
Housekeeping

- Please respect the **Code of Conduct**
- Handouts available in:

<https://github.com/alan-turing-institute/github-introduction>
- Use the **post-its** provided to let us know if you have a question or need help
- Please ask questions on anything related to these topics!

The Alan Turing Institute



Git Good: an Introduction to GitHub for Collaboration



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Let's Git Good:



- **Part 1: Why and basics**
- Exercise 1: Finding an Issue and contributing to a project.
 - You will practice: Using issues to contribute and document decisions
- **Part 2: Advanced**
- Exercise 2: Editing a file and making a Pull Request.
 - You will practice: Markdown; contributing, pull requests
- **Bonus Exercise:** Make your own repo, edit your readme

Collaboration

Working together, often not at the same time or in the same place (distributed)

Challenges:

- People editing the same line
- Incorporating different ideas
- Different versions of the doc



What is version control?

An approach to **recording** changes in a file over time so that you can:

- track history
- review specific changes
- go to earlier/later versions (back up!)



Git & GitHub



Git is one of the most widely used **software** for version control. It is free and open source!

You can use git **on your computer** through the command line or a GUI.



GitHub is a popular **website** for hosting and sharing projects you have been tracking with git.

Flexible and securely control of access to materials, and open publishing.



And version controlled documentation!

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.

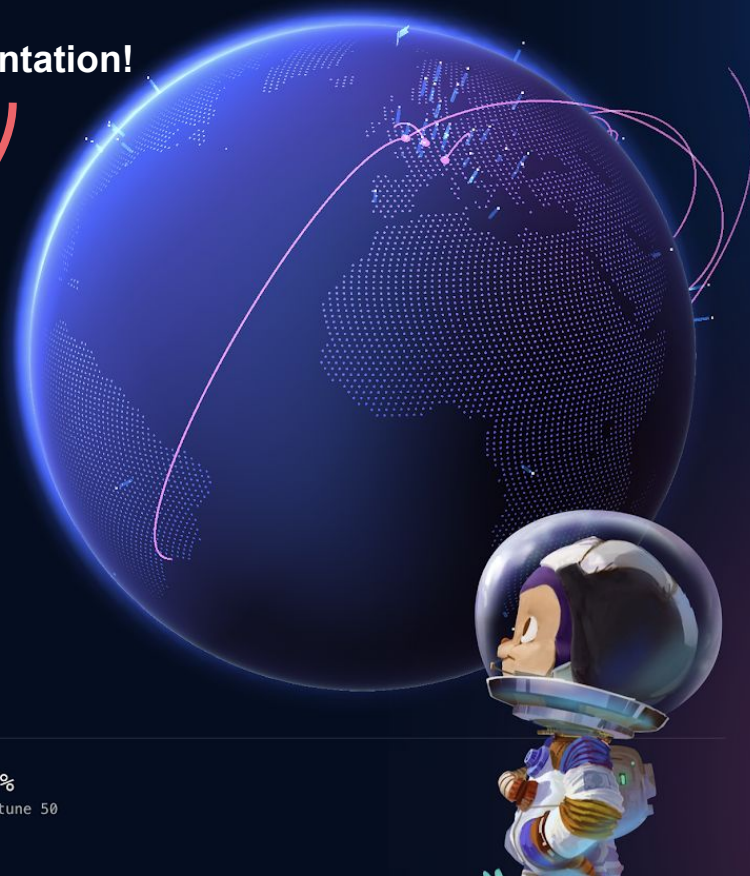
Sign up for GitHub

56+ million
Developers

3+ million
Organizations

100+ million
Repositories

72%
Fortune 50



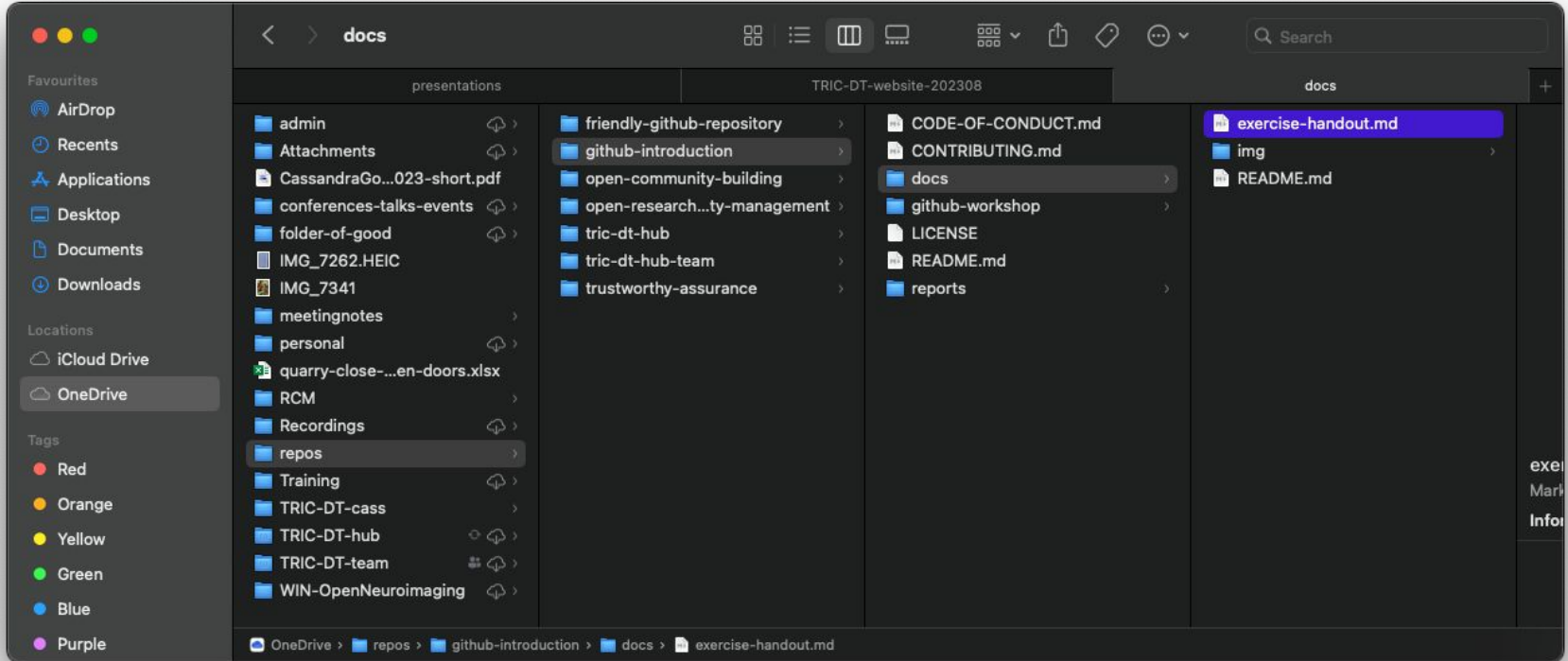
GitHub - online (“remote”)

The image shows a screenshot of a GitHub repository page for 'EKaroune / Open-Science-in-Phytolith-Research'. Red arrows point from numbered boxes to specific parts of the interface:

- 1. Project**: Points to the repository name 'EKaroune / Open-Science-in-Phytolith-Research'.
- 2. Issues**: Points to the 'Issues' tab in the top navigation bar.
- 3. Files**: Points to the file list on the left side of the repository page.
- 4. Landing page or README.md file**: Points to the 'Open Science in Phytolith Research' section of the README.
- 5. Insights**: Points to the 'Insights' tab in the top navigation bar.
- 6. Edit repo details**: Points to the gear icon (repository settings) in the top right corner.
- 7. Description of the repository**: Points to the 'About' section of the repository page.
- 8. Link for Git pages**: Points to the 'gh-pages' branch link in the 'About' section.
- 9. Topic labels**: Points to the 'open-science' and 'open-data' topic labels.
- 10. License**: Points to the 'CC-BY-4.0 License' section.







github.com/alan-turing-institute/github-introduction ; github.com/alan-turing-institute/open-research-community-management ;
github.com/alan-turing-institute/the-turing-way

GitHub - local

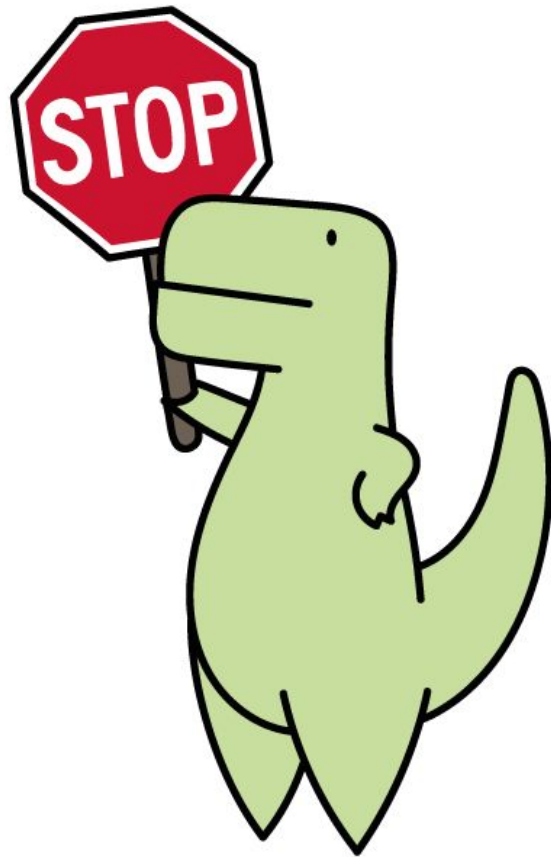


Online repo: github.com/alan-turing-institute/github-introduction.

GitHub Vocabulary: Repository

- Repository (repo)  = filing cabinet / directory
- Commit  = save point
- Issue  = feedback and “to-do” list
- Branch & Fork  = different “streams” of work
- Pull request  = ask to incorporate your changes
- Merge  = incorporate changes

Questions?



LoofandTimmy.com

Exercise 1:

Commenting on an issue.

- Go to the repository we've set up for this session.
- Comment on the issue titled "**Exercise 1: Getting started**".



Collaborating in GitHub

When working with others, we want to:

- draft ideas NOT on main branch
- reviews and editing from team members before finalising new additions

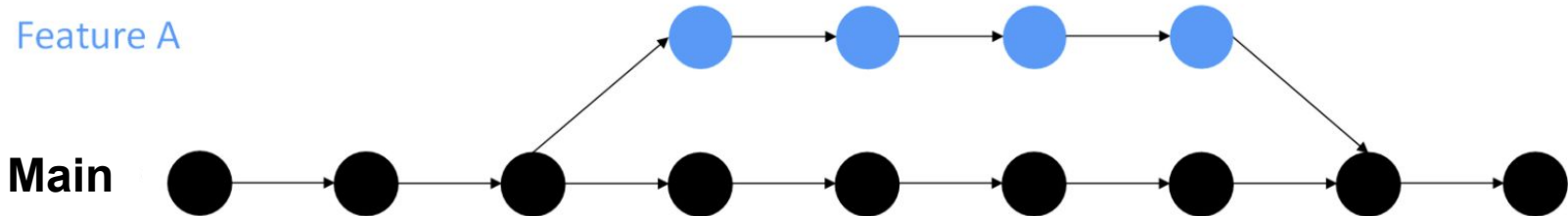


Fig. 18 An illustration of a development and main branch in git.

Branch vs Fork

A temporary place in **your** repo pointing to a commit

Is used to work on an idea (like a solution to a problem) → *requires 'write' access to the original repo*

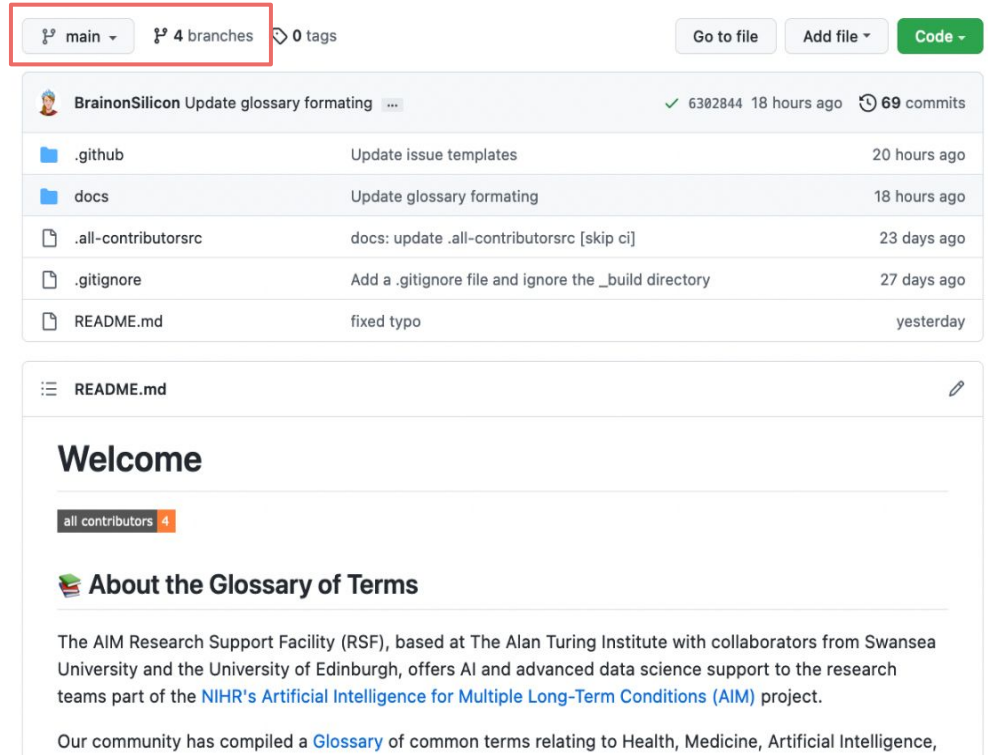
Fork: An **independent** copy of a repo

Can be used for independent work or collaboration → *does not require write access to original repo*

Branch

A temporary place in **your** repo pointing to a commit

Is used to work on an idea
(like a solution to a problem)
→ *requires 'write' access to
the original repo*



The screenshot shows a GitHub repository interface. At the top, a red box highlights the 'main' branch selector and the '4 branches' link. Below this, the repository name 'BrainonSilicon' is shown with a commit hash '6302844' and '18 hours ago' timestamp, along with '69 commits'. A table lists the repository's files and their last update times:

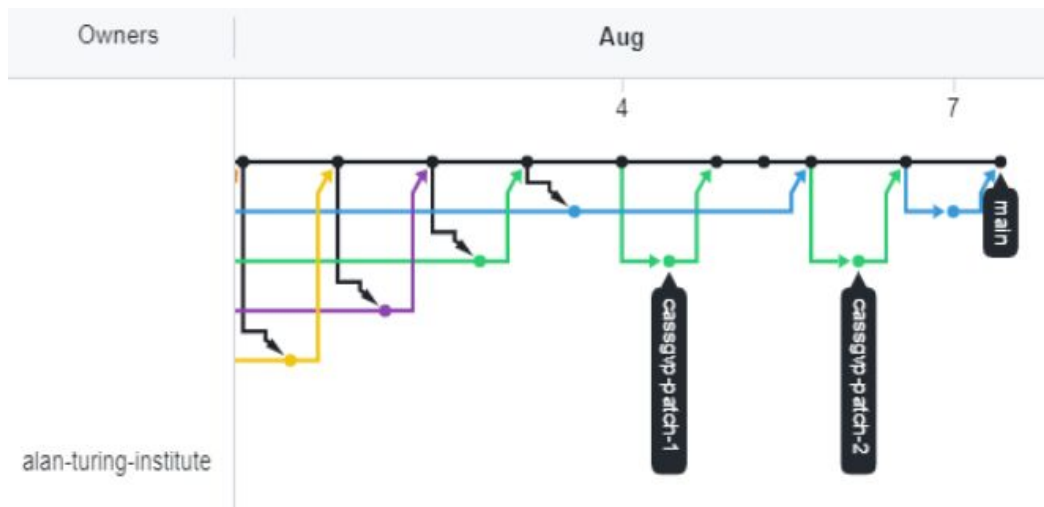
File	Commit Message	Last Update
.github	Update issue templates	20 hours ago
docs	Update glossary formatting	18 hours ago
.all-contributorsrc	docs: update .all-contributorsrc [skip ci]	23 days ago
.gitignore	Add a .gitignore file and ignore the _build directory	27 days ago
README.md	fixed typo	yesterday

Below the file list, the 'README.md' file is selected, showing a 'Welcome' message and a section titled 'About the Glossary of Terms'. The text describes the AIM Research Support Facility (RSF) and mentions the 'NIHR's Artificial Intelligence for Multiple Long-Term Conditions (AIM) project'.

Pull Request & Merge

Pull request
request to add your changes
from a branch back into main.

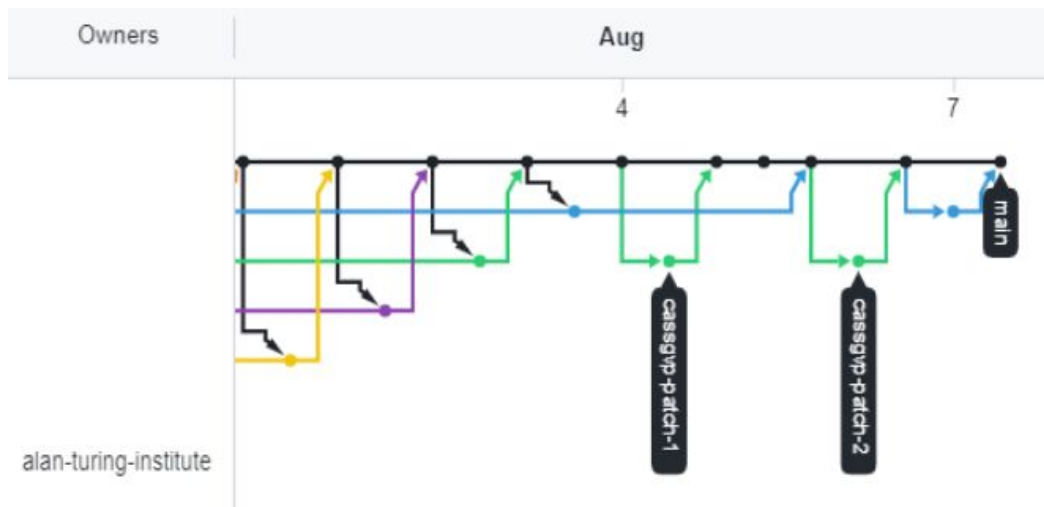
Merge
act of incorporating new
changes (commits) from one
branch to another.



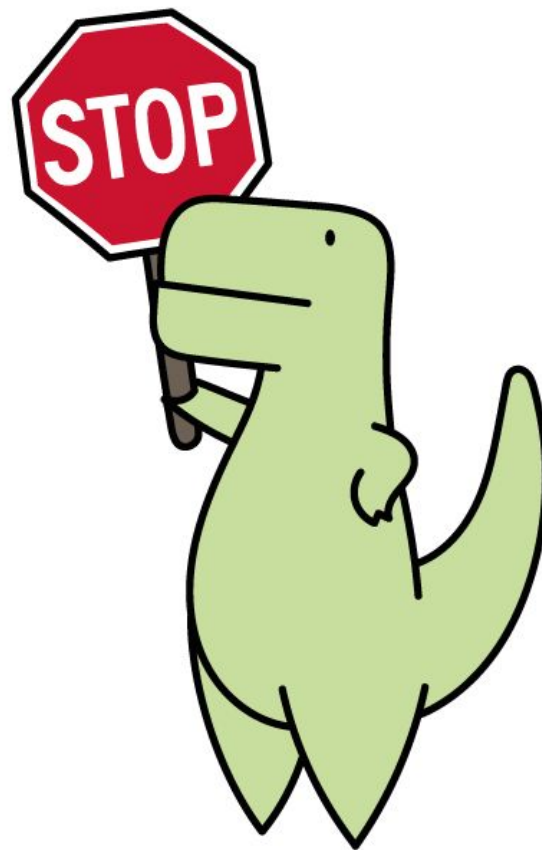
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Questions?



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GitHub Exercise 2: Edit a file and make a Pull Request.

1. Go to the file labelled **introductions**
2. Edit the file and write about your **favourite pizza topping**
3. **Commit** the change and submit a **Pull Request**.



GitHub Stretch Exercise: Create a new repo

1. Create a repo
2. Edit your README.md



<https://github.com/alan-turing-institute/github-introduction>. Zenodo at DOI: <https://doi.org/10.5281/zenodo.8221283>, CC-BY 4.0. GIF from <https://tenor.com/view/spinning-dive-paola-espinosa-sanchez-olympics-magnificent-dive-high-dive-gif-22567002>

Branches, PRs, and Merging

If you own a repo or are an official collaborator:




- a. you will **Create a new branch**
- b. work on the new branch
- c. **create a Pull Request** for the changes you've made
- d. a collaborator will decide to merge them in.

Forks, PRs, and Merging

If you **do not** own a repo and aren't an official collaborator:

- a. you will **Create a fork**
- b. work on your own fork
- c. **create a Pull Request** for the changes you've made
- d. the repo maintainer will decide to merge them in.

GitHub Skills Summary

- Repository to store your project 
- Issues to track tasks 
- Writing in Markdown to add links and content
- Branches and Pull requests to collaborate 

Acknowledgements

- The Brilliant Club, support staff, and Juliette Sexton.
- Kirstie Whitaker, Malvika Sharan, *The Turing Way* community, friends & collaborators
- Sophia Batchelor, Malvika Sharan, Cass Gould van Praag, Emma Karoune, Eirini Zormpa, Gabin Kayumbi.
- GitHub workshop based on Friendly GitHub Intro by Kirstie Whitaker, GitHub Collaborating Document by Malvika Sharan & GitHub for Collaboration by Sophia Batchelor.
- Original artwork by Scriberia: <https://doi.org/10.5281/zenodo.3332807>

THANK YOU!!



Scriberia 