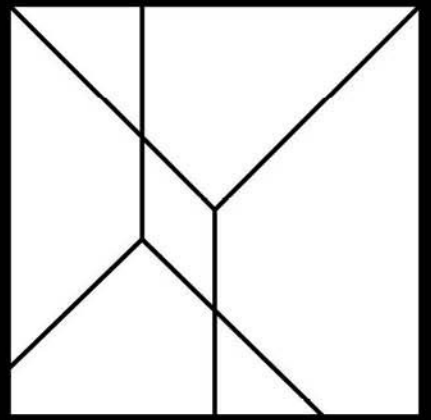
FALL 2021

WORKSHOP

SEPTEMBER 20, 2021



Carleton
Immersive
Media
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GITHUB

Fall 2021

Roadmap

- The ‘Git’ in ‘GitHub’
  - What is it? What are its uses?
- What is GitHub?
- Are these the only options?
- How to use GitHub (EXTERNAL TUTORIAL)
  - Version Control
  - Collaborating on GitHub
  - GitHub Pages

What is the "Git" in **Git**hub?

Github is built on top of git; understanding the underlying git model is important here.

Github simply hosts git "repositories"

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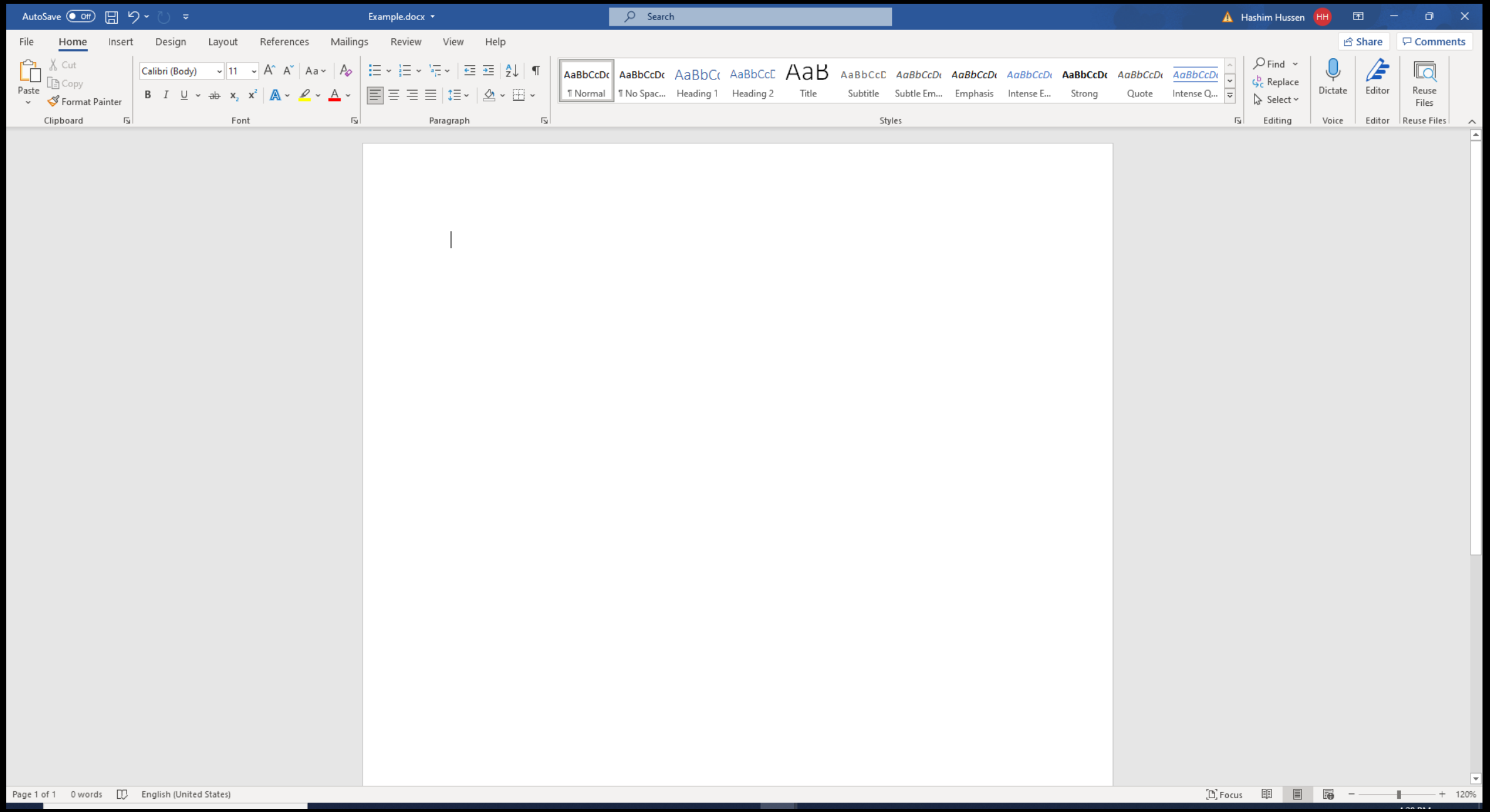
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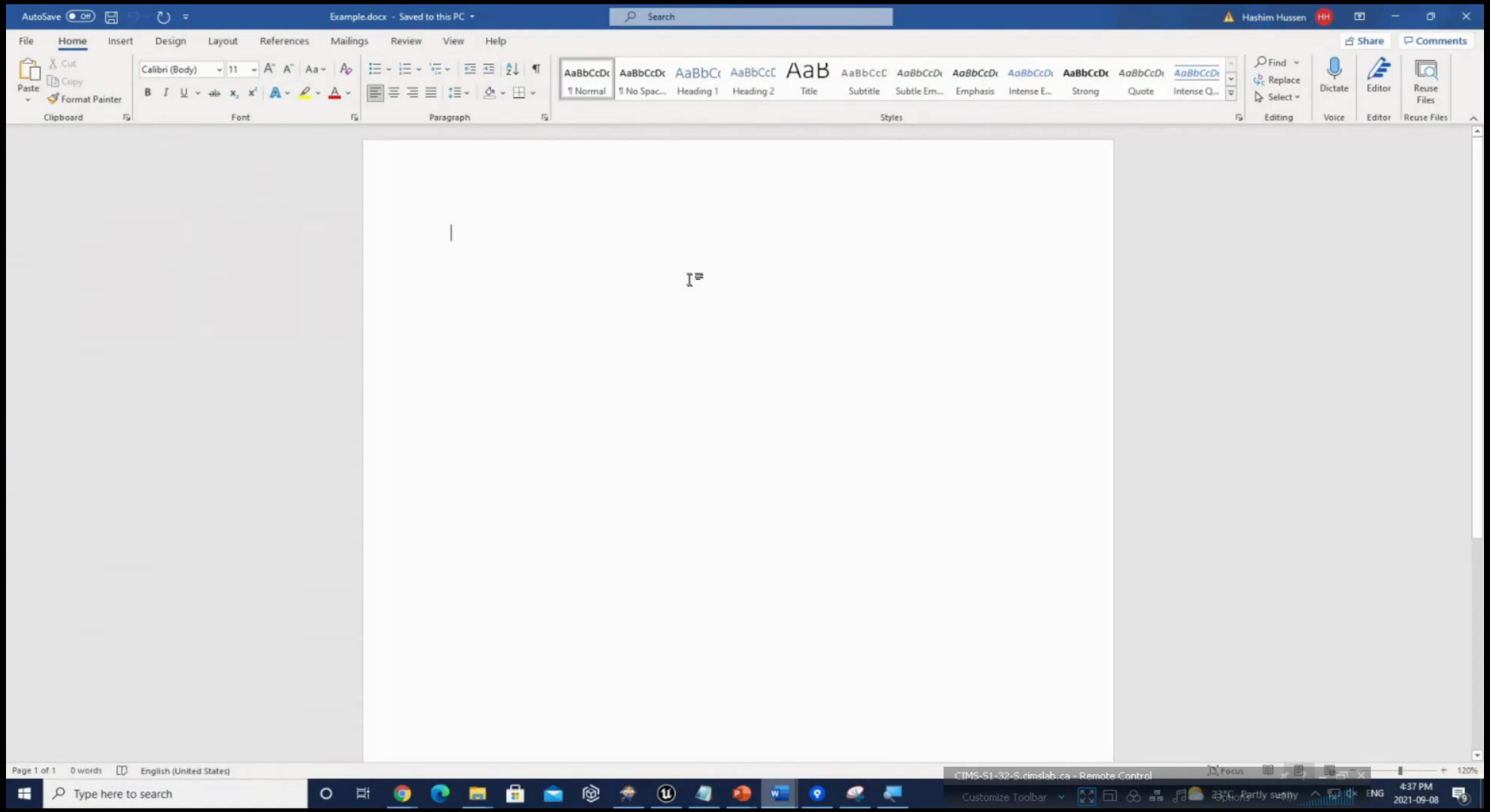
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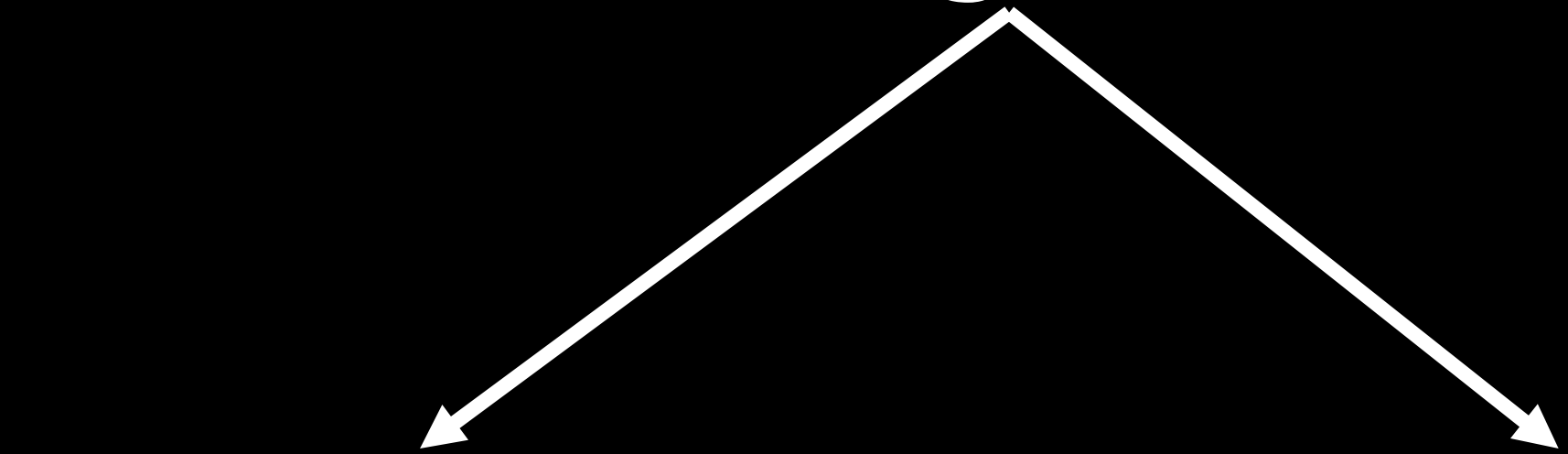
- “I overwrote a file by accident”
- “I deleted a file by accident”
- “I liked the older version of a file better”
- “How can I keep track of my changes?”

Git

- Created by Linus Torvalds in 2005
- A software / pseudo-programming language used to keep track of changes in files.
- It is installed LOCALLY on your system
- Created for the purpose of:
  - Source Control Management
- Has competitors, such as Perforce Helix Core and Mercurial

Source Control Management

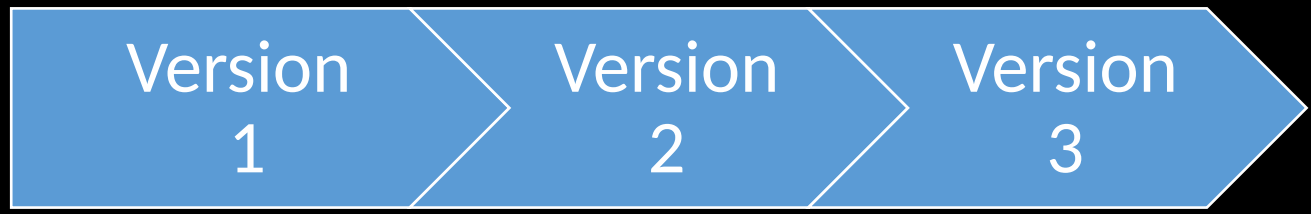


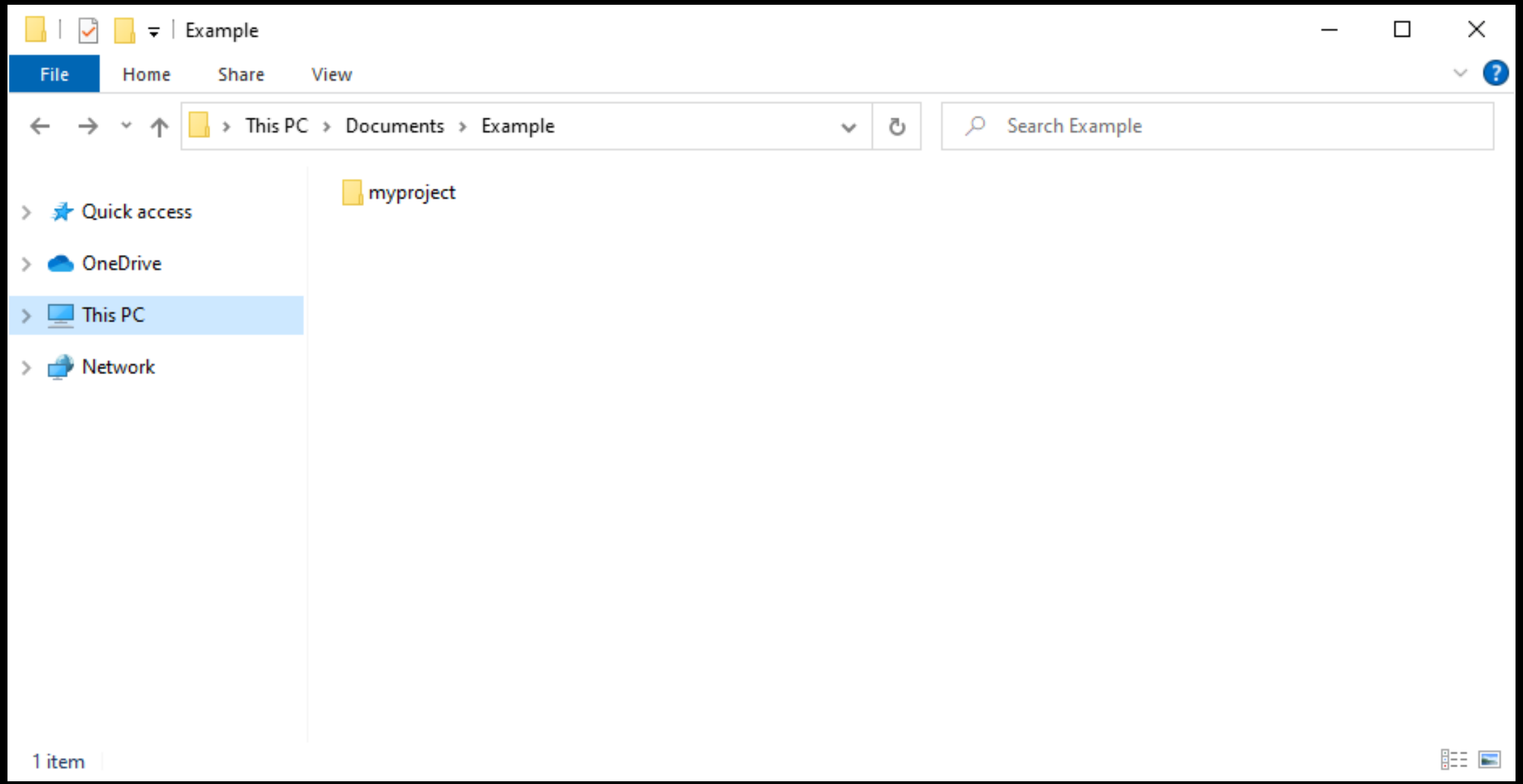
Version Control

Team Collaboration

Version Control

- Changes to files can be tracked
- This creates a ‘history’ allowing files to revert to older versions

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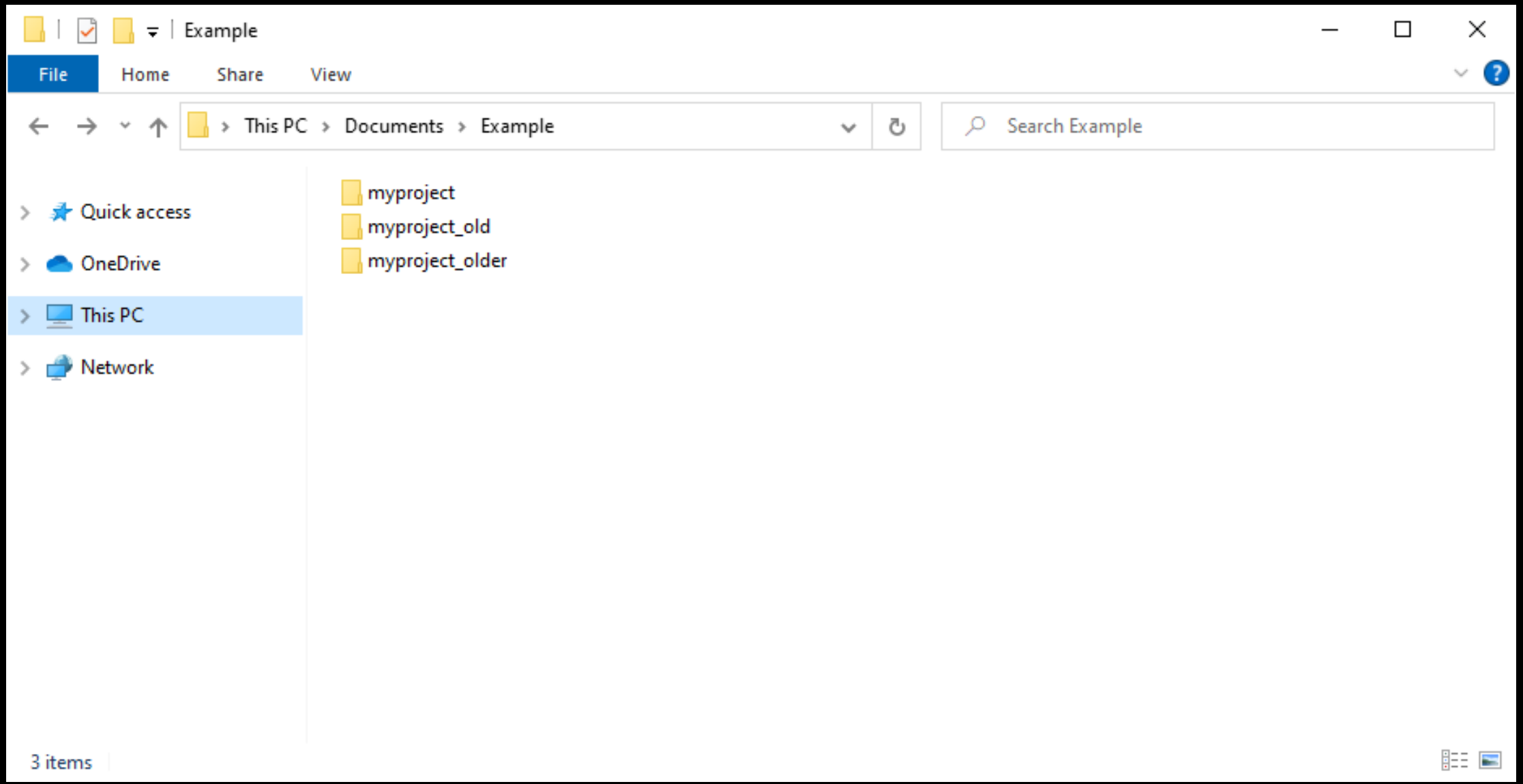
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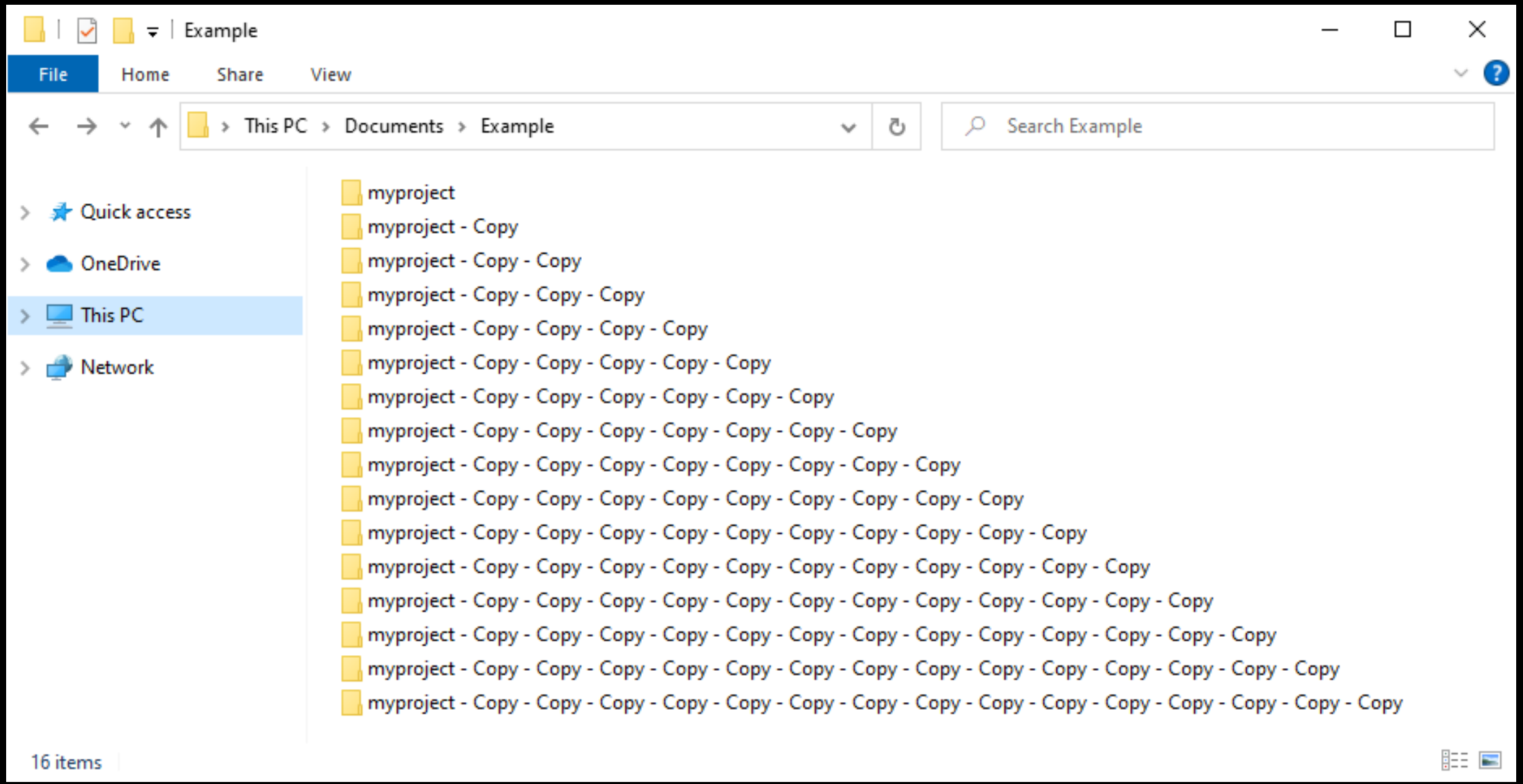
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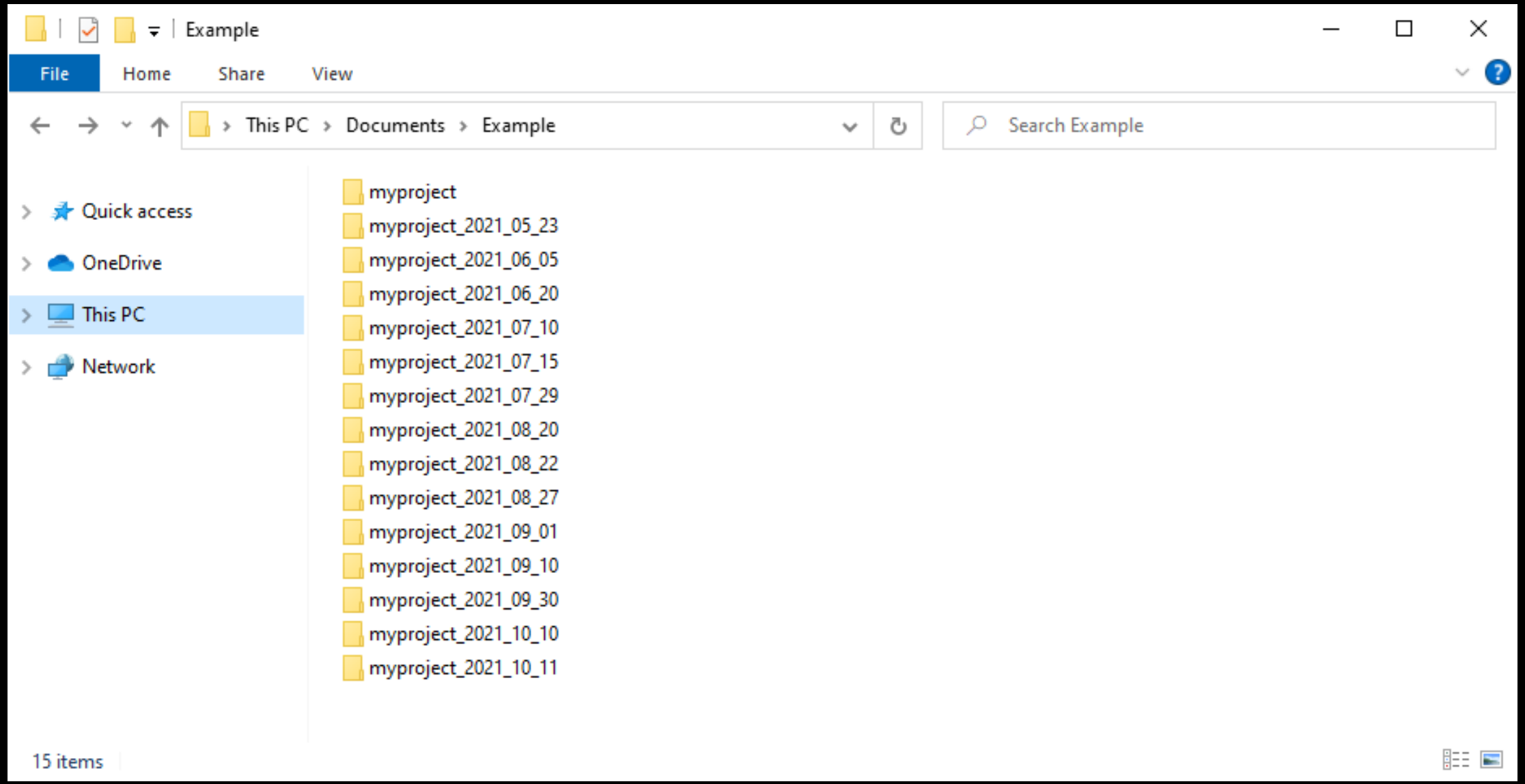
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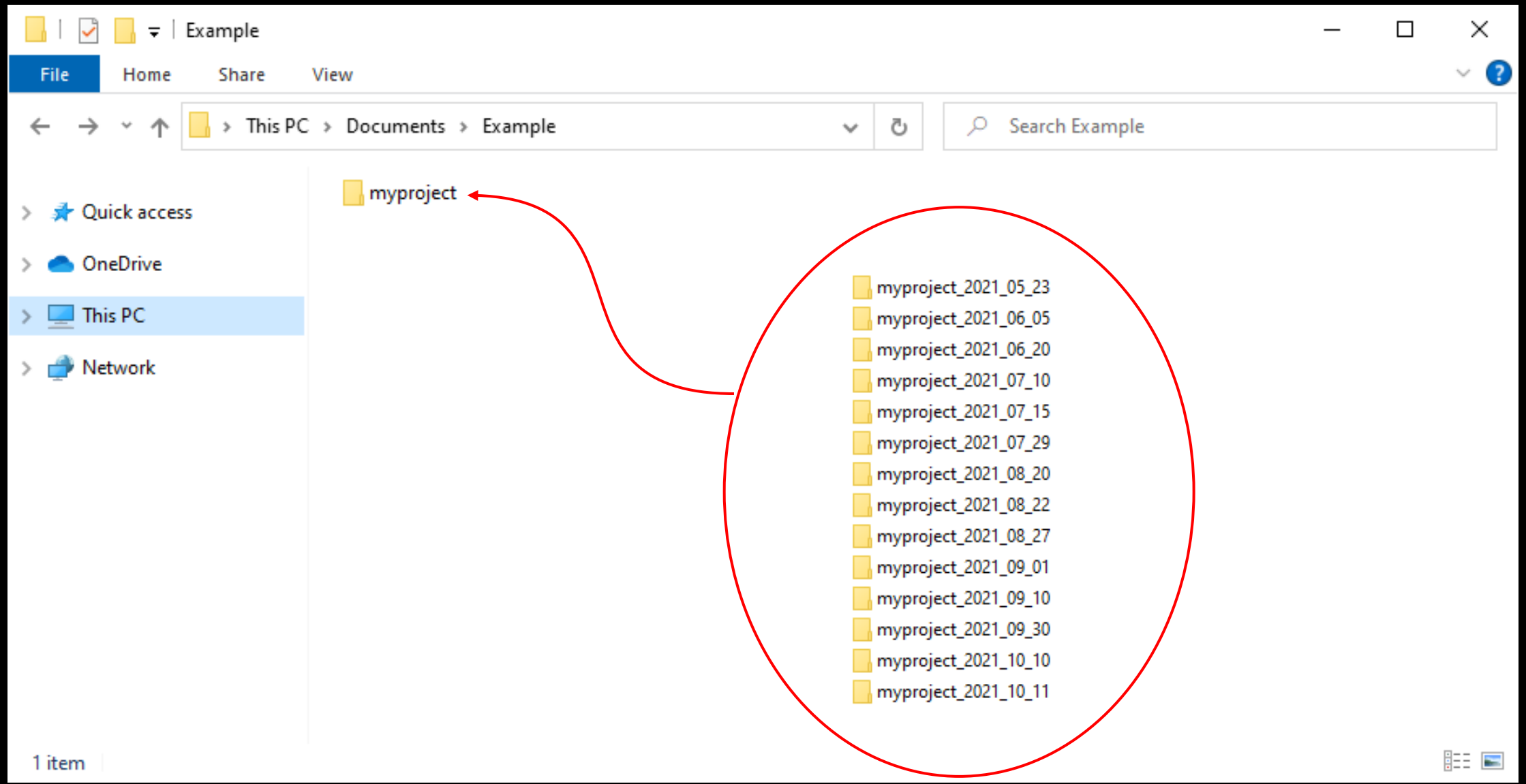
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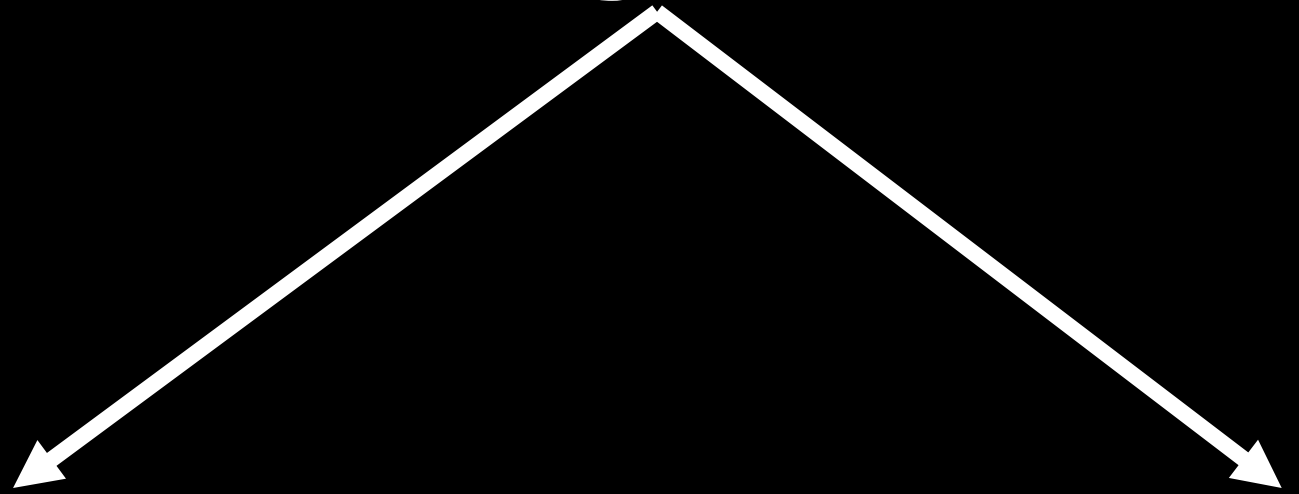
Source Control Management

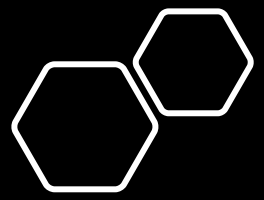


Version Control ✅

Team Collaboration (?)

Git and its competitors

- Version Control Systems
- Command Line Tools

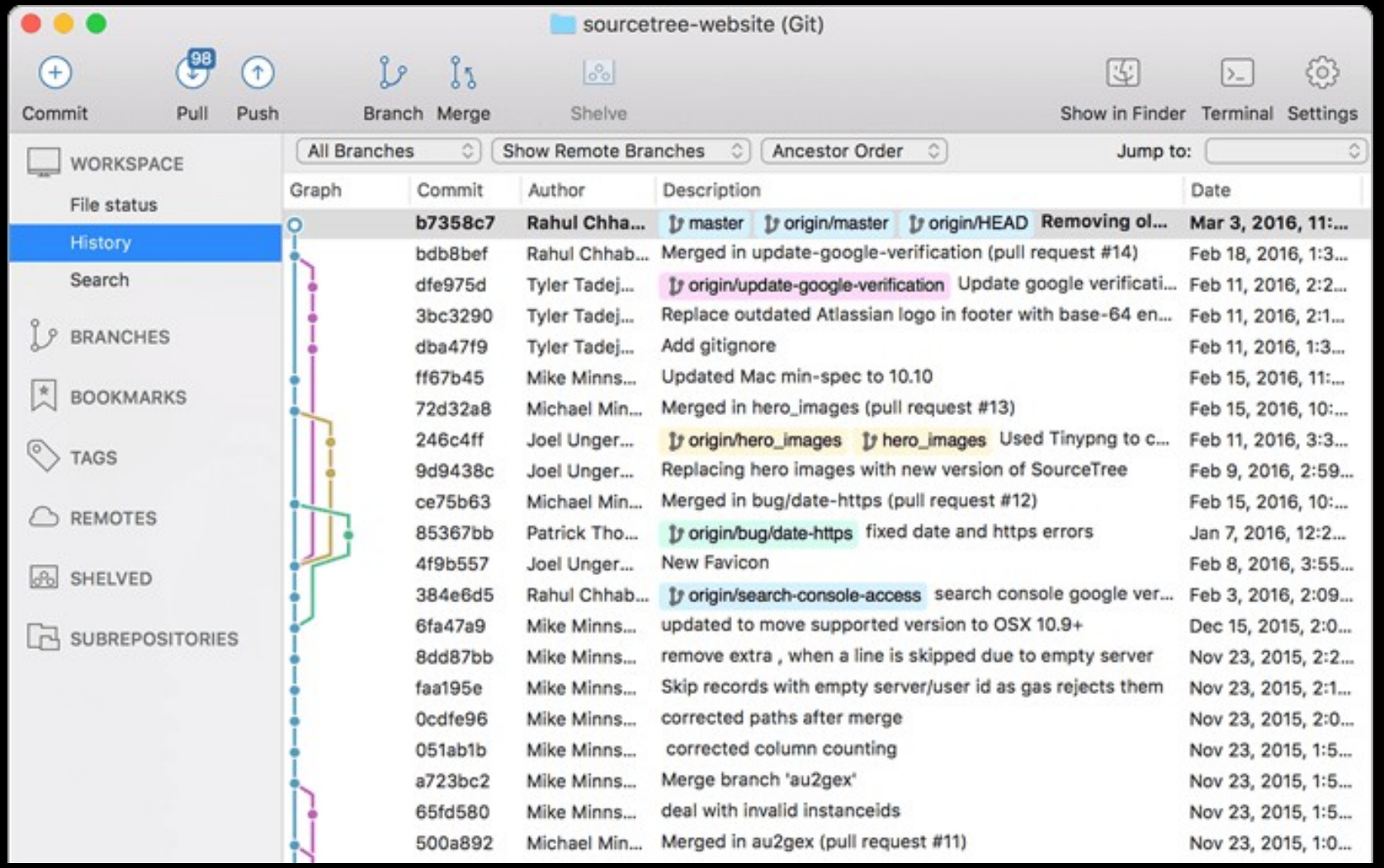


Examples of Git-based software tools

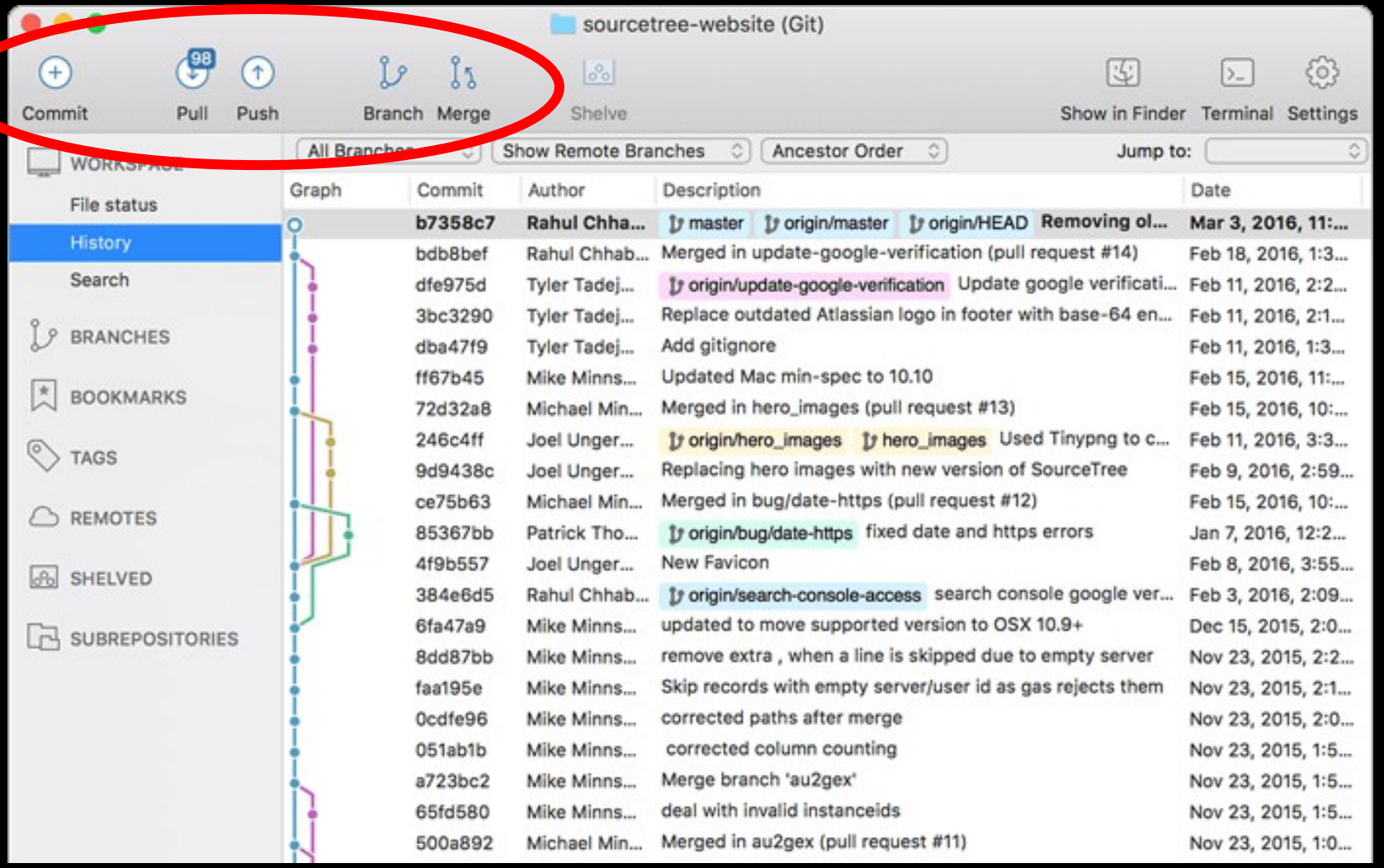
They simplify the development workflow by providing a GUI

- GitKraken may be available for Linux

SourceTree Example on Mac



SourceTree Example on Mac



Key Concepts

Repository

Commit

Branch

Merge

Push

Pull

There are additional commands and concepts, such as:

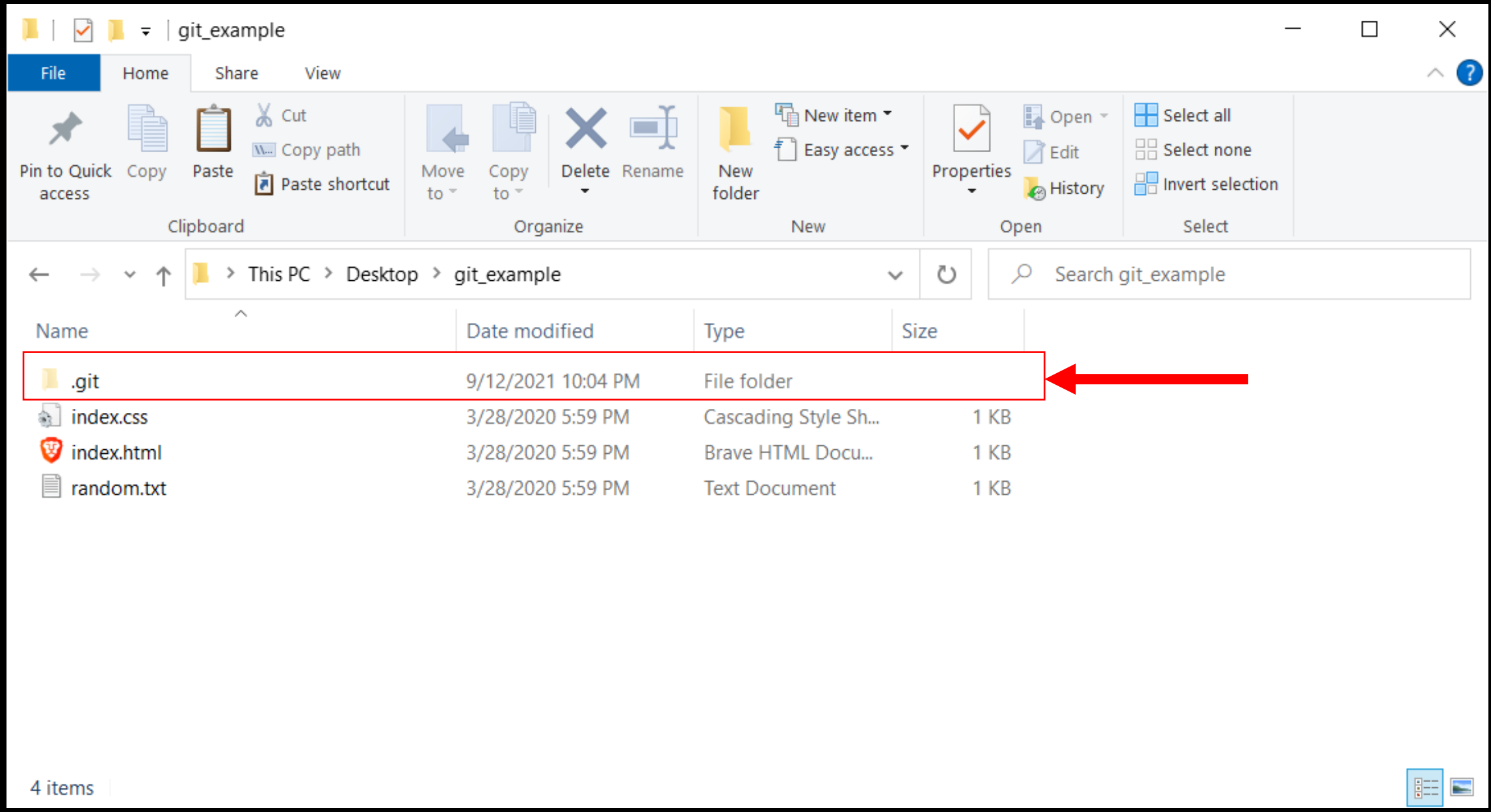
- Initializing a Git repo
- Adding/Staging Files
- Changing the HEAD pointer

However, these concepts relate more to the use of Git in the command line. This workshop's main focus is to act as an introduction to GitHub and concepts that are fully transferrable.

Link to Git Tutorial: https://git-scm.com/docs/gittutorial

What is a ‘Repository’?

- Think of a repository as a main ‘project folder’.
- A repository can be of two types:
  - Local
    - This is the repository which is on one’s local computer.
    - Through the command line, we can easily transform a regular folder into a git local repository by using **‘git init’**.
    - **Uses ‘git branch’ and ‘git merge’**
  - Remote
    - This is repository which is located/hosted on another network or on a cloud-based Git hosting service (e.x. Github)
    - **Uses ‘git branch’, ‘git merge’, ‘git push’, and ‘git pull’**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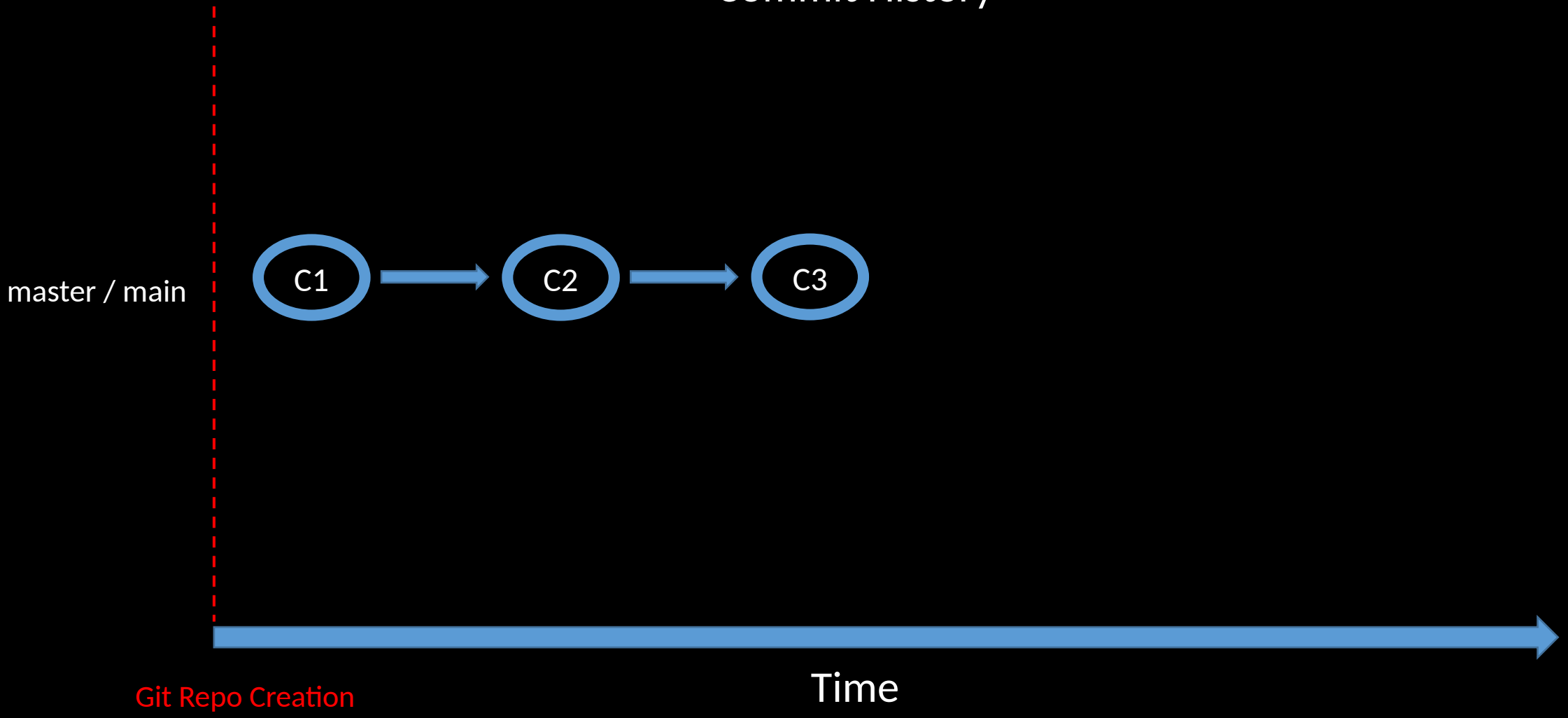
What is a ‘Commit’?

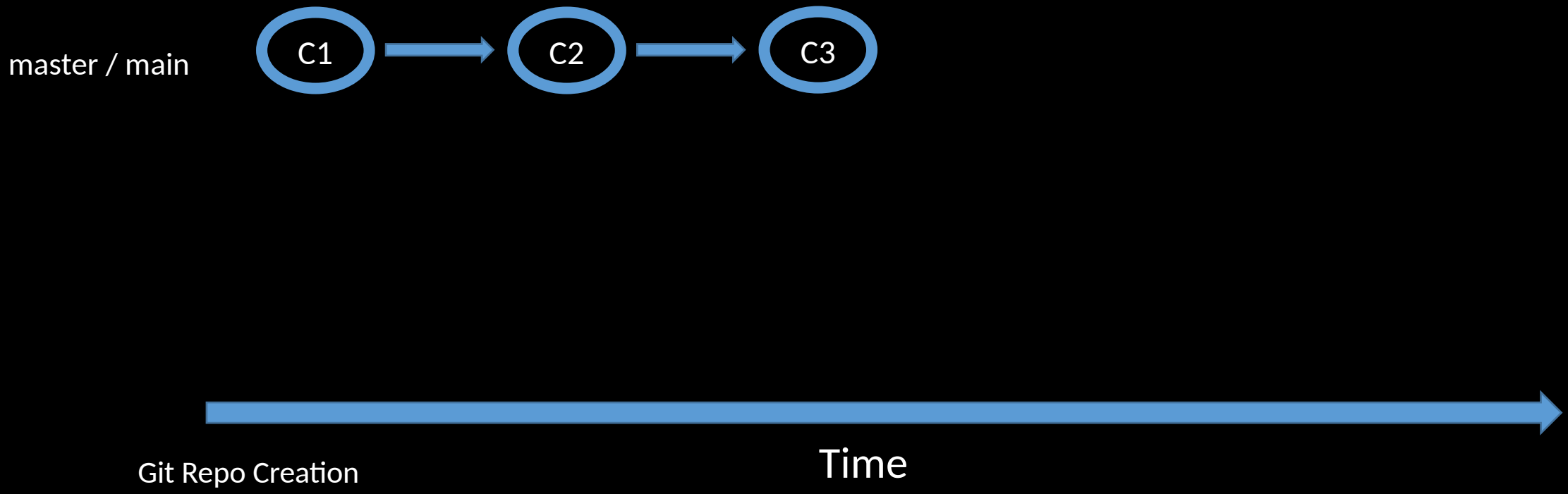
Commit History



C - Commit

What is a ‘Branch’?
What is a ‘Merge’?

Commit History



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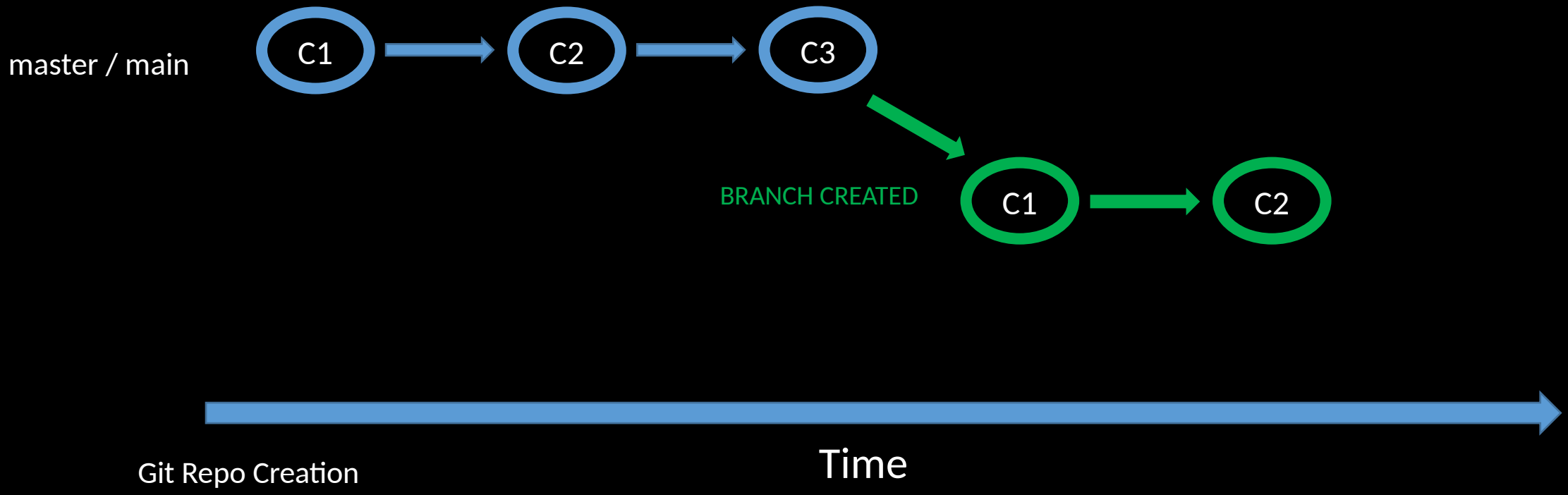

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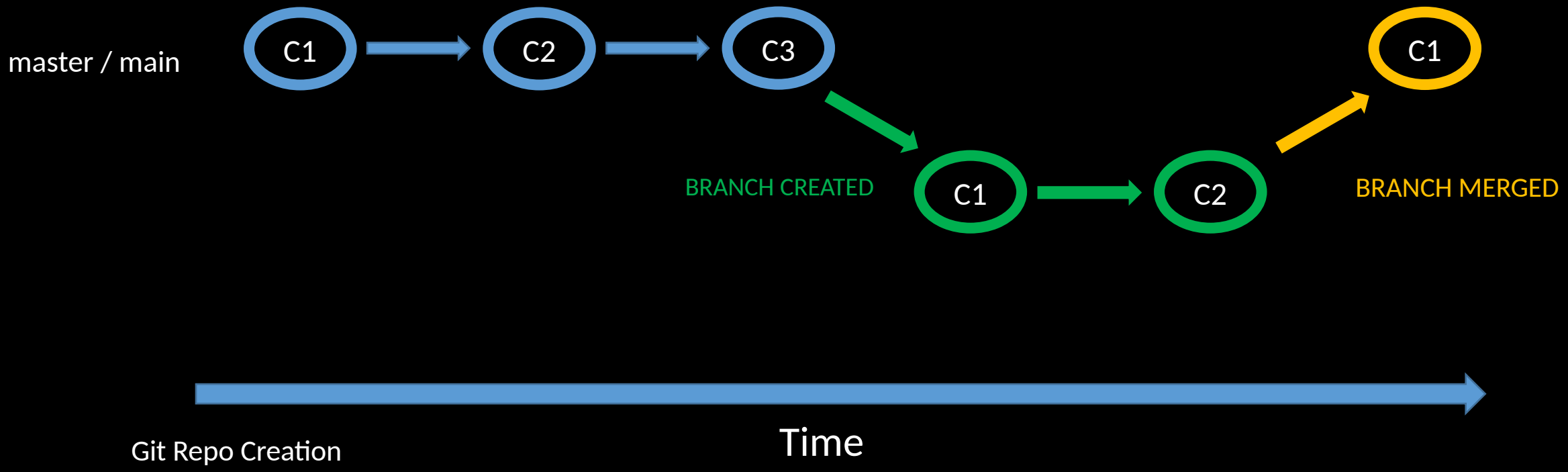

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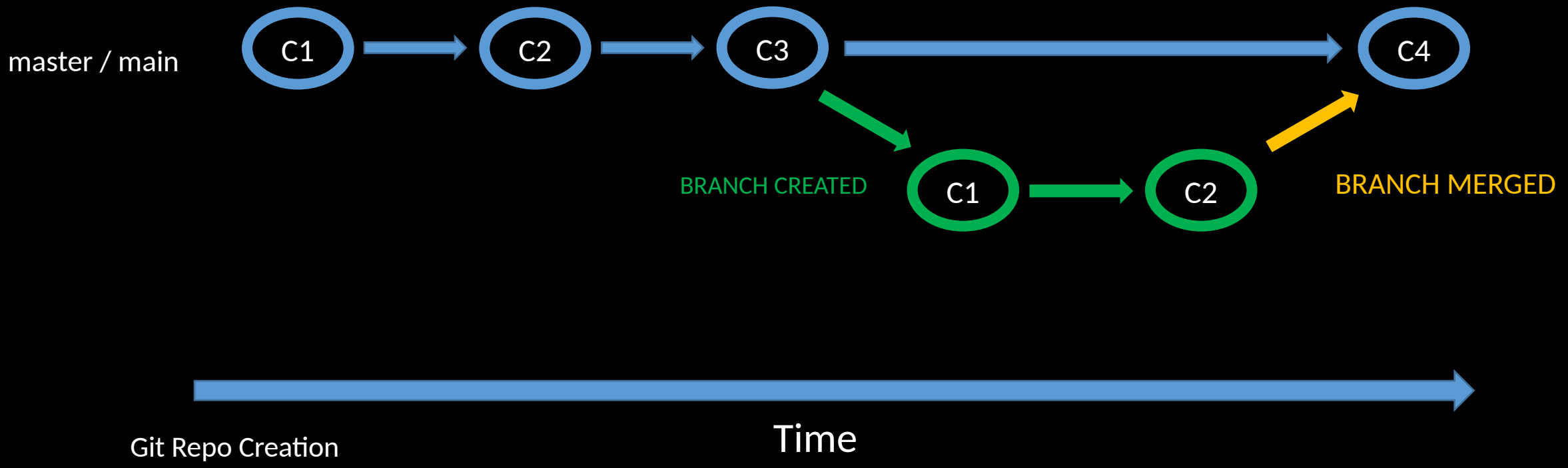

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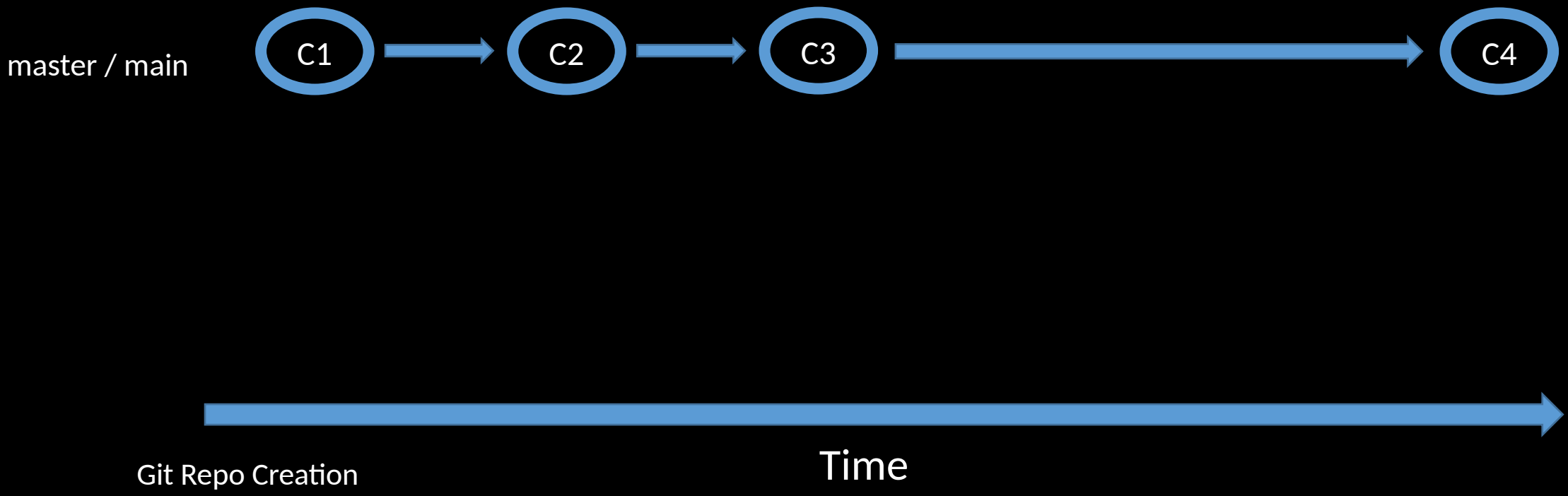

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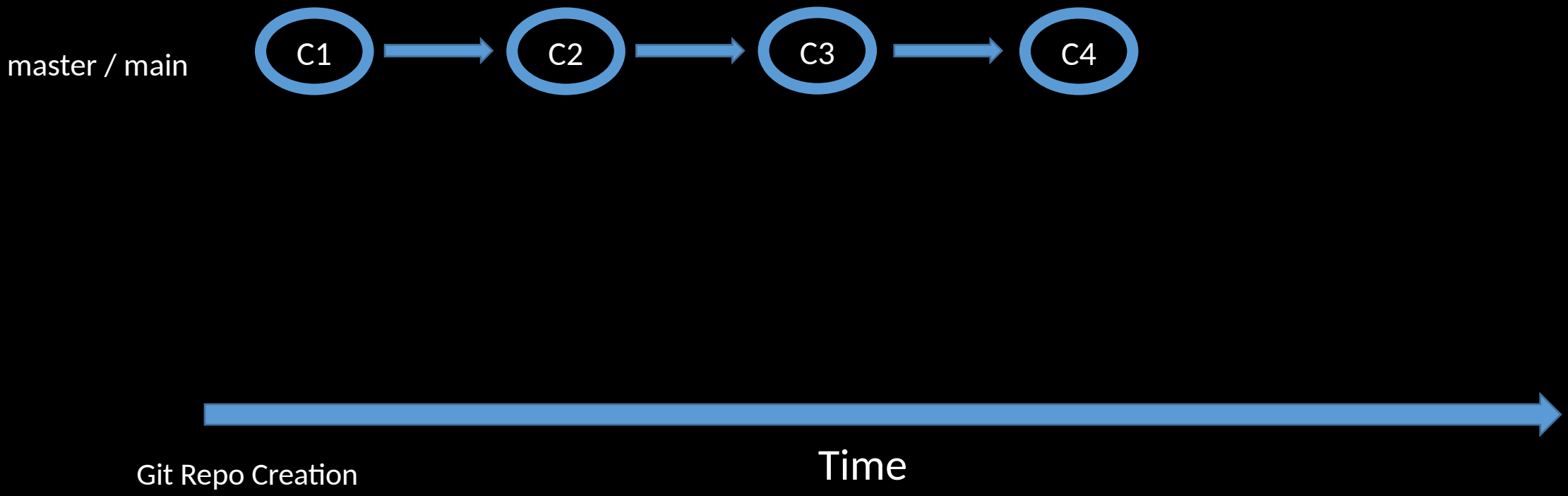
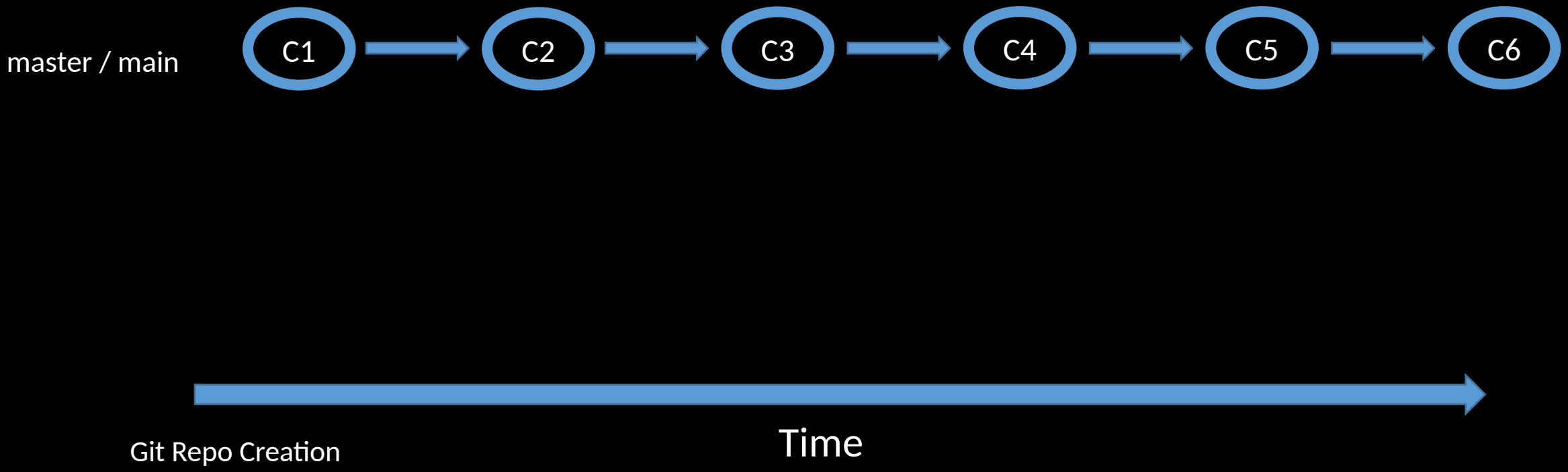


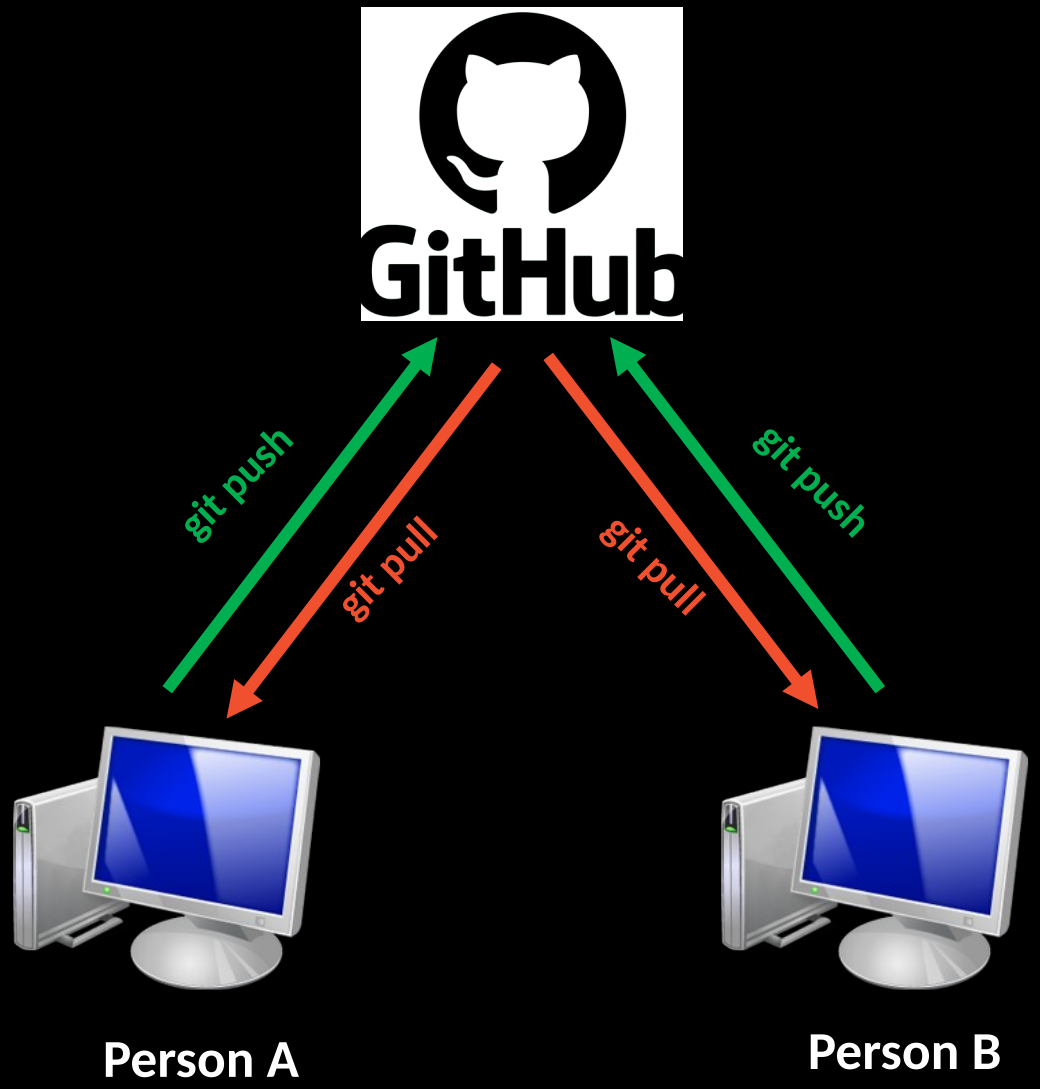
C - Commit

Commit History



C - Commit

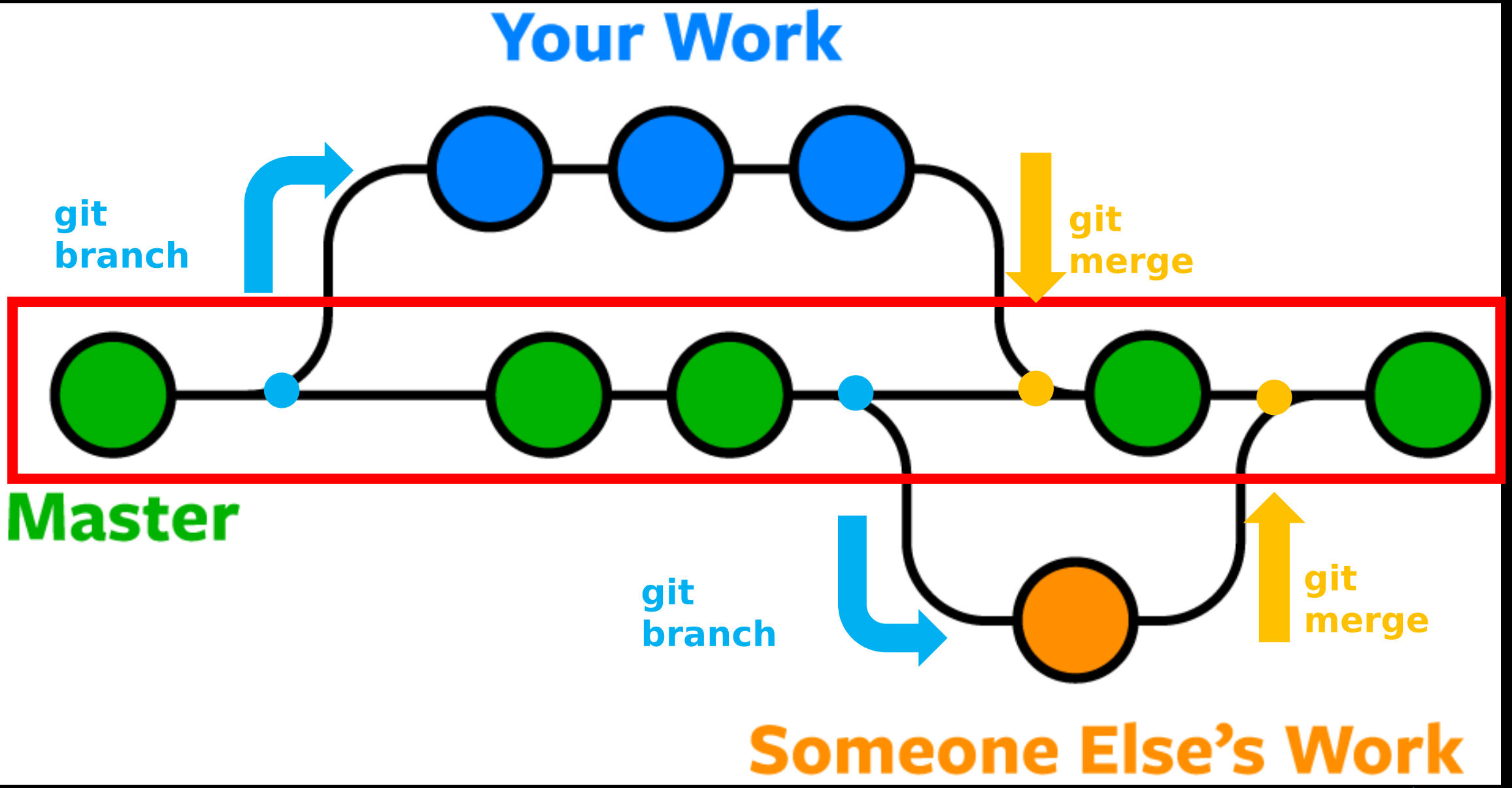
What is a ‘Push’?
What is a ‘Pull’?



Push: Uploads **local repository** commit history to update remote repository

Pull: Downloads **remote repository** commit history to update local repository

PUSH UP / PULL DOWN


Your Work
git
branch
git
merge
Master
git
branch
git
merge
Someone Else's Work
Time

GitHub

- GitHub is a cloud-based hosting service that lets you manage Git repositories.
- Major tech companies use Github for at least some of their software projects
- Developers can easily make changes to their software development code while also collaborating with other developers.
- Complete and simple UI which will take away the need to use ‘git’ in the command line

GitHub

github.com

Private (3)

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

hashimhussen

Repositories New

Find a repository...

Show more

Recent activity

Getting Started with GitHub

Your teams

Find a team...

Learn Git and GitHub without any code!

Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request.

Read the guide Start a project

You've been added to the EpicGames organization!

View organization

All activity

Introduce yourself

The easiest way to introduce yourself on GitHub is by creating a README in a repository about you! You can start here:

hashimhussen / README.md

```
- 👋 Hi, I'm @hashimhussen
- 👀 I'm interested in ...
- 🌱 I'm currently learning ...
- 👯 I'm looking to collaborate on ...
- 📫 How to reach me ...

```

Save the Date!

GitHub Universe is coming October 27 and 28. From product deep dives to interactive roundtables, you'll gather the tips, tools, and connections to help you do the best work of your life.

Learn more

Explore repositories

welldone-software/why-did-you-render
why-did-you-render by Welldone Software monkey patches React to notify you about potentially avoidable re-renders. (Works with React Native as well.)

JavaScript ☆ 7.1k

reactjs/rfcs
RFCs for changes to React

☆ 3.4k

zertosh/invariant
invariant

JavaScript ☆ 1.1k

Explore more →

Create a New Repository

github.com/new

Private (3)

Update

Search or jump to... /

Pull requests Issues Marketplace Explore

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere?
Import a repository.

Owner * Repository name *

hashimhussen /

Great repository names are short and memorable. Need inspiration? How about upgraded-parakeet?

Description (optional)

Public
Anyone on the internet can see this repository. You choose who can commit.

Private
You choose who can see and commit to this repository.

Initialize this repository with:
Skip this step if you're importing an existing repository.

Add a README file
This is where you can write a long description for your project. Learn more.

Add .gitignore
Choose which files not to track from a list of templates. Learn more.

Choose a license
A license tells others what they can and can't do with your code. Learn more.

hashimhussen / example Private

Unwatch 1 Star 0 Fork 0

Code Issues Pull requests Actions Projects Security Insights Settings

main 1 branch 0 tags

Go to file Add file Code

hashimhussen Create README.md d43b287 now 1 commit

README.md	Create README.md	now

README.md

example

My first GitHub Repository

About

My first GitHub Repository

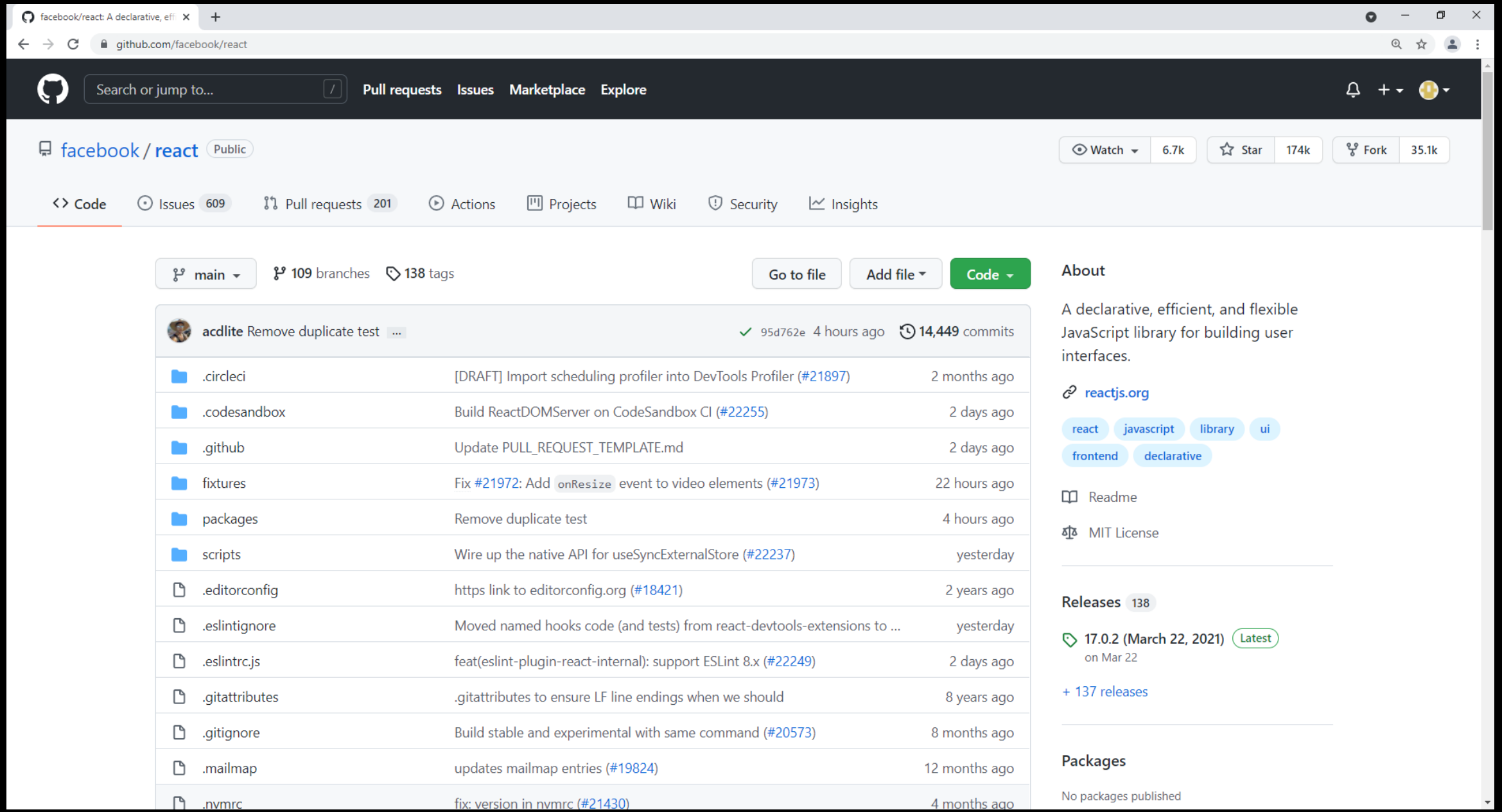
Readme

Releases

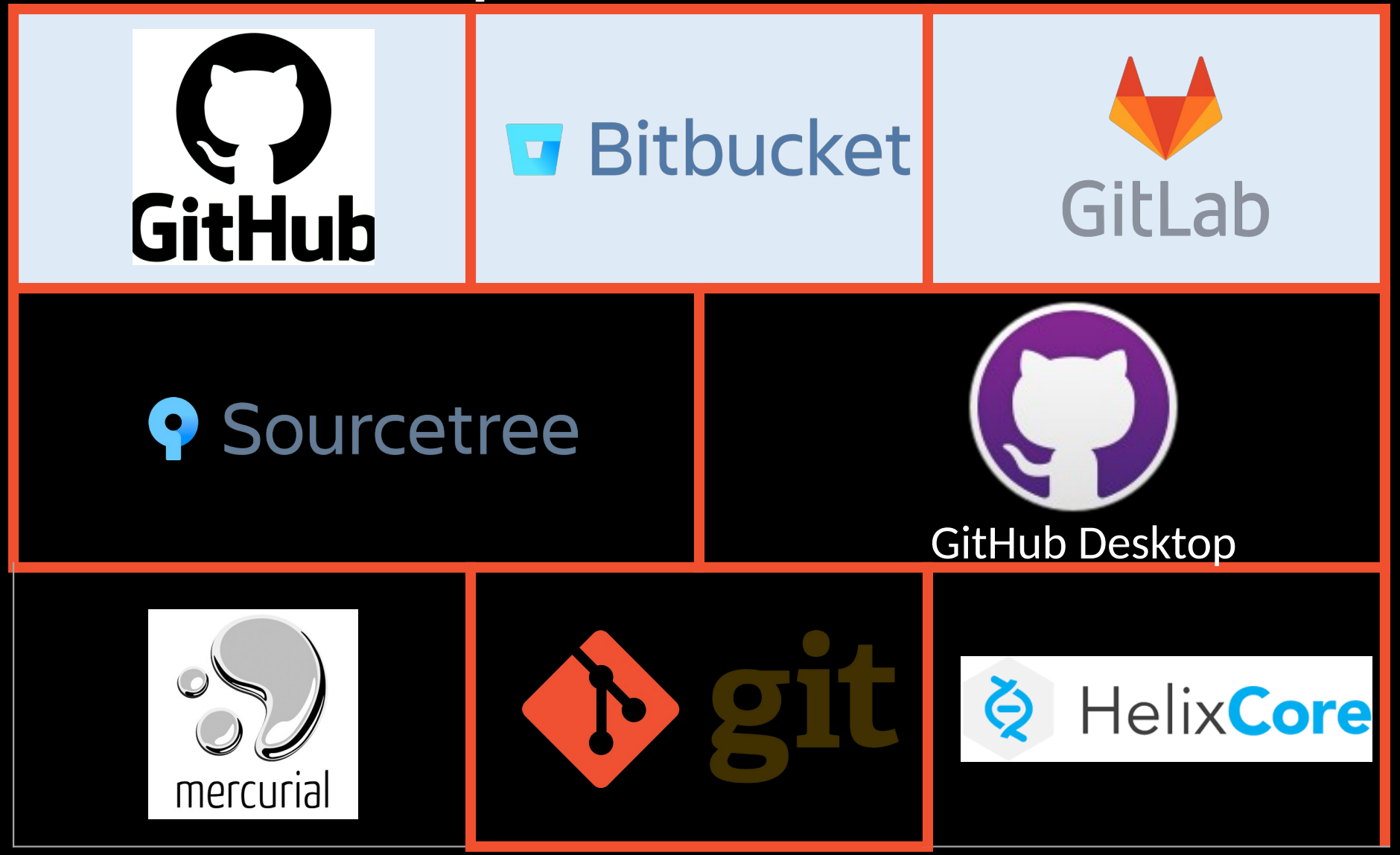
No releases published
Create a new release

Packages

No packages published
Publish your first package


facebook/react: A declarative, eff
github.com/facebook/react
Search or jump to...
Pull requests
Issues
Marketplace
Explore
facebook / react
Public
Watch 6.7k
Star 174k
Fork 35.1k
Code
Issues 609
Pull requests 201
Actions
Projects
Wiki
Security
Insights
main
109 branches
138 tags
Go to file
Add file
Code
acdlite Remove duplicate test ...
95d762e 4 hours ago
14,449 commits
.circleci [DRAFT] Import scheduling profiler into DevTools Profiler (#21897) 2 months ago
.codesandbox Build ReactDOMServer on CodeSandbox CI (#22255) 2 days ago
.github Update PULL_REQUEST_TEMPLATE.md 2 days ago
fixtures Fix #21972: Add onResize event to video elements (#21973) 22 hours ago
packages Remove duplicate test 4 hours ago
scripts Wire up the native API for useSyncExternalStore (#22237) yesterday
.editorconfig https link to editorconfig.org (#18421) 2 years ago
.eslintignore Moved named hooks code (and tests) from react-devtools-extensions to ... yesterday
.eslintrc.js feat(eslint-plugin-react-internal): support ESLint 8.x (#22249) 2 days ago
.gitattributes .gitattributes to ensure LF line endings when we should 8 years ago
.gitignore Build stable and experimental with same command (#20573) 8 months ago
.mailmap updates mailmap entries (#19824) 12 months ago
.nvmrc fix: version in nvmrc (#21430) 4 months ago
About
A declarative, efficient, and flexible JavaScript library for building user interfaces.
reactjs.org
react
javascript
library
ui
frontend
declarative
Readme
MIT License
Releases 138
17.0.2 (March 22, 2021) Latest
on Mar 22
+ 137 releases
Packages
No packages published

Comparison of Tools



Github Learning Lab Tutorial