Git + GitHub

The
Complete
Web
Developer in
2018

Git and GitHub

Source control: allows multiple people to work on same file
                        examples: Git, Github

Merge conflict - when two branches both modify the same region of a file and try to merge. Git can't know which of the changes to keep, and thus needs human intervention to resolve the conflict

We are familiar with using GitHub in the browser so far, let's use the terminal…

Terminal Commands

```
ls  - list what's in current directory

cd  - change dir [letter + TAB to autocomplete]

git clone https://github.com/steph-bot/geometry-
landing-page.git

git status
git add index.html [letter + TAB autocomplete]
git add . (adds ALL files!)
git commit -m "adding new files"
git push (pushes commits to gitHub.com)
git pull (pulls from gitHub.com to local repo)

git branch (view branches & which branch I'm on)
git branch NewFeature  (create branch NewFeature)
git checkout NewFeature (switch to branch)
git merge master (merge master into current
branch >> do git pull 1st to get newest master)
```
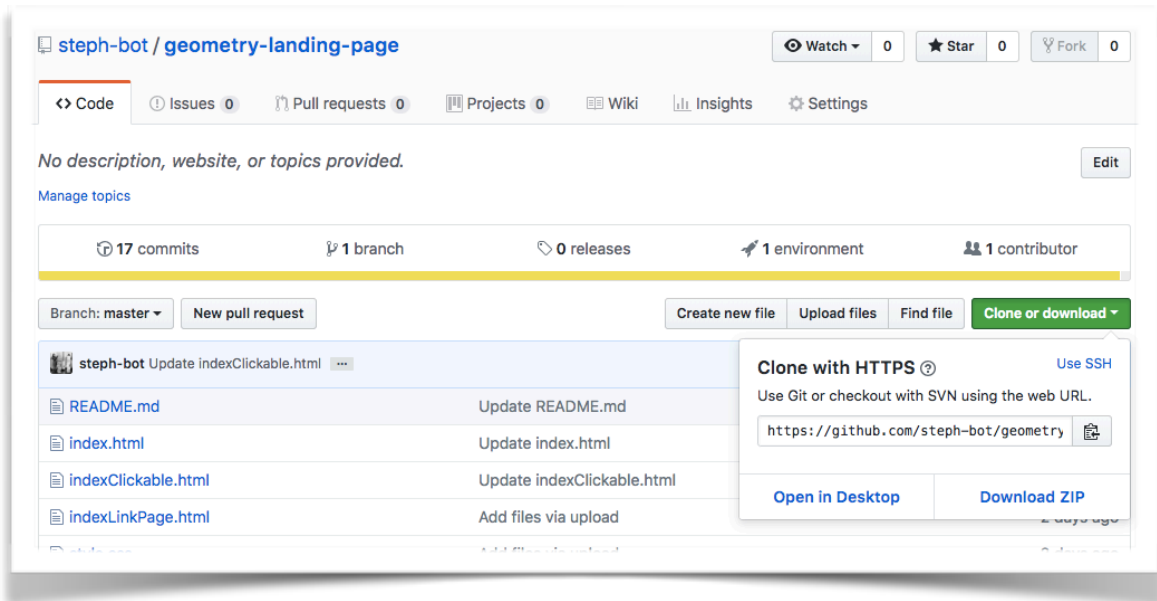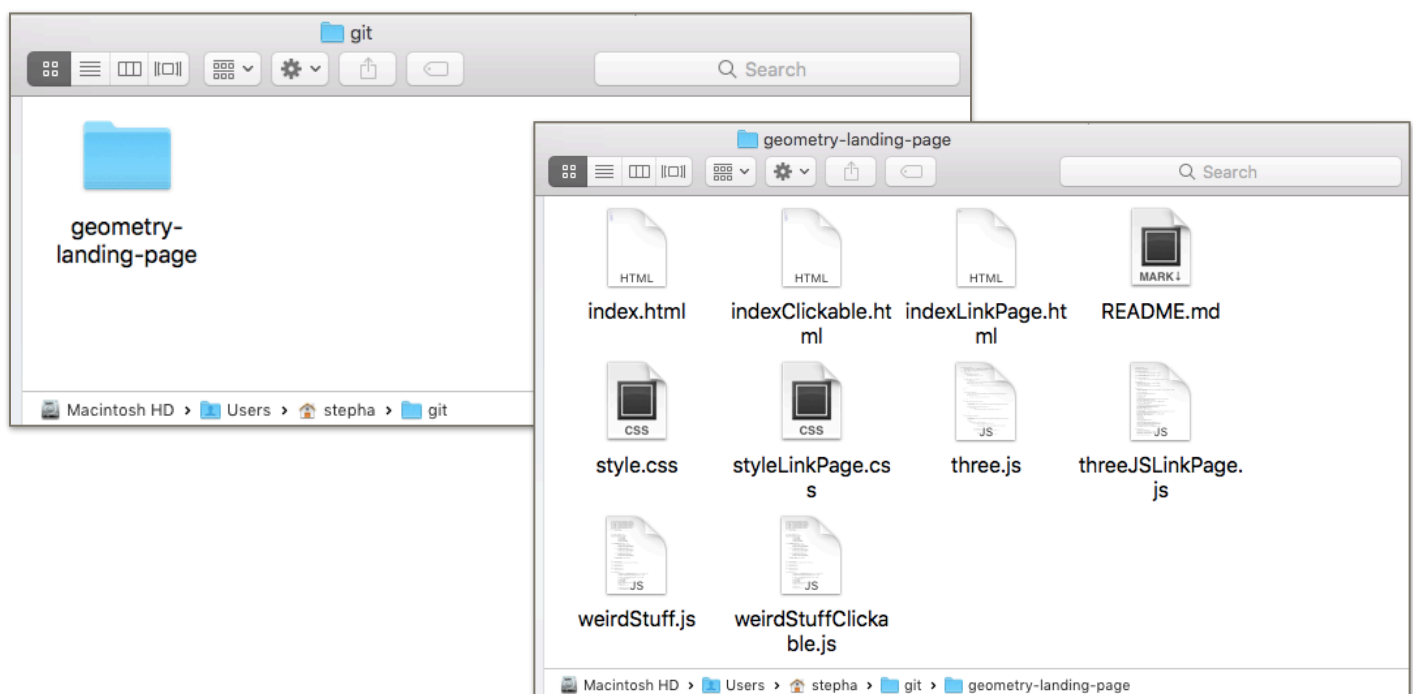
When you clone or download on GitHub, make sure it says
"Clone with HTTPS":

Copy link in the little box, and paste in terminal:

```
git clone https://github.com/steph-bot/geometry-
landing-page.git
```

Now we've created a local folder containing all files in the repo:

How it looks in the terminal:

```
Stephanies-Air:~ stepha$ git —version

git version 2.17.2 (Apple Git-113)

Stephanies-Air:~ stepha$ ls

Applications Downloads     Music          git
Desktop      Library       Pictures my-app
Documents    Movies        Public

Stephanies-Air:~ stepha$ cd git

Stephanies-Air:git stepha$ ls

Stephanies-Air:git stepha$ git clone https://github.com/
steph-bot/geometry-landing-page.git

Cloning into 'geometry-landing-page'...
remote: Enumerating objects: 60, done.
remote: Counting objects: 100% (60/60), done.
remote: Compressing objects: 100% (58/58), done.
remote: Total 60 (delta 31), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (60/60), done.

Stephanies-Air:git stepha$ ls

geometry-landing-page
```

Let's move to the repo (cd g+TAB to autocomplete dir name) and
check the git status

Stephanies-Air:git stepha$ cd geometry-landing-page/

Stephanies-Air:geometry-landing-page stepha$ ls

README.md   style.css   weirdStuff.js
index.html   styleLinkPage.css weirdStuffClickable.js
indexClickable.html three.js
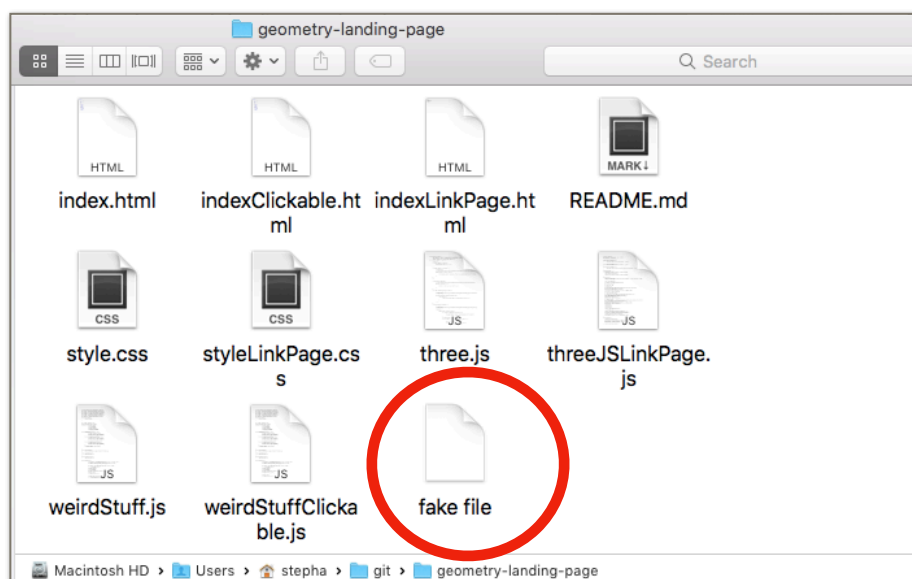indexLinkPage.html   threeJSLinkPage.js

Stephanies-Air:geometry-landing-page stepha$ git status

On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean

Everything looks good because we haven't made changes yet.
Let's add a file to the repo locally:

```
Stephanies-Air:geometry-landing-page stepha$ git status
```

```
On branch master
Your branch is up to date with 'origin/master'.

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

    fake file

nothing added to commit but untracked files present (use "git add" to
track)
```

We have untracked file!

```
Stephanies-Air:geometry-landing-page stepha$ git add fake\
file
```

```
Stephanies-Air:geometry-landing-page stepha$ git status
```

```
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

    new file:   fake file
```

```
Stephanies-Air:geometry-landing-page stepha$ git commit -m
"adding file for practice using git in
Terminal"
```

```
[master 450a2ea] adding file for practice using git in Terminal
 Committer: Stephanie <stepha@Stephanies-Air.attlocal.net>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
```

following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 1 insertion(+)
 create mode 100644 fake file

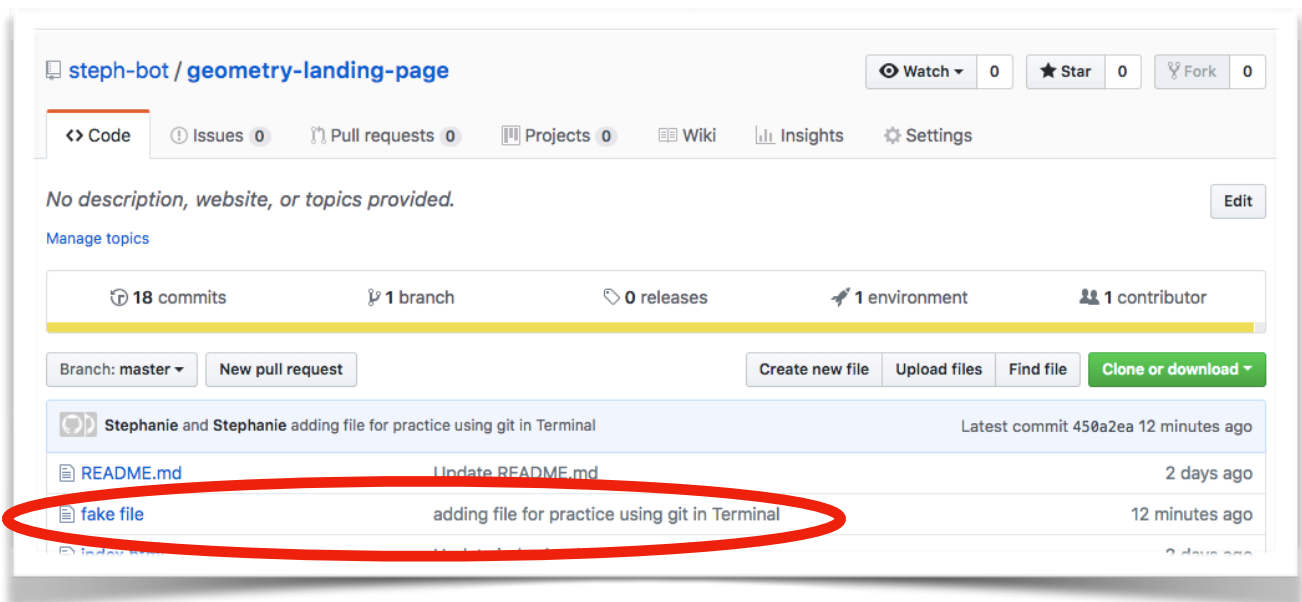Stephanies-Air:geometry-landing-page stepha$ git status

On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)
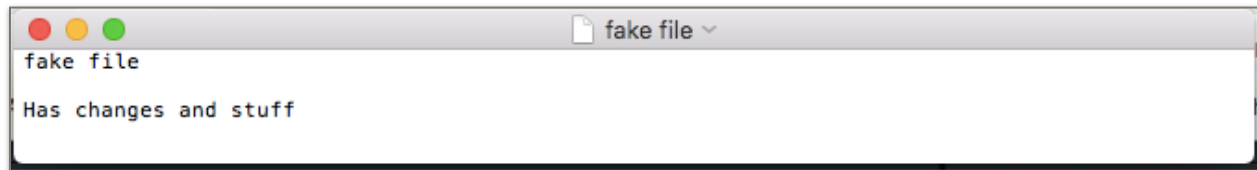
nothing to commit, working tree clean

Stephanies-Air:geometry-landing-page stepha$ git push

Username for 'https://github.com': steph-bot
Password for 'https://steph-bot@github.com':
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 305 bytes | 305.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/steph-bot/geometry-landing-page.git
   fae287f..450a2ea master -> master

Commit pushed to GitHub.com, everything is up to date now!

Let's edit the file....

```
fake file

fake file

Has changes and stuff
```

Stephanies-Air:geometry-landing-page stepha$ git status

On branch master
Your branch is up to date with 'origin/master'.

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: fake file

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

Stephanies-Air:geometry-landing-page stepha$ git add .

Stephanies-Air:geometry-landing-page stepha$ git commit -m
"updated fake file contents"

[master 3a0d0a1] updated fake file contents
 Committer: Stephanie <stepha@Stephanies-Air.attlocal.net>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author
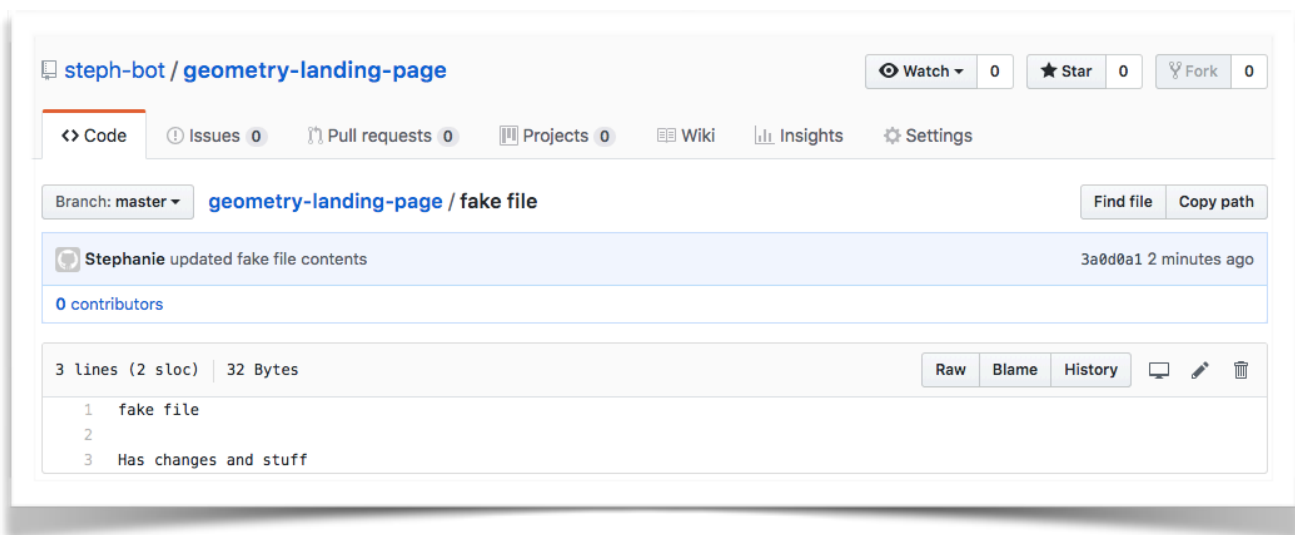
 1 file changed, 3 insertions(+), 1 deletion(-)

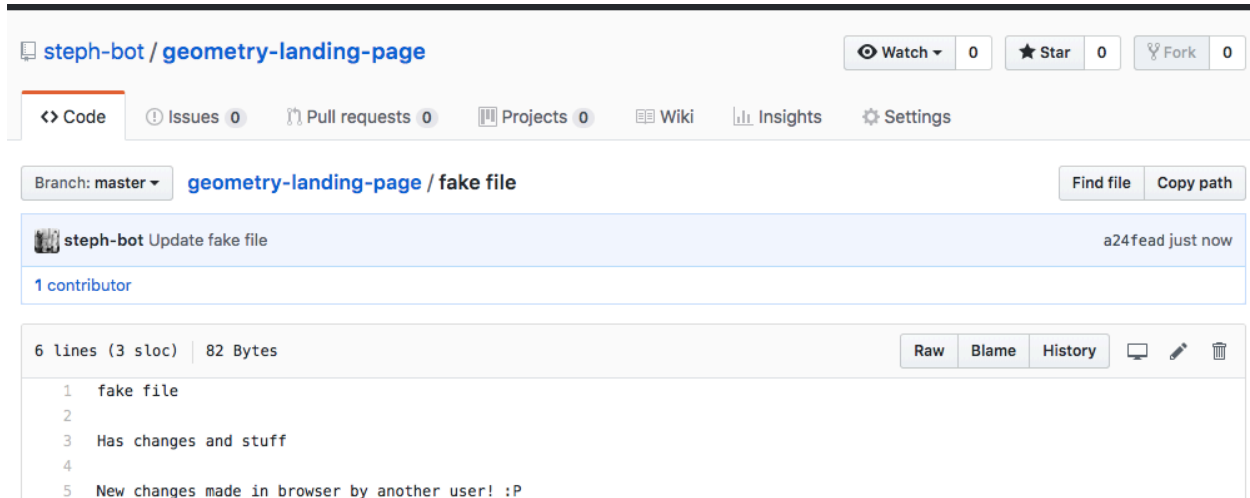Stephanies-Air:geometry-landing-page stepha$ git push

```
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 307 bytes | 307.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/steph-bot/geometry-landing-page.git
   450a2ea..3a0d0a1  master -> master
```

File now updated on GitHub.com...

🖥 steph-bot / **geometry-landing-page**

👁 Watch ▾ 0   ★ Star 0   🍴 Fork 0

<> Code   ⓘ Issues 0   Pull requests 0   Projects 0   Wiki   Insights   Settings

Branch: master ▾   geometry-landing-page / **fake file**   Find file   Copy path

Stephanie updated fake file contents   3a0d0a1 2 minutes ago

0 contributors

3 lines (2 sloc) | 32 Bytes   Raw   Blame   History

```
1    fake file
2
3    Has changes and stuff
```

Let's edit the file in the browser...

🖥 steph-bot / **geometry-landing-page**

👁 Watch ▾ 0   ★ Star 0   🍴 Fork 0

<> Code   ⓘ Issues 0   Pull requests 0   Projects 0   Wiki   Insights   Settings

Branch: master ▾   geometry-landing-page / **fake file**   Find file   Copy path

steph-bot Update fake file   a24fead just now

1 contributor

6 lines (3 sloc) | 82 Bytes   Raw   Blame   History

```
1    fake file
2
3    Has changes and stuff
4
5    New changes made in browser by another user! :P
```

We need to update our local repository...

```
Stephanies-Air:geometry-landing-page stepha$ git status

On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean
```
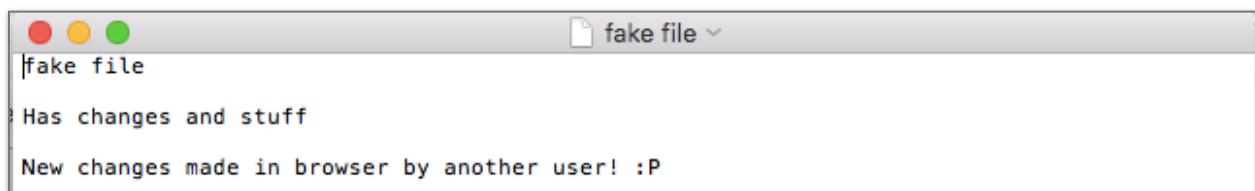
NOTE: git status does NOT tell us there are changes we haven't pulled, even though our file is different from what's online!

```
Stephanies-Air:geometry-landing-page stepha$ git pull

remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
From https://github.com/steph-bot/geometry-landing-page
   3a0d0a1..a24fead  master       -> origin/master
Updating 3a0d0a1..a24fead
Fast-forward
 fake file | 4 +++-
 1 file changed, 3 insertions(+), 1 deletion(-)
```
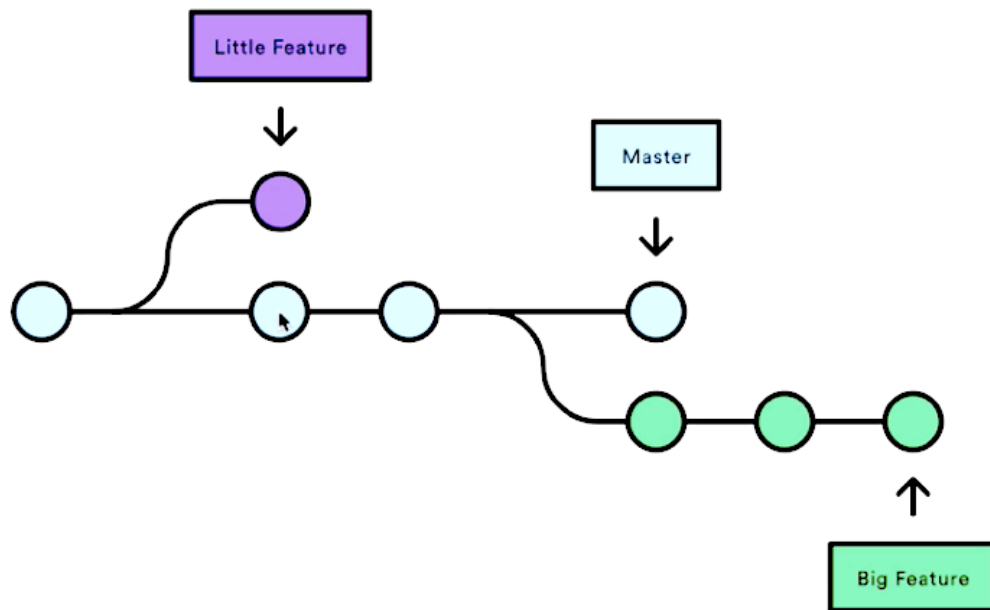
Our local file is now up to date:

```
● ● ●                         📄 fake file ⌄
fake file

Has changes and stuff

New changes made in browser by another user! :P
```

- If you ever happen to see it, ignore the DS_Store file, it is specific to MacOS and useless.

- To start a new day of work: `git pull`

GitHub Branches

It's better to work on features in a branch instead of in "master"

```
git branch (view branches & which branch I'm on)
git branch NewFeature (create branch NewFeature)
git checkout NewFeature (switch to branch)
git merge master (merge master into current
branch.. make sure you do git pull first to have
most up to date master!)
```
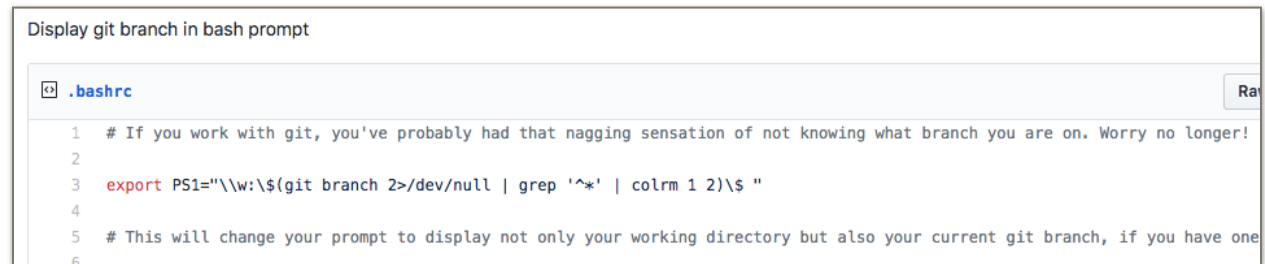

After completing the feature in it's own branch, use GitHub website to create a pull request to show teammates.

Teammates can then start a "review". Eventually, a teammate will merge the pull request (you usually don't merge your own stuff).

Some teams like deleting the branch after the merge.

Trick to display branch in terminal:
Source: *https://gist.github.com/justintv*

```
export PS1="\\w:\$(git branch 2>/dev/null |
grep '^*' | colrm 1 2)\$ "
```

Display git branch in bash prompt

```
<>  .bashrc                                                                                    Ra
   1   # If you work with git, you've probably had that nagging sensation of not knowing what branch you are on. Worry no longer!
   2
   3   export PS1="\\w:\$(git branch 2>/dev/null | grep '^*' | colrm 1 2)\$ "
   4
   5   # This will change your prompt to display not only your working directory but also your current git branch, if you have one
   6
```

To start a new day of work:

```
git checkout master (switch to master branch)
git pull (pulls from gitHub.com to local repo)
```