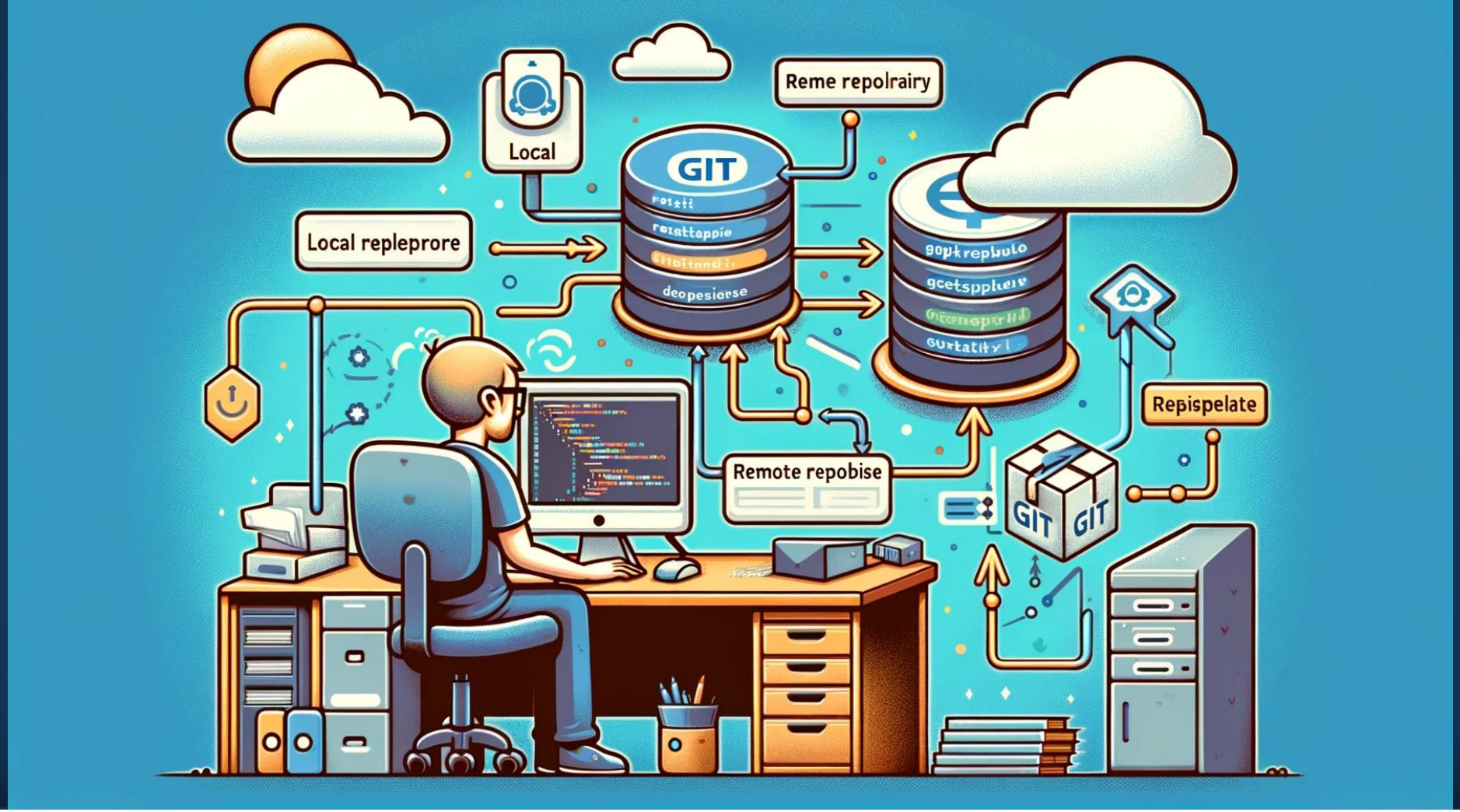


LaTeX und GitHub

Oliver Kopp

JabRef e.V.

CC BY SA

Motivation

- Mehrere Leute
- Sichergehen, dass Dokument kompiliert

Demo-Repository https://github.com/demo-kopp/dante-2024

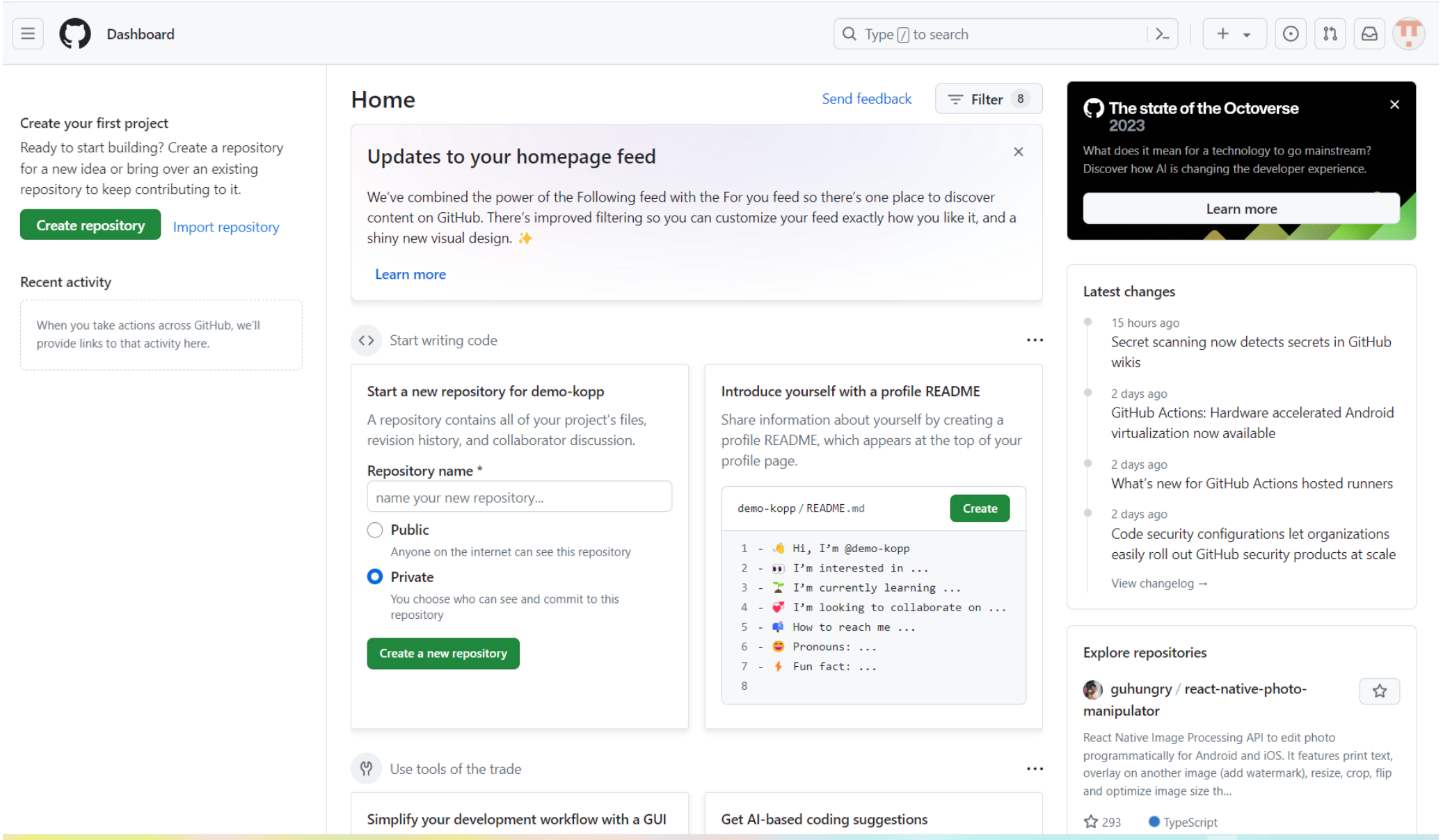
Arbeitsumgebung

- Server: GitHub
  - Kostenlos für OpenSource

GitHub Account anlegen

- https://github.com
- Email
  - Kann vor der Öffentlichkeit versteckt werden
- Login name
  - Login similar to your university account. Example: koppor
  - Use your last name prefixed by the first letter of your first name. Example: okopp
  - Use firstname.lastname. Example: oliver.kopp

Stand nach Anlage



Repository anlegen I

Create a new repository

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

Required fields are marked with an asterisk (*).

Owner * **Repository name ***

demo-kopp / dante-2024

dante-2024 is available.

Great repository names are short and memorable. Need inspiration? How about **musical-funicular** ?

Description (optional)

Repository anlegen II

Initialize this repository with:

Add a README file

This is where you can write a long description for your project. Learn more about READMEs.

Add .gitignore

.gitignore template: TeX

Choose which files not to track from a list of templates. Learn more about ignoring files.

Choose a license

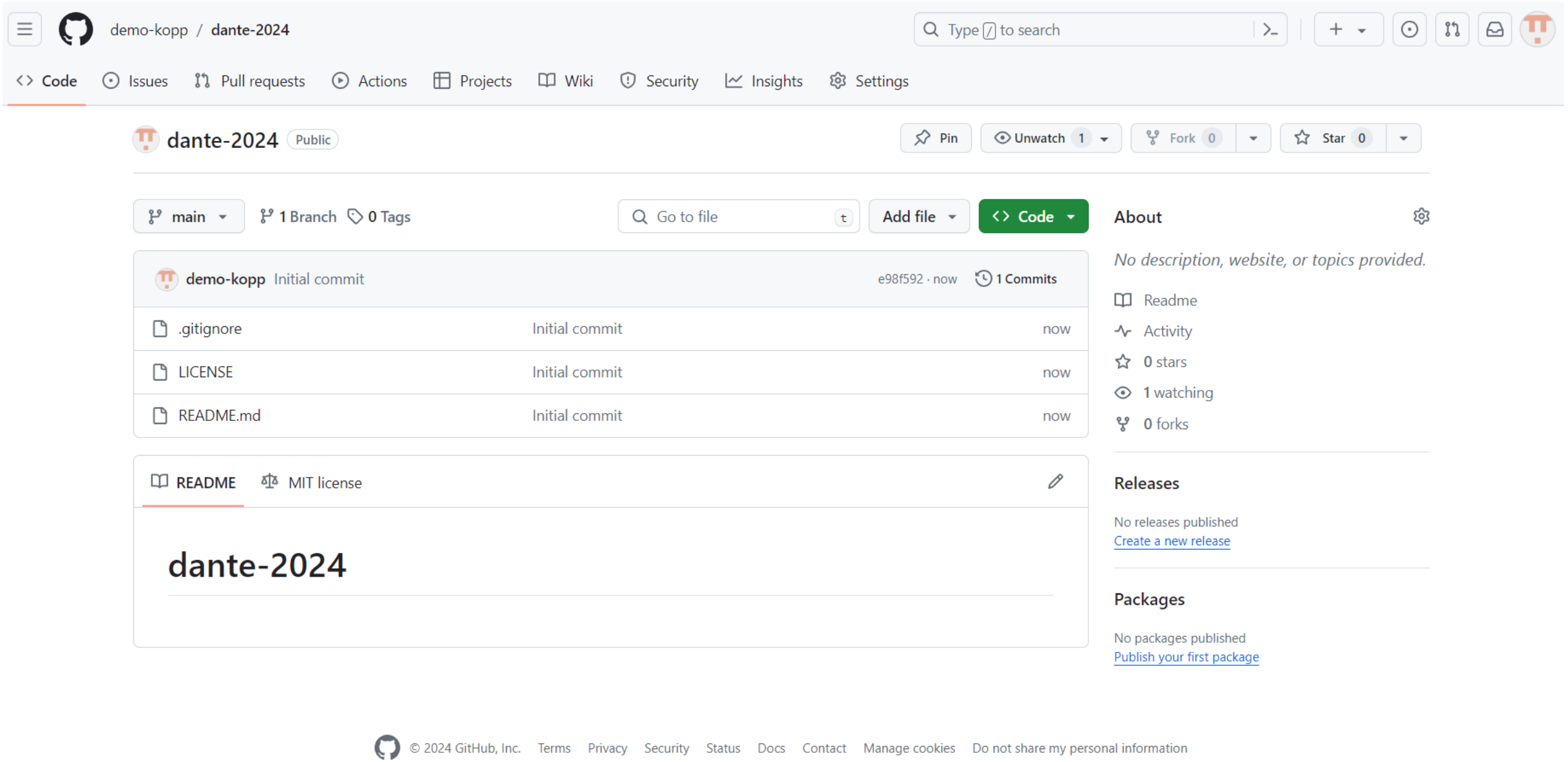
License: MIT License

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

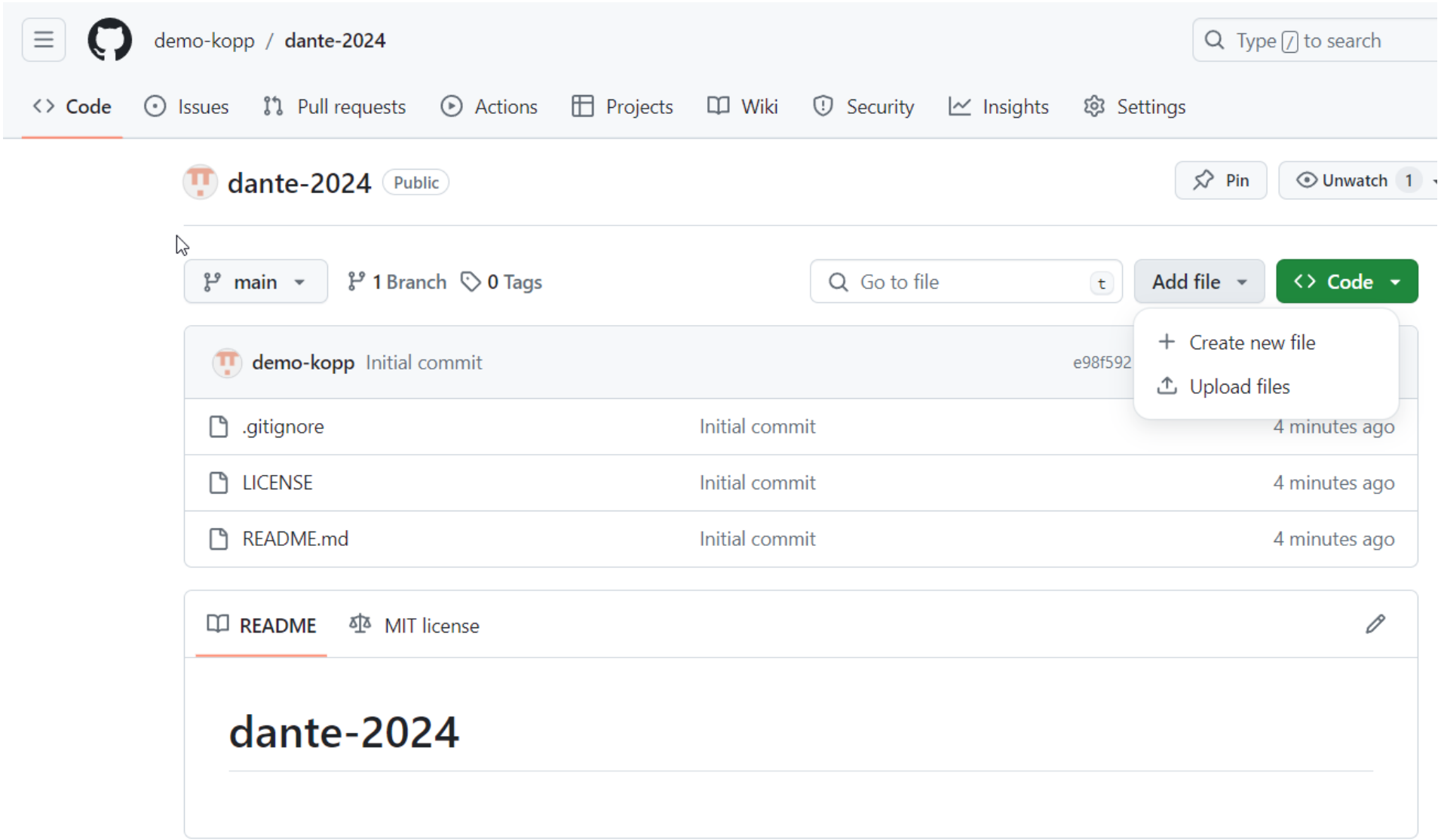
This will set `main` as the default branch. Change the default name in your settings.

You are creating a public repository in your personal account.

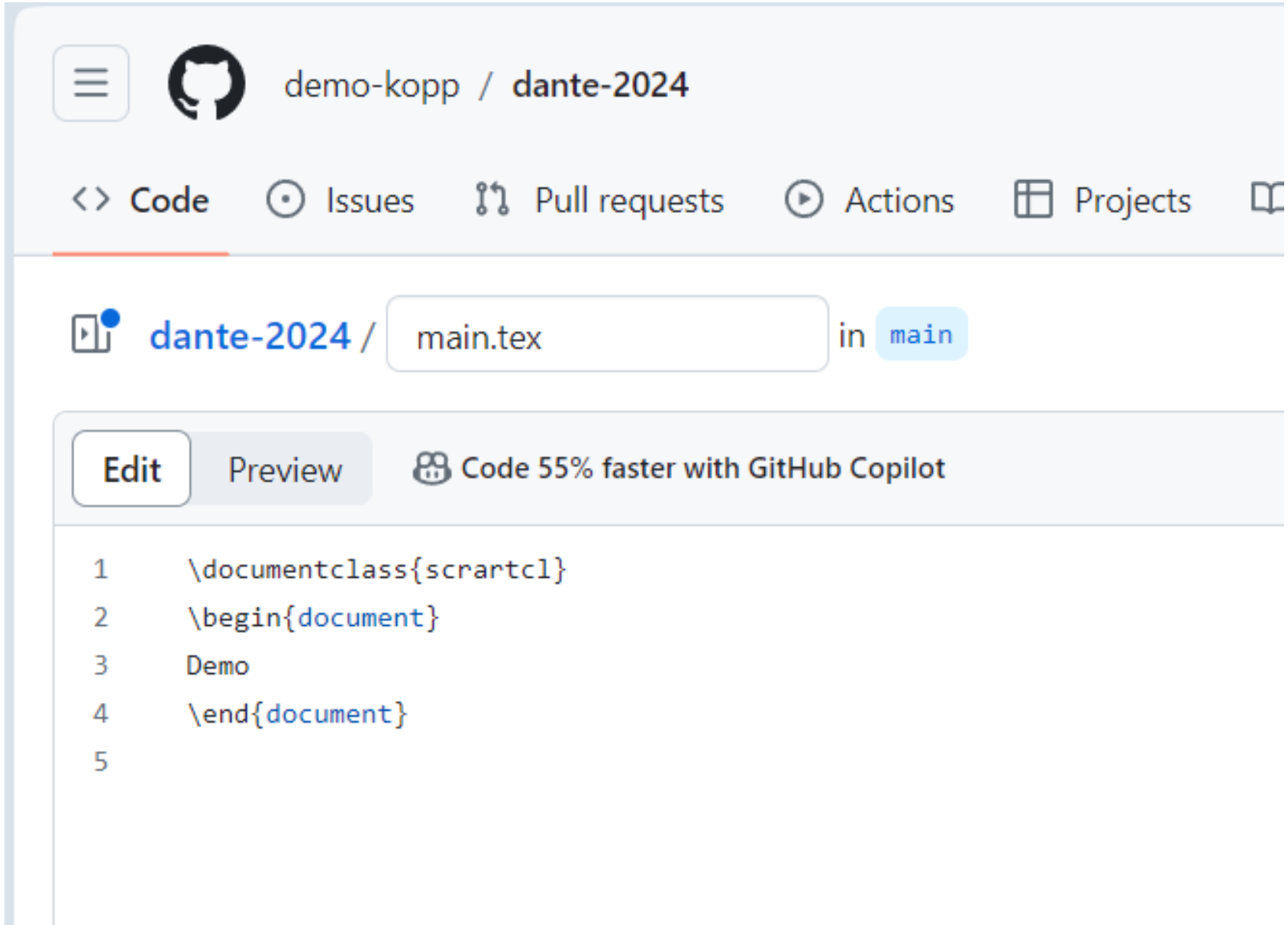
Stand nach Anlage Repository



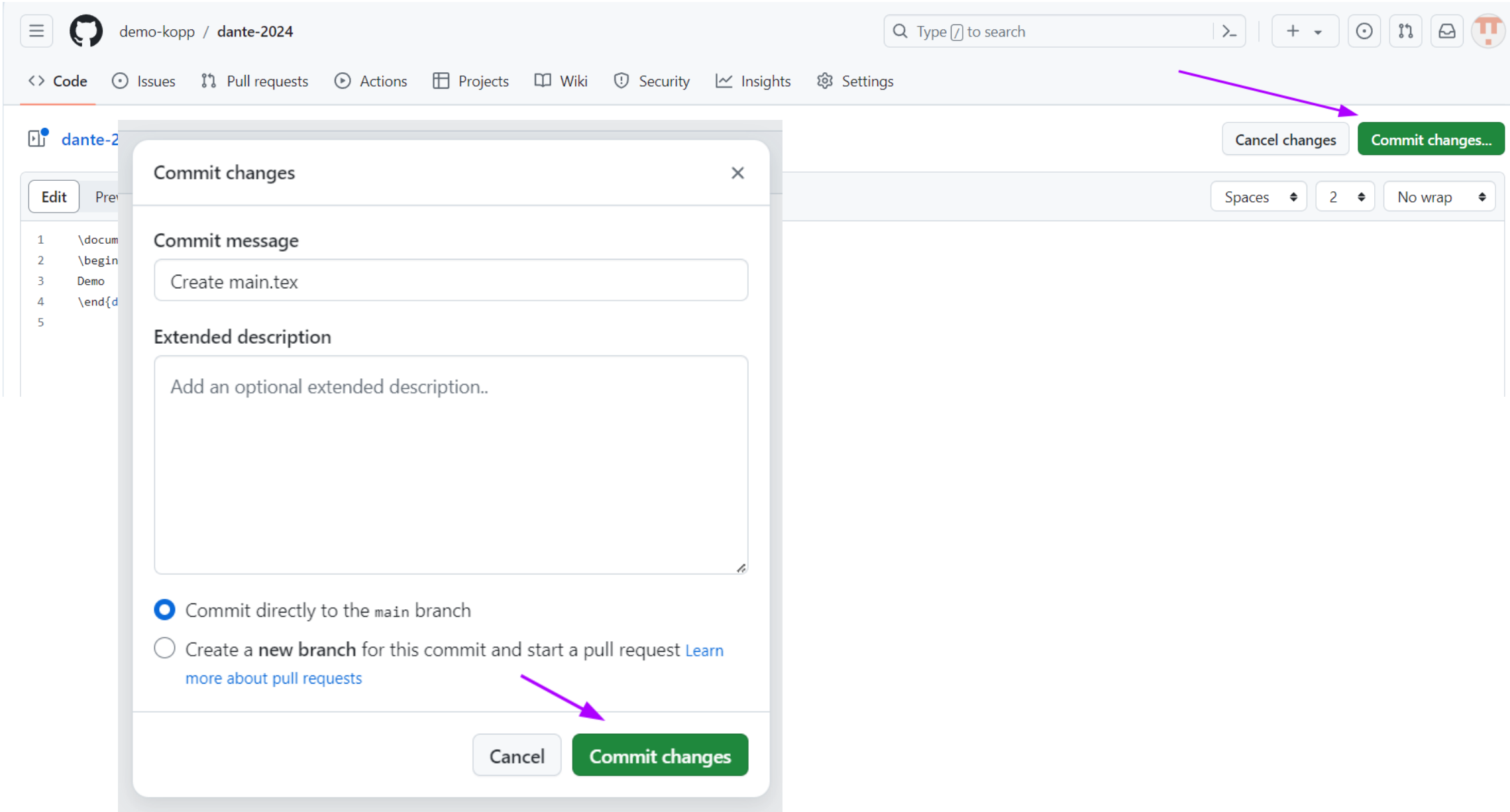
Erstes LaTeX-Dokument: Neue Datei anlegen



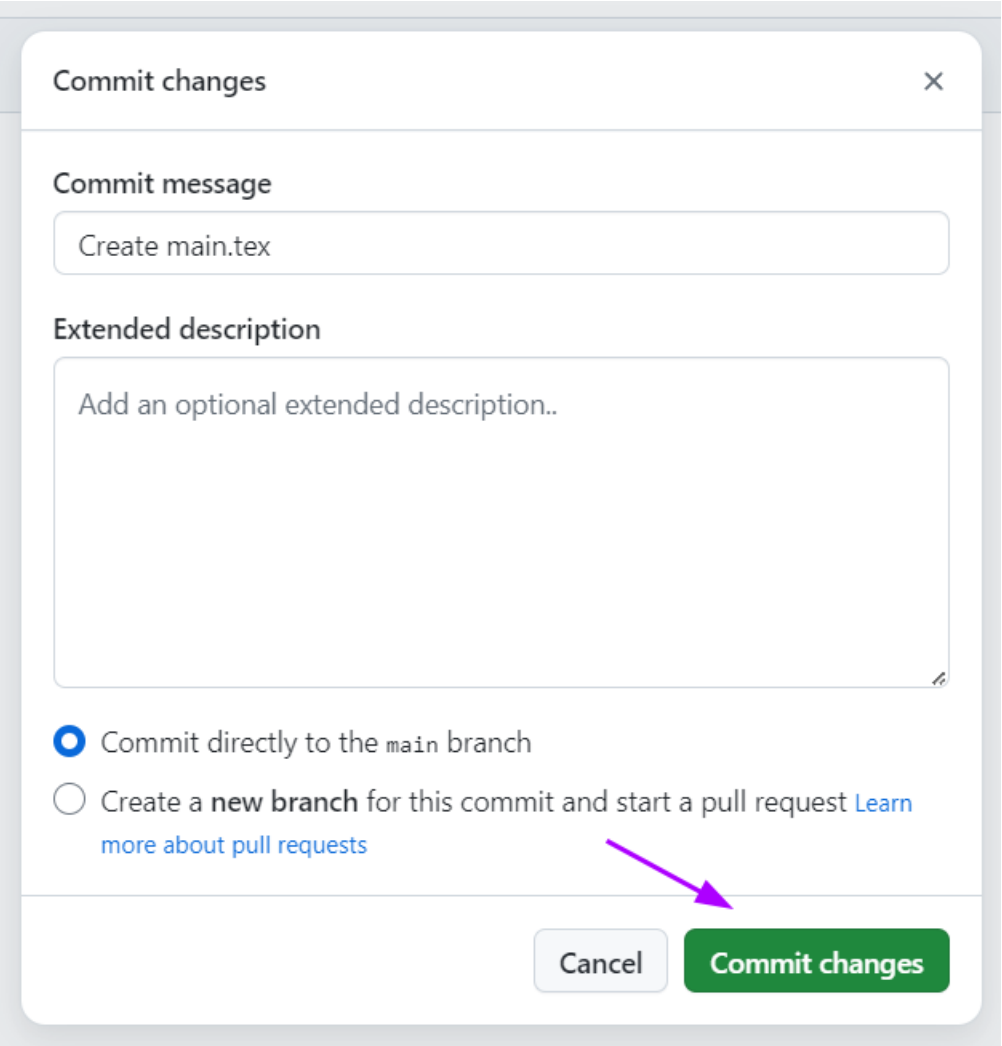
Inhalt hinzufügen



Committen


demo-kopp / dante-2024
Type / to search
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Cancel changes
Commit changes...
Edit
Spaces
2
No wrap
1 \docum
2 \begin
3 Demo
4 \end{d
5
Commit changes
Commit message
Create main.tex
Extended description
Add an optional extended description..
Commit directly to the main branch
Create a new branch for this commit and start a pull request Learn more about pull requests
Cancel
Commit changes

Committen


Commit changes
Commit message
Create main.tex
Extended description
Add an optional extended description..
Commit directly to the main branch
Create a new branch for this commit and start a pull request Learn more about pull requests
Cancel
Commit changes

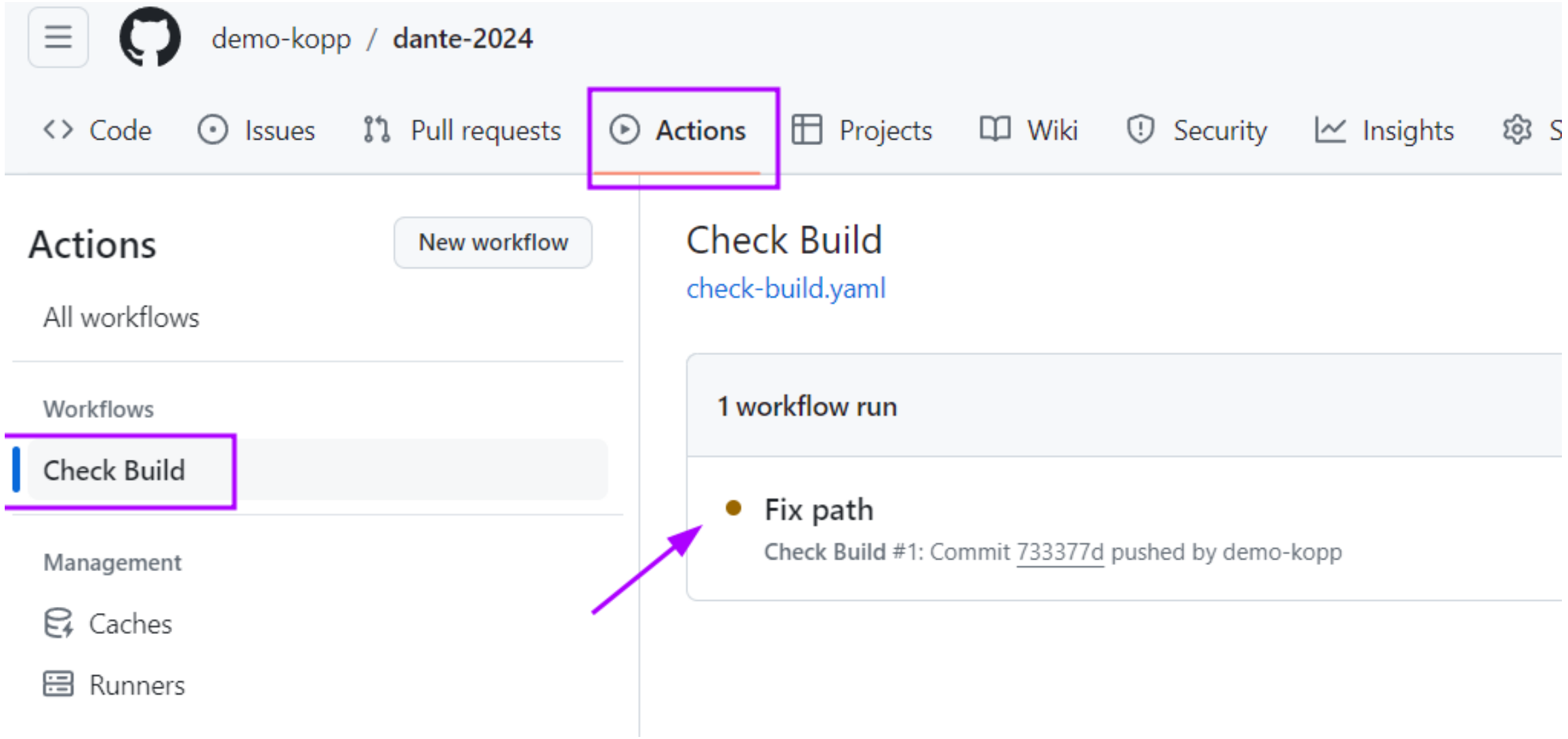
Prüfung der Kompilierung

dante-2024 / .github / workflows / check-build.yaml in main

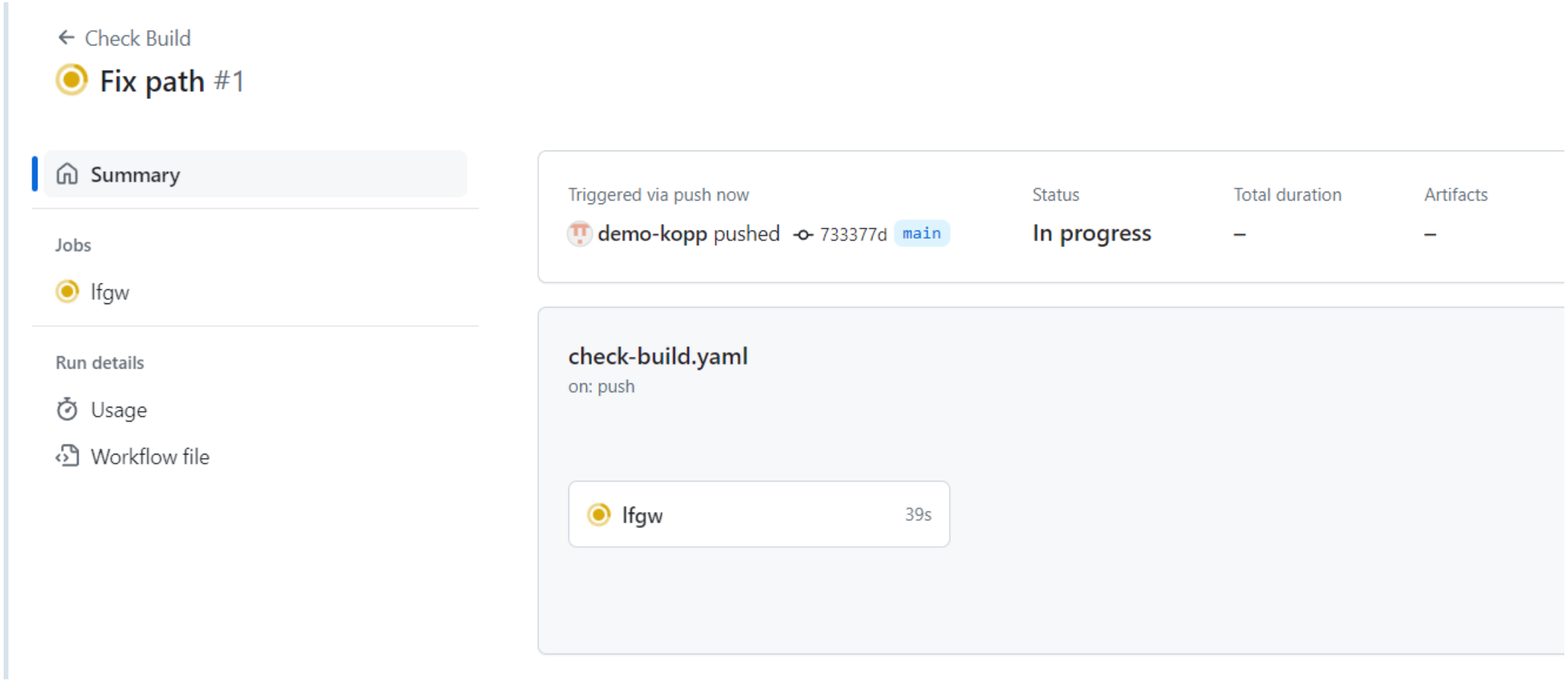
Edit | Preview | Code 55% faster with GitHub Copilot | Spaces | 2 | No wrap

```yaml
name: Check Build

on: [push]

jobs:
  build:
    runs-on: ubuntu-latest
    name: check
    steps:
      - name: Checkout
        uses: actions/checkout@v4
      - name: Install TeX Live
        uses: zauguin/install-texlive@v3
        with:
           packages: >
             latex latex-bin scheme-basic koma-script luatexbase luatex
      - run: lualatex main

```

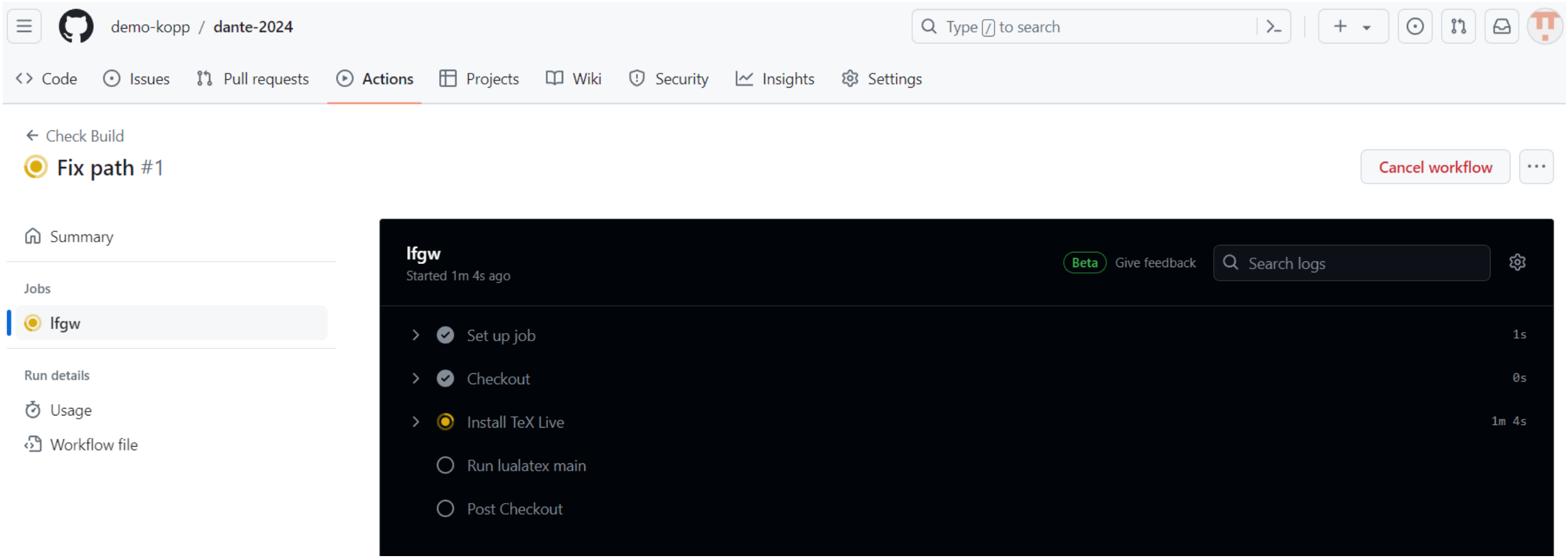
Workflow läuft!



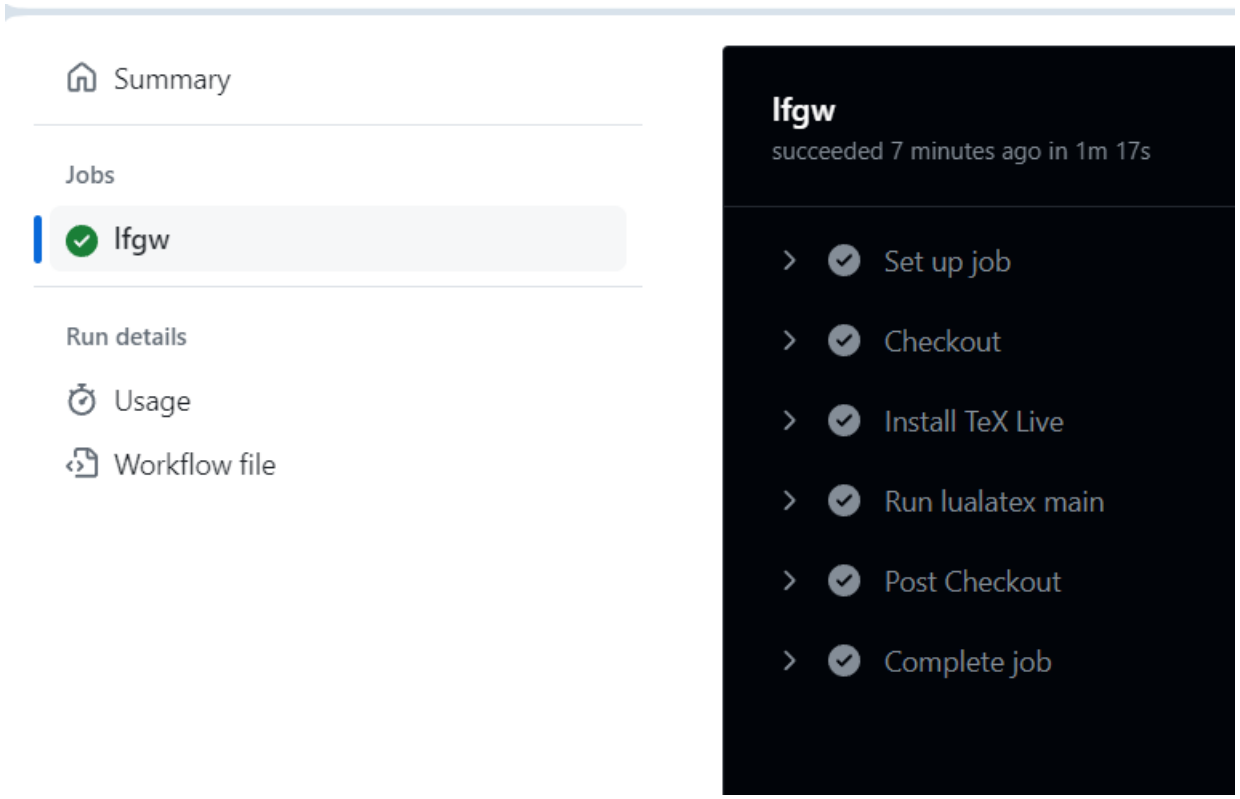
Workflow läuft!



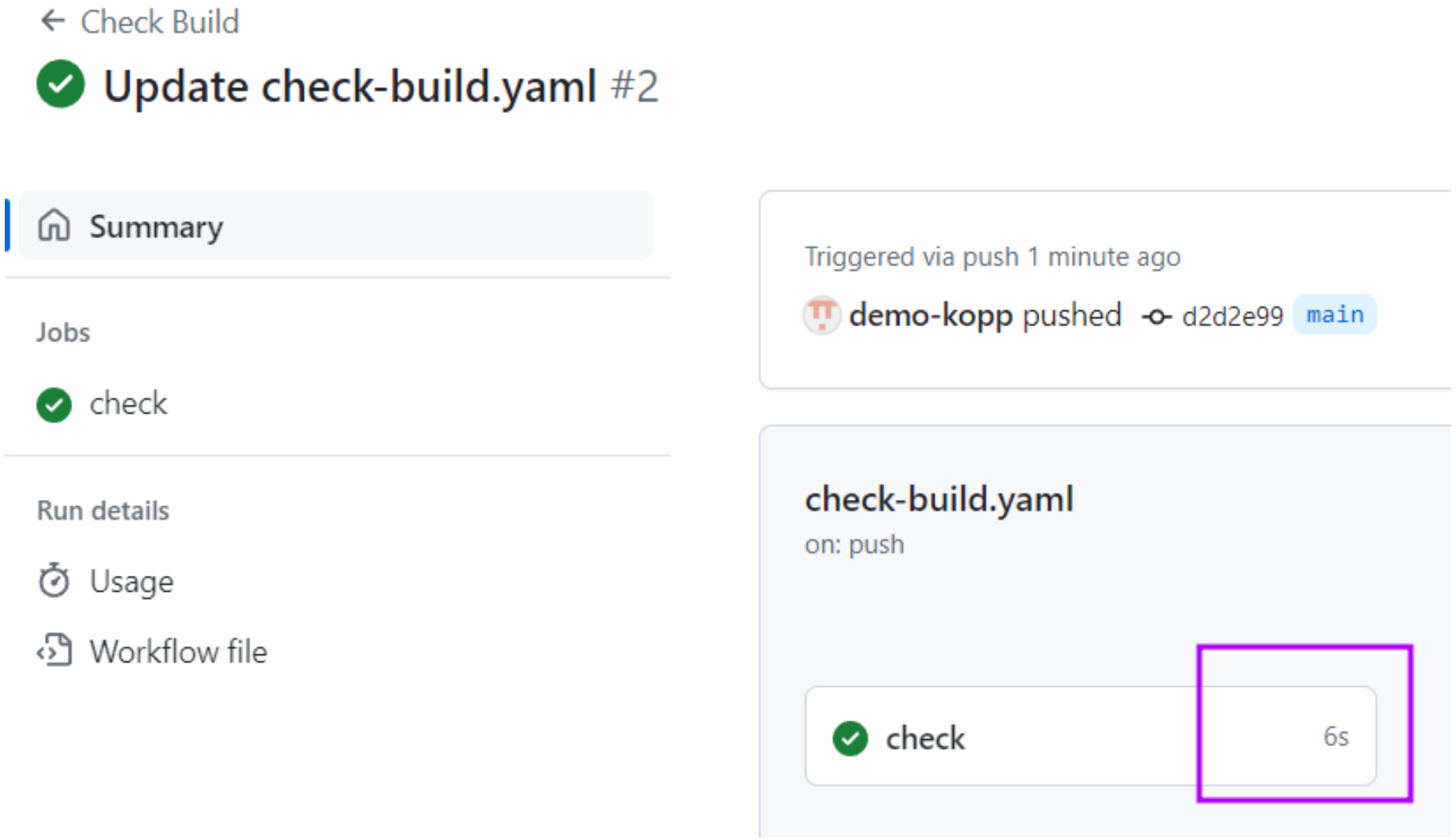
Workflow läuft!



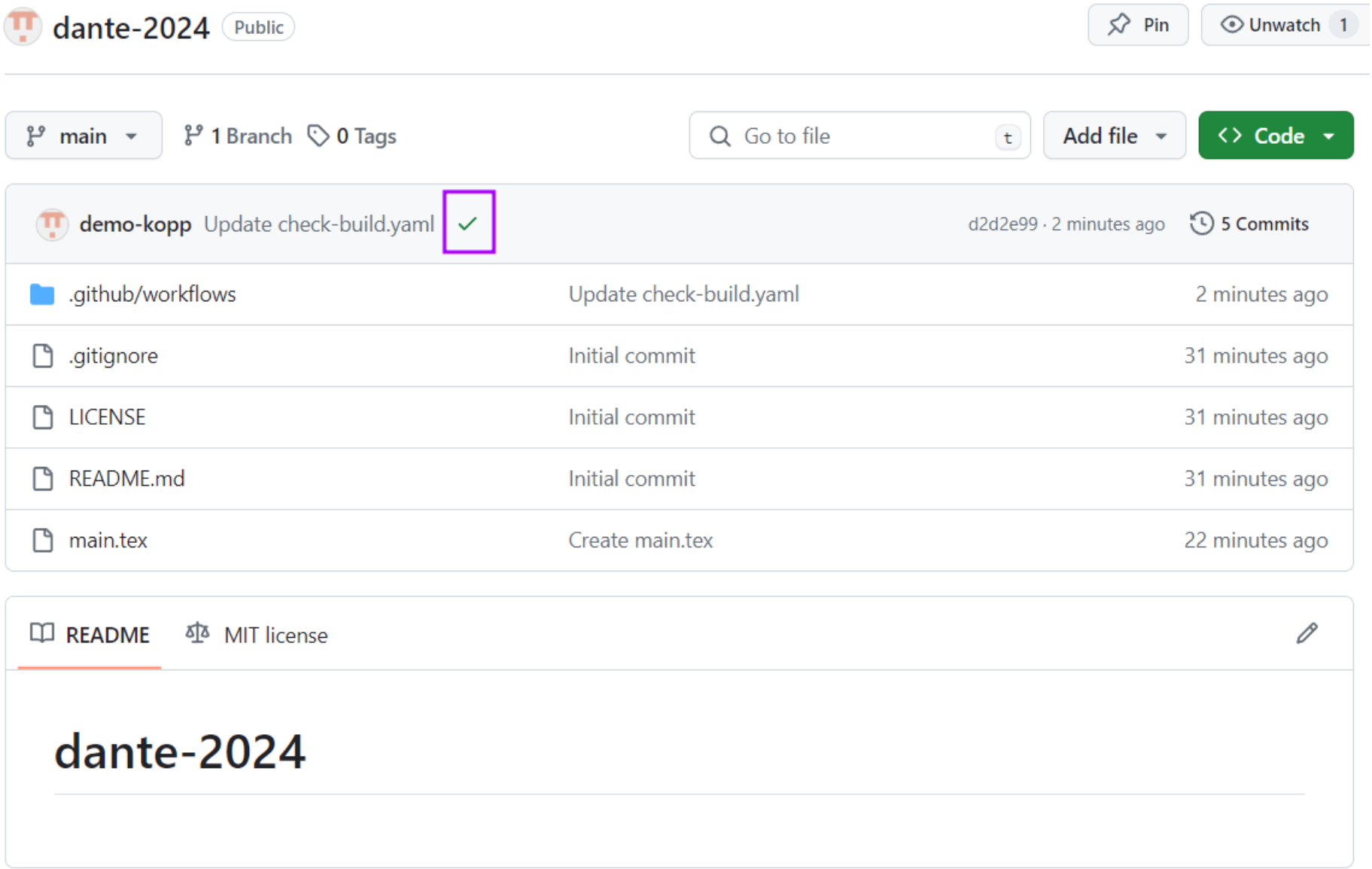
Alles grün!


Summary
Jobs
lfgw
Run details
Usage
Workflow file
lfgw
succeeded 7 minutes ago in 1m 17s
Set up job
Checkout
Install TeX Live
Run lualatex main
Post Checkout
Complete job

Zweiter Lauf



Alles grün!


dante-2024
Public
Pin
Unwatch 1
main
1 Branch
0 Tags
Go to file
t
Add file
Code
demo-kopp Update check-build.yaml
d2d2e99 · 2 minutes ago
5 Commits
.github/workflows
Update check-build.yaml
2 minutes ago
.gitignore
Initial commit
31 minutes ago
LICENSE
Initial commit
31 minutes ago
README.md
Initial commit
31 minutes ago
main.tex
Create main.tex
22 minutes ago
README
MIT license
dante-2024

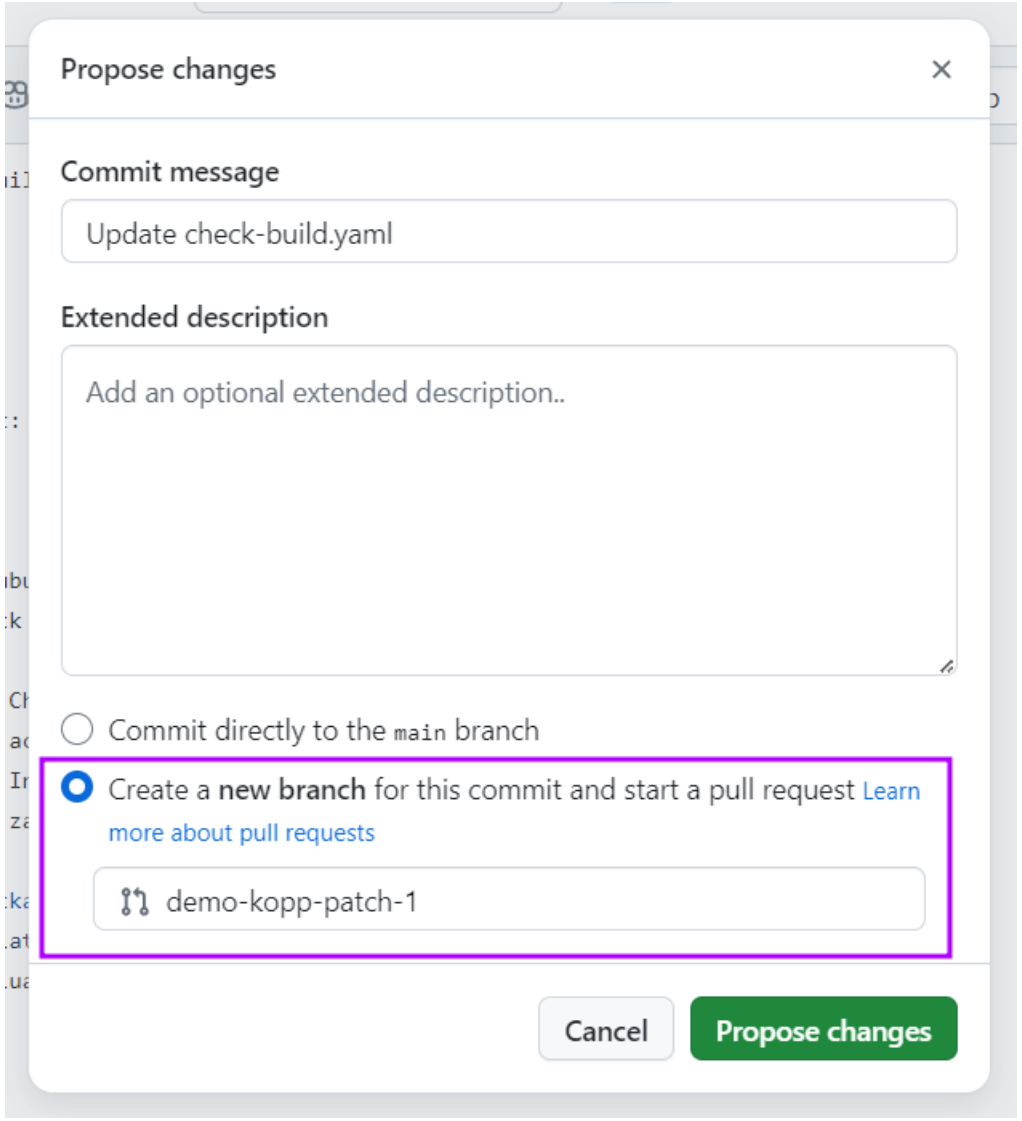
„main“ soll grün bleiben → Pull Requests

dante-2024 / .github / workflows / check-build.yaml in main

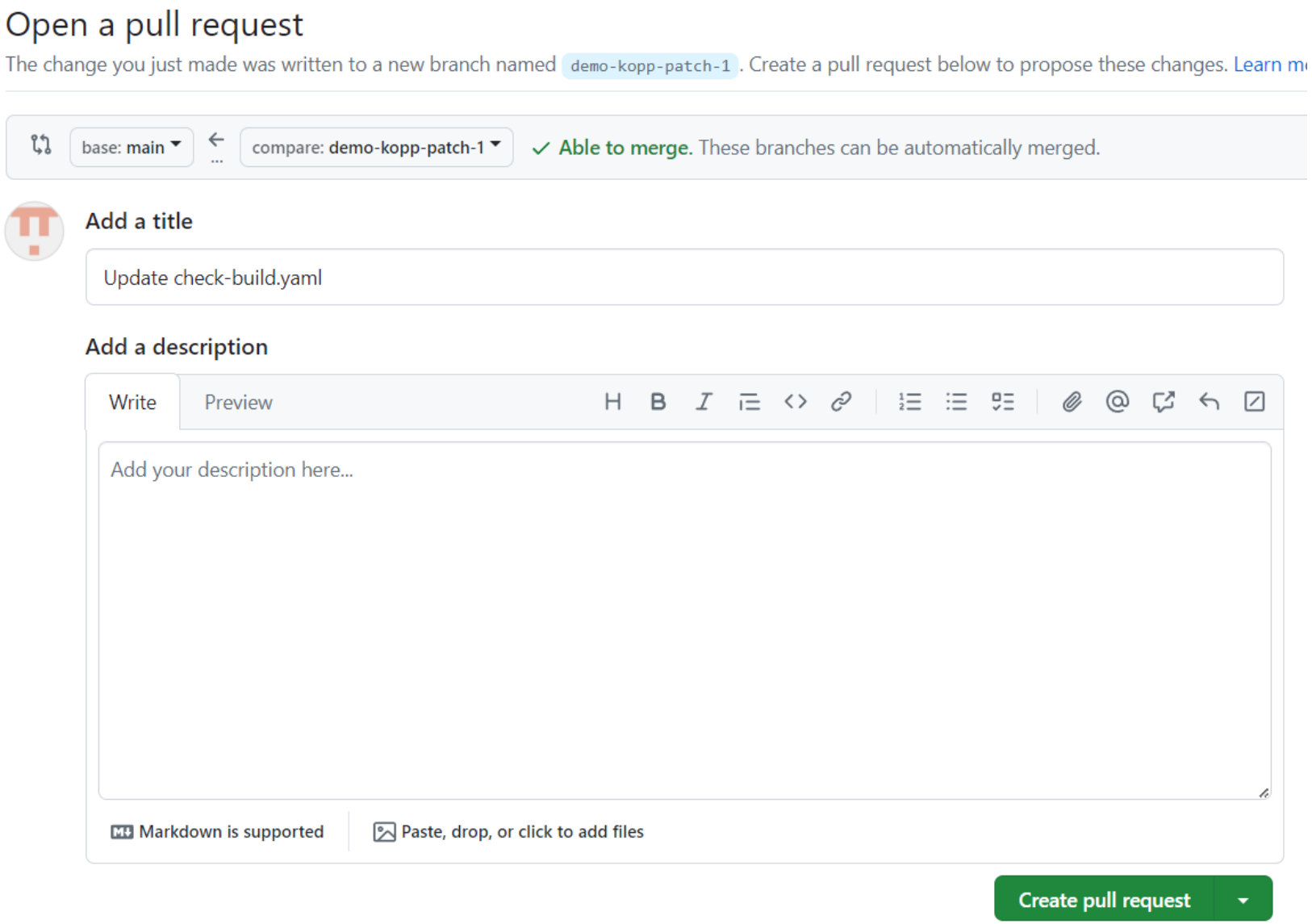
Edit | Preview | Code 55% faster with GitHub Copilot | Spaces | 2 | No wrap

```yaml
name: Check Build

on:
  push:
    branches:
      - main
  pull_request:

jobs:
  build:
    runs-on: ubuntu-latest
    name: check
    steps:
      - name: Checkout
        uses: actions/checkout@v4
      - name: Install TeX Live
        uses: zauguin/install-texlive@v3
        with:
           packages: >
             latex latex-bin scheme-basic koma-script luatexbase luatex
      - run: lualatex main

```

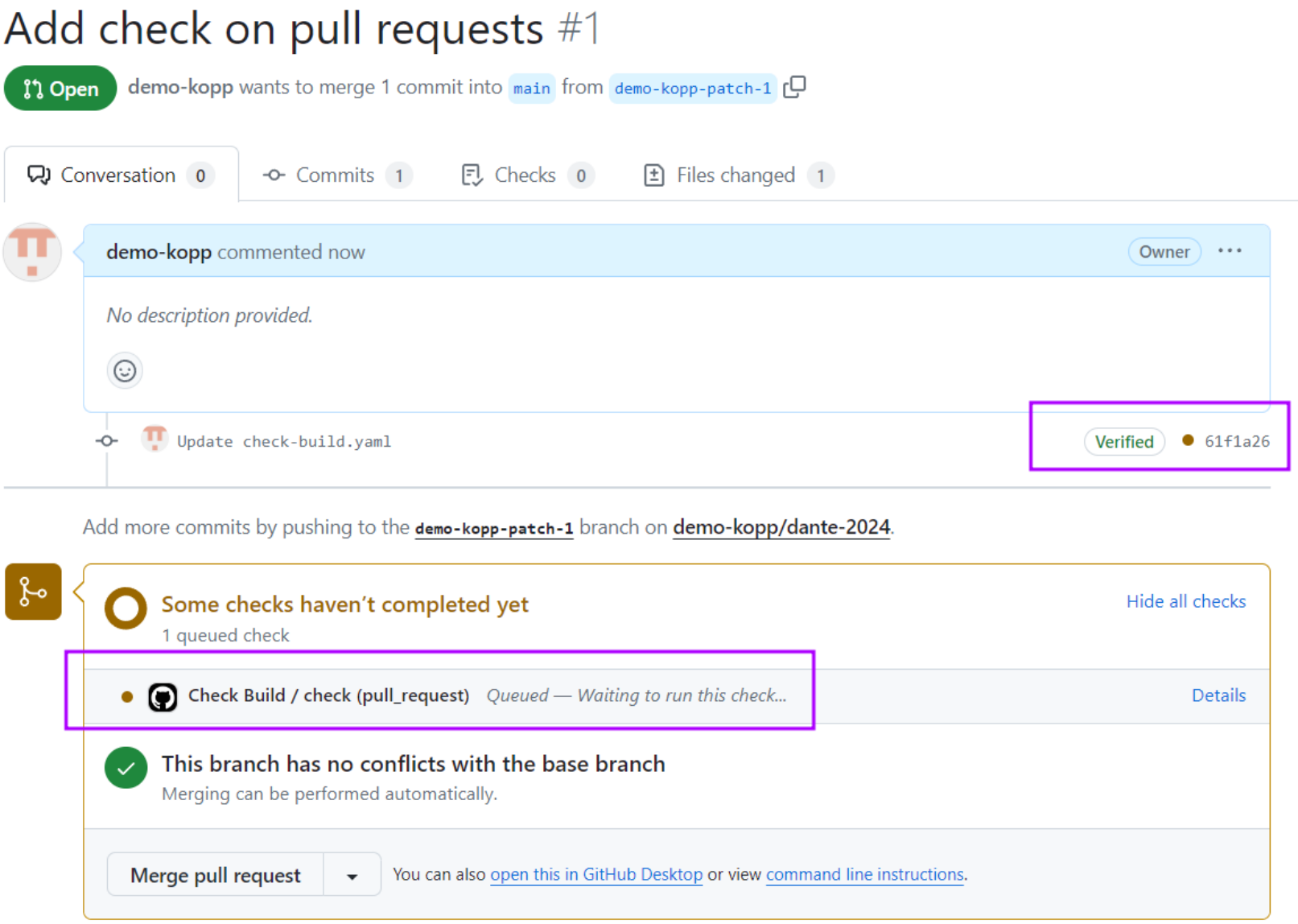
„main“ soll grün bleiben → Pull Request stellen



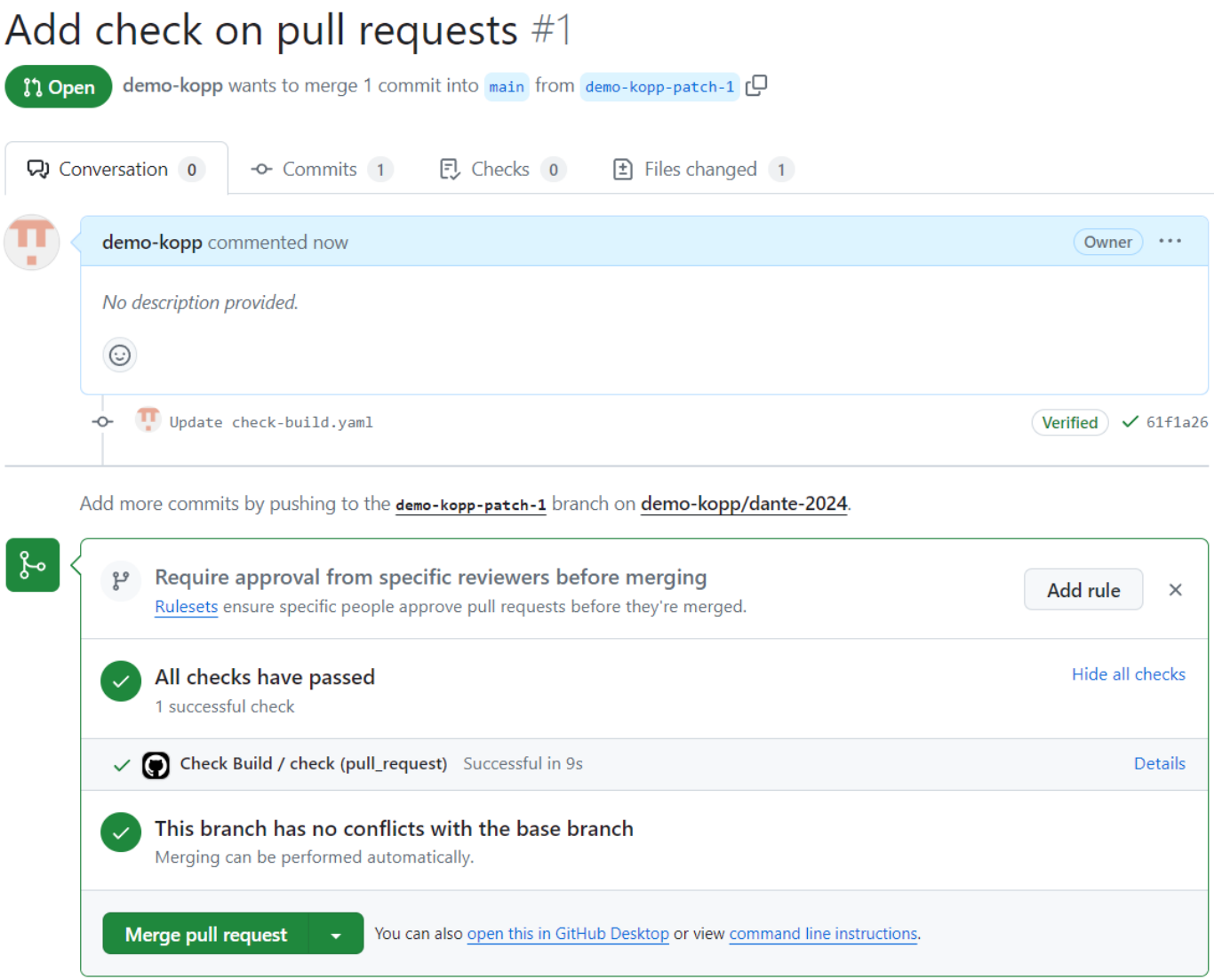
Pull Request stellen



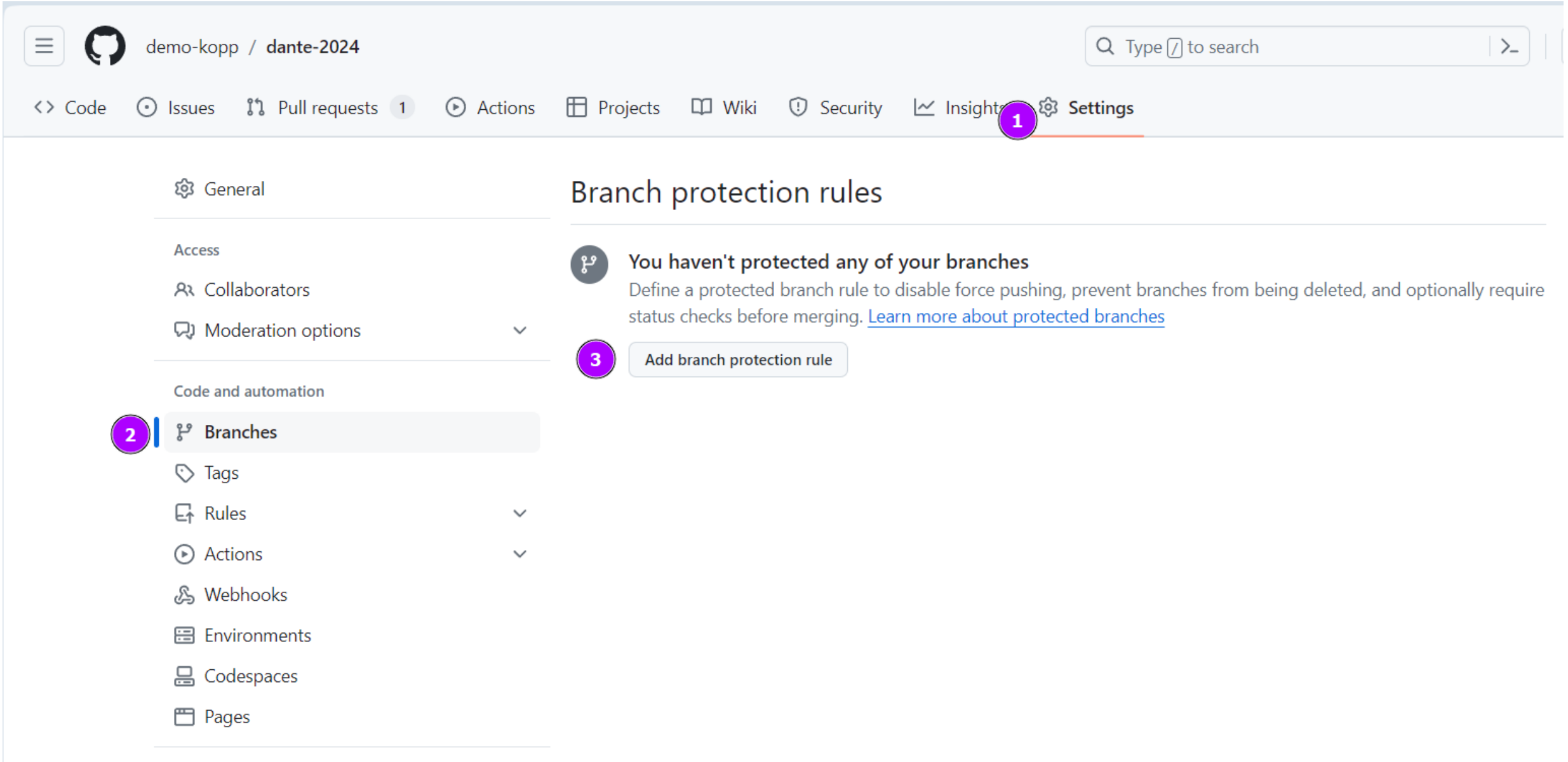
Checks bei Pull Requests



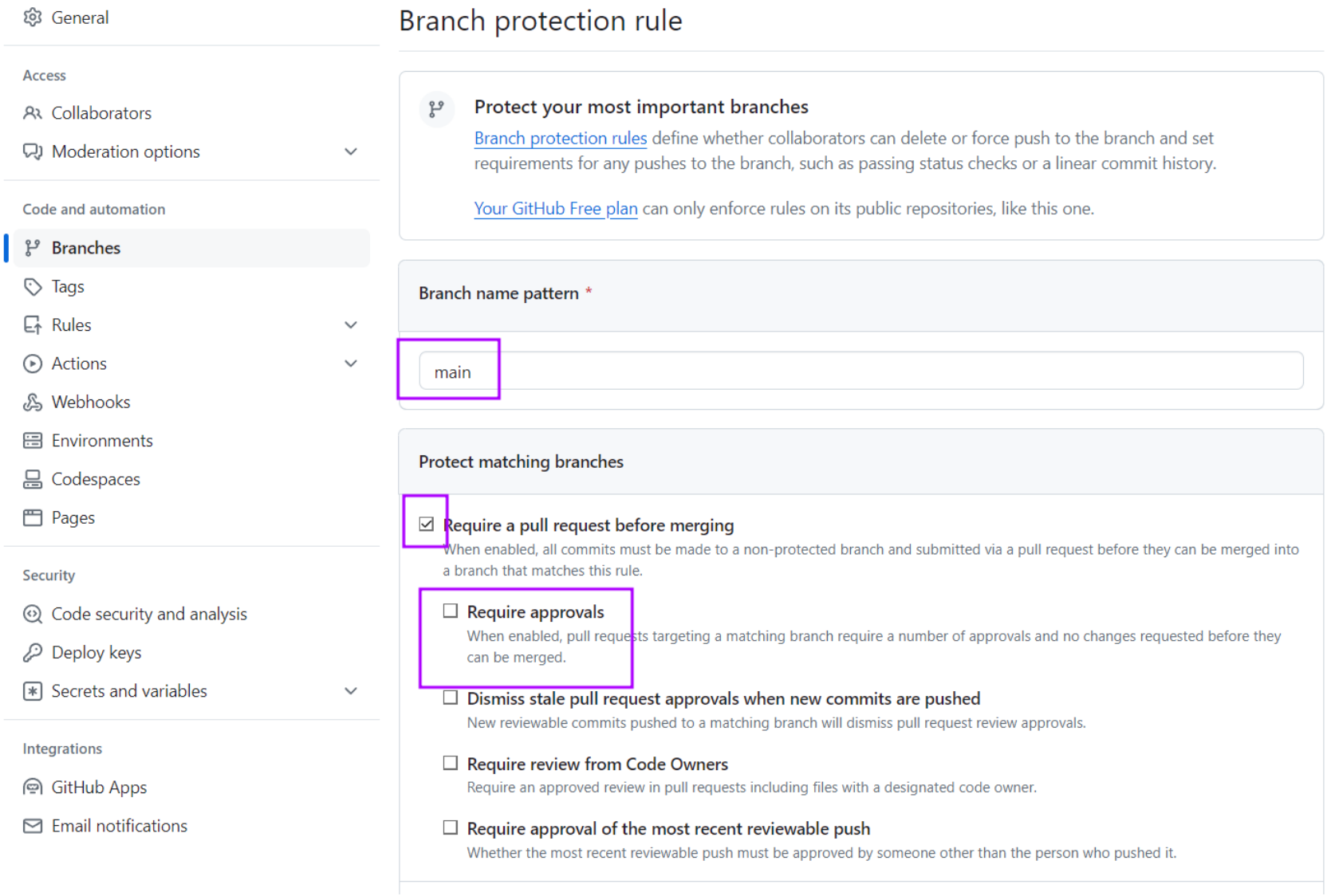
Check erfolgreich



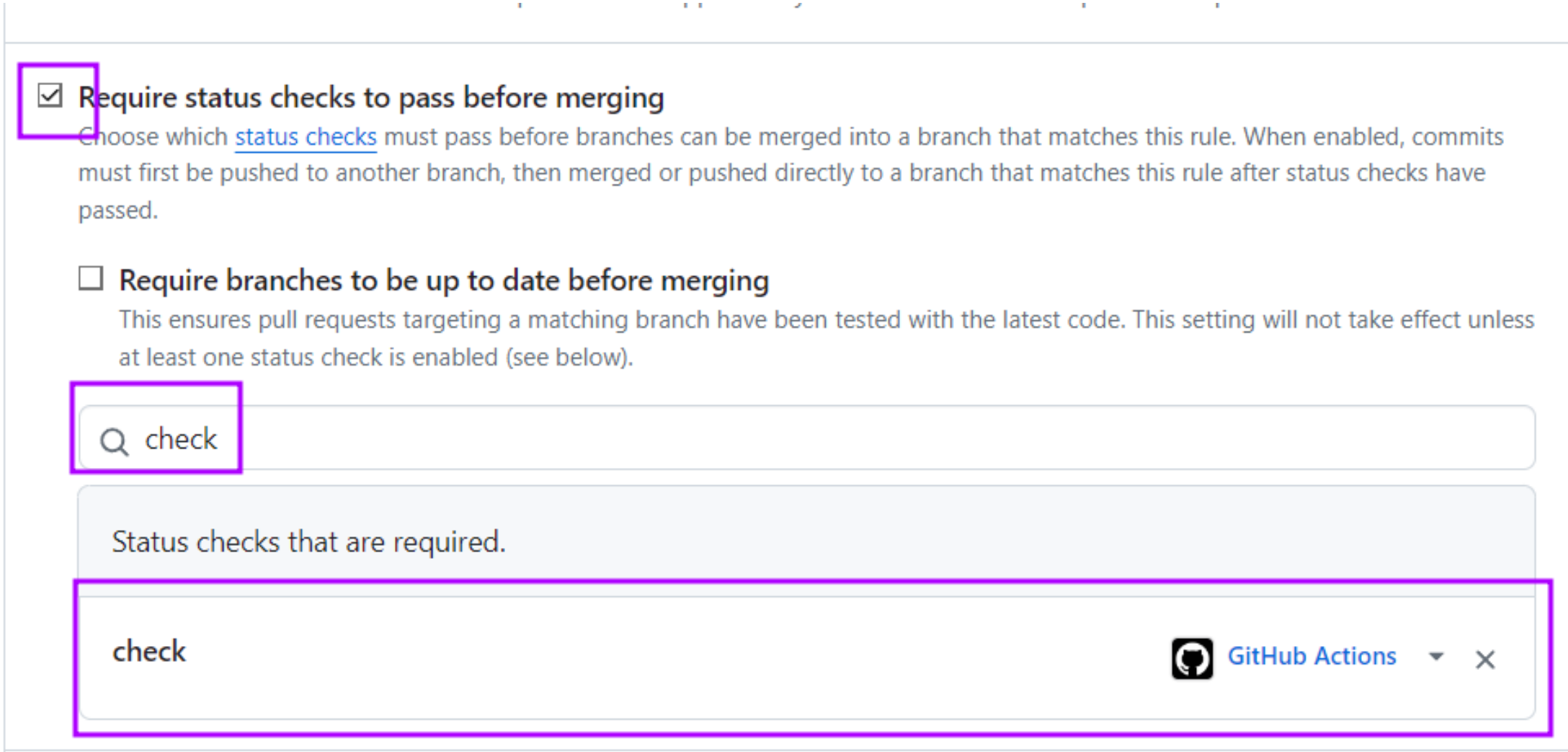
Zwang zur Nutzung von Pull Requests I



Zwang zur Nutzung von Pull Requests II



Zwang zur Nutzung von Pull Requests → Erforderliche Status-Prüfungen



„Schöne“ Historie

☑ **Require linear history**

Prevent merge commits from being pushed to matching branches.

[main] 11cead6 Initial commit - John Doe

[demo-dante-patch-1] bacc198 Improvement - Joh

[demo-dante-patch-1] 0ca553a Fix improvement -

[main] 69c2840 Merge branch `demo-dante-patch

[main] 7a5a03f Initial commit - John Doe

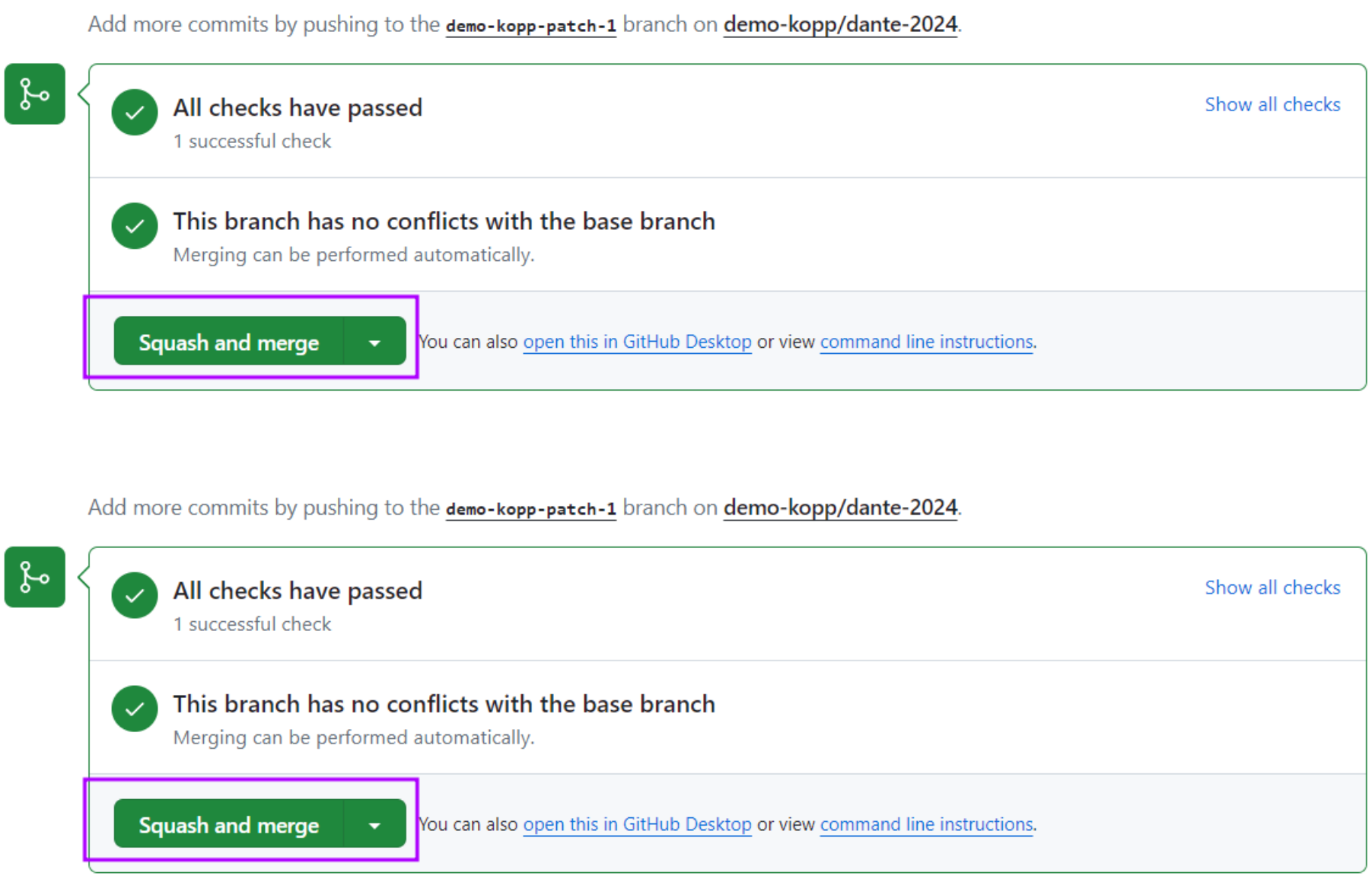
[demo-dante-patch-1] ea8dae1 Improvement -

[demo-dante-patch-1] 947dbb4 Fix improveme

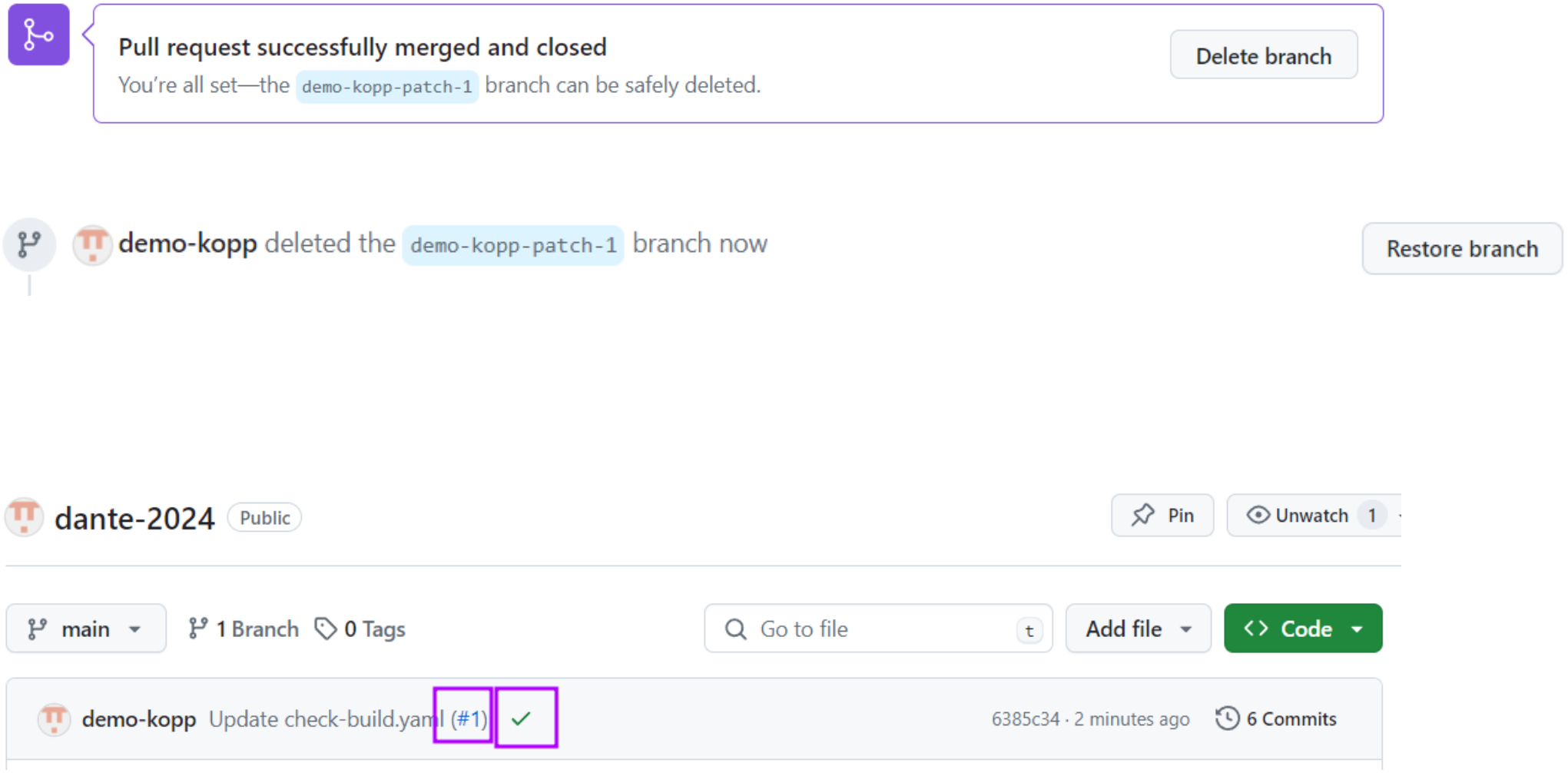
[main] 81b6fd3 Update check-build.yaml (#1) -

Branch wurde gelöscht

Resultat: Weitere Merge-Option



Resultat nach Klick



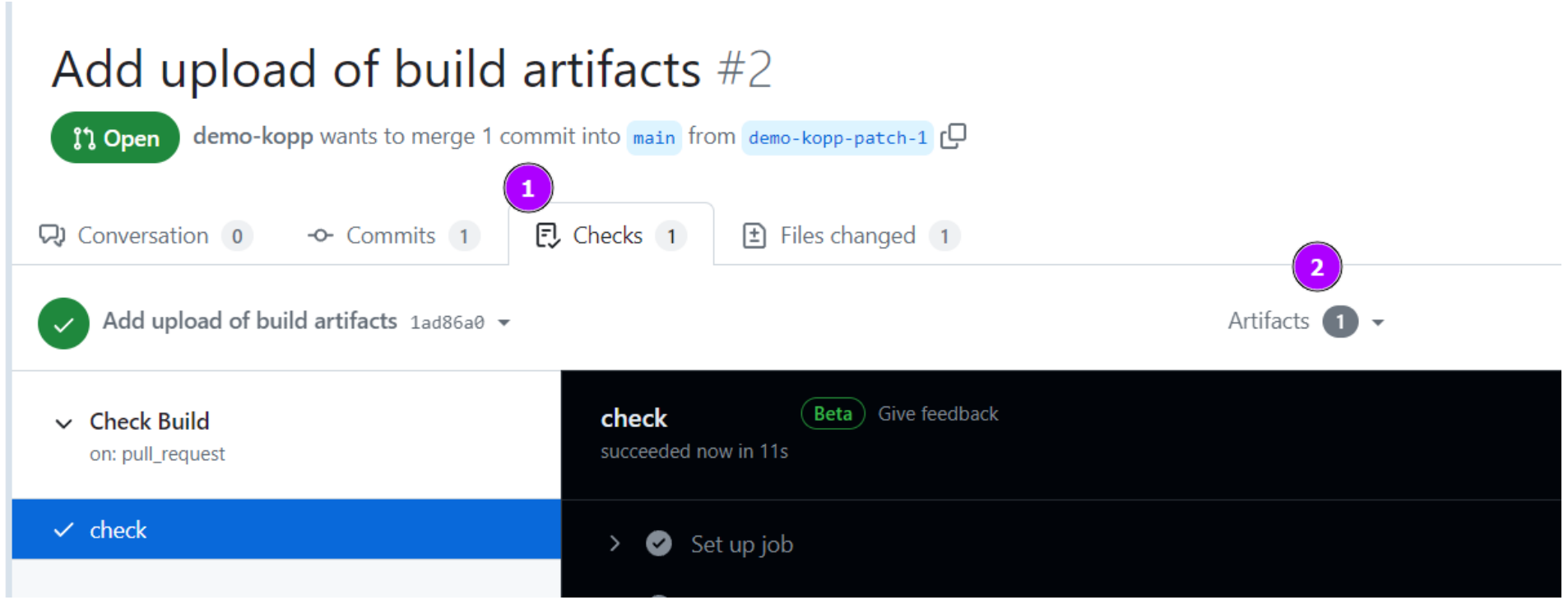
PDF verfügbar stellen

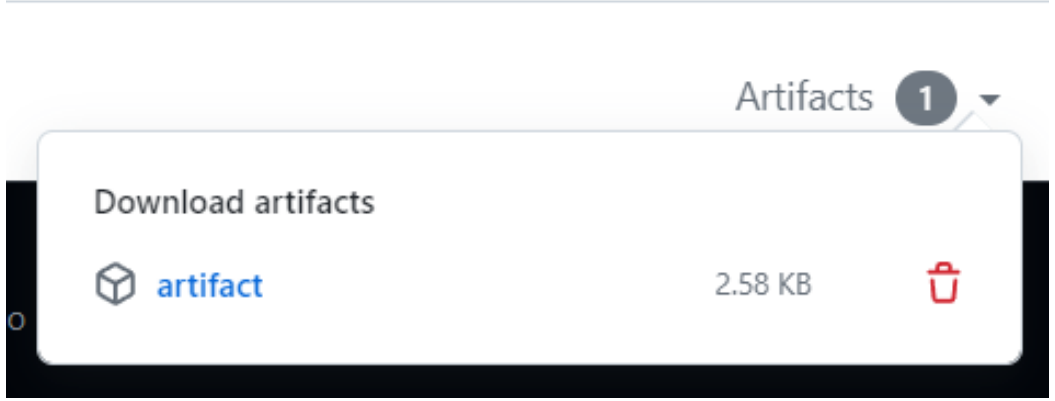
dante-2024 / .github / workflows / check-build.yaml in main

Edit | Preview | Code 55% faster with GitHub Copilot | Spaces | 2 | No wrap

```
22        - name: Upload build artifats
23          uses: actions/upload-artifact@v4
24          with:
25            path: main.pdf
```

An das Artefakt ran kommen

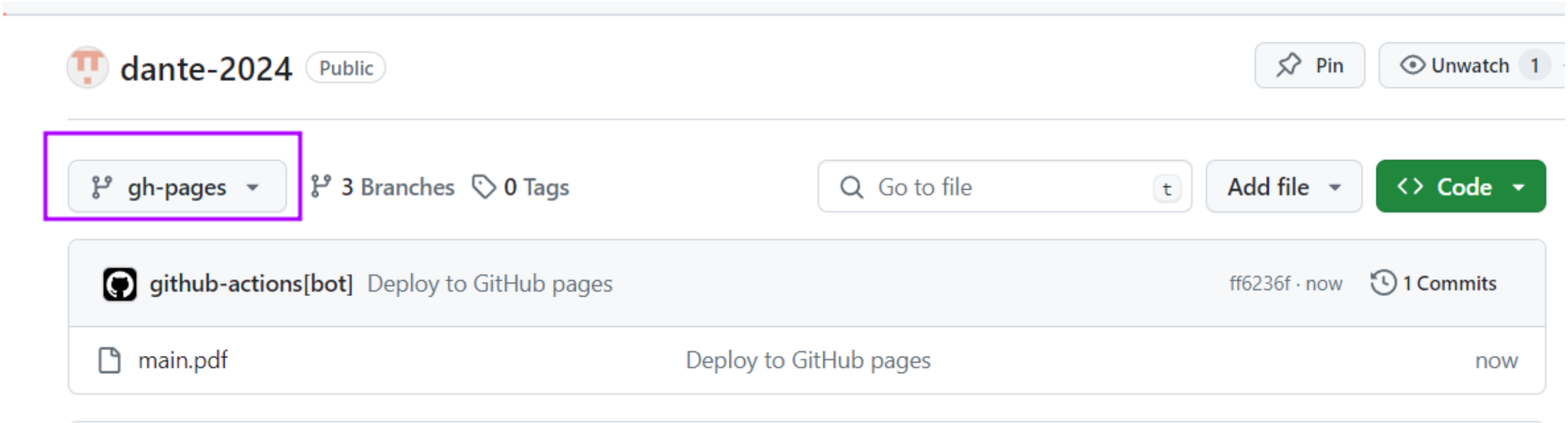




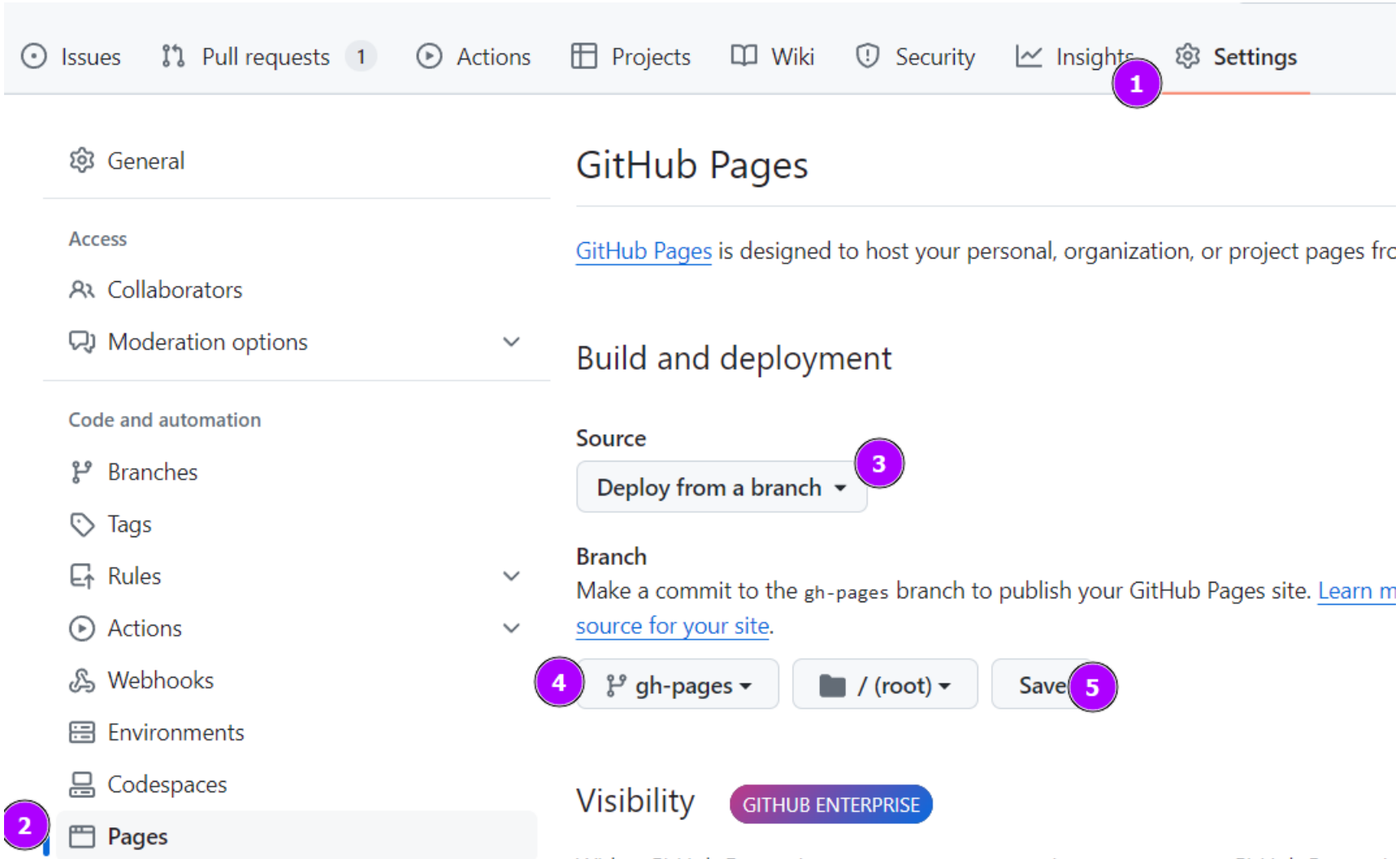
Artefakt für User verlinken I

```yaml
permissions:
  contents: write

jobs:
  build:
    runs-on: ubuntu-latest
    name: check
    steps:
      - name: Checkout
        uses: actions/checkout@v4
      - name: Install TeX Live
        uses: zauguin/install-texlive@v3
        with:
           packages: >
             latex latex-bin scheme-basic koma-script luatexbase luatex
      - run: lualatex main
      - name: Prepare build dir
        run: |
          mkdir build
          cp main.pdf build/
      - name: Upload to gh-pages branch
        uses: crazy-max/ghaction-github-pages@v4
        with:
          target_branch: gh-pages
          build_dir: build
        env:
          GITHUB_TOKEN: ${{ secrets.GITHUB_TOKEN }}
```

Artefakt für User verlinken II

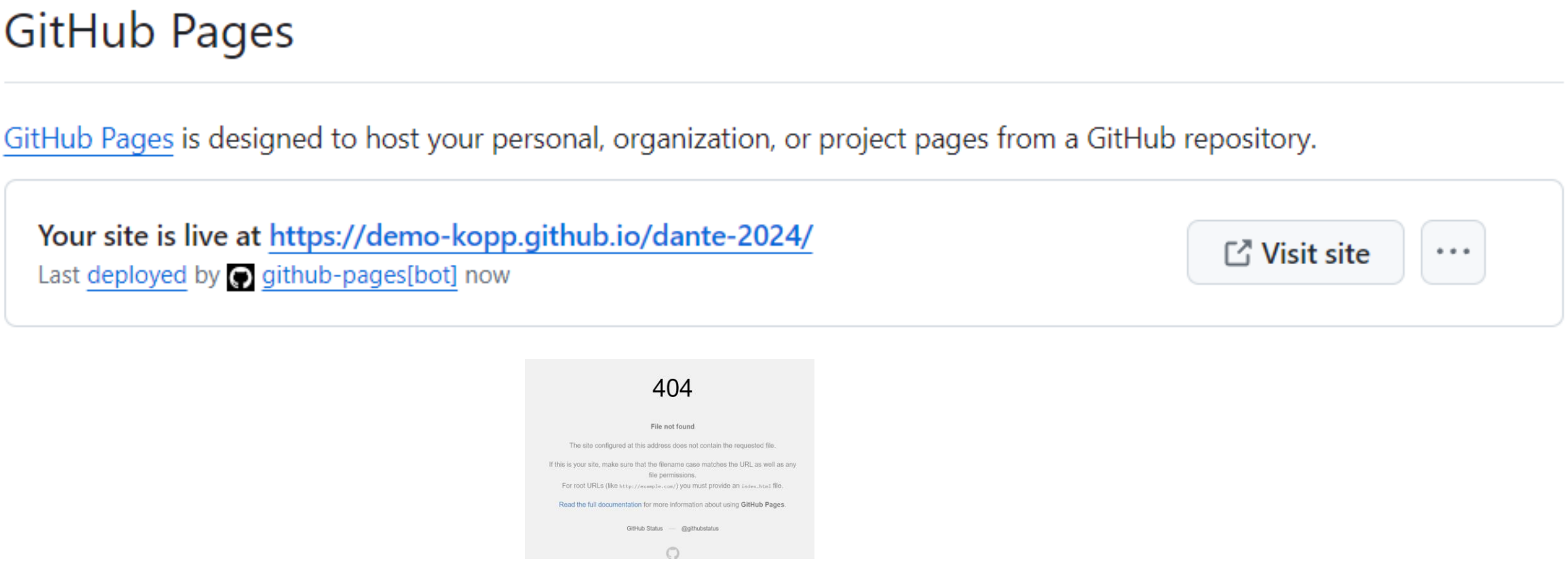


Artefakt für User verlinken III

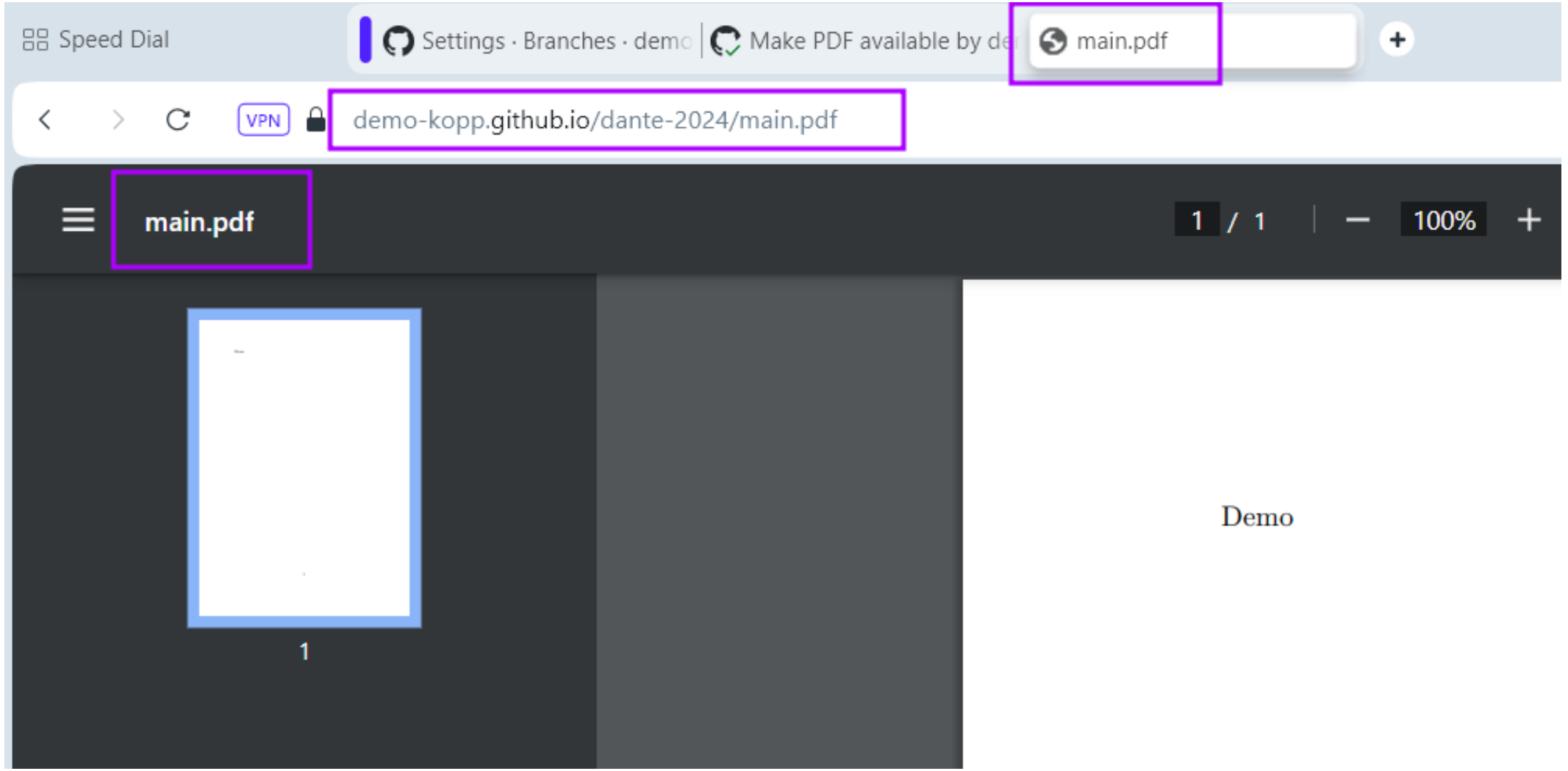


Artefakt für User verlinken IV

- … ein bißchen mehr Arbeit -> neuer Commit, damit es live ist
  - z.B. „workflow_dispatch:“ als Trigger

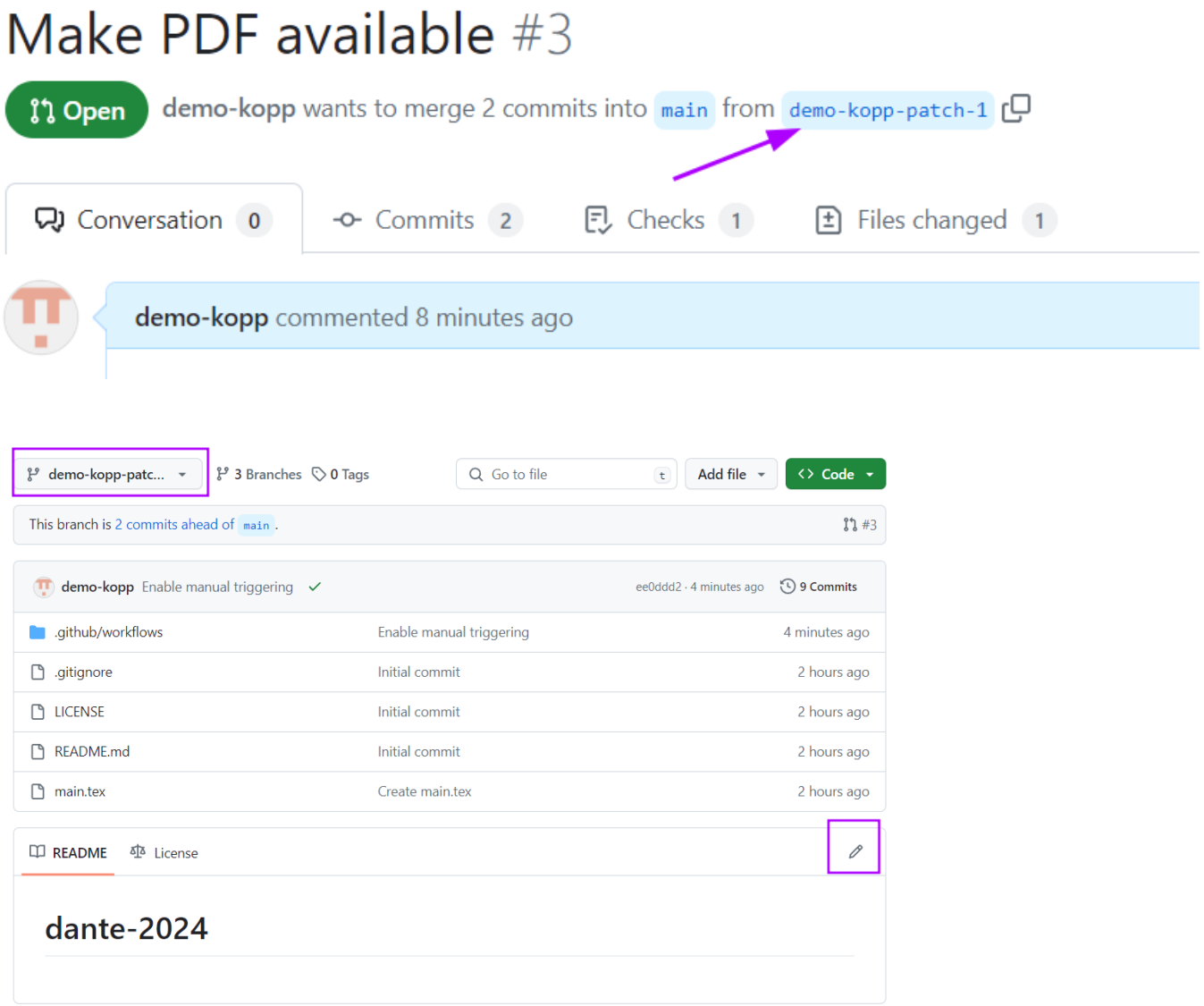


PDF ist live

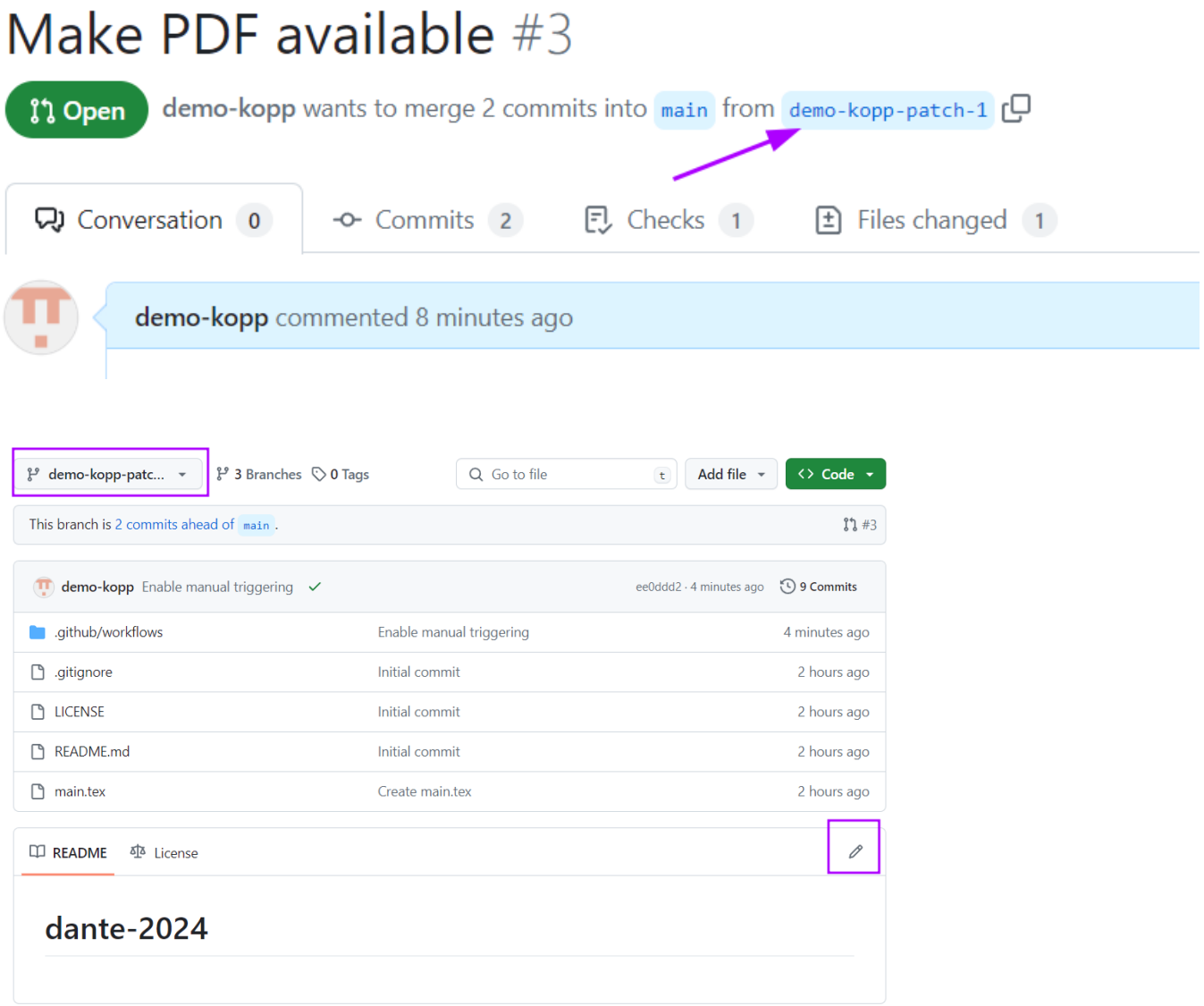


https://demo-kopp.github.io/dante-2024/main.pdf

PDF aus README.md verlinken I



PDF aus README.md verlinken II



PDF aus README.md verlinken III

dante-2024 / README.md in demo-kopp-patch-1

Edit Preview Code 55% faster with GitHub Copilot

```
1  # dante-2024
2
3  PDF: <https://demo-kopp.github.io/dante-2024/main.pdf>
4
```

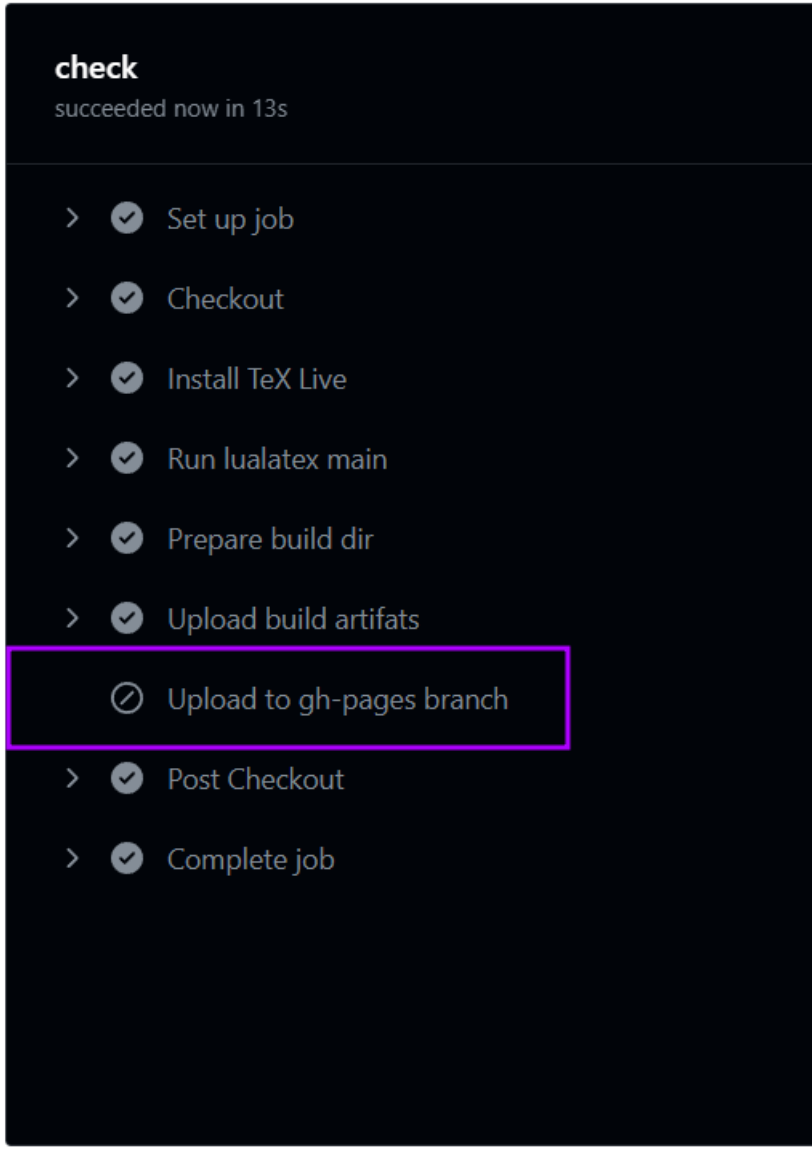
README License

dante-2024

PDF: https://demo-kopp.github.io/dante-2024/main.pdf

Nur erstellen, wenn auf „main“

```
if: >
      (github.repository == 'demo-kopp/dante-2024') &
      (github.ref == 'refs/heads/main')
```



texlogsieve zur Herausarbeitung von wichtigen Log-Nachrichten

Zusammenfassung und Ausblick

- GitHub zur Versionskontrolle
- GitHub Actions zum Kompilieren der Dokumente

- Hausaufgaben
  - Durcharbeiten von https://lostechies.com/joshuaflanagan/2010/09/03/use-gitk-to-understand-git/
  - Eigenes LaTeX-Projekt auf GitHub mit Check versehen
  - Beitrag („Pull Request“) zu https://github.com/dante-ev/l2kurz leisten

- Weiterführendes (bezogen auf git)
  - Interaktive Simulation von git: https://github.com/initialcommit-com/git-sim
  - Curated list of amazingly awesome Git tools, resources and shiny things: https://github.com/dictcp/awesome-git

Appendix

Moderne Action für gh-pages

```
- name: Upload artifact
      uses: actions/upload-pages-artifact@v3
      with:
        path: main.pdf
```

LaTeX für Geisteswissenschaftler

- https://github.com/thomas-hilarius-meyer/LaTeX-fuer-Geisteswissenschaftler/actions
- https://github.com/thomas-hilarius-meyer/LaTeX-fuer-Geisteswissenschaftler/blob/master/.github/workflows/check-build.yml

Git Installationstipps

- Tool: git
  - Ubuntu: sudo apt-get install git git-gui gitk
  - macOS: brew update && brew install git && brew install git-gui
  - Windows: choco install git.install -y --params "/GitAndUnixToolsOnPath /WindowsTerminal /WindowsTerminalProfile /Editor:VisualStudioCode"

Some git tweaks

```
rem always have Linux line endings in text files
git config --global core.autocrlf input
rem support more than 260 characters on Windows
rem See https://stackoverflow.com/a/22575737/873282 for details
git config --global core.longpaths true
rem some color and diff tweaks
rem   Use SVN's ||| also in git - and remove matching lines in the conflict region
rem   See https://git-scm.com/docs/git-config#Documentation/git-config.txt-mergeconflictStyle
for details
git config --global merge.configStyle "zdiff3"
rem Always push to the branch we pulled from
rem   See https://git-scm.com/docs/git-config#Documentation/git-config.txt-pushdefault for
details
git config --global push.default current
rem  Source: https://stackoverflow.com/a/72401899/873282
git config --global push.autoSetupRemote true
rem  Colors in output
rem  Source: https://unix.stackexchange.com/a/44297/18033
git config --global color.ui auto
rem Sort branches at "git branch -v" by committer date
git config --global branch.sort -committerdate
rem tabs are 4 spaces wide
git config --global gui.tabsize 4
```

Source: https://github.com/koppor/koppors-chocolatey-scripts/blob/main/install.bat