The Alan Turing Institute

Collaborative Coding

Federico Nanni
Kaspar Beelen
Ed Chalstrey
Kalle Westerling

Slides adapted from: https://drive.google.com/file/d/1n8vQ9sZ3M6QDxiE24rYE7PXviTKBxOWD/view

Presentation Overview

- Slides and hands-on exercises

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Slido (anonymous):

- www.slido.com
- #4869941

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  - Commits
  - Branches

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- GitHub basics:
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  - Issues and project boards
  - Pull Requests

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  - Pull Requests
- **The Git flow model**

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- Git basics:
  - Commits
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- GitHub basics:
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  - Issues and project boards
  - Pull Requests
- **The Git flow model**

We will **not** cover:

- Coding and programming examples. Only markdown files.
- Git version control locally on your machine

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The tutorial is based on materials from previous years created by Lydia France and Levan Bokeria (DH&RSE - Cambridge 2023) and Kasra Hosseini, Mariona Coll Ardanuy and Federico Nanni (DH&RSE – Turing 2021)

Part 1: Git and GitHub

Git Version Control – the basics

- **Version control**, or source control, involves tracking and managing changes to code.

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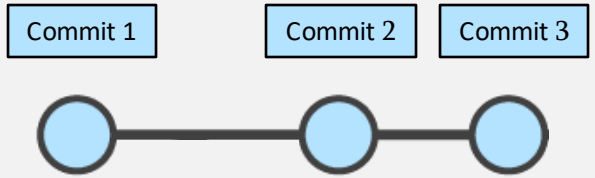

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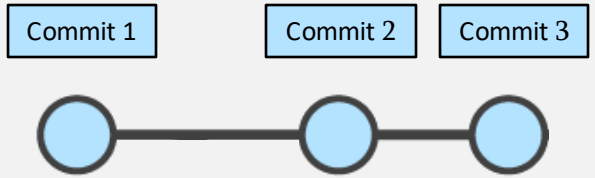

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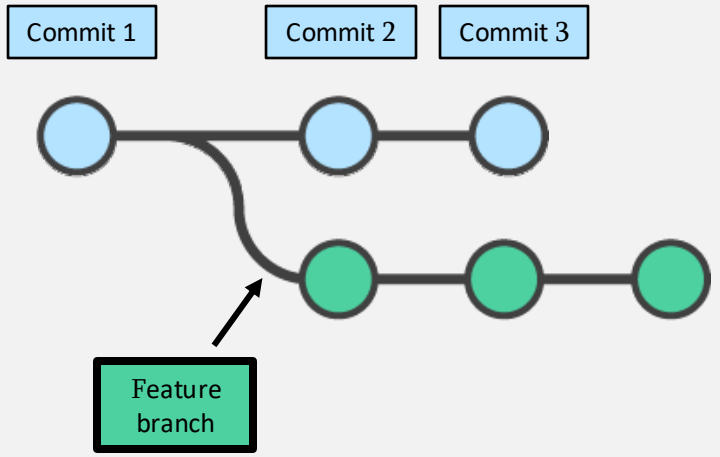

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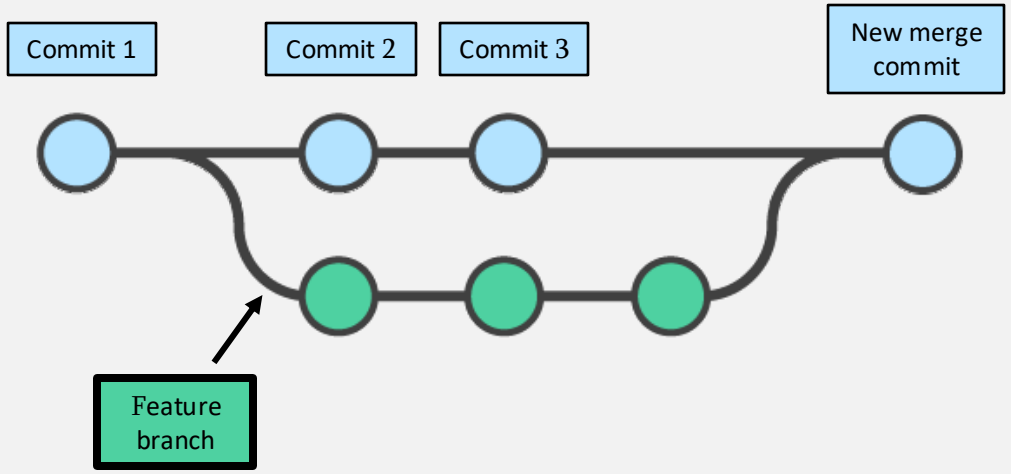

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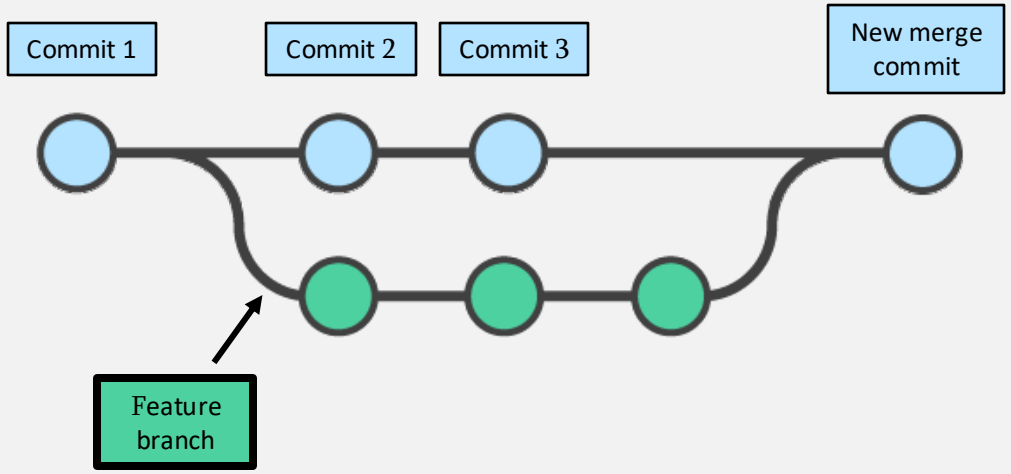
- **Merging branches**: fusing of code from two different branches, usually done via a ”pull request” (also known as a “merge request”)



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GitHub – a simple example repo

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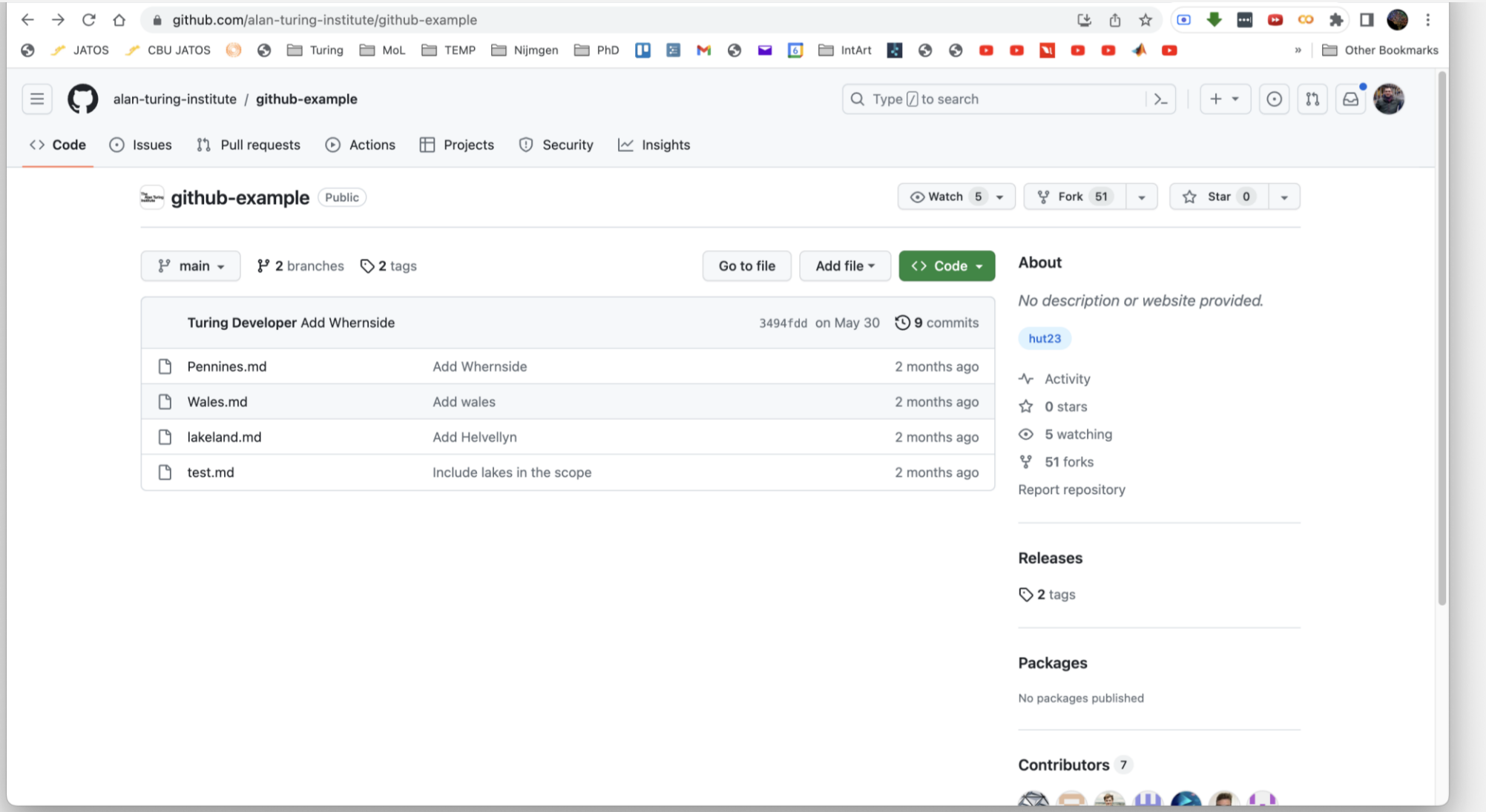

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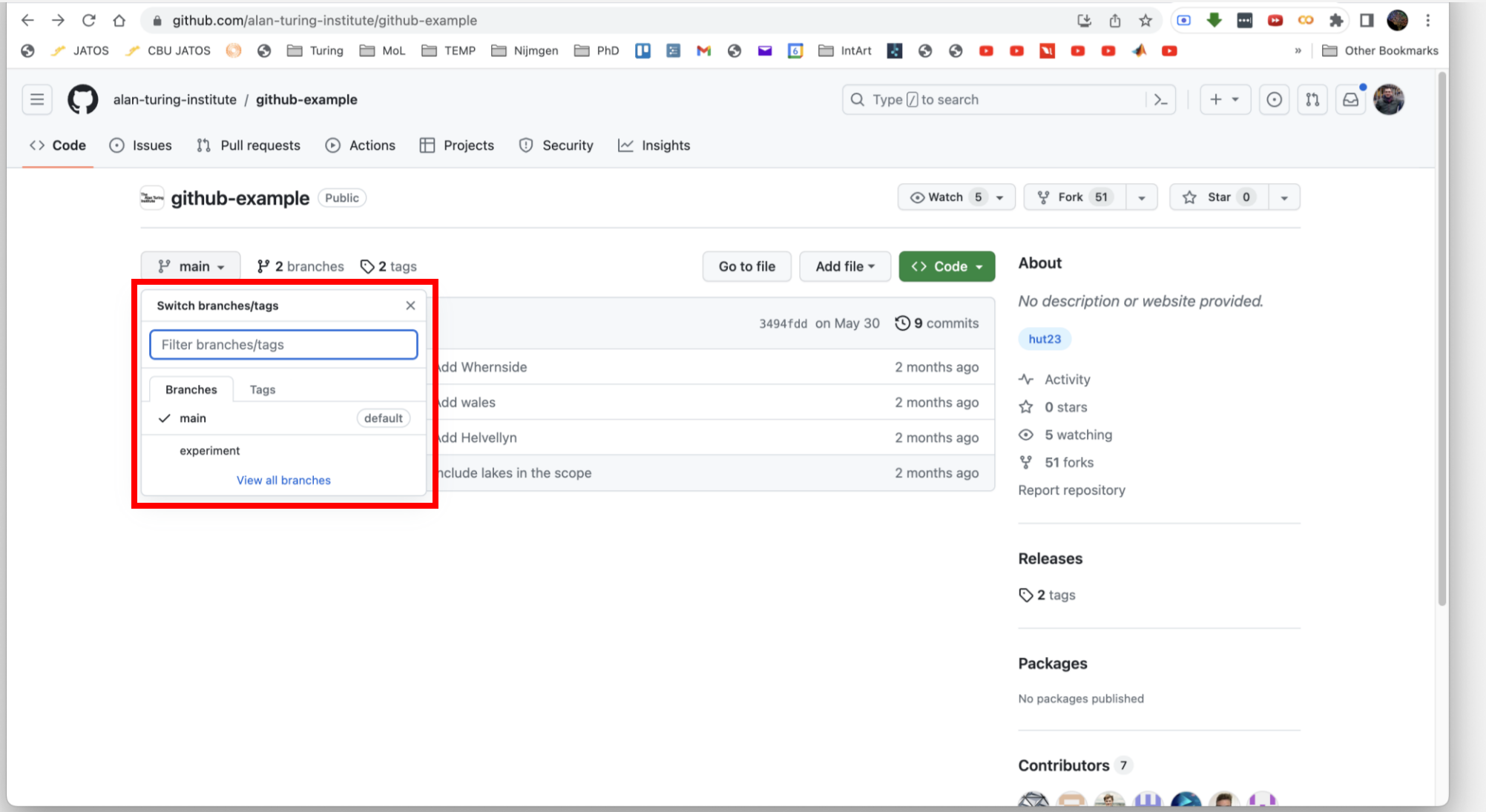

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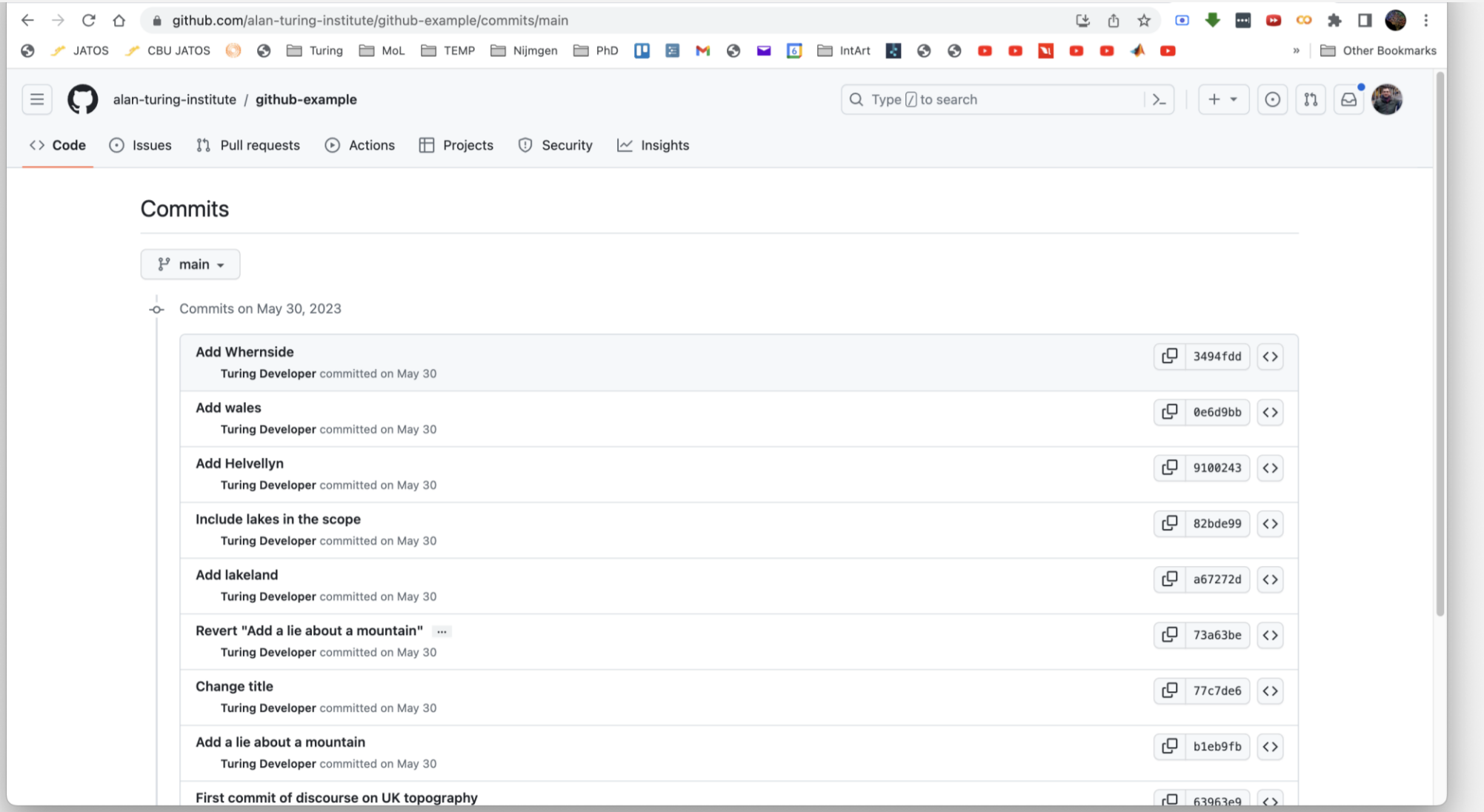

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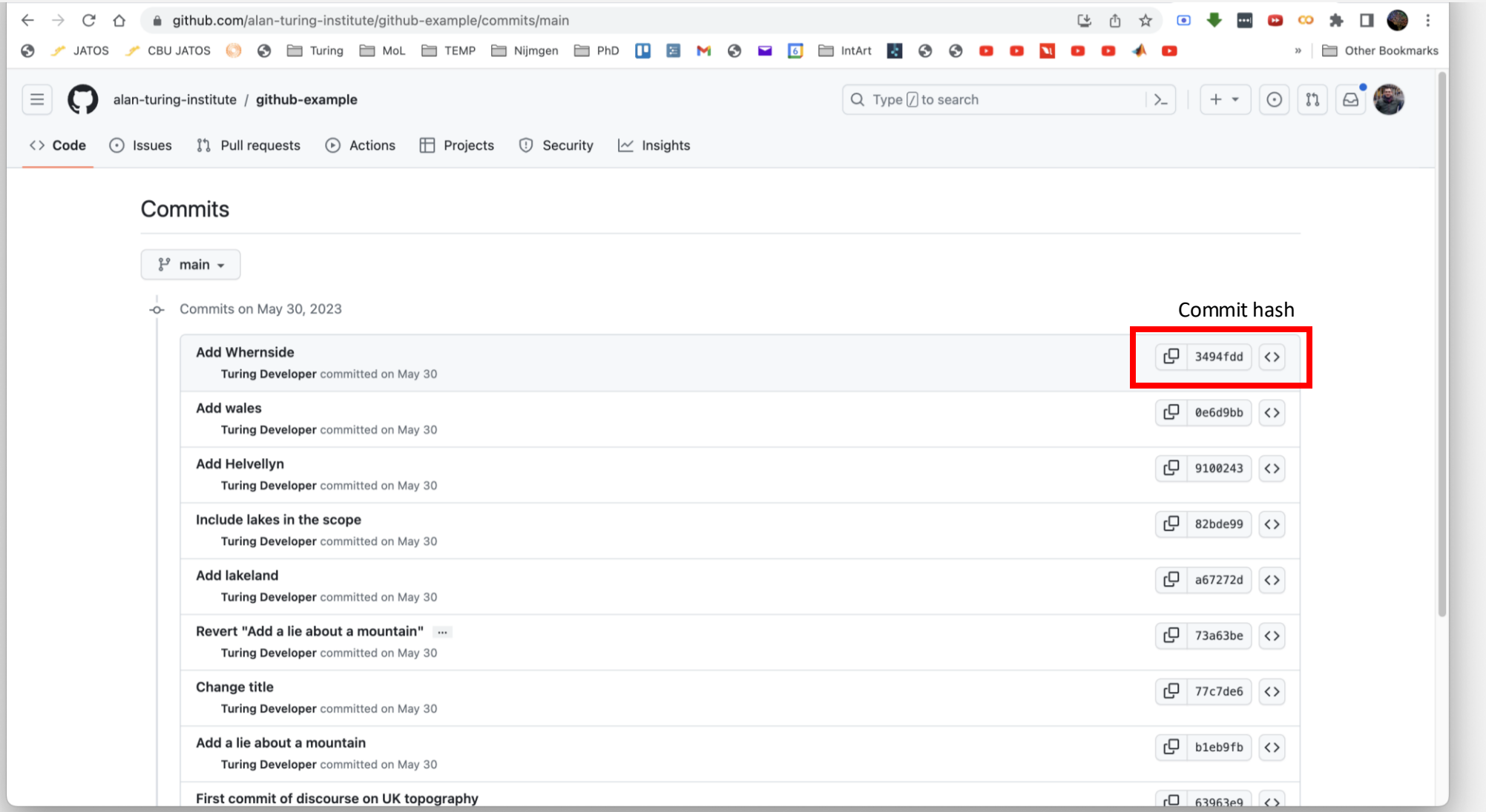

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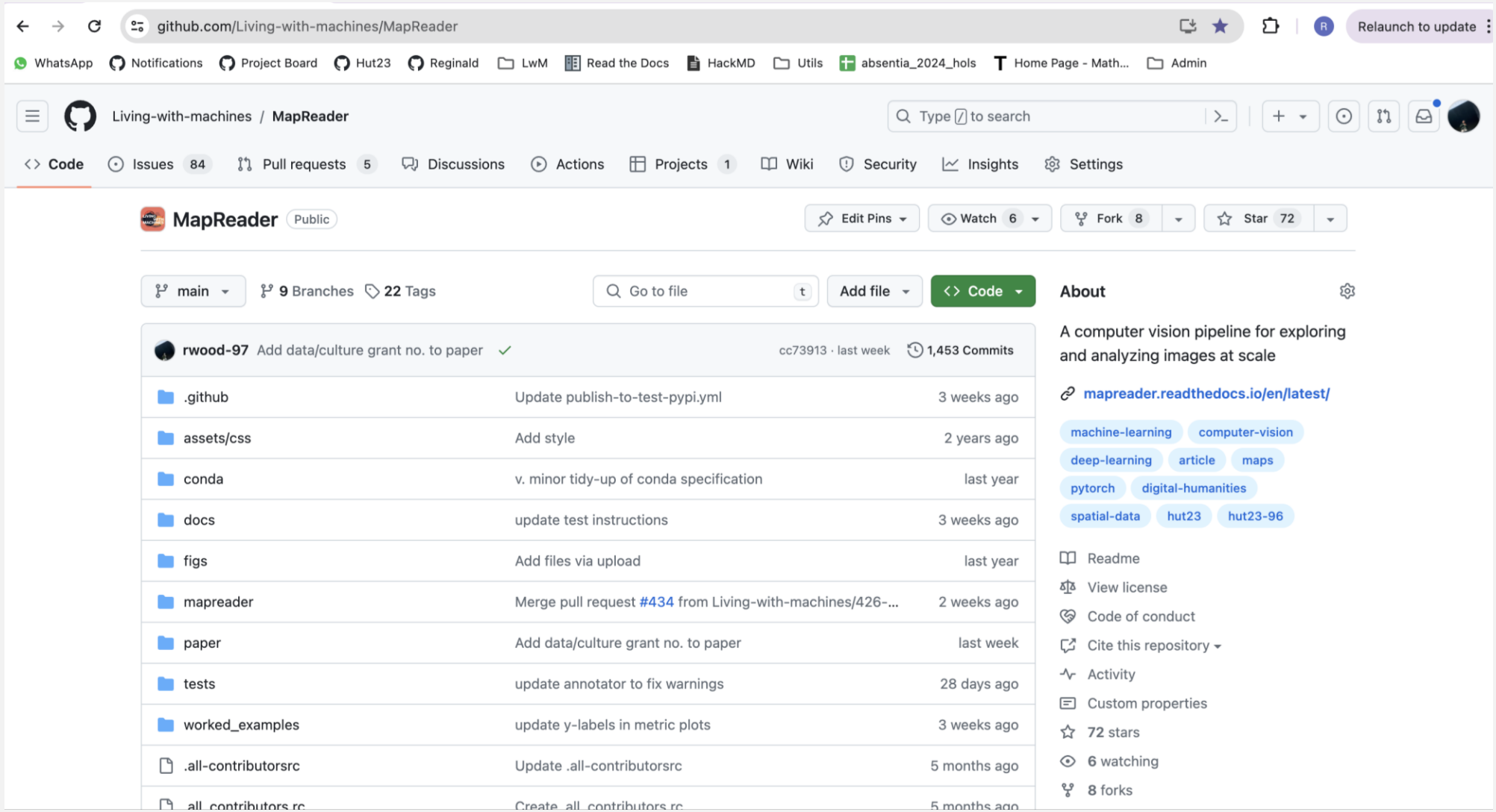
- Topics covered:
  - Forking a repo
  - Creating an Issue
  - Creating a Project board to track issues.
- Link to the step-by-step instructions document
  - Complete sections: Fork, Commit, Collaborate, Kanban board, Issues.

Part 2: Git flow framework for collaboration

GitHub - a more complex example:



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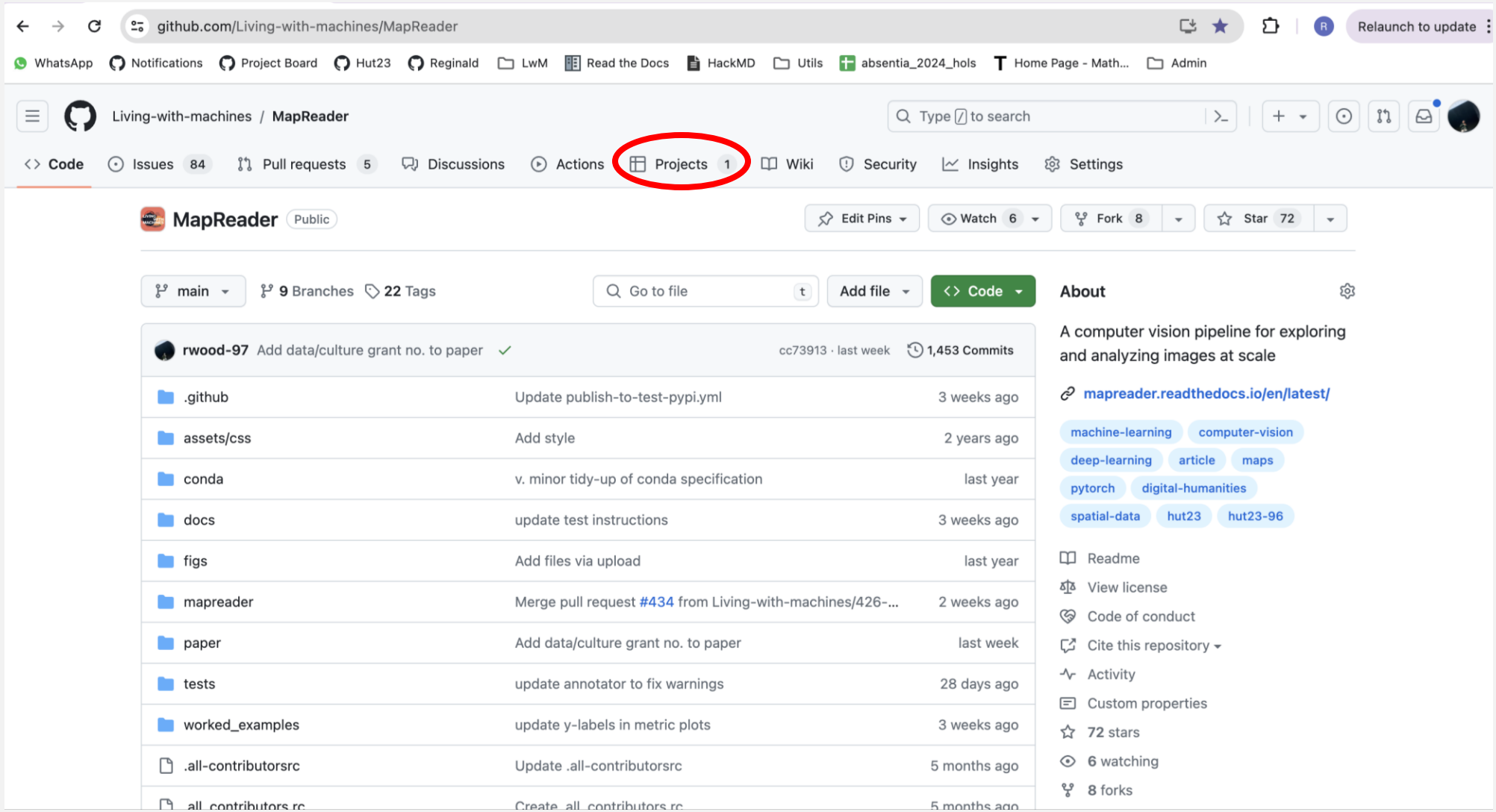
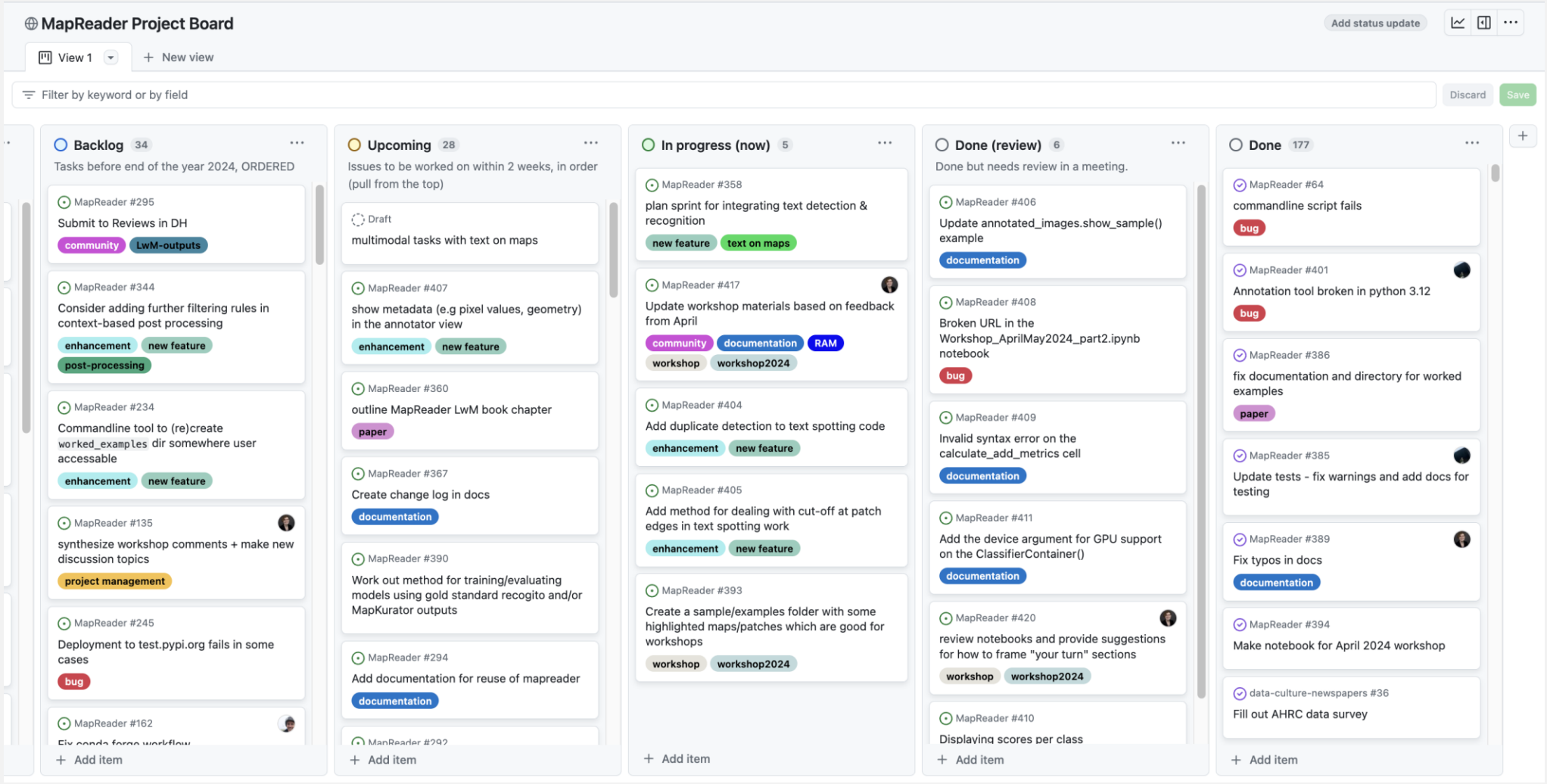


GitHub – Kanban style project boards



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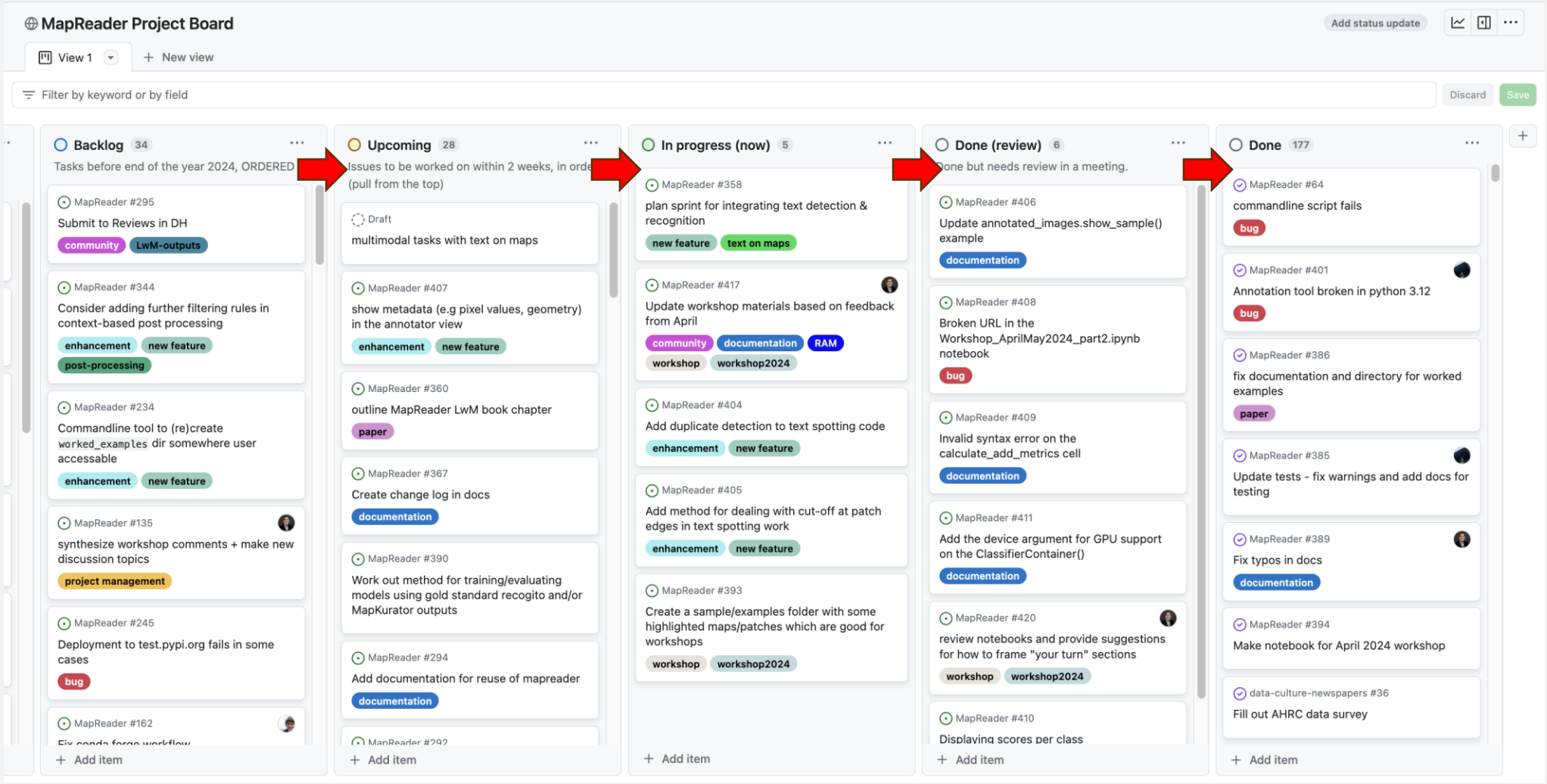
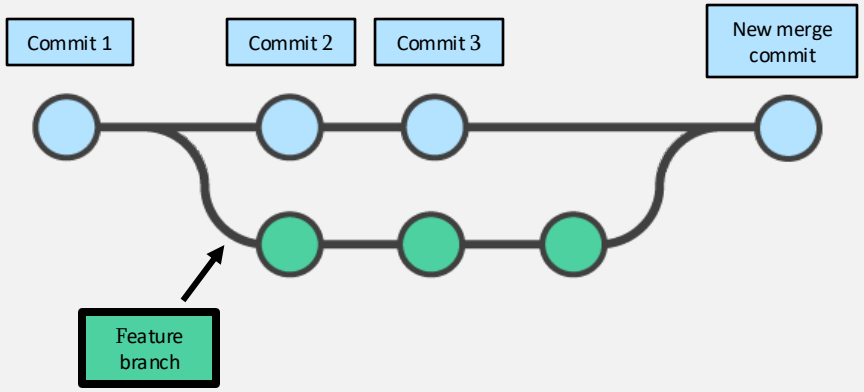


Git flow for collaboration

- A Git workflow



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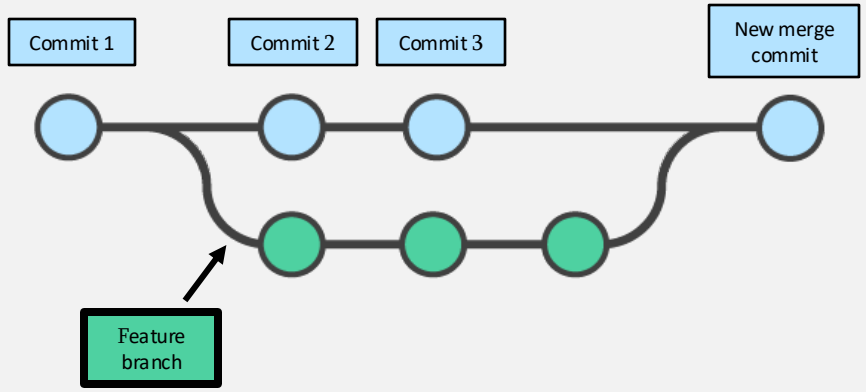

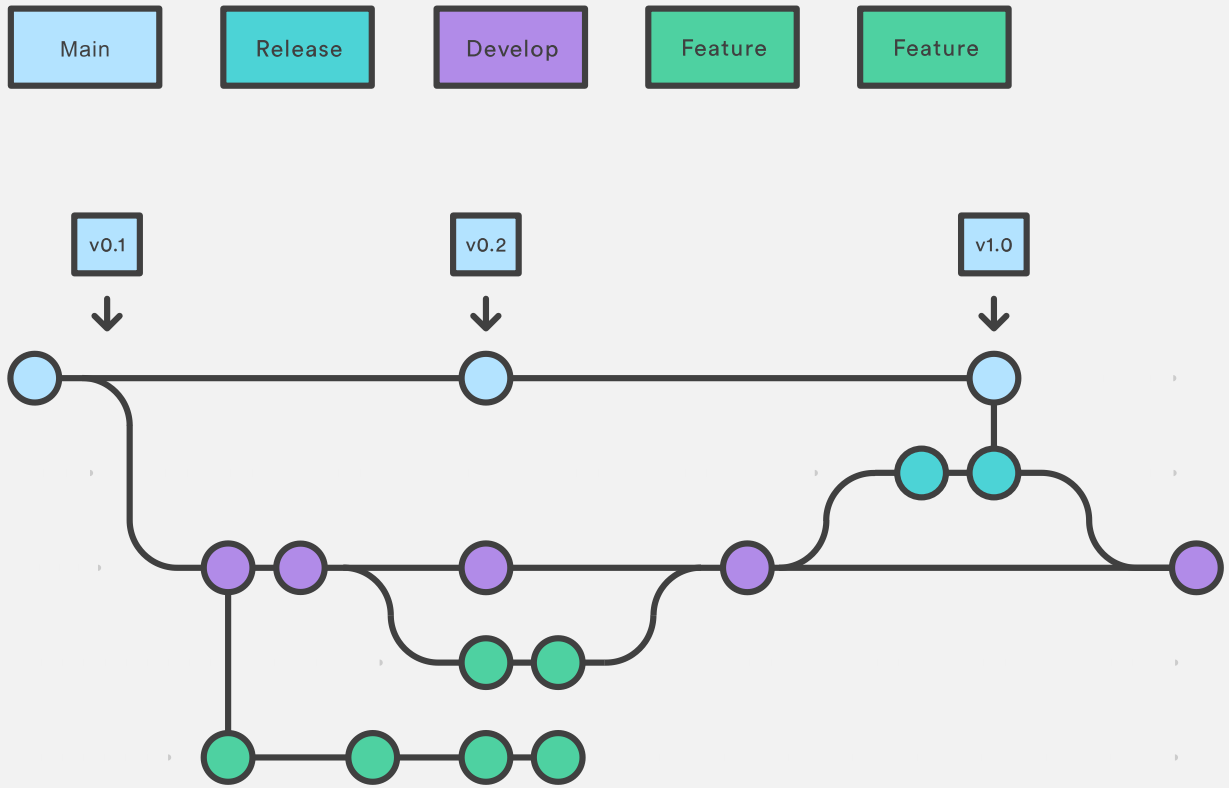

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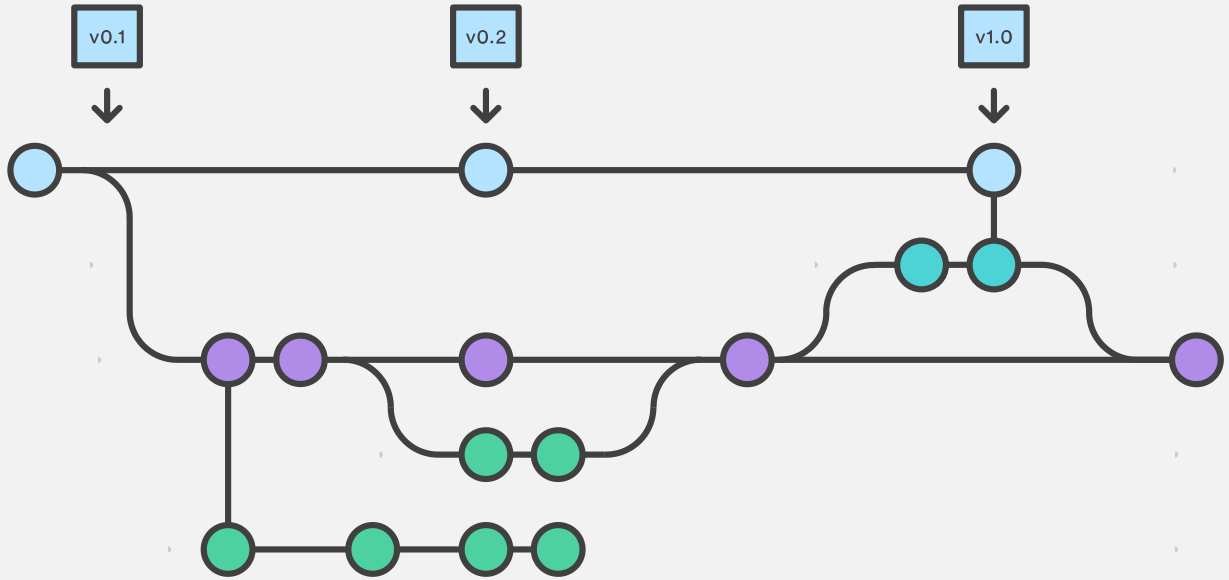
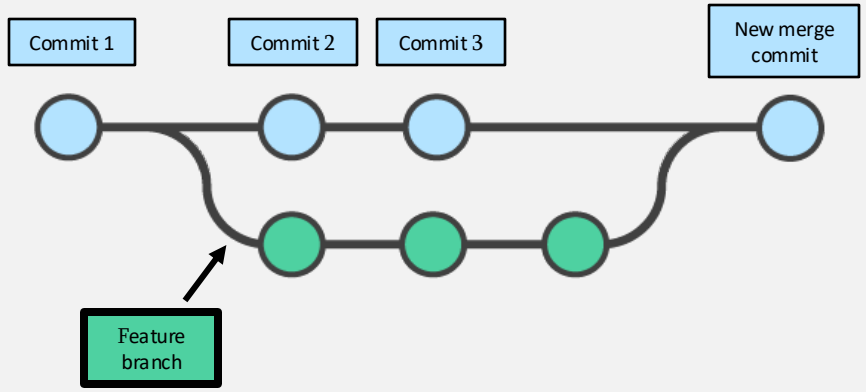
Git flow for collaboration

- A Git workflow
  - A branching model designed around the project release.





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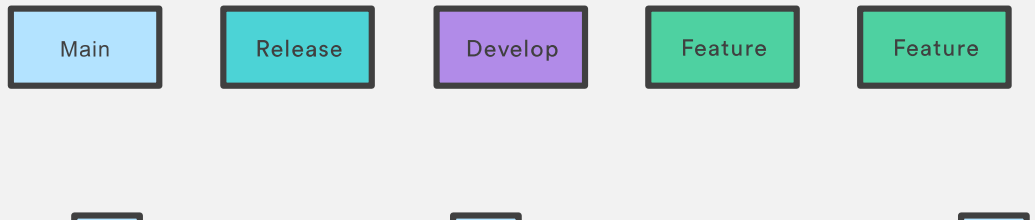

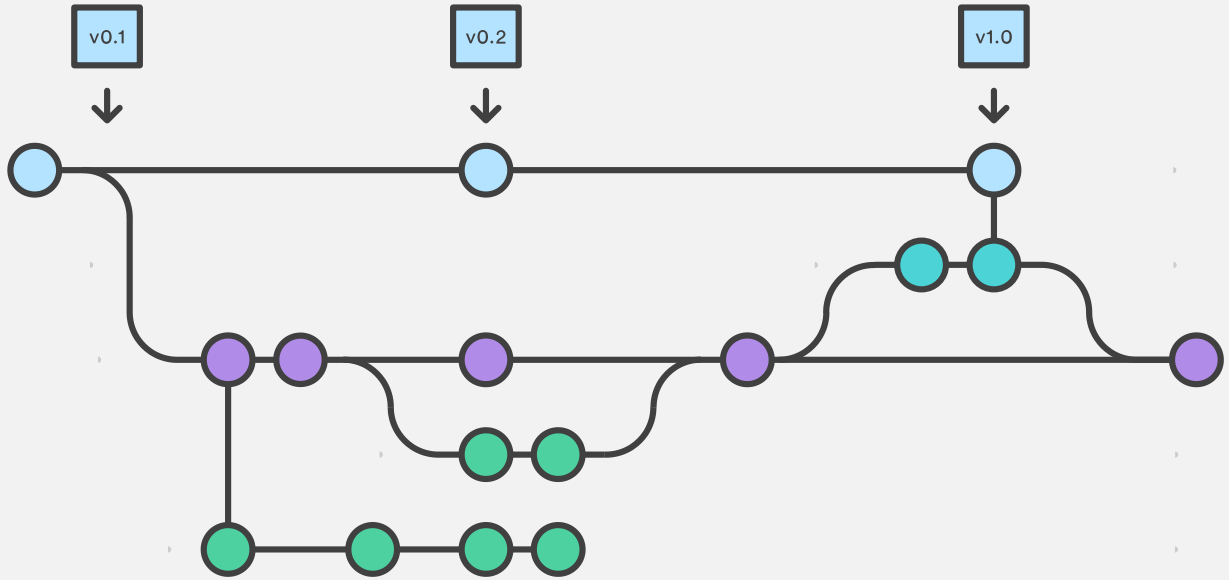

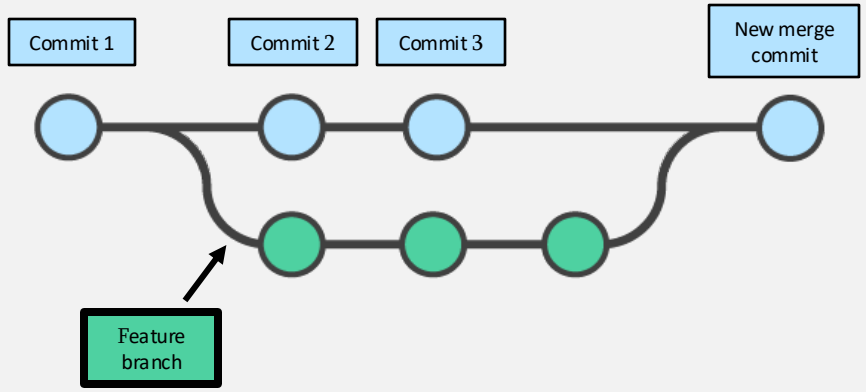

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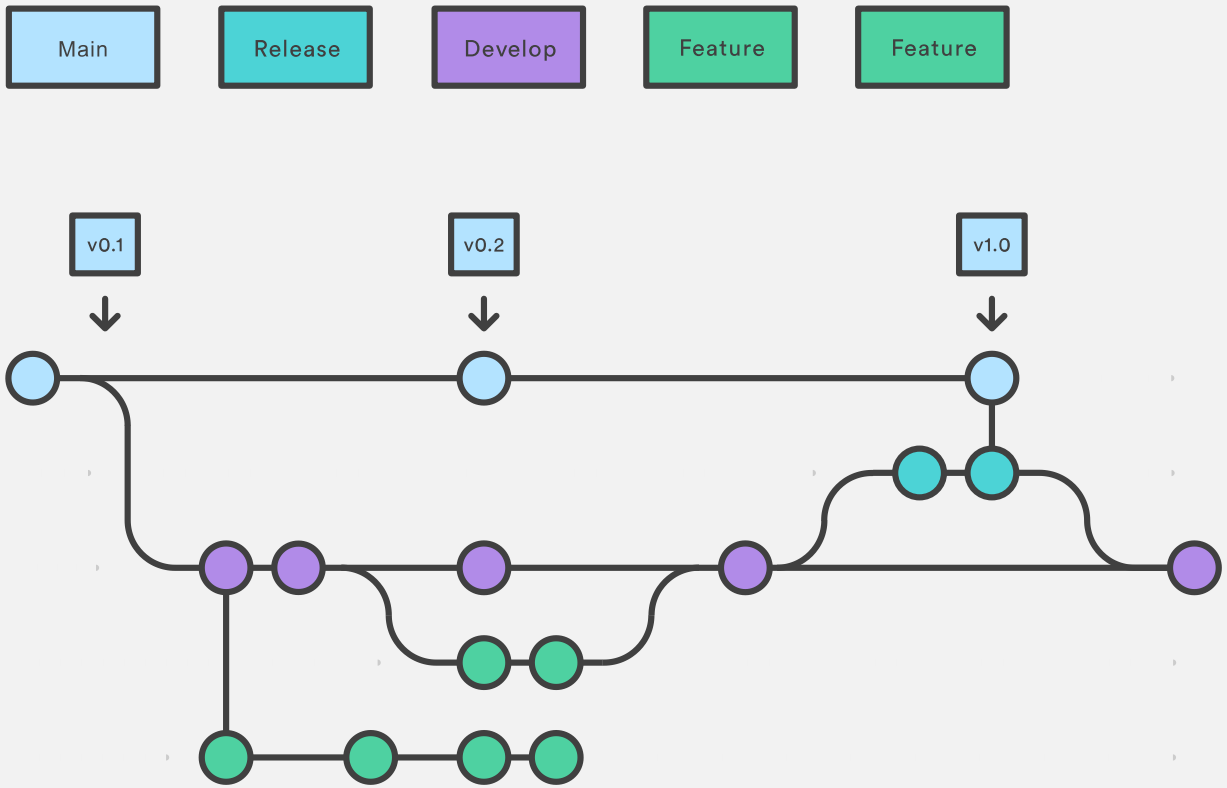

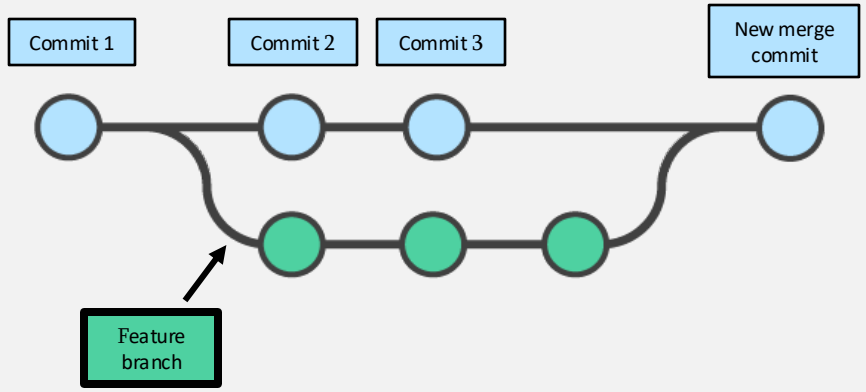

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Git flow for collaboration

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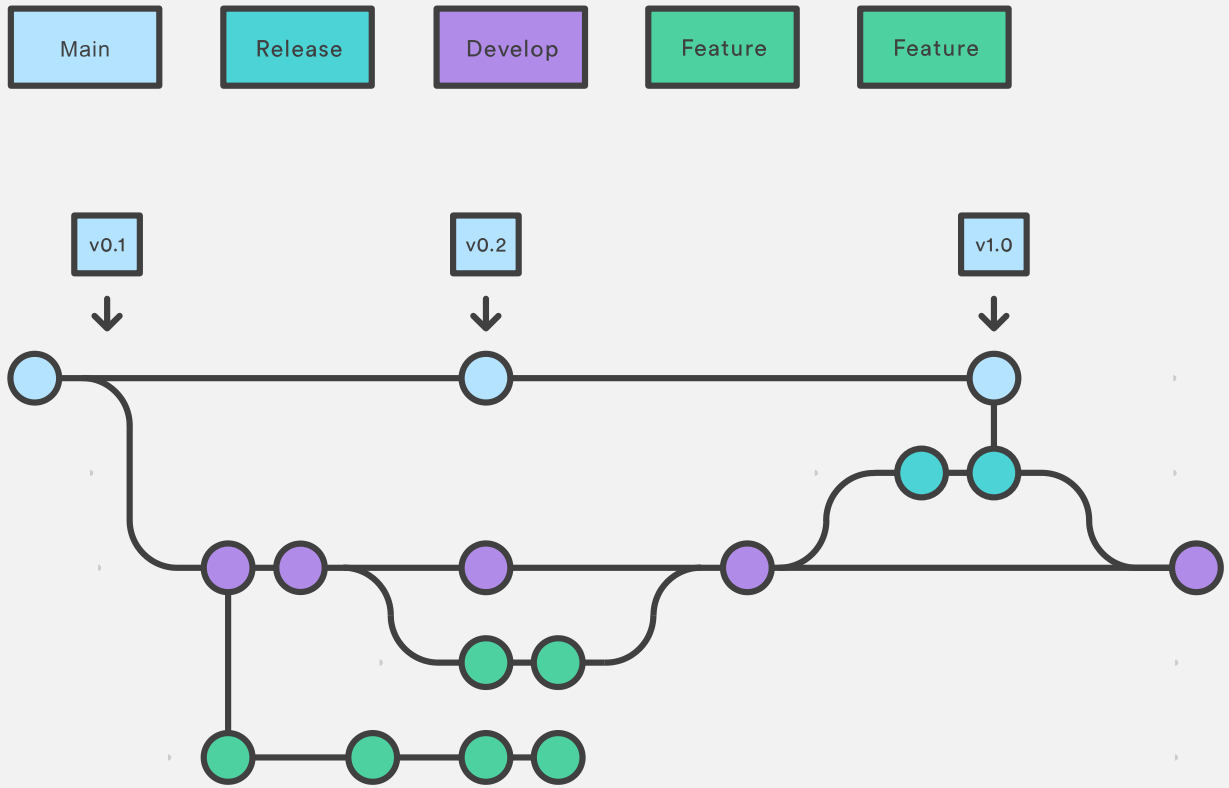
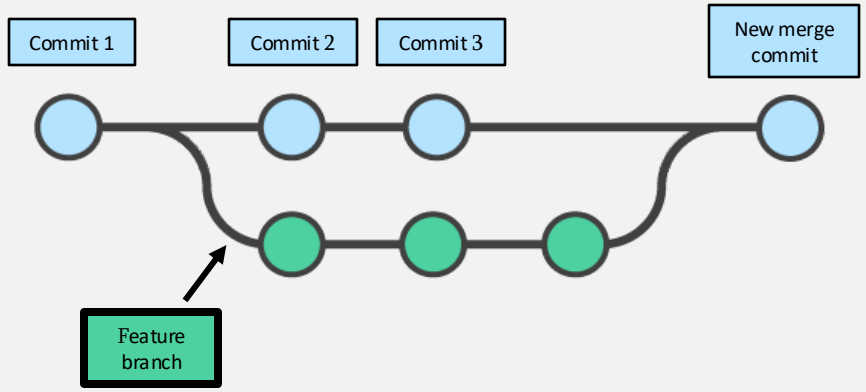
  - Specific roles to different branches
  - How and when they should interact
- Not the only workflow
  - e.g. GitHub workflow for continuous delivery





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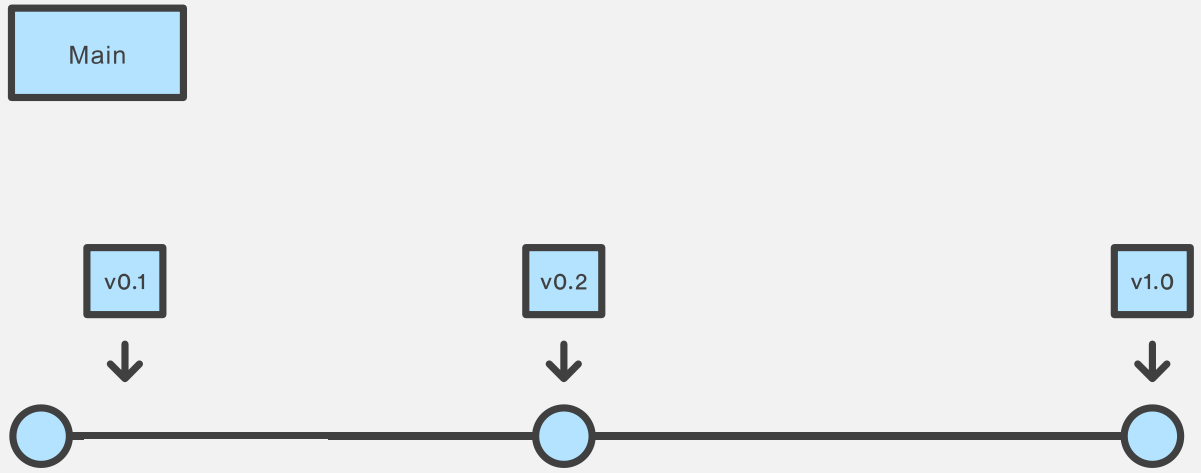

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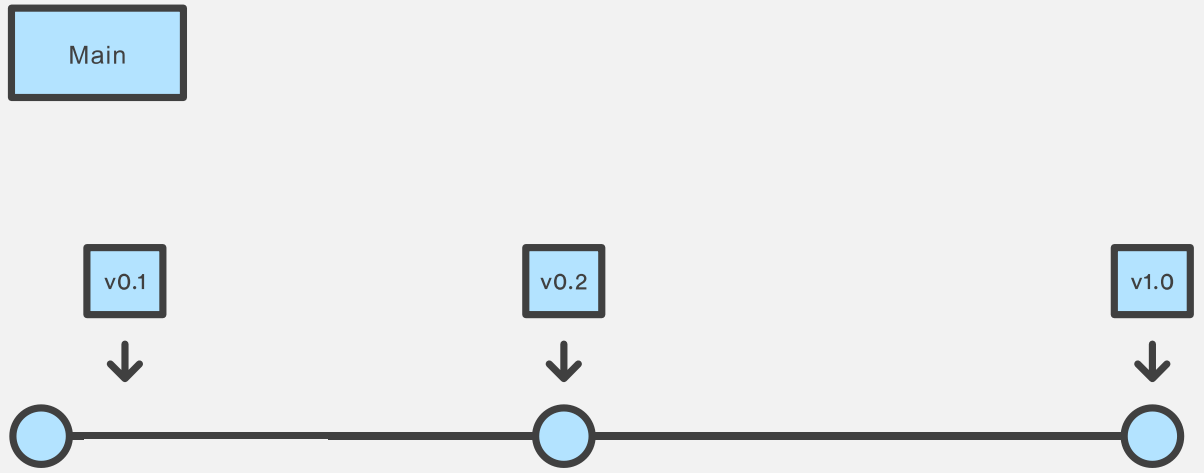

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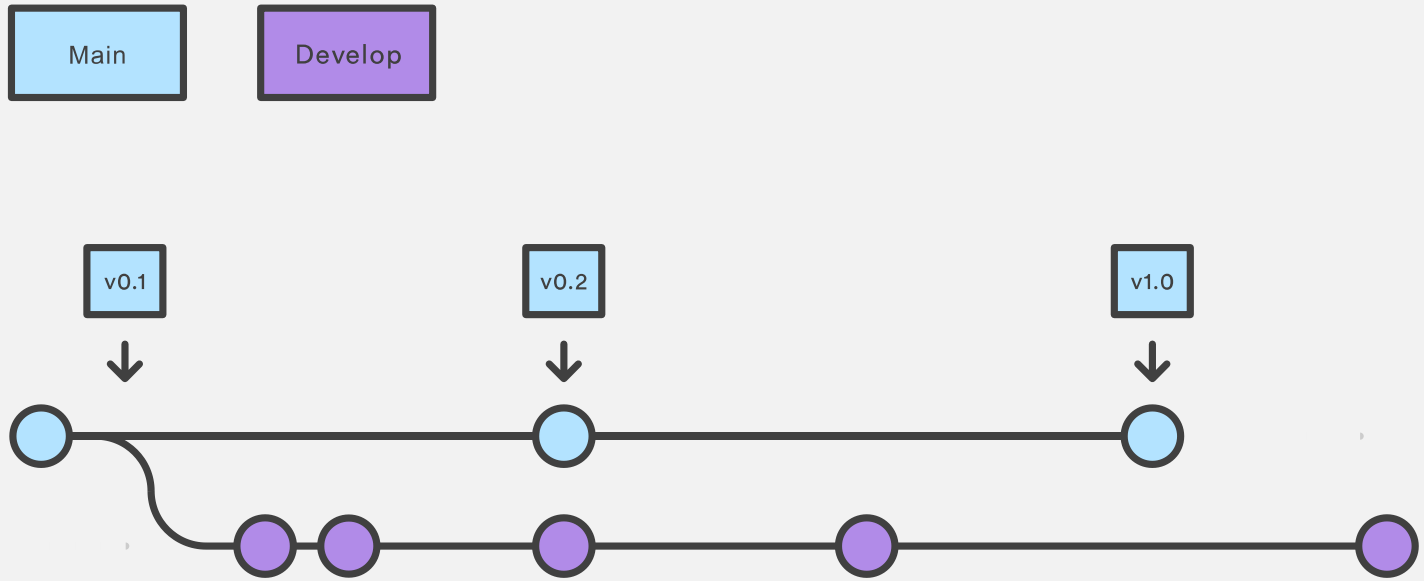

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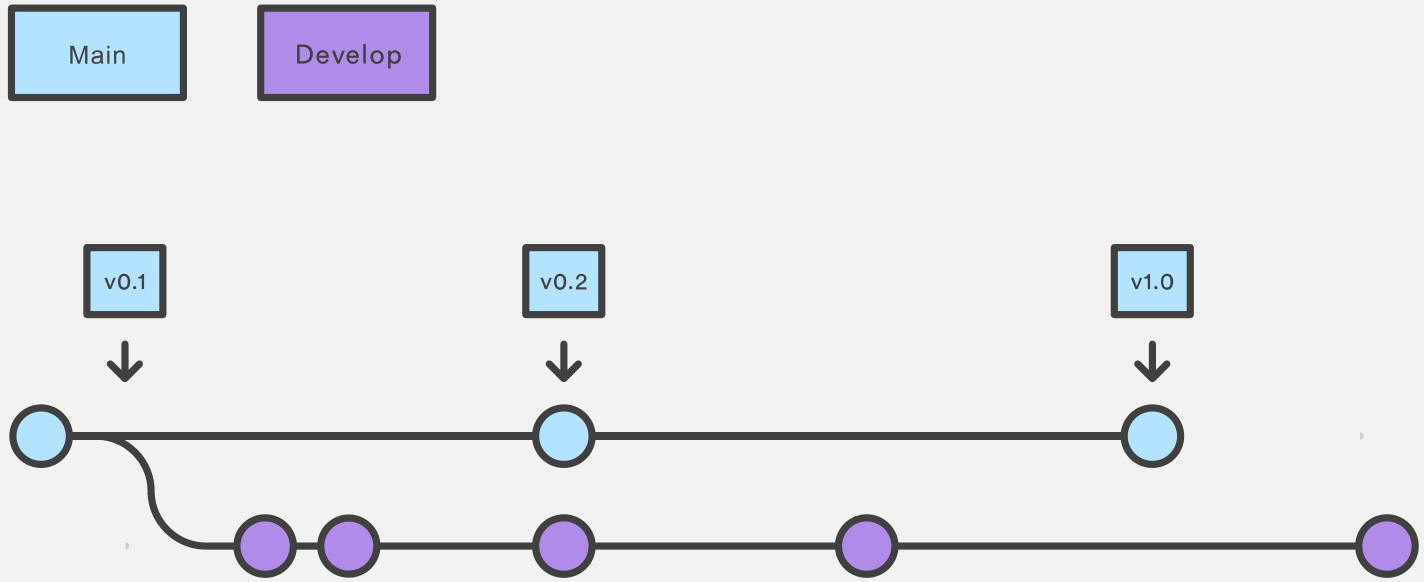

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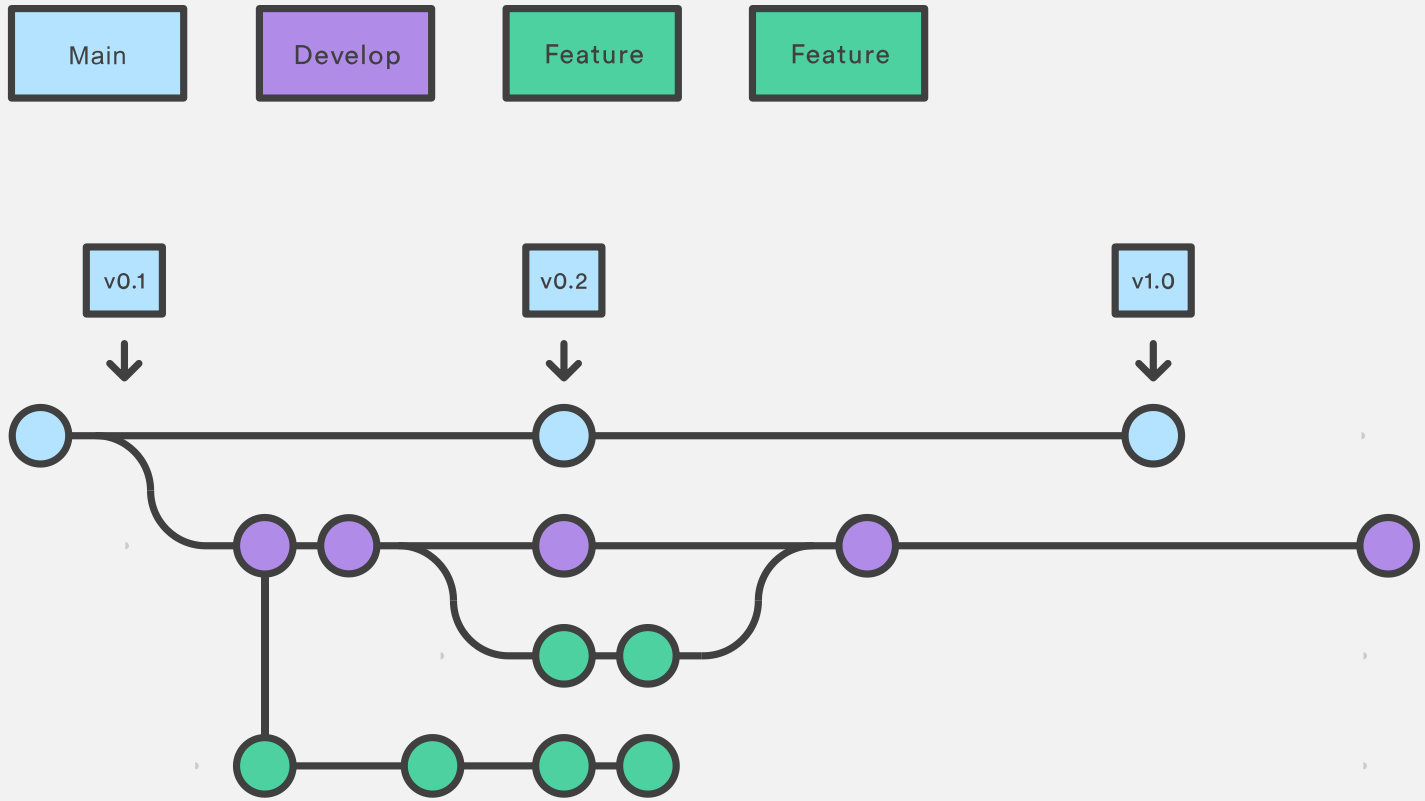

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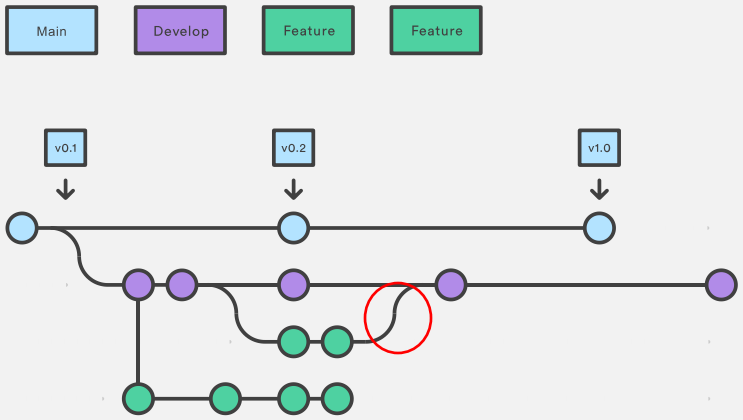

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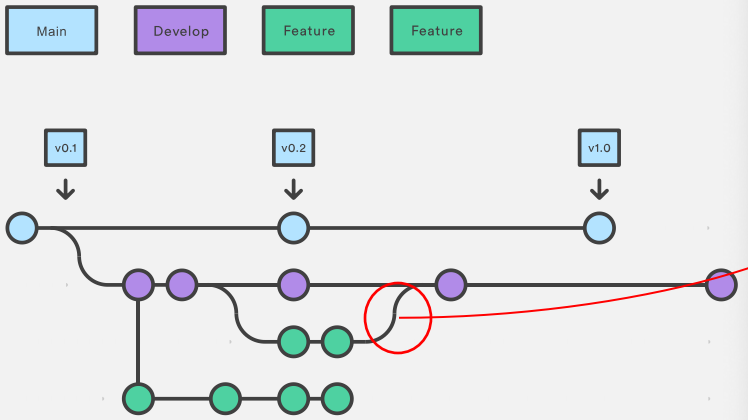

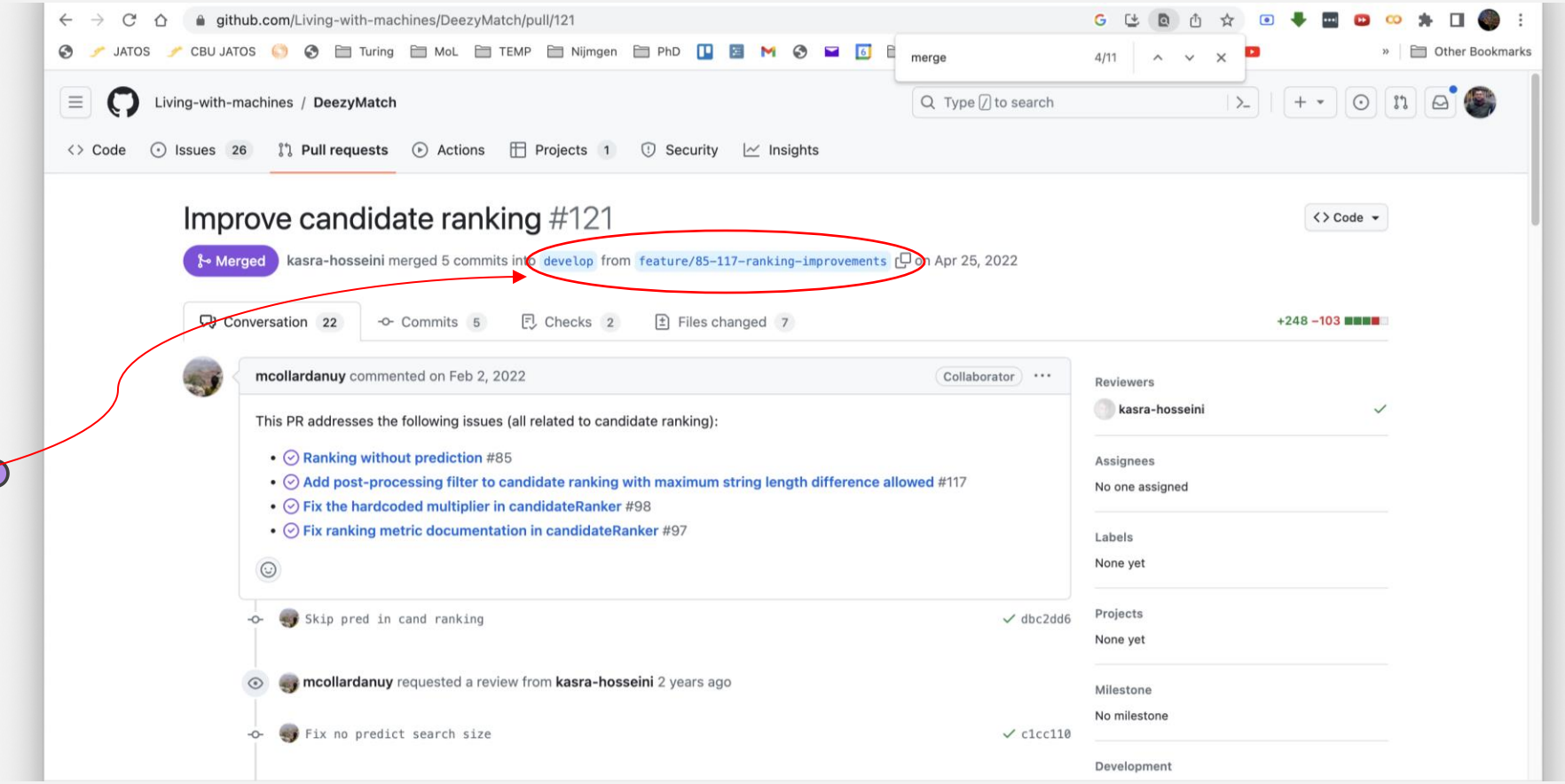

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Hands-on part 2/2:

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  - Creating Pull Requests
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  - Creating branches
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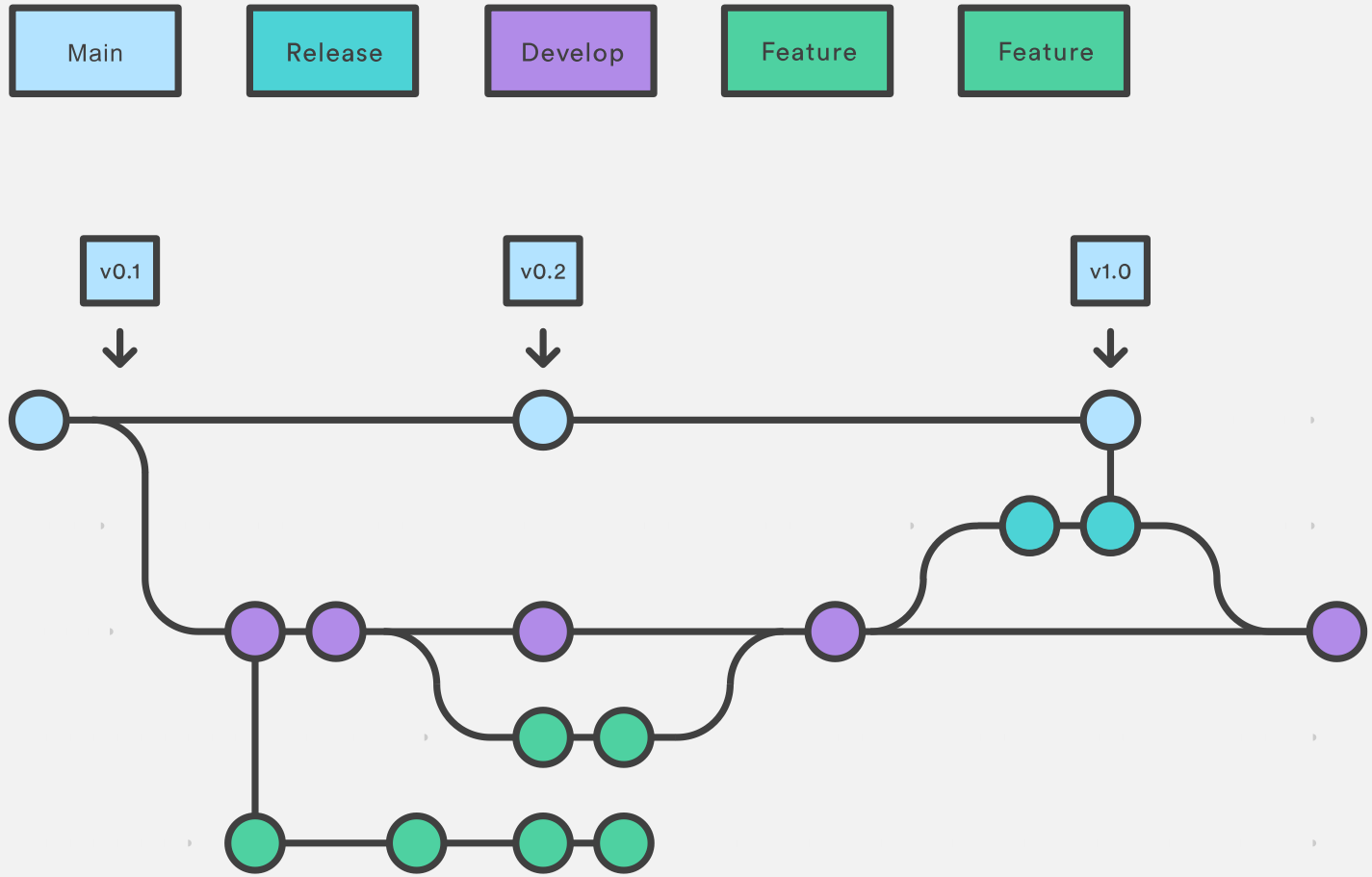
- Link to the step-by-step instructions document
  - Complete sections: Branches, Pull Requests, Review Pull Requests, Merging.

Git flow continued:
Release and Hotfix branches

Git flow: Release branches



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Git flow: Release branches

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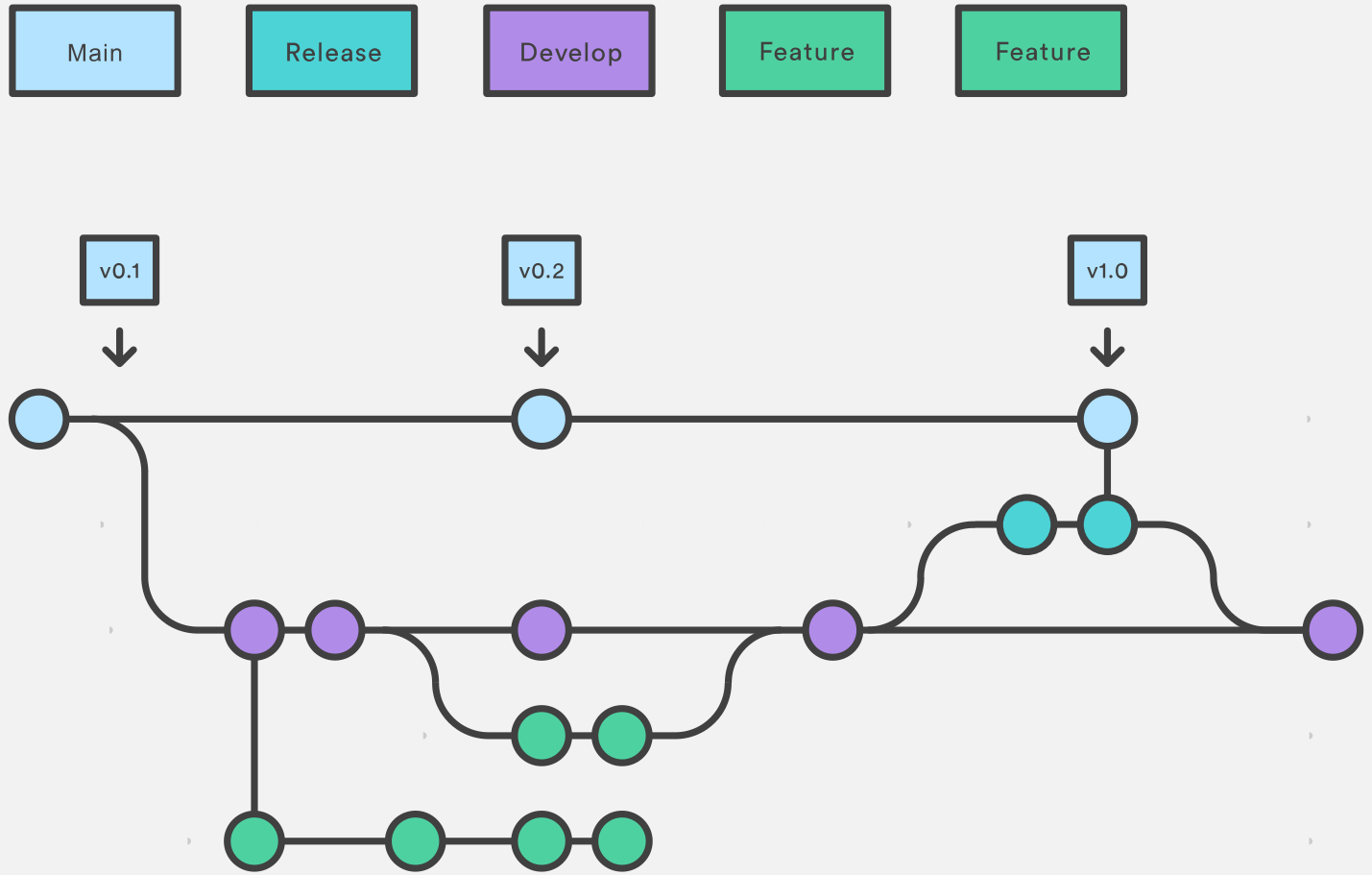

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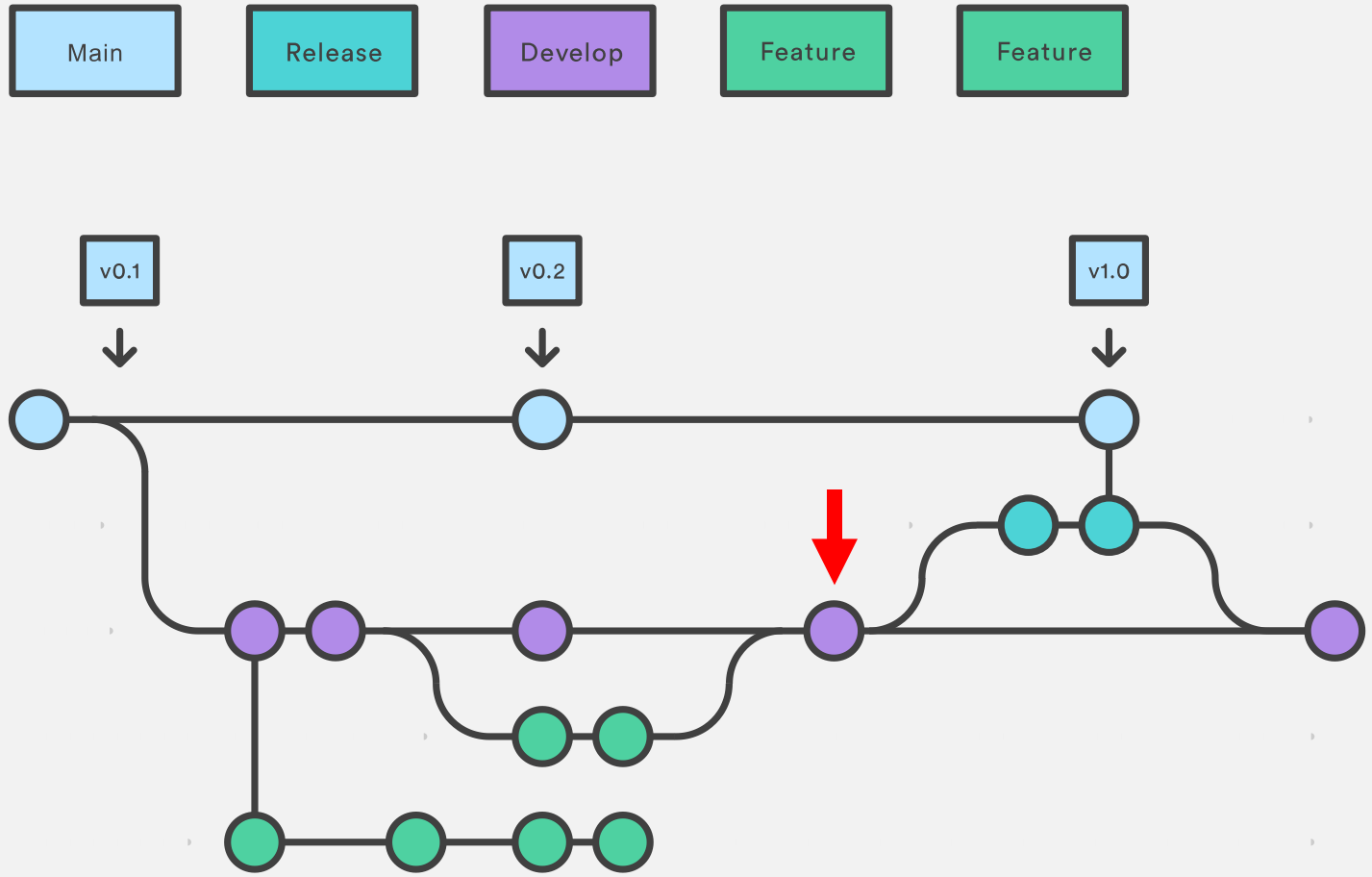

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Git flow: Release branches

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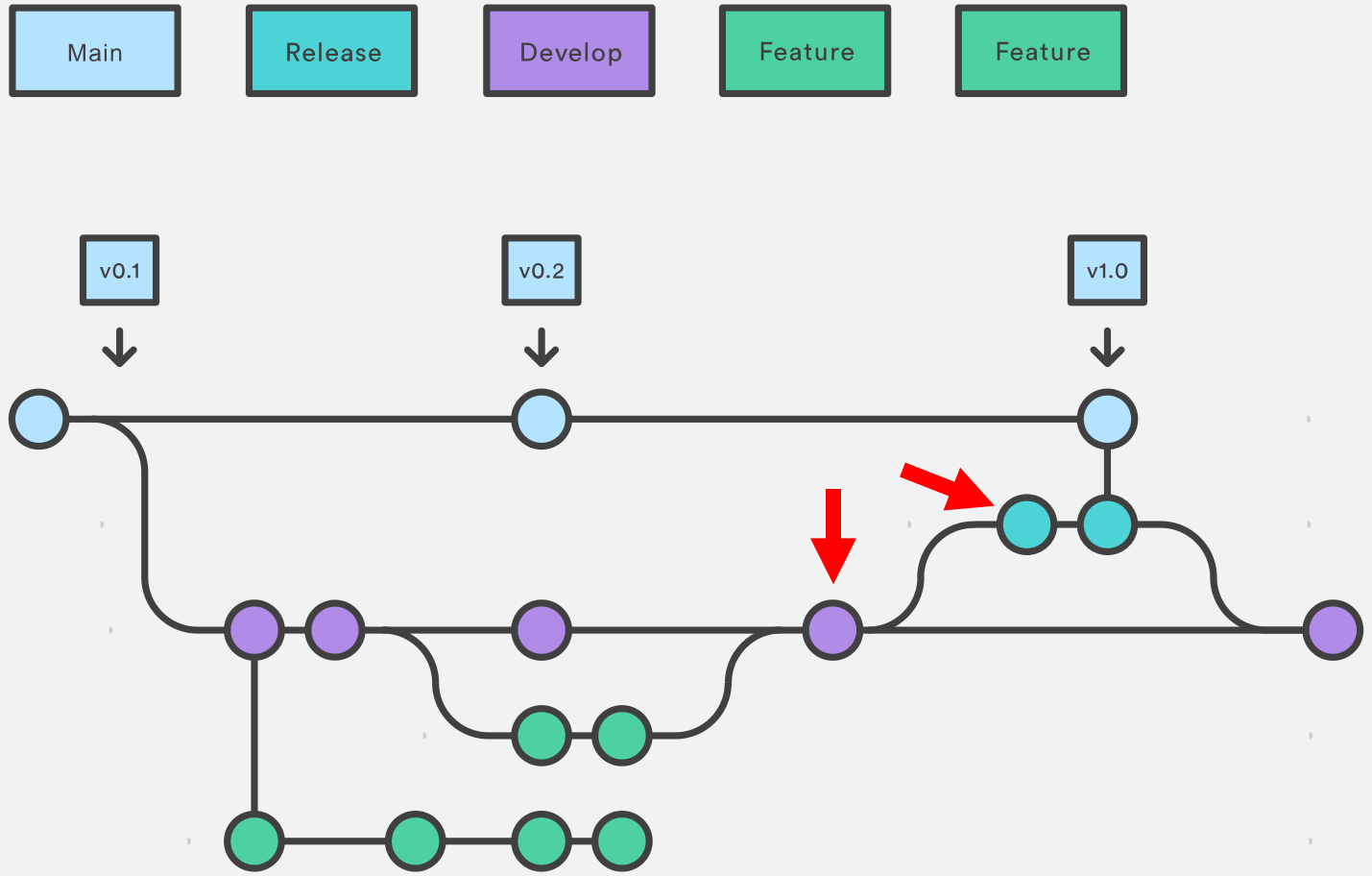

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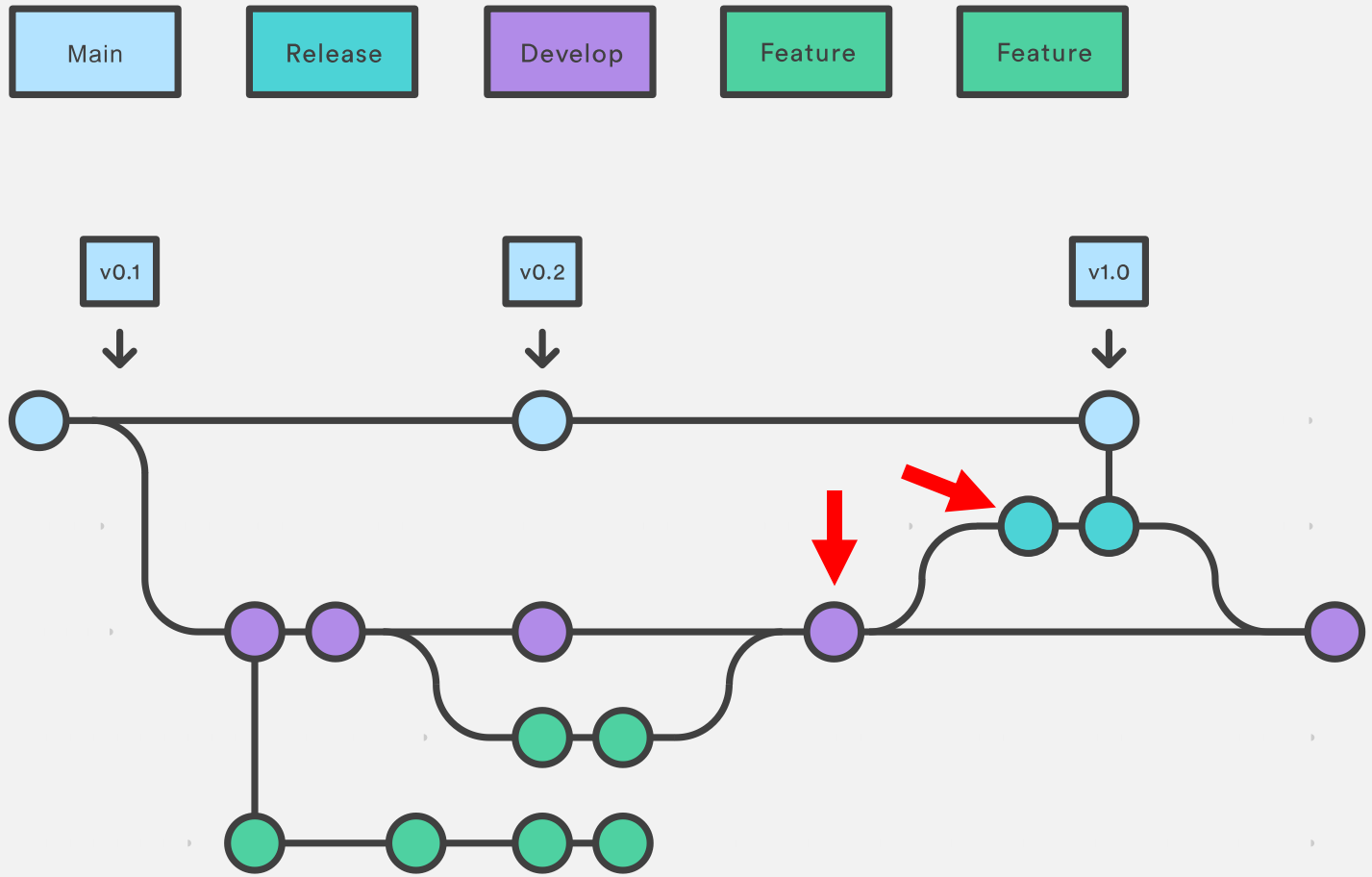
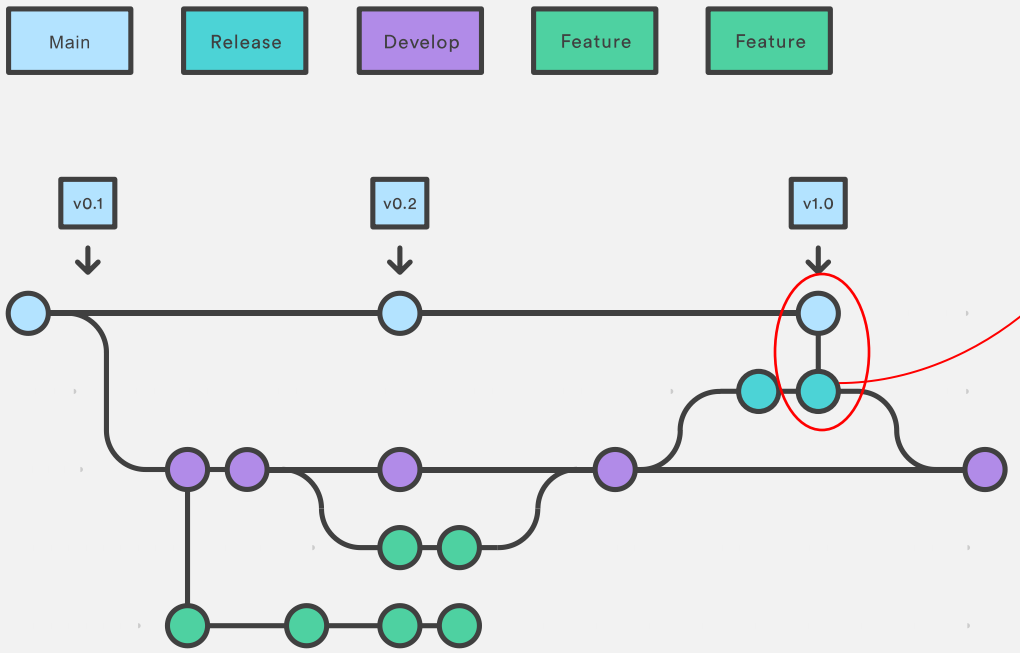
Git flow: Release branches

- When ready for a new release, no new features.
- Create a ”release” branch. Only:
  - Documentation
  - Minor bug fixes
  - Meta-data for release
  - etc.

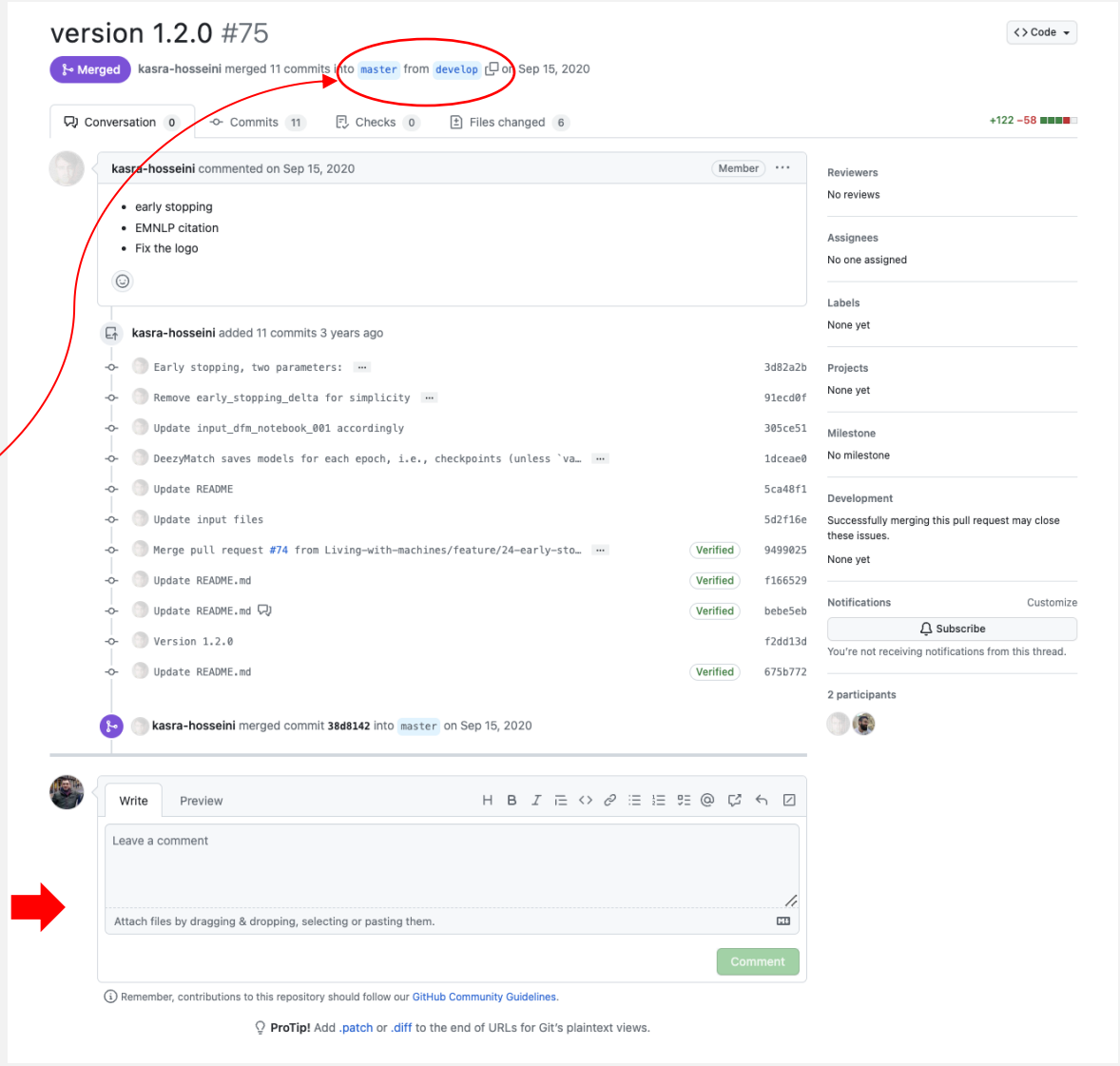


Figures adapted from https://www.atlassian.com/git/tutorials/comparing-workflows/gitflow-workflow under Creative Commons Attribution 2.5 Australia License

Git flow: Release branches



Review, discuss…



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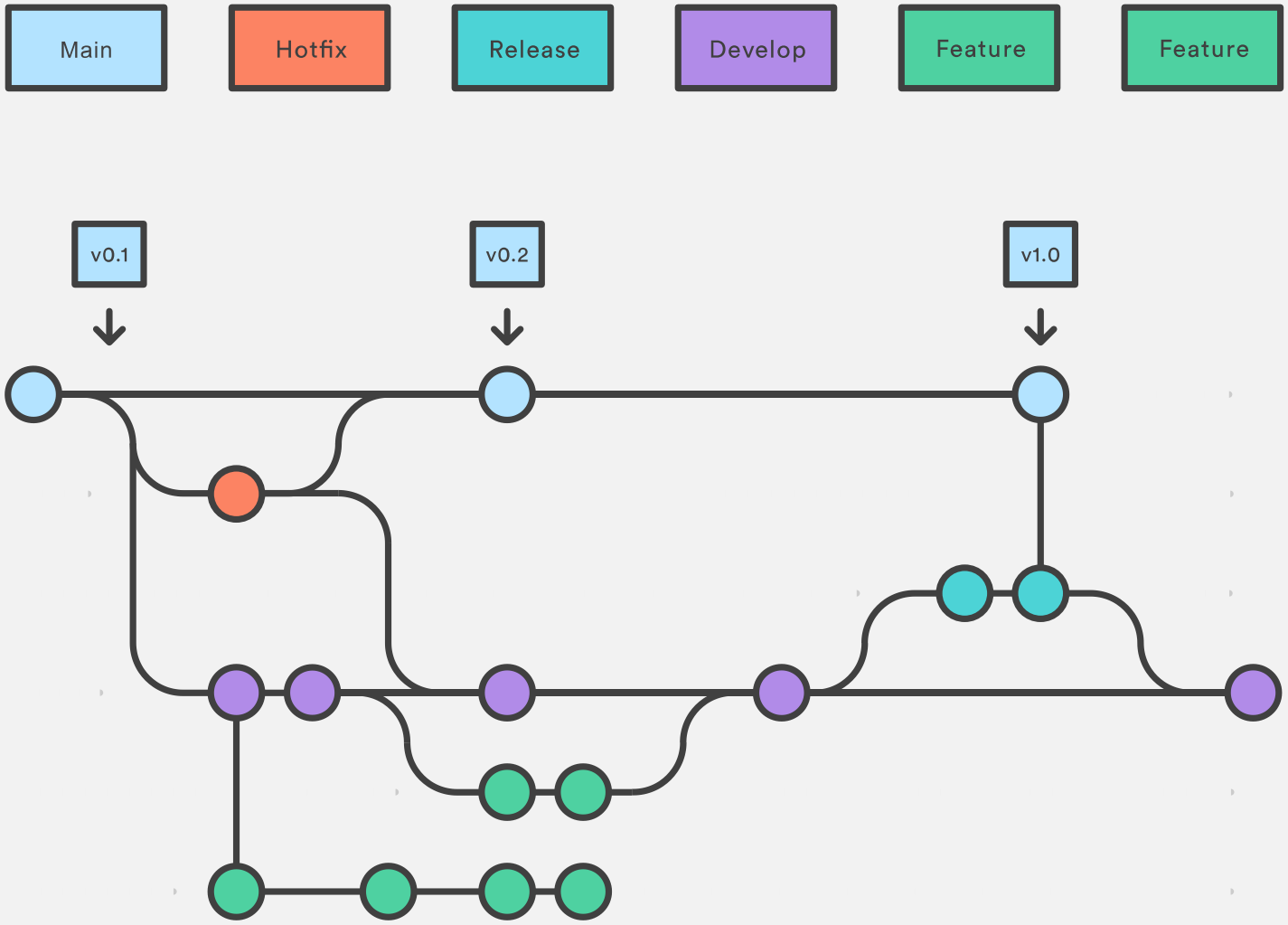
Git flow: Hotfix branches

- Maintenance or Hotfix branches to patch releases



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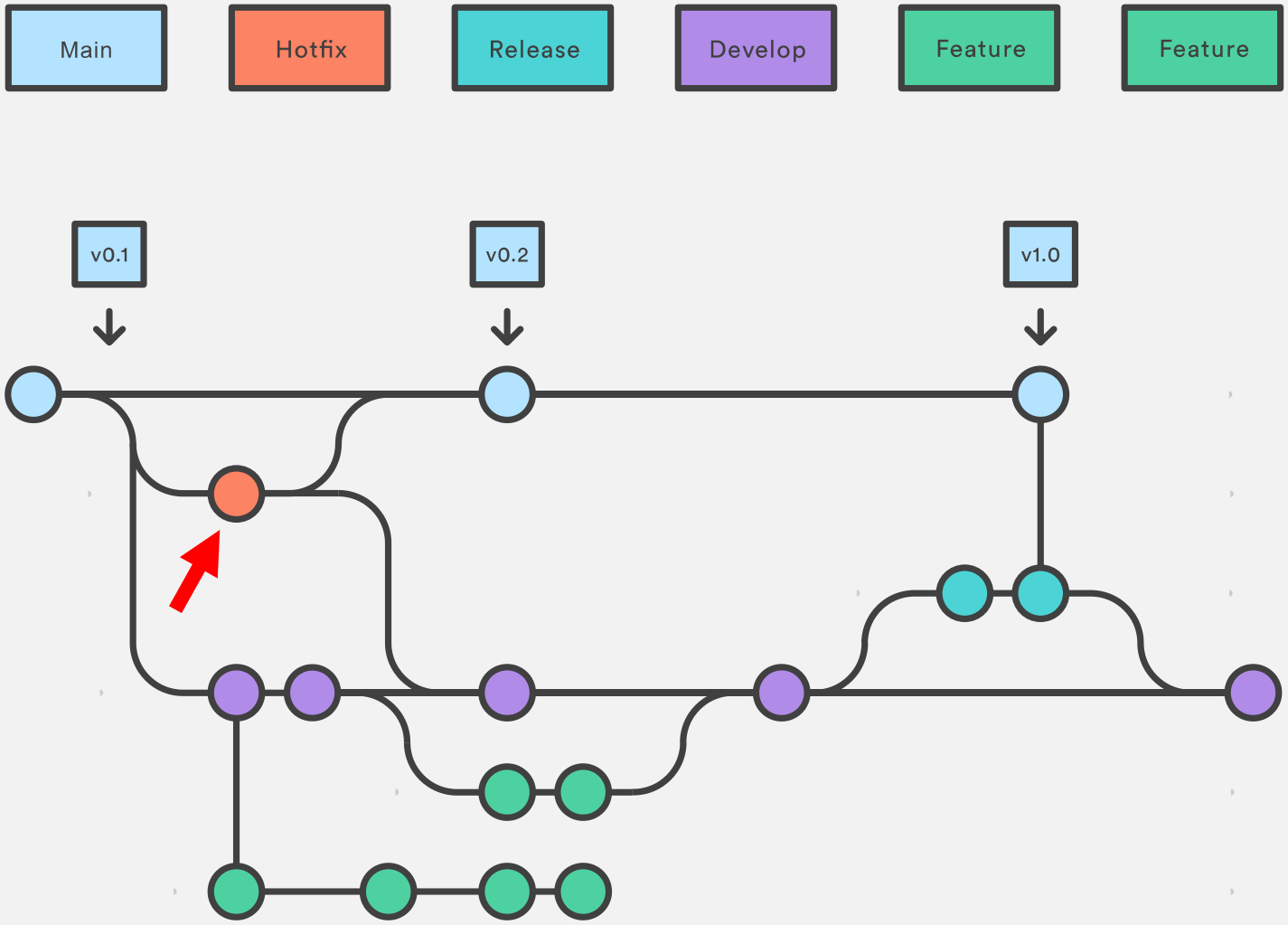
Git flow: Hotfix branches

- Maintenance or Hotfix branches to patch releases



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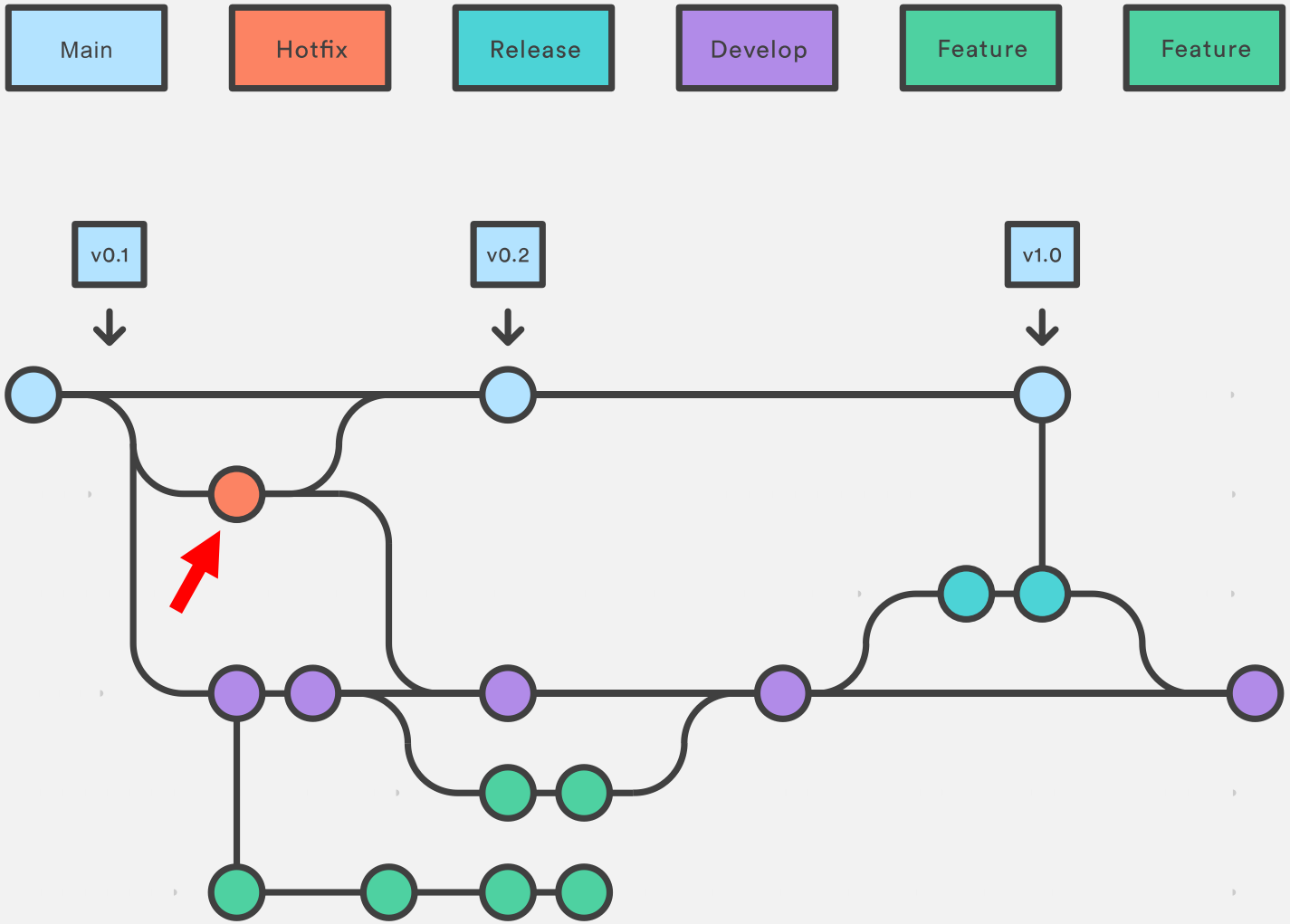
Git flow: Hotfix branches

- Maintenance or Hotfix branches to patch releases
- They are based on main



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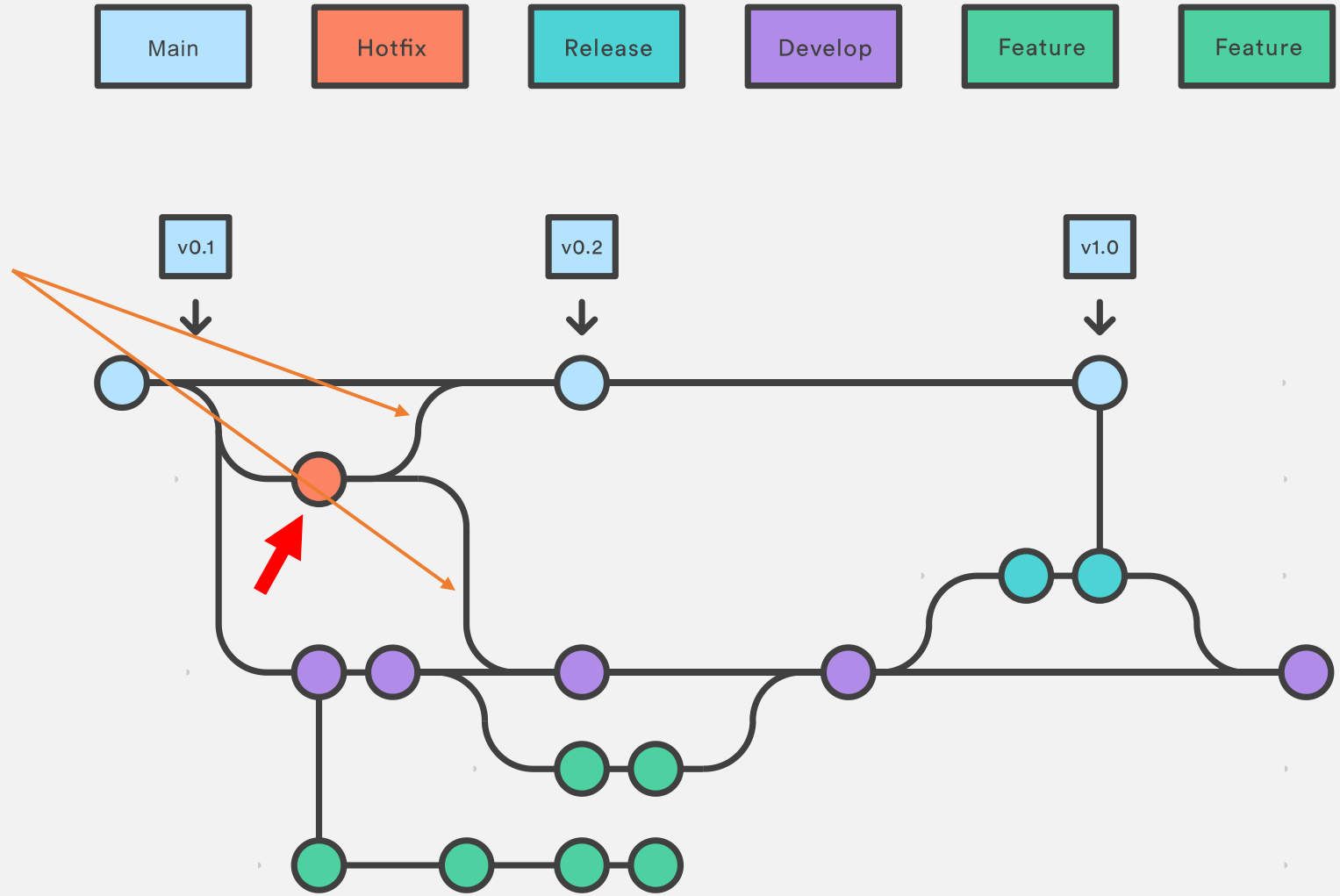
Git flow: Hotfix branches

- Maintenance or Hotfix branches to patch releases
- They are based on main
- Merge into Main and Develop (or release, if exists)



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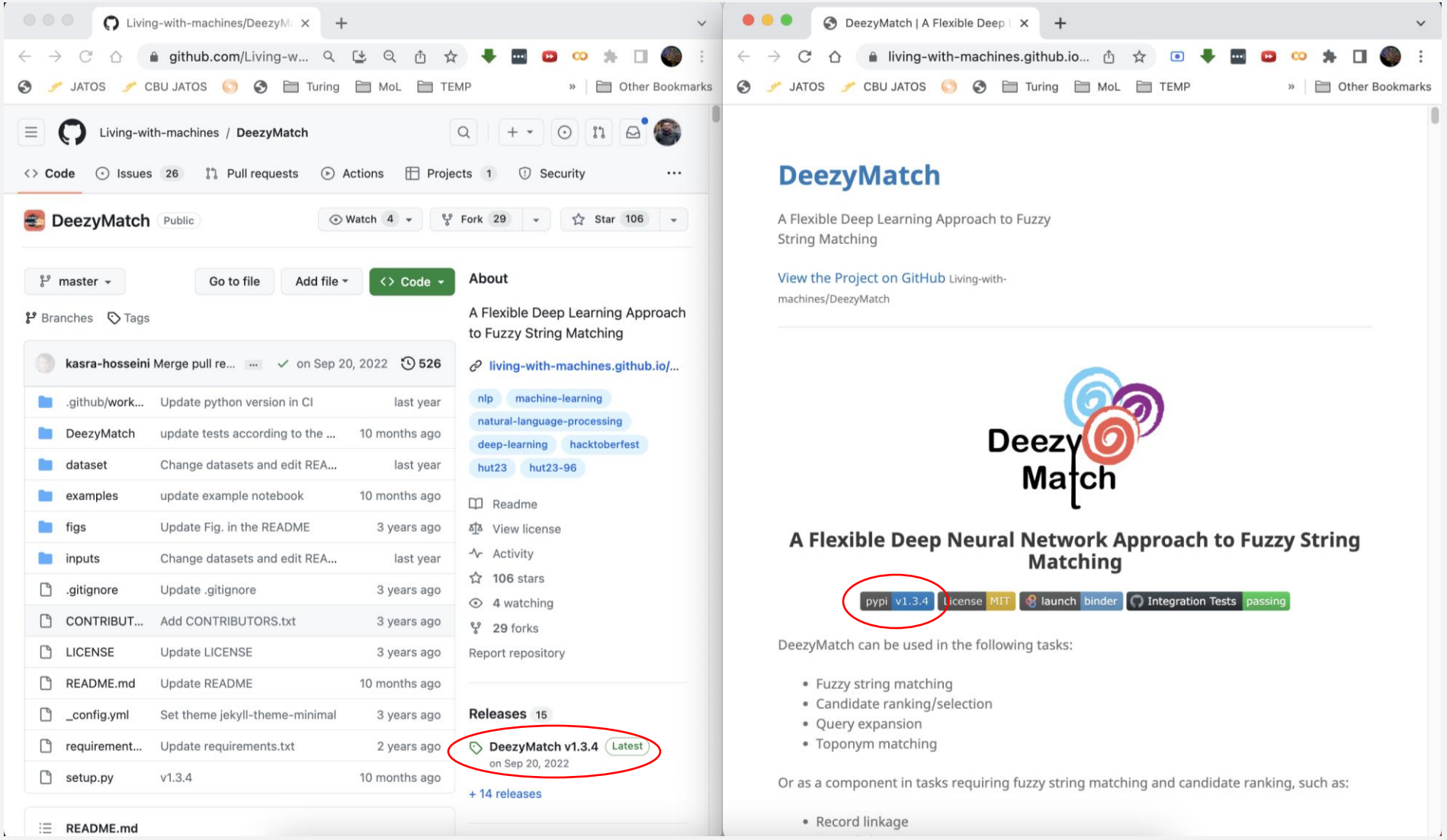
Git flow: versioning the release of your software



No code was damaged

in the making of this workshop