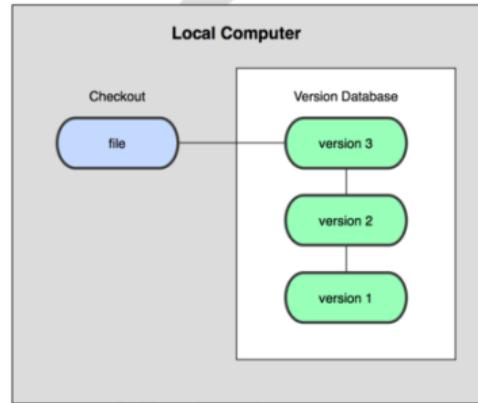




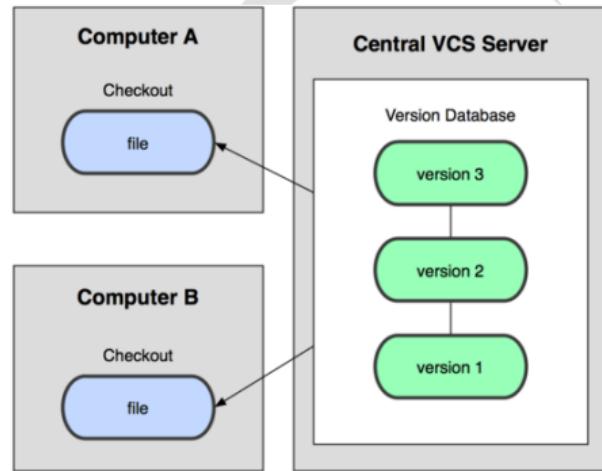
# Einführung in GIT

Sebastian Reichel <[sre@mainframe.io](mailto:sre@mainframe.io)>

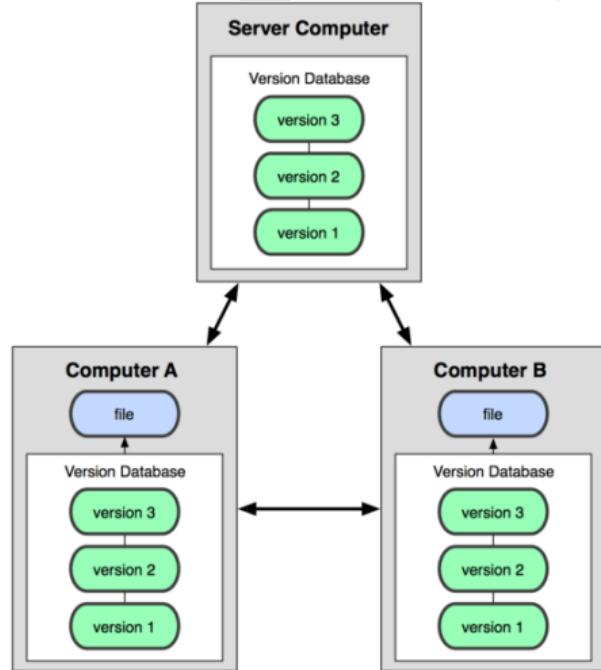
# Versionskontrollsystem



# Versionskontrollsystem



# Versionskontrollsystem



- Linux
  - ▶ apt install git
  - ▶ yum install git
  - ▶ ...
- Windows/Mac
  - ▶ <https://desktop.github.com/>

# git - Konfiguration

```
git config --global user.name "Sebastian Reichel"  
git config --global user.email "sre@ring0.de"  
git config --global core.editor vim
```

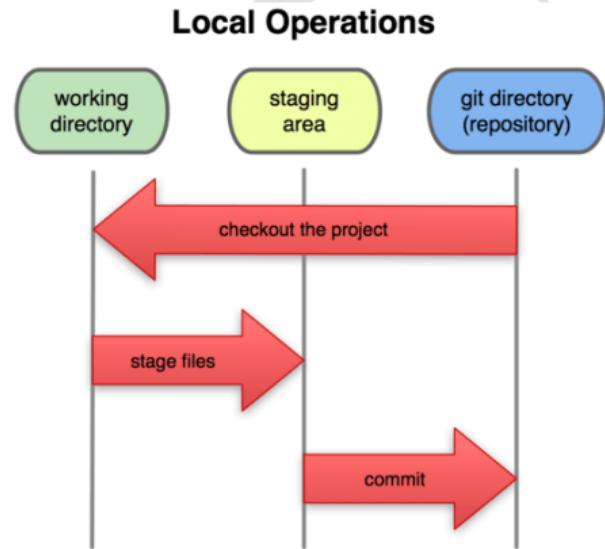
Variante 1:

- 1 In das Projektverzeichnis wechseln
- 2 "git init" ausführen
- 3 Ab jetzt können Dateien zum Projekt hinzugefügt werden

Variante 2:

- 1 Projekt bei GitHub anlegen
- 2 Projekt auschecken (git clone URL)
- 3 Ab jetzt können Dateien zum Projekt hinzugefügt werden

# git - Commits

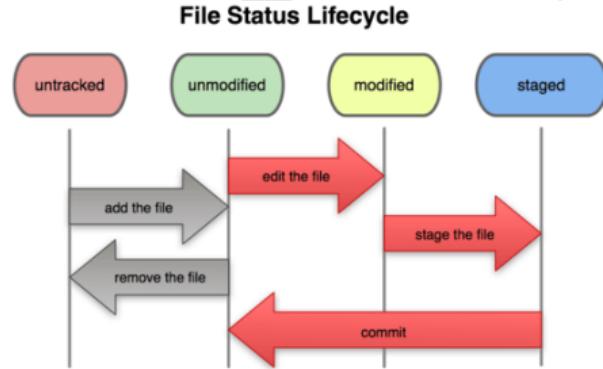


```
git add foobar.c foobar.h
```

```
git add README.txt
```

```
git commit --author "Sebastian Reichel <sre@ring0.de>" -m "Initiales Commit"
```

# git - Commits2



```
git add foobar.c
```

```
git commit -m "Problem mit foo beheben"
```

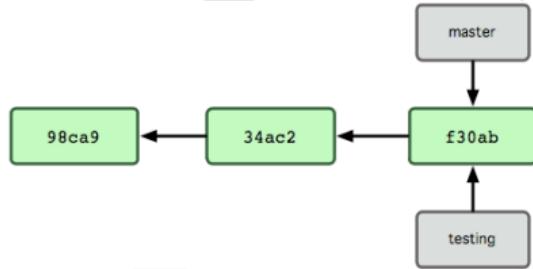
# git - History

```
git log
b39eaca8c908 - README: wireshark 2.x required (3 weeks ago) <Sebastian Reichel>
27609aefbbf5 - sort register/handoff of resource disectors (3 weeks ago) <Sebastian Reichel>
3698173bf664 - fix filename in headers (3 weeks ago) <Sebastian Reichel>
4d206bfed4fa - Wireshark 2.0 API update (3 weeks ago) <Sebastian Reichel>
78051fb3ea7e - Add README (6 months ago) <Sebastian Reichel>
c01e4ddfe876 - Update location/gps support (7 months ago) <Sebastian Reichel>
bcc6be4eec56 - NET_RSSI_IND: Show Percentage in info column (7 months ago) <Sebastian Reichel>
1e96728c936c - Handle SMS_GSM_SUBMIT requests (7 months ago) <Sebastian Reichel>
...
4af535f240fc - update for usage with wireshark 1.12 (7 months ago) <Sebastian Reichel>
0d0f1085dc41 - wireshark provides a pkg-config file now (1 year, 10 months ago) <Sebastian Reichel>
c801db6599ba - new plugin position (2 years ago) <Sebastian Reichel>
9acf18a0c2ae - update for new wireshark API (2 years ago) <Sebastian Reichel>
51e96ec112b4 - update for usage with wireshark 1.8 (3 years, 6 months ago) <Sebastian Reichel>
...
8588f347d9f9 - import the ISI wireshark plugin from libisi (5 years ago) <Sebastian Reichel>
```

# git - Tags

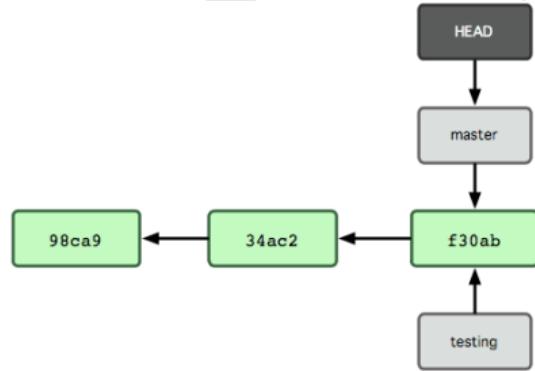
```
git tag version42  
git tag version23 <commit id>
```

# git - Branches



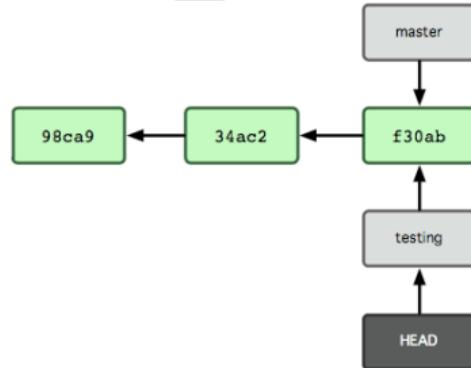
- Neue Branch anlegen:
  - ▶ git branch testing

# git - Branches



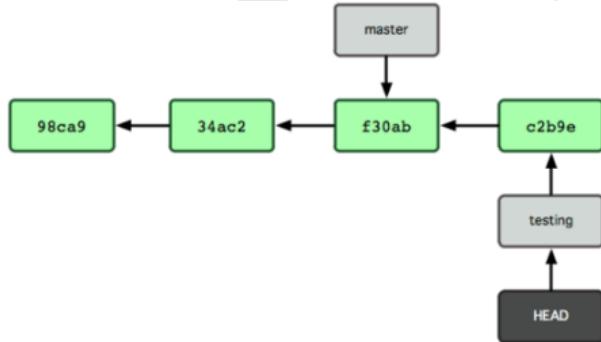
- HEAD = Code welcher gerade ausgecheckt ist

# git - Branches



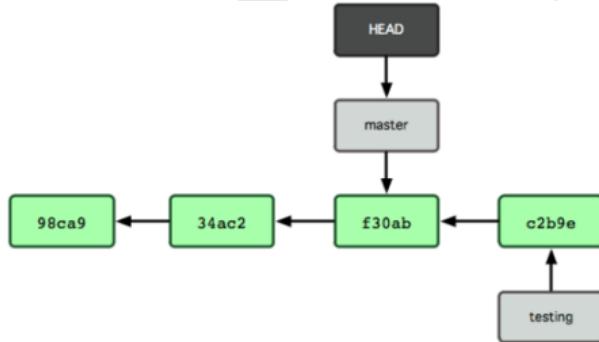
- Zur testing Branch wechseln:
  - ▶ `git checkout testing`

# git - Branches



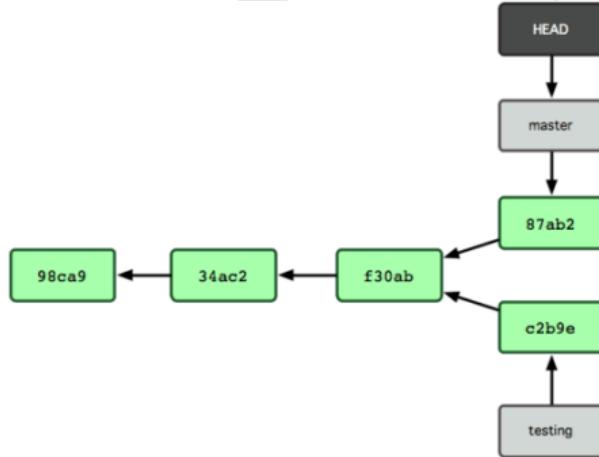
- Neues Commit hinzufügen
  - ▶ `git commit -m "just a test"`

# git - Branches



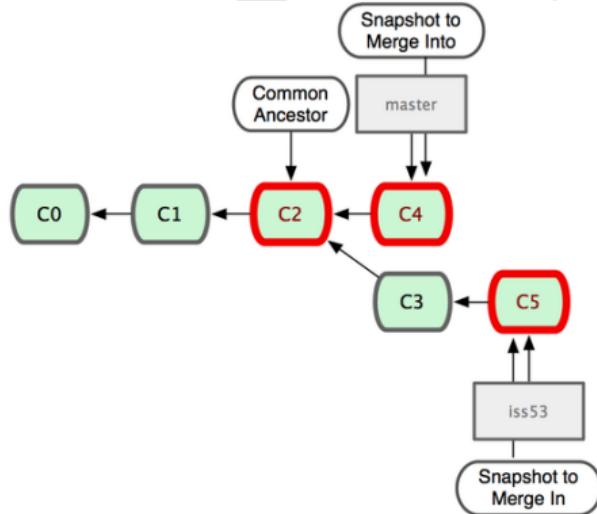
- Zurück zur master-Branch wechseln
  - ▶ `git checkout master`

# git - Branches

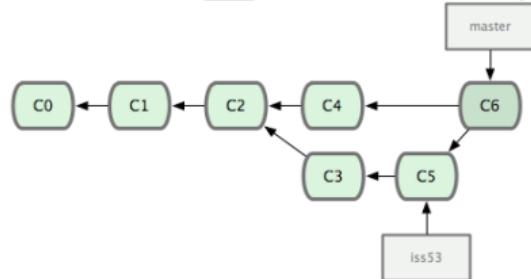


- Neues Commit hinzufügen
  - ▶ `git commit -m "just a test"`

# git - Merging



# git - Merging

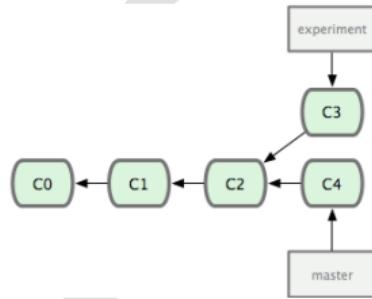


# git - Merge Conflicts

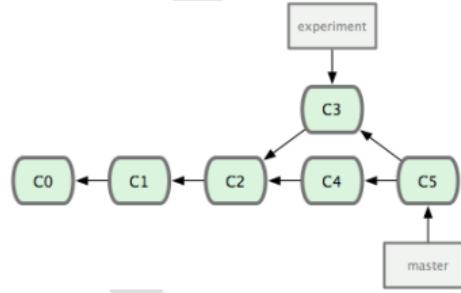
- Branch 1: foobar.c wurde geändert
- Branch 2: test.c wurde geändert
- ⇒ automatischer merge möglich

- 
- Branch 1: foobar.c wurde geändert
  - Branch 2: foobar.c wurde geändert
  - ⇒ automatischer merge evtl. nicht möglich

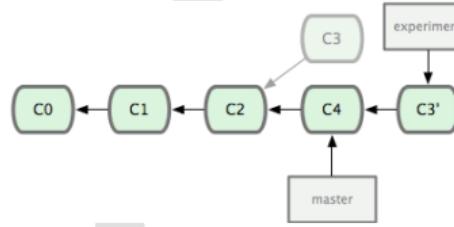
# git - Rebase



# git - Rebase



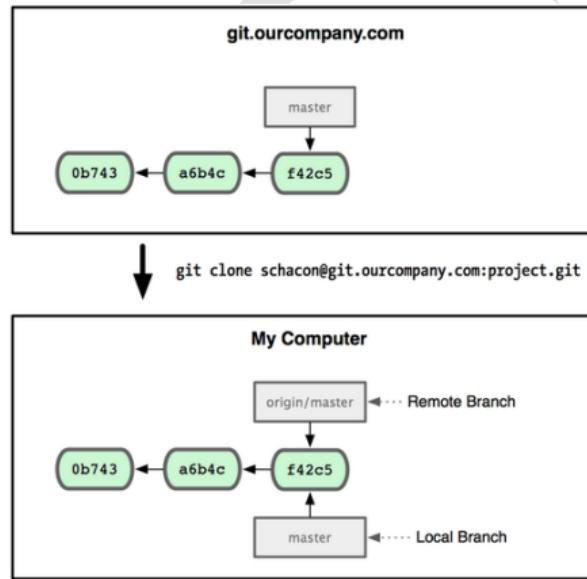
# git - Rebase



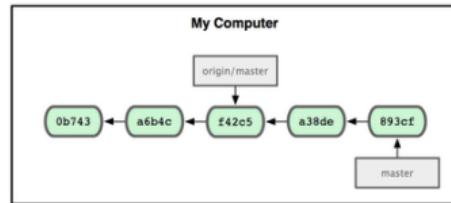
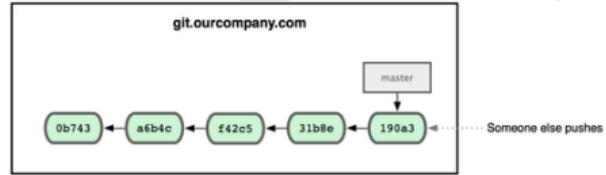
# git - Rebase

- sehr mächtig
- **gefährlich - es können Daten verloren gehen**
- verändert die History
- weniger „Müll“ im Log

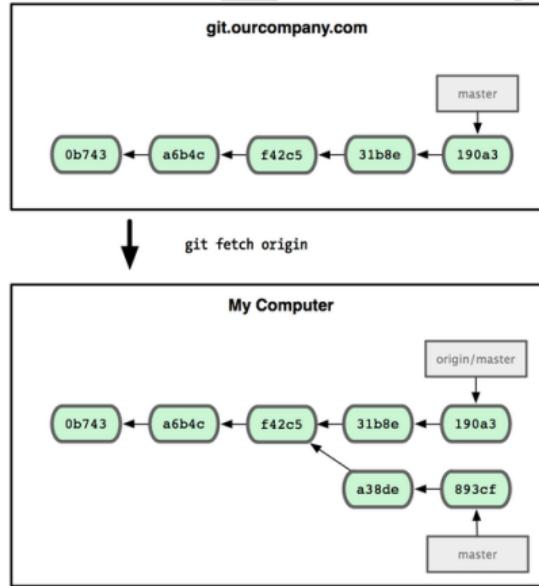
# git - Externe Branches



# git - Externe Branches



# git - Externe Branches



- Nun kann man `origin/master` in `master` mergen
  - ▶ `git merge origin/master`

- Shortcut: git pull
  - ▶ git fetch + git merge

---

- git push = branch zum server pushen
  - ▶ ggf. zunächst git fetch + git merge ausführen

- <https://git-scm.com/book/de/v1>
  - ▶ Offenes Buch zum Thema Git
  - ▶ Quelle für alle Grafiken aus dem Vortrag