beginning of them.

--ff
  When the merge resolves as a fast-forward, only update the branch pointer, without creating a merge commit. This is the default
  behavior.

--no-ff
  Create a merge commit even when the merge resolves as a fast-forward. This is the default behaviour when merging an annotated (and
  possibly signed) tag.

--ff-only
  Refuse to merge and exit with a non-zero status unless the current HEAD is already up-to-date or the merge can be resolved as a
  fast-forward.

--log[=<n>], --no-log
  In addition to branch names, populate the log message with one-line descriptions from at most <n> actual commits that are being
  merged. See also git-fmt-merge-msg(1).

  With --no-log do not list one-line descriptions from the actual commits being merged.

--stat, -n, --no-stat
  Show a diffstat at the end of the merge. The diffstat is also controlled by the configuration option merge.stat.

  With -n or --no-stat do not show a diffstat at the end of the merge.

--squash, --no-squash
  Produce the working tree and index state as if a real merge happened (except for the merge information), but do not actually make a
  commit, move the HEAD, or record $GIT_DIR/MERGE_HEAD (to cause the next git commit command to create a merge commit). This allows
  you to create a single commit on top of the current branch whose effect is the same as merging another branch (or more in case of
  an octopus).

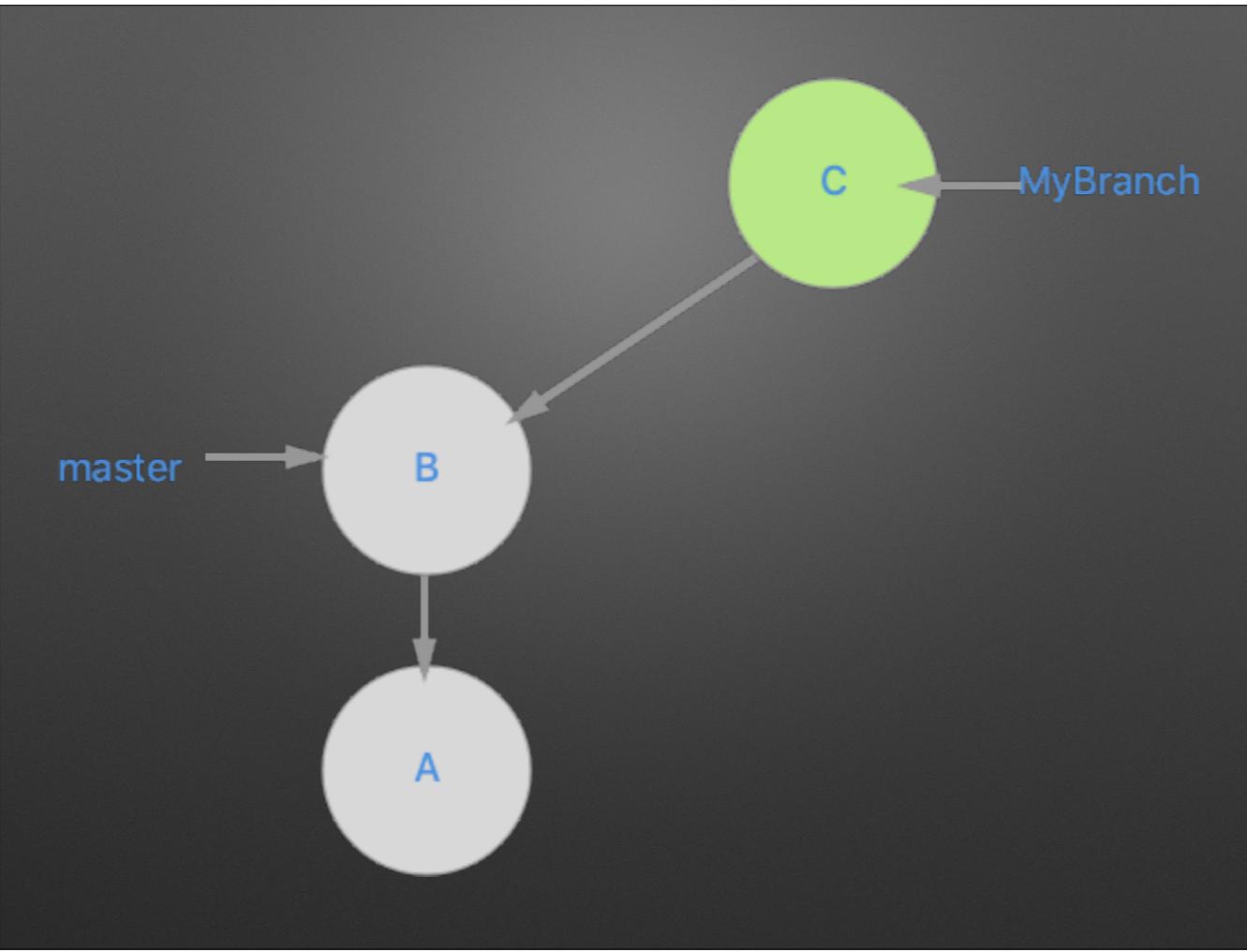
  With --no-squash perform the merge and commit the result. This option can be used to override --squash.

:
```

All about source management and specifically what do you want your history to look like.

Probably more of a senior level decision make sure you have your local system set up to do what your team expects.

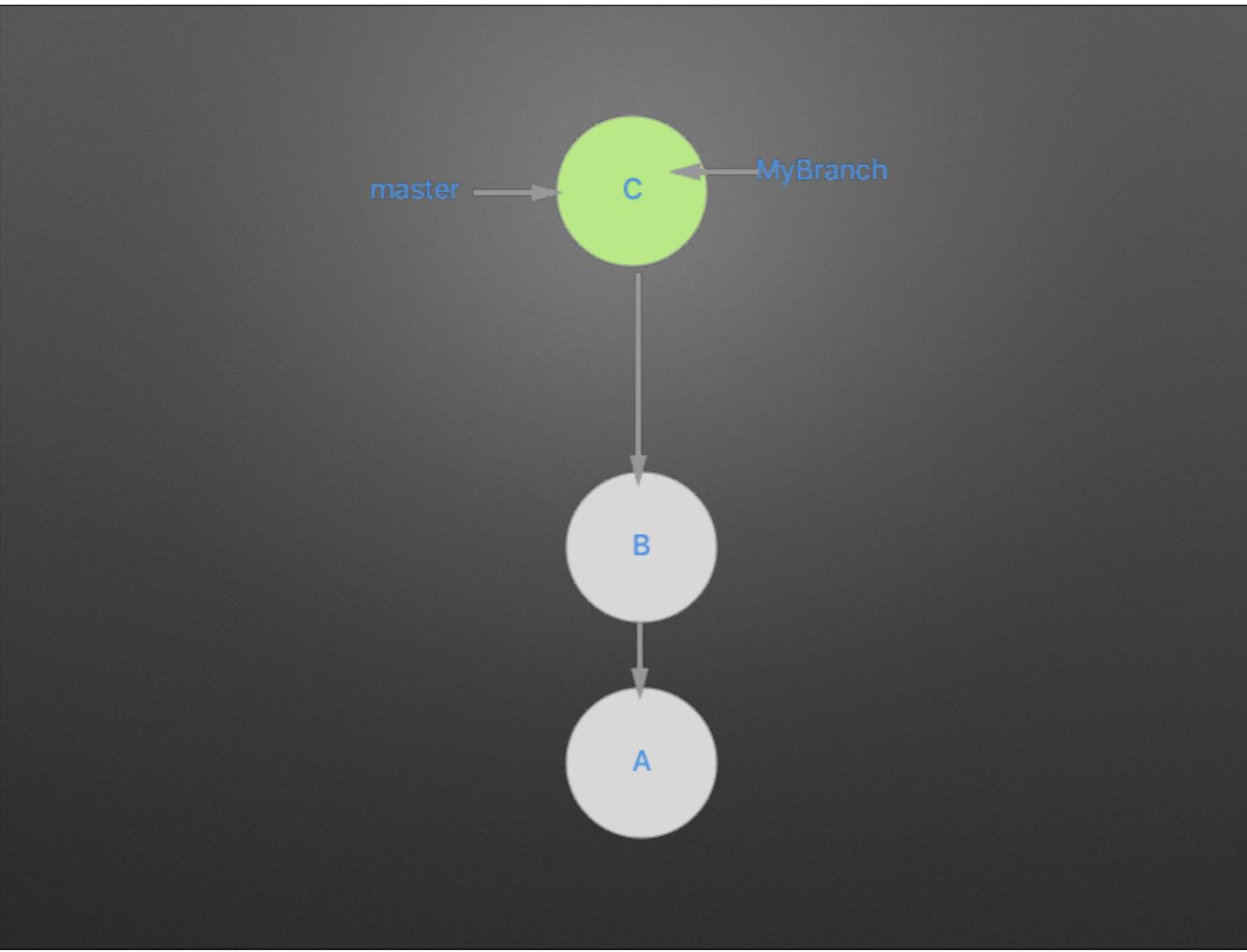
Talk through the pictures.



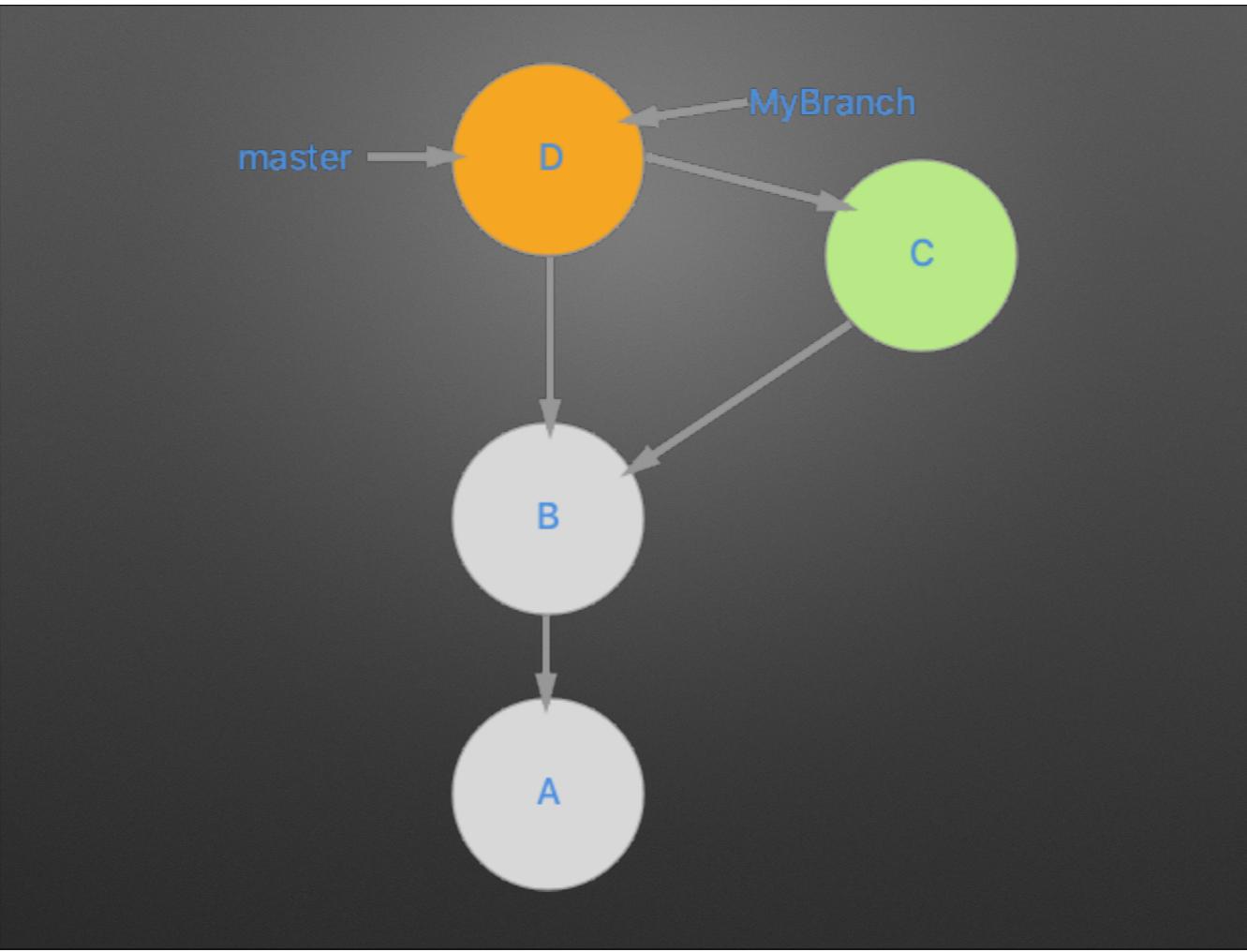
The little circle are commits. and the names are branches.

This is actually how git tracks stuff, branches are just labels that point to commits.

Commits point to their parent.

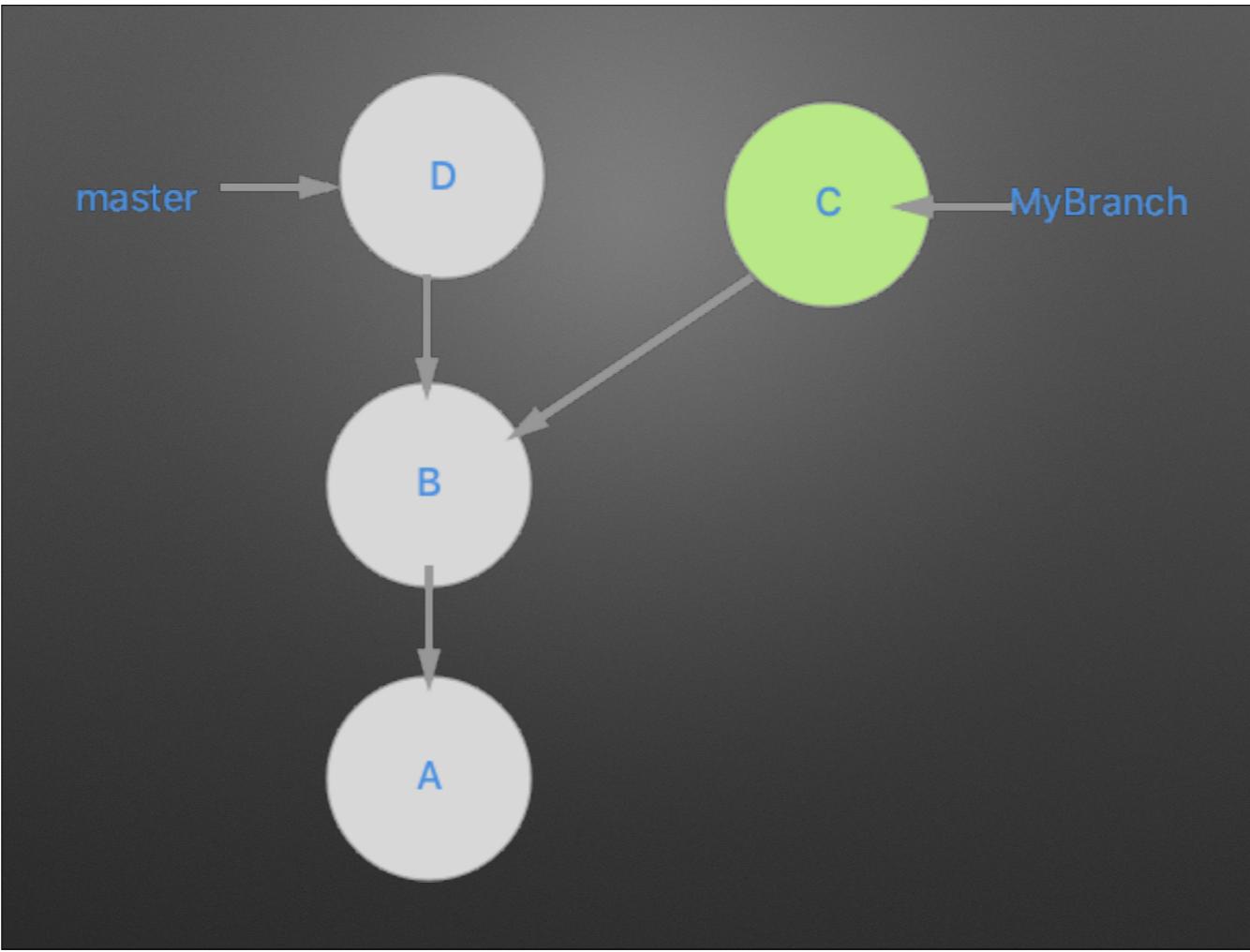


This is a fast forward merge. This is the default behavior. We really just moved the master pointer to point to C instead of B



Some developers really like this new merge commit.
It does seem a bit more true to what happened.
But there is a beauty in having a totally linear history.

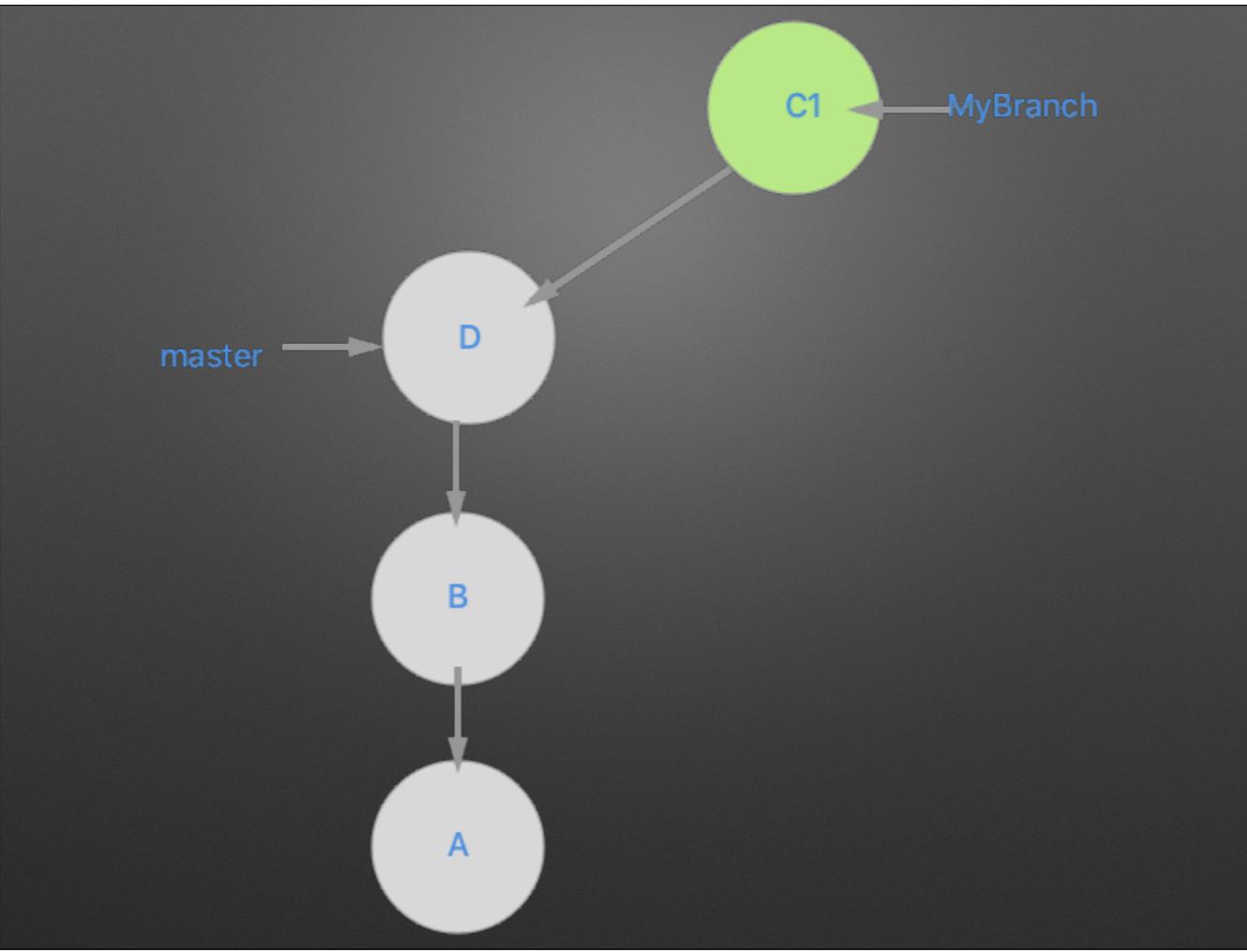
**How do I FF when other
developers have made changes**



If I try to do a fast forward merge, Git will not let me since the histories have diverged. I need to bring them together again. so that the master is pointing at a parent of C. I need to change the base of MyBranch.

I need to rebase

``git rebase master``



I have successfully rebased on top of master.

Now I can FF merge and have that beautiful linear history.

This will be requested of you often when working on Open Source Projects.

Especially ones with a lot of changes.

**Look How much
we can do
without GitHub**

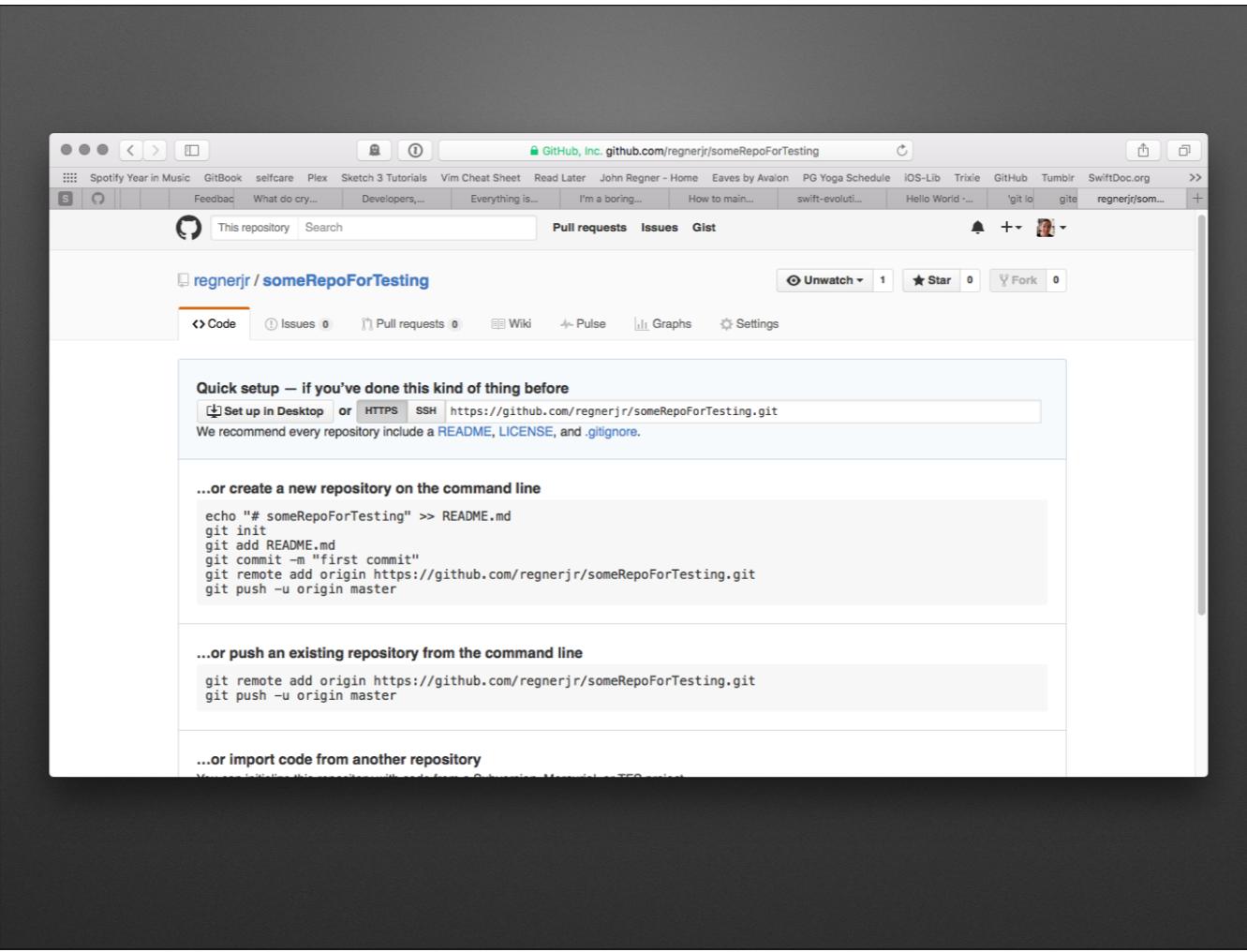


GitHub - Social Coding

A website for interacting with friends and code

git remote add

Connect your local code to GitHub (or any other git server)



```
1. john@cody: ~/dev/someFolder (zsh)
..t/hello-world (zsh) ..ev/someFolder (zsh)

~/dev/someFolder master ✓
▶ git remote -v show

~/dev/someFolder master ✓
▶ git remote add origin http://not-a-real-website.com/someFolder.git

~/dev/someFolder master ✓
▶ git remote -v show
origin http://not-a-real-website.com/someFolder.git (fetch)
origin http://not-a-real-website.com/someFolder.git (push)

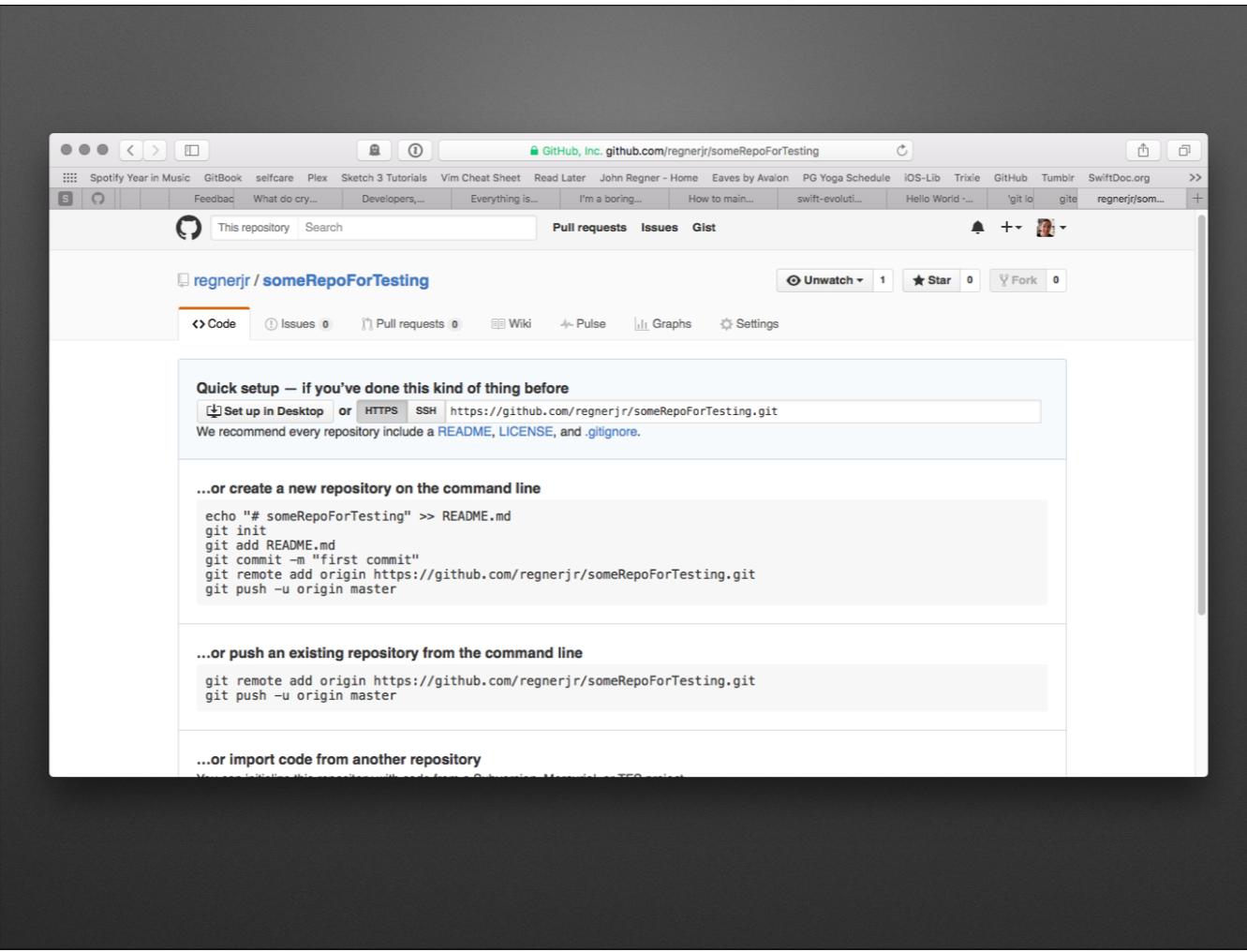
~/dev/someFolder master ✓
▶
```

1. john@cody: ~/dev/GitHub/AppleSwift/swift (zsh)

```
GitHub/AppleSwift/swift  master ✘
▶ git remote -v show
origin https://github.com/Apple/swift.git (fetch)
origin https://github.com/Apple/swift.git (push)
regnerjr   https://github.com/regnerjr/swift.git (fetch)
regnerjr   https://github.com/regnerjr/swift.git (push)

GitHub/AppleSwift/swift  master ✘
▶
```





``git push``

There are details here that are confusing.
Usually you can just ``git push``

Puts your code up on the GitHub website to share with friends, and co-workers and everybody!!! Social!!!

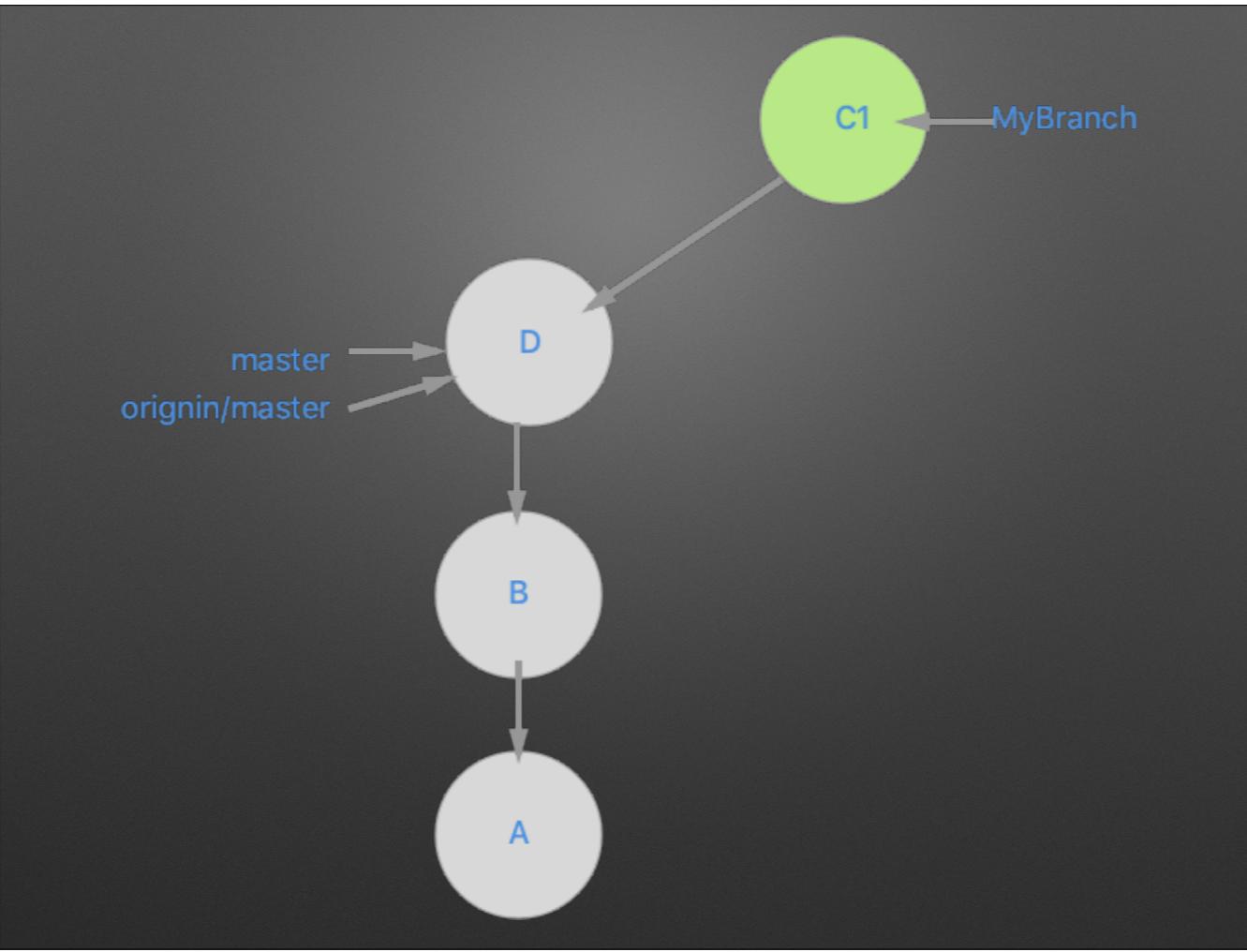
1. john@cody: ~/dev/GitHub/AppleSwift/swift (zsh)
..t/hello-world (zsh) ..ev/someFolder (zsh) git (less) ..leSwift/swift (zsh)

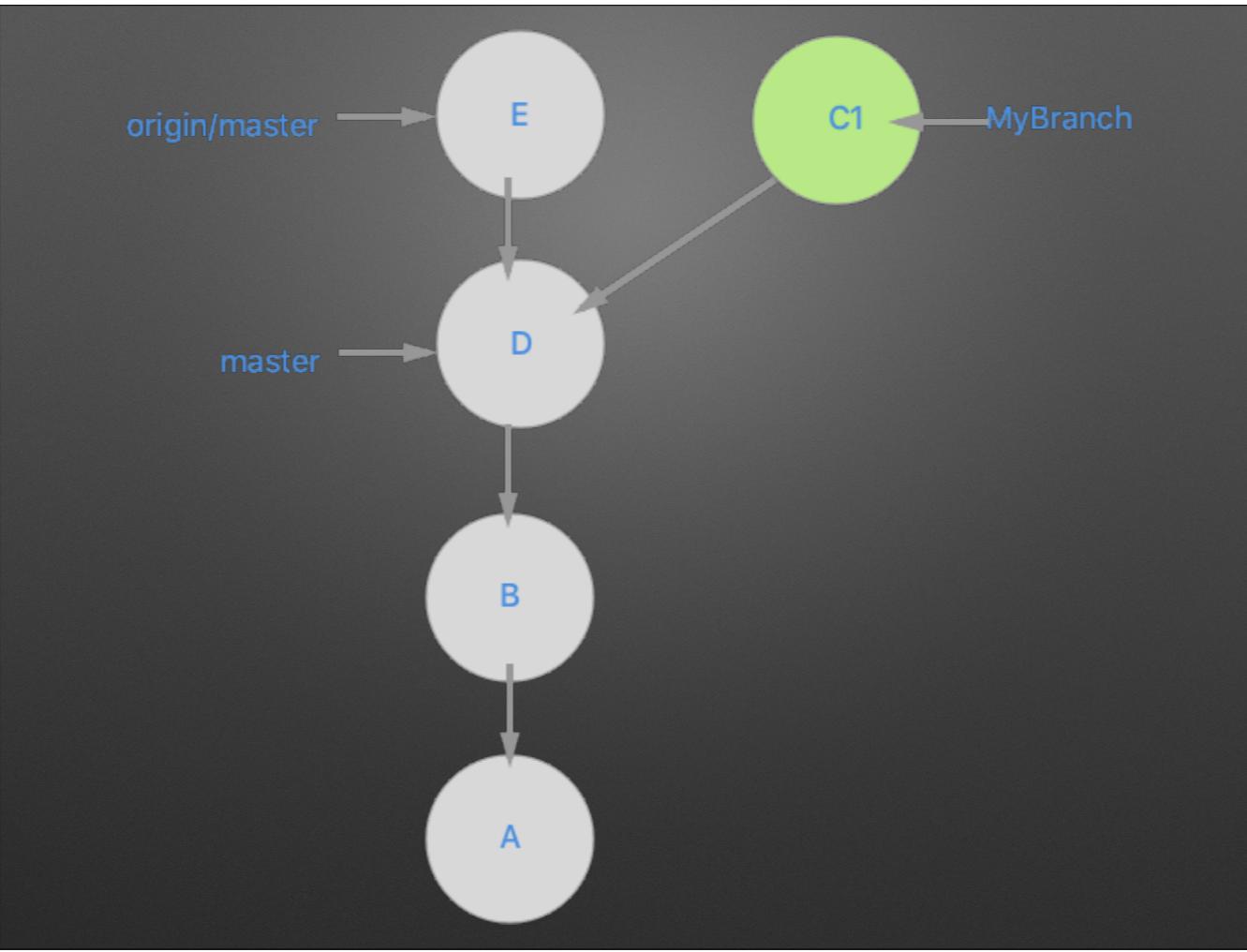
```
GitHub/AppleSwift/swift  SomeAwesomeBranchName ✘
▶ git push -u regnerjr
Counting objects: 542, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (223/223), done.
Writing objects: 100% (542/542), 178.42 KiB | 0 bytes/s, done.
Total 542 (delta 445), reused 380 (delta 318)
To https://github.com/regnerjr/swift.git
 * [new branch]      SomeAwesomeBranchName -> SomeAwesomeBranchName
Branch SomeAwesomeBranchName set up to track remote branch SomeAwesomeBranchName from regnerjr.

GitHub/AppleSwift/swift  SomeAwesomeBranchName ✘
▶
```

``git fetch –all``

Get all remote changes.
Bring them down to my repo so I can see them





``git pull``

Really just `git fetch` and `git merge` together in one.

``git pull`` will grab the changes from upstream and merge them with the current branch.

You'll probably use this for master to just pull down your teams changes.

Then maybe Rebase your own work on top.

Pull Request!

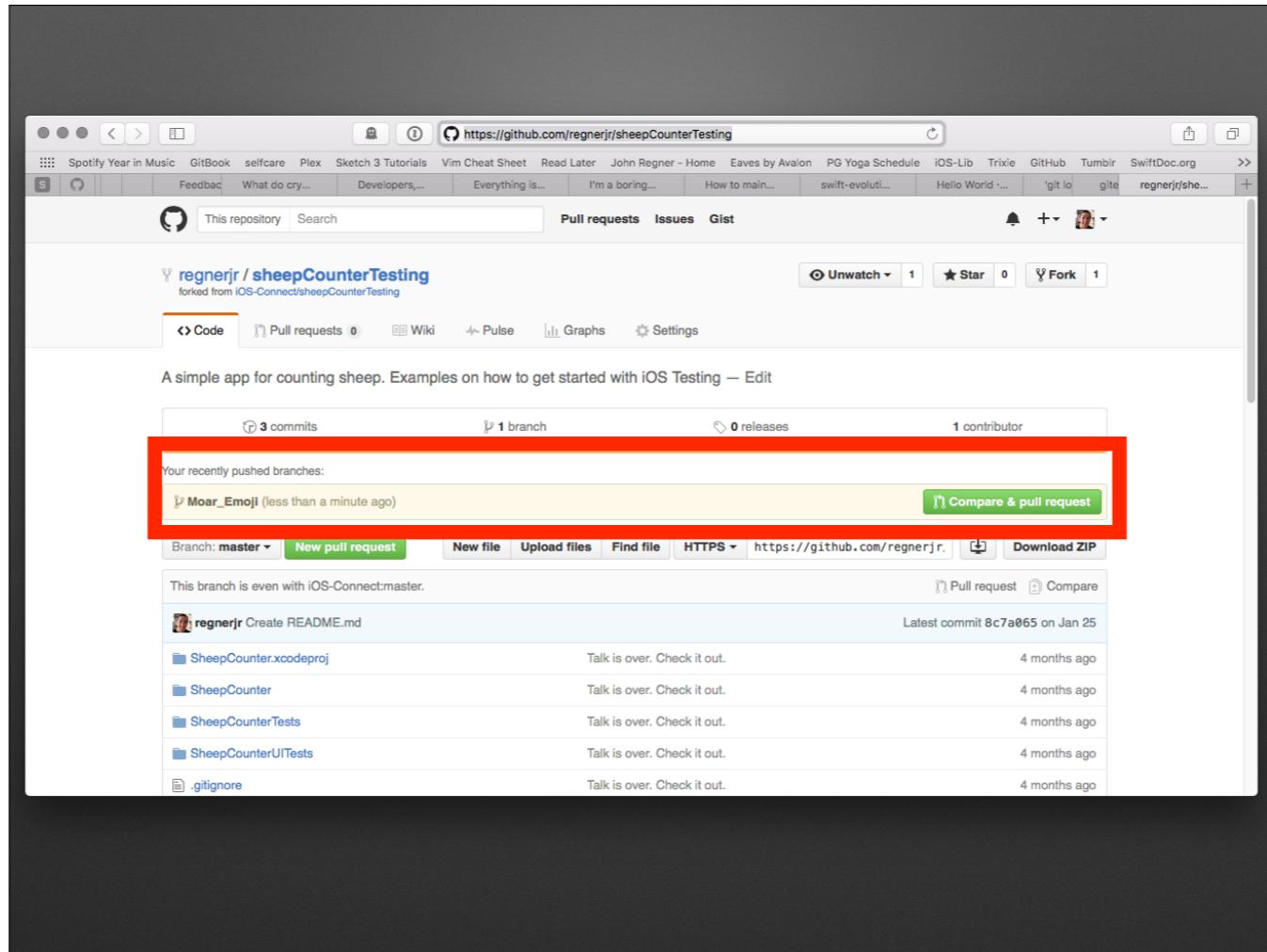
conor.maynard-germany

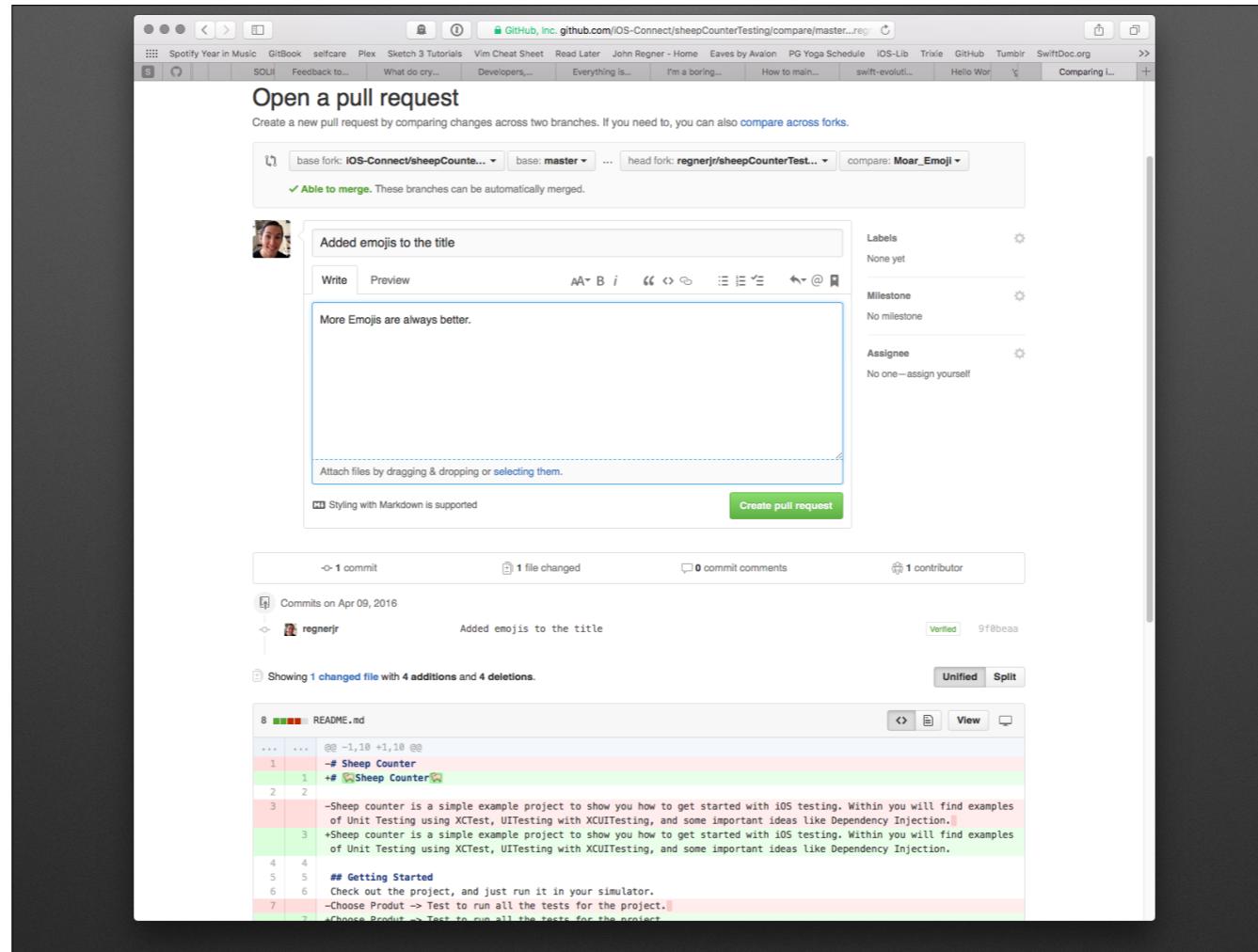




How to Pull Request (PR)

- Fork - Github copy
- Clone Your new fork - bring your copy to your machine
- Branch - With epic name
- Commits - to fix bugs and add features
- Push - Put your changes on Github (your fork)
- Propose a PR - Ask the other fork to include your code





Questions?

John Regner

@john_regner

github.com/regnerjr

Resources

- <http://guides.github.com>
- <http://www.learnenough.com/git-tutorial>
- <http://gitready.com>
- <http://git-scm.com>

Grab Bag Section

Other awesome commands

- `git bisect` Performs binary search to find where a bug was introduced
- `git cherry-pick` Move a single commit from one branch to another
- `git grep` search through your repo. Only looking in places that are tracked by git, not your build folder.

Demo Interactive rebase

