

# Git / Github Tutorial

# What is Git?

- Version control for Programmers
- Like Microsoft Word "Track Changes" feature with superpowers
- Makes it easy for programmers to collaborate and work on the same codebase
- SVN (subversion) and CVS are other version control programs (Git is the most popular)

# What is Github?

- Web-based Git repository hosting service
- Built on top of git
- Morphed into a "social network" for developers

# Vocabulary

- Repository
- Branch
- Fork
- Commit
- Push
- Pull Request

# Repository

- Most basic element of GitHub
- A repository contains all of the project files
- Stores each file's revision history
- Repositories can have multiple collaborators and can be either public or private.

# Branch

- Parallel version of a repository
- It is contained within the repository, but does not affect the primary or master branch allowing you to work freely without disrupting the "live" version.
- When you've made the changes you want to make, you can merge your branch back into the master branch to publish your changes

# Fork

- A fork is a copy of a repository. Forking a repository allows you to freely experiment with changes without affecting the original project
- Most commonly, forks are used to either propose changes to someone else's project or to use someone else's project as a starting point for your own idea

# Commit

- A "revision", is an individual change to a file (or set of files)
- Git's version of "saving"
- Commits usually contain a commit message which is a brief description of what changes were made

# Push

- Refers to sending your committed changes to a remote repository such as GitHub.com
- For instance, if you change something locally, you'd want to then push those changes so that others may access them

# Pull Request

- Pull requests are proposed changes to a repository submitted by a user and accepted or rejected by a repository's collaborators.
- Pull requests each have their own discussion forum. See Using Pull Requests.
- Used to perform "Code Reviews" of other developers' work

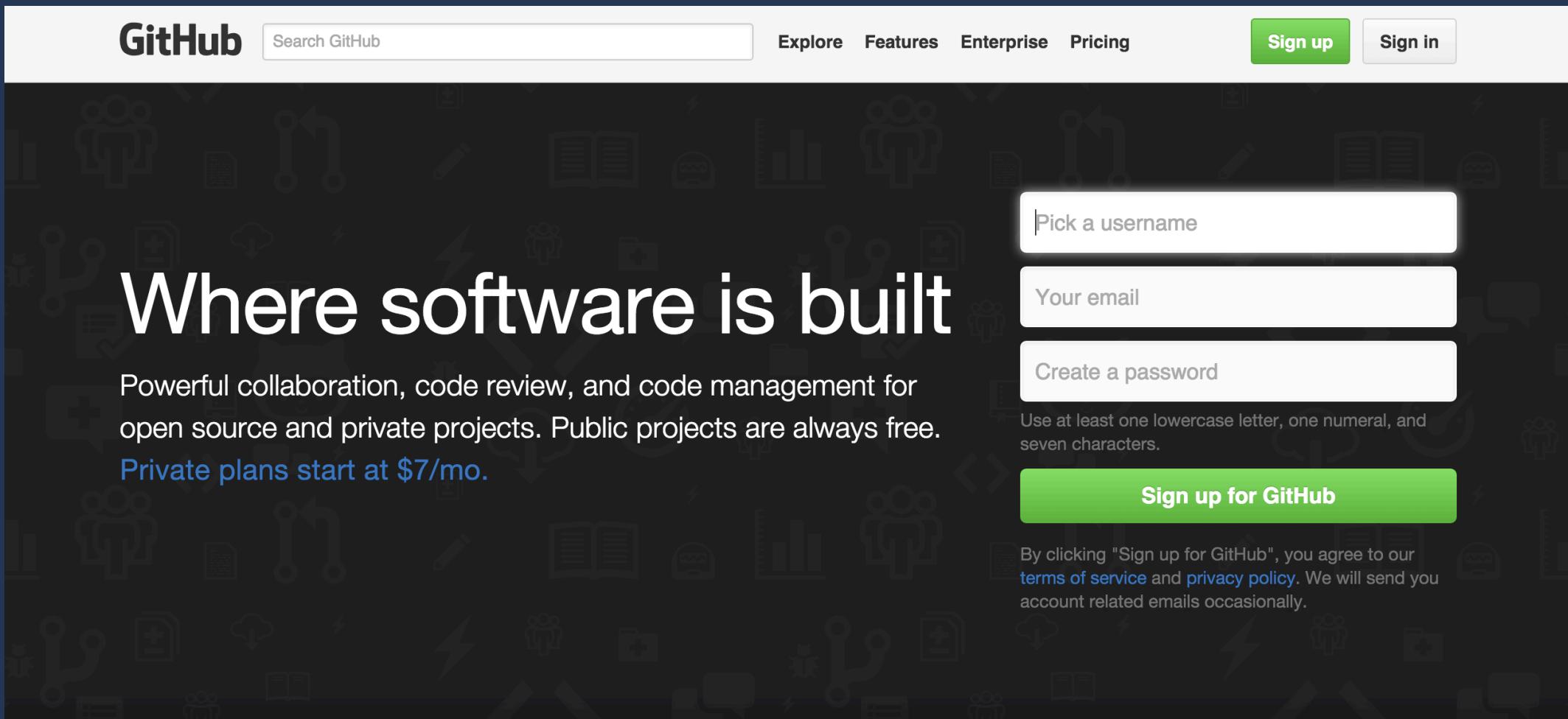
# Merge

- Merging takes the changes from one branch (in the same repository or from a fork), and applies them into another
- This often happens as a Pull Request (which can be thought of as a request to merge)

# **Initial Setup**

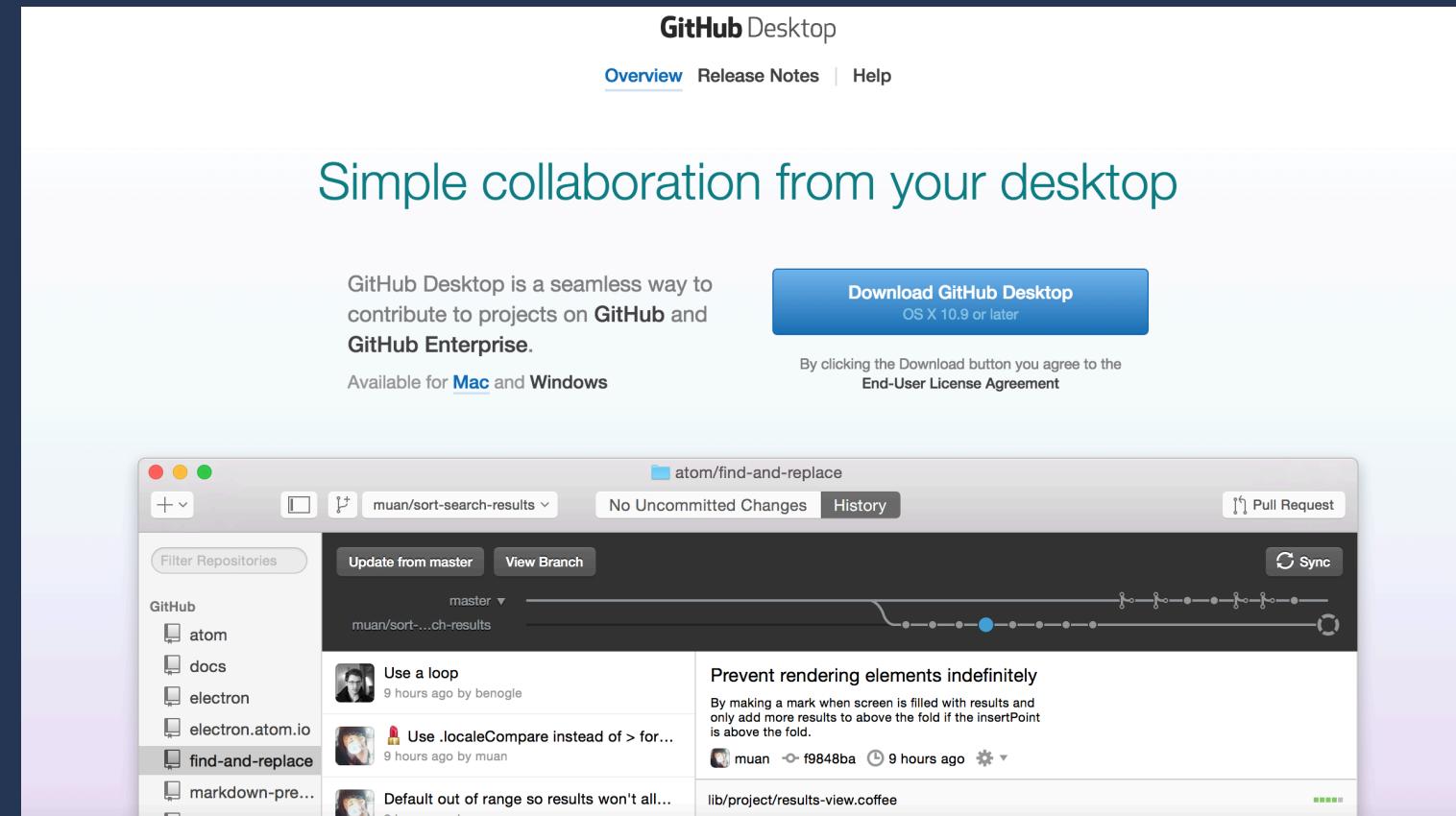
**(The following steps only need to  
be completed One Time)**

# Step 1: Create a Github Account\*



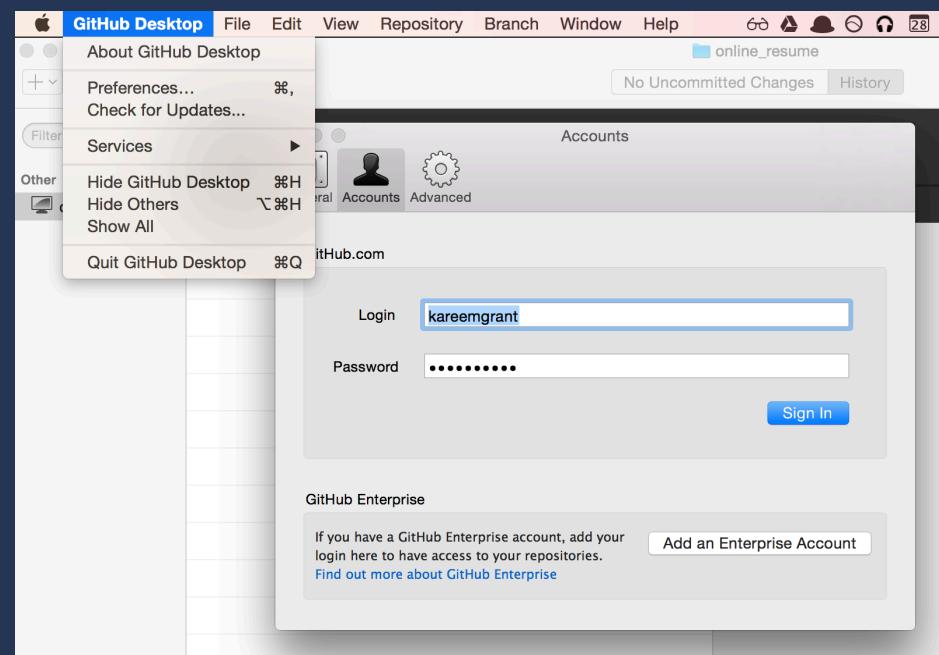
\*one-time step

# Step 2: Download Github Desktop software\*



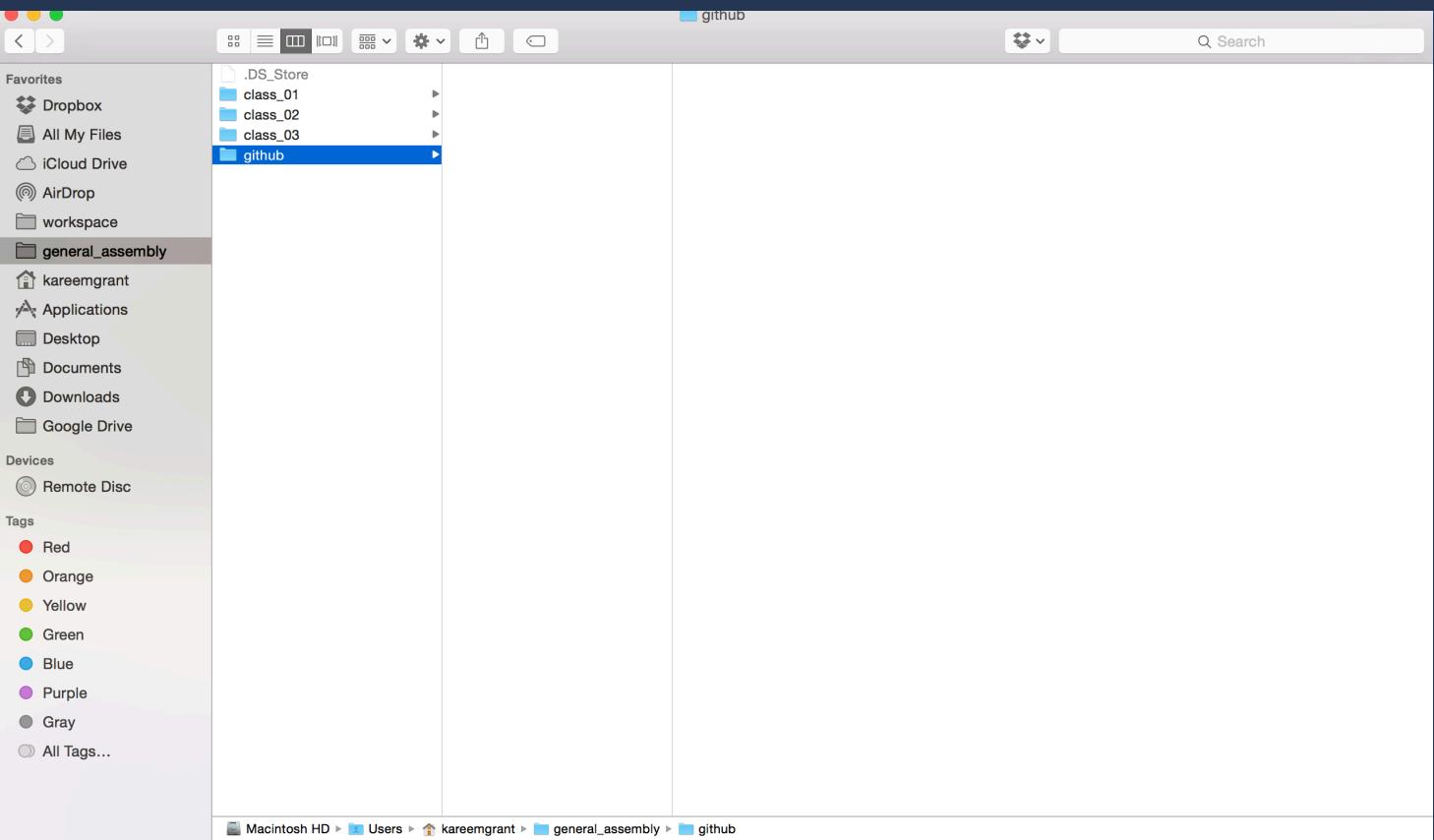
\*one-time step

# Step 3: Sign in to Github Account through the Github Desktop application



- Github Desktop -> Preferences -> Accounts
  - \*one-time step / Use Github account username & password

# Step 4: Create a folder named github in your "class" folder\*

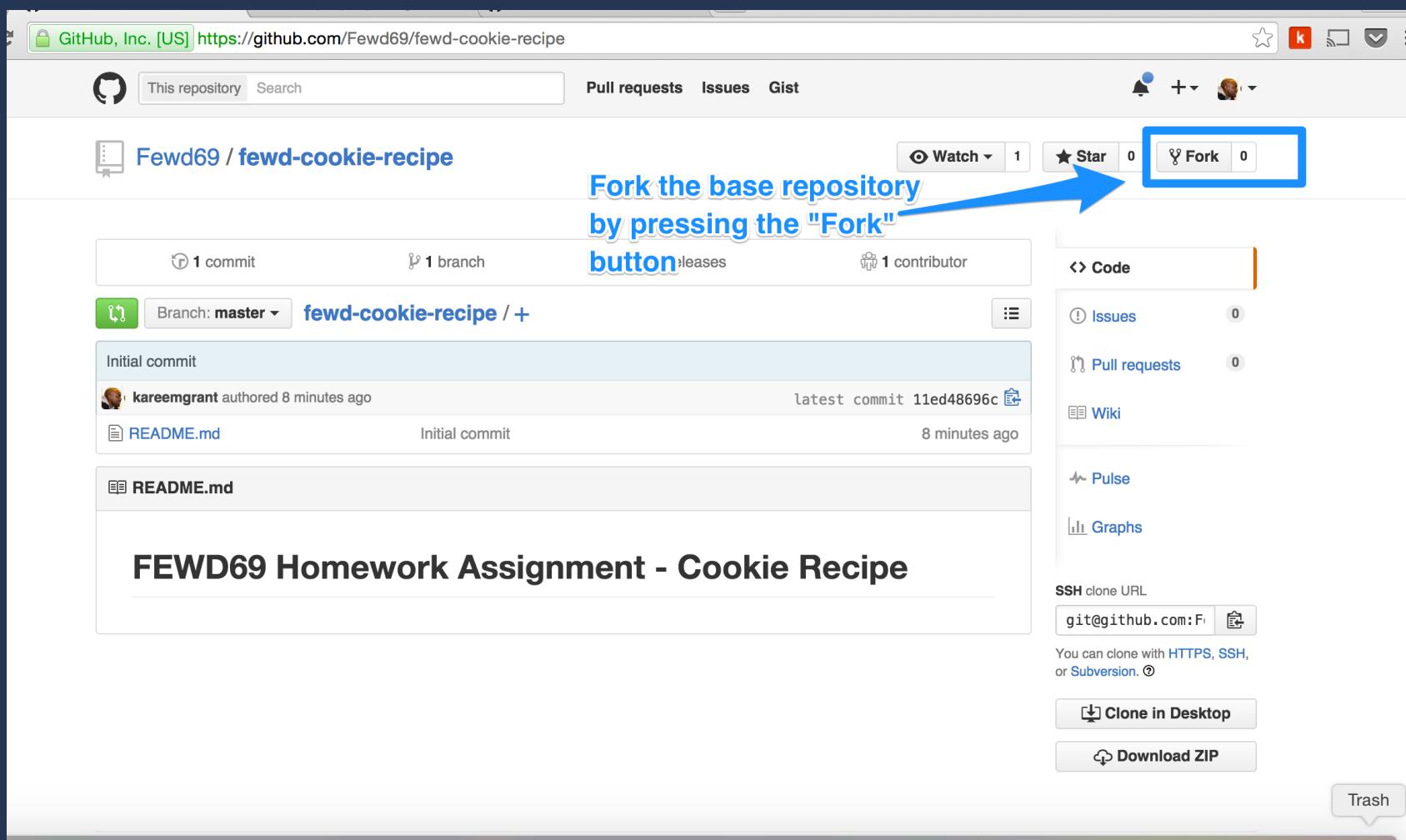


\*one-time step

# Starting an Assignment

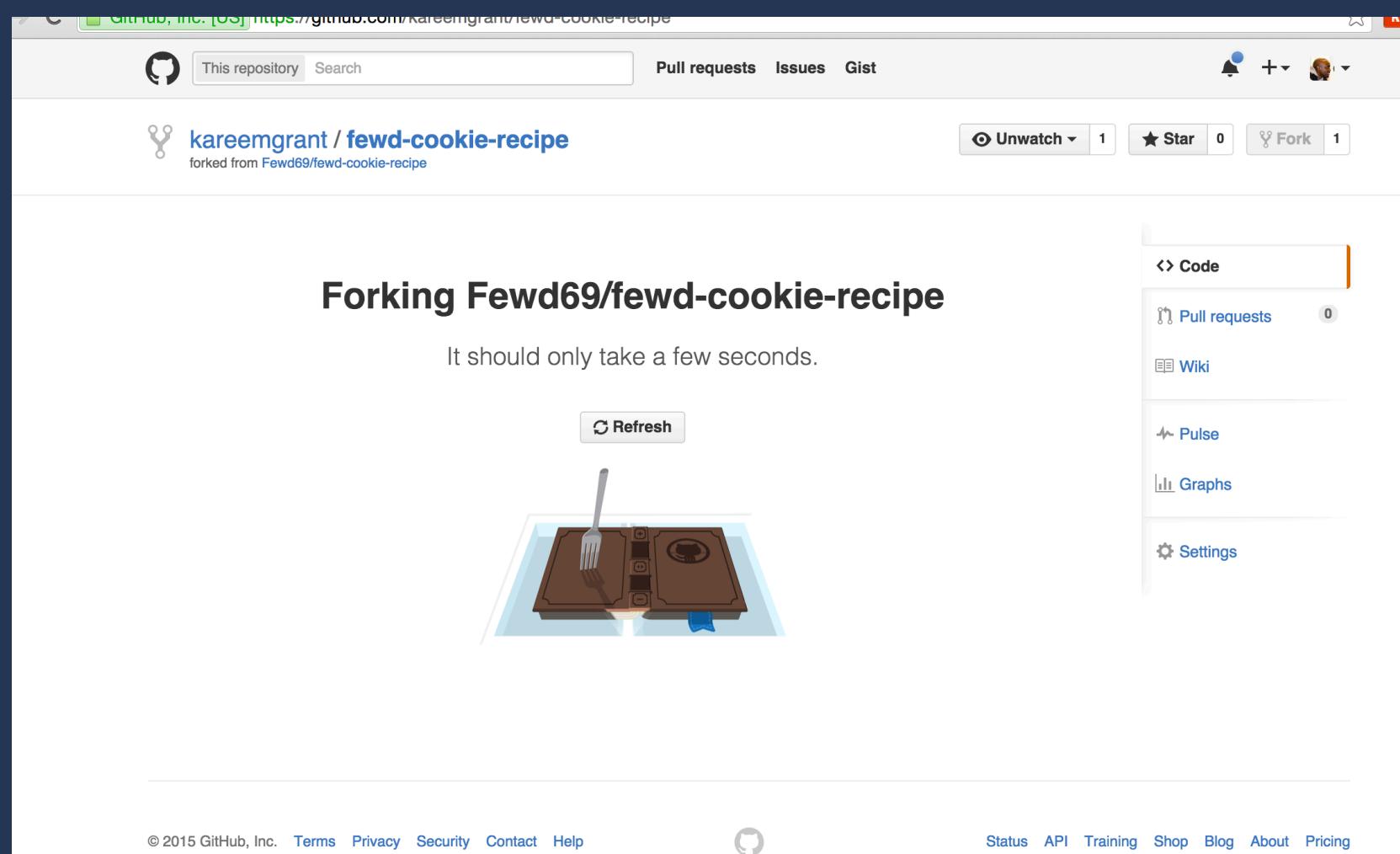
# Step 5a: Fork Instructor Repository

- The link for the Instructor repository will be provided to you

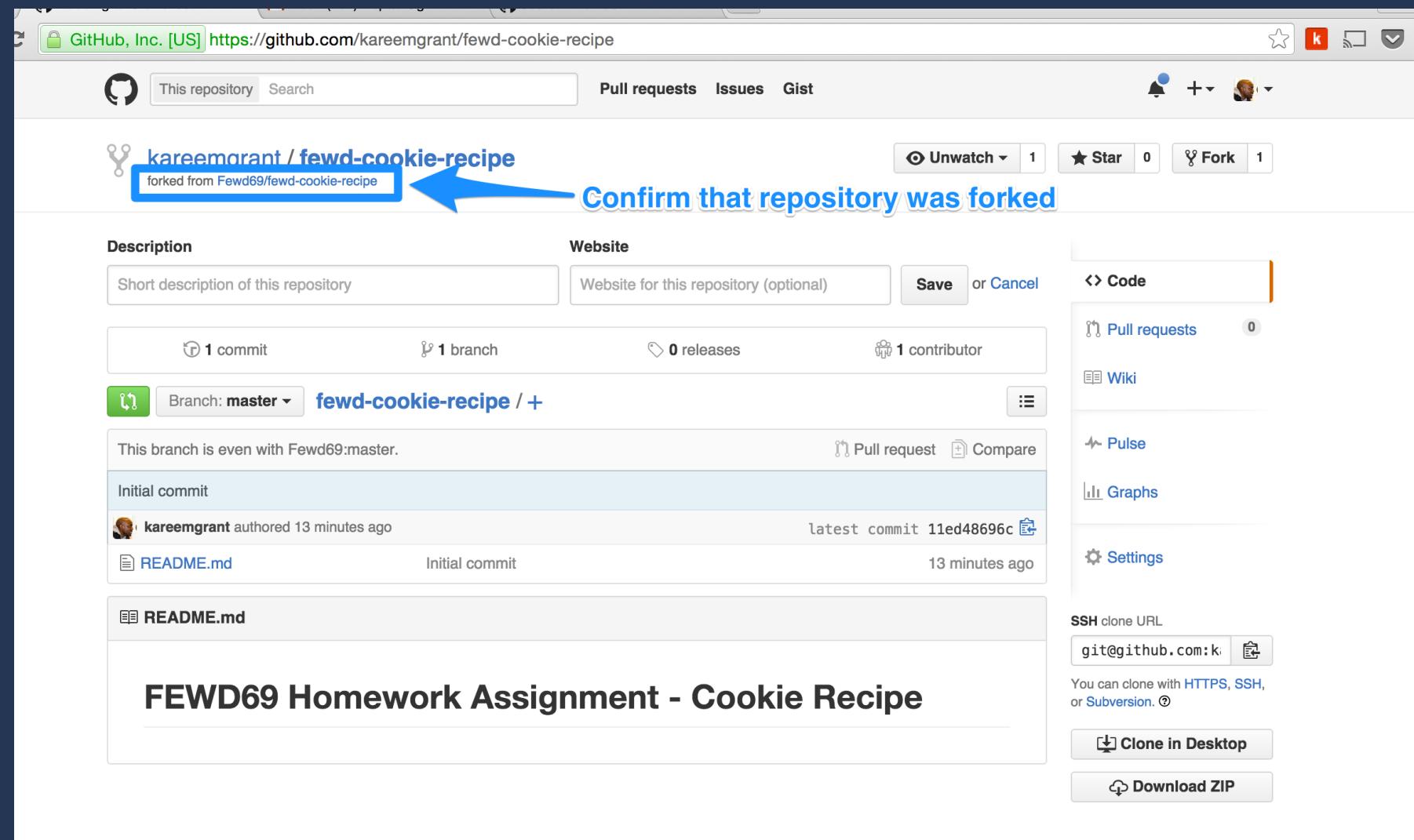


# Step 5b: Fork Instructor Repository

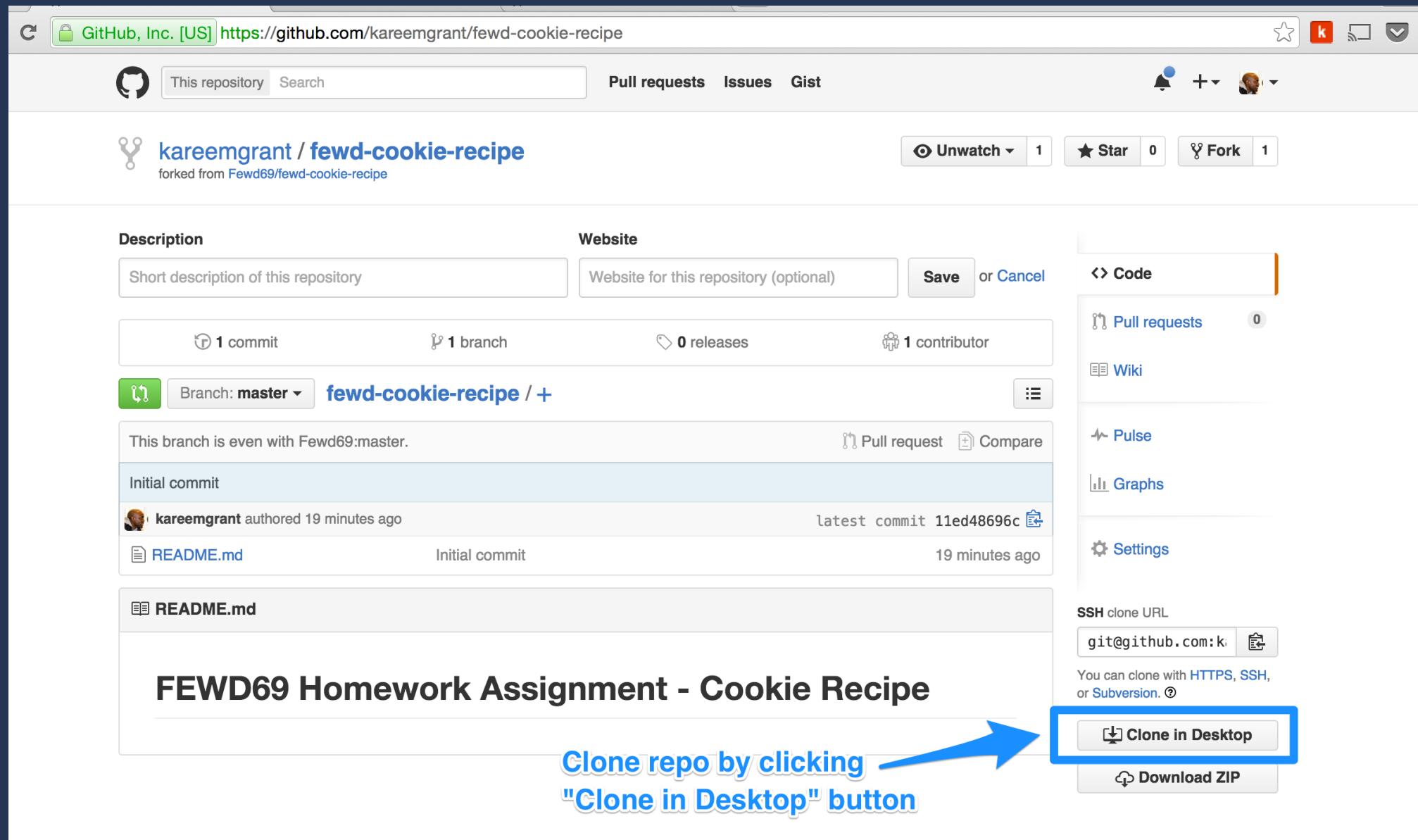
- Github will create a copy of the repo under your account



# Step 6: Confirm Repository was Successfully Forked

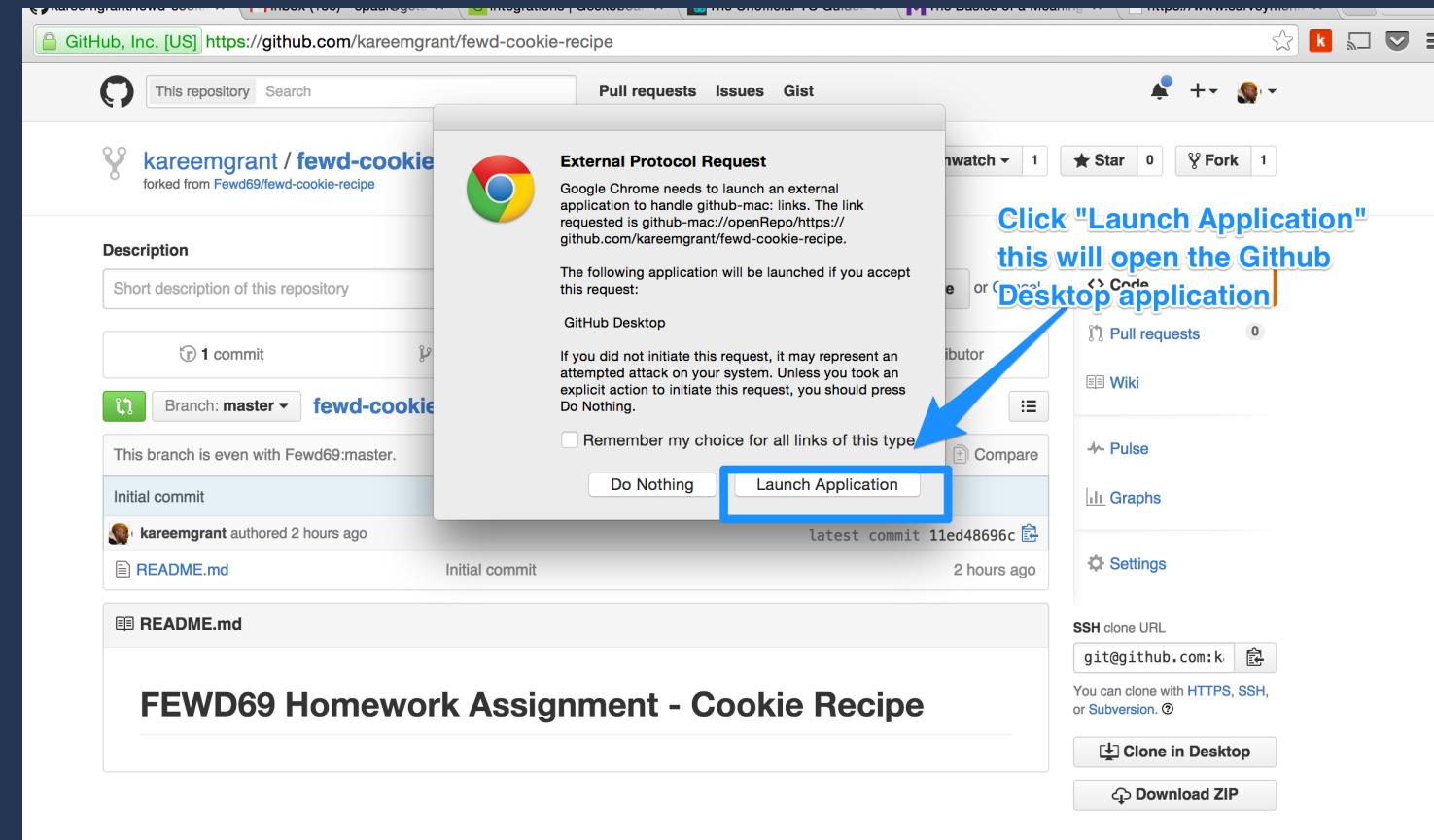


# Step 7a: Clone Repository in Github



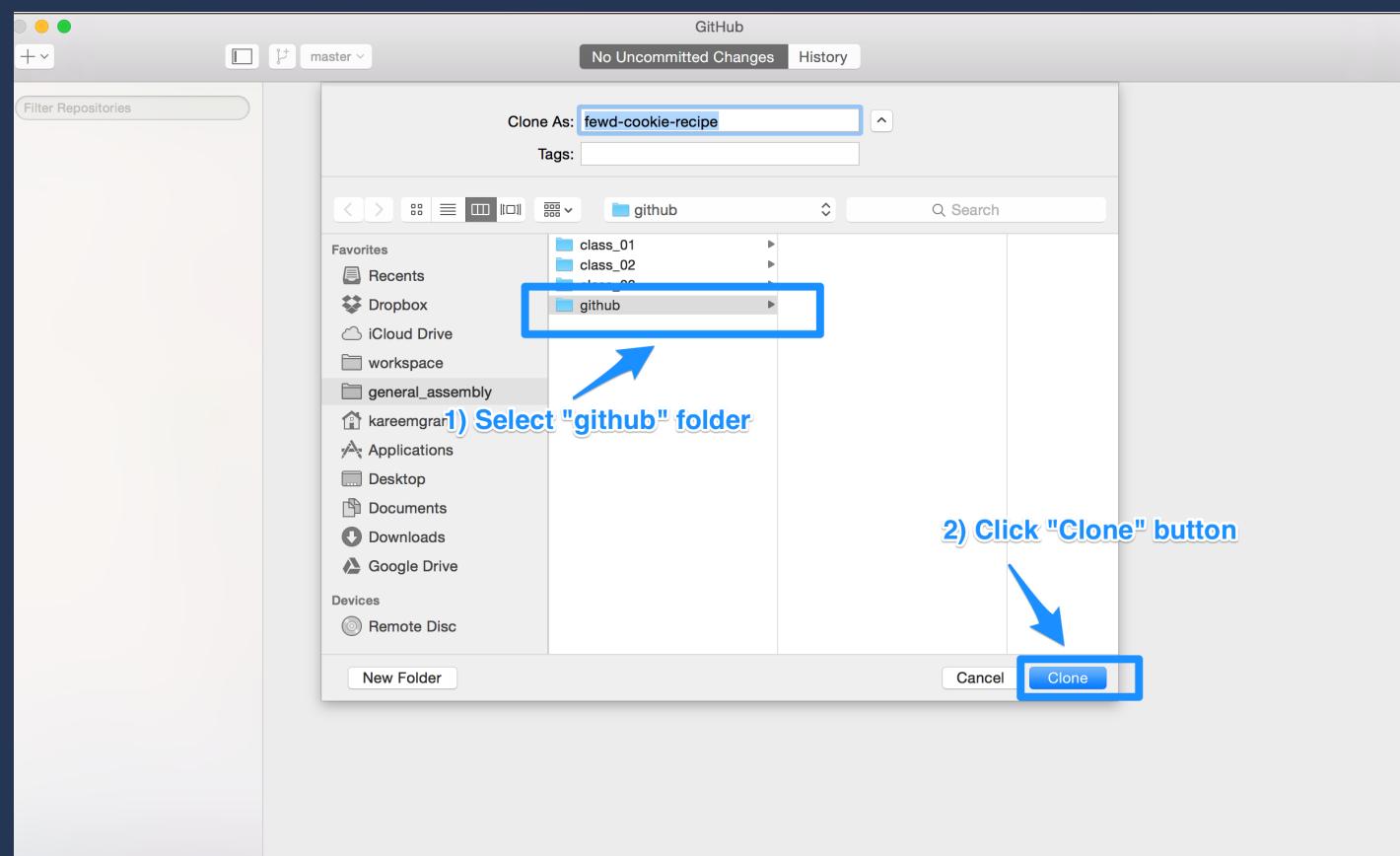
# Step 7b: Click "Launch Application" button

- This opens your Github Desktop application

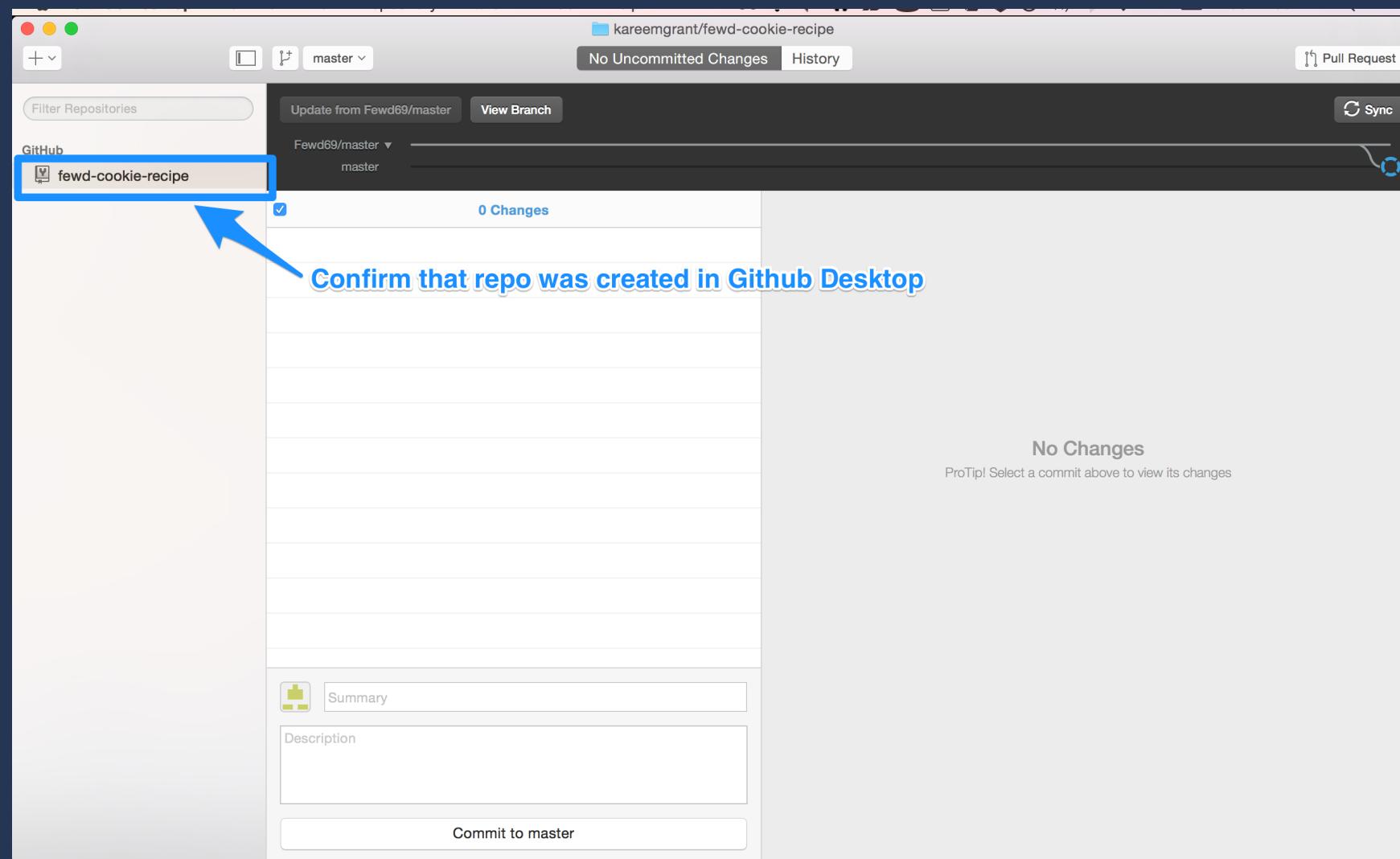


# Step 7c: Select your "github" folder and click "clone"

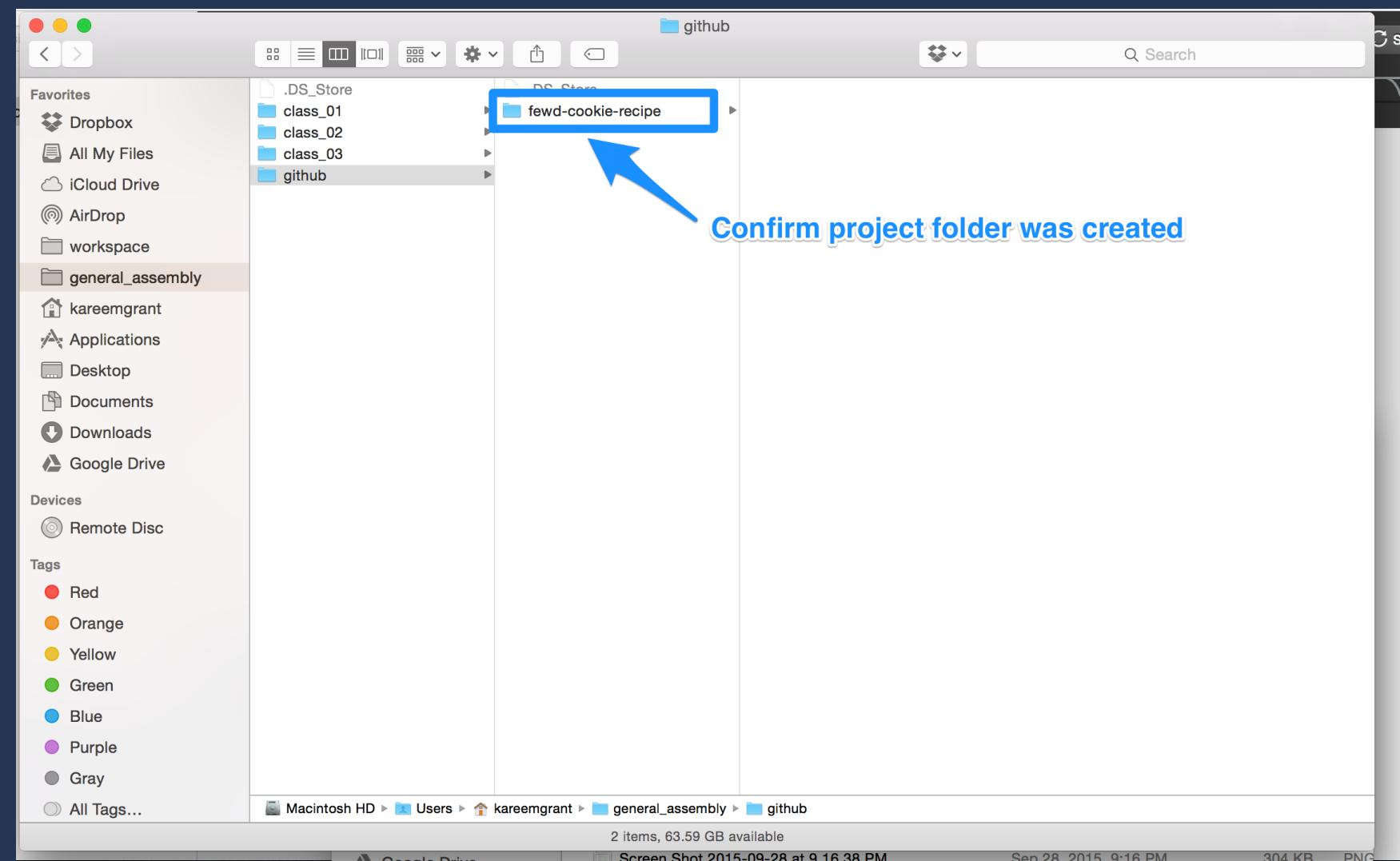
- This is where the project folder will live



# Step 8: Confirm Repo was created in Github Desktop

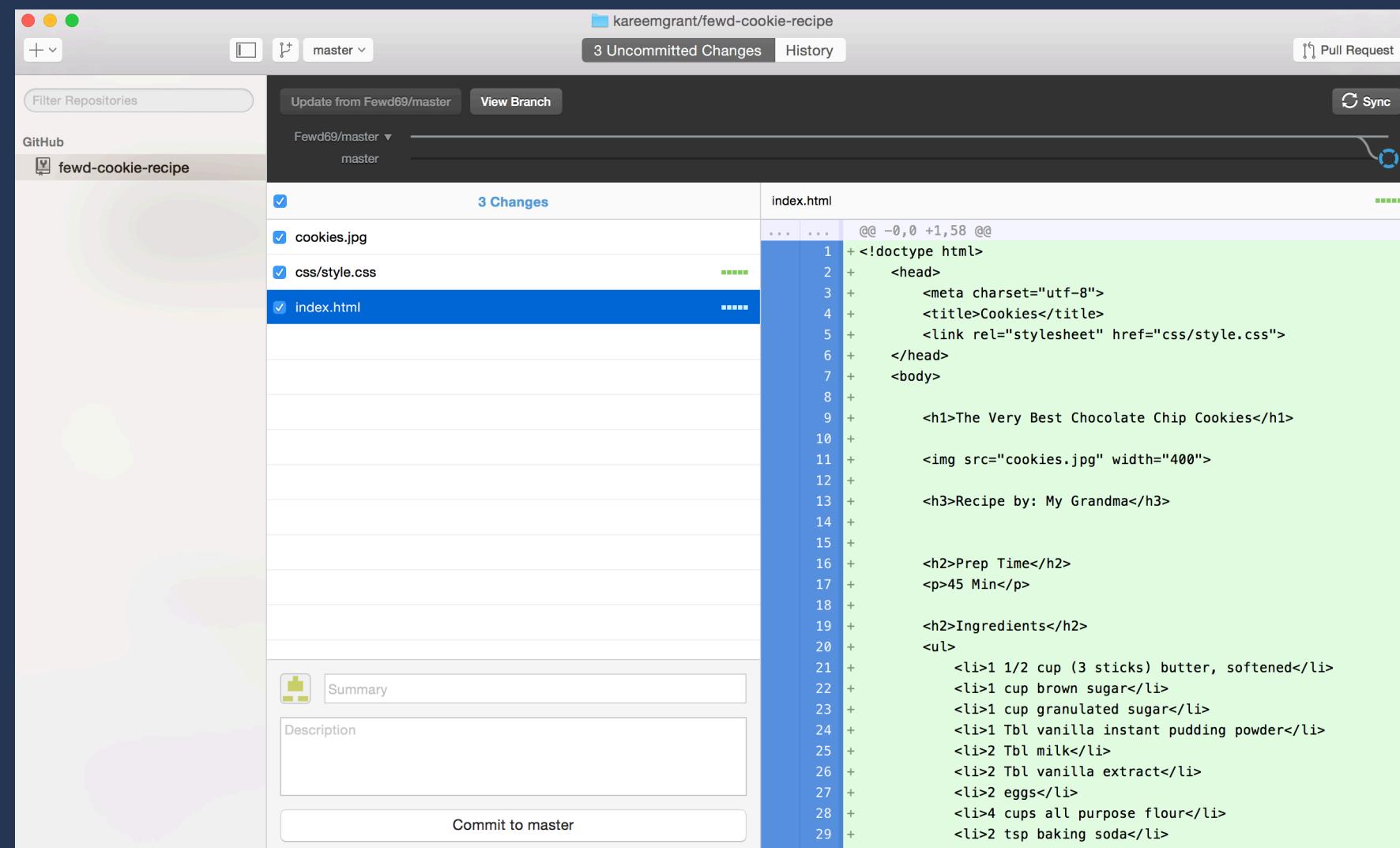


# Step 9: Confirm project folder was created in "github" folder

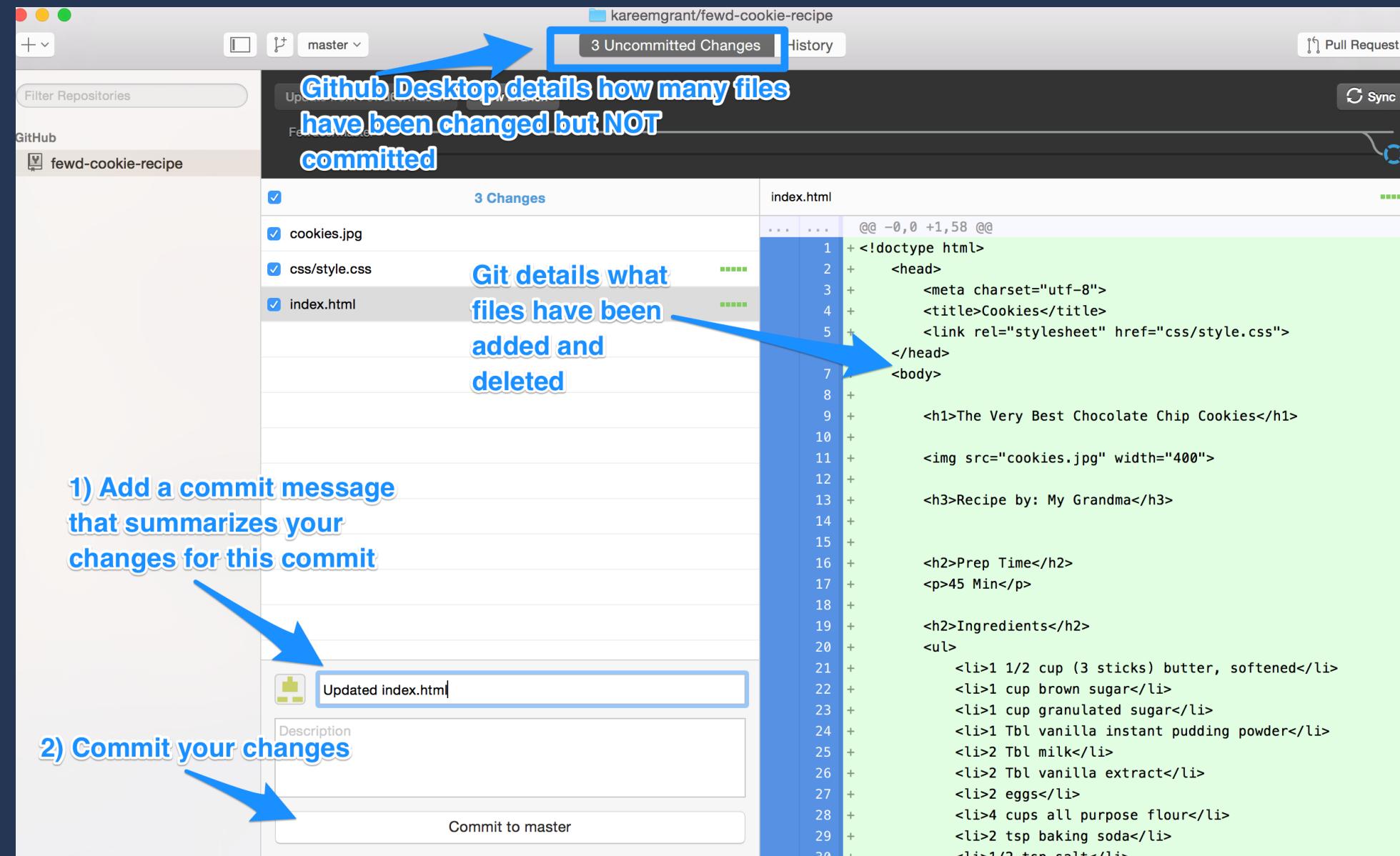


**Step 10a: Open project folder  
with sublime and add code (as  
you normally would)**

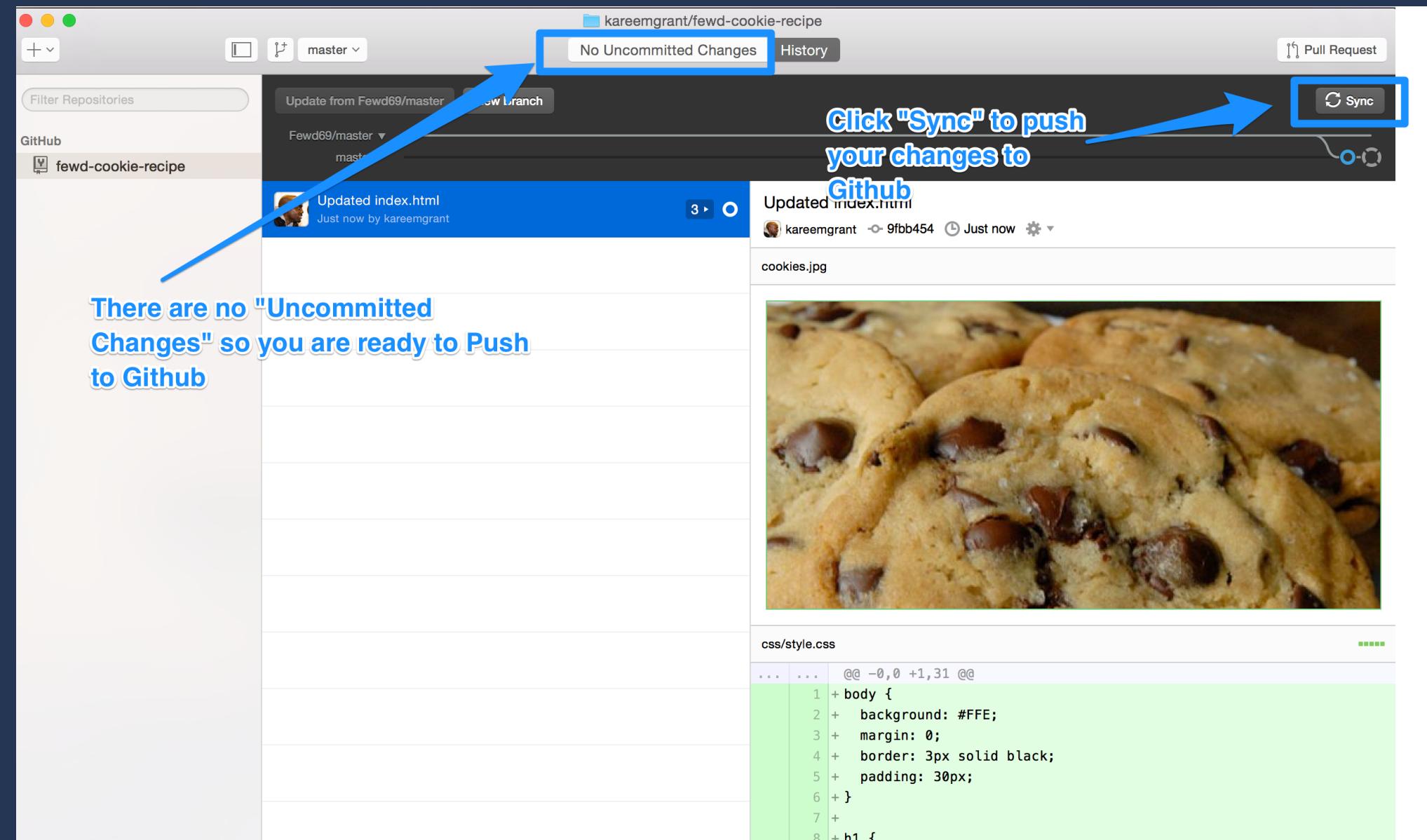
# Step 10b: View changes in Github Desktop



# Step 11: Commit Your Changes



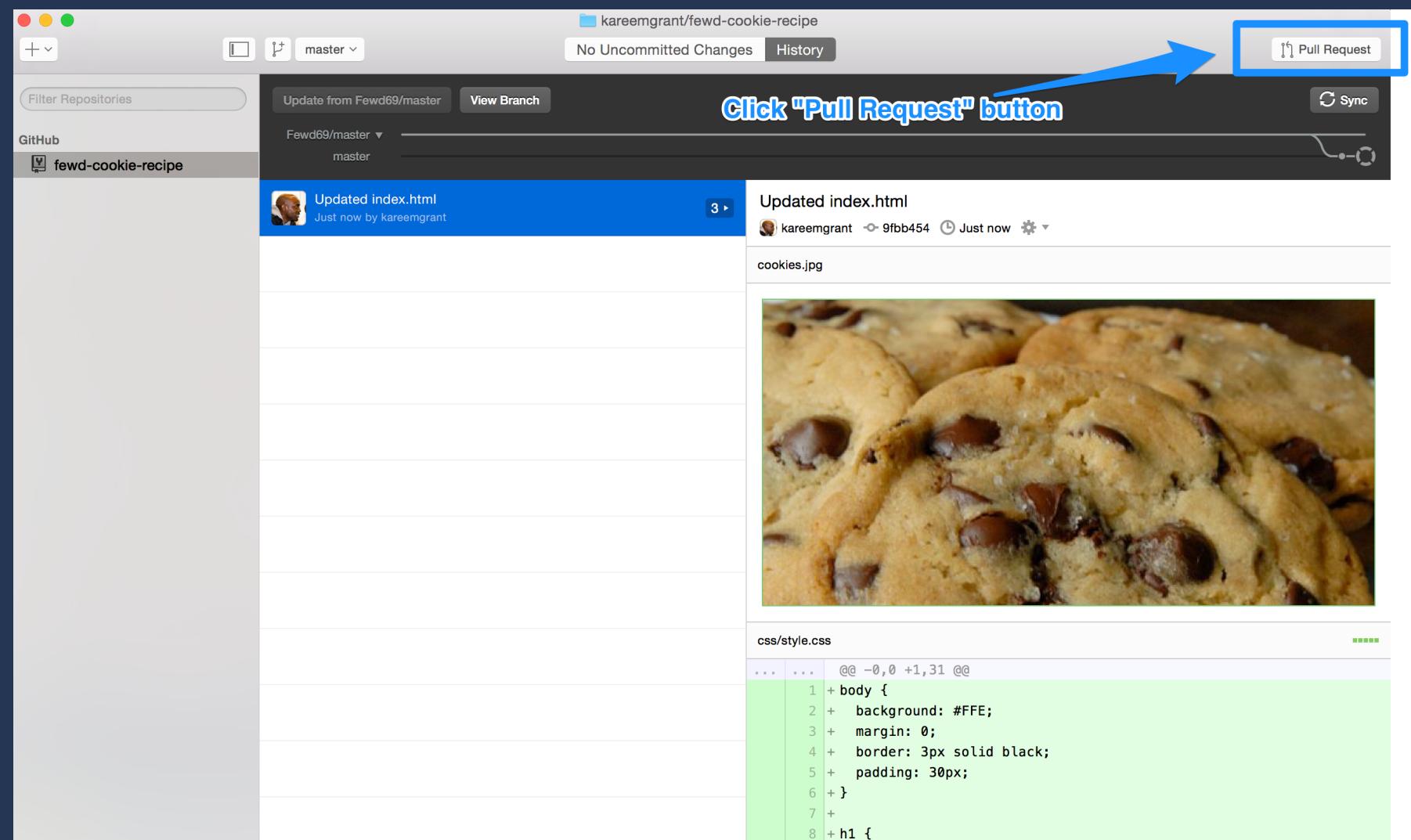
# Step 12: Push your changes to Github.com



**Repeat Steps 10 through 12 - as many times as needed**

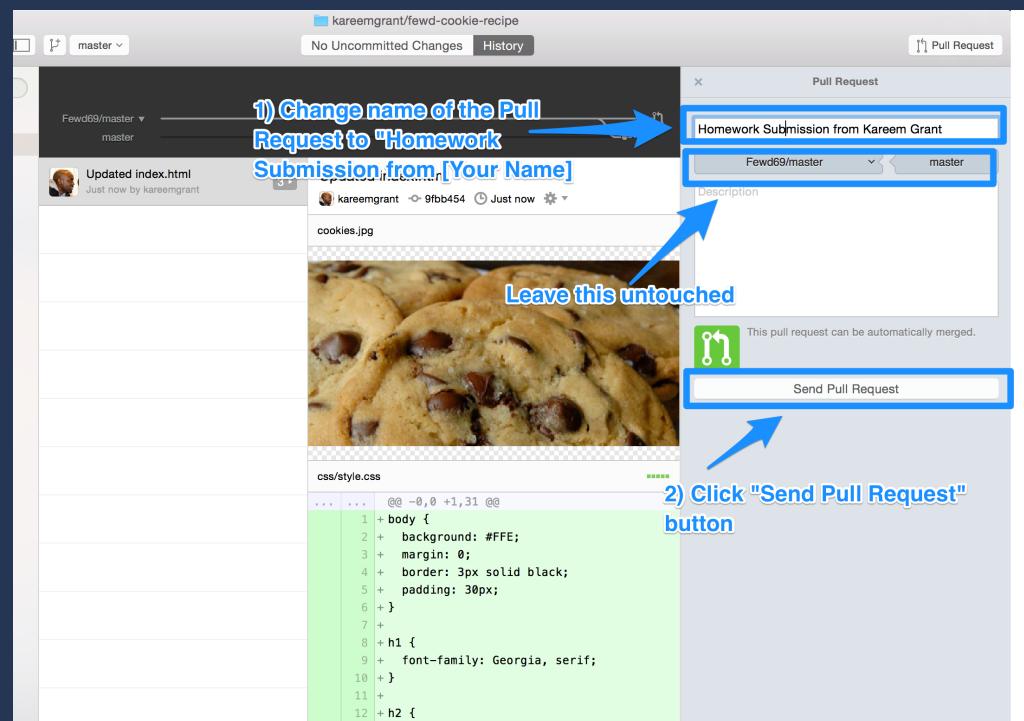
# **Submitting Your Assignment**

# Step 13a: Create a Pull Request in Github Desktop

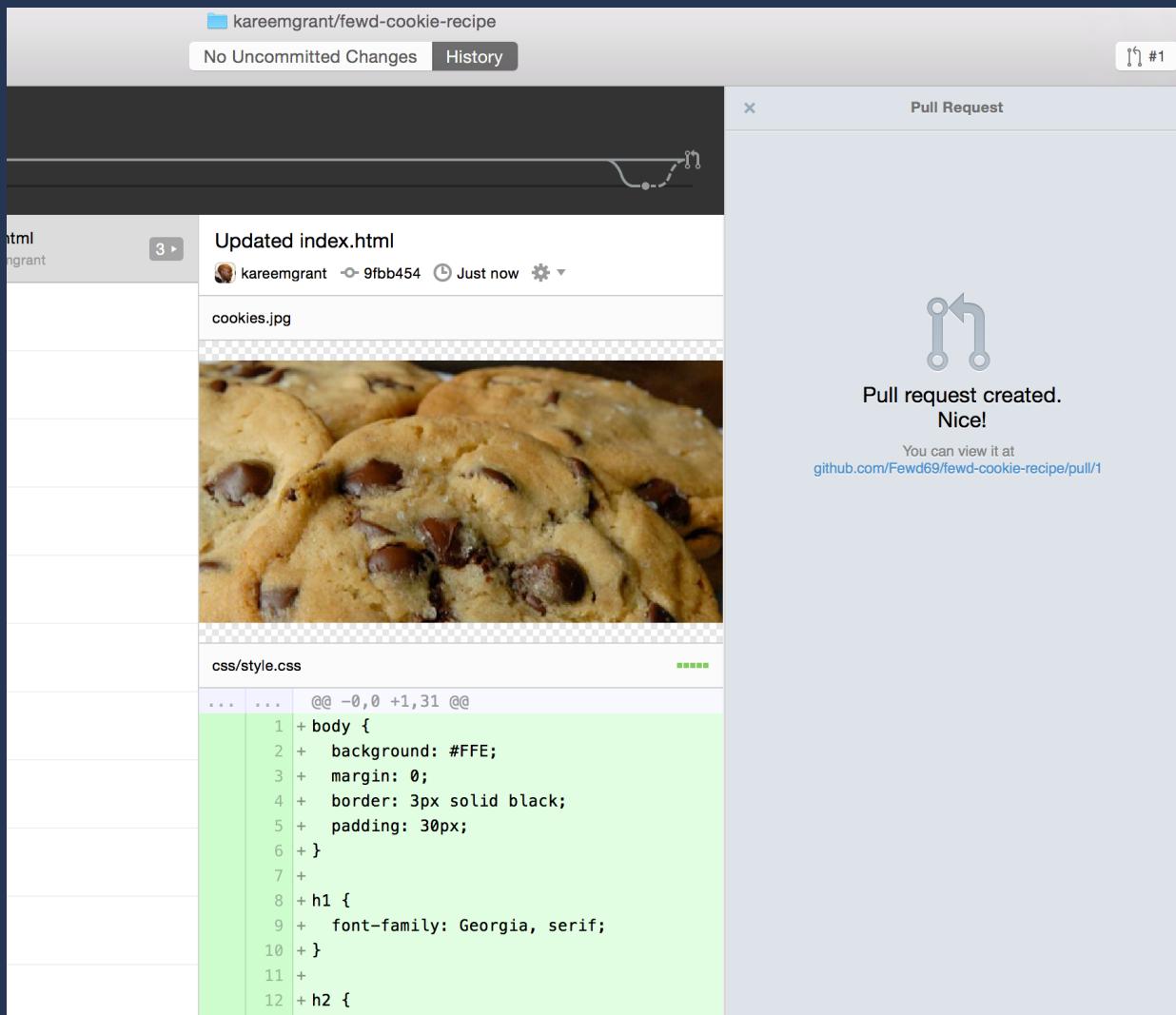


# Step 13b: Create a Pull Request in Github Desktop

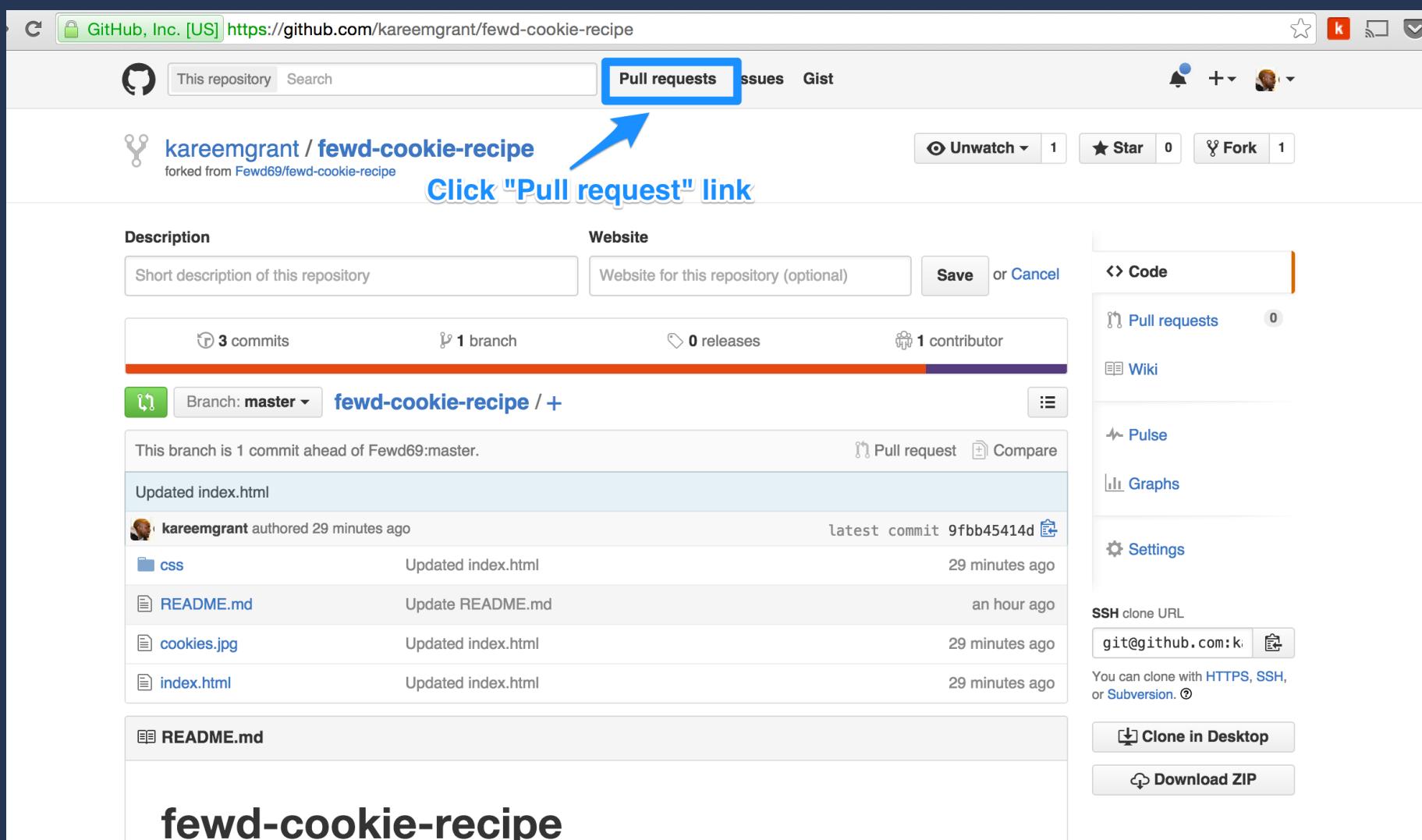
- **Important:** Pull request should be named: HW Submission from [Your Name]



# Step 13c: Create a Pull Request in Github Desktop



# Step 14a: Confirm Creation of Pull Request on Github



# Step 14b: Confirm Creation of Pull Request on Github

GitHub, Inc. [US] <https://github.com/pulls>

Search GitHub

Pull requests Issues Gist

Created Assigned Mentioned

4 Open ✓ 101 Closed

is:open is:pr author:kareemgrant

Click on your Pull Request link

Fewd69/fewd-cookie-recipe Homework Submission from Kareem Grant  
#1 opened 5 minutes ago by kareemgrant

Visibility ▾ Organization ▾ Sort ▾

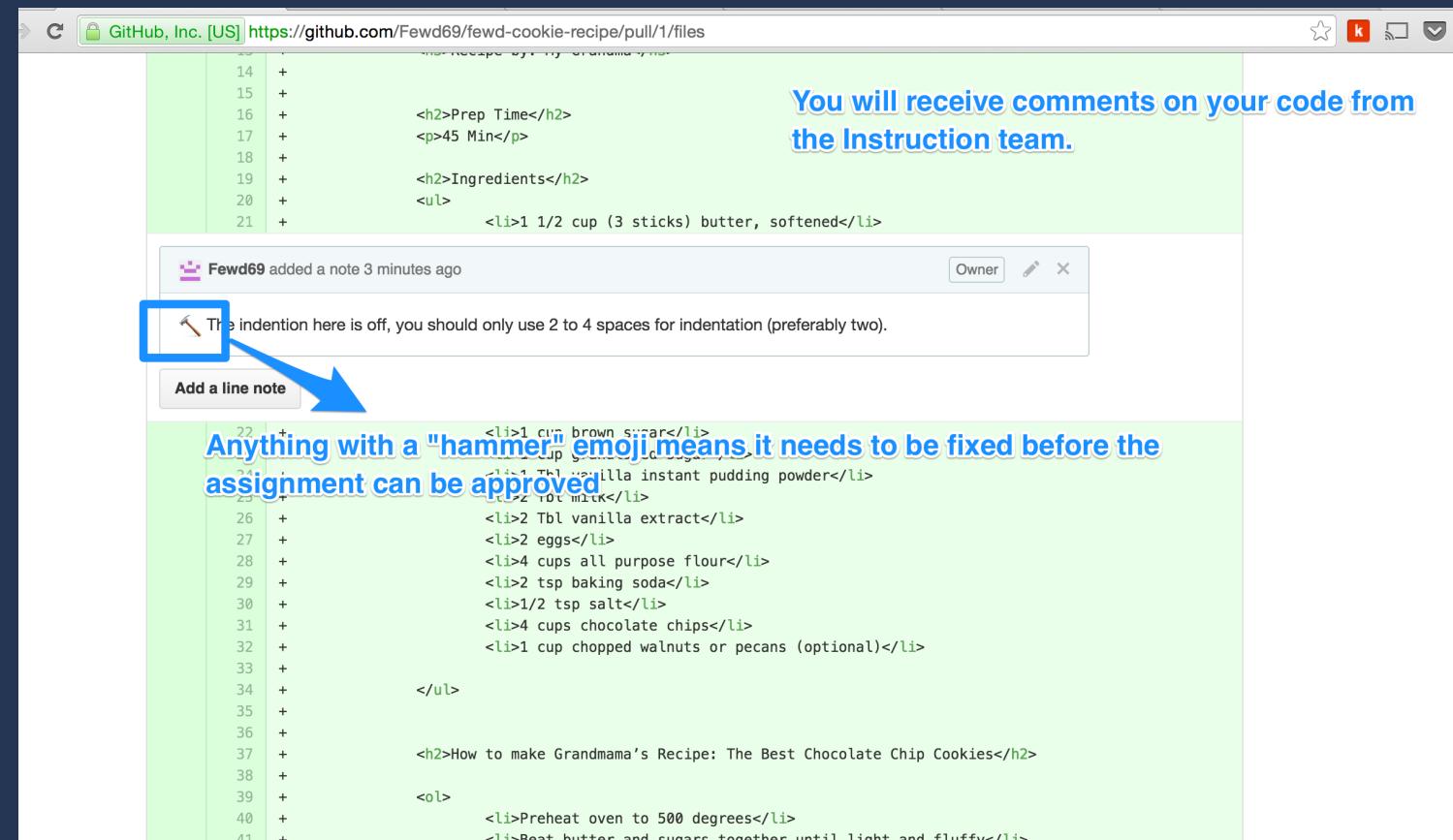
# Step 14c: Confirm Creation of Pull Request on Github

The screenshot shows a GitHub pull request page. At the top, the URL is https://github.com/Fewd69/fewd-cookie-recipe/pull/1. The repository name "Fewd69 / fewd-cookie-recipe" is highlighted with a blue box and has a blue arrow pointing to the text "Your pull request lives on the Instructor repo that you forked". The main title of the pull request is "Homework Submission from Kareem Grant #1". The status is "Open" and it shows "kareemgrant wants to merge 2 commits into Fewd69:master from kareemgrant:master". Below the title, there are sections for "Conversation" (3), "Commits" (2), and "Files changed" (3). A comment from "kareemgrant" is shown, stating "commented an hour ago" and "No description provided.". The commit history shows "Updated index.html" by "kareemgrant" with hash 9fbb454. On the right side, there are sections for "Labels" (None yet), "Milestone" (No milestone), and a sidebar with various icons.

# **Receive Feedback from Instructors**

# Step 15a: Instructors will leave feedback and let you know what needs to be fixed

- Hammer emojis indicate something that needs to be fixed



# Step 15b: Students can add comments of their own to get clarification

The screenshot shows a GitHub pull request page for a file named "cookie-recipe.py". The file contains Python code for a cookie recipe, including sections for prep time, ingredients, and a note about butter.

**Comments:**

- Fewd69** added a note 10 minutes ago: "The indentation here is off, you should only use 2 to 4 spaces for indentation (preferably two)."
- kareemgrant** added a note 10 seconds ago: "Is there a setting in Sublime that I can use to help with my indentation?" This comment is highlighted with a blue box and a blue arrow points to it from the text on the right.

**Text on the right:**

Students can add comments of their own to discuss code issues or ask for clarification

# **Step 16: Student Fixes Any Outstanding Issues (Hammer emojis)**

**Repeat Steps 10 through 12**

- 1) Make your changes in sublime
- 2) Commit your changes
- 3) Push your changes

**Do Not create a new Pull Request** Your existing Pull Request will automatically be updated

# Step 17: Instructor Reviews Changes

- Instruction team will receive an email notification letting them know your Pull Request was updated
- Instruction team will confirm that "hammers" were addressed

# Step 18: Instructor Approves Your Assignment

- Student will receive a "Thumbs Up" emoji indicating that the assignment was approved

