

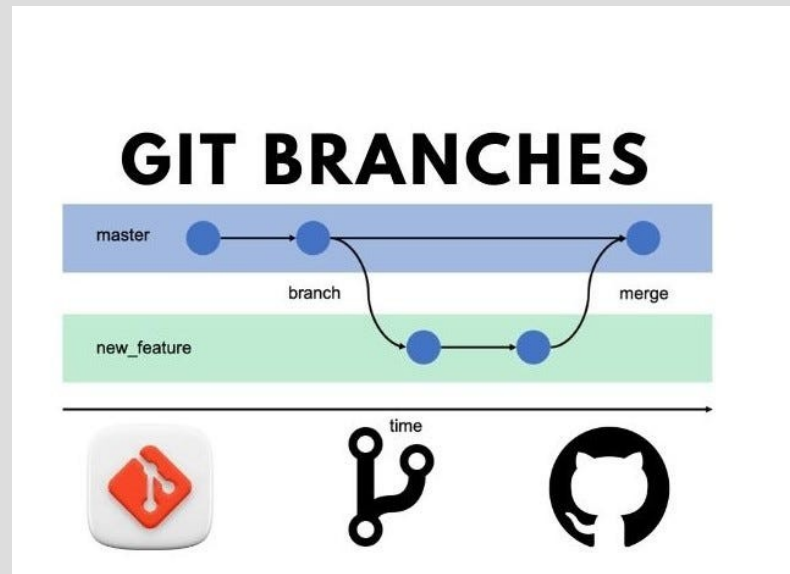


GIT/GITHUB/GITLAB TEIL 2

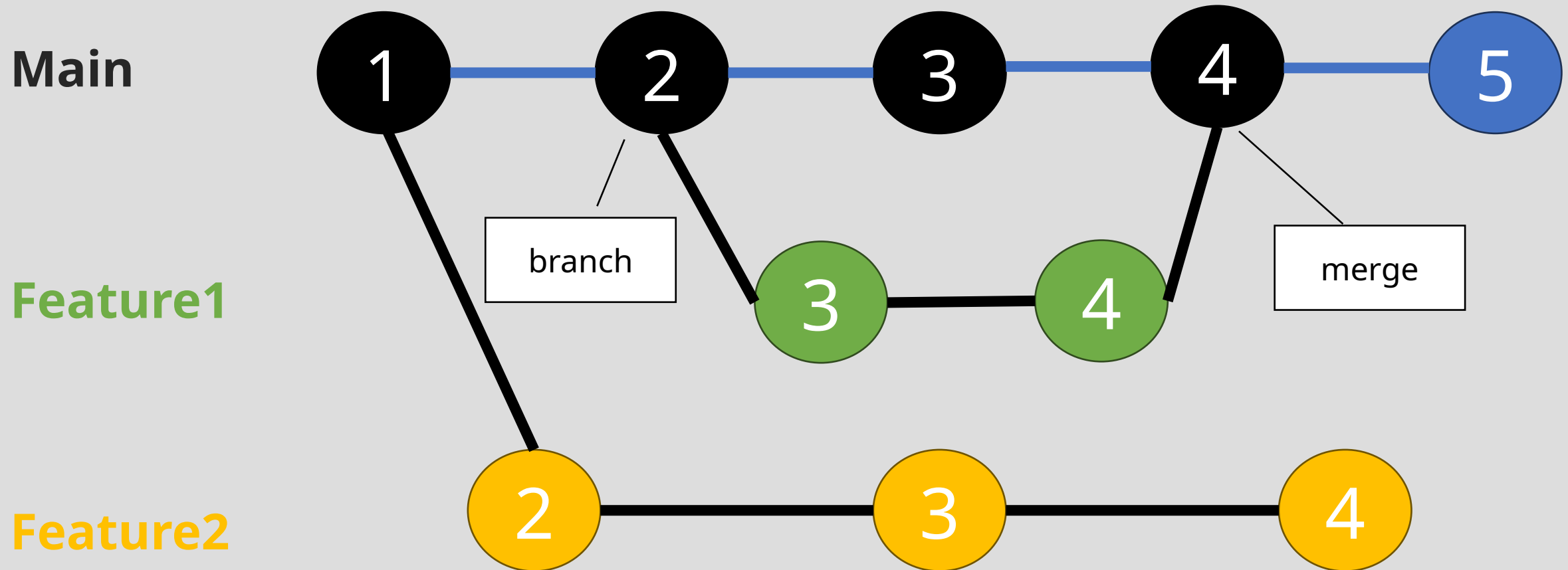
Branching --- Merging --- Forking --- Pull Requests

BRANCHING AND MERGING

- Idee von Branches
 - Wir arbeiten an Features, ohne das „Grundgerüst“ unseres Projektes zu gefährden
 - Für jedes Feature ein **branch**
 - Sobald die Features getestet sind, **mergen** wir die Zweige



BRANCHING AND MERGING



BRANCHING

- Neuer branch wird mit `git branch <name>` erzeugt
- Anzeige aller branches mit `git branch`

```
$ git branch alien-plot
```

```
Patrick@KorberKPA MINGW64 ~/OneDrive - BG&BRG Baden Biondekgasse/Desktop/test/story (main)
```

```
$ git branch  
  alien-plot  
* main
```

BRANCHING

- * zeigt an, auf welchem branch du bist
- branch wechseln mit `git checkout <name>`

```
$ git branch alien-plot

Patrick@KorberKPA MINGW64 ~/OneDrive - BG&BRG Baden Biondegasse/Desktop/test/story (main)
$ git branch
  alien-plot
* main
```

```
$ git checkout alien-plot
Switched to branch 'alien-plot'

Patrick@KorberKPA MINGW64 ~/OneDrive - BG&BRG Baden Biondegasse/Desktop/test/story (alien-plot)
$ git branch
* alien-plot
  main
```

BRANCHING

- Sobald branch gewechselt ist, normaler Ablauf (git add, git commit, ...)
- Alle Änderungen betreffen jetzt NUR den branch **alien-plot**
- Änderungen sichtbar unter **git log**

```
$ git log
commit 15cc287b5a54236dc0ad831f935f42dc4cba0690 (HEAD -> alien-plot)
Author: P.Korber <patkordum@gmail.com>
Date:   Mon Mar 18 10:03:35 2024 +0100

    Modified Chapter1 and 2 to include alien theme

commit 78dc9012bc1568df2cbd7a2064b82300f8b5519c (origin/main, main)
Author: P.Korber <patkordum@gmail.com>
Date:   Mon Mar 18 09:37:06 2024 +0100

    gitignore included
```

BRANCHING

- Zurück wechseln auf main branch mit `git checkout main`
- Alle Änderungen betreffen NUR den branch `main`

```
Patrick@KorberKPA MINGW64 ~/OneDrive - BG&BRG Baden Biondegasse/Desktop/test/story (alien-plot)
$ git branch
* alien-plot
  main
```

```
Patrick@KorberKPA MINGW64 ~/OneDrive - BG&BRG Baden Biondegasse/Desktop/test/story (alien-plot)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
```

```
Patrick@KorberKPA MINGW64 ~/OneDrive - BG&BRG Baden Biondegasse/Desktop/test/story (main)
$ touch chapter4.txt
```

```
Patrick@KorberKPA MINGW64 ~/OneDrive - BG&BRG Baden Biondegasse/Desktop/test/story (main)
$ git add .
```

```
Patrick@KorberKPA MINGW64 ~/OneDrive - BG&BRG Baden Biondegasse/Desktop/test/story (main)
$ git commit -m "Chapter 4 complete"
[main ef704f4] Chapter 4 complete
1 file changed, 1 insertion(+)
create mode 100644 chapter4.txt
```

BRANCHING

- Zurück wechseln auf main branch mit `git checkout main`
- Alle Änderungen betreffen NUR den branch `main`

```
$ git log
commit ef704f458a831d0e1f4d3e9a41688f338067ecfb (HEAD -> main)
Author: P.Korber <patkordum@gmail.com>
Date: Mon Mar 18 10:10:21 2024 +0100

    Chapter 4 complete

commit 78dc9012bc1568df2cbd7a2064b82300f8b5519c (origin/main)
Author: P.Korber <patkordum@gmail.com>
Date: Mon Mar 18 09:37:06 2024 +0100

    gitignore included
```

- `git checkout main` bzw. `alien-plot` führt zu unterschiedlichem Status des Repositories!

MERGING

- `git merge <name>` führt die Änderungen zwischen <name> mit dem aktuellen branch zusammen
- Unterschiedliche merge-Algorithmen (für uns nicht relevant)

```
$ git merge alien-plot
Merge made by the 'ort' strategy.
 chapter2.txt | 2 +-
1 file changed, 1 insertion(+), 1 deletion(-)
```

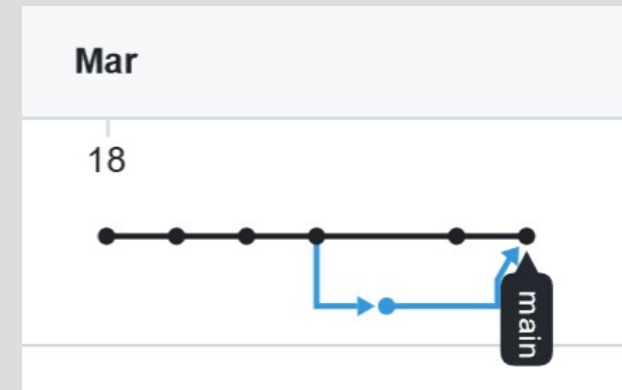
```
$ git log
commit e879a261debe9110c79f85ba9c21595f7ca87a85 (HEAD -> main)
Merge: ef704f4 15cc287
Author: P.Korber <patkordum@gmail.com>
Date: Mon Mar 18 10:14:17 2024 +0100

Merge branch 'alien-plot'
```

MERGING

- Übertragen auf remote repository

```
$ git push -u origin main
Enumerating objects: 10, done.
Counting objects: 100% (10/10), done.
Delta compression using up to 8 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (8/8), 795 bytes | 795.00 KiB/s, done.
Total 8 (delta 4), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (4/4), completed with 1 local object.
To https://github.com/patkordum/teststory.git
 78dc901..e879a26  main -> main
branch 'main' set up to track 'origin/main'.
```



Commits

main

All users

All time

Commits on Mar 18, 2024

Merge branch 'alien-plot'

patkordum committed 4 minutes ago

e879a26



Chapter 4 complete

patkordum committed 8 minutes ago

ef704f4



FORKING / PULL REQUESTS

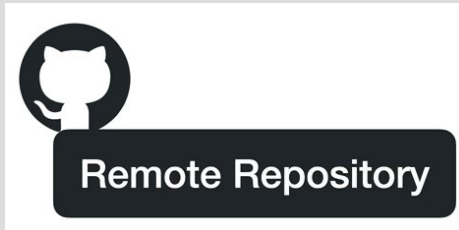
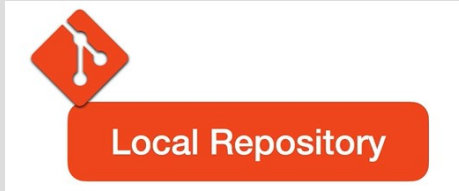
- Idee: Kollaboratives Arbeiten mit Git
- Bisher: „Nur“ Version Control

```
git push -u <remote name> <branch name>
```

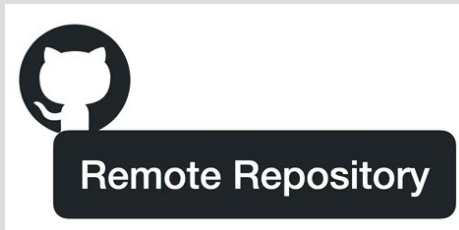
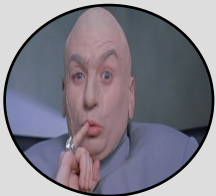


FORKING / PULL REQUESTS

Ich



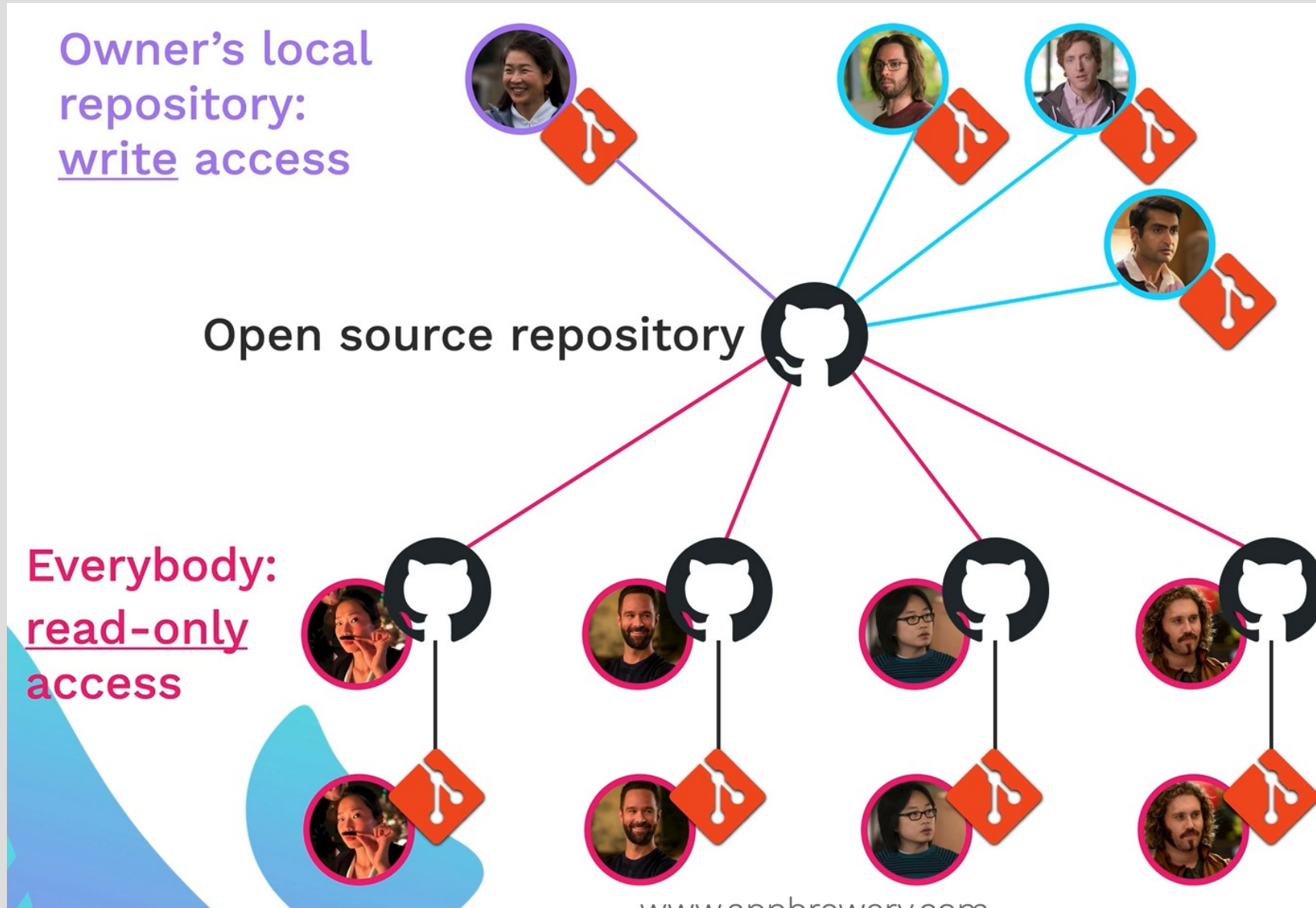
Evil Twin



 Fork

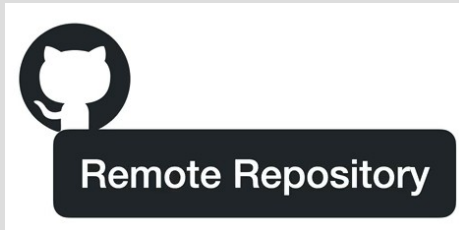
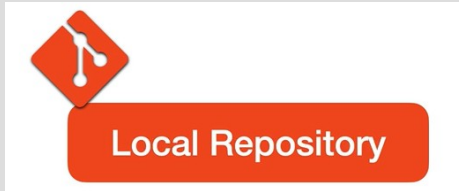


FORKING / PULL REQUESTS



FORKING / PULL REQUESTS

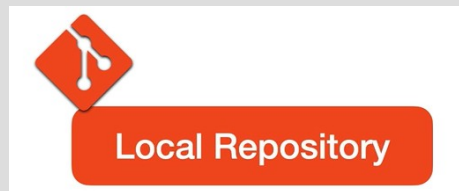
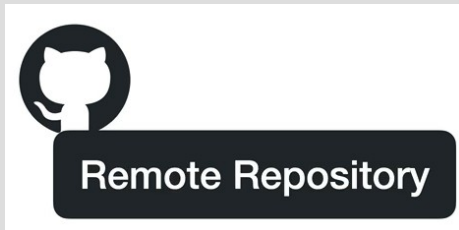
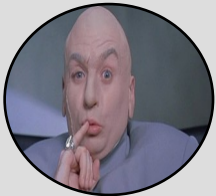
Ich



git clone



Evil Twin



FORKING / PULL REQUESTS

Write access

Owner

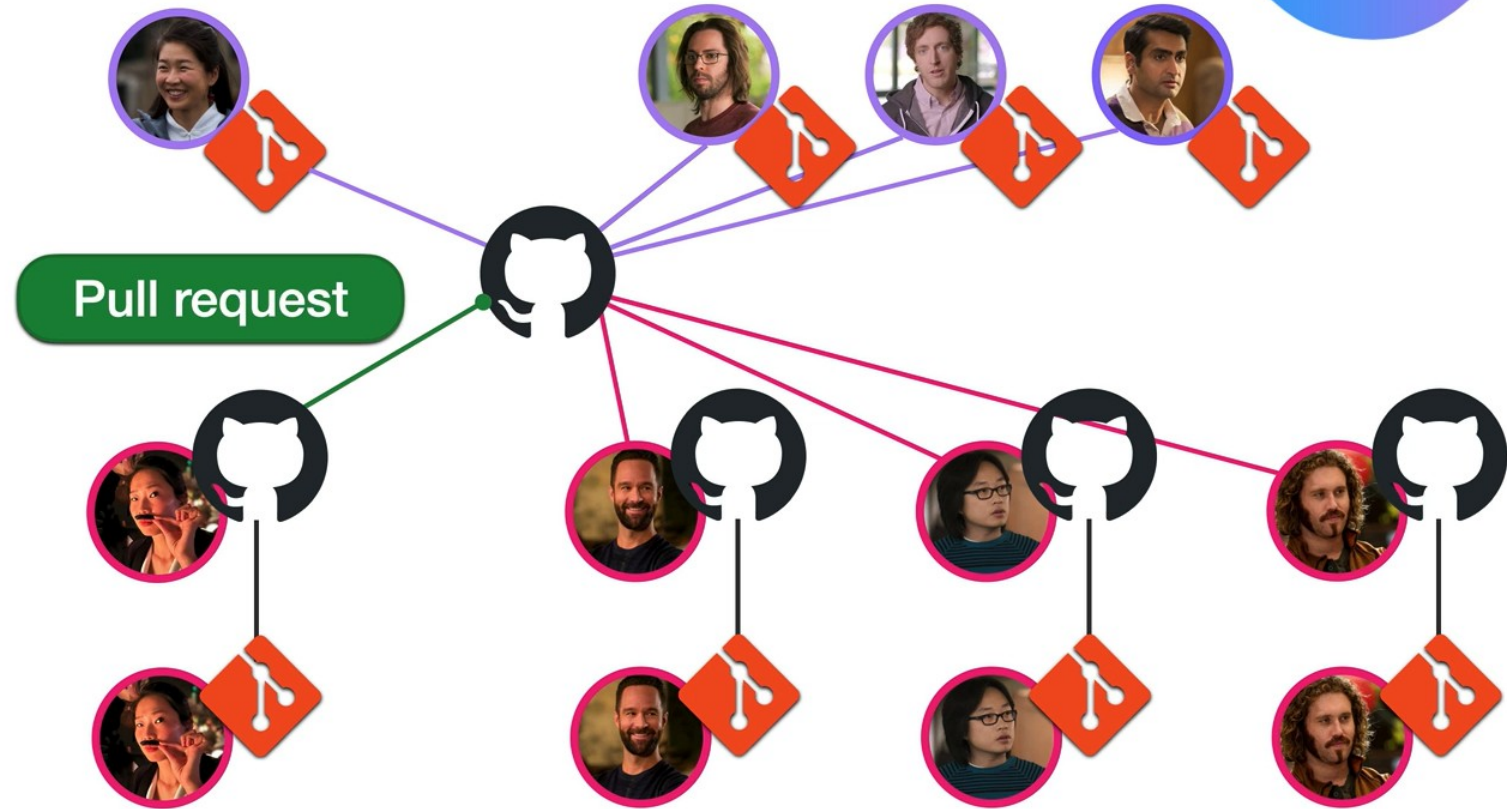
Collaborators

Read-only access

Pull request

Contributors

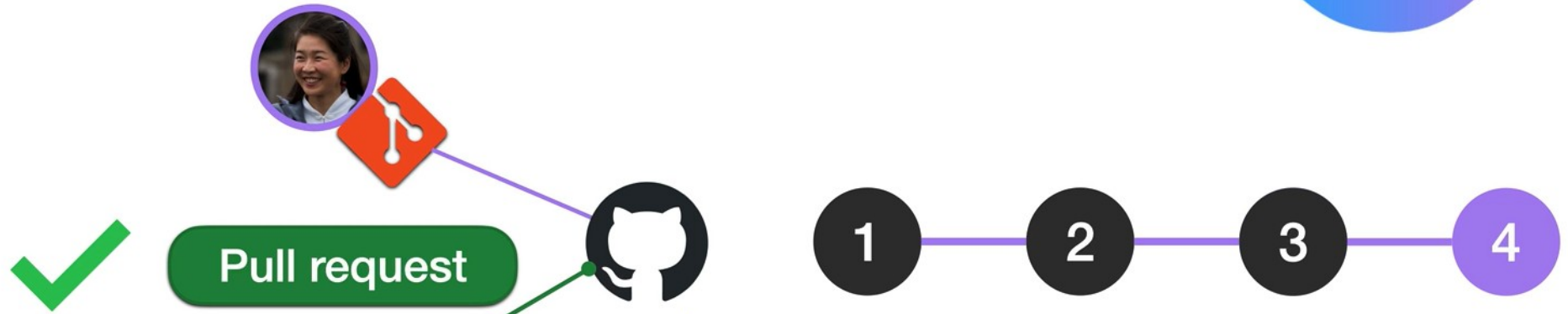
Everyone else



FORKING / PULL REQUESTS

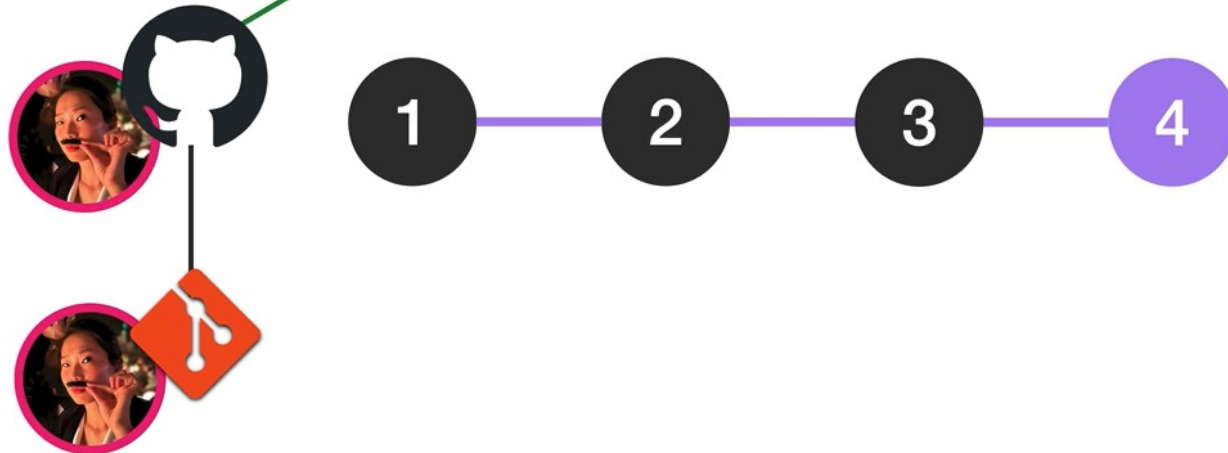
Write access

Owner



Read-only access

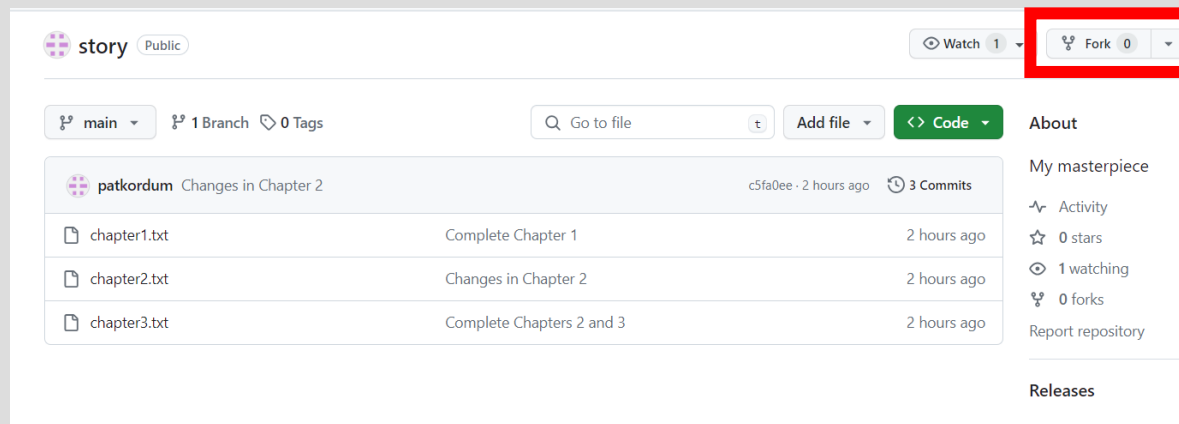
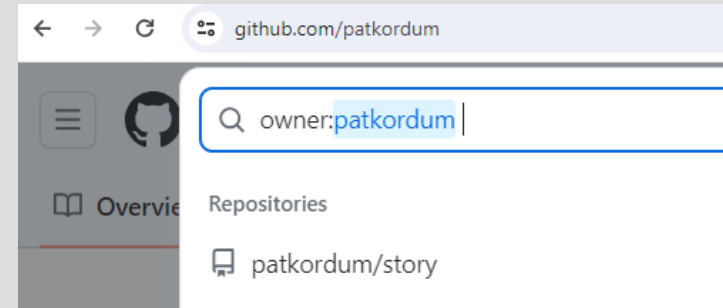
Contributors



FORKING / PULL REQUEST

Ablauf

- Ziel-Repository auf Github finden
- Ziel-Repository forken



FORKING / PULL REQUEST

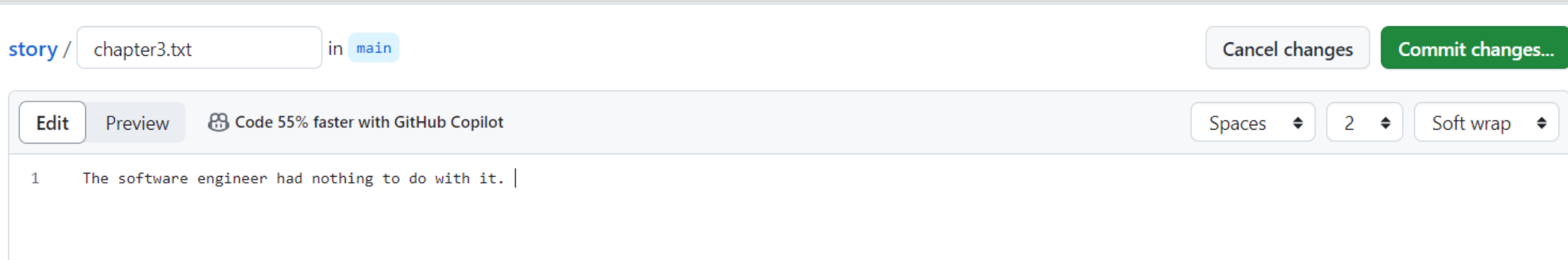
- Fork ist als eigenes Repository vorhanden (inkl. aller commits etc.)

The screenshot shows the GitHub interface for a repository named 'story' by user 'patkor'. The repository is public and was forked from 'patkordum/story'. The main branch is 'main', and there is 1 branch and 0 tags. The repository is up to date with the upstream 'patkordum/story:main'. A recent commit by 'patkordum' titled 'Changes in Chapter 2' is shown, with a commit hash of 'c5fa0ee' and 3 commits. The commit details table lists three files: 'chapter1.txt', 'chapter2.txt', and 'chapter3.txt', each with a description and a timestamp of '2 hours ago'.

File	Commit Message	Time
chapter1.txt	Complete Chapter 1	2 hours ago
chapter2.txt	Changes in Chapter 2	2 hours ago
chapter3.txt	Complete Chapters 2 and 3	2 hours ago

FORKING / PULL REQUEST

- Änderungen können nun durchgeführt werden:




FORKING / PULL REQUEST

- Änderungen können nun durchgeführt werden
 - Diese können in deine eigenen Kopie (fork) übertragen werden (commit)

story / in main

Cancel changes Commit changes...

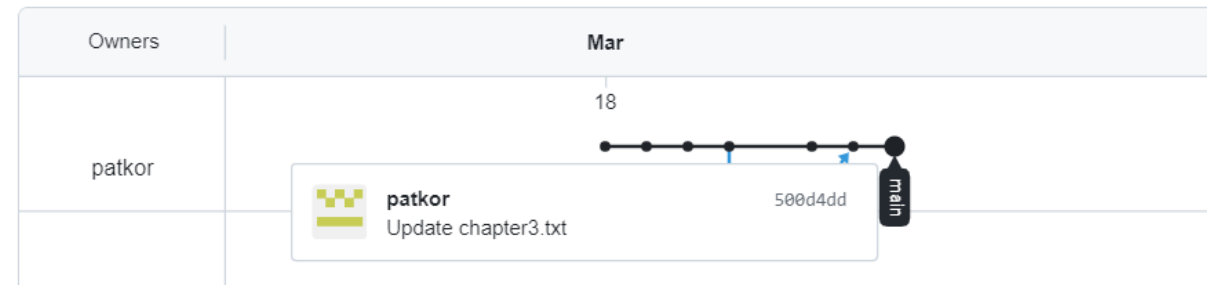
Edit Preview  Code 55% faster with GitHub Copilot

Spaces 2 Soft wrap

```
1 The software engineer had nothing to do with it. |
```

Network graph

Timeline of the most recent commits to this repository and its network ordered by most recently pushed to.



FORKING / PULL REQUEST

- ABER: Im Original-Repository erscheinen sie als eigener Branch (nicht „main“)

story / in main

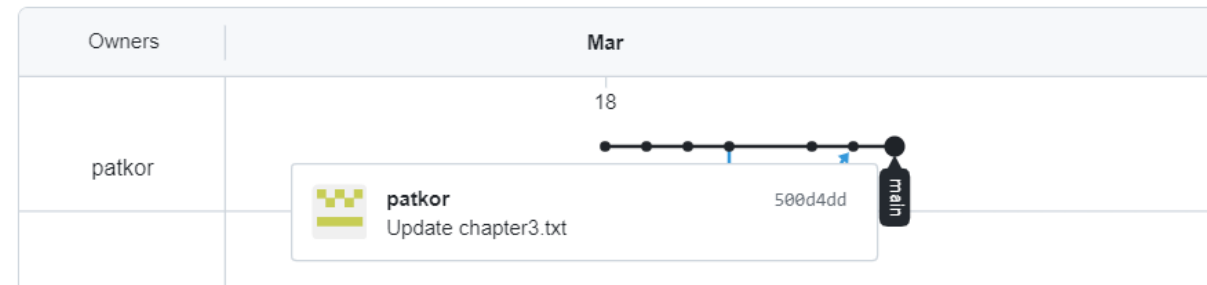
Cancel changes Commit changes...

Edit Preview Code 55% faster with GitHub Copilot Spaces ▾ 2 ▾ Soft wrap ▾

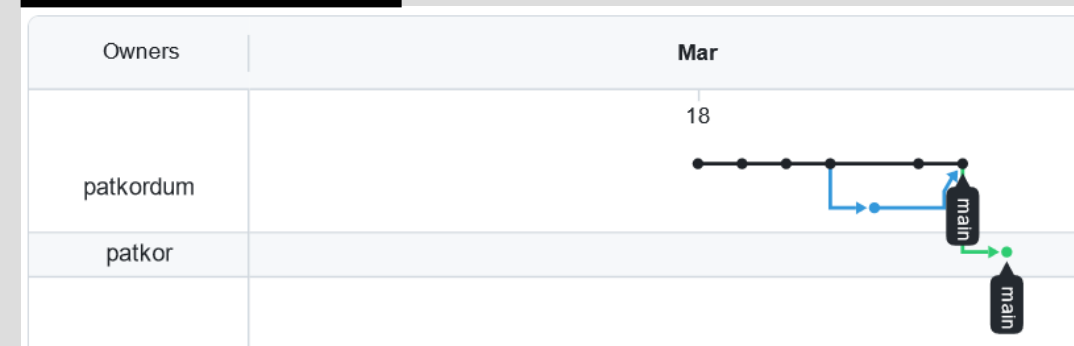
```
1 The software engineer had nothing to do with it. |
```

Fork

Timeline of the most recent commits to this repository and its network ordered by most recently pushed to.



Original-Repo



FORKING / PULL REQUEST

- Über **Pull Request** können wir die Besitzerin auffordern, unsere Änderungen ins Original-Repository zu übernehmen:

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](#) or [learn more about diff comparisons](#).

base repository: patkordum/teststory base: main head repository: patkor/teststory 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 Mar 18, 2024

Update chapter3.txt Verified 500d4dd <>

patkor committed 8 minutes ago

Showing 1 changed file with 1 addition and 1 deletion. Split Unified

2 chapter3.txt

```
... -1 +1 @@
1 - The gardener had nothing to do with it.
1 + The software engineer had nothing to do with it.
```

FORKING / PULL REQUEST

- Besitzerin des Repositories kann den Pull Request annehmen, ablehnen oder diskutieren
 - Bei Annahme des Pull Requests entsteht ein neuer **commit**

