

★ GitHub Introduction ★

Sophia Batchelor, Malvika Sharan

Slides: <https://zenodo.org/record/5070361>

References: [Mozilla Science Lab's Study Group Orientation](#),
[Friendly GitHub Intro by Kirstie Whitaker](#) & [GitHub Collaborating Document by Malvika Sharan and Esther Plomp](#)

Visual description: <https://learngitbranching.js.org/>





Links and CoC

Click the links for the paired online material

- <https://hackmd.io/@turingway/Hkkf-GgsO>
- [Github link](#)

Code of Conduct

If you experience or witness unacceptable behaviour, or have any other concerns, please report it by contacting the organisers - Malvika and Kirstie. (theturingway@gmail.com).

The Turing Way



An Open Source guide on Data Science.

We involve and support a diverse community to
collaboratively develop resources to make data science
reproducible, ethical and inclusive for everyone.



Roadmap

What is Version Control and Why it's Important

What is GitHub

Exercise: Make your first Git Page

☕ BREAK ☕

GitHub and Markdown

Exercise: adding a README.md

Vocab of GitHub for Version Control

Exercise: editing a GitHub page and making a PR

Other features of GitHub

Collaborative Documents

There are challenges in developing collaborative documents...

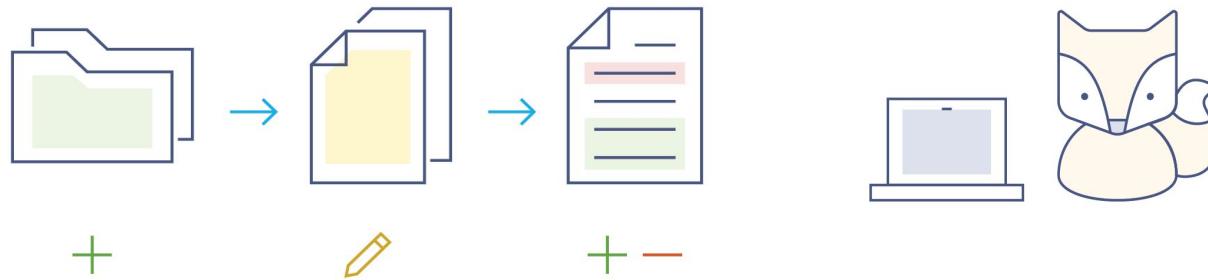
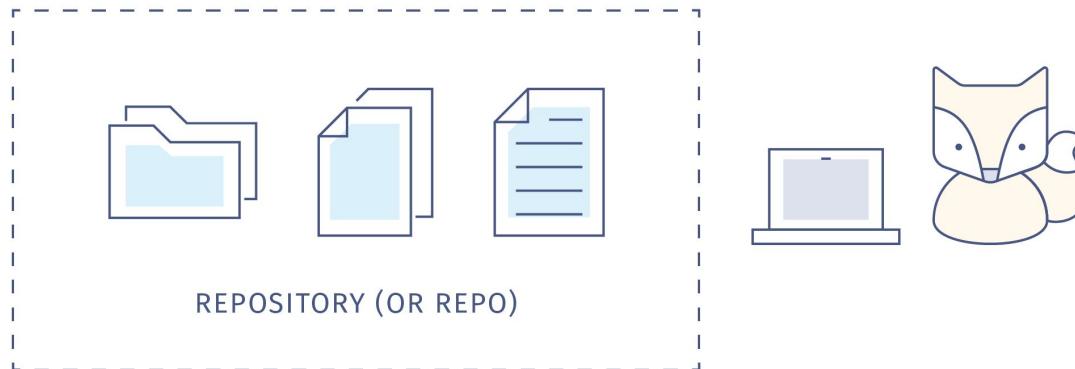


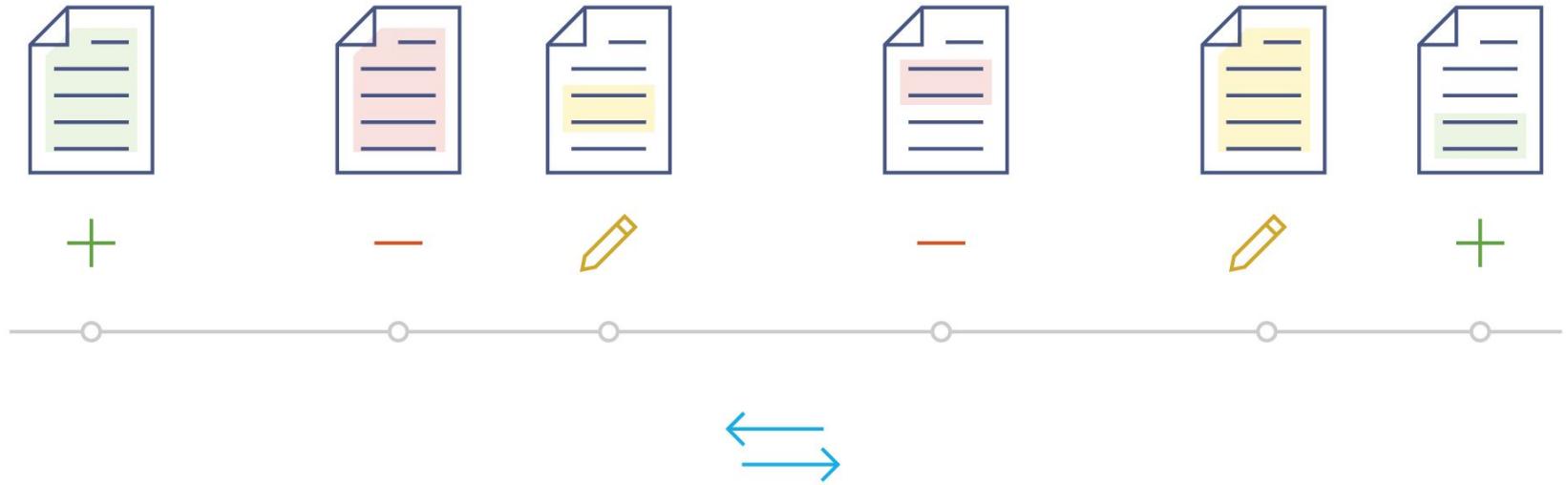
Collaborative Documents

There are challenges in developing collaborative documents...

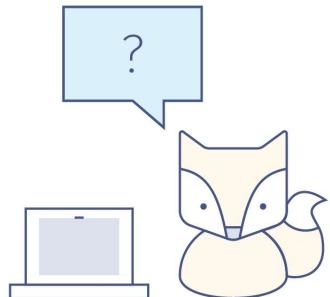
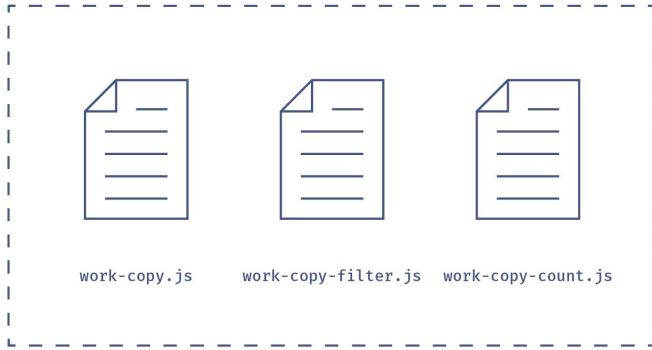
- Asynchronous and conflicting edits, location, time zones, and VERSIONS!

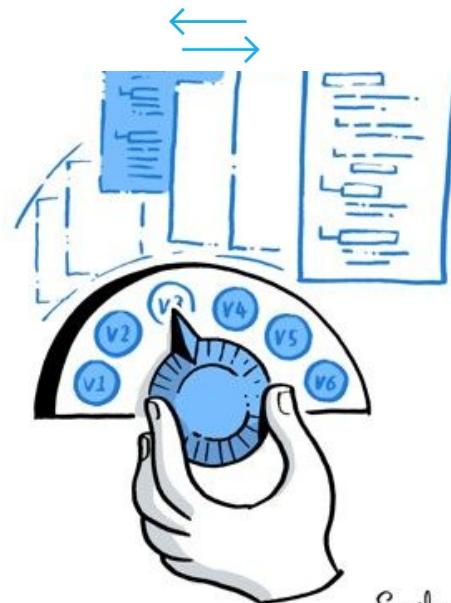






Revisions and Versions





Version Control

Management of **changes**, called **revisions**, to a file

- Simple file versioning with v1.0, v1.1, ...
- Simple tools like Google Drive, Dropbox...
- Advanced tools: git (local version controls system)



Revision: Change associated with a **timestamp** and details like what changes were made, who changed them, why etc.



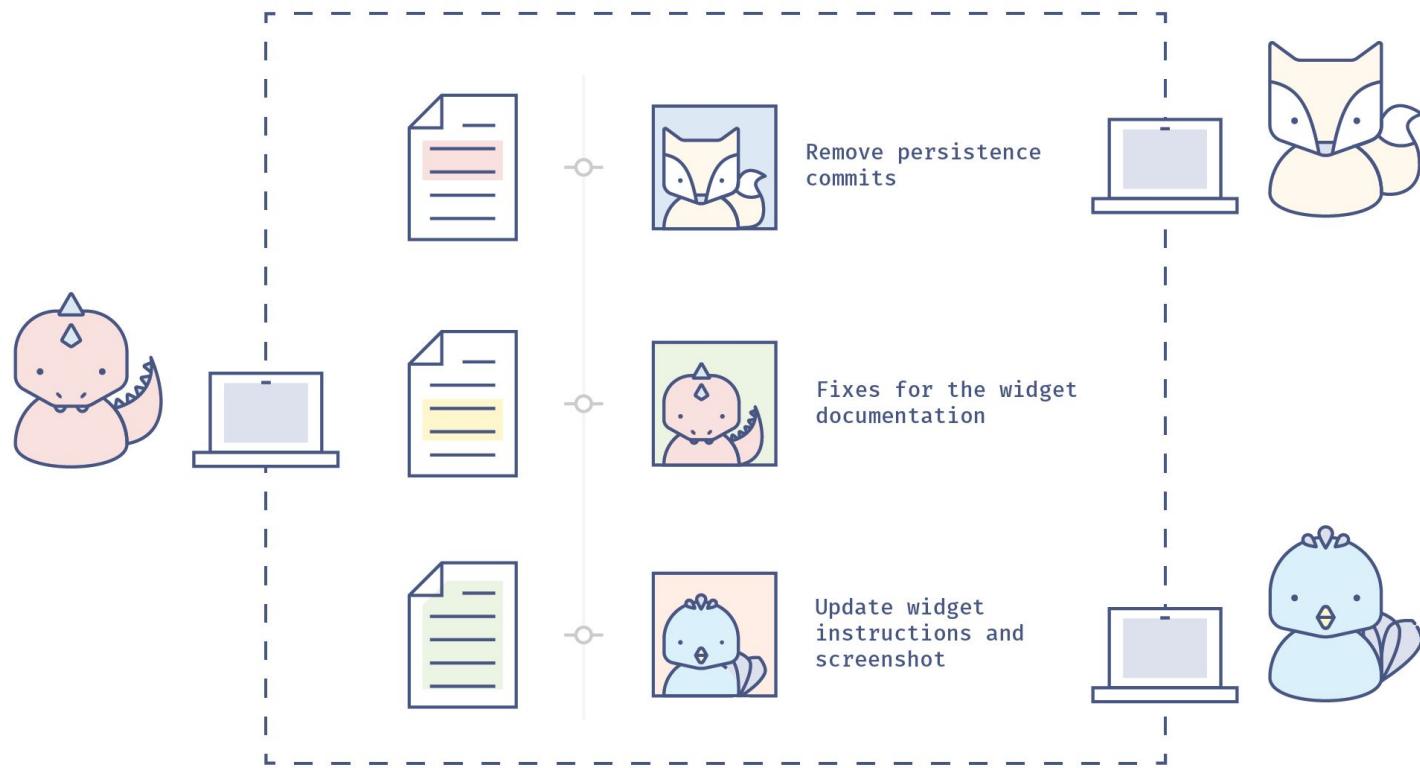
Version Control

Management of **changes**, called **revisions**, to a file

- Simple file versioning with v1.0, v1.1, ...
- Simple tools like Google Drive, Dropbox...
- Advanced tools: git (local version controls system)
- **Benefits:** collaborate in real time, store history, go back to previous versions



We can Collaborate on GitHub



But what **IS** GitHub?



Where the world builds software

Millions of developers and companies build, ship, and maintain their software on GitHub—the largest and most advanced development platform in the world.

Email address

Sign up for GitHub



56+ million
Developers

3+ million
Organizations

100+ million
Repositories

72%
Fortune 50





GitHub

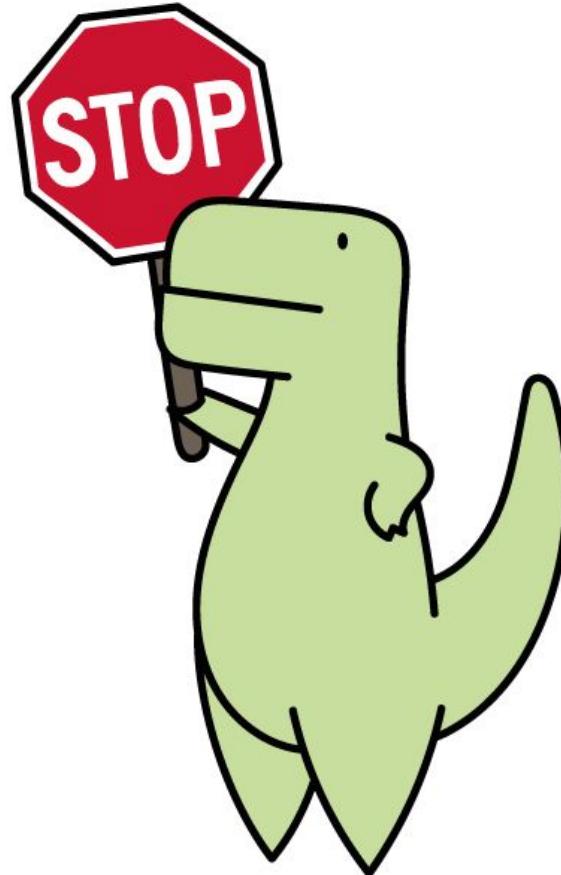
- **hosts your repositories** (projects) online
- helps you **work with contributors**/collaborators
- provides **web interface** for version control
- It can be used for **project management** and communication
- useful for any project where a group of people are working together

PAUSE!!!

Do you have a GitHub Account?

Go to <https://github.com/>

- Create an account using the sign up
- Login





GitHub Exercise!

First Repo

“friendly-collab-party”

Repository (Repo)

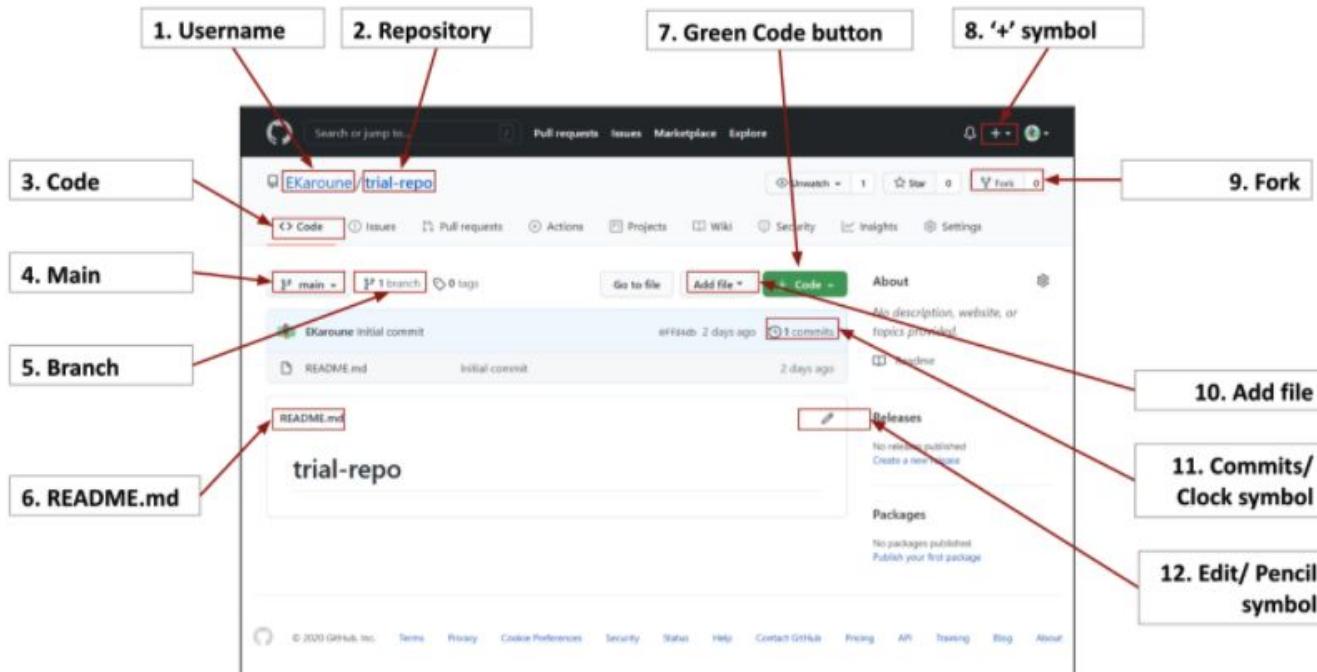
A project where all your files are, online or on your computer

The screenshot shows the GitHub interface for creating a new repository. On the left, a large teal arrow points from the text "First Repo" towards the GitHub interface. On the right, another orange arrow points from the text "friendly-collab-party" towards the "Repository name" field. The GitHub interface includes the following elements:

- Create a new repository**: The title of the page.
- Owner**: Set to "pajanne".
- Repository name**: The input field contains "friendly-collab-party" with a green checkmark icon.
- Description (optional)**: An empty text input field.
- Visibility**: A radio button for "Public" is selected, with the description "Anyone can see this repository. You choose who can commit." below it.
- Privacy**: A radio button for "Private" is available, with the description "You choose who can see and commit to this repository." below it.
- Initialize this repository with a README**: A checked checkbox with the description "This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository." below it.
- Add .gitignore**: A dropdown menu set to "None".
- Add a license**: A dropdown menu set to "None".
- Create repository**: A prominent green button at the bottom.

At the bottom of the page, there is footer text: "© 2016 GitHub, Inc. Terms Privacy Security Status Help" and "Contact GitHub API Training Shop Blog About".

First Repo



CONGRATS!!

You created your first repo.



<https://tenor.com/view/flower-power-rainbow-yeah-gif-7304860>

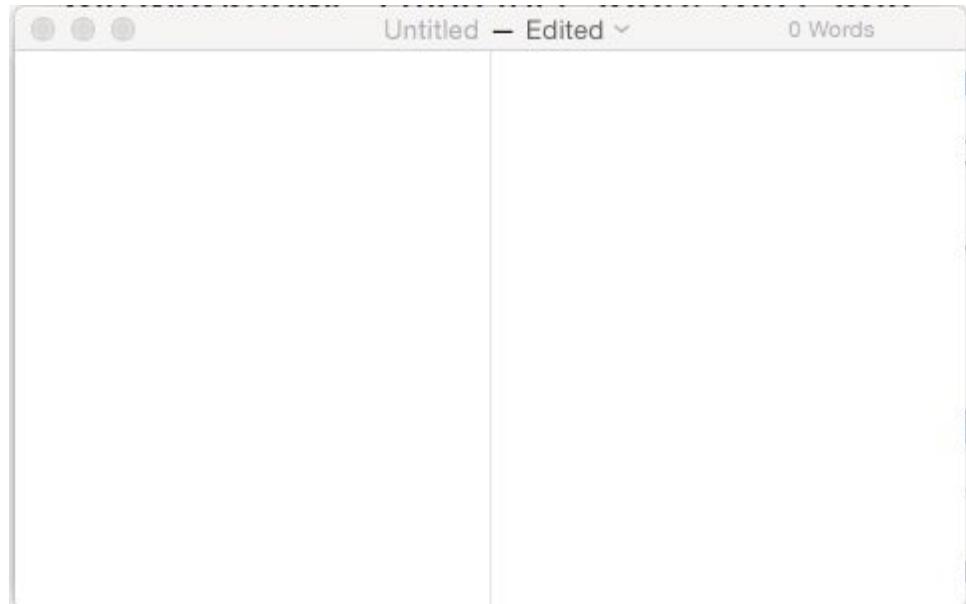
Let's Take a Break
See you in 00:00 Minutes

Markdown (.md) for formatting

Markdown is a simple text
“markup” language made for
quickly writing formatted text

Great for blogs, documentation,
and even writing papers.

You are already using it in the
HackMD.



Markdown (.md) for formatting

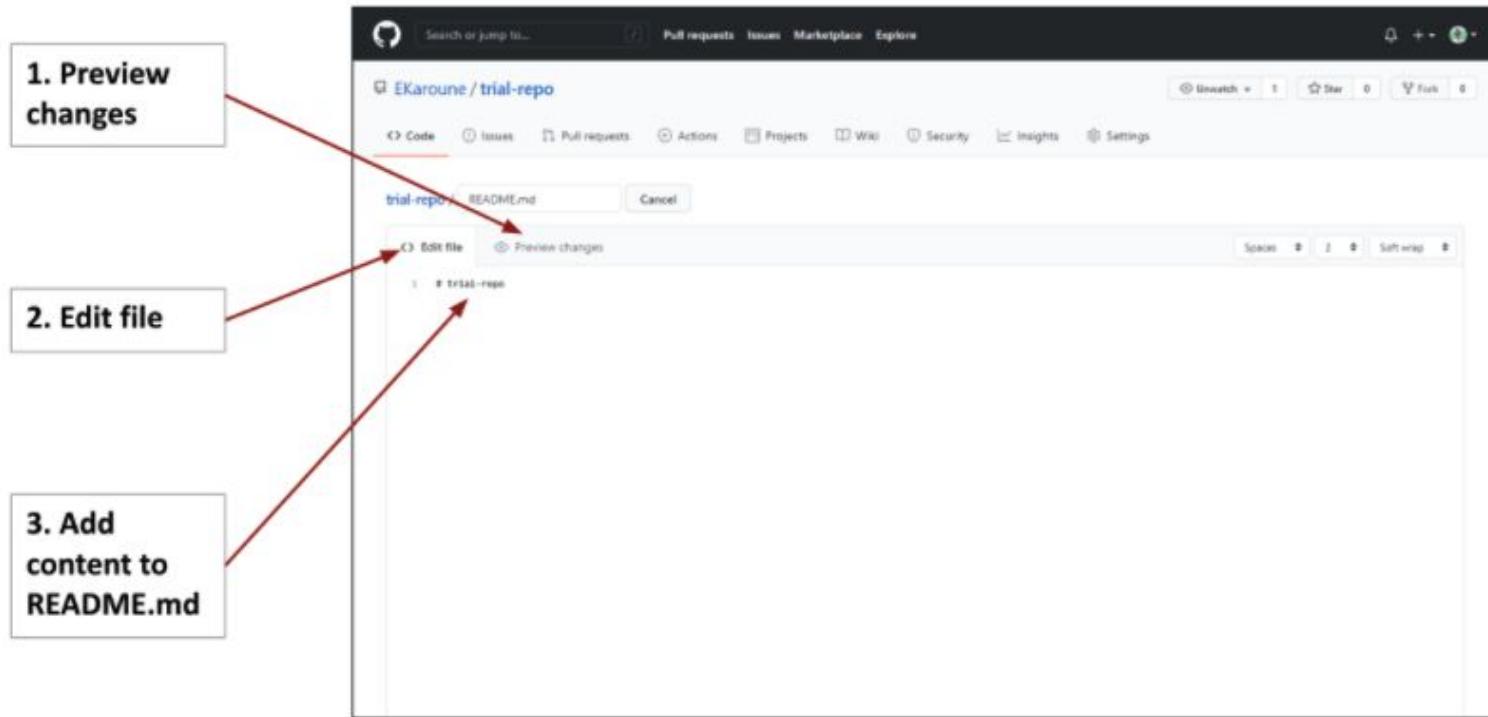
Create a README file

- Landing page for your repo
- Add about your project
- List tasks of varying expertise clearly
- Add names/ids of your collaborators
- Invite others with specific skills
- But let's write it in style with Markdown



GitHub Exercise!

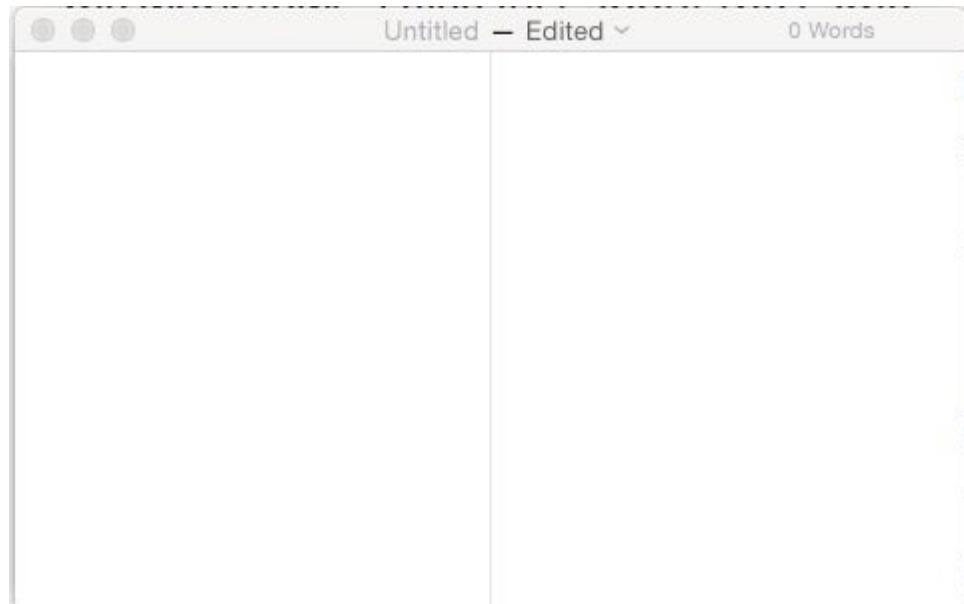
GitHub Exercise: Create a README.md



GitHub Exercise: Create a README.md

Write whatever you would like!

- About the project
- Today's date
- A hello world message!



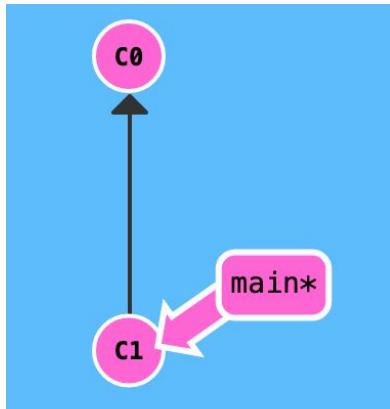
GitHub Vocab

- Commit 
- Branch & Fork 
- Pull request 
- Merge 

Commit ➔

Saving a version of file(s)

- ‘commit’ changes with message
(i.e.‘My first commit’)



→ ⌂ ⌂ https://github.com/alan-turing-institute/the-turing-way/commits/

-o Commits on Apr 26, 2021

Update contributors.md ...
EstherPlomp committed 16 days ago ✓

-o Commits on Apr 24, 2021

Update hyperlink so it renders in Netlify build (#1823)
inwaves committed 18 days ago ✓

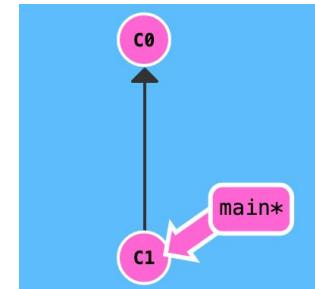
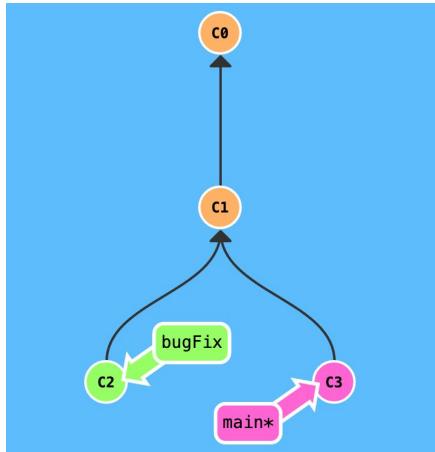
Improve grammar in compendia.md (#1822) ...
inwaves and malvikasharan committed 18 days ago ✓

-o Commits on Apr 22, 2021

Update project_management/turing_mybinder_role.md
sgibson91 committed 20 days ago ✓

Branch & Fork ↵

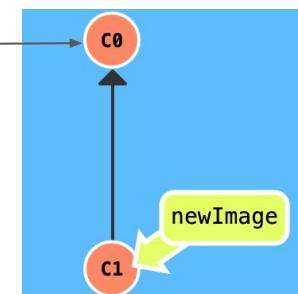
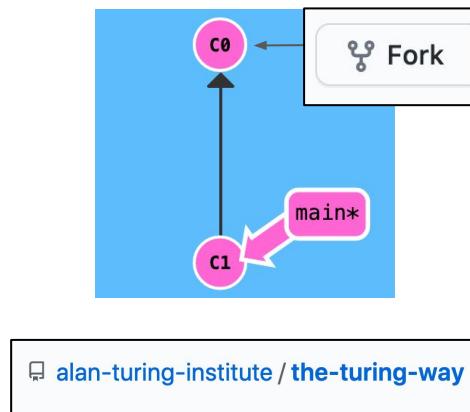
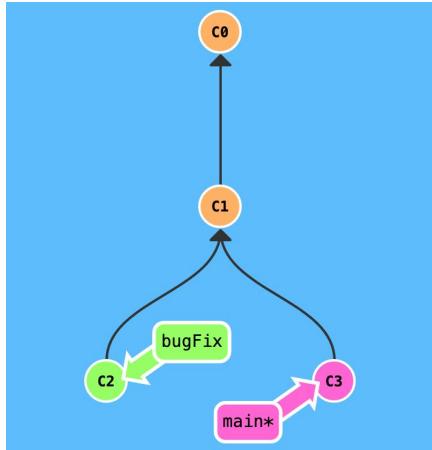
- **Branch:** pointers to a specific commit in **your** repo, temporary places to work through a feature ← you have **write** access



[alan-turing-institute / the-turing-way](https://github.com/alan-turing-institute/the-turing-way)

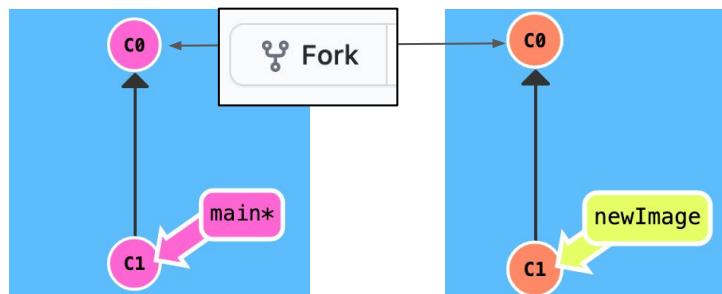
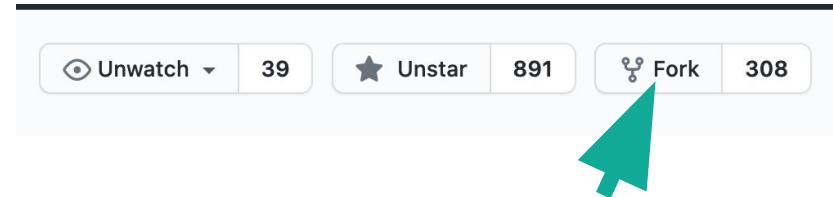
Branch & Fork ↵

- **Branch:** pointers to a specific commit in **your** repo, temporary places to work through a feature ← you have **write** access
- **Fork:** copy of repo that is an entirely **independent repo** ← no need of write access or intent to merge with the main



Fork 🔒

Task: Fork The Turing Way repo



user name / **the-turing-way**

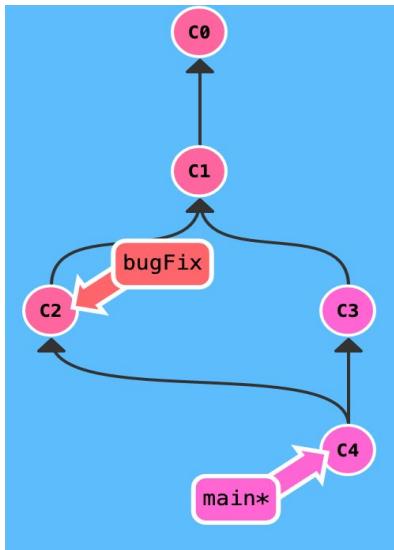
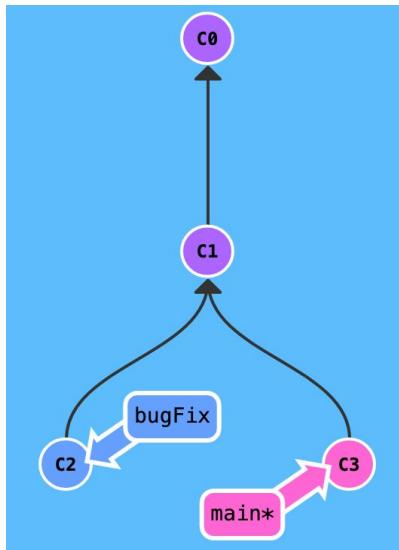
forked from [alan-turing-institute/the-turing-way](#)

alan-turing-institute / **the-turing-way**

malvikasharan / **the-turing-way**
forked from [alan-turing-institute/the-turing-way](#)

Pull Request (PR)

- PR: Requesting to combine the work from a forked repo or two branches to the main repo



Fork + Pull Request

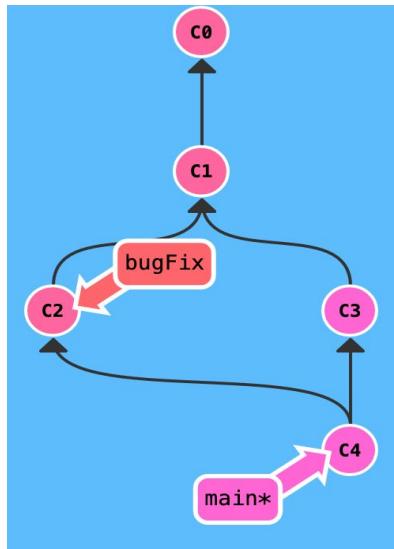
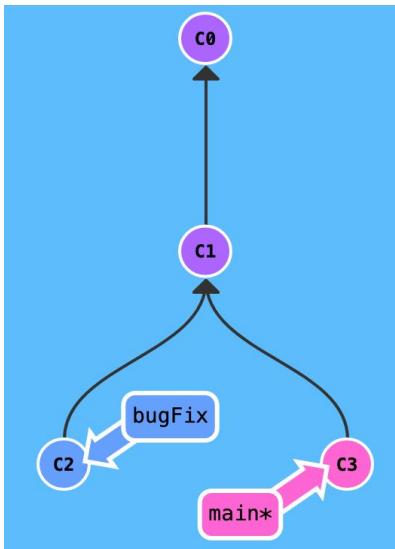
If you don't own a repo and aren't an official collaborator:

- a. you will **fork a repo**
- b. work on your forked copy of the repo
- c. *make a pull request for the changes you've made*
- d. *author/owner will decide to merge them in.*
- e. Make friends + Big party!



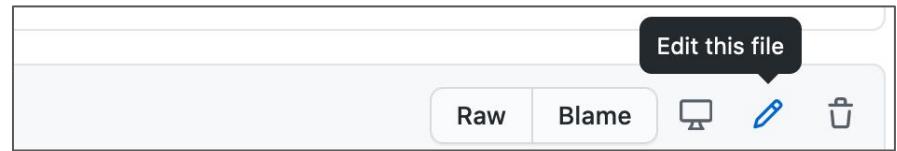
Pull Request (PR) - 1

Task: Edit by adding your details
“[workshops/github-workshop/2021-07-05-intro-workshop.md](https://workshops.github-workshop/2021-07-05-intro-workshop.md)”



[the-turing-way / workshops / github-workshop / 2021-07-05-intro-workshop.md](https://the-turing-way.workshops.github-workshop/2021-07-05-intro-workshop.md)

GitHub for Collaboration: The Turing Way Workshop at the EEI summer conference



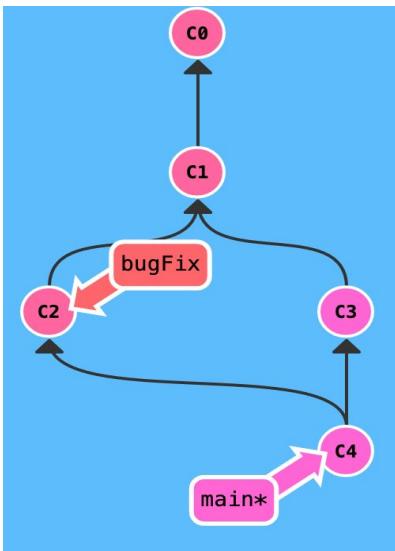
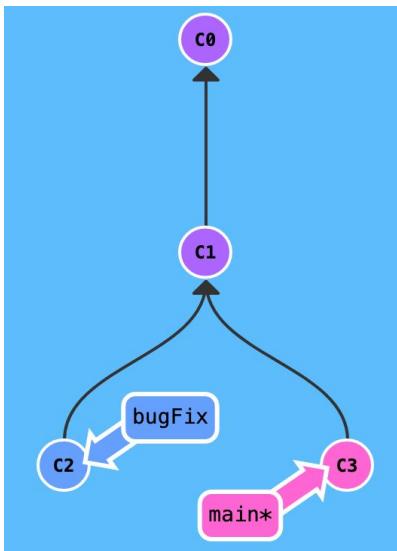
Sign up below by adding your details

Name / Institute or affiliation / **What specific aspect of GitHub do you find challenging?

- * Chilukuri Sai Dharani / Sri venkateswara engineering college /
- * Guilherme B Ferreira / Universitiy College London /
- * Dave Kupferschmidt / US National Institutes of Health /
- * Kunal Verma / Jaypee University Of Information Technology /
- * Kendra Phelps / EcoHealth Alliance /
- * Mabrouk Boutagouga / University of Batna 1 /
- * Maria Nanton / Buenos Aires' Ministry of Health /
- *
- *
- *

Pull Request (PR) - 2

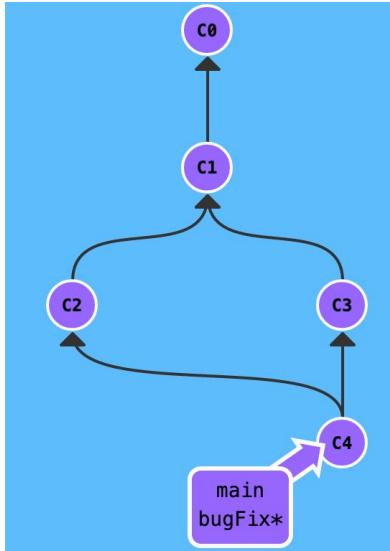
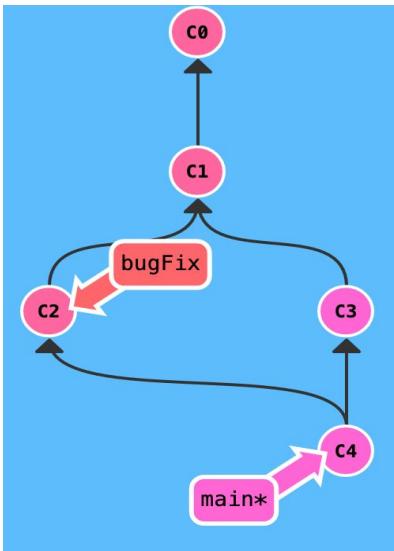
Task: Edit by adding your details
“*workshops/github-workshop/2021-07-05-intro-workshop.md*”



A screenshot of the GitHub Pull Requests interface. At the top, there is a navigation bar with links for Code, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. Below the navigation bar, there are filters: "is:pr is:open" (0 Open, 2 Closed), Labels (11), Milestones (0), and a "New pull request" button. In the center, there is a section titled "Comparing changes" with a message: "Choose two branches to see what's changed or to start a new pull request. If you need to, you can also compare across forks." Below this, there are dropdown menus for "base repository", "base: master", "head repository", and "compare: master". A message indicates that the branches are "Able to merge". On the right, there is a "Create a test PR" input field, a rich text editor toolbar, and a "Create pull request" button.

Merge

- **Merge:** combining the work from two different branches together after review



Create a test PR #1868

Open malvikasharan wants to merge 2 commits into `alan-turing-institute:master` from `malvikasharan:master`

Conversation 0 Commits 2 Checks 0 Files changed 1

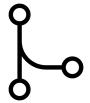
malvikasharan commented 2 minutes ago

Summary

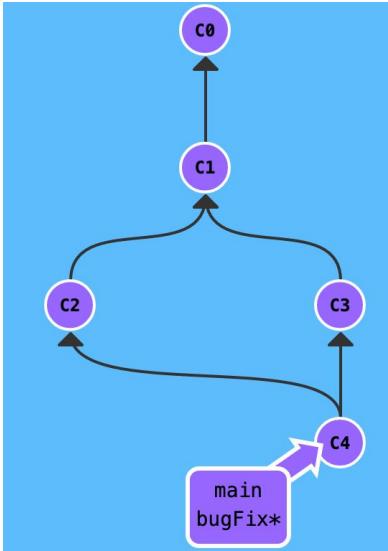
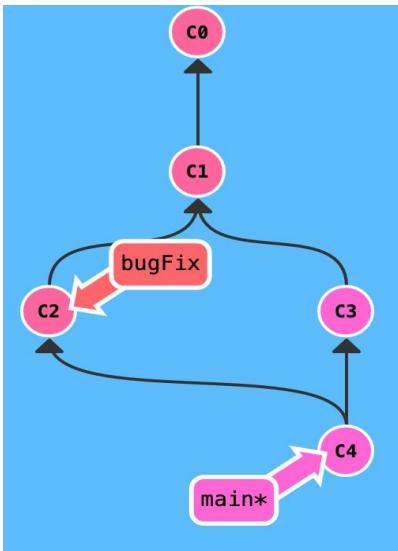
- Test PR for the workshop

Conversation 1 Commits 2 Checks 13 Files changed 1

Merge



- **Merge:** combining the work from two different branches together after review



Create a test PR #1868

Open malvikasharan wants to merge 2 commits into `alan-turing-institute:master` from `malvikasharan:master`

Conversation 0 Commits 2 Checks 0 Files changed 1

malvikasharan commented 2 minutes ago

Summary

- Test PR for the workshop

Conversation 1 Commits 2 Checks 13 Files changed 1

workshops/github-workshop/2021-05-13-intro-workshop.md

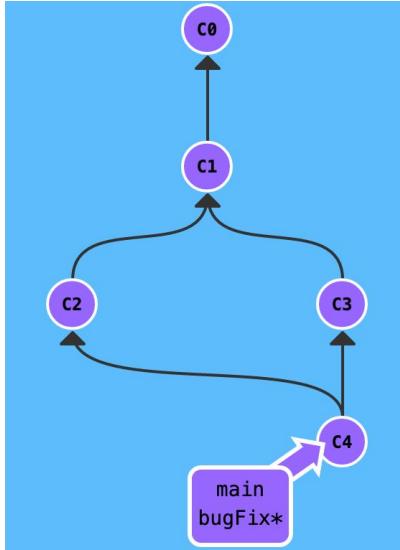
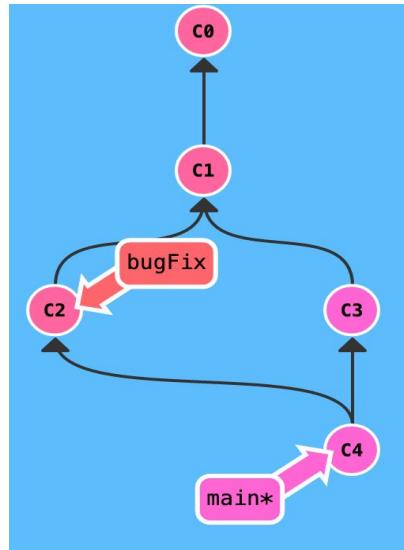
```
@@ -37,7 +37,7 @@ Name / Institute or affiliation / **What specific aspect of GitHub do you find c
37 * Kendra Phelps / EcoHealth Alliance /
38 * Mabrouk Boutagouga / University of Batna 1 /
39 * Maria Nanton / Buenos Aires' Ministry of Health /
40 - *
41 *
42 *
43
```

37 * Kendra Phelps / EcoHealth Alliance /
38 * Mabrouk Boutagouga / University of Batna 1 /
39 * Maria Nanton / Buenos Aires' Ministry of Health /
40 + * Malvika / The Alan Turing Institute / Testing this PR
41 *
42 *
43

Review before merge: Demo

```
@@ -37,7 +37,7 @@ Name / Institute or affiliation / **What specific aspect of GitHub do you find c
37 * Kendra Phelps / EcoHealth Alliance /
38 * Mabrouk Boutagouga / University of Batna 1 /
39 * Maria Nanton / Buenos Aires' Ministry of Health /
40 - *
41 *
42 *
43
37 * Kendra Phelps / EcoHealth Alliance /
38 * Mabrouk Boutagouga / University of Batna 1 /
39 * Maria Nanton / Buenos Aires' Ministry of Health /
40 + * Malvika / The Alan Turing Institite / Testing this PR
41 *
42 *
43
```

Users with write access can approve and merge PRs



Create an issue: Demo

Issues are like posts/messages

- Report bugs and errors, propose a new idea, save notes or invite discussions
- Give a descriptive header, provide details



The screenshot shows a GitHub repository page for 'alan-turing-institute / the-turing-way'. The 'Issues' tab is selected, displaying 328 issues. Below the header, there's a form for creating a new issue titled 'Issue: 🌟 General'. The form includes sections for 'Title', 'Summary', and 'Description'. A note at the bottom states: 'Styling with Markdown is supported' and 'Remember, contributions to this repository should follow its [contributing guidelines](#) and [code of conduct](#)'. A 'Submit new issue' button is at the bottom right.

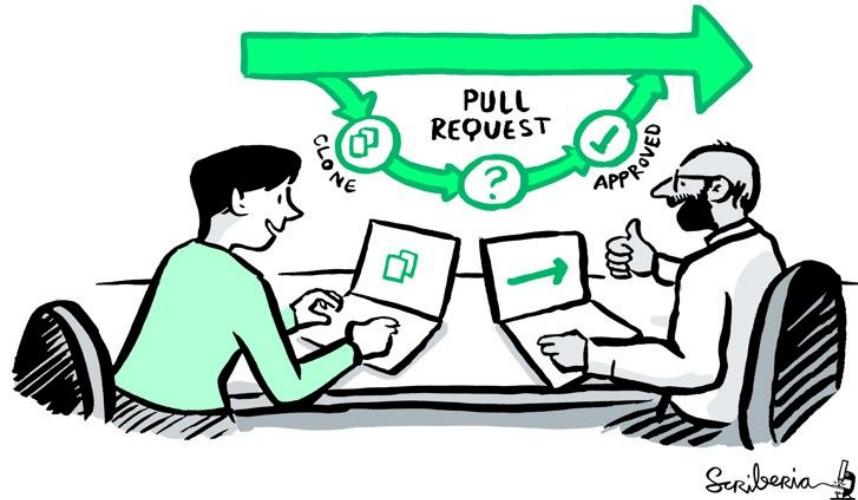
Issue vs Pull Request (PR)

- With a **issues**, you can **propose ideas for possible changes**, and invite discussions before you **make a PR** (or do something else).
- With a **pull request**, you can **propose changes**, discuss, and iterate on before you **merge** the changes into the project.



Using Issue & PR Features

- Different **contributors** can see what you are working on and offer help, share thoughts or learn from your work.
- Provide sufficient details, respond patiently, accept constructive feedback and **invite collaboration**.



Using Issue & PR Features

- **Advance features:** Use labels to sort or highlight relevant PRs and issues (“good first issue”) and tag people for comments/review

Onboarding Callum as Turing cluster admin #1856

Open sgibson91 opened this issue 9 days ago · 1 comment

sgibson91 commented 9 days ago · edited

Actions

- Open issue in <https://github.com/jupyterhub/team-compass> introducing Callum
 - Issue here [jupyterhub/team-compass#407](#)
- Add item to May's meeting agenda to introduce Callum
- Invite Callum to the May JupyterHub & Binder team meeting
- Callum to request access to the `turingmybinder` Azure subscription through TopDesk
- Sarah to schedule meeting with Callum to give a tour of the GitHub repositories and various tools/procedures
- Sarah to schedule sync-up meeting with Callum, Kirstie and Malvika re synergies between TPS/Turing Way/Binder (Jupyter more widely)

Assignees

- callummole
- sgibson91

Labels

- community
- project management

Projects

- None yet

Milestone

- No milestone

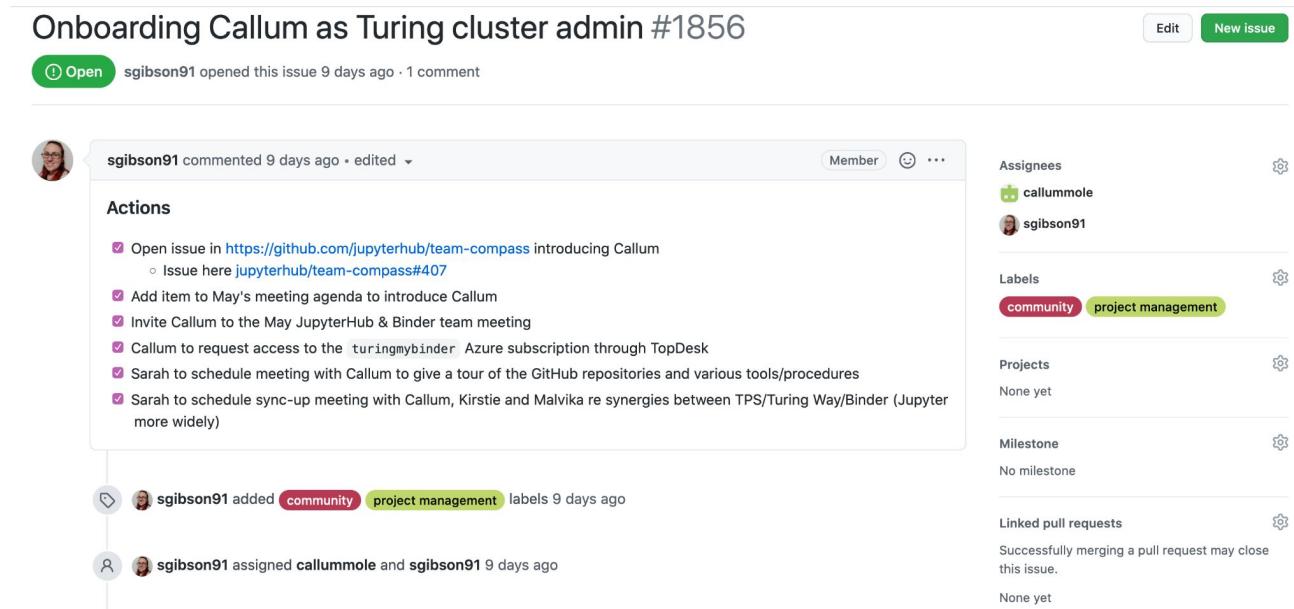
Linked pull requests

- Successfully merging a pull request may close this issue.

None yet

sgibson91 added community project management labels 9 days ago

sgibson91 assigned callummole and sgibson91 9 days ago



Congratulations!



You now know:

Commit 

Issue 

Pull request 

Merge 



There are many more Github features that you can **try in your own time.**

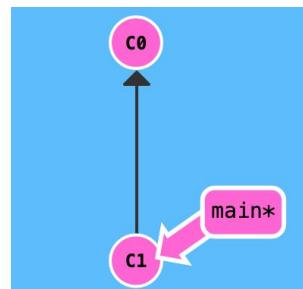
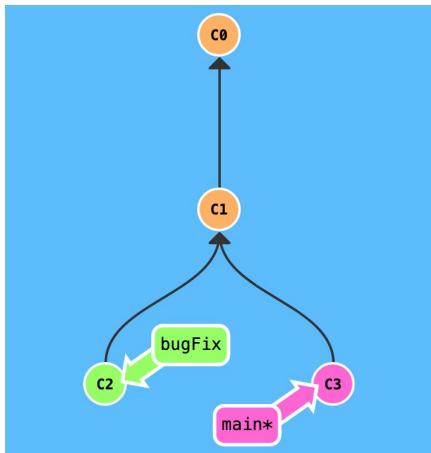


Create “pull request”

Branch & PR



- **Branch:** pointers to a specific commit in **your** repo, temporary places to work through a feature ← you have **write** access



friendly-collab-party / README.md in main

<> Edit file Preview

```
1 # Friendly Collab Party
2
3 This is my test repository.
4
5 This sentence is being added to test making branch on my own repo.
6
```

-o- Commit directly to the `main` branch.

Create a new branch for this commit and start a pull request. Learn more

↳ malvikasharan-patch-1

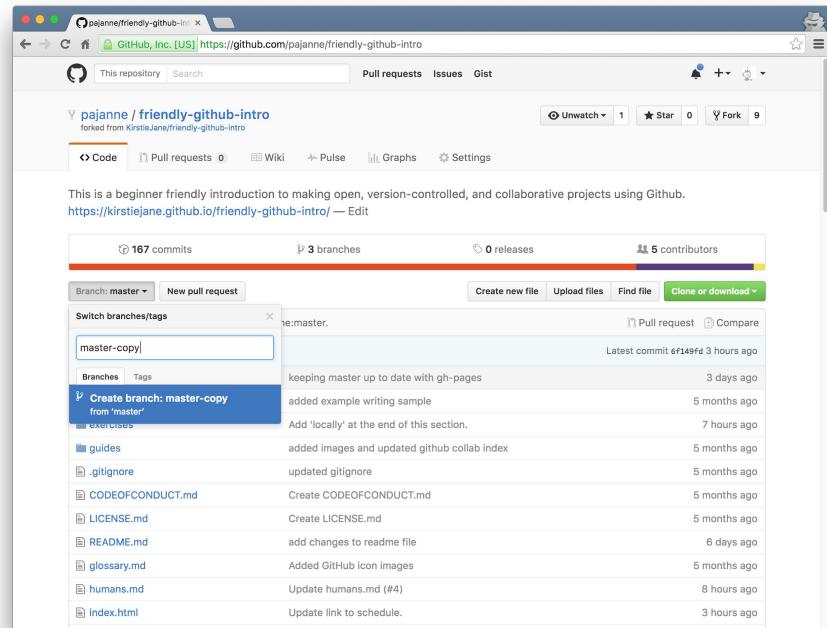
Propose changes Cancel

A screenshot of a GitHub-style interface showing a commit in the 'main' branch. The commit message is '# Friendly Collab Party'. Below the commit, there are two options: 'Commit directly to the main branch.' (radio button) and 'Create a new branch for this commit and start a pull request.' (radio button, which is selected). A callout box highlights the second option with the text 'Learn more' and a link 'malvikasharan-patch-1'. At the bottom are 'Propose changes' and 'Cancel' buttons.

Pull request in your own repo

Pull request
request to add your changes from a
branch back into master

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



“merge” your pull request to your repo

Optional

*Add collaborators to work as a core
part of your team!*

Add collaborators

1. Only the owner of a repo can:
 - a. add people as **collaborators**
 - b. each collaborator can read/write files in the repo
 - c. each collaborator is adding files and other content →
making branches → and either directly merging changes in
or via pull requests

Settings - add collaborators here

A screenshot of a GitHub repository page for the repository "joeyklee/friendly-collab-party". The page shows basic repository statistics: 1 commit, 1 branch, 0 releases, and 1 contributor. A green button labeled "New pull request" is visible. Below the stats, a commit history is shown with one entry from "joeyklee" titled "Initial commit" made just now. The repository's README.md file is displayed, containing the text "friendly-collab-party" and the description "This is a repo for friendly collaboration party". At the top of the page, a red arrow points to the "Settings" tab in the navigation bar. The page footer includes links for Status, API, Training, Shop, Blog, About, and Pricing.

joeyklee / friendly-collab-party — [Edit](#)

1 commit 1 branch 0 releases 1 contributor

Branch: master — [New pull request](#) [New file](#) [Upload files](#) [Find file](#) [HTTPS](#) — <https://github.com/joeyklee/friendly-collab-party> [Download ZIP](#)

joeyklee Initial commit Latest commit 13e00a2 just now

README.md Initial commit just now

README.md

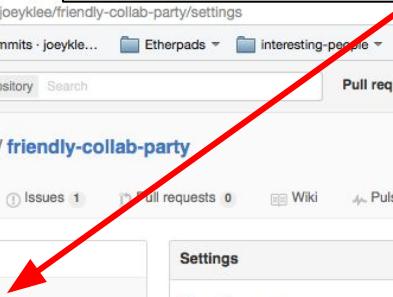
friendly-collab-party

This is a repo for friendly collaboration party

© 2016 GitHub, Inc. [Terms](#) [Privacy](#) [Security](#) [Contact](#) [Help](#)

[Status](#) [API](#) [Training](#) [Shop](#) [Blog](#) [About](#) [Pricing](#)

Click here



A screenshot of a GitHub repository settings page. The URL in the address bar is <https://github.com/joeykle/friendly-collab-party/settings>. The page title is "joeykle / friendly-collab-party". The top navigation bar includes links for "Pull requests", "Issues", "Gist", "Unwatch", "Star", and "Fork".

The left sidebar has a "Settings" tab selected, showing the following sections:

- Options**:
 - Collaborators** (highlighted with a red arrow)
 - Branches
 - Webhooks & services
 - Deploy keys
- Settings**:
 - Repository name: friendly-collab-party (with a "Rename" button)
- Features**:
 - Wikis: GitHub Wikis is a simple way to let others contribute content. Any GitHub user can create and edit pages to use for documentation, examples, support, or anything you wish.
 - Restrict editing to collaborators only: Public wikis will still be readable by everyone.
 - Issues: GitHub Issues adds lightweight issue tracking tightly integrated with your repository. Add issues to milestones, label issues, and close & reference issues from commit messages.
- GitHub Pages**:
 - Automatic page generator**: Create a beautiful site for your project with our automatic GitHub Pages generator. Author your content in our Markdown editor, select a theme, then publish.
[Launch automatic page generator](#)

Add collaborator's name here



Add collaborator's name here

GitHub, Inc. (US) | https://github.com/joeyklee/friendly-collab-party

Pull requests Issues Gist

Unwatch 1 Star 0 Fork 0

Code Issues 1 Pull requests 0 Wiki Pulse Graphs Settings

Options Collaborators Branches Webhooks & services Deploy keys

Collaborators Push access to the repository

This repository doesn't have any collaborators yet. Use the form below to add a collaborator.

Search by username, full name or email address Add collaborator

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Why and When would I add collaborators?

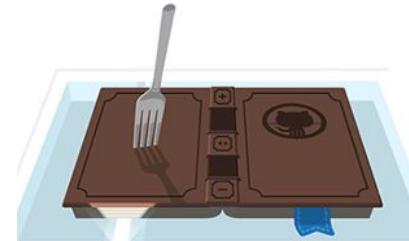
- You're building a document and you have teammates.
- You're writing a paper and multiple people will be writing/editing.
- You're developing a new course with multiple trainers.
- You are doing an analysis and need your collaborator to review.
- etc...

*Add 1-2 of your project members or mentors as
collaborators to your “friendly-collab-party”!*

Git/GitHub Features

Fork

make a copy of someone else repository

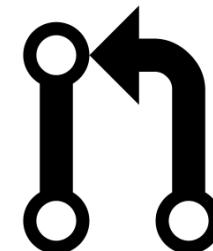


Pull request

request to add your changes into a
forked repository

Clone

copy a repository onto your local
computer



Download Zip

download the content of a repository

Create & manage
“Issues”

Pull Request to add your
changes into forked repo

Fork this repo

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

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

A screenshot of a GitHub repository page for "malvikasharan / developing_collaborative_document". The page shows the repository's main branch, "main", which has 1 branch and 1 tag. There are 1 issue and 1 pull request. The repository has 11 forks and 4 stars. The README.md file is rendered at the bottom.

Branches:

- main (selected)
- 1 branch
- 1 tag

Issues:

- 1

Pull requests:

- 1

Actions, Projects, Wiki, Security, Insights

Code dropdown menu:

- Go to file
- Add file
- Code (selected)

Clone options:

- Clone (HTTPS, SSH, GitHub CLI)
- Use Git or checkout with SVN using the web URL: <https://github.com/malvikasharan/developing...>

Open with GitHub Desktop

Download ZIP

Repository details:

- 13 months ago
- 13 months ago
- 2 months ago
- 2 months ago

DOI: 10.5281/zenodo.3835657

Clone to your
computer from the web
using GitHub Desktop
or git command

This material is used for teaching
non-researchers about versioning and
maintaining Open Access Documents
to invite collaboration.

malvikasharan.github.io/developing...

Readme

Download Zip to
download the zipped
repo onto your
computer

on 20 May 2020

Packages

Git/GitHub Feature

Project or Project Board

Sort issues, notes, to-dos in a set of columns. These could be:

- milestones
- todo/testing/done
- anything else you like!

The screenshot shows a GitHub repository named 'intermine / intermine'. The top navigation bar includes 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. Below the repository name, there are tabs for 'Code', 'Issues 217', 'Pull requests 1', 'Actions', 'Projects 4', 'Wiki', 'Security', 'Insights', and 'Settings'. A 'Projects' tab is highlighted.

The main area displays a 'Roadmap & release planning' section updated 26 days ago, followed by three columns of cards:

- Roadmap & release planning**: Contains 19 items for 'InterMine 4.1.2 (January 2019)', such as 'DataSet URLs do not appear in tables; do show in report heading' (bug) and 'Remove "upload to GenomeSpace" export'.
- Projects**: Contains 5 items for 'InterMine 4.2.0 (Spring 2019)', such as 'FAIR: add profile Gene and Protein markup to the report page' (fair) and 'Add "data sets" source -- instead of using items XML' (input-needed).
- InterMine 5.0.0**: Contains 1 item for 'InterMine 5.0.0', which is a 'Future InterMine release'.

A 'Filter cards' search bar and a '+ Add cards' button are located at the bottom right of the board area. The URL at the bottom of the page is <https://github.com/intermine/intermine/issues/2045>.

Glossary & Questions

Don't worry if you haven't gotten **all the terms** yet -
Play around more & clarify any questions by emailing.





Book:
the-turing-way.netlify.app/

GitHub:
github.com/alan-turing-institute/the-turing-way

Twitter:
twitter.com/turingway

Email:
theturingway@gmail.com

