

# 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

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**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**

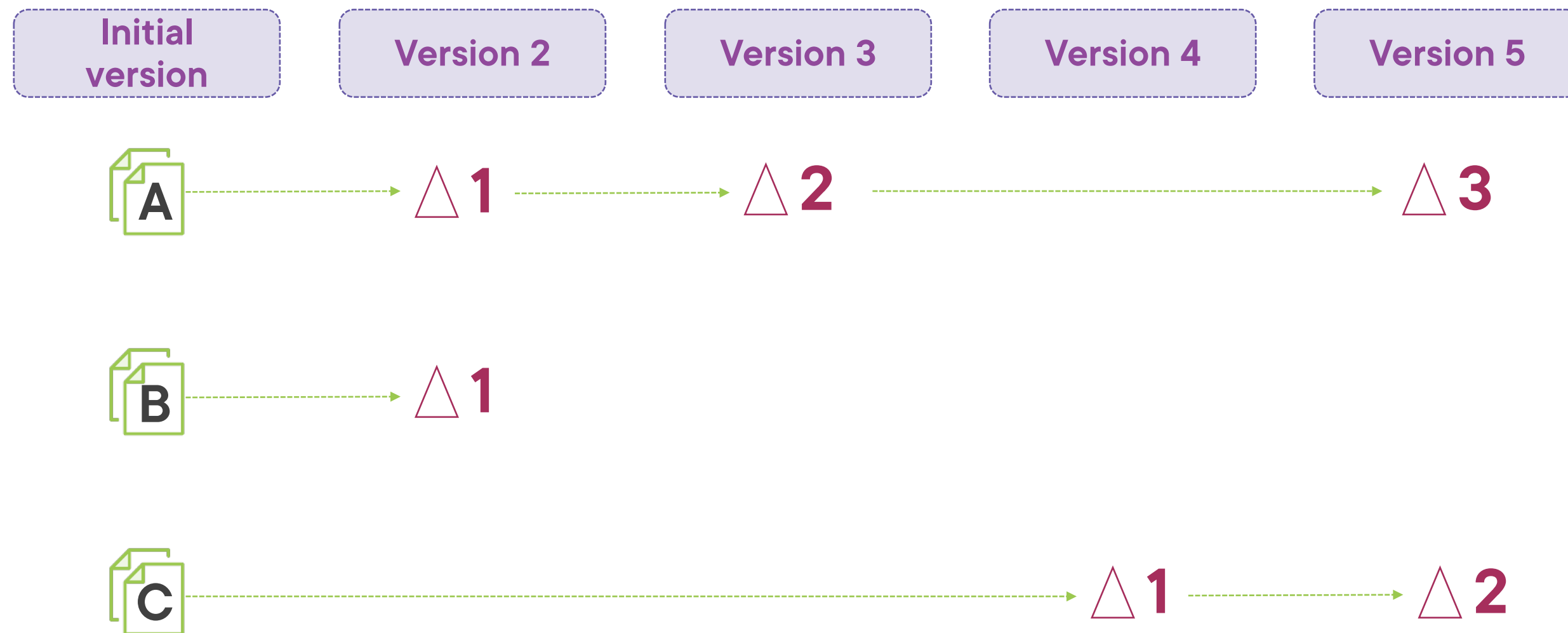
**Encouraged to be used**

**Works because of the way Git works**

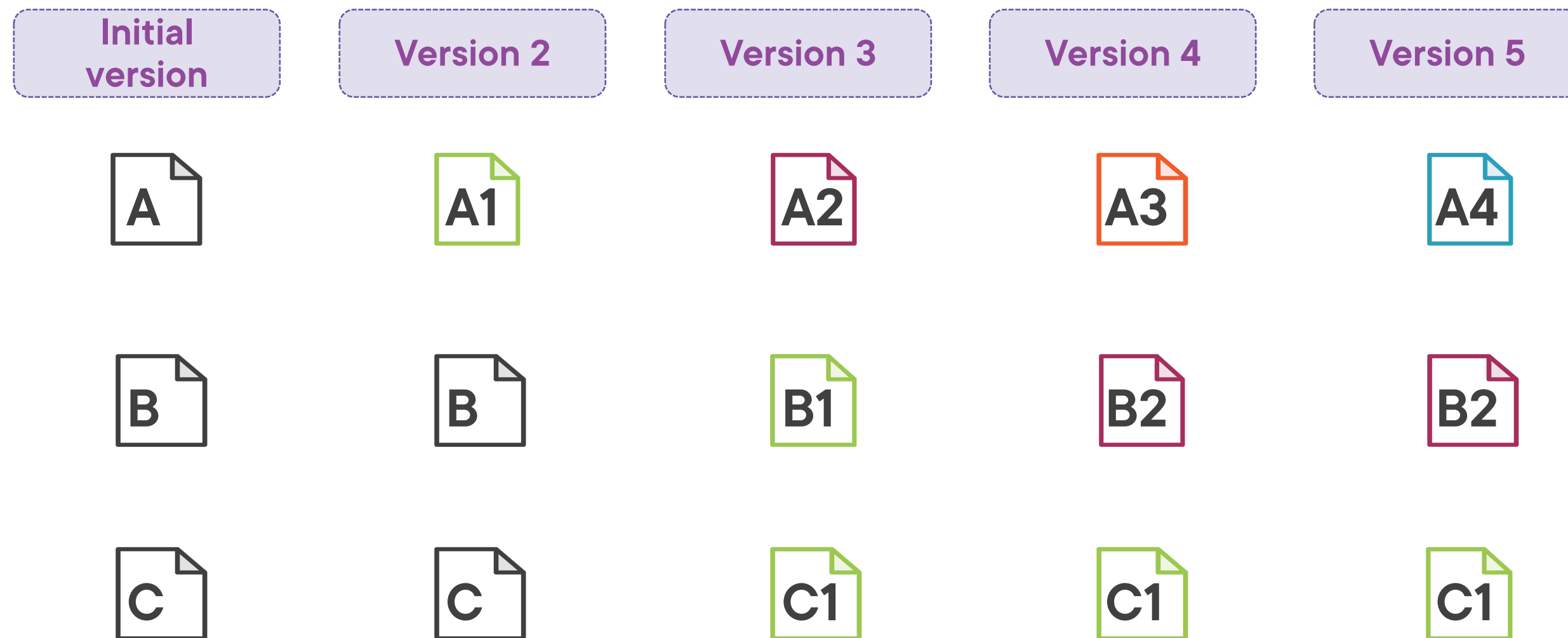
- Snapshots



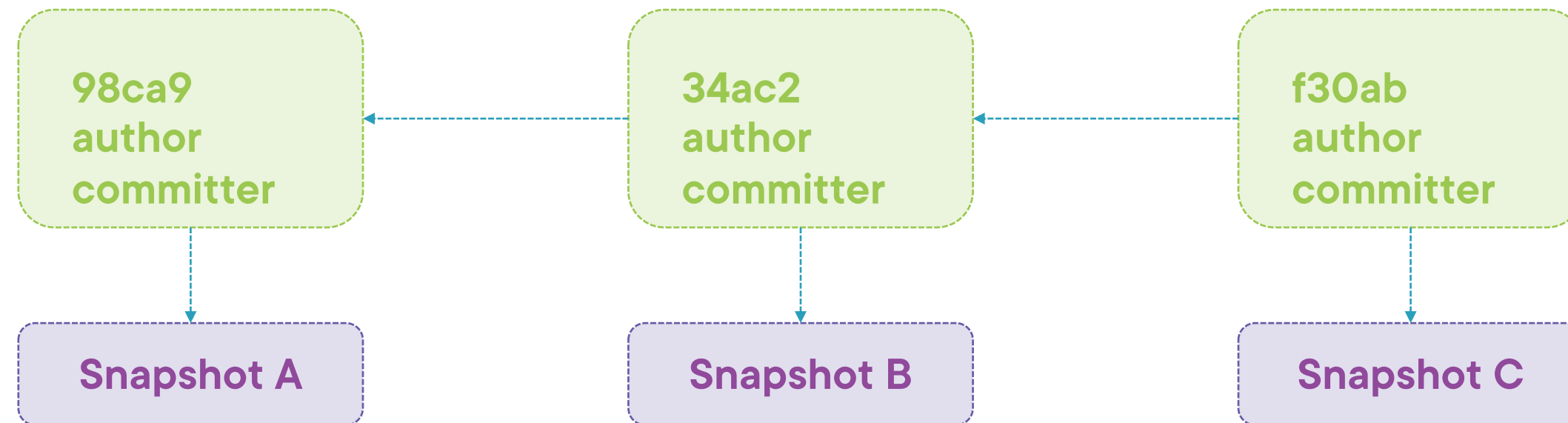
# Traditional Source Management



# 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**

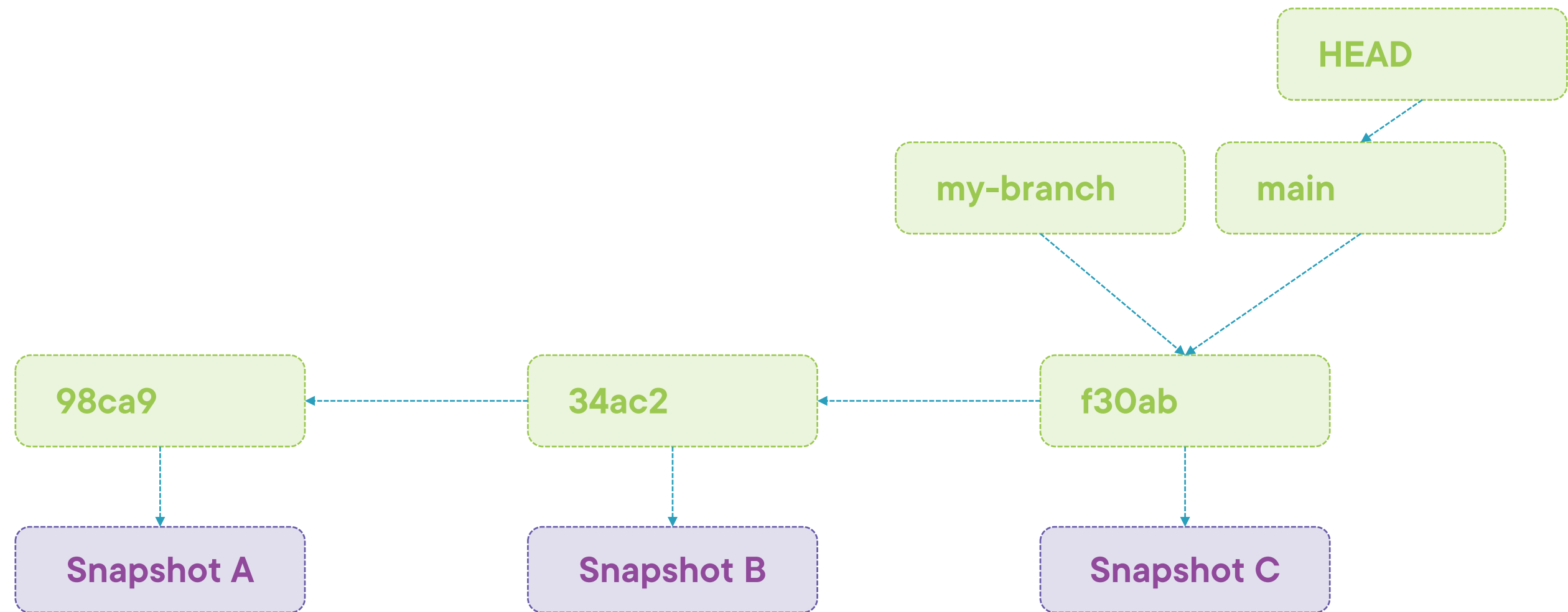
- Points to latest commit
- Moves forward with every commit

**Use branches for**

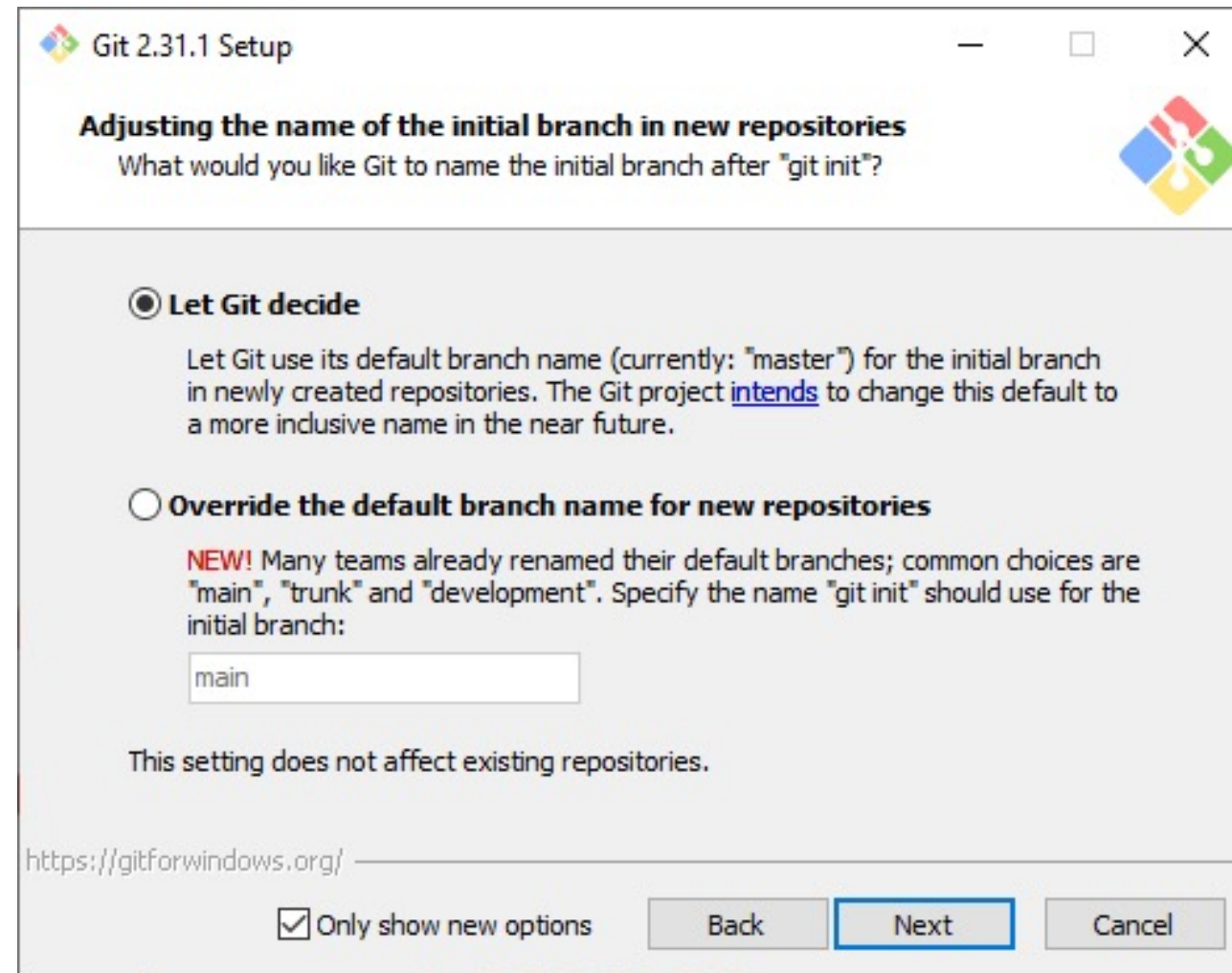
- Features
- Bugs
- Experiments



# 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**

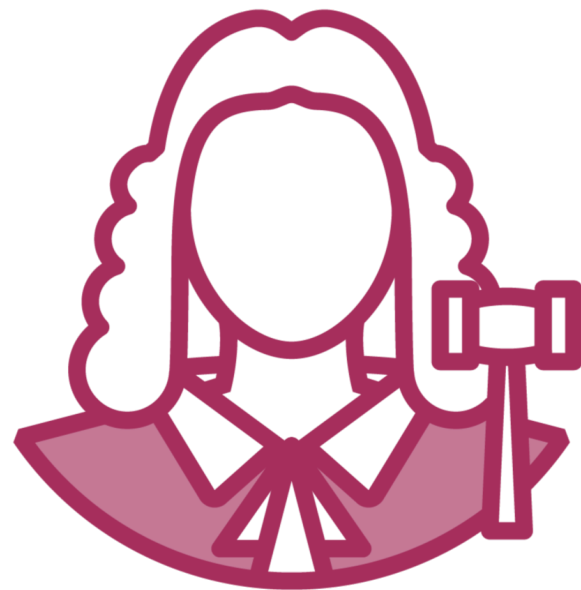


# Understanding Branching Strategies

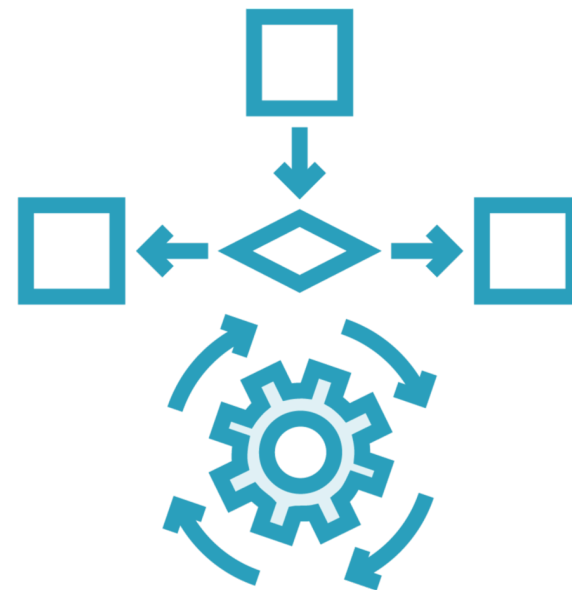
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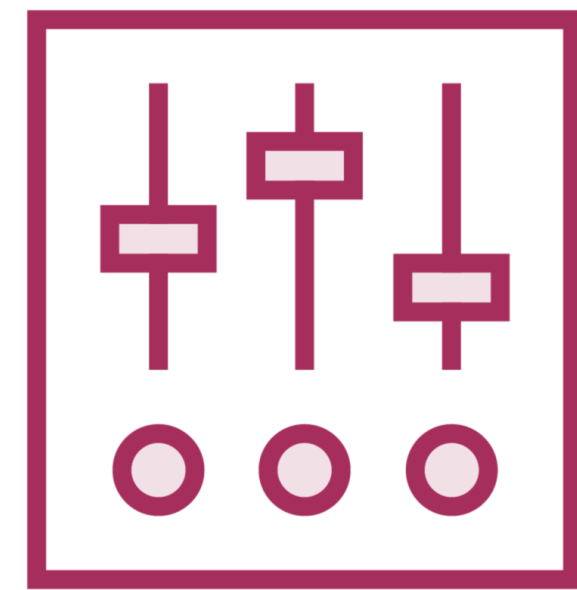
# Defining a Branching Strategy



**Set of rules**



**Define workflow for  
branches**



**Different options exist**



# Branching Strategies

**Centralized workflow**

**Gitflow workflow**

**Forking workflow**

**GitHub workflow**



# Using the GitHub Flow

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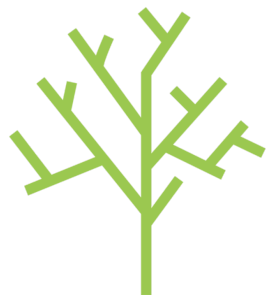
# Understanding the GitHub Workflow



**Lightweight**



**Favored by GitHub**



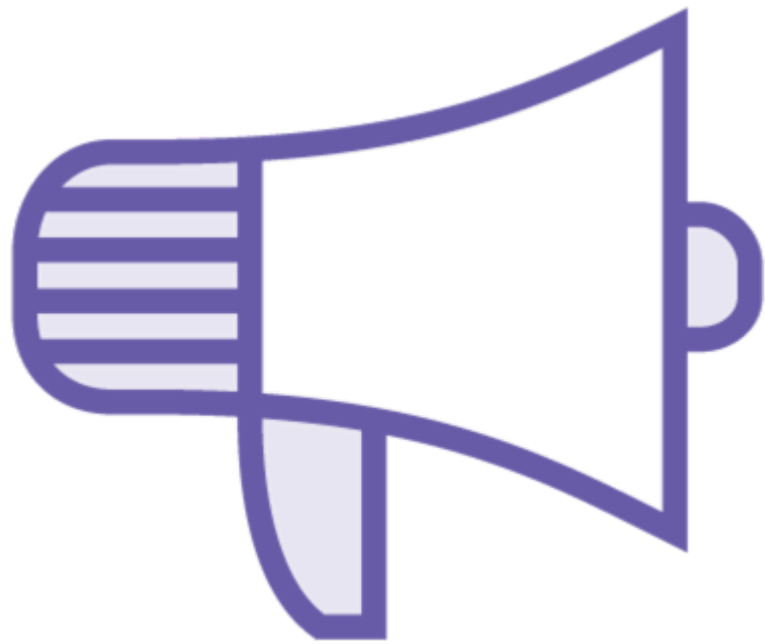
**Branches for bugs, features...**



**Evolves around pull requests**



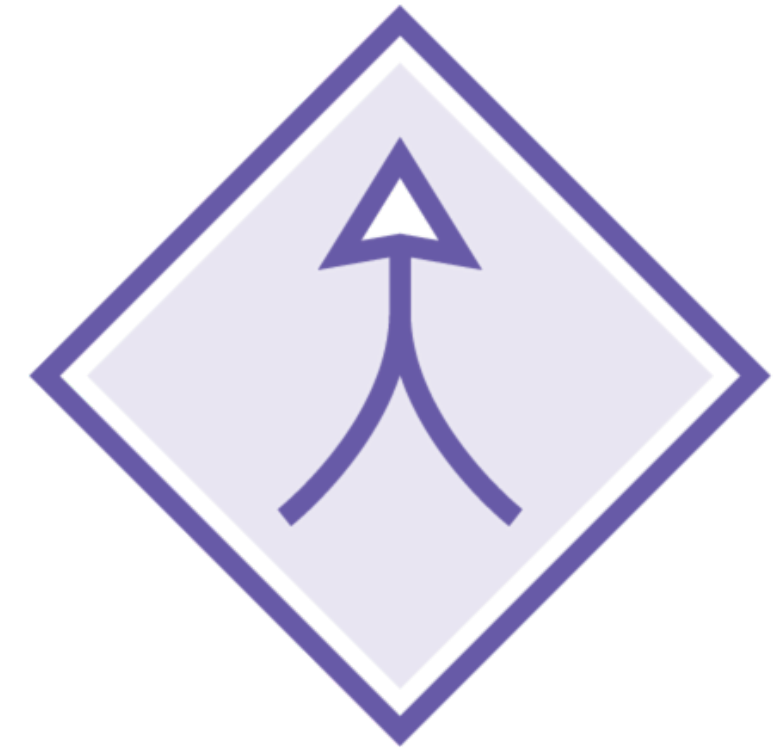
# Pull Requests



**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

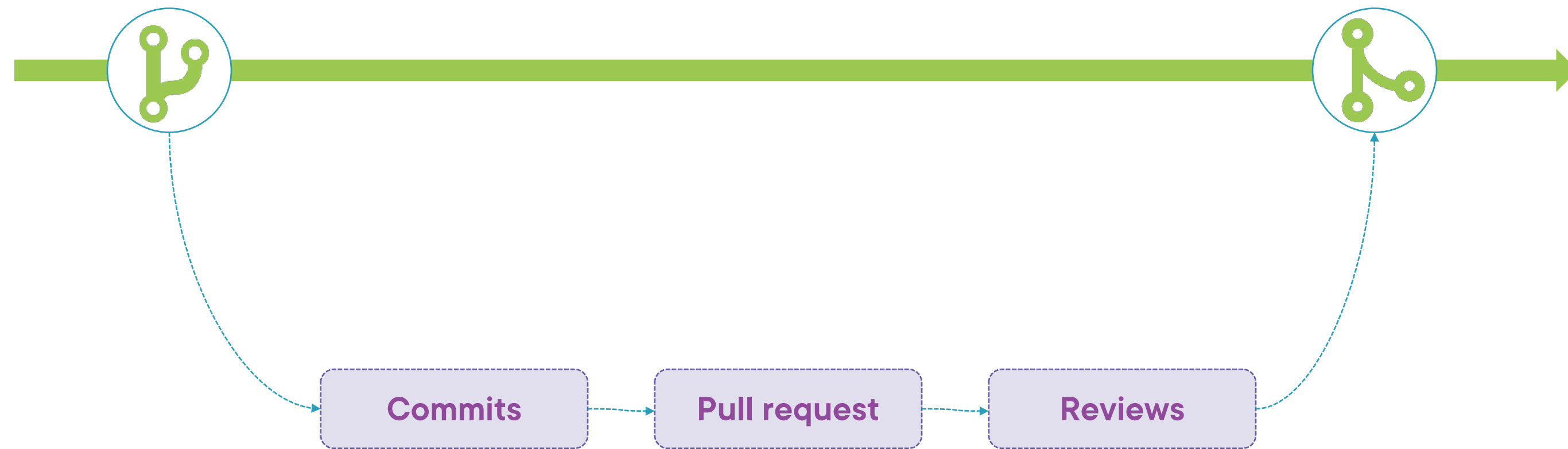
Linked issues

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](#).



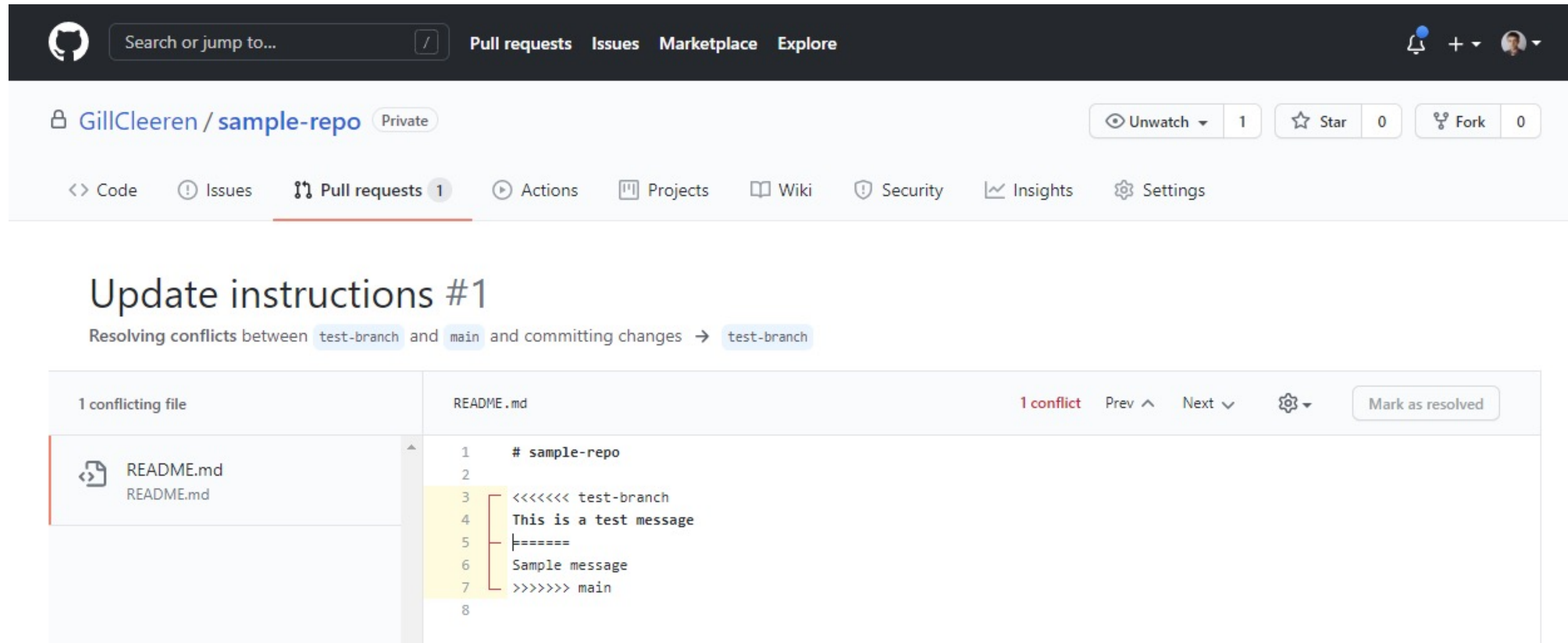


## Typical conflicts

- 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. The top navigation bar includes the GitHub logo, a search bar, and links for Pull requests, Issues, Marketplace, and Explore. The repository name is GillCleeren / sample-repo, marked as Private. It shows 1 Unwatch, 0 Stars, and 0 Forks. The Pull requests tab is active, showing 1 pull request. The pull request title is "Update instructions #1" and the description is "Resolving conflicts between test-branch and main and committing changes → test-branch". The conflict resolution interface shows 1 conflicting 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 taking the test-branch changes.

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

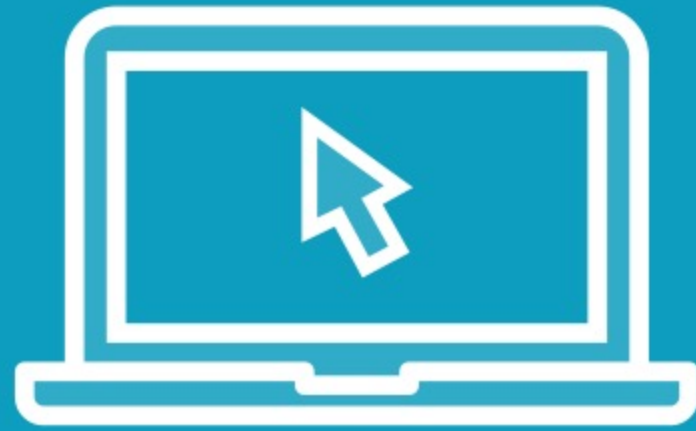


**Creating a PR template**

**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

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**Copy of a repo**

**Doesn't impact the original repo**

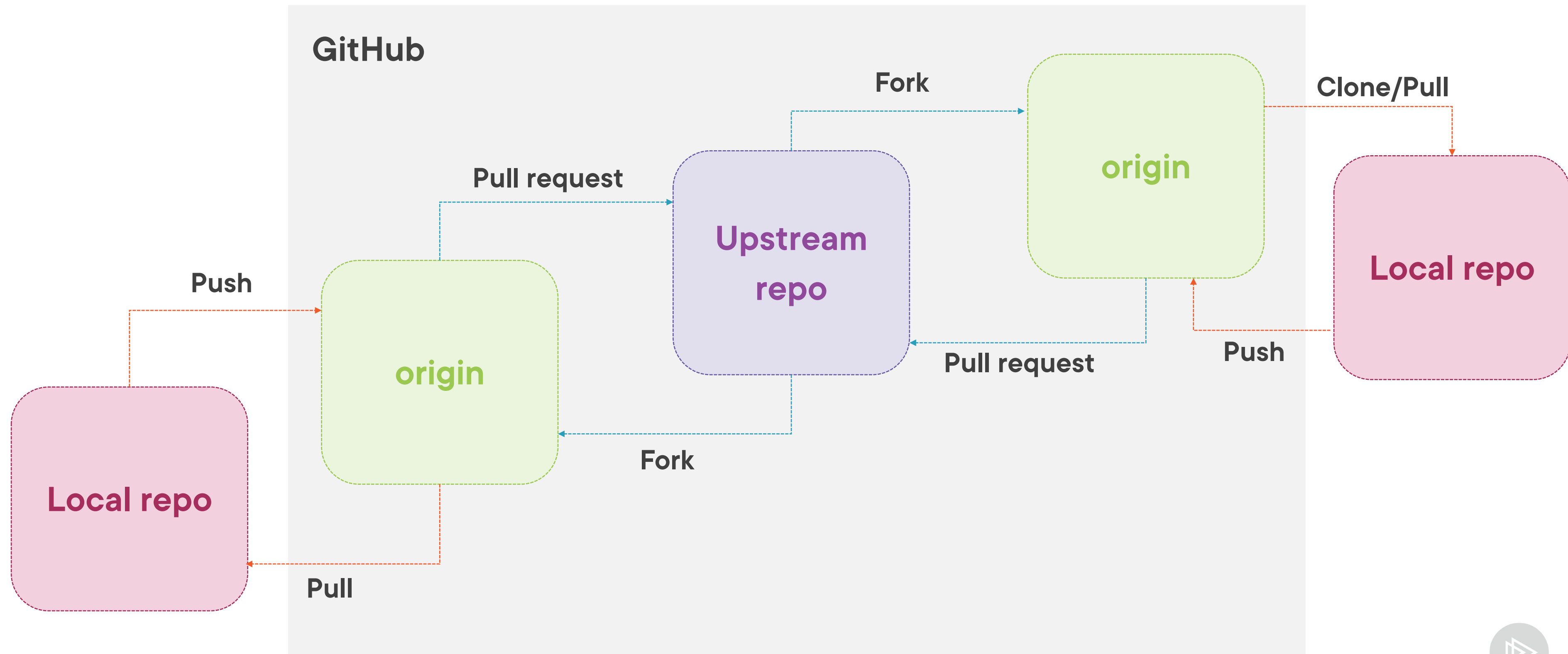
**Changes can be merged again via pull requests**

**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

