

Intro to Git & GitHub

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Welcome!

Girl Develop It is here to provide affordable and accessible programs to learn software through mentorship and hands-on instruction.

Rules

- We are here for you!
- Every question is important
- Help each other
- Have fun

Welcome!

- What's your name?
- What is your Git/GitHub experience?
- What do you hope to get out of the class?

What we will cover

- What is version control and why should we care?
- Setting up GitHub Desktop & GitHub.com
- Collaboration with others

What is version control?

Track & Revert Changes

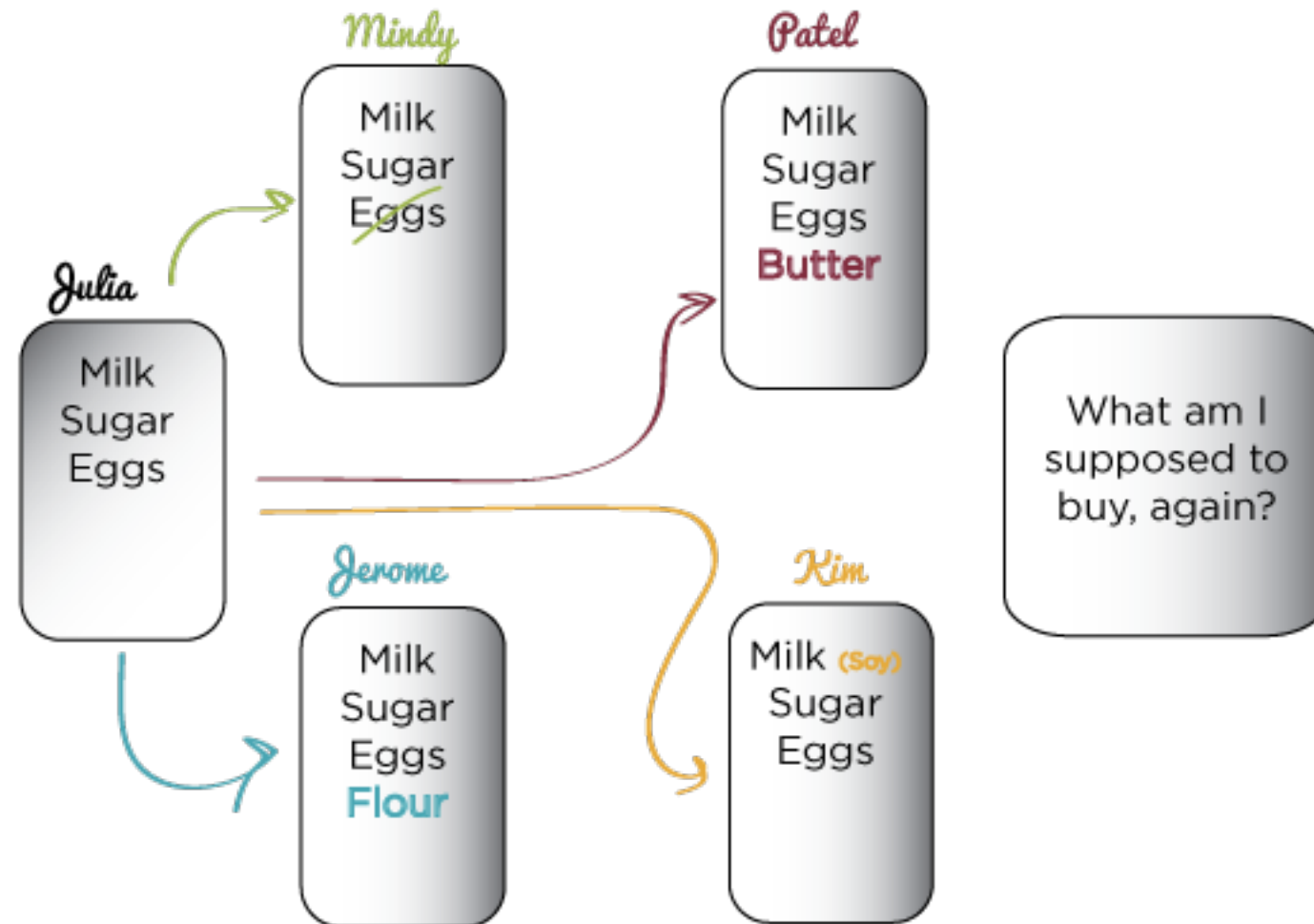
Mistakes happen. Wouldn't it be nice if you could see the changes that have been made and go "back in time" to fix something that went wrong?

What is version control?

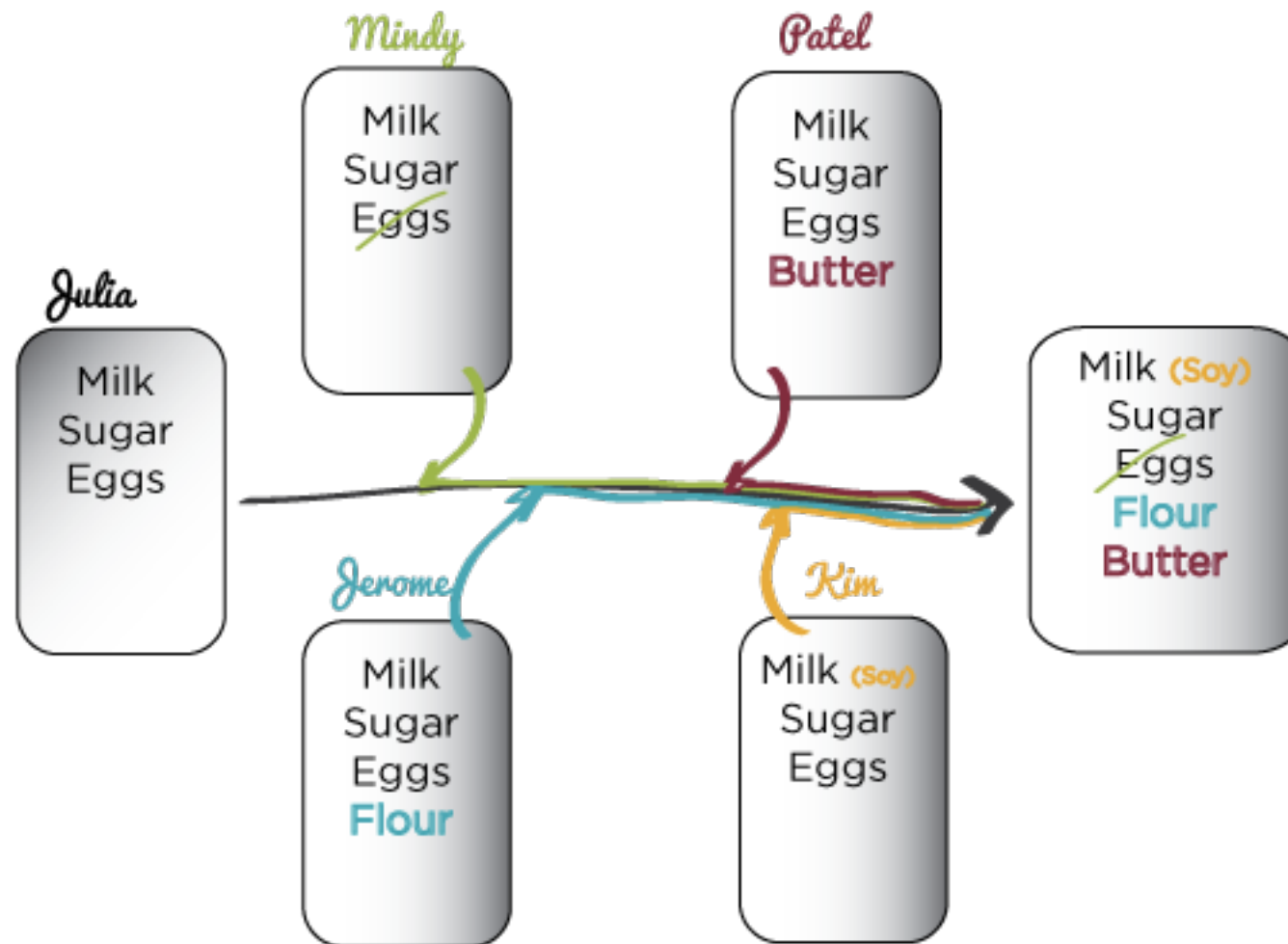
Collaborate

Create anything with other people,
from academic papers to entire
websites and applications.

What is version control?



What is version control?



History

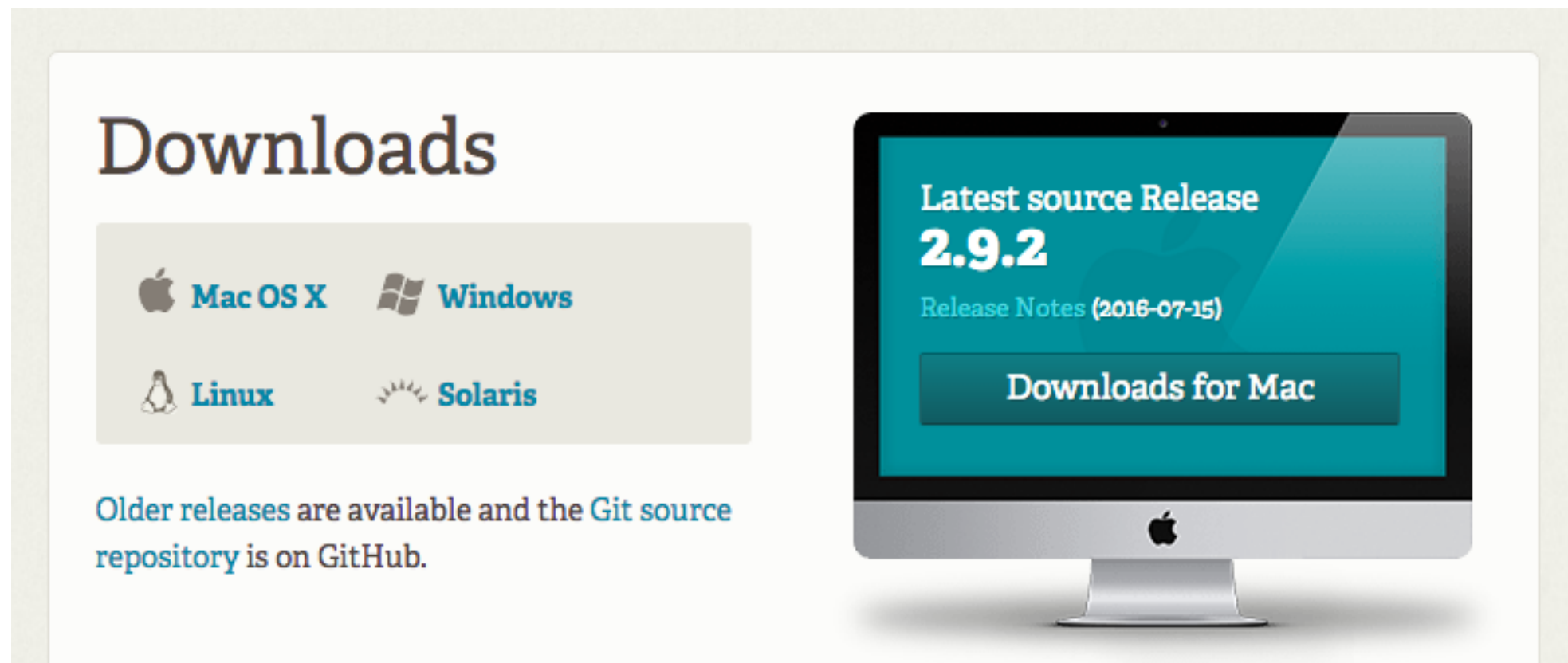
- 1990s — CVS (Concurrent Version Systems)
- 2000s — SVN (Apache Subversion)
- 2005 — Git
- 2008 — GitHub Founded

Git Benefits

- Fast -- add to your team and code base quickly
- Distributed, every user has a local copy
- Each commit has a corresponding hash (track changes from everyone)
- Everyone has a local copy of the history

Installation

git-scm.com/downloads



Sign Up for GitHub

github.com/join

Join GitHub

The best way to design, build, and ship software.



Step 1:
Set up a personal account



Step 2:
Choose your plan



Step 3:
Tailor your experience

Create your personal account

Username

This will be your username — you can enter your organization's username next.

Email Address

You will occasionally receive account related emails. We promise not to share your email with anyone.

Password

You'll love GitHub

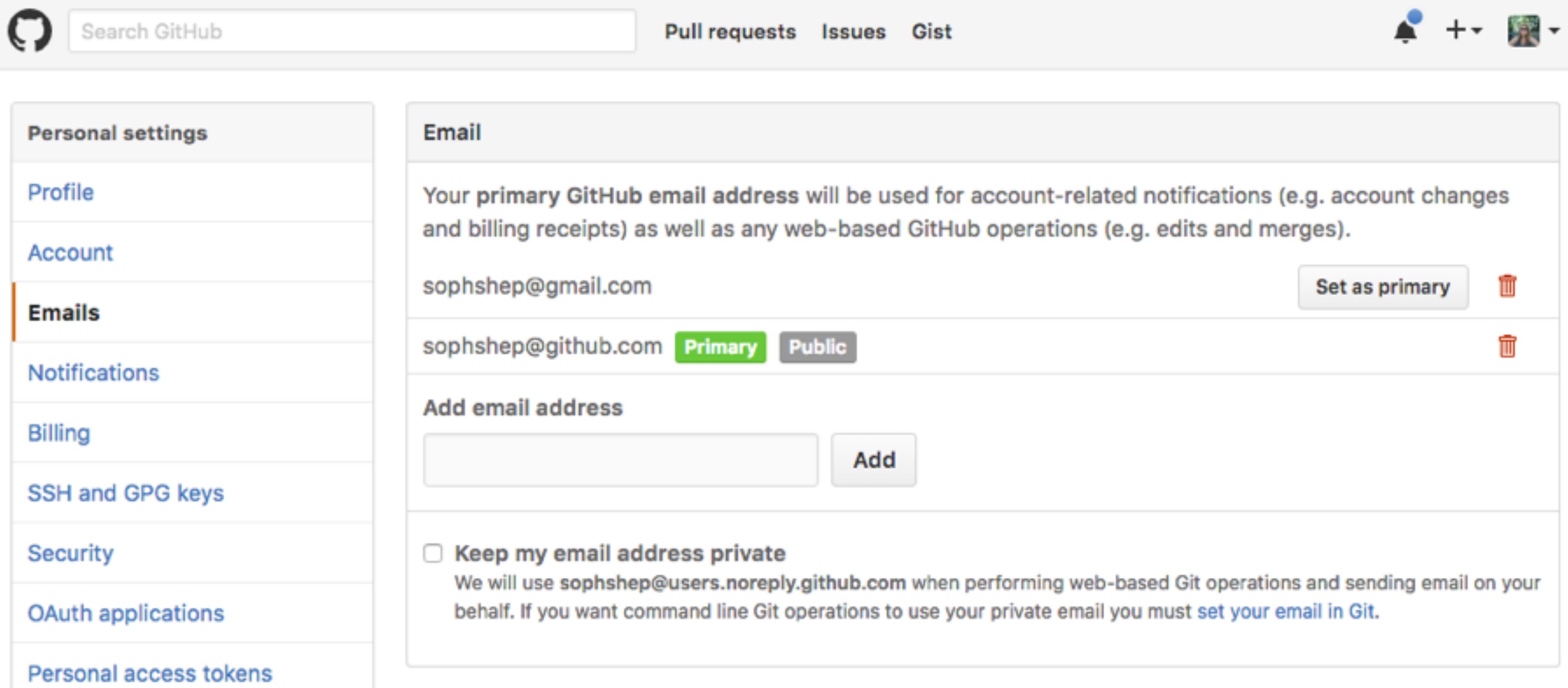
Unlimited collaborators

Unlimited public repositories

- ✓ Great communication
- ✓ Frictionless development
- ✓ Open source community

GitHub Settings

github.com/settings/email

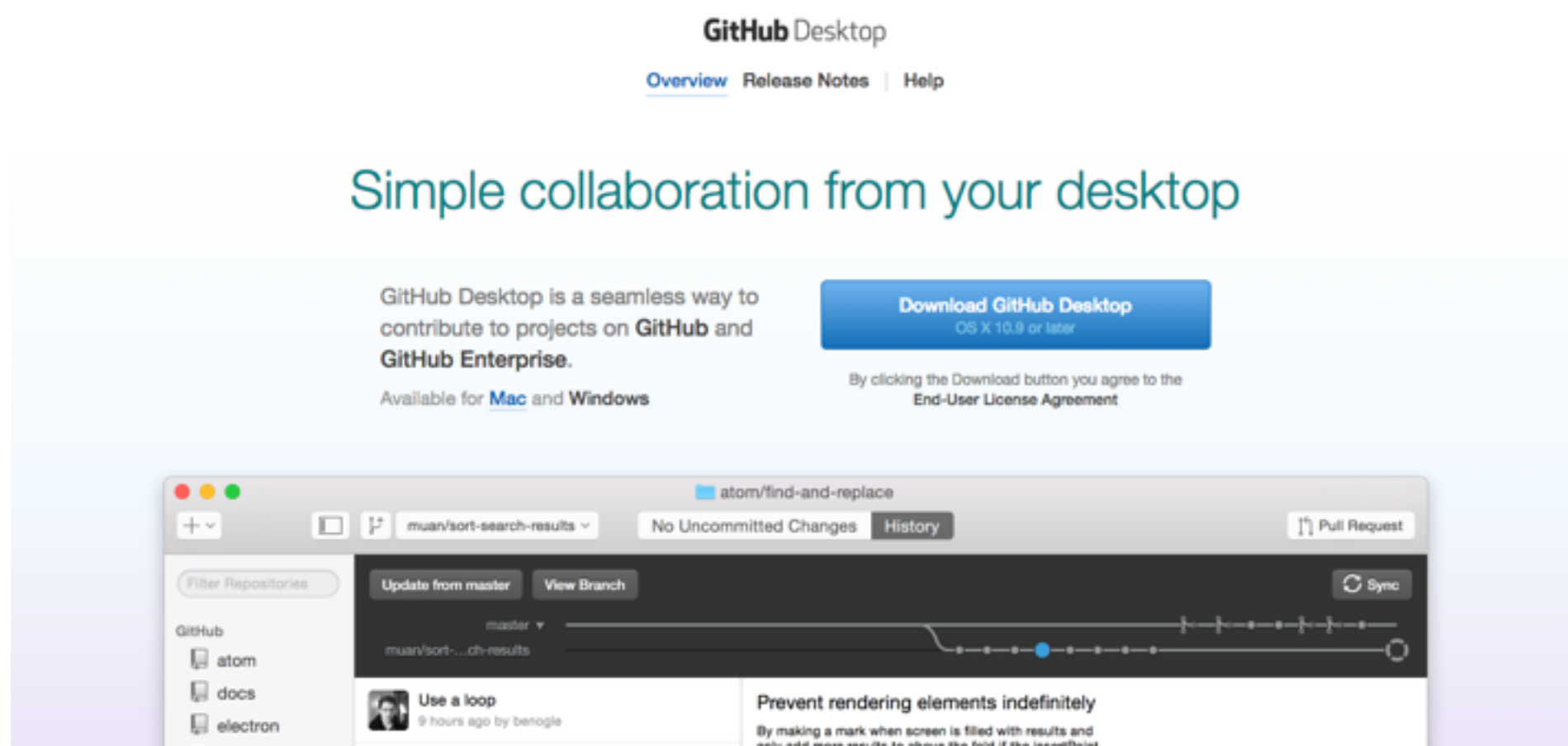


The screenshot shows the GitHub Settings page for a user named 'sophshep'. The left sidebar contains a list of settings categories: Personal settings, Profile, Account, Emails (highlighted), Notifications, Billing, SSH and GPG keys, Security, OAuth applications, and Personal access tokens. The main content area is titled 'Email' and contains the following information:

- A description: "Your primary GitHub email address will be used for account-related notifications (e.g. account changes and billing receipts) as well as any web-based GitHub operations (e.g. edits and merges)."
- A list of email addresses:
 - sophshep@gmail.com with a "Set as primary" button and a trash icon.
 - sophshep@github.com with "Primary" and "Public" labels and a trash icon.
- An "Add email address" section with a text input field and an "Add" button.
- A checkbox labeled "Keep my email address private" with the following text: "We will use sophshep@users.noreply.github.com when performing web-based Git operations and sending email on your behalf. If you want command line Git operations to use your private email you must [set your email in Git](#)."

Get GitHub Desktop

desktop.github.com



Connect GitHub & Desktop

- Select **GitHub Desktop** menu >
- **Preferences** >
- **Accounts** >
- Enter GitHub credentials

Connect GitHub & Desktop

- Preferences >
- Advanced >
- Enter name
- Enter email

Break?

Git Commands

services.github.com/resources/

GitHub GIT CHEAT SHEET

Git is the open source distributed version control system that facilitates GitHub activities desktop. This cheat sheet summarizes commonly used Git command line instructions for qu

INSTALL GIT

GitHub provides desktop clients that include a graphical user interface for the most common repository actions and an automatically updating command line edition of Git for advanced scenarios.

GitHub for Windows
<https://windows.github.com>

GitHub for Mac
<https://mac.github.com>

Git distributions for Linux and POSIX systems are available on the official Git SCM web site.

Git for All Platforms
<http://git-scm.com>

CONFIGURE TOOLING

Configure user information for all local repositories

MAKE CHANGES

Review edits and craft a commit transaction

\$ git status

Lists all new or modified files to be committed

\$ git diff

Shows file differences not yet staged

\$ git add [file]

Snapshots the file in preparation for versioning

\$ git diff --staged

Shows file differences between staging and th

\$ git reset [file]

Unstages the file, but preserve its contents

\$ git commit -m "[descriptive message]

Records file snapshots permanently in version

GIT CHEAT SHEET

REFACTOR FILENAMES

Relocate and remove versioned files

\$ git rm [file]

Deletes the file from the working directory and stages the deletion

\$ git rm --cached [file]

Removes the file from version control but preserves the file locally

\$ git mv [file-original] [file-renamed]

Changes the file name and prepares it for commit

SUPPRESS TRACKING

Exclude temporary files and paths

***.log
build/
temp-***

A text file named `.gitignore` suppresses accidental versioning of files and paths matching the specified patterns

\$ git ls-files --other --ignored --exclude-standard

Lists all ignored files in this project

SAVE FRAGMENTS

Shelve and restore incomplete changes

REVIEW HISTORY

Browse and inspect the evolution of project files

\$ git log

Lists version history for the current branch

\$ git log --follow [file]

Lists version history for a file, including renames

\$ git diff [first-branch]...[second-branch]

Shows content differences between two branches

\$ git show [commit]

Outputs metadata and content changes of the specified commit

REDO COMMITS

Erase mistakes and craft replacement history

\$ git reset [commit]

Undoes all commits after [commit], preserving changes locally

\$ git reset --hard [commit]

Discards all history and changes back to the specified commit

SYNCHRONIZE CHANGES

Register a repository bookmark and exchange version history

About Repositories

github.com/sophshep/gdi-intro-to-github

- A repository is a project
- Local & Remote
- “Watch” this repository
- Issues
- README.md

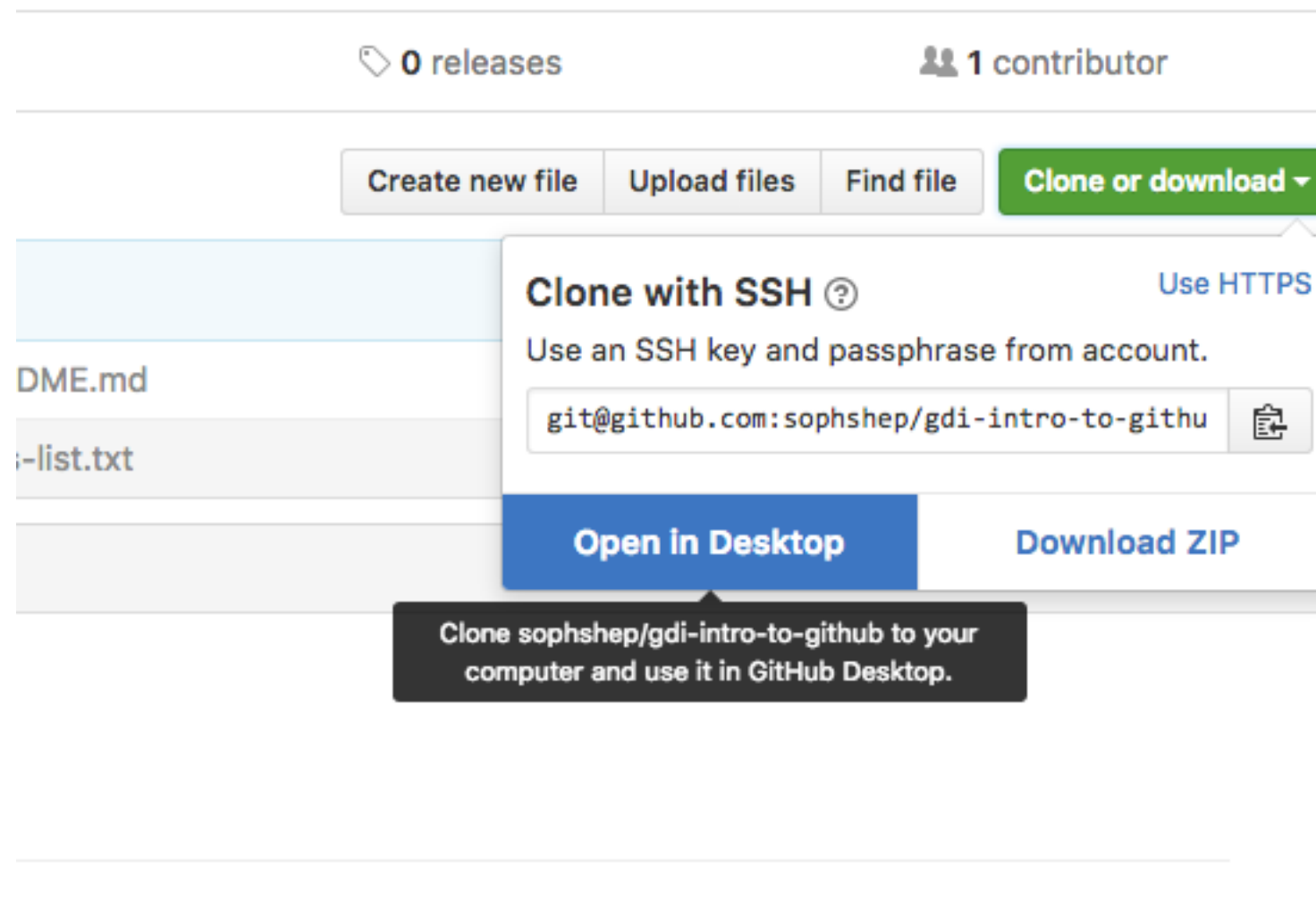
Collaborating

- **Forks:** A fork is a personal copy of another user's repository that lives on your account.
- **Branches:** A branch is a 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.

Clone Repo

```
git clone git@github.com:sophshep/gdi-intro-to-github.git
```

github.com/sophshep/gdi-intro-to-github

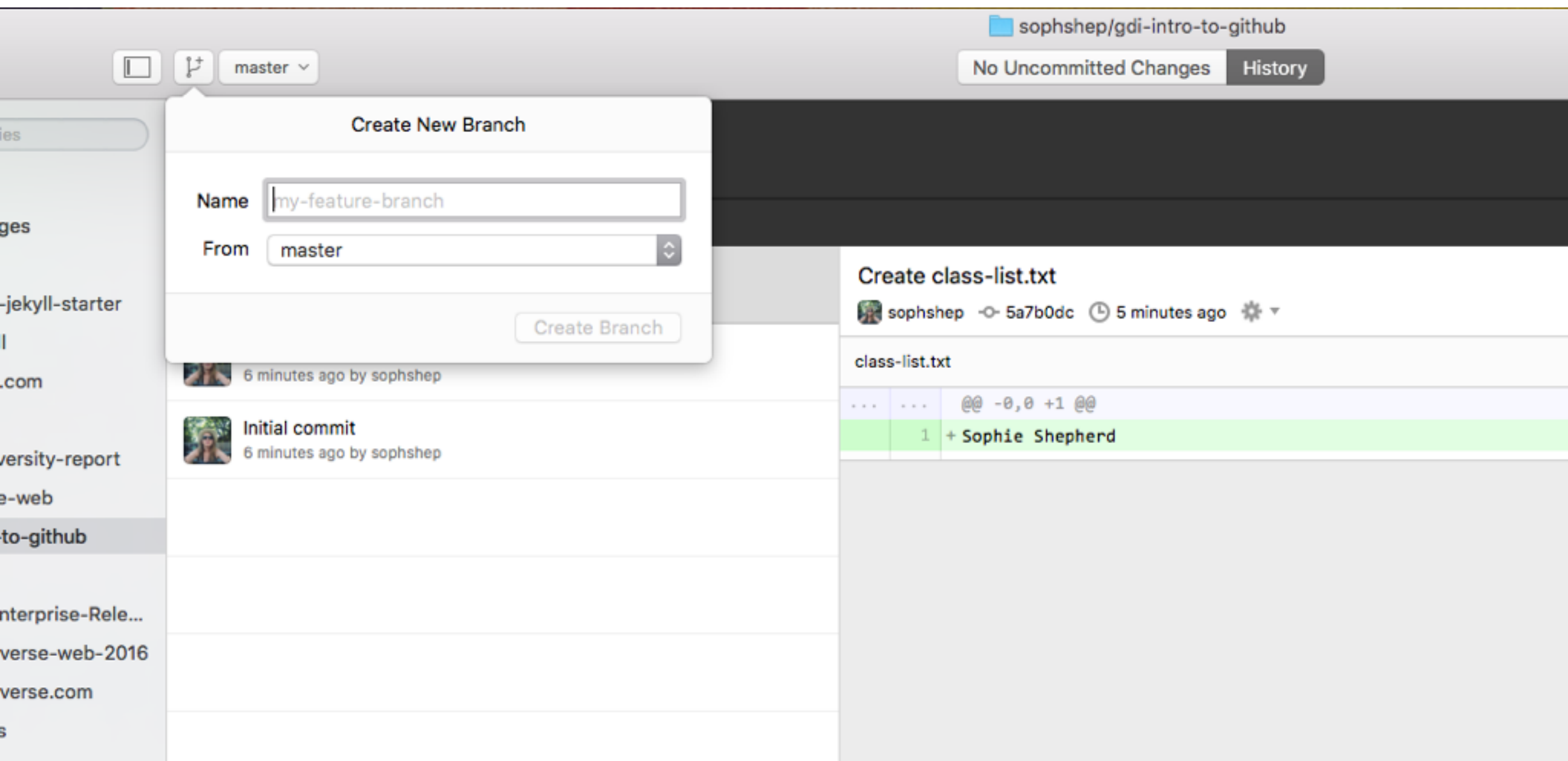


About Branches

- A branch represents an independent line of development, does not interfere with master
- New commits are recorded in the history for the current branch.

Make branch

```
git checkout -b sophie-branch
```




Make changes

- Add yourself to class list
- Add a new file

About Commits

- A commit, or "revision", is an individual change to a file (or set of files).
- Like a snapshot of the repository
- Commits should a commit message which is a brief description of what changes were made.

Commit changes



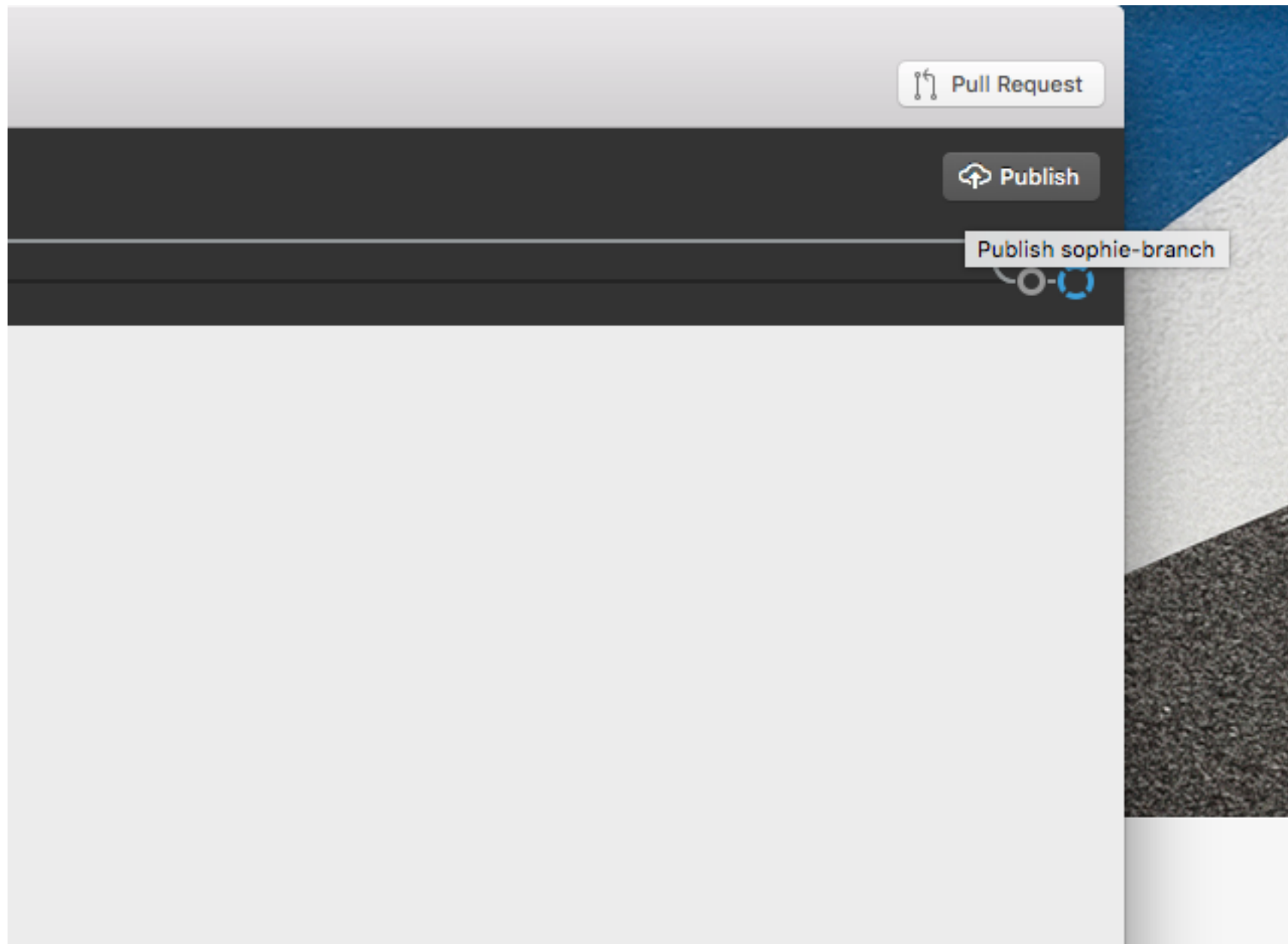
Adding myself to list

Description

Commit to sophie-branch

Publish Branch


(aka “push”)





About Pull Requests

- Pull requests let you tell others about changes you've pushed to a repository on GitHub.
- Once a pull request is sent, interested parties can review the set of changes, discuss potential modifications, and even push follow-up commits if necessary.

Create Pull Request

 This repository Search

Pull requestsIssuesGist

 +

sophshep / gdi-intro-to-github

Watch 0Star 0Fork 0

[Code](#) [Issues 0](#) [Pull requests 0](#) [Wiki](#) [Pulse](#) [Graphs](#) [Settings](#)

A project that students can collaborate on — Edit

3 commits

1 branch

0 releases

1 contributor


Your recently pushed branches:

sophie-branch (less than a minute ago)

Compare & pull request

Branch: master New pull request

Create new fileUpload filesFind fileClone or download

 sophshep committed on GitHub Create class-list.txt


Latest commit 5a7b0dc 18 minutes ago

README.md	Update README.md	18 minutes ago
class-list.txt	Create class-list.txt	18 minutes ago




README.md


gdi-intro-to-github

Create Pull Request

 This repository

[Pull requests](#) [Issues](#) [Gist](#)


 [sophshep / gdi-intro-to-github](#)


[Watch](#) 0 [Star](#) 0 [Fork](#) 0

[Code](#) [Issues](#) 0 [Pull requests](#) 0 [Wiki](#) [Pulse](#) [Graphs](#) [Settings](#)

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#).

 [base: master](#) ... [compare: sophie-branch](#) ✓ **Able to merge.** These branches can be automatically merged.




Adding myself to list


[Write](#) [Preview](#)

AA B i “ <> 🔗 ☰ ☷ ✓ ☑ ↩ @ ★


This change adds me to the class list, and also includes some photos of my cat.

Labels 

None yet

Milestone 

No milestone

Assignees 

No one—assign yourself

Merge Pull Request

The screenshot shows a GitHub Pull Request interface. At the top, the repository is 'sophshep / gdi-intro-to-github'. The Pull requests tab is active, showing 1 request. The title of the pull request is 'Adding myself to list #1'. The description states: 'sophshep wants to merge 1 commit into master from sophie-branch'. The pull request is open, and the commit message is 'Adding myself to list'. A comment from the owner 'sophshep' says: 'This change adds me to the class list, and also includes some photos of my cat.' The pull request status is 'This branch has no conflicts with the base branch', indicating it can be merged automatically. A green button labeled 'Merge pull request' is visible. The right sidebar shows 'Labels' (None yet), 'Milestone' (No milestone), 'Assignees' (No one—assign yourself), and '1 participant' (sophshep). The bottom of the page shows a 'Write' field for a comment.

This repository Search Pull requests Issues Gist

sophshep / gdi-intro-to-github Watch 0 Star 0 Fork 0

Code Issues 0 Pull requests 1 Wiki Pulse Graphs Settings

Adding myself to list #1

Edit

Open sophshep wants to merge 1 commit into master from sophie-branch

Conversation 0 Commits 1 Files changed 1 +1 -0

sophshep commented just now Owner

This change adds me to the class list, and also includes some photos of my cat.

Adding myself to list 5e09f80

Add more commits by pushing to the sophie-branch branch on sophshep/gdi-intro-to-github.

✓ This branch has no conflicts with the base branch
Merging can be performed automatically.

Merge pull request You can also open this in GitHub Desktop or view command line instructions.

Labels: None yet

Milestone: No milestone

Assignees: No one—assign yourself

1 participant

Notifications

Unsubscribe

You're receiving notifications

Write Preview

Learn More

help.github.com/articles/github-glossary/

GitHub Git Cheat Sheet

guides.github.com

atlassian.com/git