

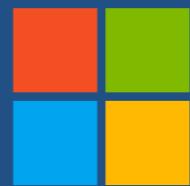
Git/GitHub for beginners

Brainhack 2018

Singapore

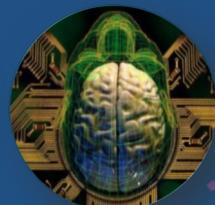
June 14-16, 2018

2018
OHBM
SINGAPORE
June 17 - 21, 2018



Microsoft

GitHub



Qing Wang
Vincent



vincent.qing@neuroinformatics-collaboratory.org

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1 What and why is Git/GitHub

2 Basics

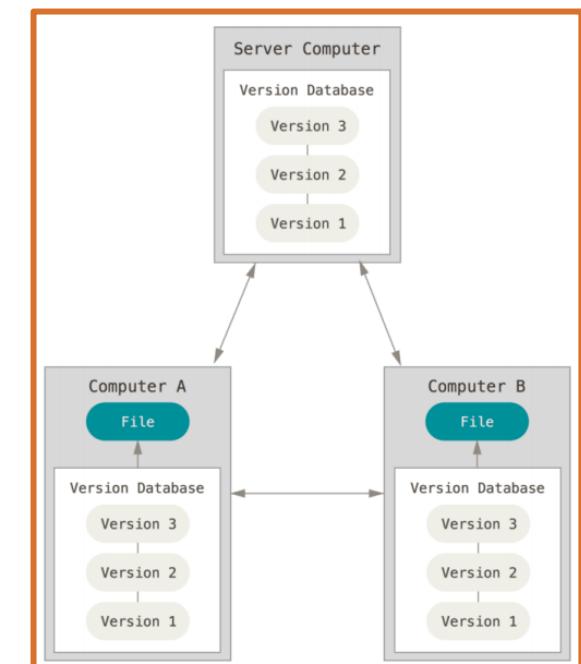
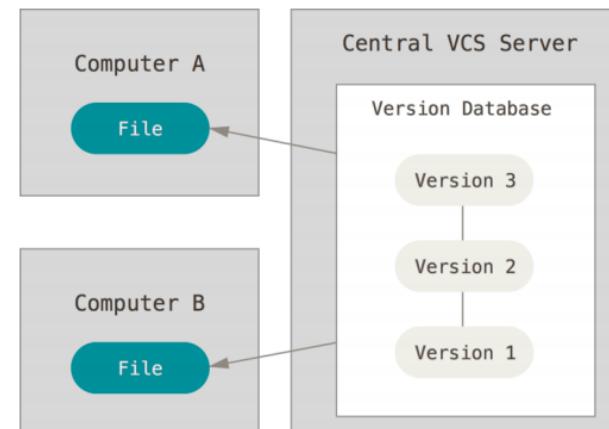
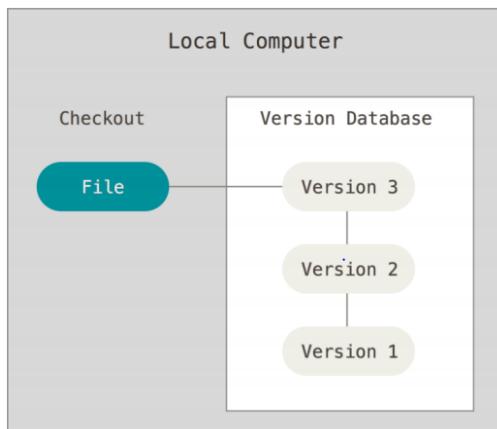
3 Teamwork and OPEN SCIENCE

4 More resources

1. What and why is Git/GitHub?

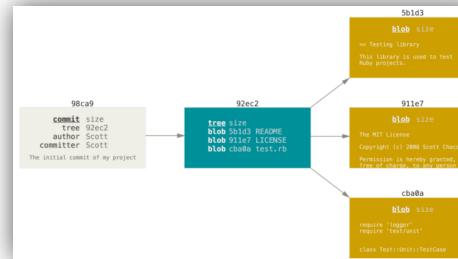
名称	修改日期	类型
codeV1.txt	2018/6/13 22:53	TXT 文件
codeV1.1.txt	2018/6/13 22:54	TXT 文件
codeV1.1.1.txt	2018/6/13 22:54	TXT 文件
codeV1.1.1final.txt	2018/6/13 22:54	TXT 文件
codeV1.1.1finalVincent.txt	2018/6/13 22:54	TXT 文件
codeV1.1.1finalPeter.txt	2018/6/13 22:55	TXT 文件
codeV1.1.1finalfinalfinalVincent(I will never change).txt	2018/6/13 22:55	TXT 文件
codeV1.1.1finalfinalfinalFreeze(I will never change agian...).txt	2018/6/13 22:56	TXT 文件

1. Version control;
 1. Centralized Version control System (SVCS, CVS Subversion...);
 2. Distributed Version Control System (DVCS, *Git*, Mercurial, Bazaar...);
2. Git / GitHub.



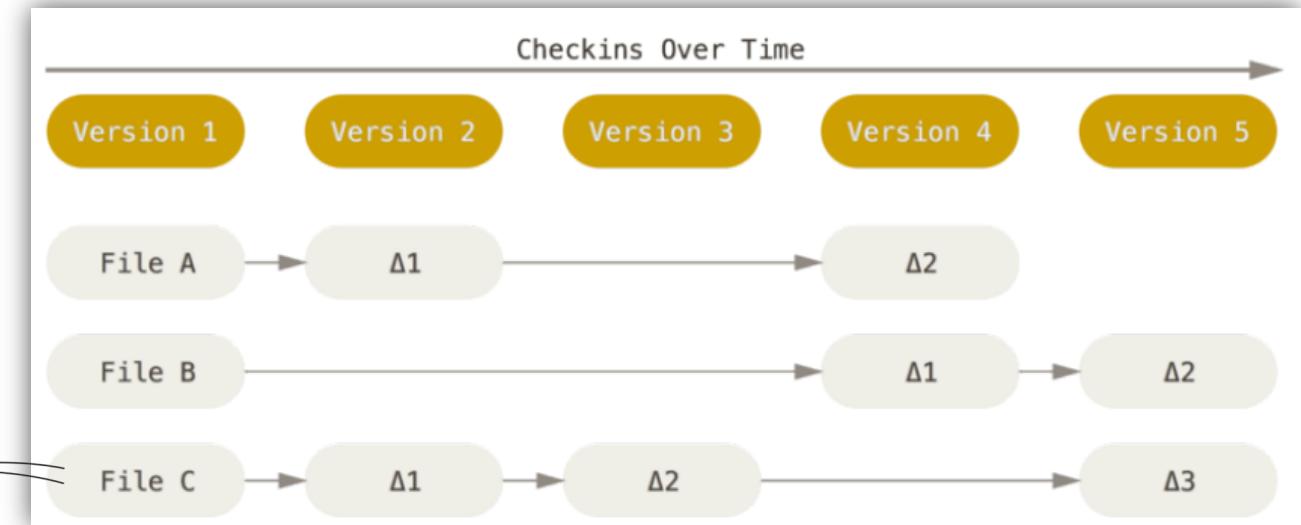
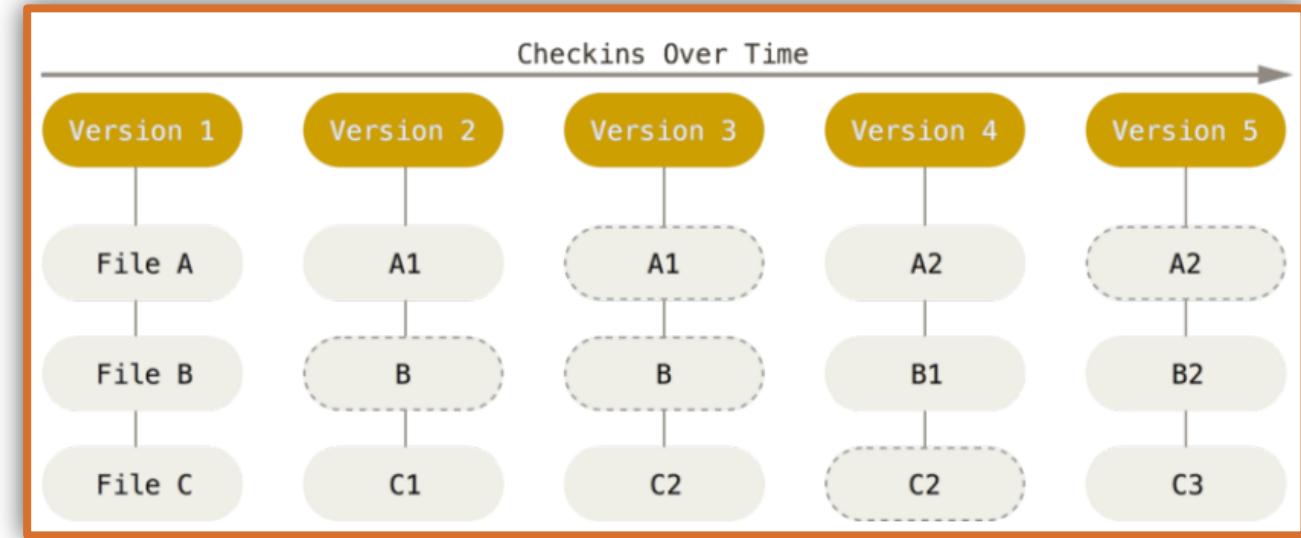
1. What and why is Git/GitHub?

1. Basic mechanism (commit object);

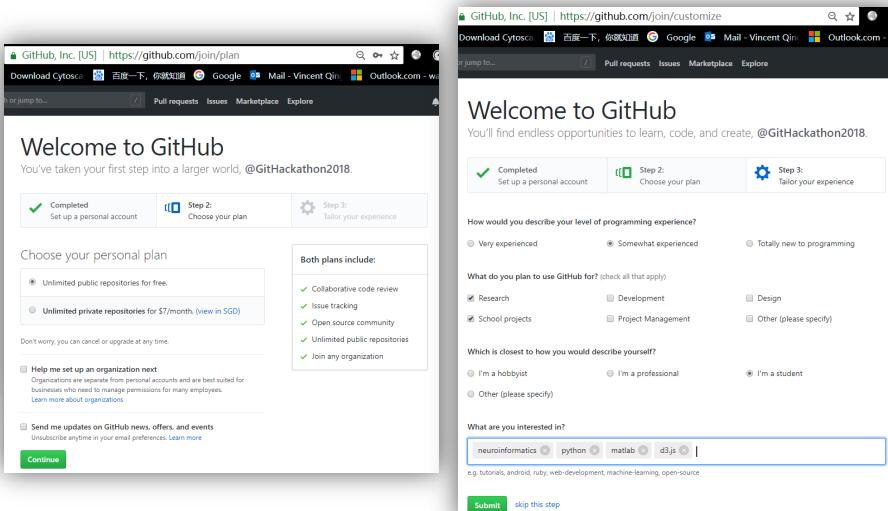
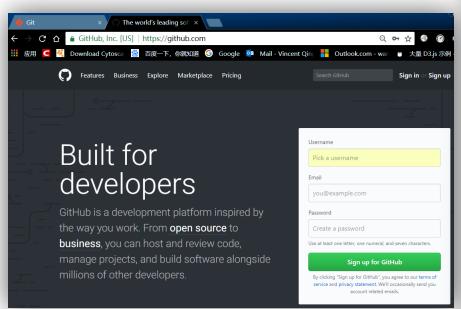


2. Git (*tool*);
3. GitHub (*platform, online service*):

- hosts your repositories (projects)
- helps you work with collaborators
- interface support
 - Online
 - GitHub Desktop App
 - Command line using 'Git'
 - RStudio for R fans



Register GitHub



User name: GitHackathon2018

The dashboard shows a "Git" tab, a "Your Actions" tab, and a "steam - Google Search" tab. The main area has a "Search or jump to..." bar and navigation links for "Pull requests", "Issues", "Marketplace", and "Explore". A callout box labeled "Create your repo" points to the "New repository" button in a "Repositories" section. Another callout box labeled "Explore other projects" points to the "Explore GitHub" button. A central GitHub cat icon is surrounded by dashed lines connecting to the "Discover interesting projects and people to populate your personal news feed" section. This section includes a "Custom domains on GitHub Pages gain support for HTTPS" notification and a "View new broadcasts" button. Other sections like "Browse activity" and "Discover repositories" are also visible.

2. Basics concepts1

Repository (Repo)

a project where all your files are, online or on your computer

```
$ git init
```

Commit

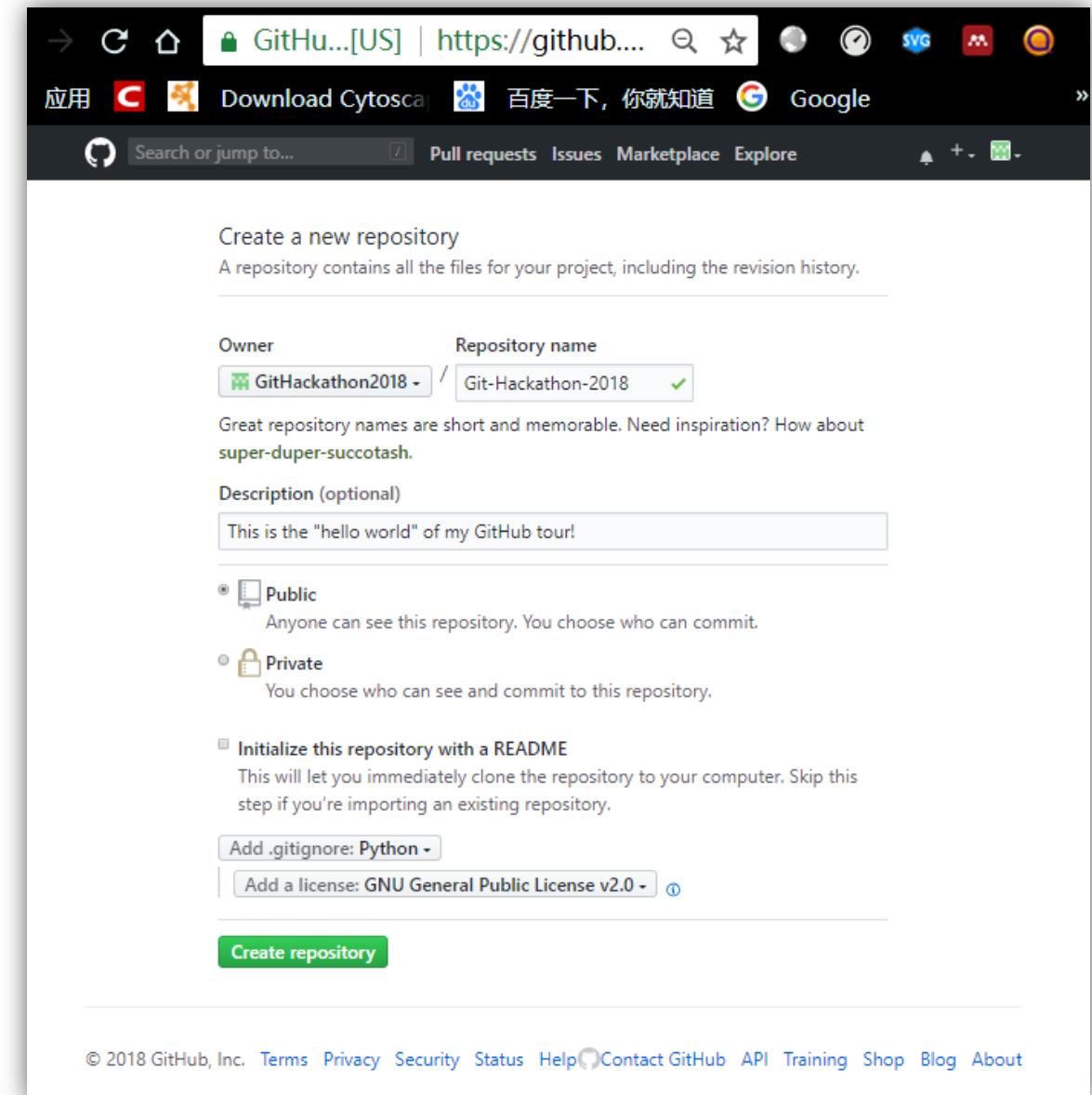
saving a version of file(s) or snapshot

```
$ git add README.md
```

```
$ git commit -m 'My first commit'
```

Issues

to-do list of tasks, bugs and things you wish to accomplish



2. Basics concepts2

Branch

A new version of project that goes parallel with the master branch.

Pull request

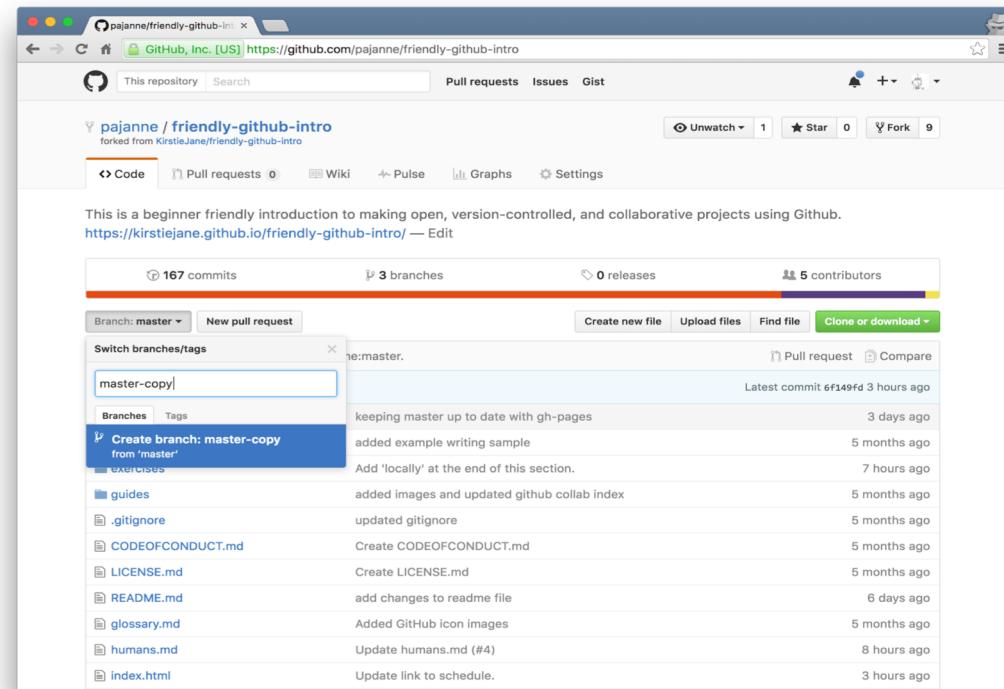
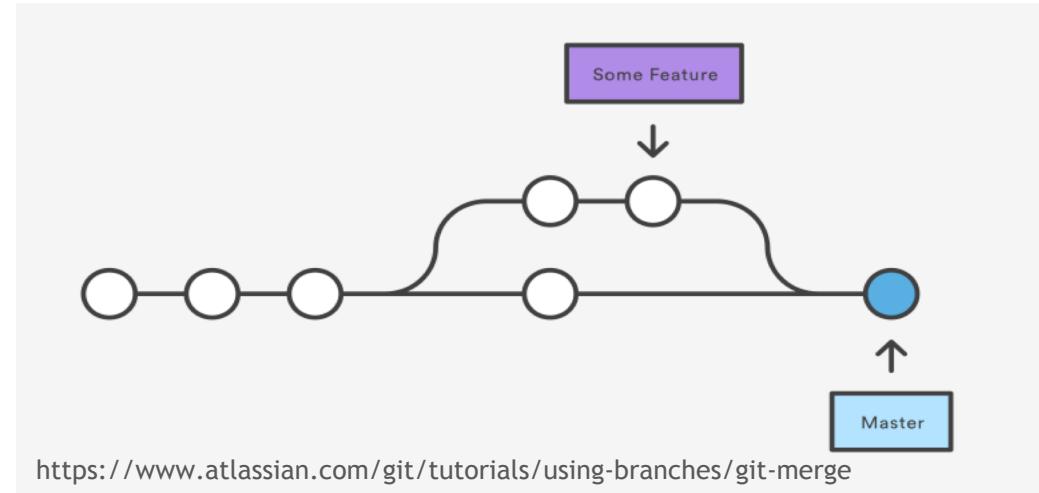
request to add your changes from a branch back into master

Push request

request to add your changes from local branch into remote branch

Merge

act of incorporating new changes (commits) from one branch to another

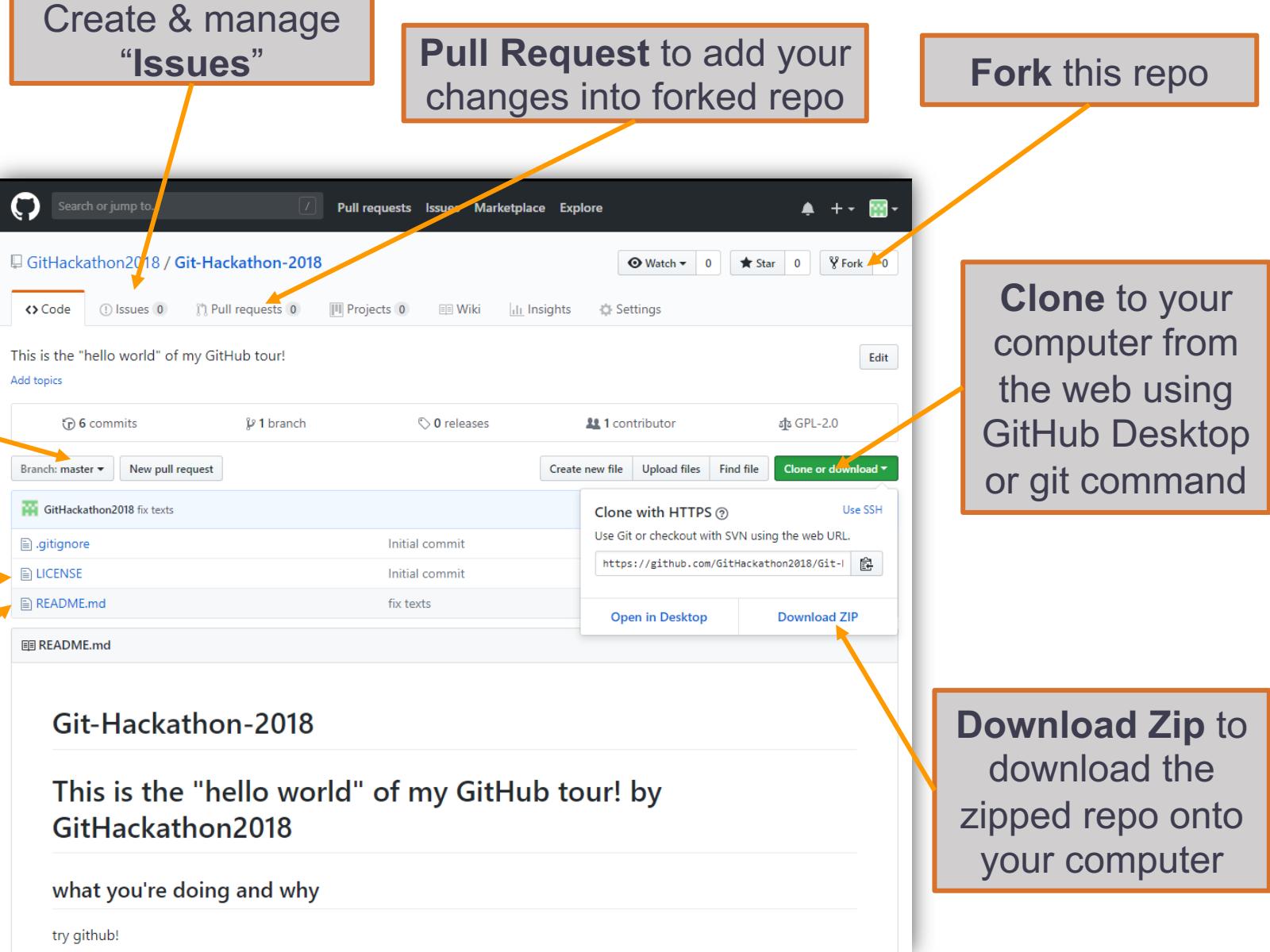


2. Basics GUI

Your default **branch** is “master” - but you can switch or add branches here

Choose the license “LICENSE.md”

The “README.md” is automatically rendered when you visit a repo



2. Basics

README.md

- In root directory
- all caps
- in markdown (.md)

The basic description of the repo

This is the "hello world" of my GitHub tour!

Add topics

5 commits 1 branch 0 releases 1 contributor GPL-2.0

Branch: master New pull request Create new file Upload files Find file Clone or download

.gitignore Initial commit 2 hours ago

LICENSE Initial commit 2 hours ago

README.md hotfix 2 minutes ago

README.md

Git-Hackathon-2018

This is the "hello world" of my GitHub tour! by GitHackathon2018

what you're doing, for who, and why

try github!

what makes your project special and exciting

This is the first step to git/github!

```
# Git-Hackathon-2018
2 This is the "hello world" of my GitHub tour!
3 by GitHackathon2018
4 =====
5 ## what you're doing, for who, and why
6 try github!
7
8 ## what makes your project special and exciting
9 This is the first step to git/github!
10
11 ## how to get started
12 This is what we are going to do!
13
14 ## where to find key resources
15
16 ### main website
17 https://git-scm.com/
18 https://github.com/
19
20 ### Mark down
21 https://github.com/adam-p/markdown-here/wiki/Markdown-Cheatsheet
22
23 ### tutorial
24 https://kirstiejane.github.io/friendly-github-intro/
25
26 ### CONCEPTS
27 ##### Branch
28 - an identical copy of a project at a particular point in time kept separate from the 'master' branch. This keeps your code in the 'master' branch safe while you make changes and experiment with new branch. You can **merge** your new branch back into the 'master' branch when you want to publish changes.
```

2. Basics

markdown

- Language of documents
- GitHub automatically renders anything written in Markdown;
- eg: README...

Headers

```
# H1  
## H2  
### H3  
#### H4  
##### H5  
###### H6
```

Alternatively, for H1 and H2, an underline-ish style:

```
Alt-H1  
=====
```



```
Alt-H2  
-----
```

H1

H2

H3

H4

H5

H6

Alternatively, for H1 and H2, an underline-ish style:

Alt-H1

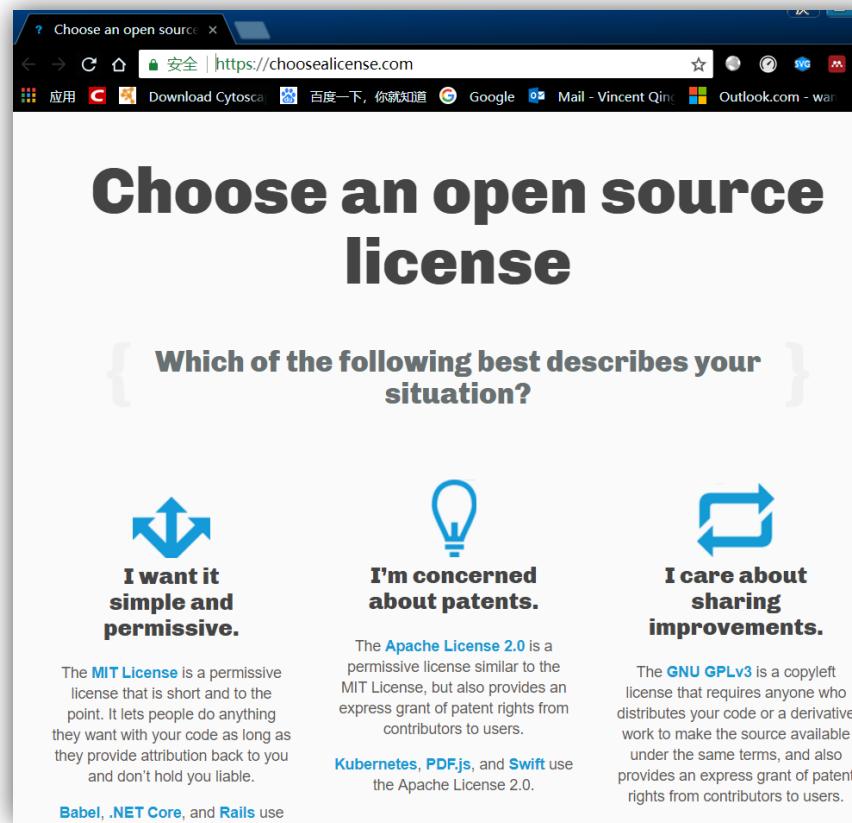
Alt-H2

2. Basics

LICENSE.md

- In root directory
- all caps
- in markdown (.md)

Finding the right license:
It's about how people can use that project;
[ChooseALicense.com](https://choosealicense.com) to help you make decision.



2. Basics

CONTRIBUTING.md

- In root directory
- all caps
- in markdown (.md)

Announce to the contributors of how

The screenshot shows a GitHub repository page for the 'atom' organization. The file 'CONTRIBUTING.md' is displayed. The page includes a header with the author 'zeke', the commit message 'remove links to Contributor Covenant CoC', the date 'd81e2a2 on Dec 3, 2015', and a list of 26 contributors. Below the header, there are statistics: '524 lines (418 sloc) | 45.8 KB' and navigation links for 'Raw', 'Blame', and 'History'. The main content of the file is titled 'Contributing to Atom'. It starts with a section for newcomers, followed by a 'Table Of Contents' which includes sections for 'What should I know before I get started?' (with links to 'Code of Conduct' and 'Atom and Packages'), 'How Can I Contribute?' (with links to 'Reporting Bugs', 'Suggesting Enhancements', 'Your First Code Contribution', and 'Pull Requests'), and 'Styleguides' (with links to 'Git Commit Messages', 'CoffeeScript Styleguide', and 'Specs Styleguide'). Three specific sections are highlighted with orange boxes: 'cheer' (under 'What should I know before I get started?'), 'introduction' (under 'How Can I Contribute?'), and 'style' (under 'Styleguides').

2. Basics

CODEOFCONDUCT.md

- In root directory
- all caps
- in markdown (.md)

Rules outlining the social norms & rules & responsibilities of an individual project, party or organization.

Branch: master atom / CODE_OF_CONDUCT.md Find file

him2him2 Docs: Update HTTP -> HTTPS 9fdec77 on 26

3 contributors

47 lines (28 sloc) | 3.17 KB Raw Blame History

Contributor Covenant Code of Conduct

Our Pledge

In the interest of fostering an open and welcoming environment, we as contributors and maintainers pledge to making participation in our project and our community a harassment-free experience for everyone, regardless of age, body size, disability, ethnicity, gender identity and expression, level of experience, nationality, personal appearance, race, religion, or sexual identity and orientation.

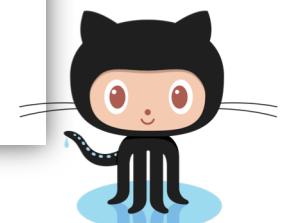
Our Standards

Examples of behavior that contributes to creating a positive environment include:

- Using welcoming and inclusive language
- Being respectful of differing viewpoints and experiences
- Gracefully accepting constructive criticism
- Focusing on what is best for the community
- Showing empathy towards other community members

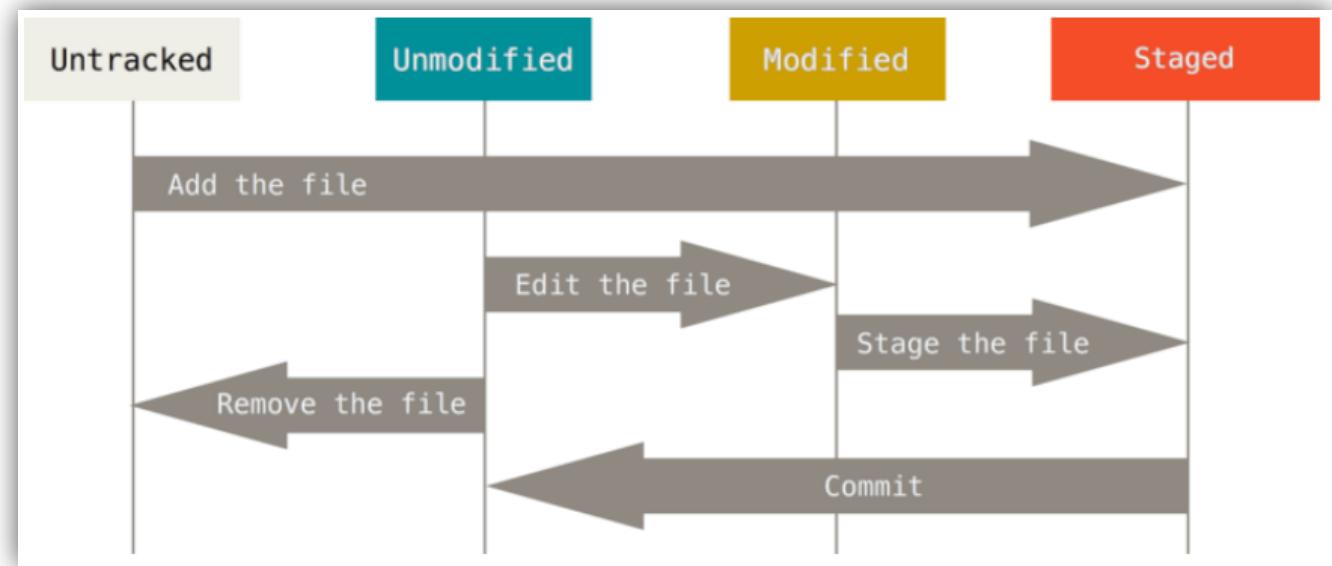
Examples of unacceptable behavior by participants include:

- The use of sexualized language or imagery and unwelcome sexual attention or advances
- Trolling, insulting/derogatory comments, and personal or political attacks



3. Teamwork and OPEN SCIENCE

Some basic Git commands

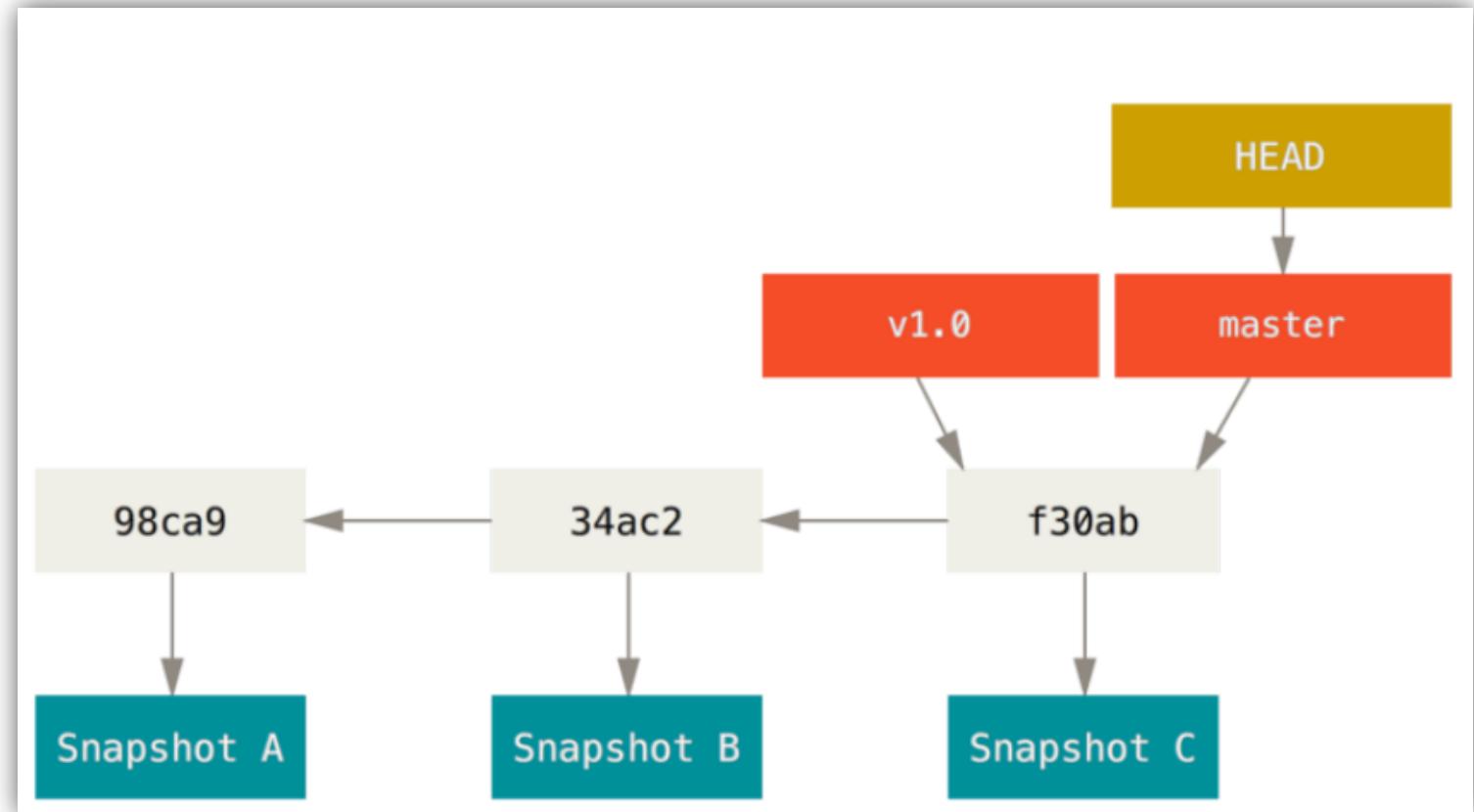


```
$ git init
$ git add file.x
$ git commit -m -a 'initial project version'
$ git clone https://github.com/libgit2/libgit2 mylibgit
$ git status (-s,--short)
$ cat .gitignore (*.o)
$ git rm README.md
$ git mv file_from file_to
$ git log (--pretty=format)
$ git tag
$ git show v1.4
$ git config --global alias.co checkout
$ git revert commit_id
```

3. Teamwork and OPEN SCIENCE

- Current directory (HEAD)
- Create Branch
 - `$ git branch v1.0`
- Change Branch
 - `$ git checkout v1.0`

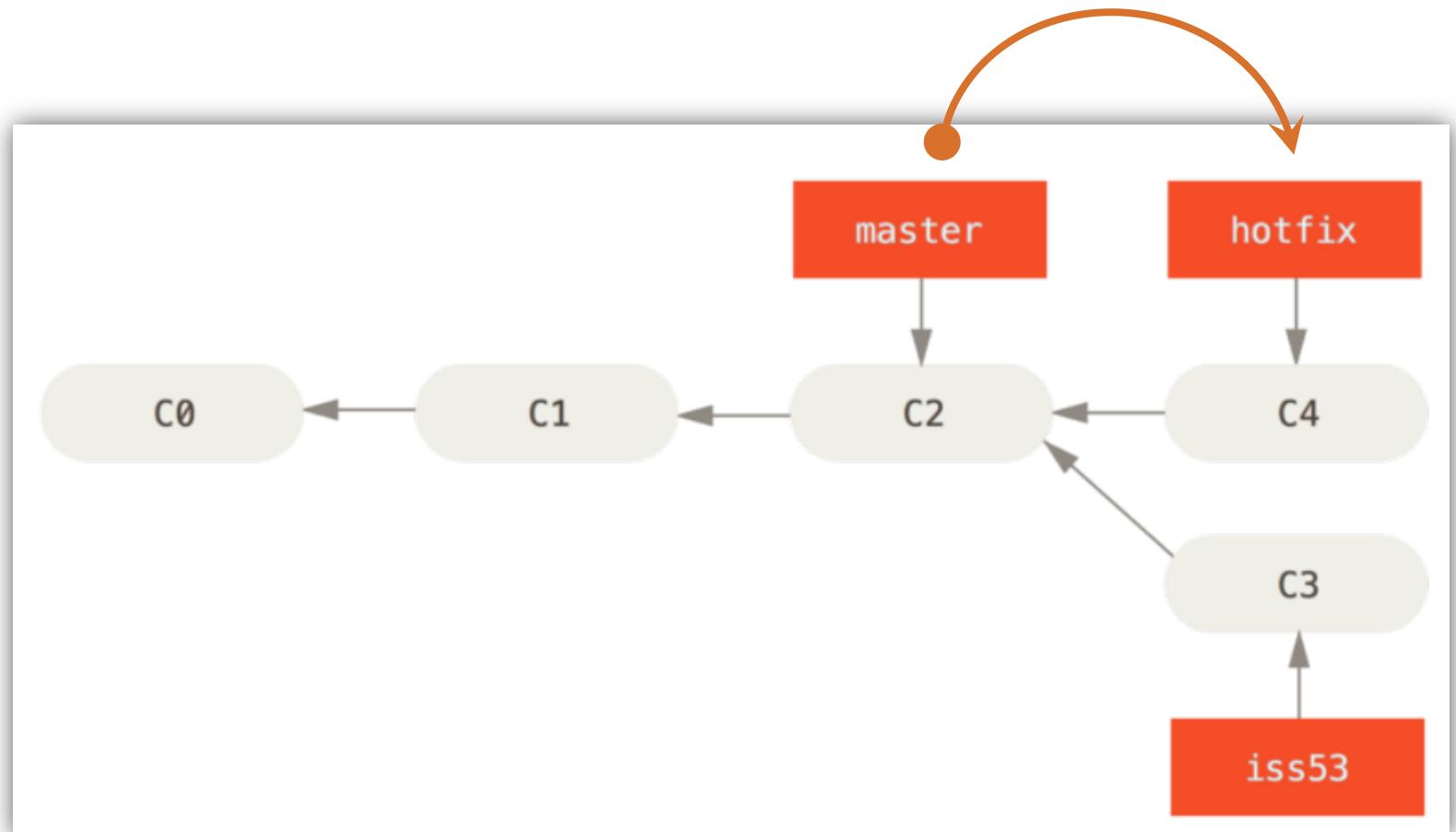
Projects after several commits...



3. Teamwork and OPEN SCIENCE

- Merge branches
 - \$ git checkout master
 - \$ git merge hotfix

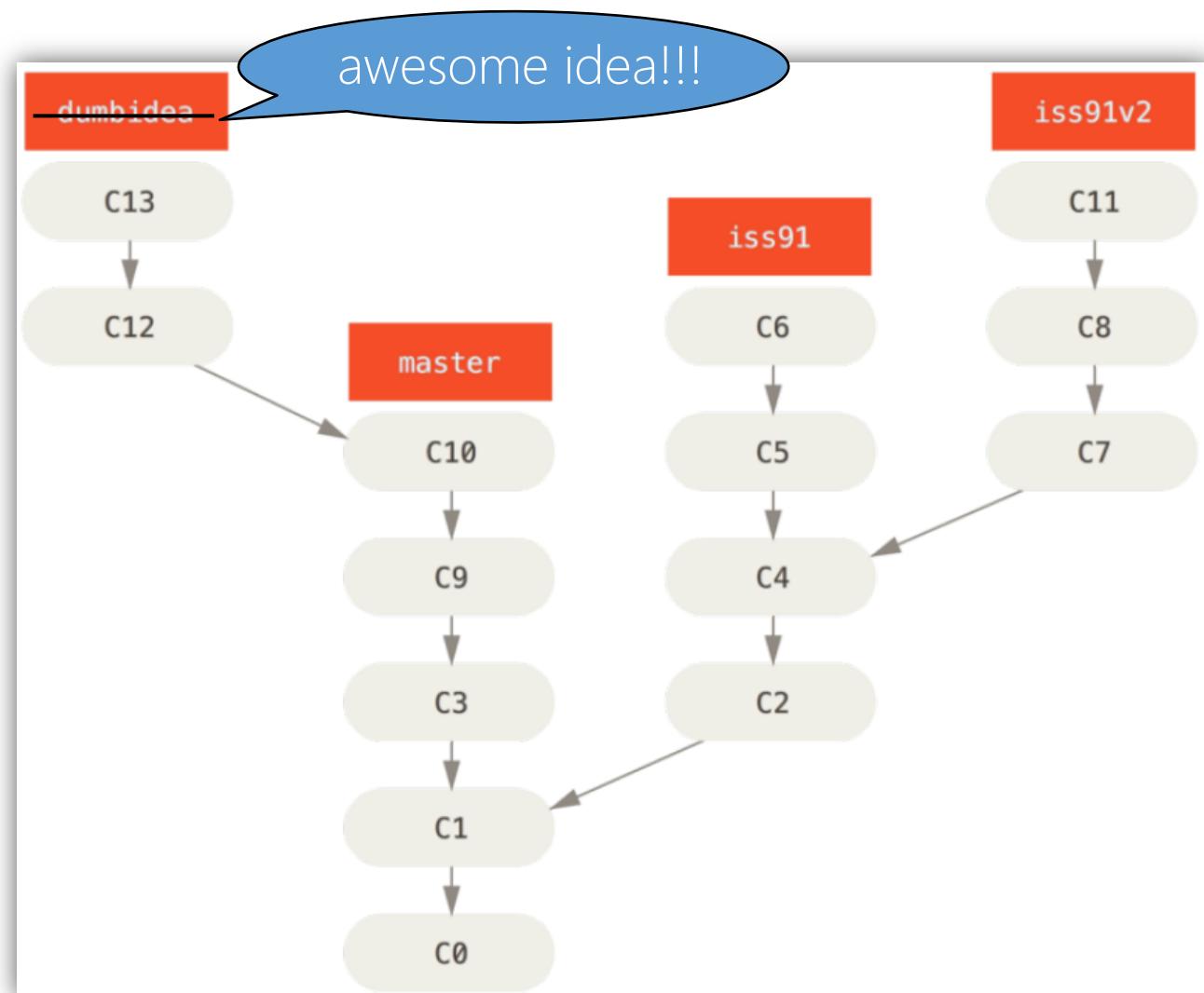
Projects after several branches...



3. Teamwork and OPEN SCIENCE

- Organize OPEN SCIENCE

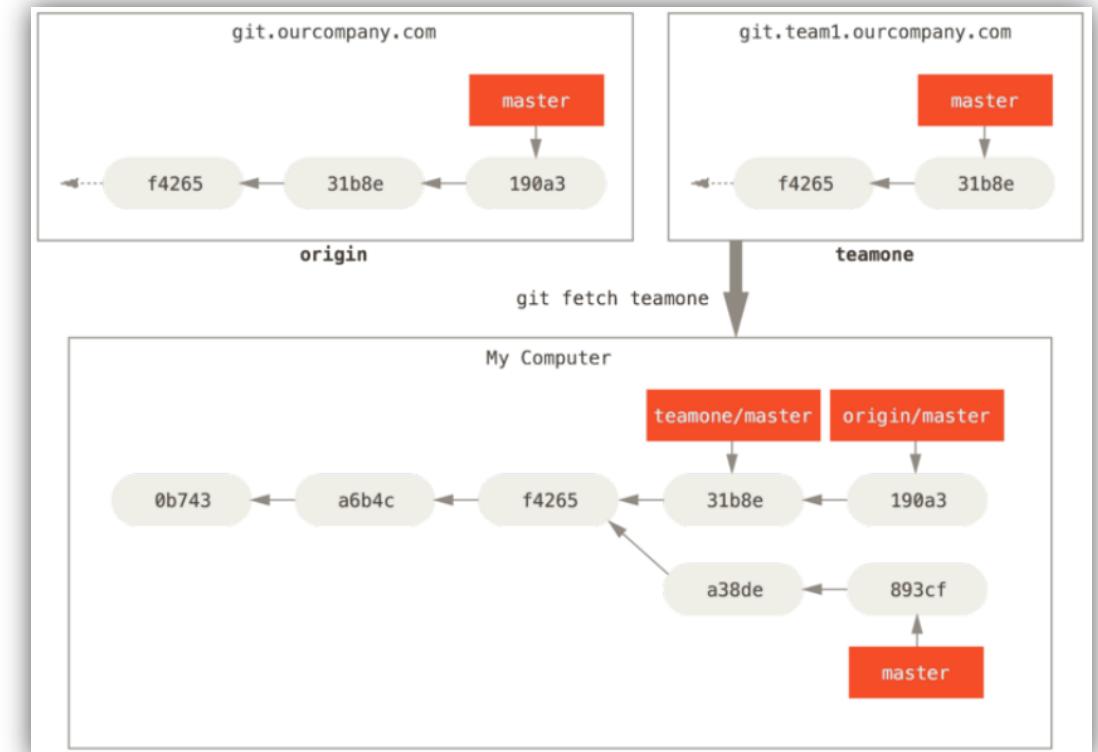
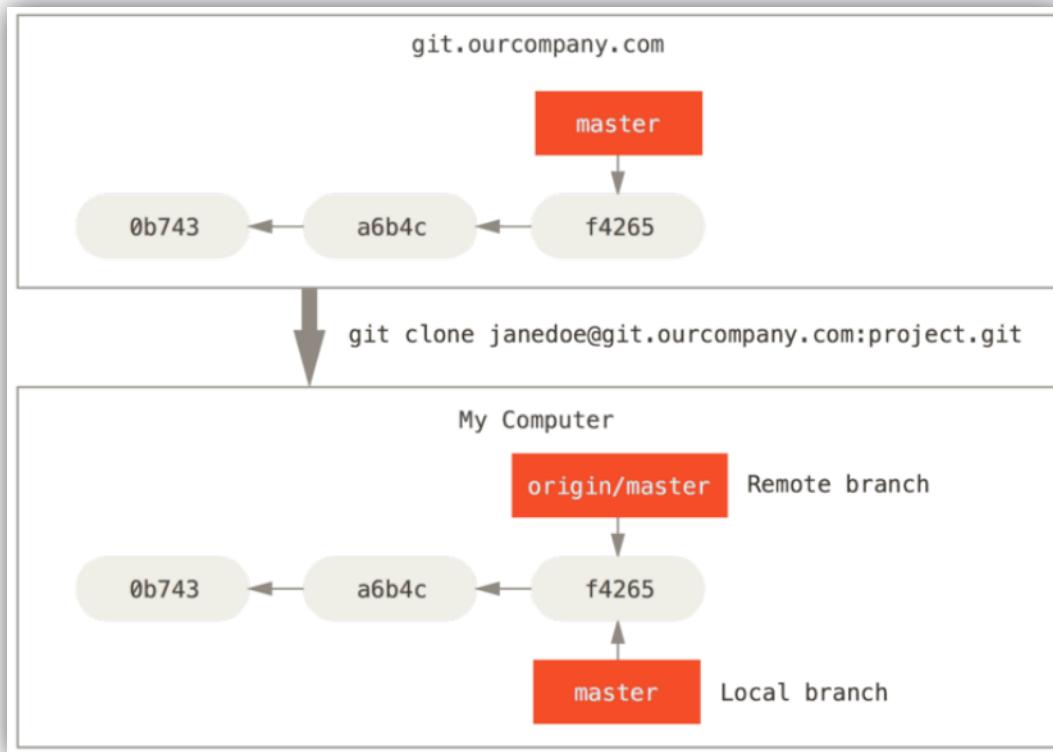
How your projects may look like...



3. Teamwork and OPEN SCIENCE

From local repo to the upstream repo (GitHub)

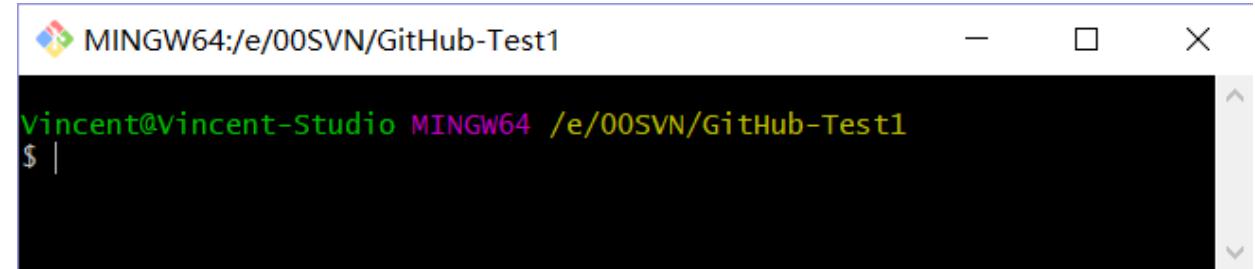
```
$ git ls-remote  
$ git pull  
$ git push origin master
```



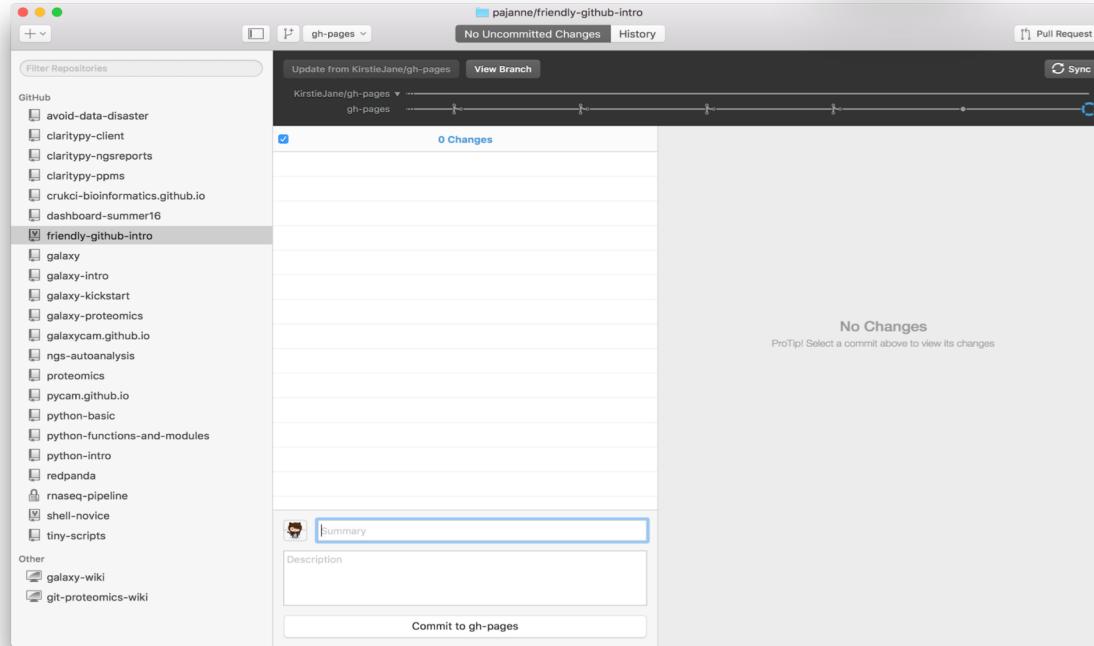
3. Teamwork and OPEN SCIENCE



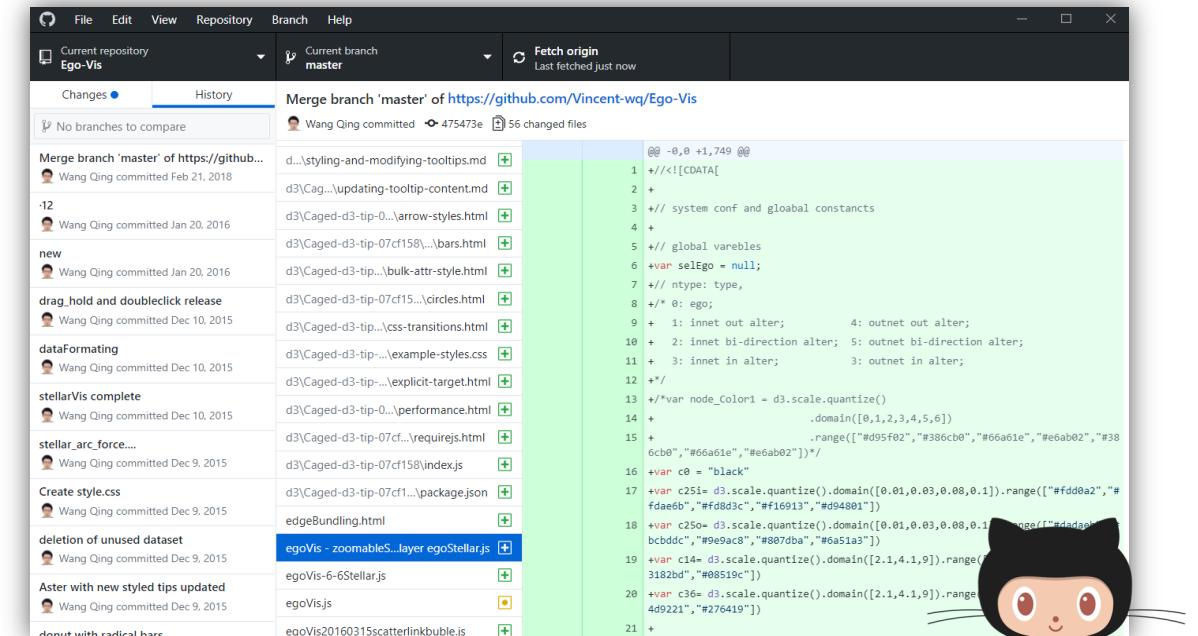
Do not worry, you have GUIs...



```
Vincent@Vincent-Studio MINGW64 /e/00SVN/GitHub-Test1
```



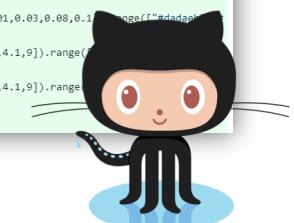
The GitHub desktop application interface shows a sidebar with a list of repositories under 'GitHub' and 'Other'. The main area displays a commit history for the repository 'friendly-github-intro'. A message 'No Changes' is visible at the bottom.



The GitHub desktop application interface shows a merge branch 'master' from 'https://github.com/Vincent-wq/Ego-Vis'. The 'Changes' tab is selected, showing a list of commits. The right side of the screen displays a diff view of a file named 'egoVis - zoomableS_layer egoStellar.js'.

```
diff --git a/egoVis - zoomableS_layer egoStellar.js b/egoVis - zoomableS_layer egoStellar.js
--- a/egoVis - zoomableS_layer egoStellar.js
+++ b/egoVis - zoomableS_layer egoStellar.js
@@ -0,0 +1,749 @@
+/*<![CDATA[
+/*
+// system conf and global constants
+/*
+// global variables
+var selfGo = null;
+// ntype: type,
+/* 0: ego;
+ 1: 1: inset out alter; 4: outset out alter;
+ 2: 2: inset bi-direction alter; 5: outset bi-direction alter;
+ 3: 3: inset in alter; 3: outset in alter;
+*/
+/*var node_Color1 = d3.scale.quantize()
+  .domain([0,1,2,3,4,5,6])
+  .range(["#d95f02","#386cb0","#66a61e","#e6ab02","#386cb0","#66a61e","#e6ab02"])*/
+var c0 = "black"
+var c25 = d3.scale.quantize().domain([0.01,0.03,0.08,0.1]).range(["#ffdd8a","#fd8d3c","#f16913","#948011"])
+var c25o = d3.scale.quantize().domain([0.01,0.03,0.08,0.1]).range(["#dadade","#bcbddc","#9e9ac8","#807dba","#6a51a3"])
+var c14= d3.scale.quantize().domain([2.1,4.1,9]).range([3182bd,"#08519c"])
+var c36= d3.scale.quantize().domain([2.1,4.1,9]).range([4d9221,"#276419"])

1 +</![CDATA[
2 +
3 // system conf and global constants
4 +
5 // global variables
6 var selfGo = null;
7 // ntype: type,
8 /* 0: ego;
9 + 1: inset out alter; 4: outset out alter;
10 + 2: inset bi-direction alter; 5: outset bi-direction alter;
11 + 3: inset in alter; 3: outset in alter;
12 */
13 /*var node_Color1 = d3.scale.quantize()
14   .domain([0,1,2,3,4,5,6])
15   .range(["#d95f02","#386cb0","#66a61e","#e6ab02","#386cb0","#66a61e","#e6ab02"])*/
16 var c0 = "black"
17 var c25 = d3.scale.quantize().domain([0.01,0.03,0.08,0.1]).range(["#ffdd8a","#fd8d3c","#f16913","#948011"])
18 var c25o = d3.scale.quantize().domain([0.01,0.03,0.08,0.1]).range(["#dadade","#bcbddc","#9e9ac8","#807dba","#6a51a3"])
19 var c14= d3.scale.quantize().domain([2.1,4.1,9]).range([3182bd,"#08519c"])
20 var c36= d3.scale.quantize().domain([2.1,4.1,9]).range([4d9221,"#276419"])
21 +
```



4. More resources

The screenshot shows the homepage of the Pro Git book website (<https://git-scm.com/book/zh/v2>). It features a navigation bar with links like 'About', 'Documentation', 'Downloads', and 'Community'. The main content area is titled 'Book' and contains information about the 2nd Edition (2014) of the book. It includes a 'Download Ebook' section with PDF, EPUB, and MOBI links.

<https://git-scm.com/book/zh/v2>
<https://git-scm.com/doc>
<https://github.com/phodal/github>

<https://github.com/adam-p/markdown-here/wiki/Markdown-Cheatsheet>
<https://www.webpagefx.com/tools/emoji-cheat-sheet>
ChooseALicense.com

The screenshot shows the GitHub Education website (<https://education.github.com>). It features a main heading 'Real-world tools, engaged students' and a sub-section 'GitHub Education helps students, teachers, and schools access the tools and events they need to shape the next generation of software development.' Below this are two sections: 'GitHub Student Developer Pack' (with a backpack icon) and 'GitHub Campus Experts' (with a flag icon).

<https://education.github.com/students>

The screenshot shows the 'Friendly GitHub Intro Workshop' website (<https://kirstiejane.github.io/friendly-github-intro/>). It features a 'Welcome' section with a cartoon owl icon, followed by 'Presentations', 'Exercises', 'Help & code of conduct', and 'Resources'. The Mozilla Science Lab logo is also present.

<https://github.com/phodal/github>
<https://kirstiejane.github.io/friendly-github-intro/>

Thanks

Enjoy your time of Brainhack and TrainTrack!

