

Collaborating using git

Forks and Pull Requests

Elke Fasshauer

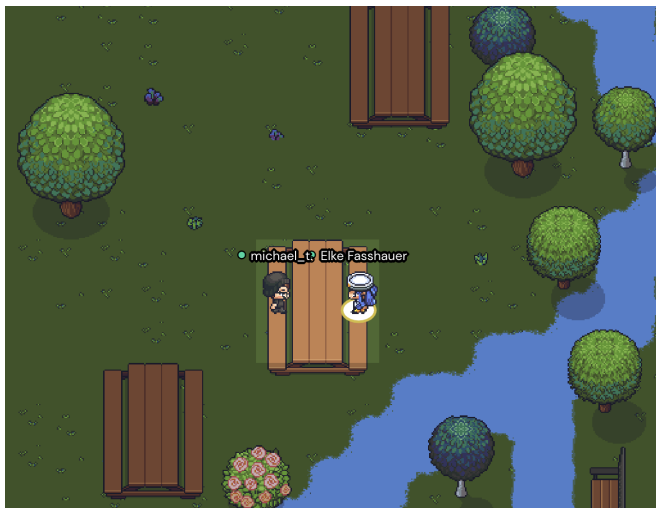
University of Tübingen

9th November 2021

Goal

Write collection of useful commands that a student starting in the group will need.

Collaborate in groups



Topics and teams

Basic terminal

- Joe
- Lauren
- Marc

vi

- Adam

Working remotely

- Andre

Finding information and other useful commands

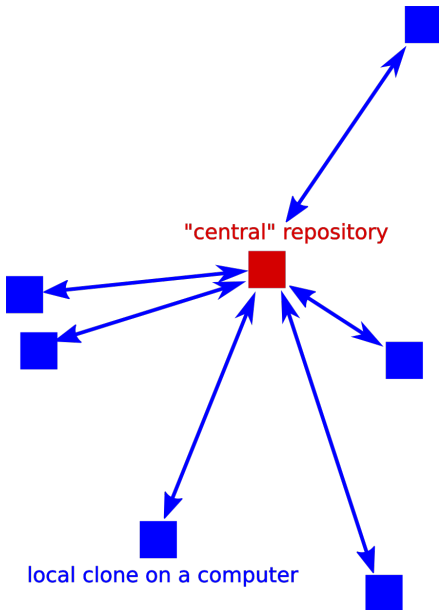
- Joe
- Lauren

Submitting, managing jobs on clusters

- Eirik

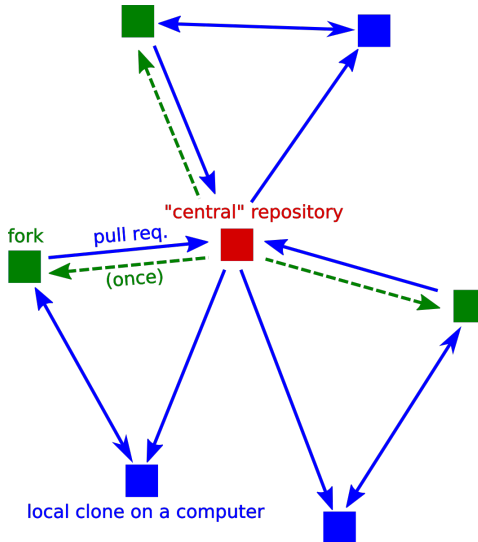
Central Workflow

Central Workflow

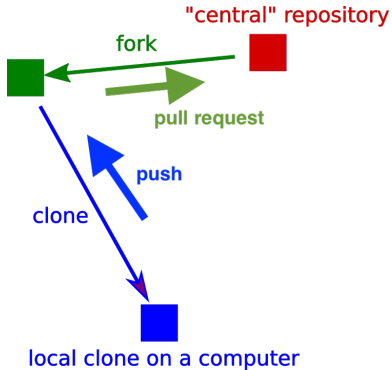


Distributed version control and forking workflow

Distributed version control and forking workflow





Distributed version control and forking workflow



Forking

Forking

 Search or jump to... / [Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#) 🔔 + 👤



[Overview](#)

[Repositories](#) 1

[Projects](#)

[Packages](#)

Type ▾

Language ▾

Sort ▾

[octocat](#) Public

[Star](#)


Updated 1 minute ago

m-thelen

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🕒 Joined 22 days ago

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Forking

The screenshot shows the GitHub interface for the repository `m-thelen / octocat`. The repository is public and has 1 watch, 0 stars, and 0 forks. A red arrow points to the **Fork** button in the top right corner of the repository header. The repository has a single branch named `main` and 0 tags. The commit history shows three commits: `3082c42` (2 minutes ago, 2 commits), `Initial commit` (3 minutes ago), and `Create firstfile.txt` (2 minutes ago). The `README.md` file is displayed, showing the text `octocat`. The right sidebar contains sections for **About** (No description, website, or topics provided), **Releases** (No releases published), and **Packages** (No packages published).

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

m-thelen / octocat Public Watch 1 Star 0 Fork 0

<> Code Issues Pull requests Actions Projects Wiki Security Insights

main 1 branch 0 tags Go to file Add file Code

m-thelen Create firstfile.txt 3082c42 2 minutes ago 2 commits

README.md	Initial commit	3 minutes ago
firstfile.txt	Create firstfile.txt	2 minutes ago

README.md

octocat

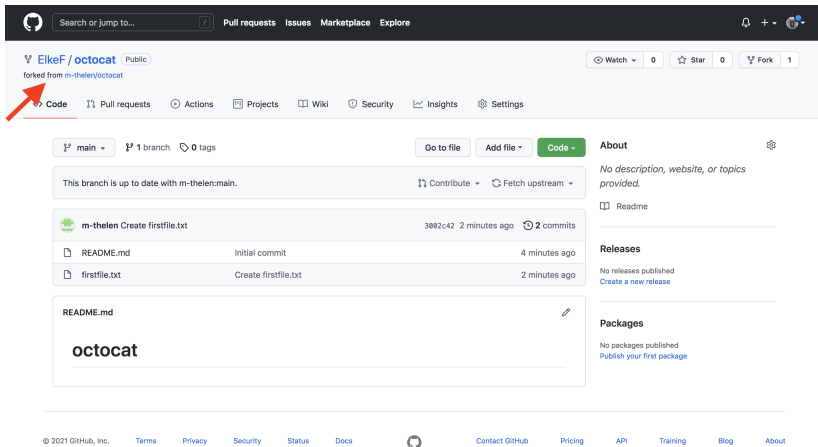
About
No description, website, or topics provided.
Readme

Releases
No releases published

Packages
No packages published

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Forking



The screenshot shows the GitHub interface for a repository named 'ElkeF/octocat', which is a fork of 'm-thelen/octocat'. A red arrow points to the 'Code' button in the repository navigation bar. The page displays the repository's main branch, 'main', with 1 branch and 0 tags. It shows a commit history table with two commits: 'Initial commit' for 'README.md' and 'Create firstfile.txt' for 'firstfile.txt'. The 'README.md' file content is visible, showing the word 'octocat'. The right sidebar contains sections for 'About', 'Releases', and 'Packages', all indicating no content has been provided or published yet.

GitHub navigation bar: Search or jump to... Pull requests Issues Marketplace Explore

Repository: ElkeF / octocat (Public)
forked from m-thelen/octocat

Buttons: Watch 0, Star 0, Fork 1

Navigation: Code (highlighted with red arrow), Pull requests, Actions, Projects, Wiki, Security, Insights, Settings

Branches: main (1 branch), 0 tags

Buttons: Go to file, Add file, Code

Status: This branch is up to date with m-thelen:main. Buttons: Contribute, Fetch upstream

Commit	Author	Time	Commits
3082c42	m-thelen	2 minutes ago	2 commits

File	Commit	Time
README.md	Initial commit	4 minutes ago
firstfile.txt	Create firstfile.txt	2 minutes ago

README.md

octocat

Right sidebar:

- About: No description, website, or topics provided.
- Readme
- Releases: No releases published. [Create a new release](#)
- Packages: No packages published. [Publish your first package](#)

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Forking

The screenshot shows the GitHub interface for a repository named 'ElkeF / octocat'. The repository is public and was forked from 'm-thelen/octocat'. The 'Code' button is highlighted with a red arrow, and a dropdown menu is open, showing options to clone the repository using HTTPS, SSH, or GitHub CLI, or to open it with GitHub Desktop or download it as a ZIP file. The repository has 1 branch and 0 tags. The README.md file is visible, showing the 'octocat' logo. The right sidebar contains sections for 'About', 'Releases', and 'Packages', all of which are currently empty.

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

ElkeF / octocat Public
forked from m-thelen/octocat

< > Code Pull requests Actions Projects Wiki Security Insights Settings

main 1 branch 0 tags

This branch is up to date with m-thelen:main.

m-thelen Create firstfile.txt

README.md Initial commit

firstfile.txt Create firstfile.txt

README.md

octocat

Go to file Add file Code

Clone
HTTPS SSH GitHub CLI
https://github.com/ElkeF/octocat.git
Use Git or checkout with SVN using the web URL.

Open with GitHub Desktop

Download ZIP

About
No description, website, or topics provided.

Readme

Releases
No releases published
Create a new release

Packages
No packages published
Publish your first package

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Forking

- work locally on your clone
- add changes to staging area
- commit
- push to your fork

Creating a pull request

The screenshot shows the GitHub interface for the repository 'ElkeF / octocat'. The top navigation bar includes links for 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. The repository is public and forked from 'm-thelen/octocat'. The main content area shows the 'main' branch, which is 1 commit ahead of 'm-thelen:main'. A red arrow points to the 'Contribute' button, which has a tooltip that says 'This branch is 1 commit ahead of m-thelen:main. Open a pull request to contribute your changes upstream.' and an 'Open pull request' button. The repository files listed are 'README.md' and 'firstfile.txt'. The right sidebar shows sections for 'About', 'Releases', and 'Packages'.

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

ElkeF / octocat Public
forked from m-thelen/octocat

<> Code Pull requests Actions Projects Wiki Security Insights Settings

main 1 branch 0 tags

This branch is 1 commit ahead of m-thelen:main.

Go to file Add file Code

About

No description, website, or topics provided.

Readme

Releases

No releases published
Create a new release

Packages

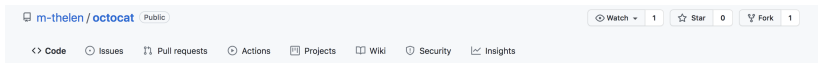
No packages published
Publish your first package

This branch is 1 commit ahead of m-thelen:main.
Open a pull request to contribute your changes upstream.
Open pull request

README.md

octocat

Creating a pull request



Comparing changes

Choose two branches to see what's changed or to start a new pull request. If you need to, you can also [compare across forks](#).

base repository: `m-thelen/octocat` base: `main` ← head repository: `ElkeF/octocat` compare: `main` ✓ **Able to merge.** These branches can be automatically merged.

Discuss and review the changes in this comparison with others. [Learn about pull requests](#)

Create pull request

↔ 1 commit

📄 1 file changed

👤 1 contributor

📅 Commits on Nov 17, 2021

second verse

👤 ElkeF committed 1 minute ago



178fe84



📄 Showing 1 **changed file** with 7 additions and 0 deletions.

Split

Unified

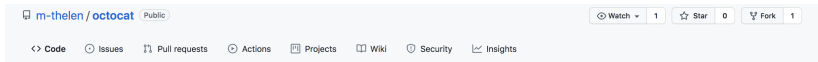
📄 7 firstfile.txt

@@ -6,3 +6,10 @@ I see then bloom

```
6 6 For me and you
7 7 And I think to myself
8 8 What a wonderful world
```


```
9 +
10 + I see skies of blue
11 + And clouds of white
12 + The bright blessed day
13 + The dark sacred night
14 + And I think to myself
15 + What a wonderful world
```

Creating a pull request



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 repository: m-thelen/octocat


base: main

←

head repository: Elkeff/octocat

compare: main






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



second verse


Write

Preview

H B I  <>    @  ↩

another verse

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

☒ Allow edits by maintainers 

Create pull request

Helpful resources

[GitHub Community Guidelines](#)

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

Reacting to a pull request

The screenshot shows the GitHub web interface for the repository 'm-thelen / octocat'. The 'Pull requests' tab is selected, showing 1 open pull request. A notification banner at the top of the pull request list states: 'Label issues and pull requests for new contributors. Now, GitHub will help potential first-time contributors discover Issues labeled with good first issue'. The pull request list shows one open pull request titled 'second verse' by user 'ElkeF', opened 1 minute ago. The footer contains copyright information for 2021 GitHub, Inc. and various links like Terms, Privacy, Security, Status, Docs, Contact GitHub, Pricing, API, Training, Blog, and About.

GitHub logo Search or jump to... Pull requests Issues Marketplace Explore

m-thelen / octocat Public Unwatch 1 Star 0 Fork 1

Code Issues Pull requests 1 Actions Projects Wiki Security Insights

Label issues and pull requests for new contributors Dismiss

Now, GitHub will help potential first-time contributors [discover Issues](#) labeled with [good first issue](#)

Filters is:pr is:open Labels 9 Milestones 0 New pull request

1 Open 1 Closed Author Label Projects Milestones Reviews Assignee Sort

second verse
#2 opened 1 minute ago by ElkeF

ProTip! Click a checkbox on the left to edit multiple Issues at once.

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Reacting to a pull request

The screenshot shows a GitHub pull request page for the repository 'm-thelen / octocat'. The pull request is titled 'second verse #2' and is created by 'ElkeF'. It shows 1 commit and 1 file changed. A green arrow points to the comment 'another verse' by 'ElkeF'.

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

m-thelen / octocat Public Unwatch 1 Star 0 Fork 1

Code Issues Pull requests 1 Actions Projects Wiki Security Insights

second verse #2

Edit Code

Open ElkeF wants to merge 1 commit into m-thelen:main from ElkeF:main

Conversation 0 Commits 1 Checks 0 Files changed 1 +7 -0

ElkeF commented 3 minutes ago Contributor

another verse

second verse 178fe04

Add more commits by pushing to the main branch on ElkeF/octocat.

Continuous integration has not been set up
GitHub Actions and several other apps can be used to automatically catch bugs and enforce style.

☒ This branch has no conflicts with the base branch
Merging can be performed automatically.

Merge pull request or view command line instructions.

Reviewers
No reviews
Still in progress? Convert to draft

Assignees
No one—assign yourself

Labels
None yet

Projects
None yet

Milestone
No milestone

Linked issues

Reacting to a pull request

The screenshot shows a GitHub pull request page for the repository 'm-thelen / octocat'. The pull request is titled 'second verse #2' and is created by user 'ElkeF'. It shows a merge of 1 commit from 'm-thelen:main' into 'ElkeF:main'. The interface includes navigation tabs for Code, Issues, Pull requests (active), Actions, Projects, Wiki, Security, and Insights. Below the title, there are buttons for 'Open', 'Edit', and 'Code'. A summary bar shows 'Conversation 0', 'Commits 1', 'Checks 0', and 'Files changed 1' with a green bar indicating '+7 -0' changes. A 'Review changes' button is visible. The main content area shows the file 'firstfile.txt' with a diff view. The diff shows changes to lines 6 through 15, with new lines added in green and deletions in red. The commit message is 'ElkeF committed 5 minutes ago' with the commit hash '178fe04e5801b223f9ff6da6fb3d1409fe67abbc'.

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

m-thelen / octocat Public Unwatch 1 Star 0 Fork 1

Code Issues Pull requests 1 Actions Projects Wiki Security Insights

second verse #2

Edit Code

Open ElkeF wants to merge 1 commit into m-thelen:main from ElkeF:main

Conversation 0 Commits 1 Checks 0 Files changed 1 +7 -0

Changes from all commits File filter Conversations Jump to Review changes

second verse

ElkeF committed 5 minutes ago commit 178fe04e5801b223f9ff6da6fb3d1409fe67abbc

7 firstfile.txt

↑	@@ -6,3 +6,10 @@ I see them bloom
6	6 For me and you
7	7 And I think to myself
8	8 What a wonderful world
9	+
10	+ I see skies of blue
11	+ And clouds of white
12	+ The bright blessed day
13	+ The dark sacred night
14	+ And I think to myself
15	+ What a wonderful world

Reacting to a pull request

The screenshot shows a GitHub pull request page for the repository 'm-thelen / octocat'. The pull request is titled 'second verse #2' and is currently open. It shows a merge of 1 commit from 'ElkeF/main' into 'm-thelen/main'. The interface includes tabs for Code, Issues, Pull requests (1), Actions, Projects, Wiki, Security, and Insights. The pull request details show a conversation with a comment from 'ElkeF' saying 'another verse'. The pull request is approved by 'm-thelen'. The right sidebar shows the pull request's status, including a progress bar, and lists of reviewers, assignees, labels, projects, milestones, and linked issues. A modal dialog is open at the bottom, showing the merge details and buttons to 'Confirm merge' or 'Cancel'.

m-thelen / octocat Public

Unwatch 1 Star 0 Fork 1

Code Issues **Pull requests 1** Actions Projects Wiki Security Insights

second verse #2

Edit Code

Open ElkeF wants to merge 1 commit into m-thelen:main from ElkeF:main

Conversation 0 Commits 1 Checks 0 Files changed 1 +7 -0

ElkeF commented 4 minutes ago Contributor

another verse

second verse 178fe04

m-thelen approved these changes now View changes

Add more commits by pushing to the main branch on ElkeF/octocat.

Merge pull request #2 from ElkeF/main

second verse

Confirm merge Cancel

Reviewers

- m-thelen

Still in progress? Convert to draft

Assignees

No one—assign yourself

Labels

None yet

Projects

None yet


Milestone

No milestone

Linked issues




Successfully merging this pull request may close these issues.

Reacting to a pull request





Search or jump to...


[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)


Your review was submitted successfully.




 **m-thelen / octocat** Public

 Unwatch


1


 Star


0


 Fork


1


 Code


 Issues


 Pull requests **1**


 Actions

 Projects


 Wiki


 Security


 Insights





second verse #2


 Edit


 Code


 Merged

m-thelen merged 1 commit into `m-thelen:main` from `ElkeF:main`  now

 Conversation **0**


 Commits **1**

 Checks **0**




 Files changed **1**

+7



-0





ElkeF commented 5 minutes ago

 Contributor  


another verse



  second verse 178fe84






m-thelen approved these changes 1 minute ago








 View changes

  merged commit `5ccdc3b` into `m-thelen:main` now

 Revert



Write

Preview

Leave a comment

Reviewers

 m-thelen 

Assignees

No one—assign yourself

Labels

None yet

Projects

None yet

Milestone

No milestone

Fetching Updates from Other Remote Repo

The screenshot shows the GitHub interface for the repository 'ElkeF / octocat'. At the top, there's a navigation bar with links to Pull requests, Issues, Marketplace, and Explore. Below this, the repository name and a link to the forked source 'm-thelen/octocat' are visible. The main content area shows the 'main' branch, which is 3 commits behind 'm-thelen:main'. A table lists files: 'README.md' (initial commit) and 'firstfile.txt' (second verse). A modal dialog is open, titled 'Fetch and merge 3 upstream commits from m-thelen:main.', with a 'Fetch and merge' button. The right sidebar contains sections for 'About', 'Releases', and 'Packages', all indicating no content is provided or published.

GitHub interface showing the repository **ElkeF / octocat** (Public), forked from [m-thelen/octocat](#).

Navigation: <> Code, Pull requests, Actions, Projects, Wiki, Security, Insights, Settings.

Branches: main (1 branch), 0 tags.

Buttons: Go to file, Add file, Code.

Status: This branch is 3 commits behind m-thelen:main. Contribute, Fetch upstream.

Files:

File	Commit
README.md	initial commit
firstfile.txt	second verse

Modal: Fetch and merge 3 upstream commits from m-thelen:main. Keep your fork up-to-date with the upstream repository. [Learn more](#). Buttons: Compare, Fetch and merge.

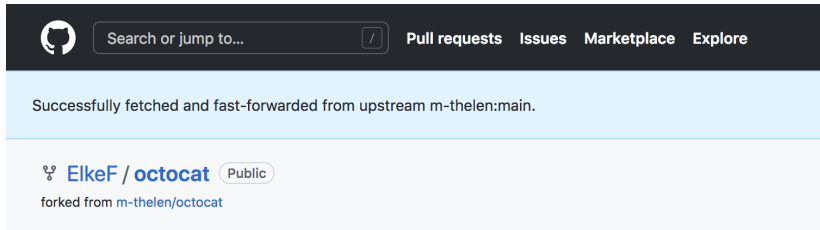
README.md

octocat

Right sidebar sections:

- About**: No description, website, or topics provided.
- Releases**: No releases published. [Create a new release](#).
- Packages**: No packages published. [Publish your first package](#).

Fetching Updates from Other Remote Repo



The screenshot shows the GitHub interface for the repository 'ElkeF / octocat'. At the top, there is a dark navigation bar with the GitHub logo, a search bar containing 'Search or jump to...', and links for 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. Below this, a light blue banner displays the message: 'Successfully fetched and fast-forwarded from upstream m-thelen:main.' The repository name 'ElkeF / octocat' is shown with a 'Public' badge. Below the repository name, it states 'forked from m-thelen/octocat'.

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

Successfully fetched and fast-forwarded from upstream m-thelen:main.

👤 ElkeF / octocat Public

forked from [m-thelen/octocat](#)