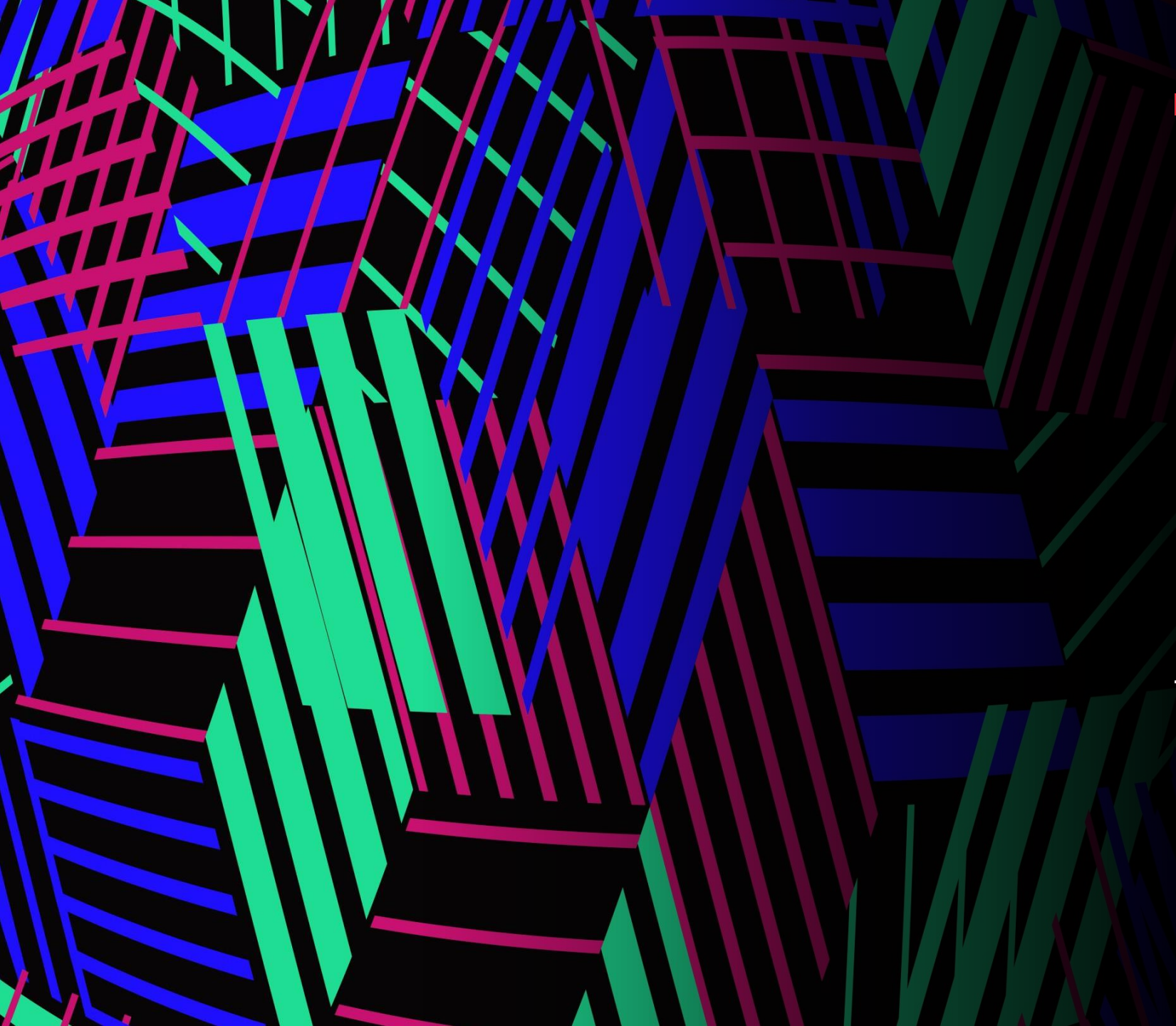


Introduction to Git and GitHub

GIS714

Spring 2025

Introduction to Git and GitHub

Part 1: Git concepts and vocabulary

Part 2: Collaborating with GitHub

Part 3: Hands-on activity - Open your own Pull Request

vs.

Open-source version-control software on your computer

Probably already installed on your OS:

```
git --version
```

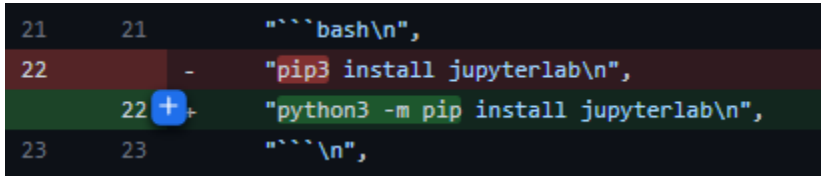
Company owned by Microsoft that hosts Git Repositories in the cloud

Alternatives: Bitbucket, GitLab, GitHub Enterprise

Provides features for sharing code, collaborating, raising issues, project tracking and more

What is “version-control” any ways?

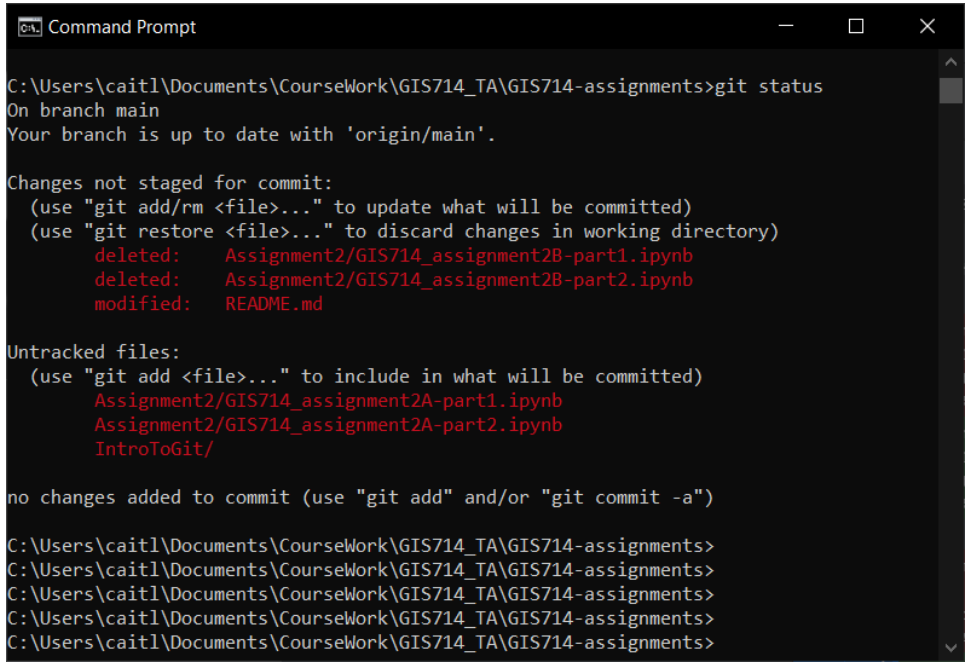
- “a system that records changes to a file or set of files over time so that you can recall specific versions later.” - git-scm.com

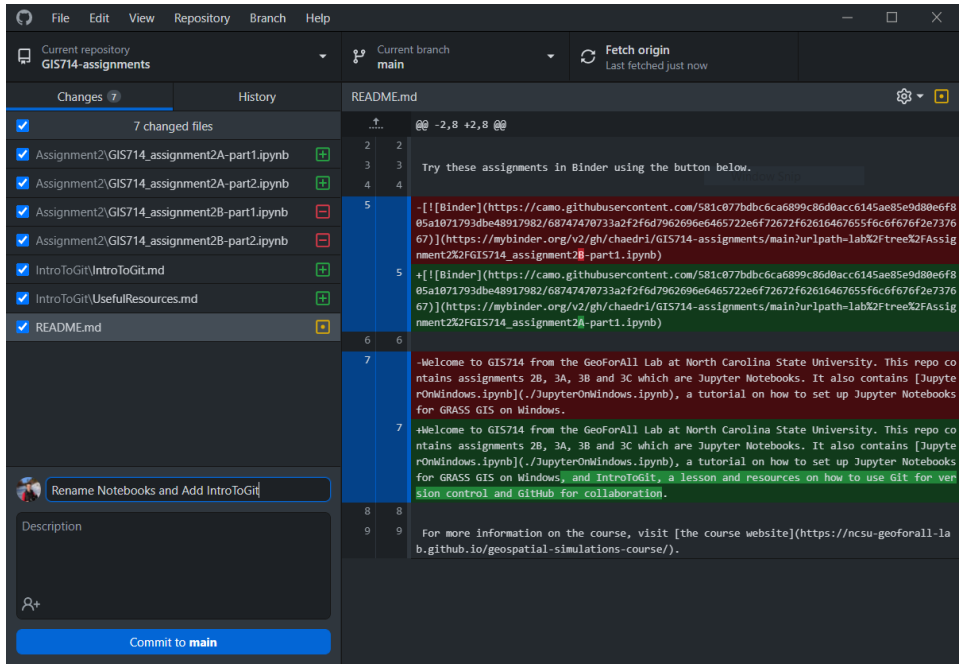


- Keeps track of multiple versions of a set of files (branches)
- Allows you to move back to older versions without deleting current work (revert/reset/checkout)

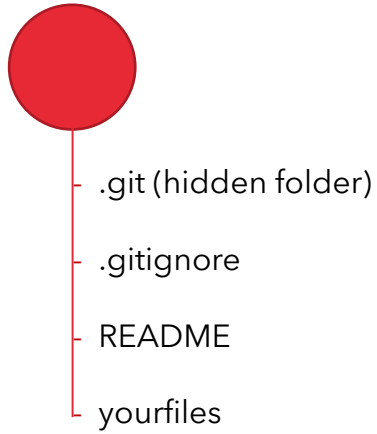
How do I use Git on my local machine?

- Command Line Interface (CLI)
  - Install Git
  - Configure SSH Key Authentication with GitHub
- Graphical User Interfaces
  - GitHub Desktop, GitKraken, SourceTree





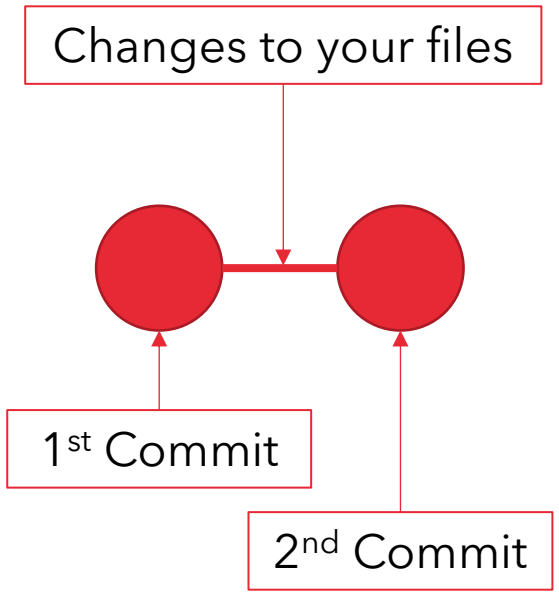
Basic Git: Get Started



Get started:

1. `git init`
2. Download/clone existing repo

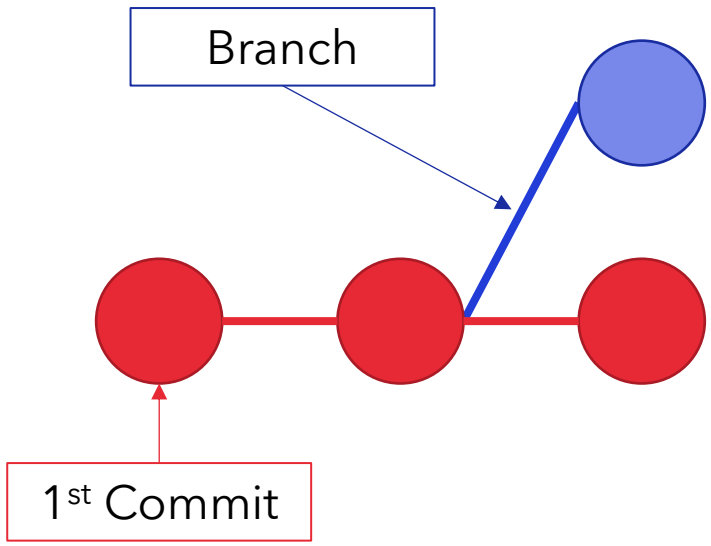
Basic Git: Commit



Commit your changes:

1. `git status` to see current state of directory
2. `git add` files that you want to commit
3. `git commit` changes with descriptions (“-m” flag)

Basic Git: Branch



Make a branch

1. `git commit`

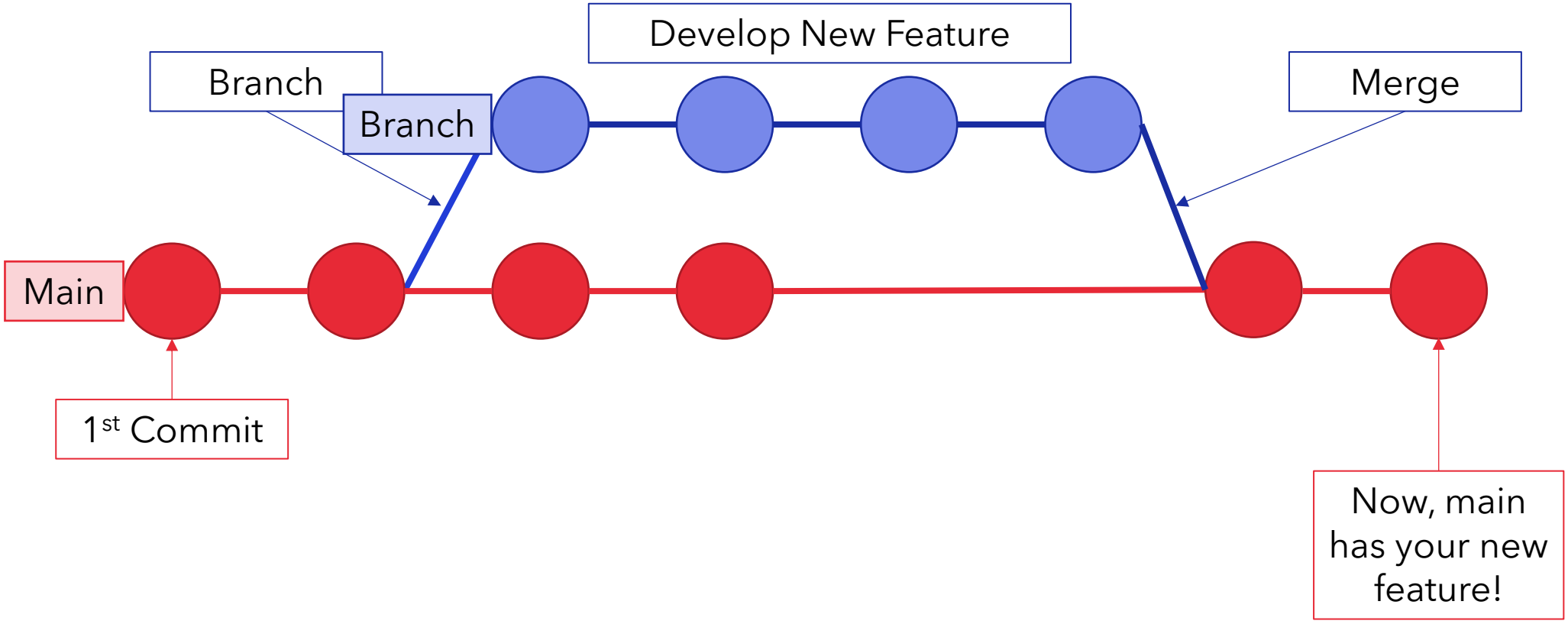
2. `git branch new-branch-name`

3. `git checkout new-branch-name`

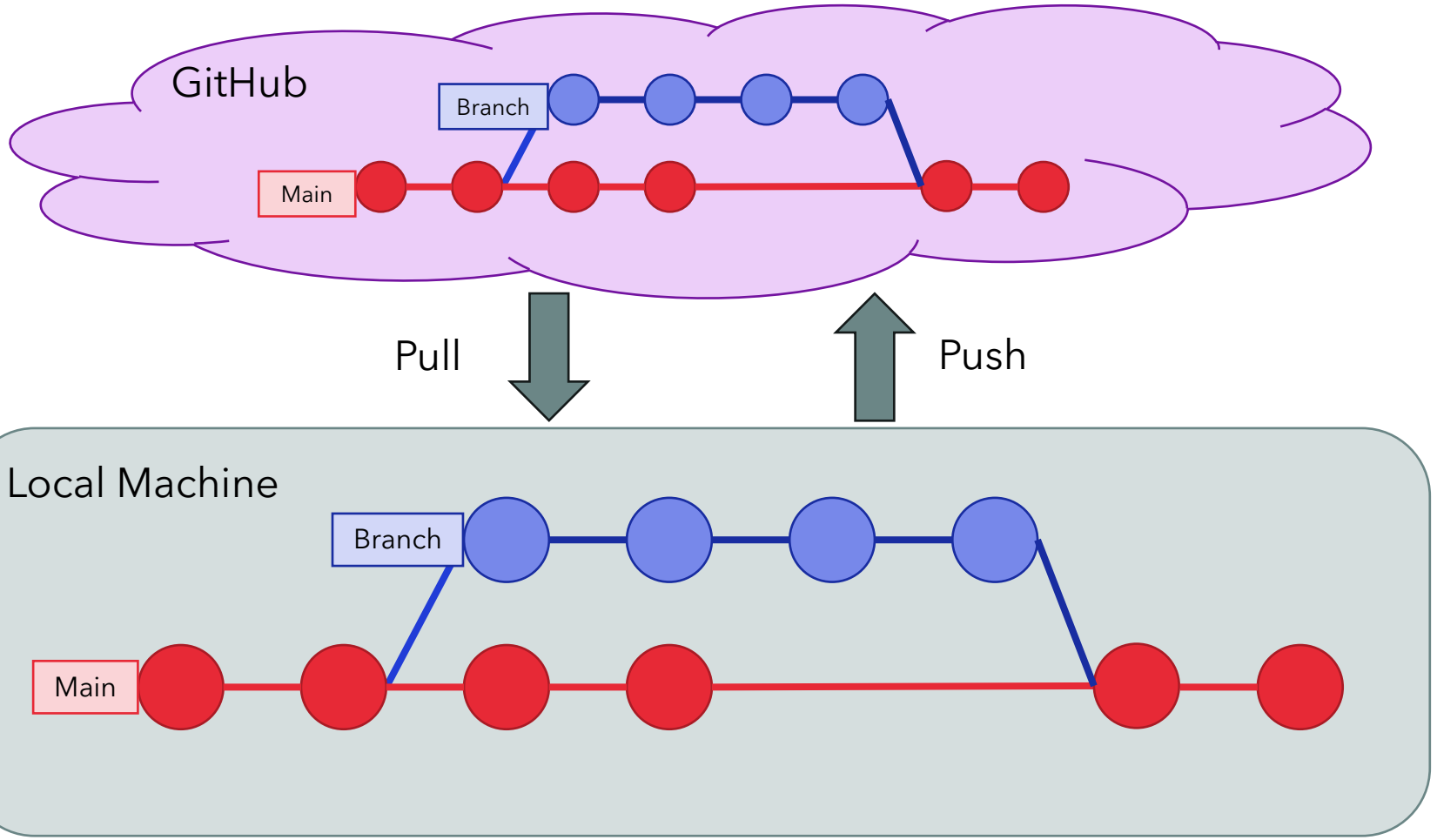
… shortcut for 2 and 3:

```
git checkout -b new-branch-name
```

Basic Git: Branch and Merge



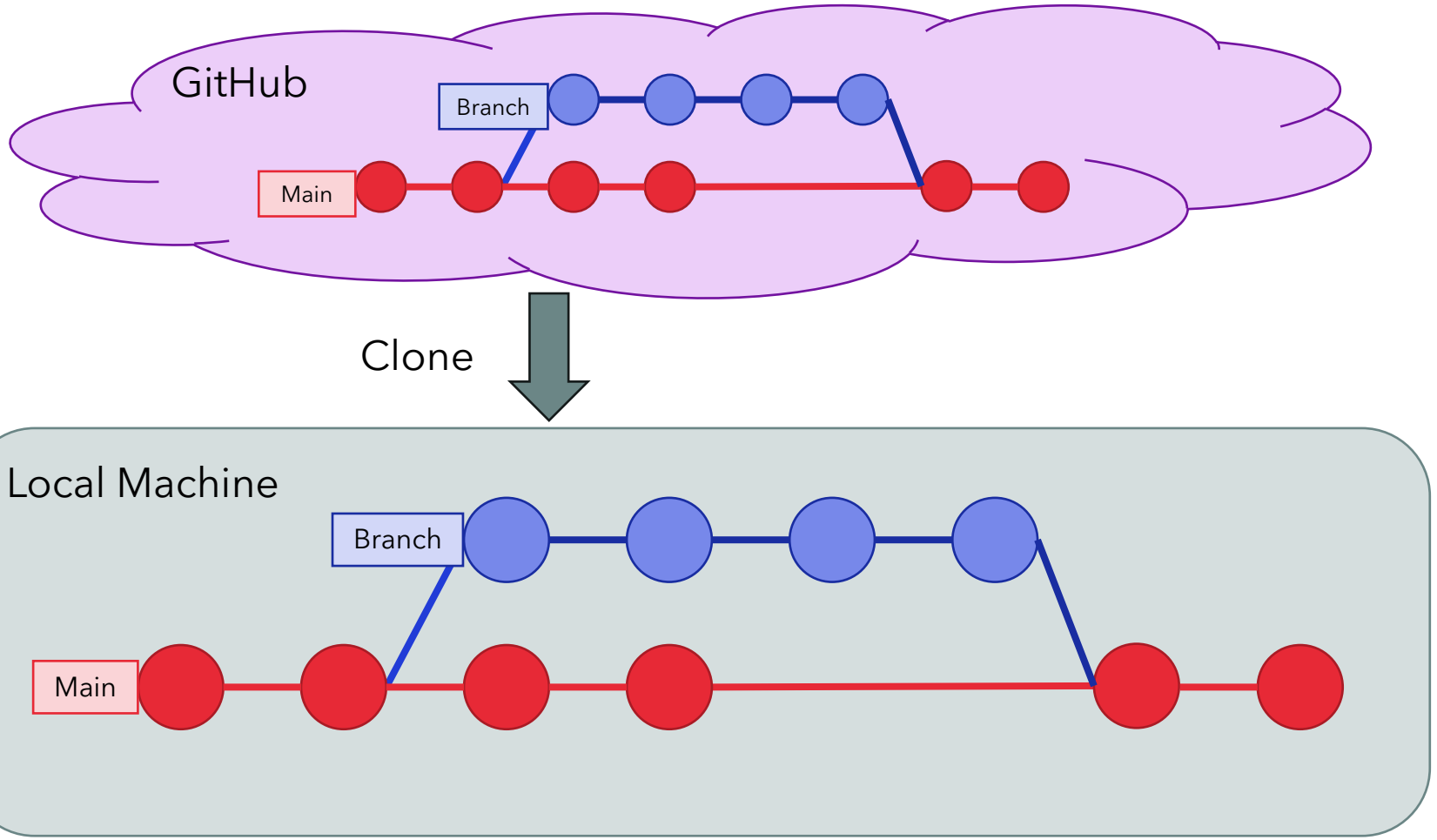
So, what about GitHub?



"I just pushed some changes"

"Let me pull the changes you just made so I can test them!"

So, what about GitHub?



"I just pushed some changes"

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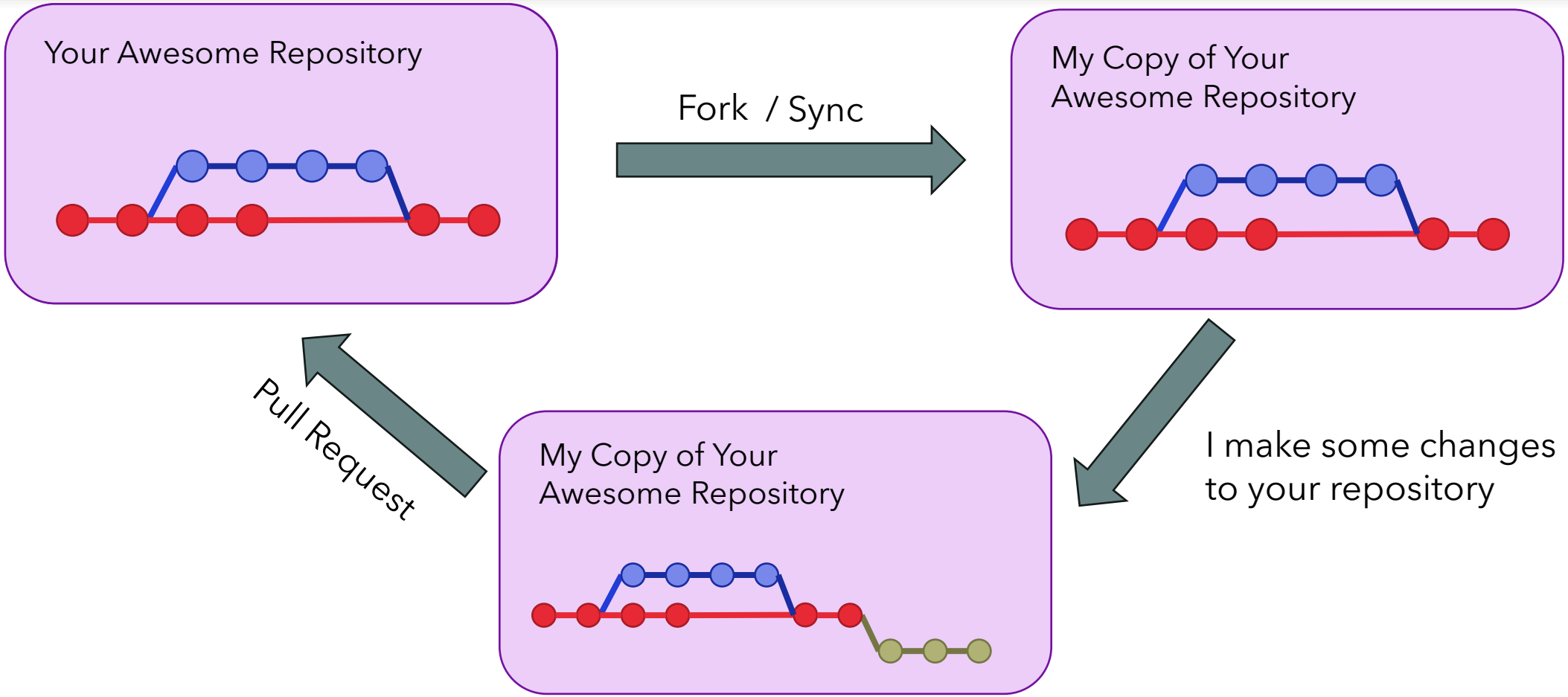
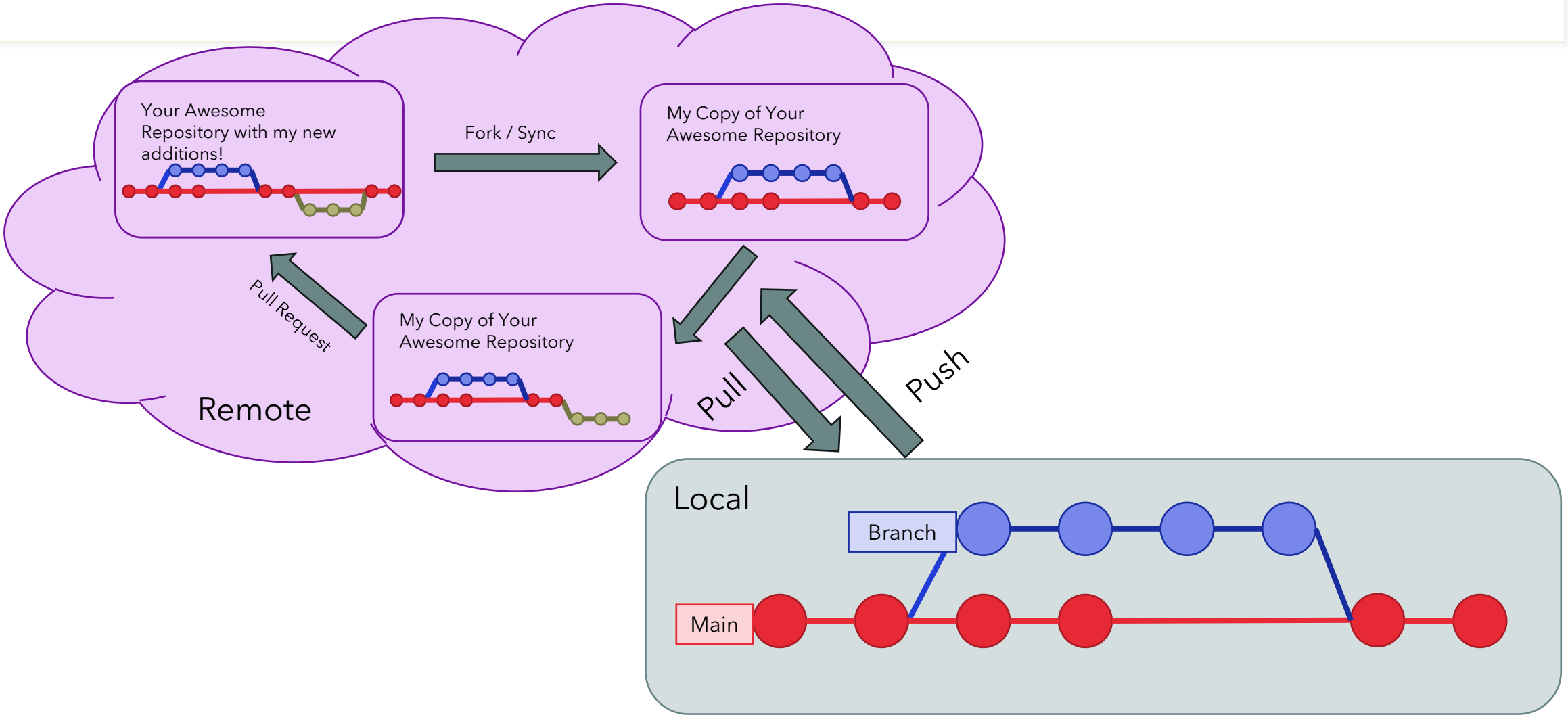
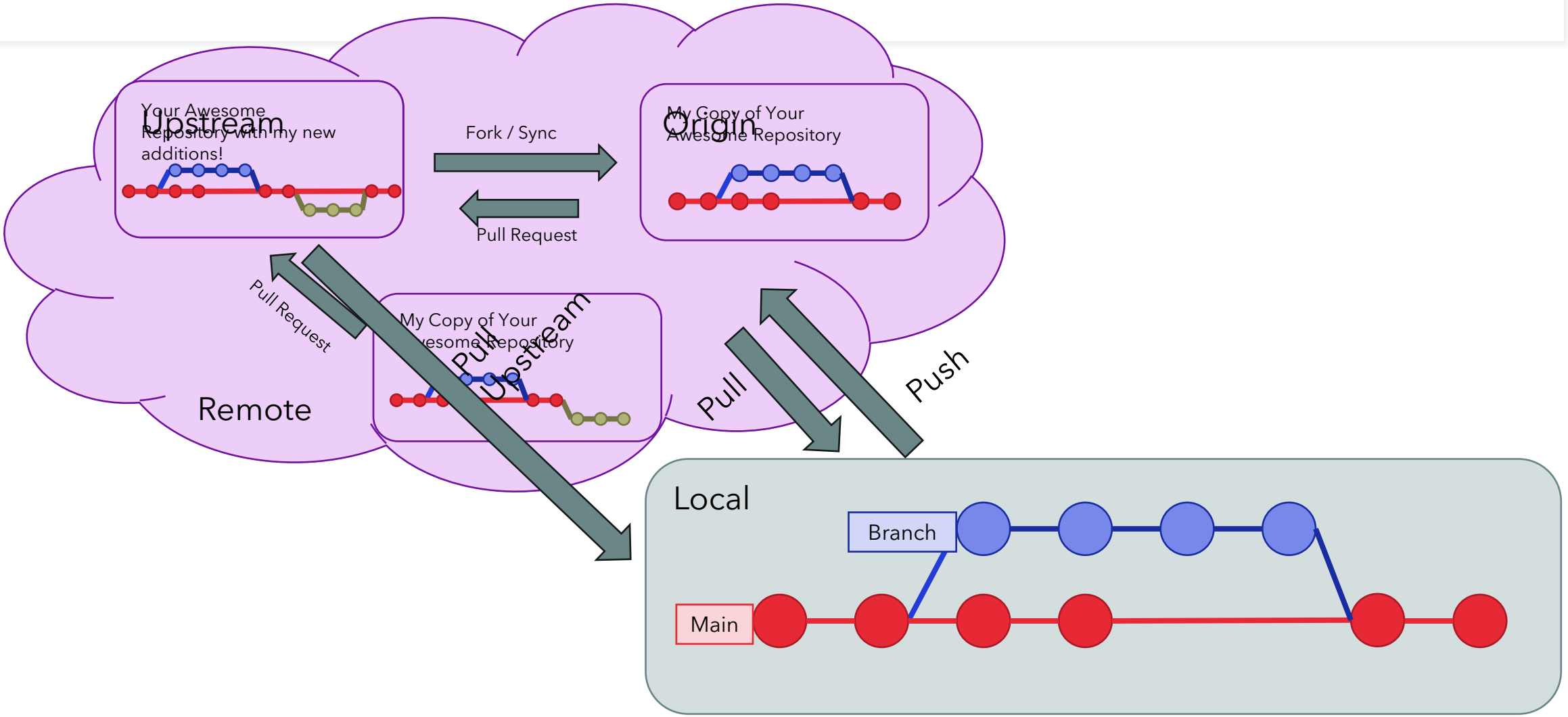
Collaborating with GitHub



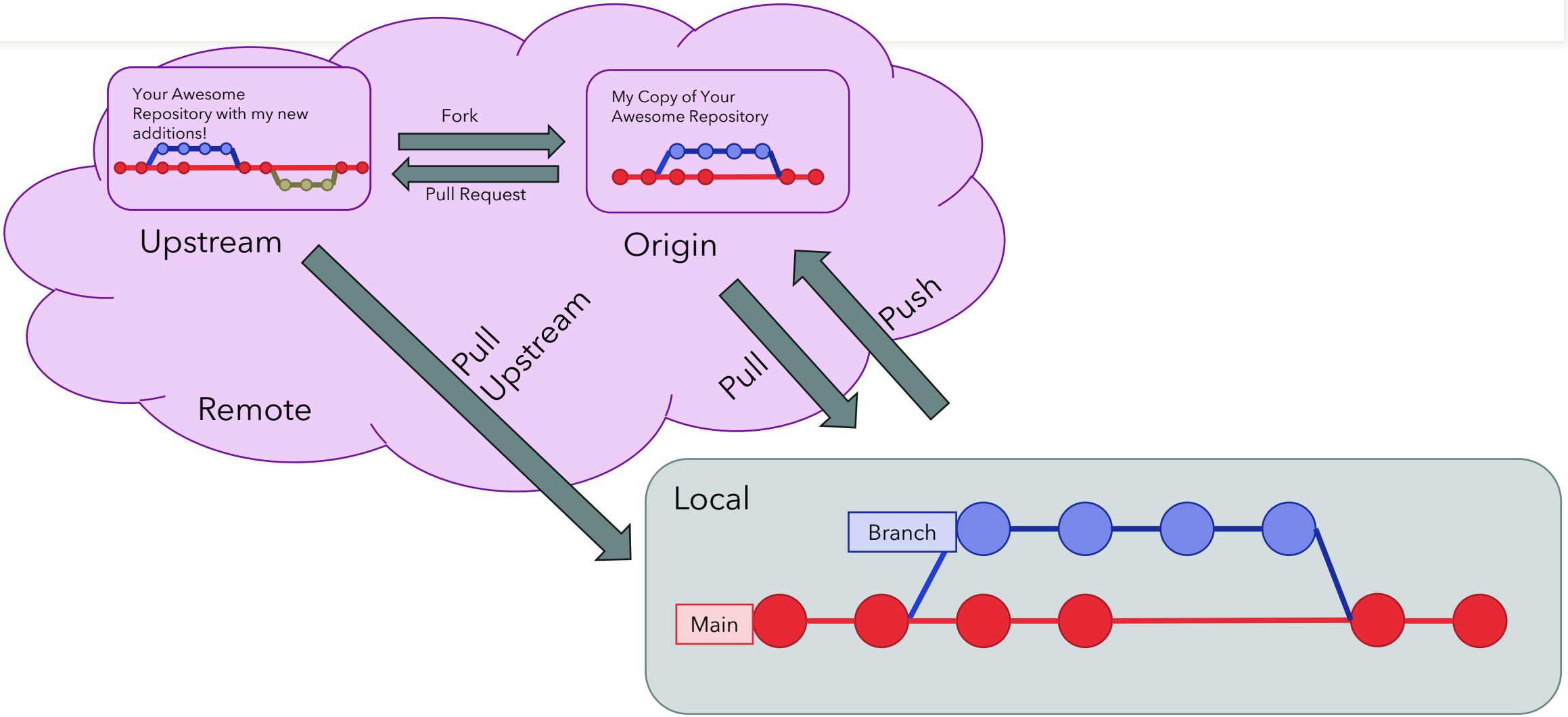
Collaborating with GitHub



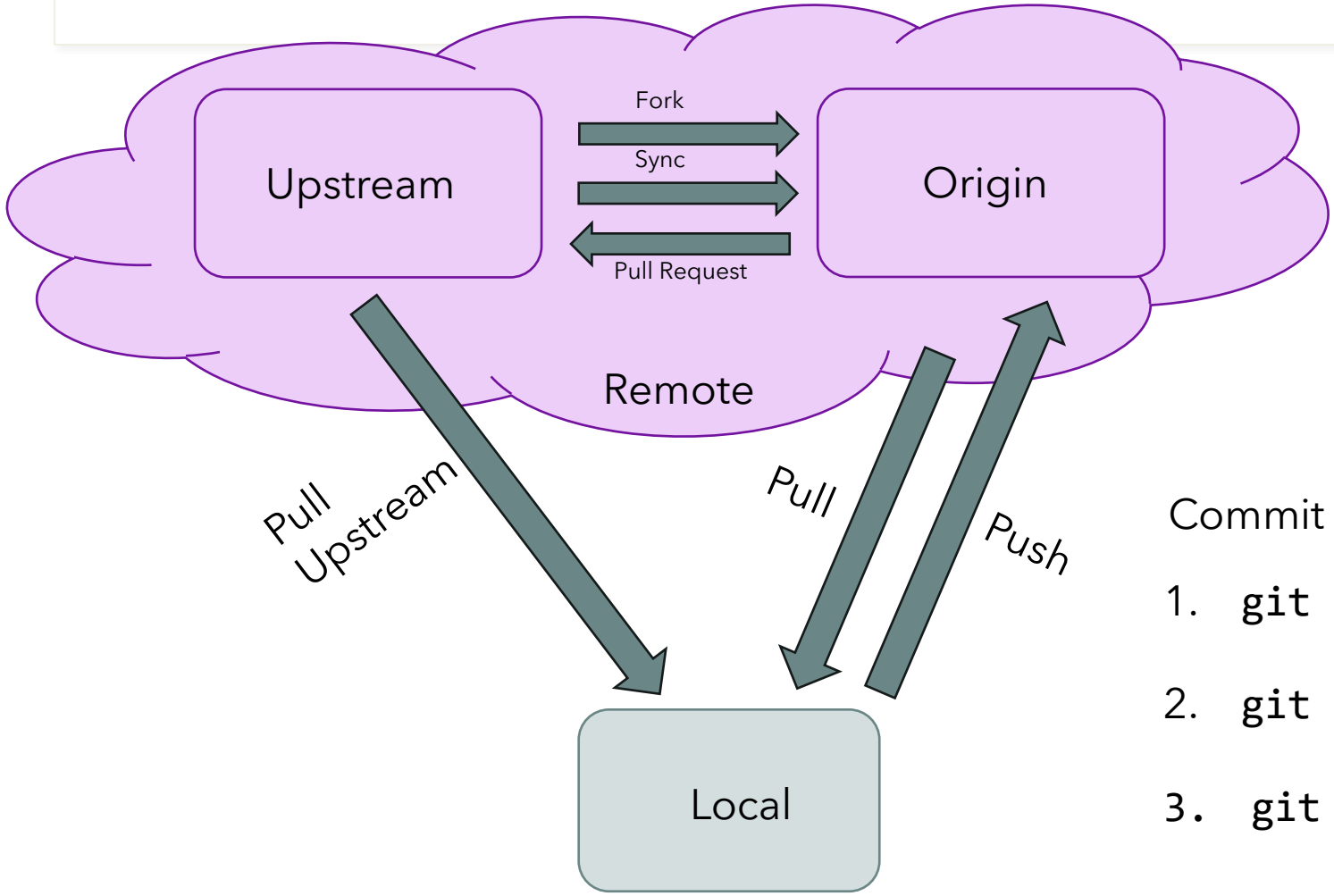
Collaborating with GitHub



Collaborating with GitHub



In Summary



Commit your changes:

1. `git status` to see current state of directory
2. `git add` files that you want to commit
3. `git commit -m "{description}"`

Try it Yourself

chaedri/GIS714-PR-tests

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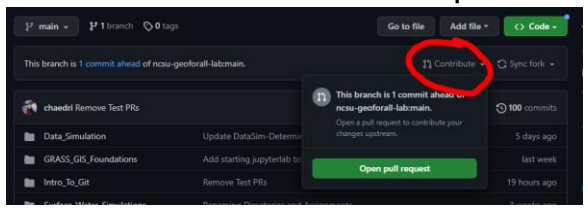
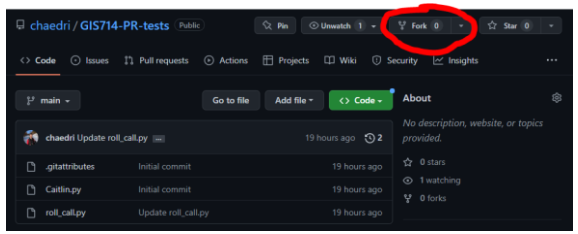
chaedri/GIS714-PR-tests

5. Pull Request



1. Fork



your-handle/GIS714-PR-tests

4. git push*

2. Clone (either with GUI or command line*)

3. git add and commit

*to clone and push from the command line, you'll have to set up GitHub authentication: https://docs.github.com/en/authentication