

Collaborating Using the GitHub Flow



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Overview



Working with branches

Understanding branching strategies

Using the GitHub Flow

Forking a repository



Working with Branches





Branching traditionally means diverging from the main development line

Expensive operation

- Copy of source directory



Branching in Git



Much more lightweight

Branching is very fast

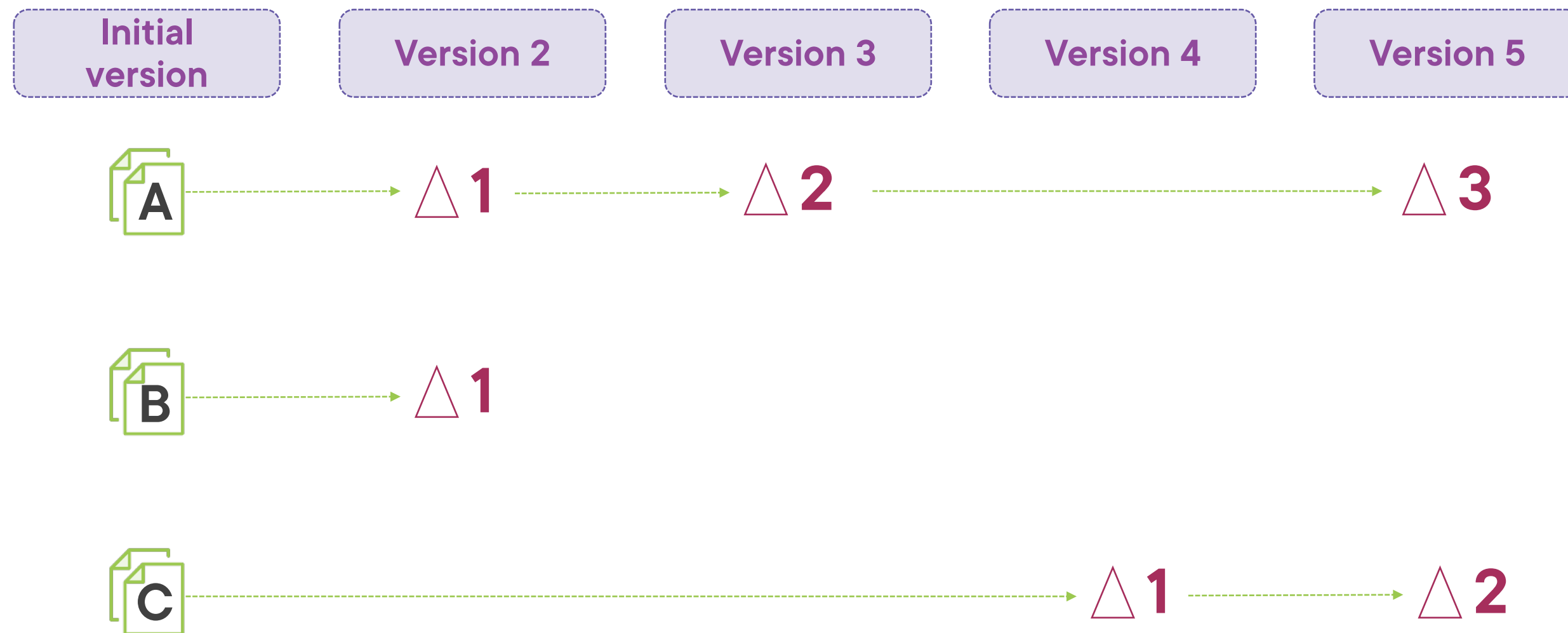
Encouraged to be used

Works because of the way Git works

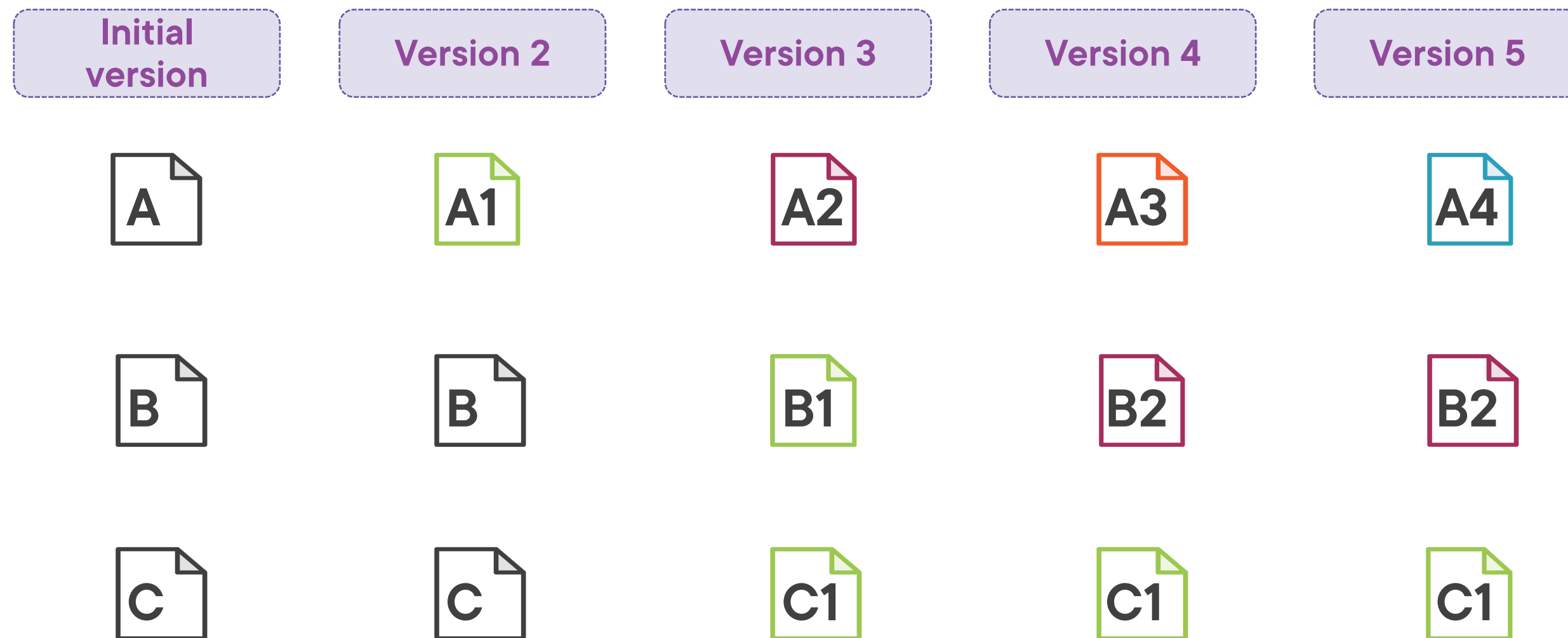
- Snapshots**



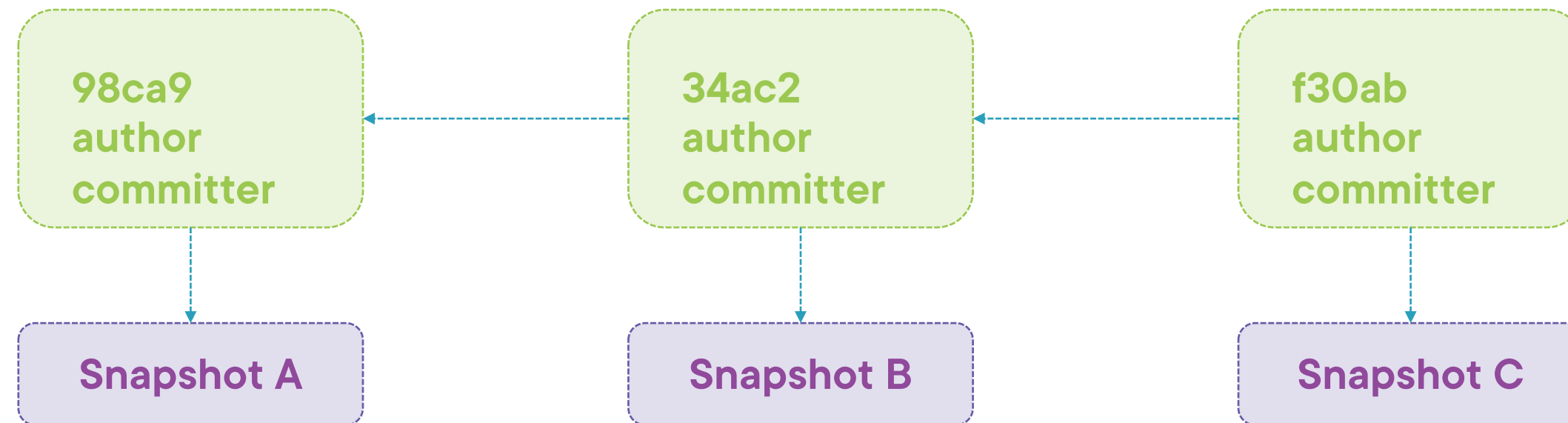
Traditional Source Management



The Concept of Snapshots in Git (and GitHub)



Commits in Git



Branching in Git



Branch is a pointer to a commit

Default branch is main

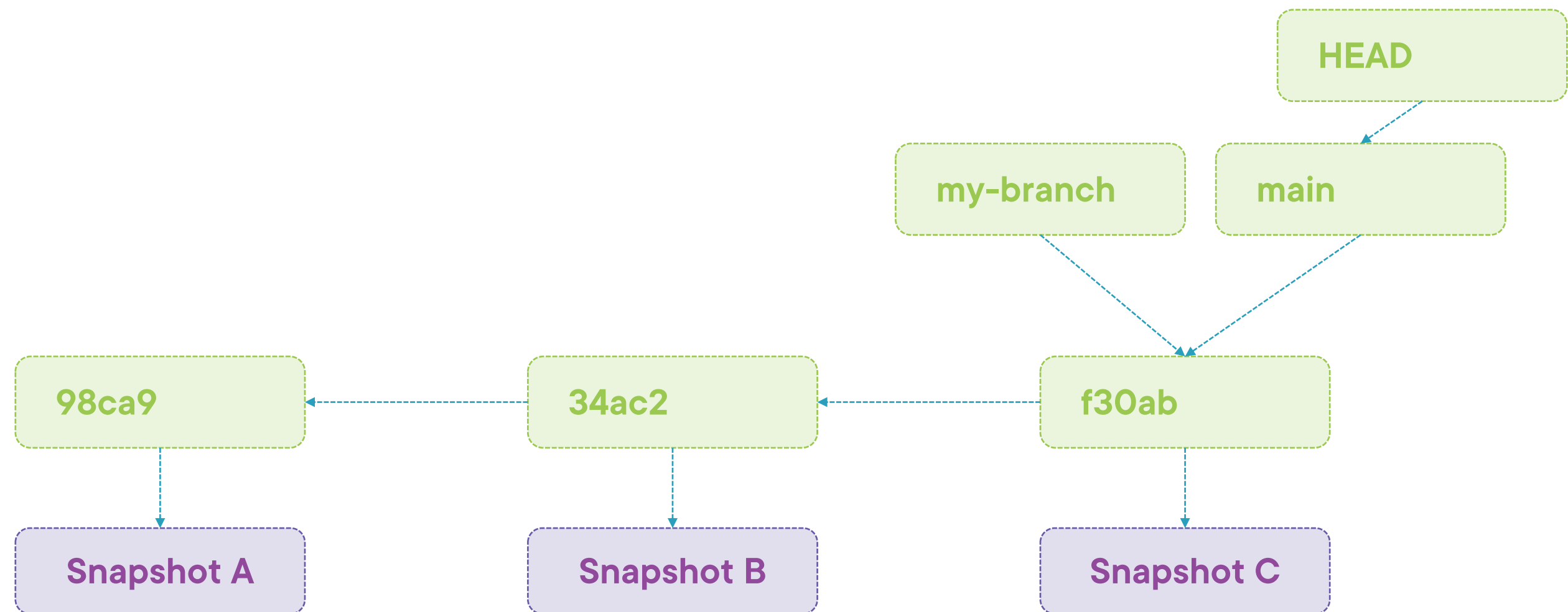
- Points to latest commit
- Moves forward with every commit

Use branches for

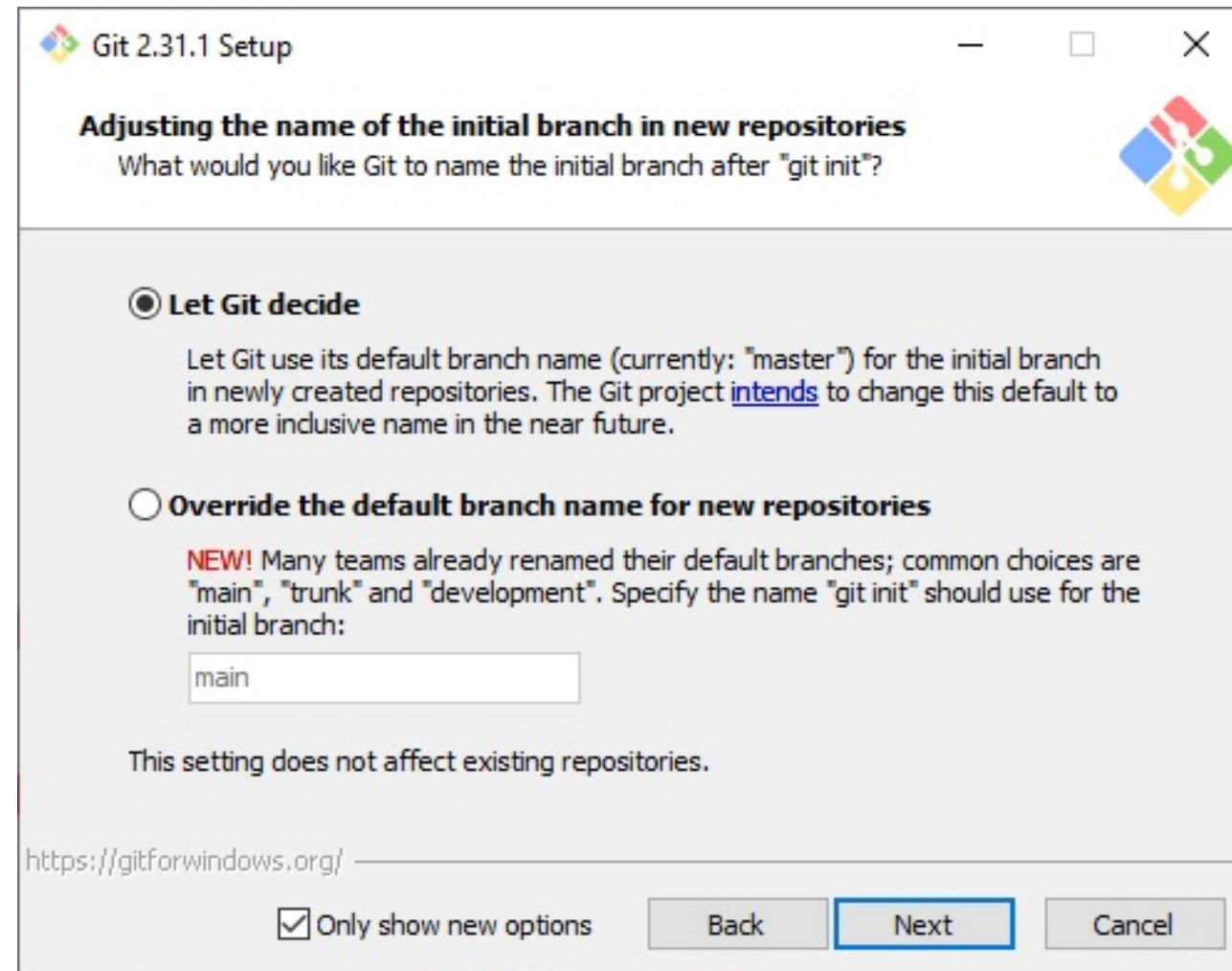
- Features
- Bugs
- Experiments



Branching in Git Continued



Default Branch Name



Demo



Creating a branch on GitHub



The Commands for Branching

```
$ git branch [branch-name]
```

```
$ git checkout [branch-name]
```

```
$ git push -u [origin] [branch]
```



Demo



Creating local branches

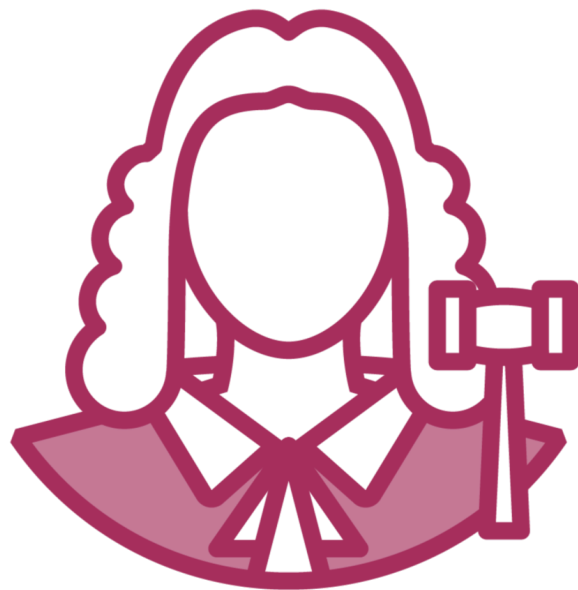
Pushing the branch to GitHub



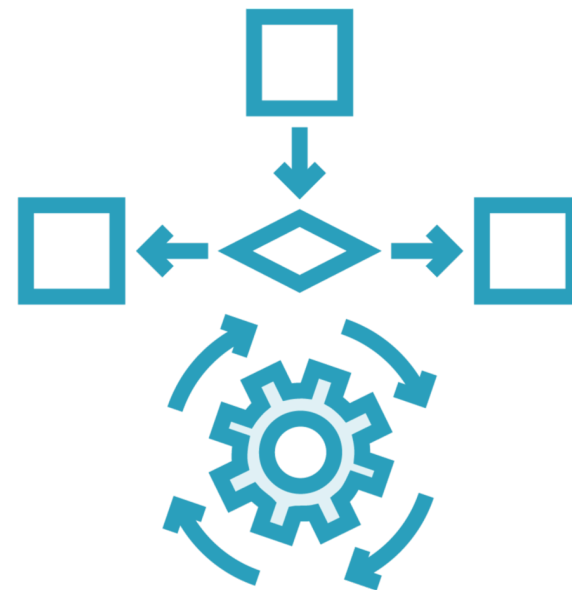
Understanding Branching Strategies



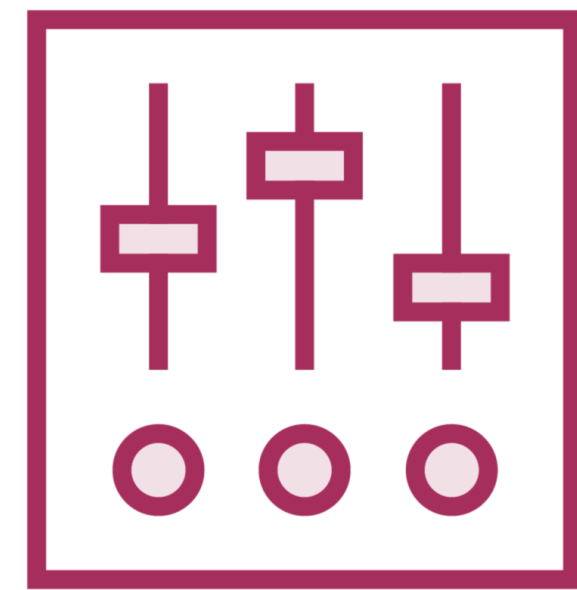
Defining a Branching Strategy



Set of rules



**Define workflow for
branches**



Different options exist



Branching Strategies

Centralized workflow

Gitflow workflow

Forking workflow

GitHub workflow



Using the GitHub Flow



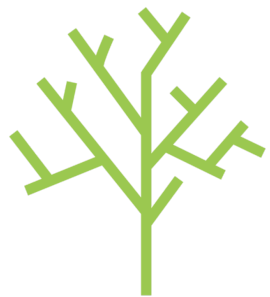
Understanding the GitHub Workflow



Lightweight



Favored by GitHub



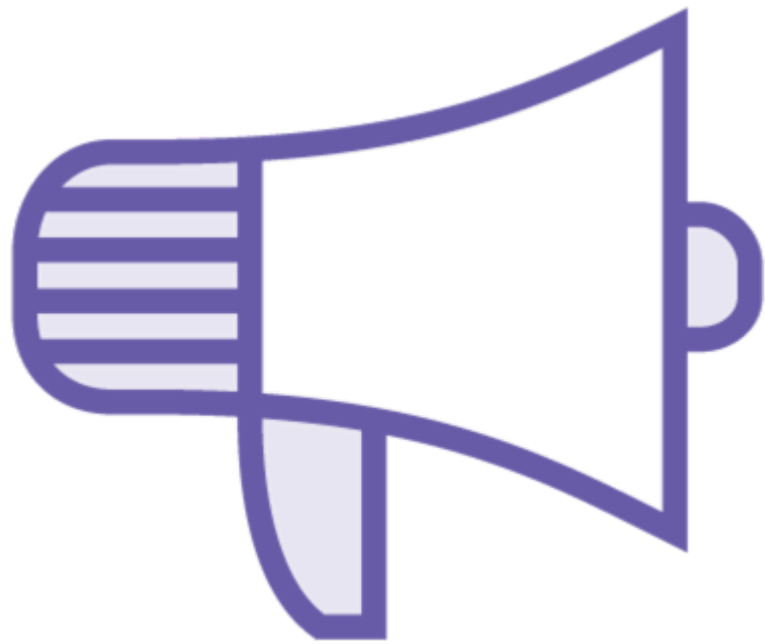
Branches for bugs, features...



Evolves around pull requests



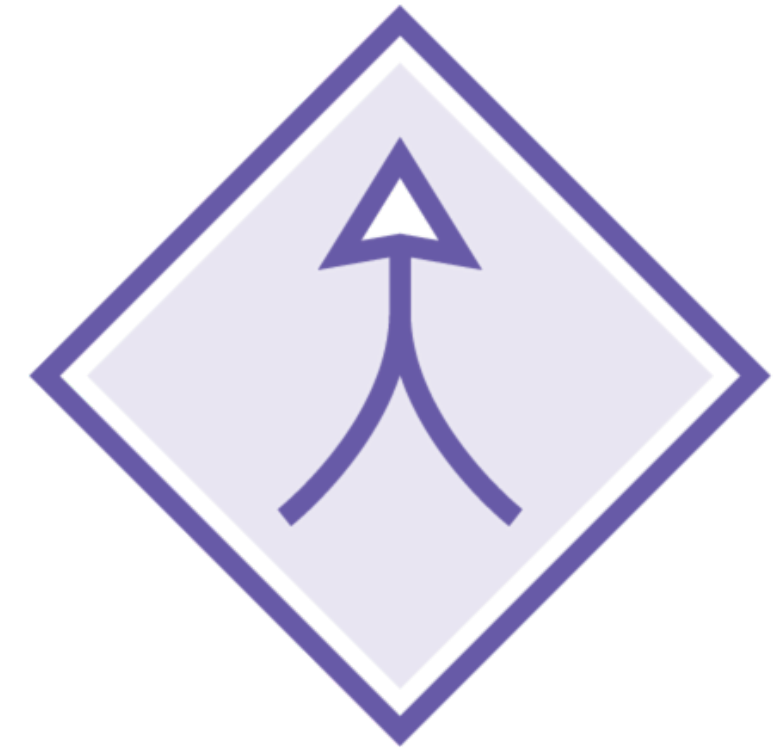
Pull Requests



**Announce a push to a
branch**



**Discuss
Review changes
Add more commits**




Merge



GitHub Support for Pull Requests

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: main

←

compare: test-branch

✓ **Able to merge.** These branches can be automatically merged.



Update instructions

Write

Preview

H

B

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<>

🔗

☑

@

🗨

↩

Leave a comment

Attach files by dragging & dropping, selecting or pasting them.

Create pull request

Reviewers

No reviews

Assignees

No one—assign yourself

Labels

None yet

Projects


None yet

Milestone

No milestone

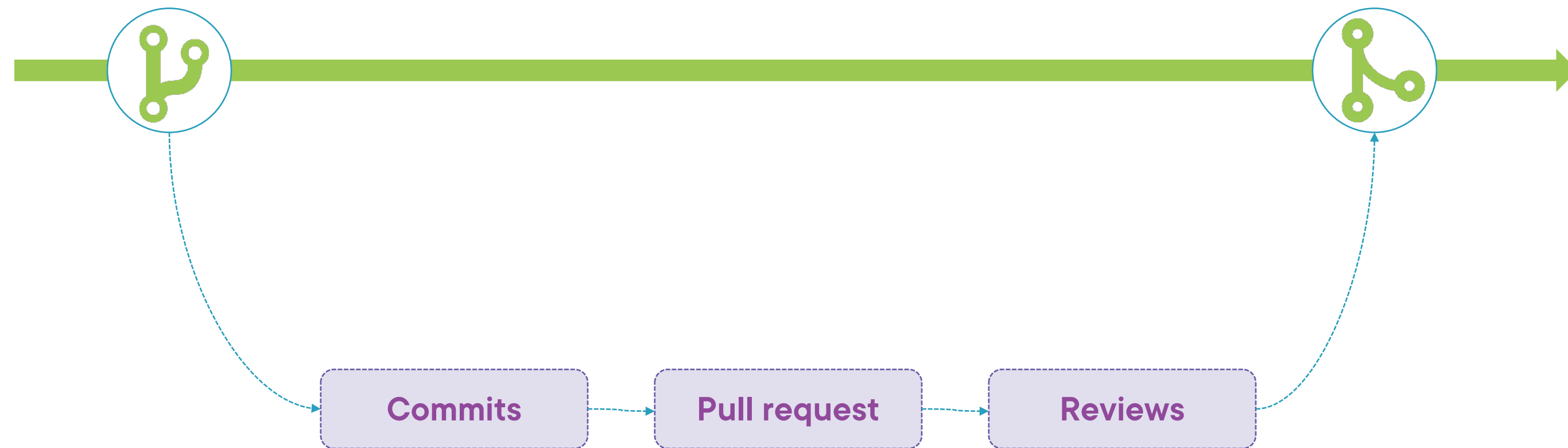
Linked issues

Use [Closing keywords](#) in the description to automatically close issues

 Remember, contributions to this repository should follow our [GitHub Community Guidelines](#).



GitHub Flow



Demo



Submitting a pull request



Demo




Reviewing the pull request


Attributing the pull request



Sometimes, You'll Have a Merge Conflict

Add more commits by pushing to the `test-branch` branch on `GillCleeren/sample-repo`.



**This branch has conflicts that must be resolved**
Use the [web editor](#) or the [command line](#) to resolve conflicts.

Resolve conflicts

Conflicting files
README.md

Merge pull request ▼

You can also [open this in GitHub Desktop](#) or view [command line instructions](#).



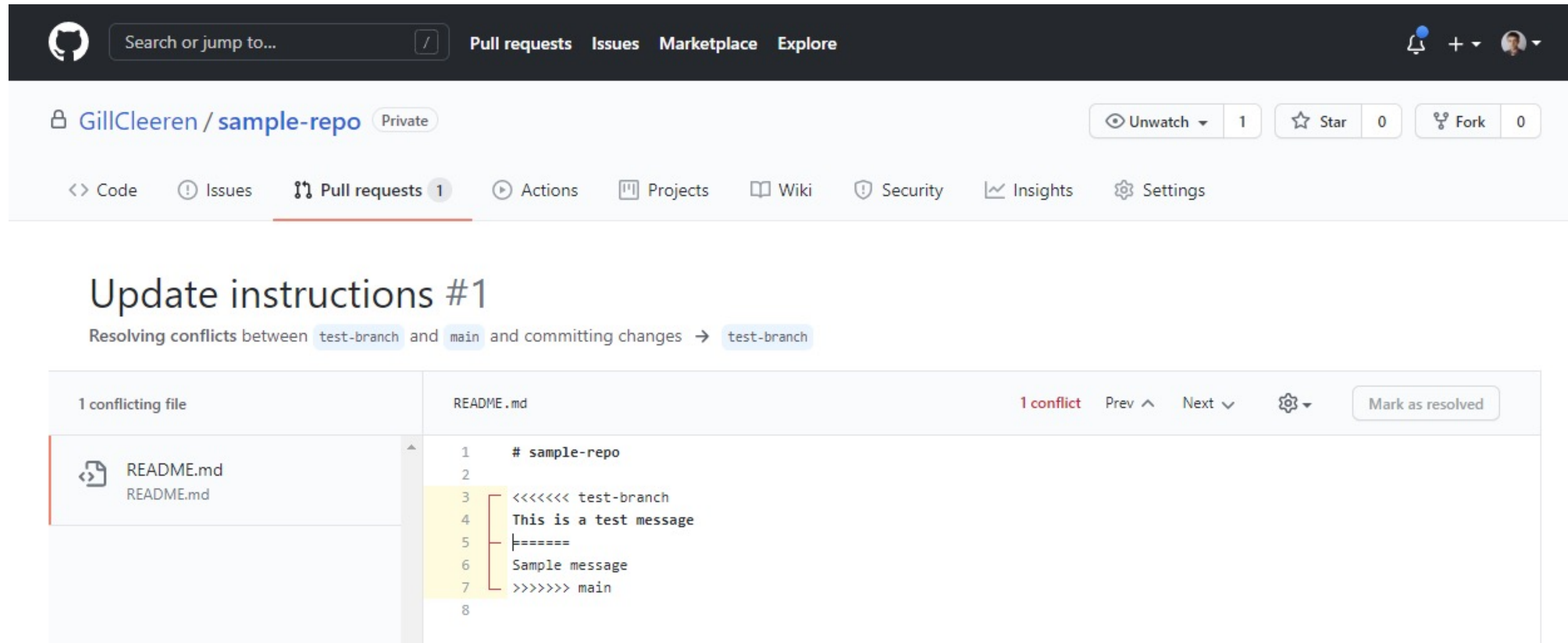


Typical conflicts

- Editing on the same line
- Editing an already deleted file

Merge conflicts needs to be solved before a merge can happen

Merging Inside GitHub



The screenshot shows the GitHub interface for a pull request titled "Update instructions #1". The repository is "GillCleeren / sample-repo" and is marked as "Private". The pull request is between the "test-branch" and the "main" branch, with 1 conflict identified. The interface includes a search bar, navigation links for Pull requests, Issues, Marketplace, and Explore, and a sidebar with links for Code, Issues, Pull requests (1), Actions, Projects, Wiki, Security, Insights, and Settings. The main content area shows the conflict resolution for the file "README.md". The conflict is between the "test-branch" and the "main" branch. The "test-branch" content is highlighted in yellow, and the "main" branch content is highlighted in green. The conflict is resolved by combining the changes from both branches.

Search or jump to... / Pull requests Issues Marketplace Explore

GillCleeren / sample-repo Private

Unwatch 1 Star 0 Fork 0

Code Issues Pull requests 1 Actions Projects Wiki Security Insights Settings

Update instructions #1

Resolving conflicts between test-branch and main and committing changes → test-branch

1 conflicting file

README.md 1 conflict Prev Next Mark as resolved

```
1 # sample-repo
2
3 <<<<<< test-branch
4 This is a test message
5 |=====
6 Sample message
7 >>>>>> main
8
```



Local Diff Tools

KDiff3

vimdiff3

P4Merge

Beyond Compare



Demo



Merging with conflicts using GitHub

Merging locally



Demo

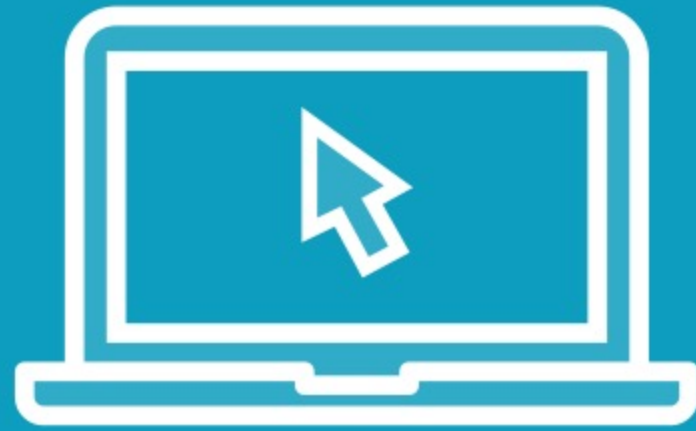


Creating a PR template

Creating a PR based on a template



Demo



Reverting a merged PR

Exploring the history

Using the blame feature on GitHub



Demo



Setting the default branch

Restoring branches



Forking a Repository





Copy of a repo

Doesn't impact the original repo

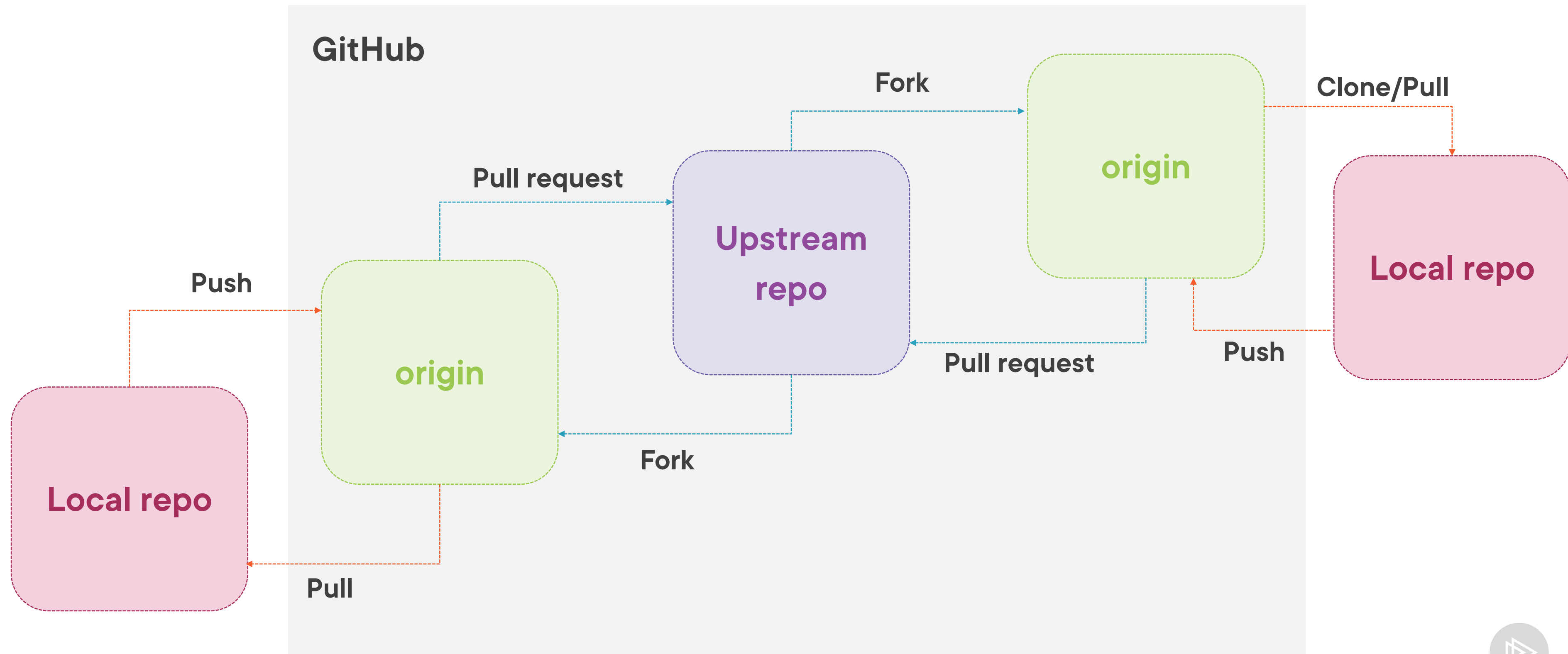
Changes can be merged again via pull requests

Available to do for anyone

- It's your repository now



Forking on GitHub



Demo



Forking a repository on GitHub

Making changes in your own branch



Summary



Git has baked-in support for easy branching

GitHub Flow is based on branches and pull requests

Emphasizes the collaborative aspect

Forking creates a copy of a repository





Up next:
Managing issues

