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Informatik

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# Workshop: Git I



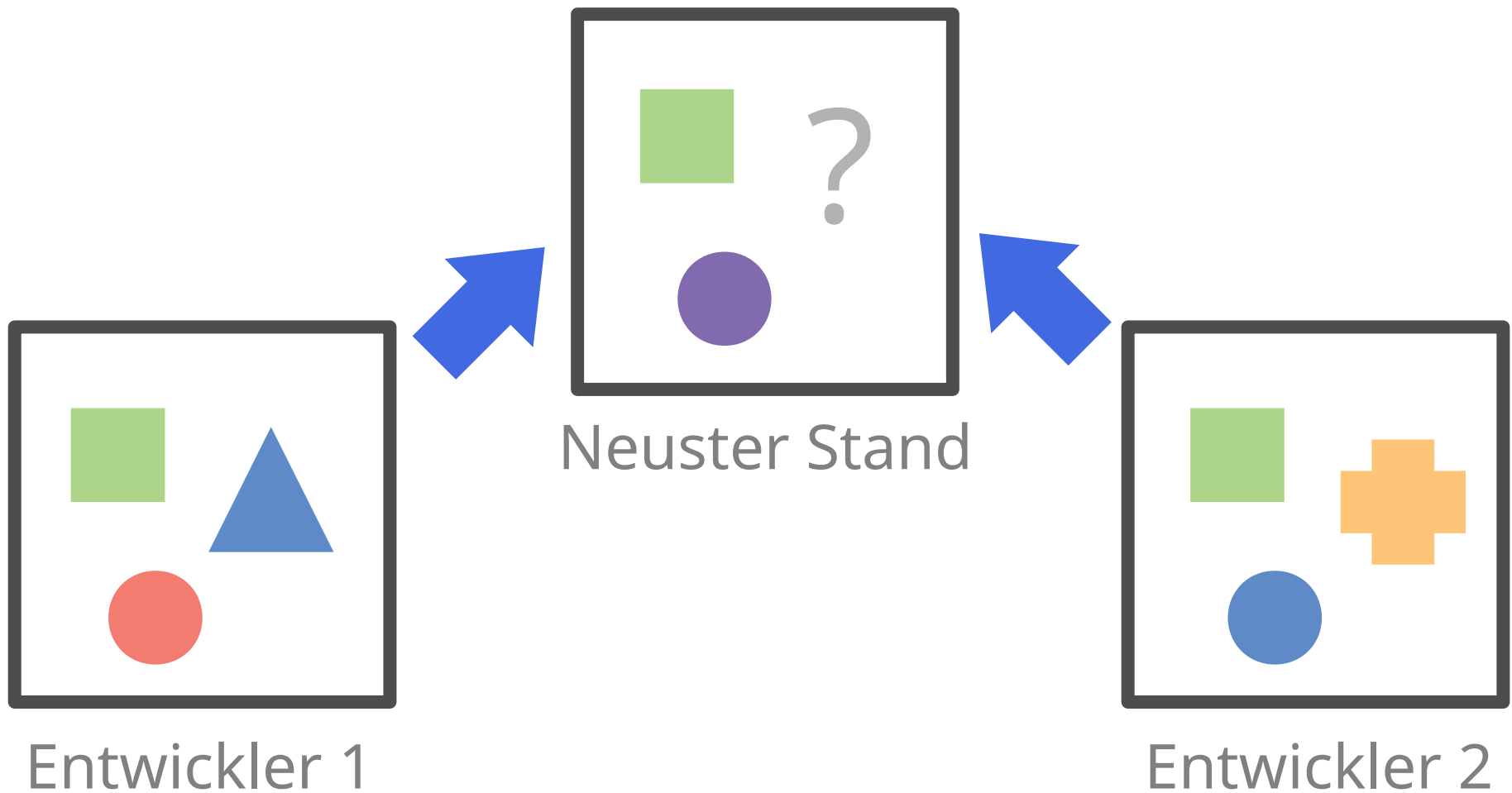
# Inhalt

- I. Git
- II. Repository
- III. Commits
- IV. Branches
- V. Remote Repository

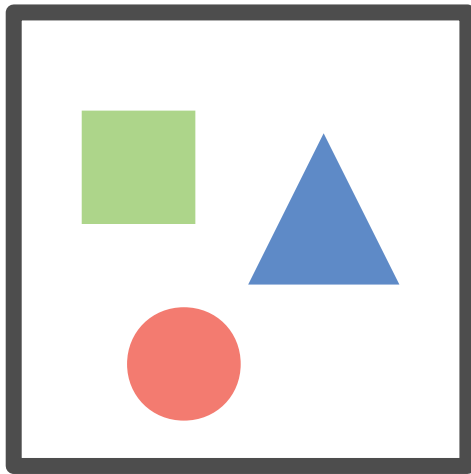


# Git

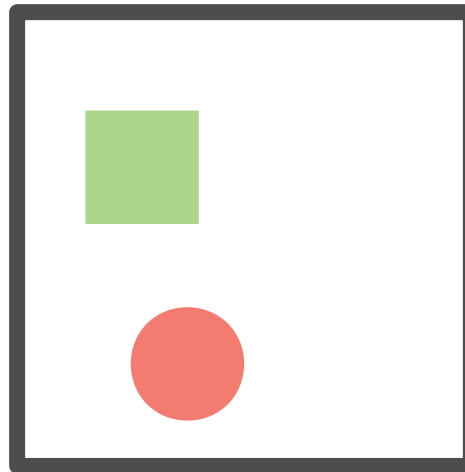
# Problem: Mehrere Versionen



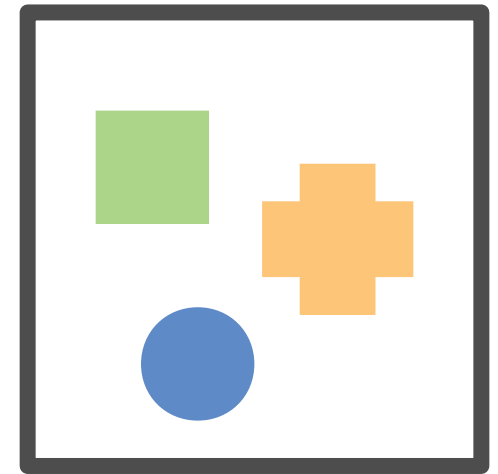
# Lösung: Git



Entwickler 1

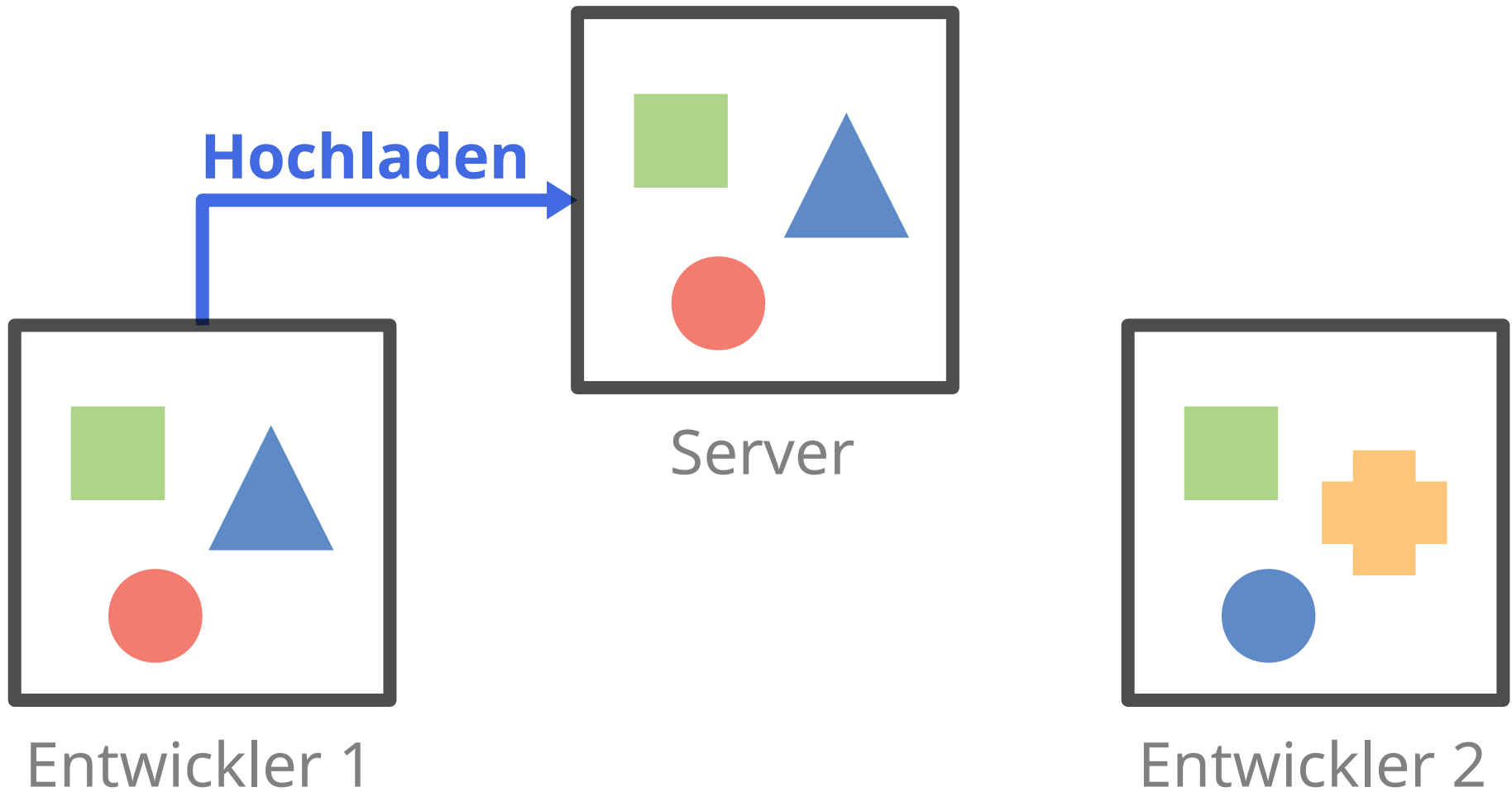


Server

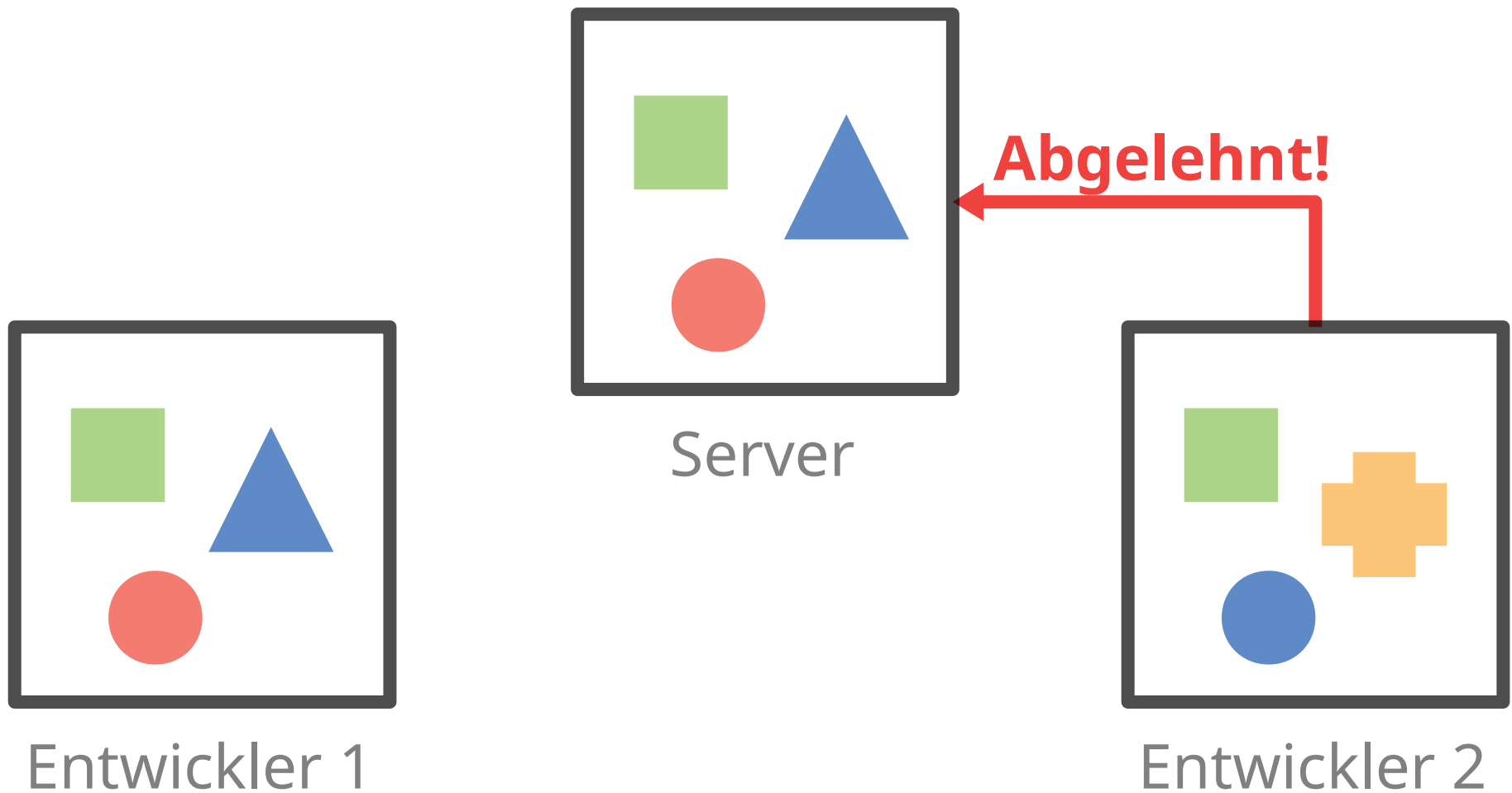


Entwickler 2

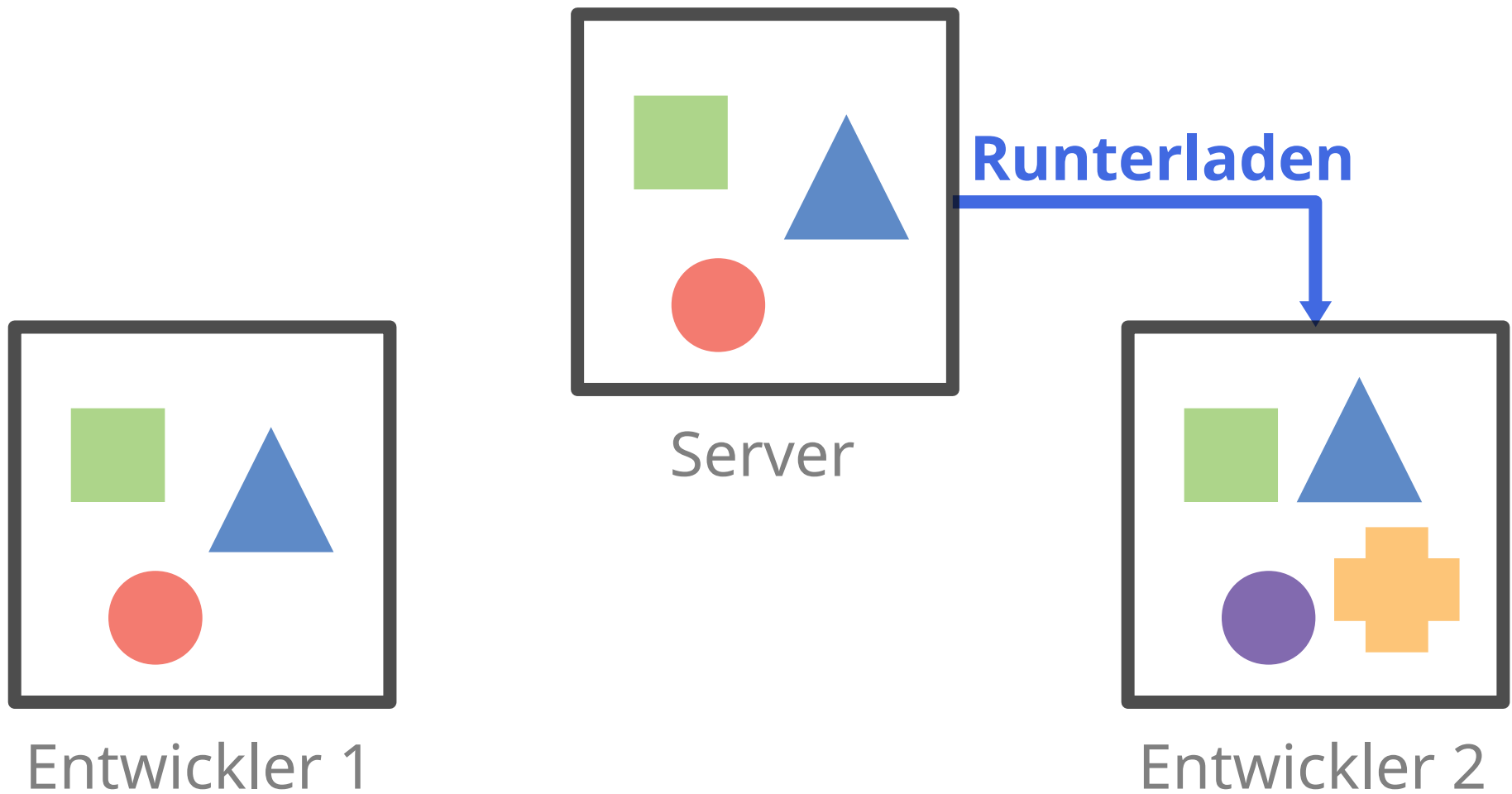
# Lösung: Git



# Lösung: Git

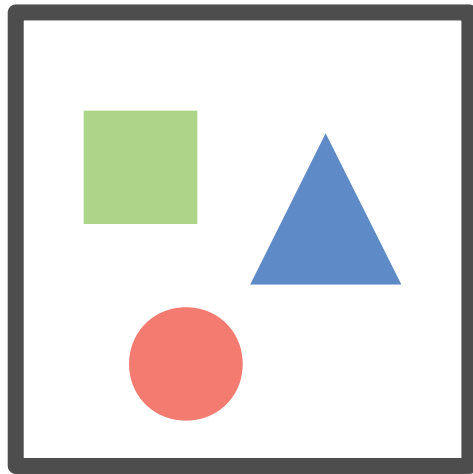


# Lösung: Git

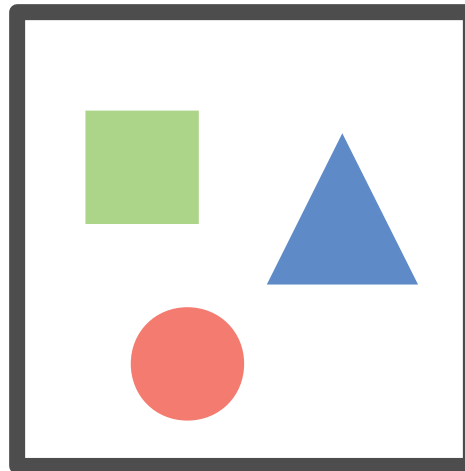




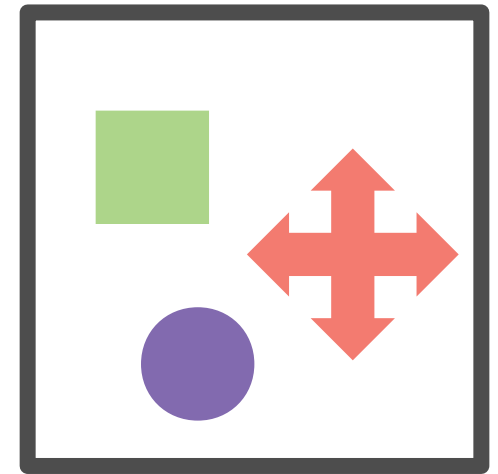
# Lösung: Git



Entwickler 1

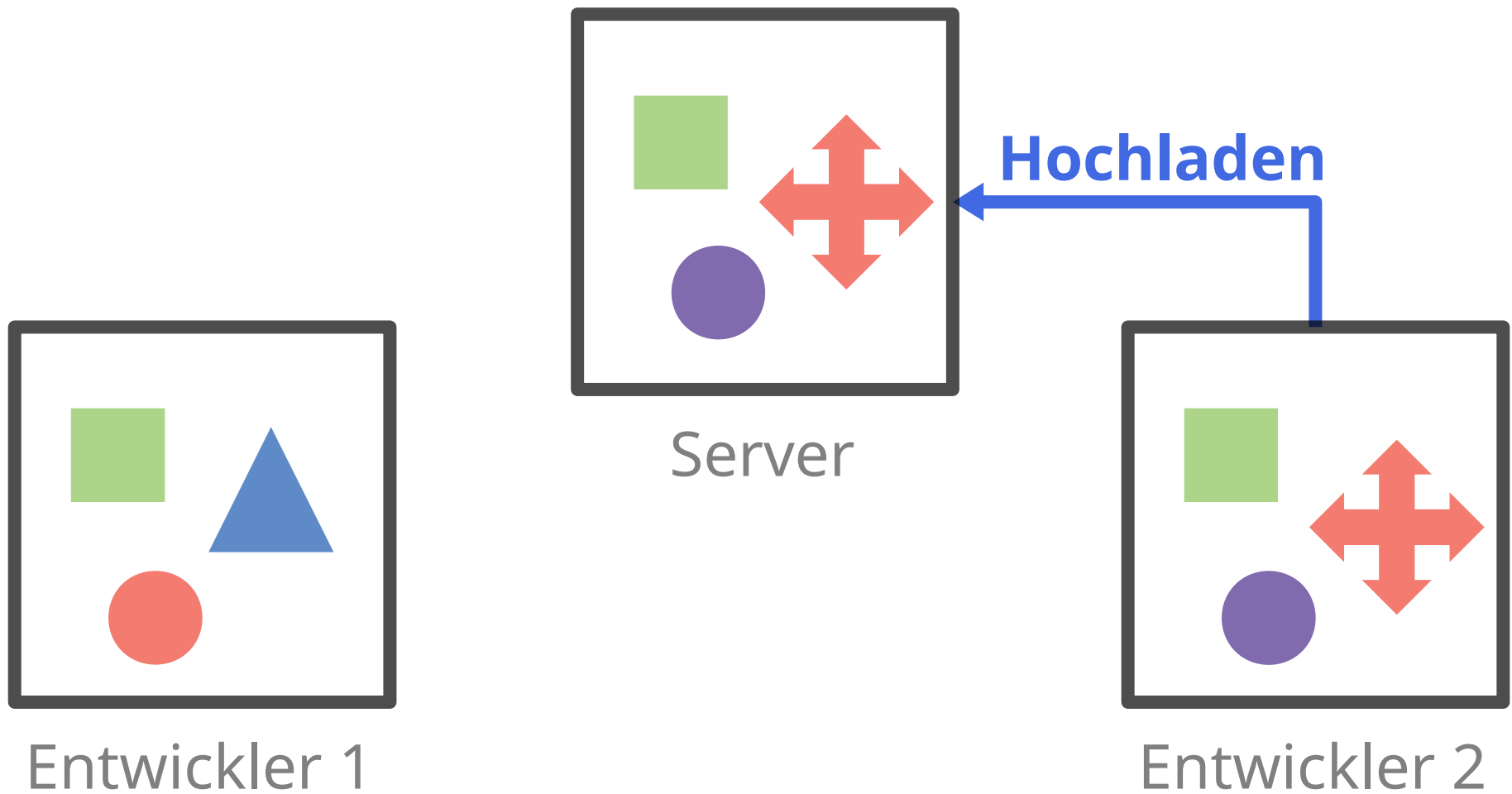


Server

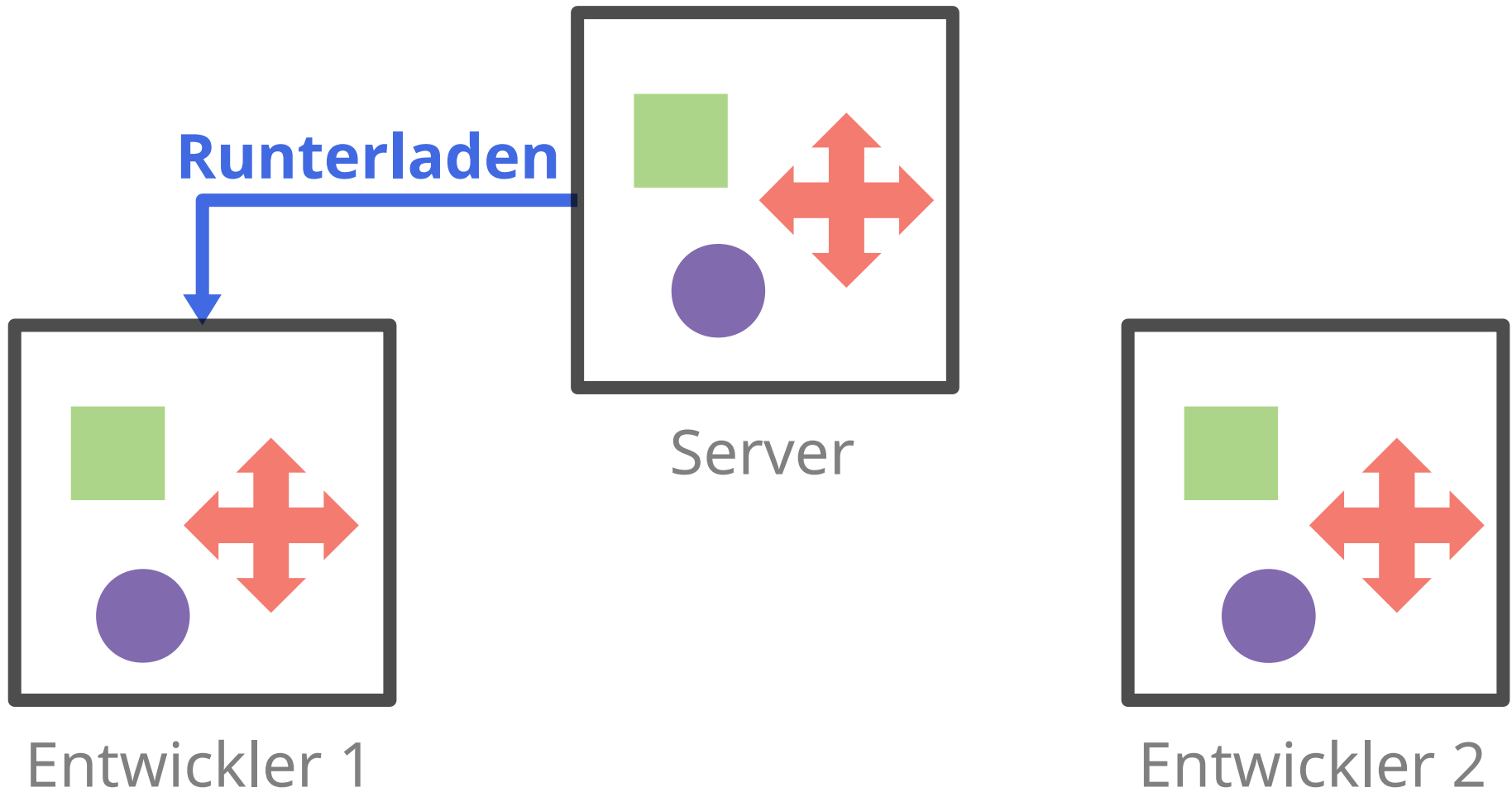


Entwickler 2

# Lösung: Git



# Lösung: Git



# Erster Git Befehle

```
$git --version
```

# Git Konfiguration

```
$git config --get <key>
```

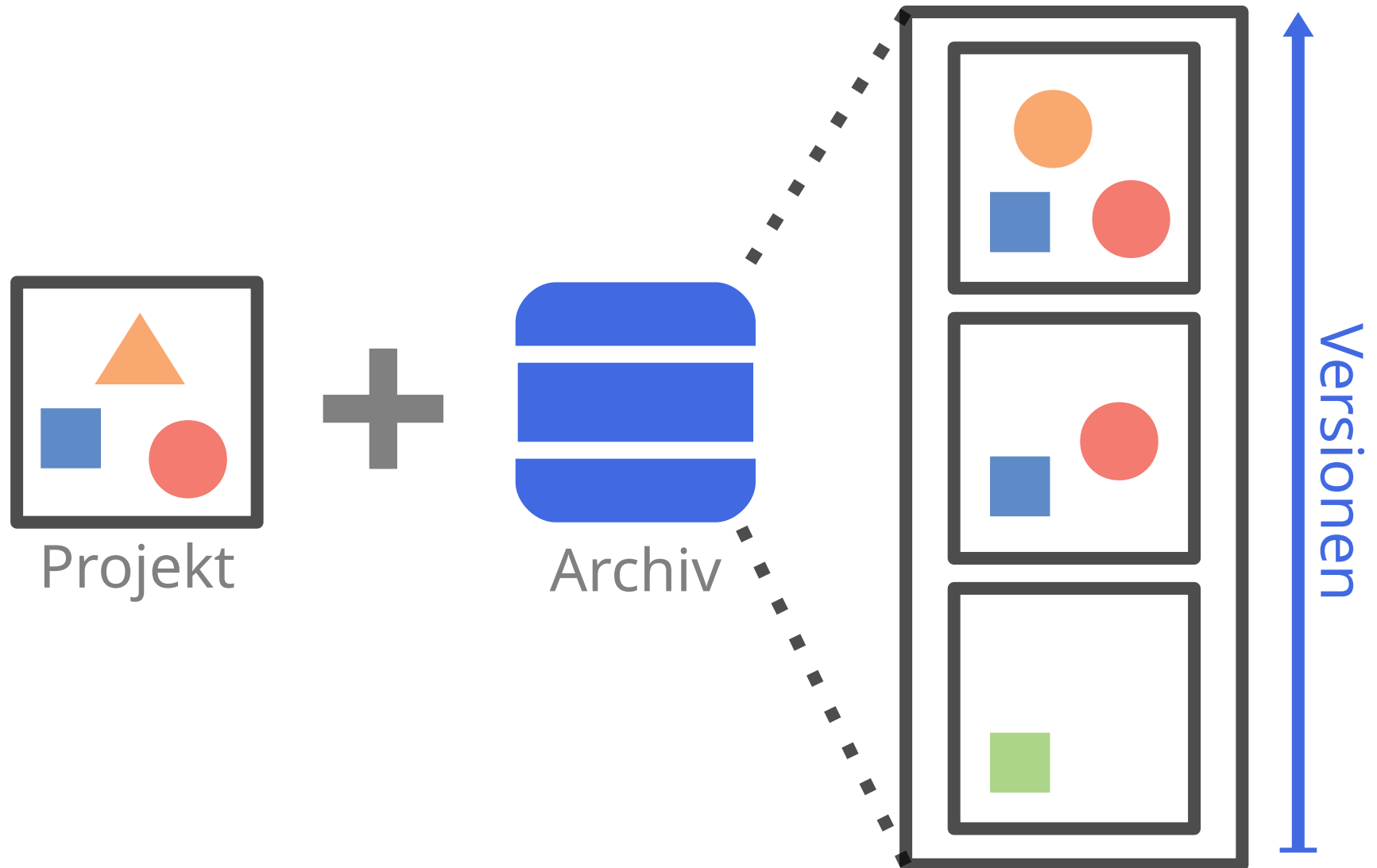
```
$git config --global <key> <value>
```

<b>Key</b>	<b>Value</b>	<b>Beispiel</b>
<code>user.name</code>	Name der angezeigt wird	“Tommy Wiseau”
<code>user.email</code>	Mail Adresse	<code>oh-hi@tommy.com</code>
<code>core.editor</code>	Editor der verwendet werden soll	<code>vim</code>



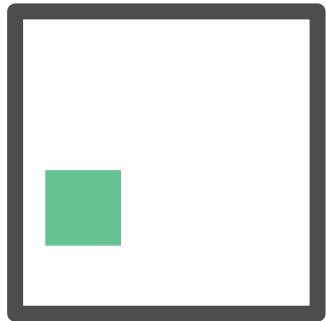
# Repository

# Was ist ein Repository



# Repository erstellen

```
$git init
```





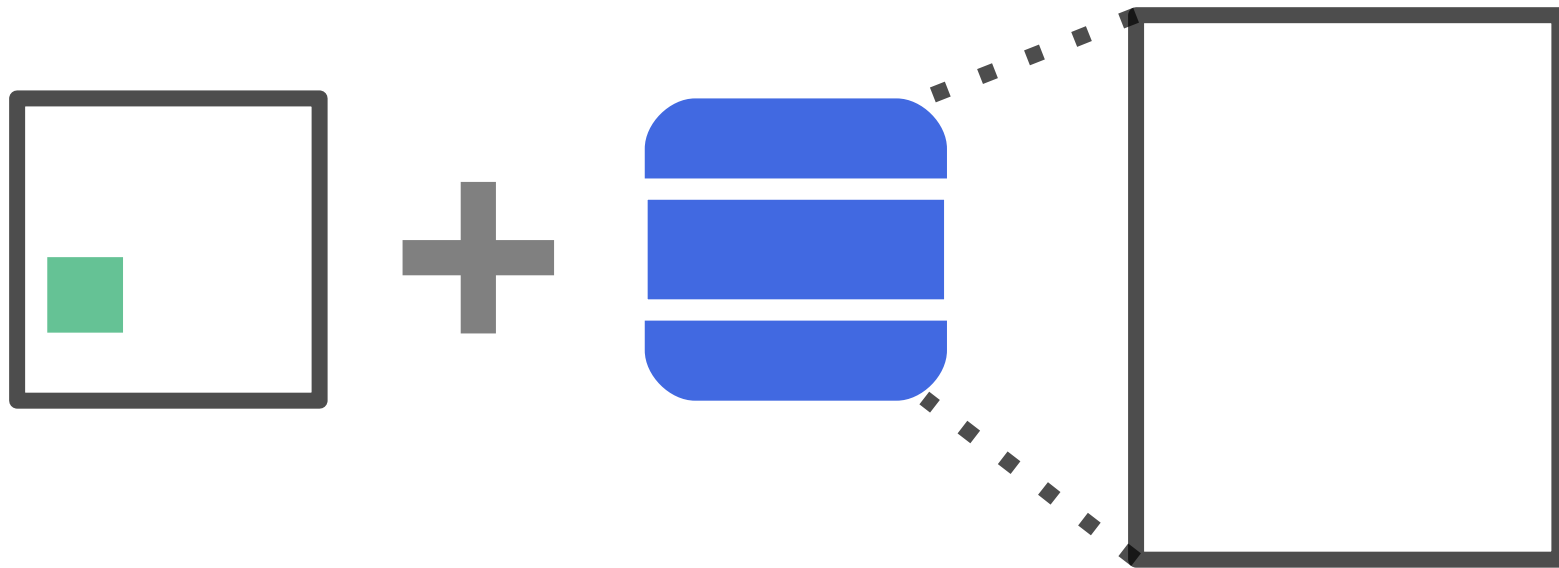
# Repository erstellen

```
$git init
```



# Repository überprüfen

```
$git status
```





# Commits

# 1 Änderungsschritt = 1 Commit

9A03

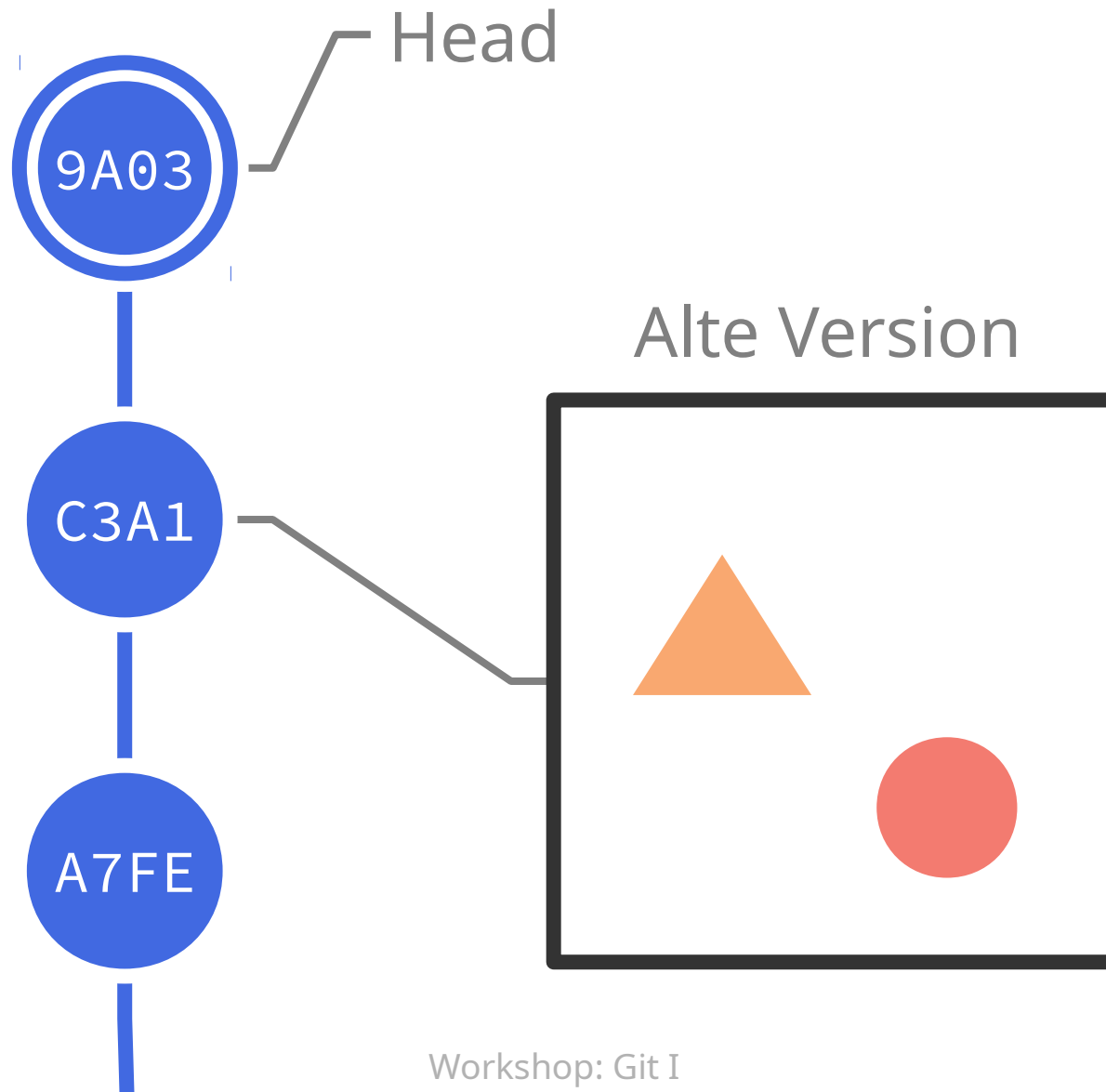
Hash: 9a03412...

Nachricht: "I lost the game"

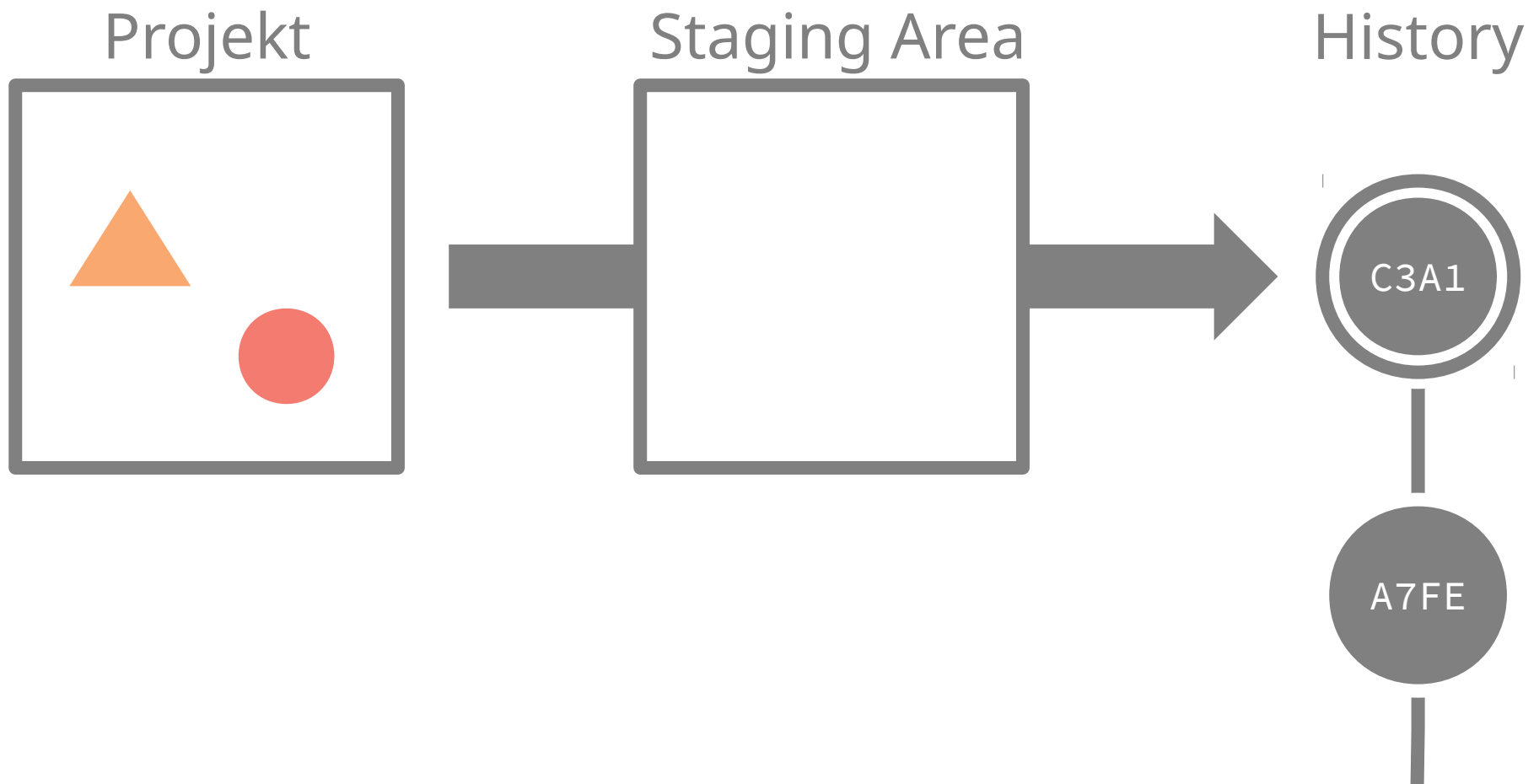
Autor: Tommy Wiseau <...>

Änderungen: ● ■ ▲

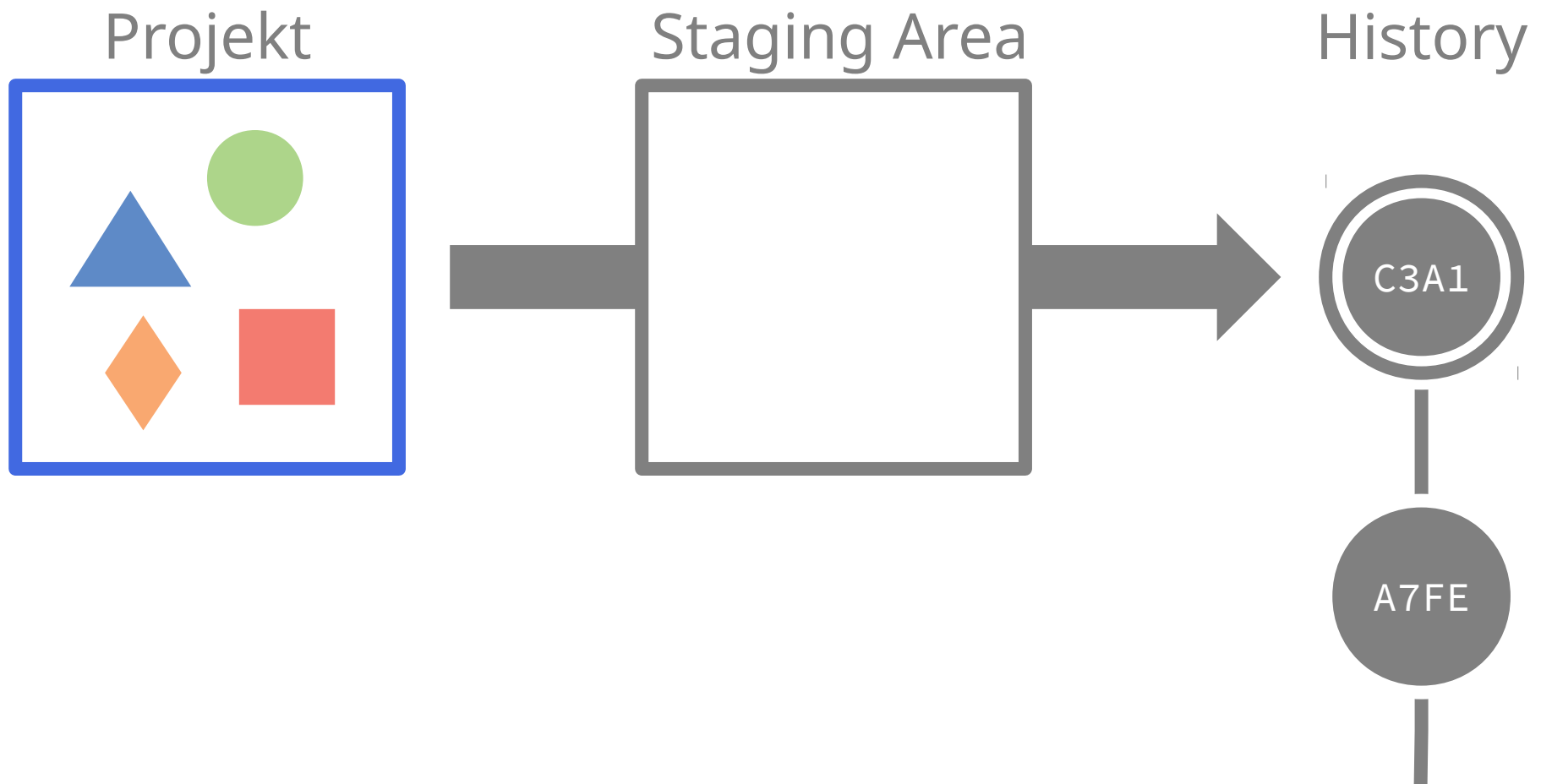
# Viele Commits = History



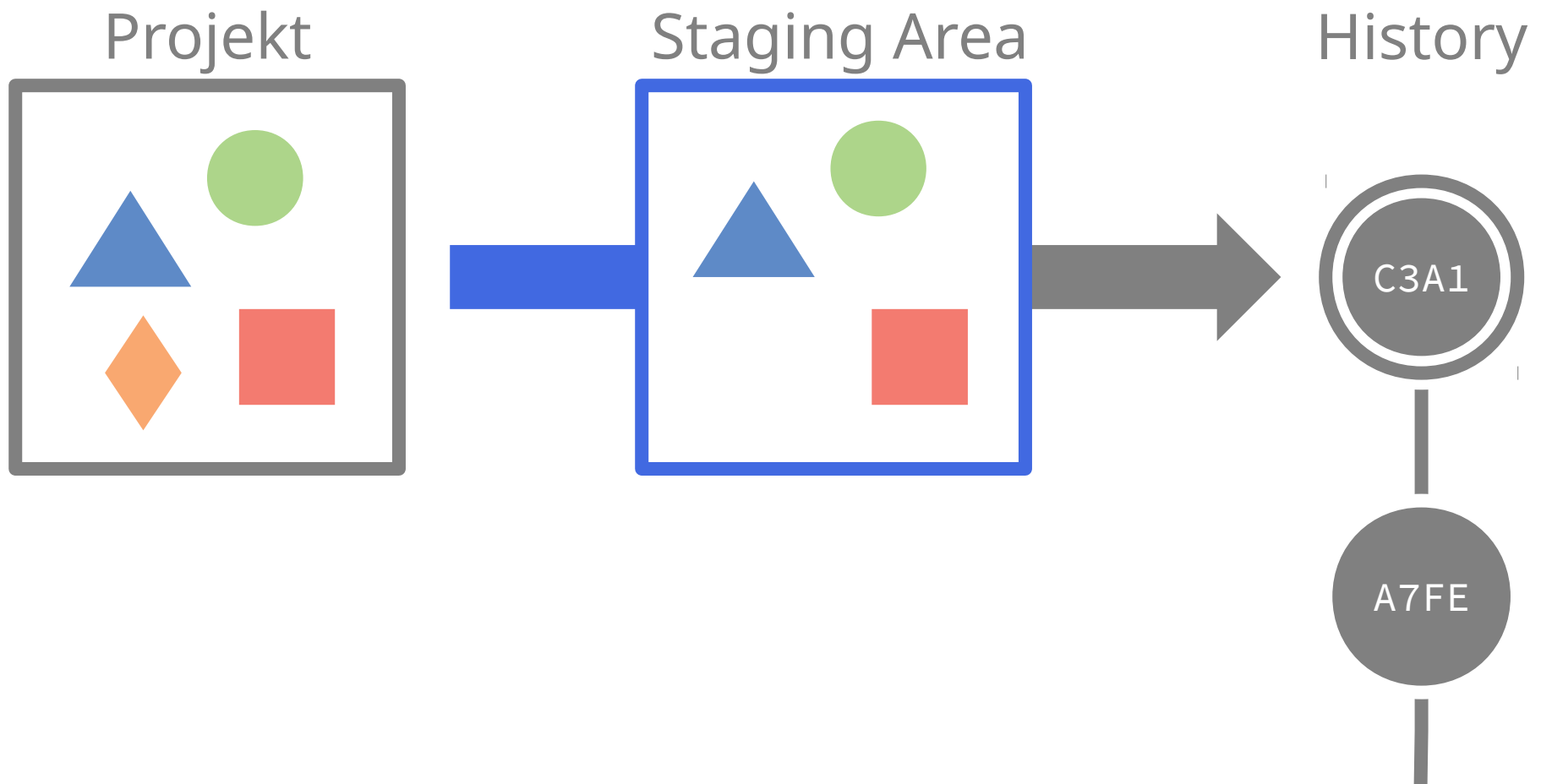
# Commits erzeugen



# Commits erzeugen

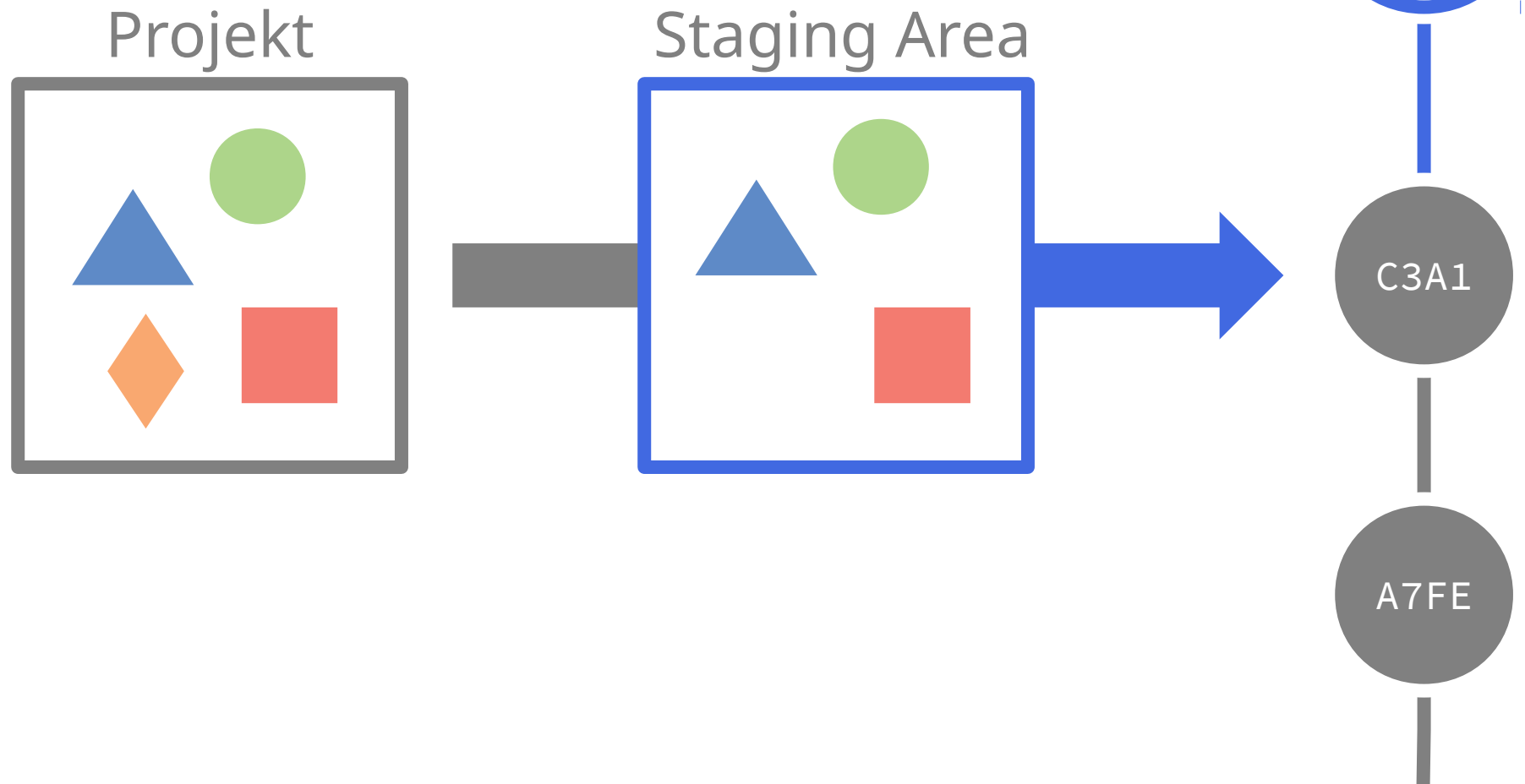


# Commits erzeugen



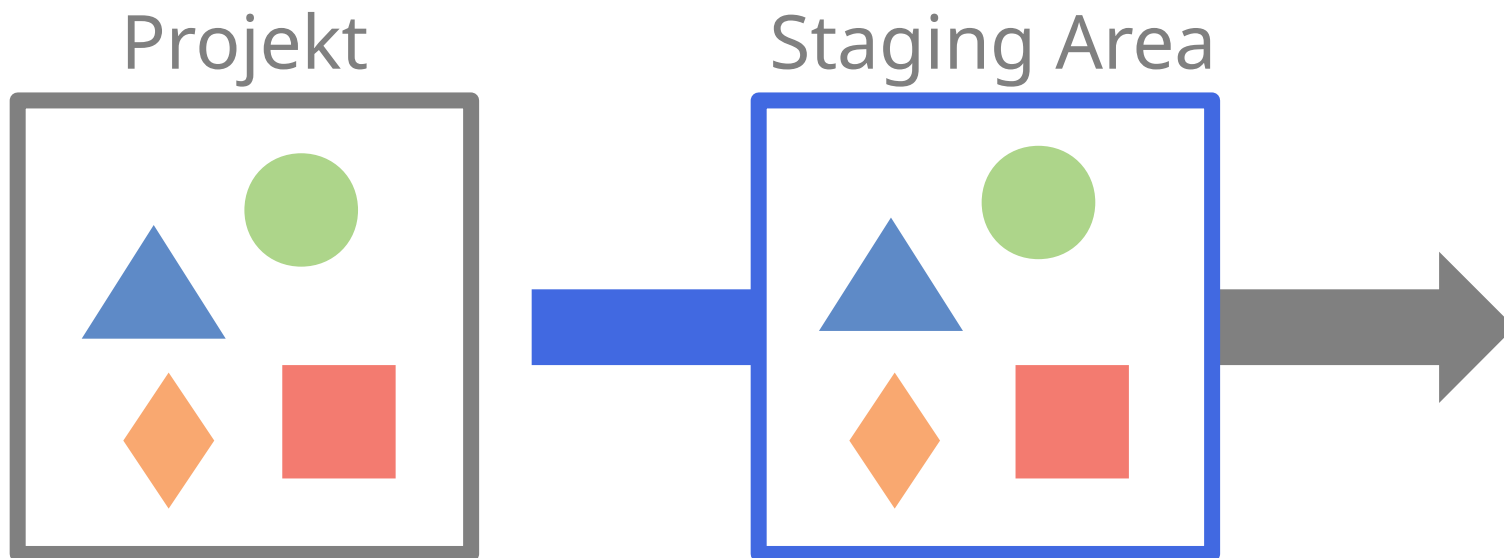


# Commits erzeugen



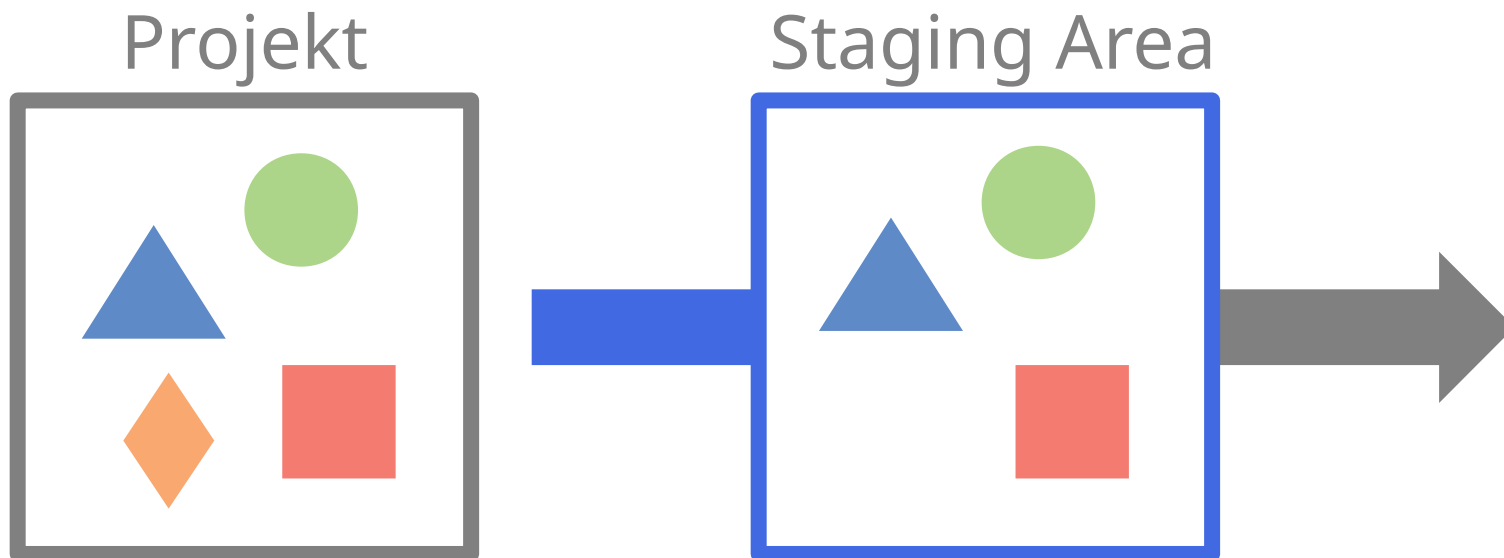
# Befehle

```
$git add <Datei>...
```



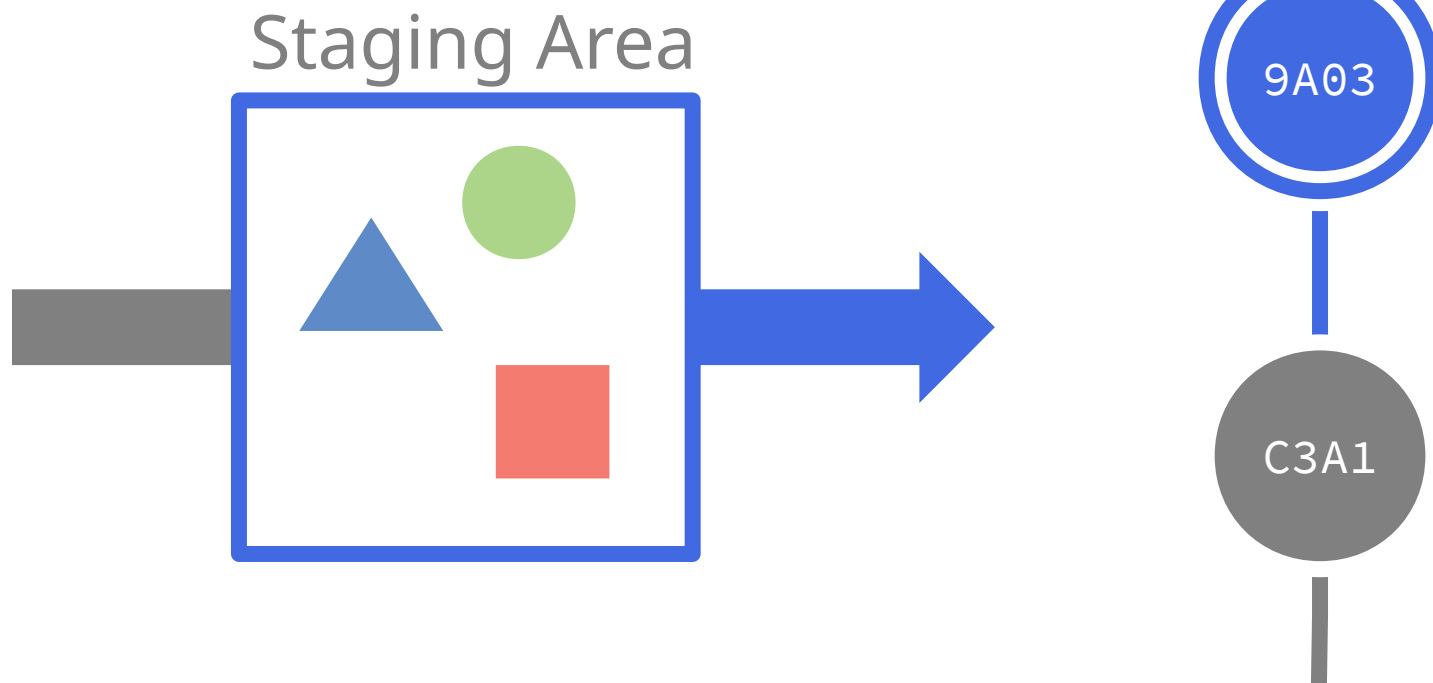
# Befehle

```
$git rm --cached <Datei>...
```



# Befehle

```
$git commit -m <Nachricht>
```



# Befehle

```
$git status
```

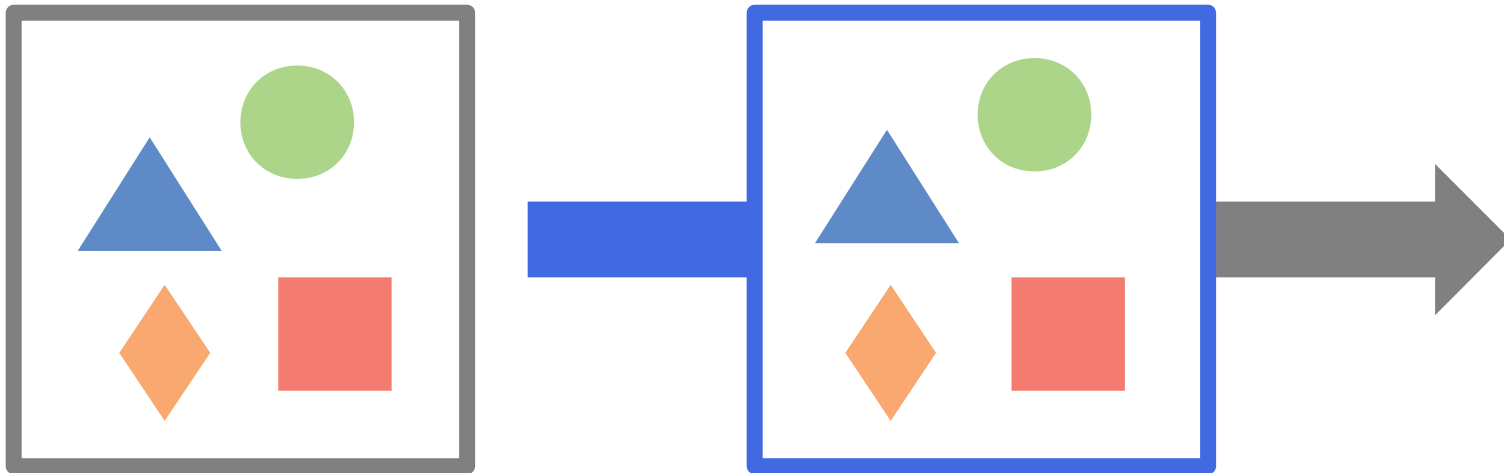
```
$git add <Datei>...
```

```
$git rm --cached <Datei>...
```

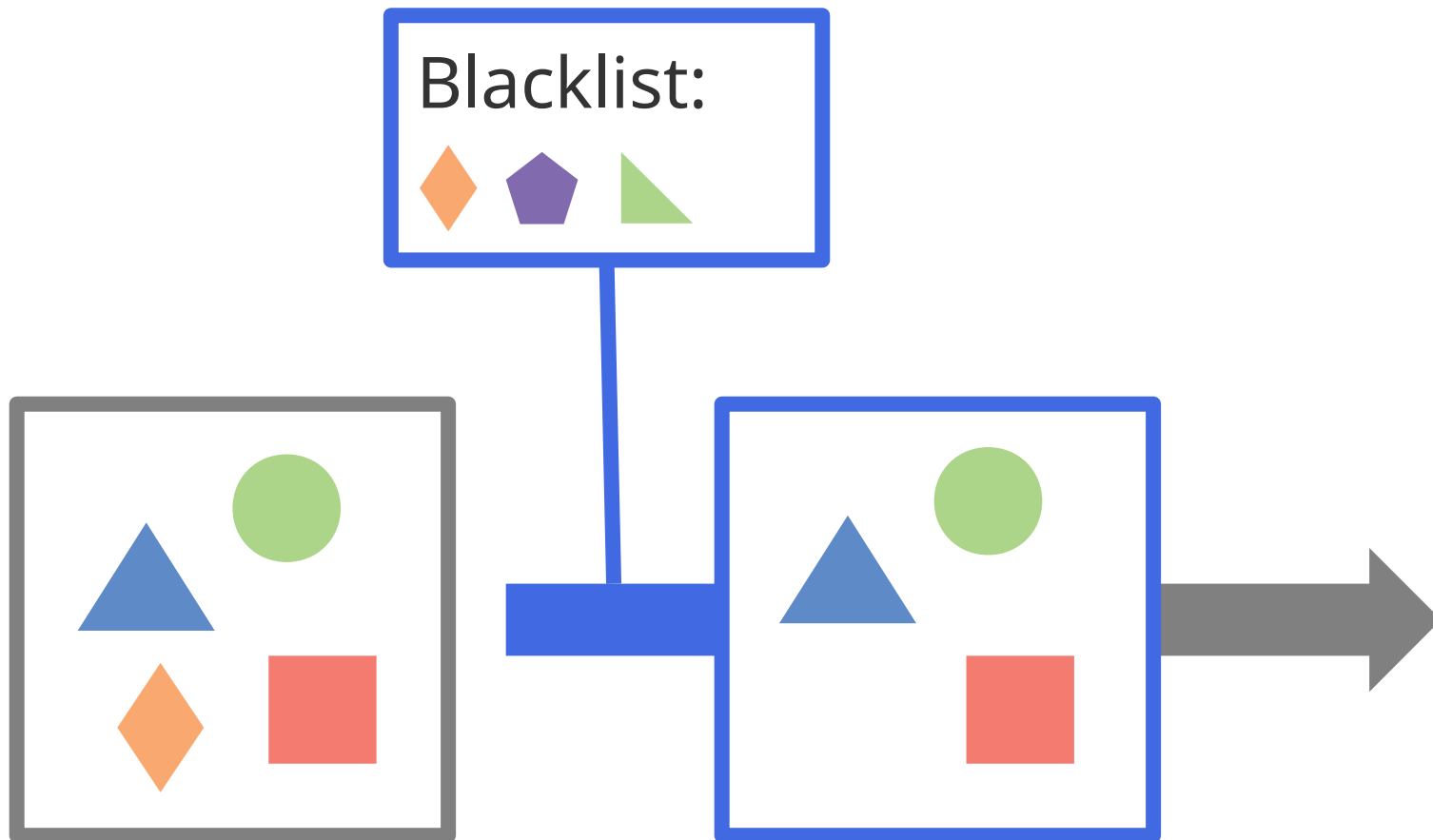
```
$git commit -m <Nachricht>
```

```
$git log
```

# Dateien ignorieren



# Dateien ignorieren



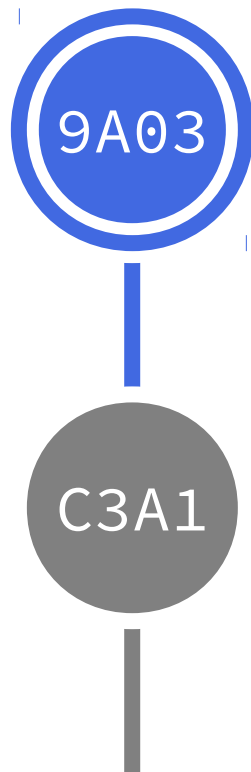
# .gitignore

```
#macOS Systemdatei
.DS_Store
#Ignoriere alle PDFs
*.pdf
#Alle versteckten Dateien ignorieren
.*
#Ignoriere alles im Ordner bin/
bin/**/*
```

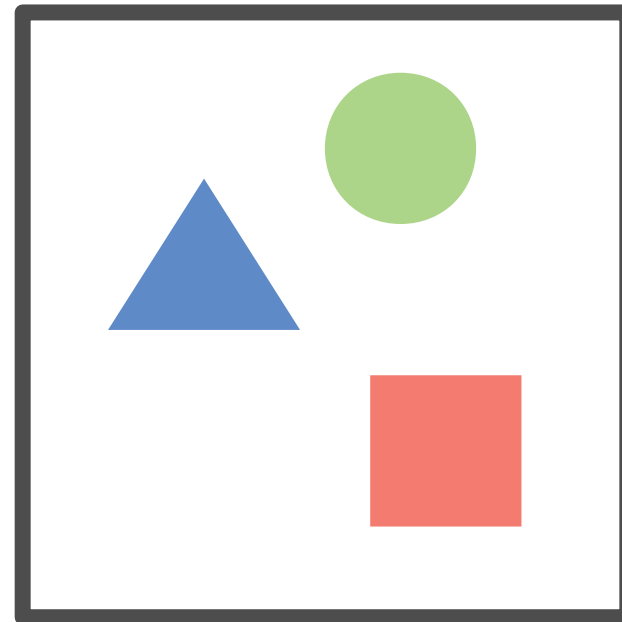


# Bewegen in der History

```
$git checkout <Hash>
```



Projekt

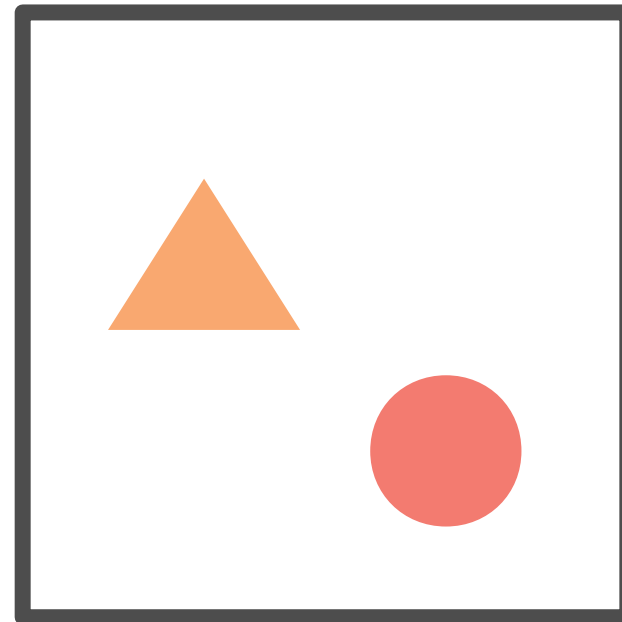


# Bewegen in der History

```
$git checkout <Hash>
```



Projekt

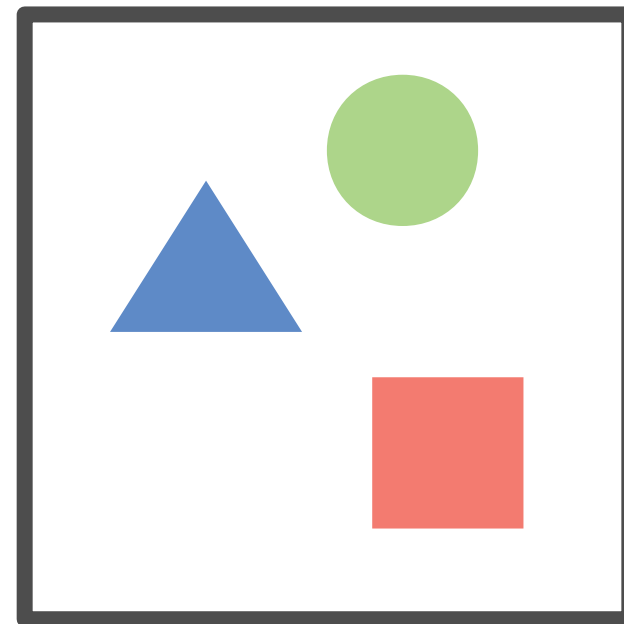


# Einzelne Dateien zurücksetzen

```
$git checkout <Hash> -- <Datei>...
```



Projekt

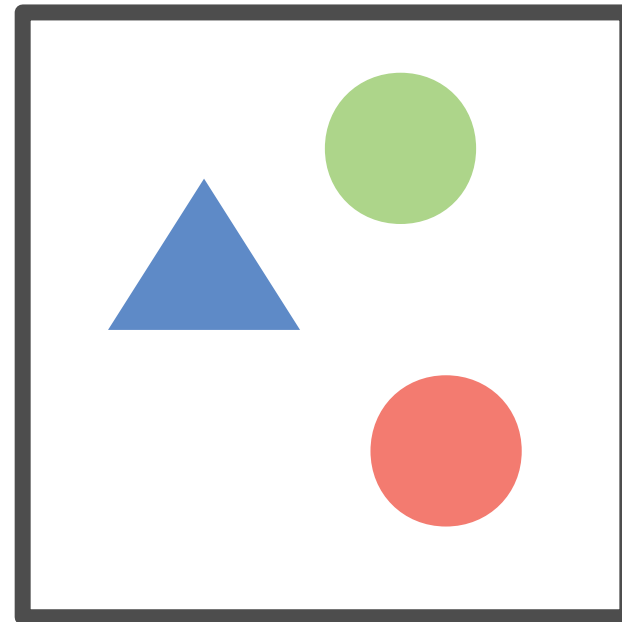


# Einzelne Dateien zurücksetzen

```
$git checkout <Hash> -- <Datei>...
```



Projekt



# Befehle

```
$git log
```

```
$git checkout <Hash>
```

```
$git checkout master
```

```
$git checkout <Hash> -- <Datei>...
```



# Branches

# Branches

Master

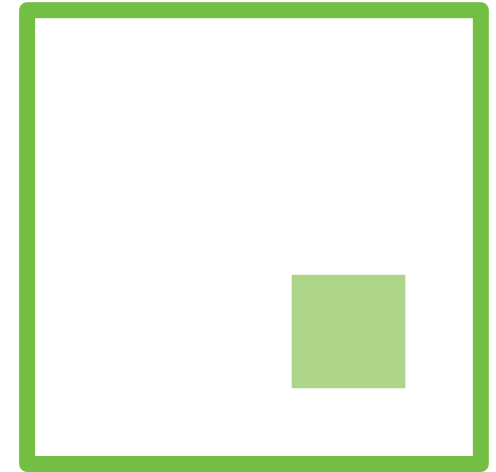


# Branches

Master



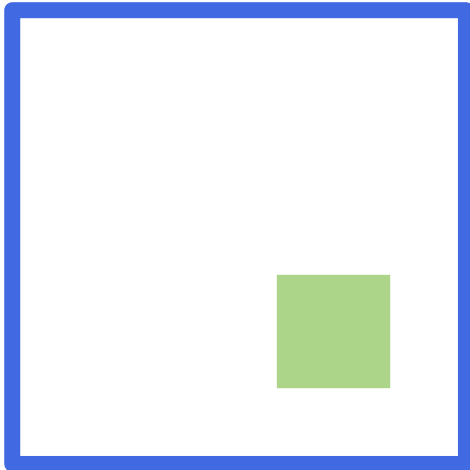
Dev



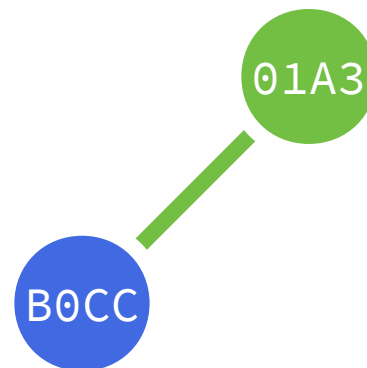
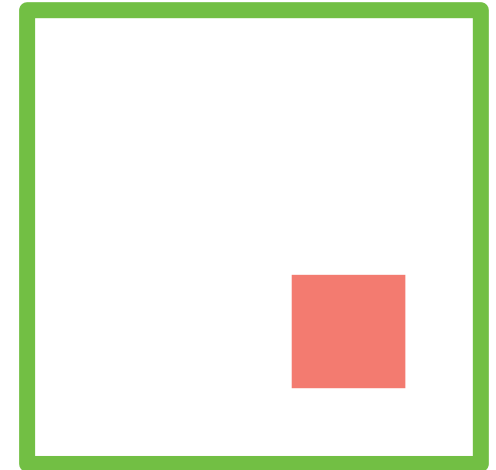


# Branches

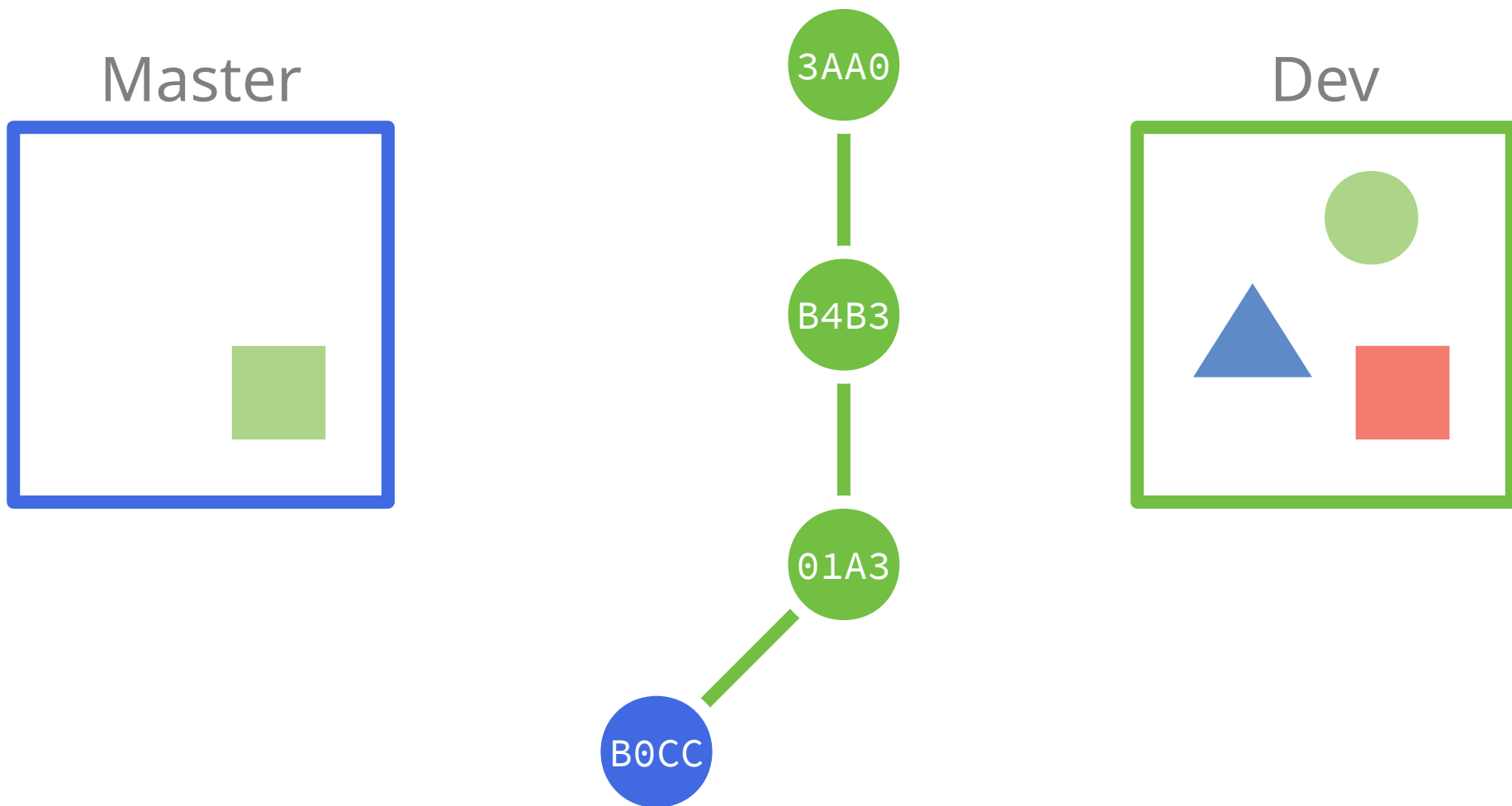
Master



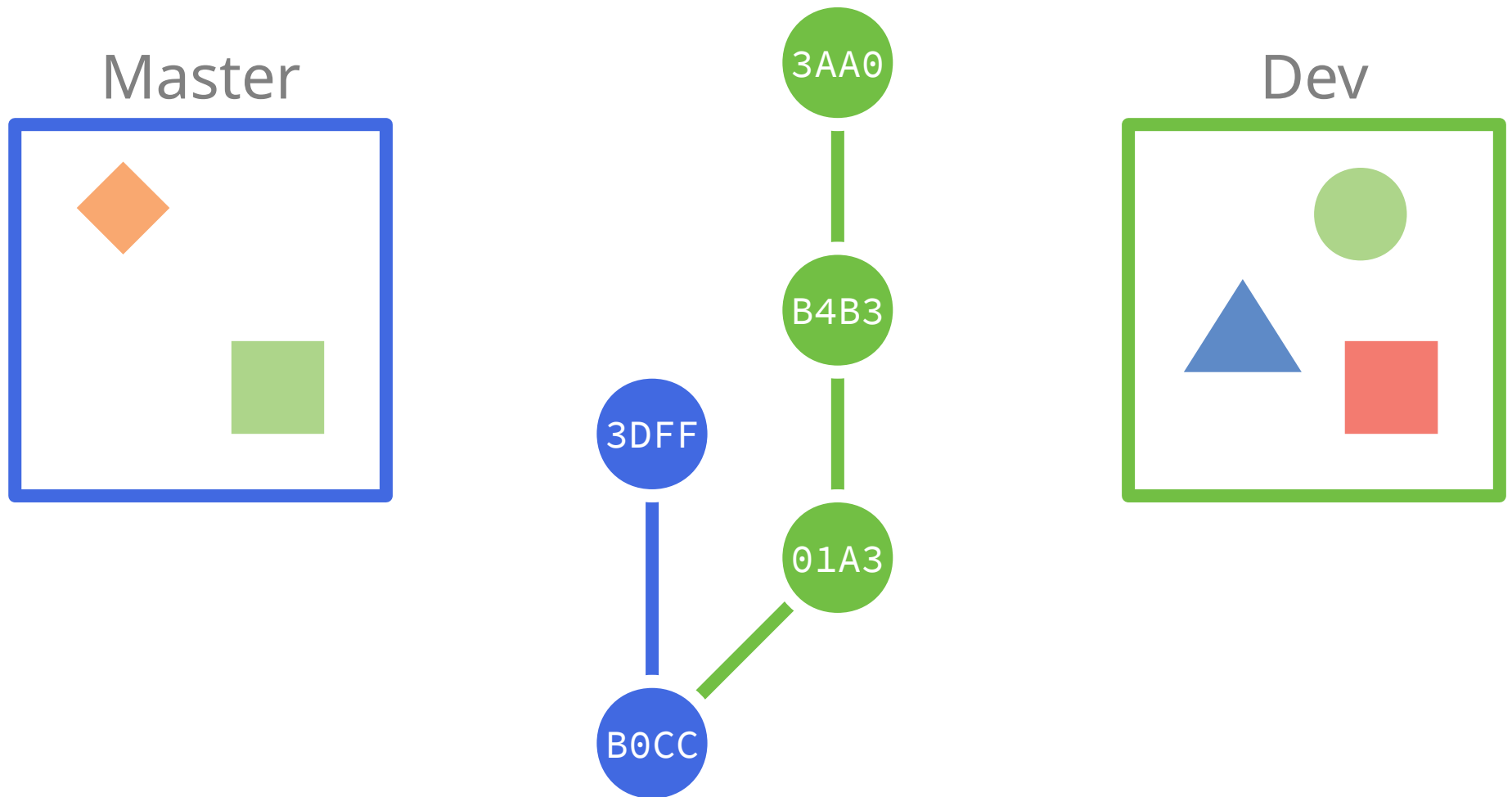
Dev



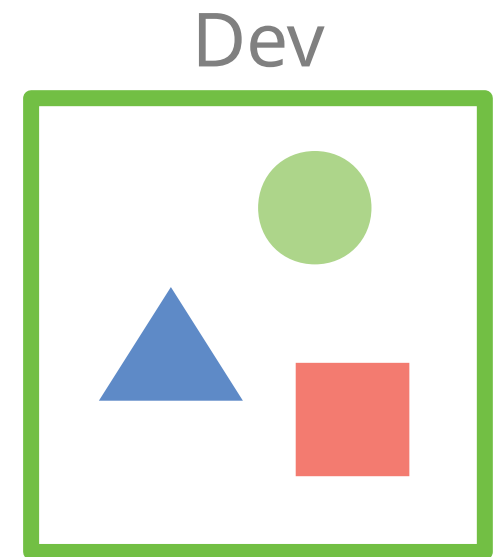
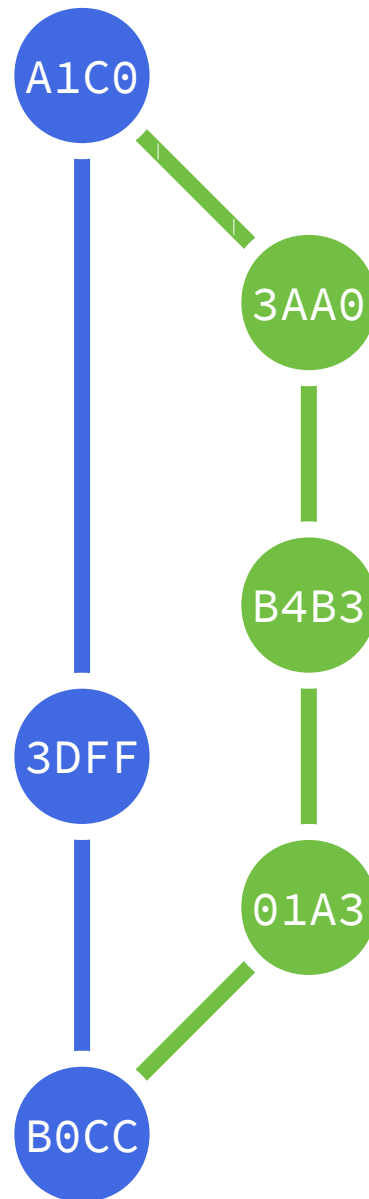
# Branches



# Branches



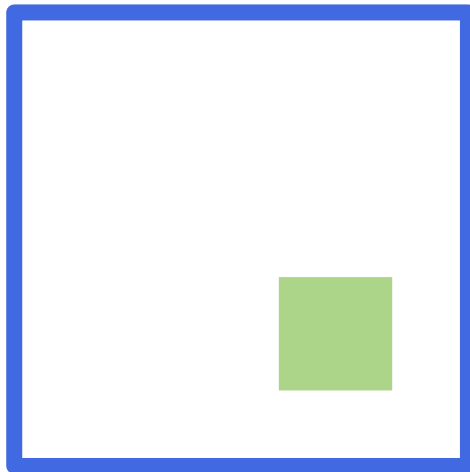
# Branches



# Branche erstellen

```
$git branch <Branch-Name>
```

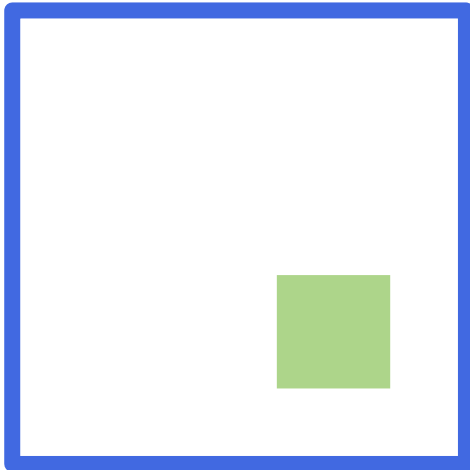
Master



# Branche erstellen

```
$git branch <Branch-Name>
```

Master



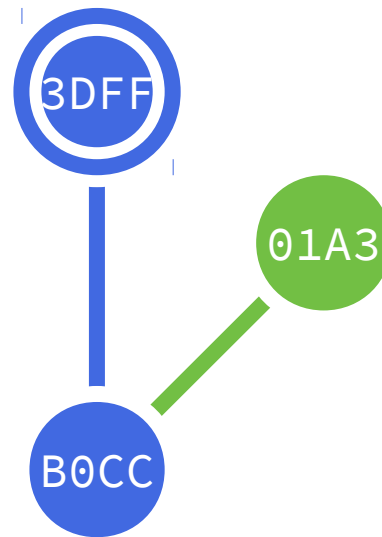
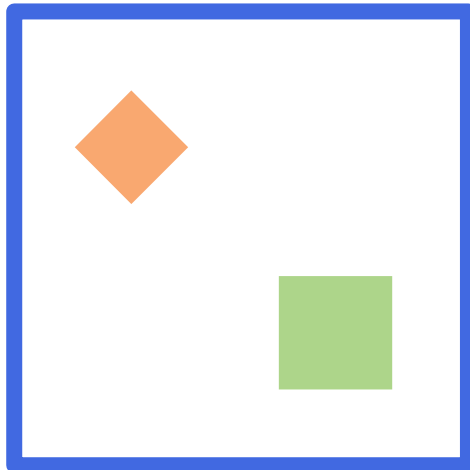
Dev



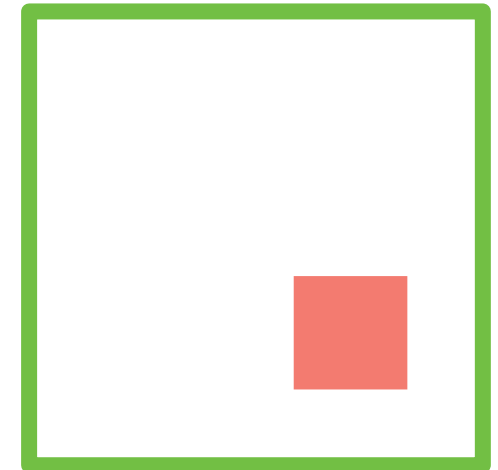
# Branch wechseln

```
$git checkout <Branch-Name>
```

Master



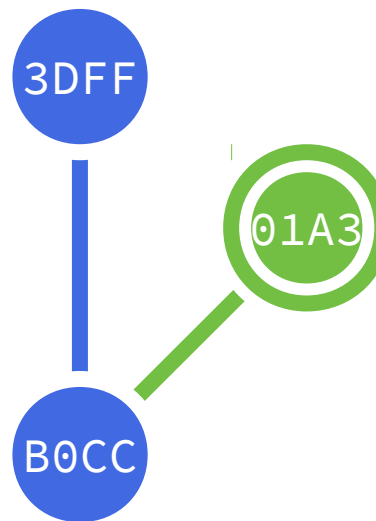
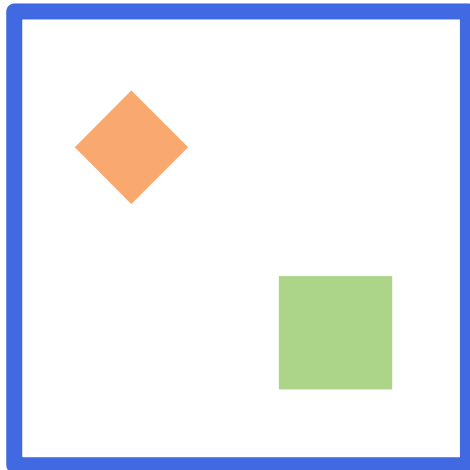
Dev



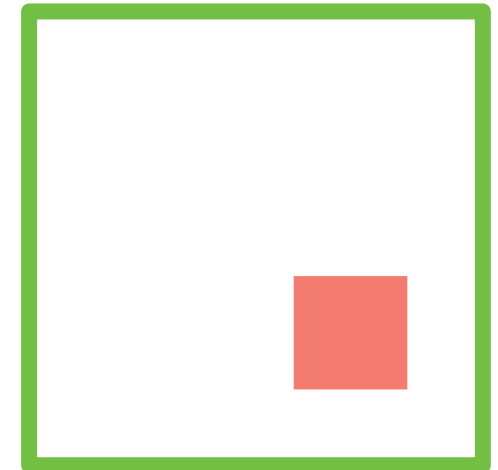
# Branch wechseln

```
$git checkout <Branch-Name>
```

Master



Dev

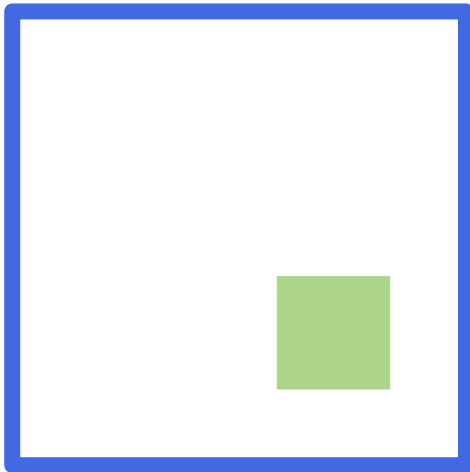




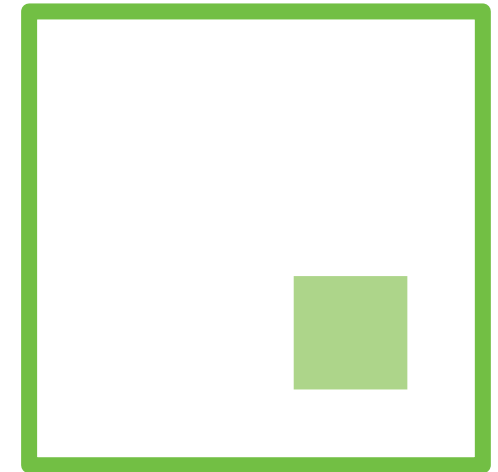
# Branch wechseln

```
$git branch <Branch-Name>
```

Master



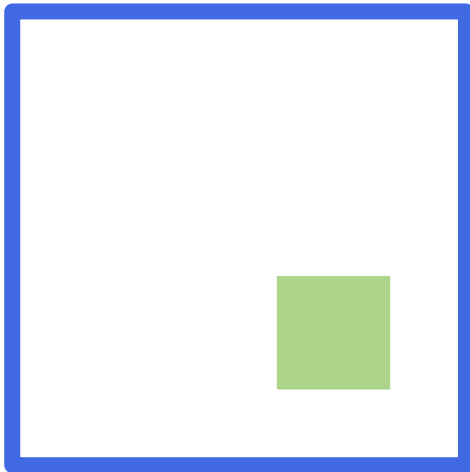
Dev



# Branch wechseln

```
$git checkout <Branch-Name>
```

Master



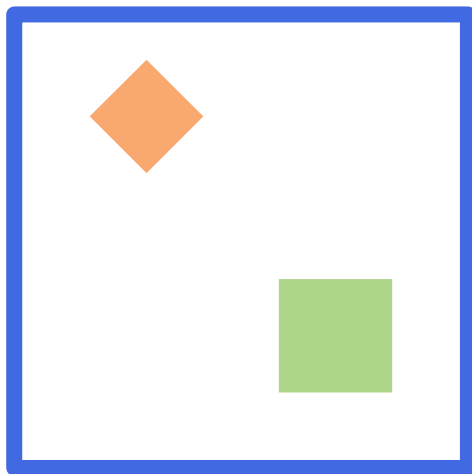
Dev



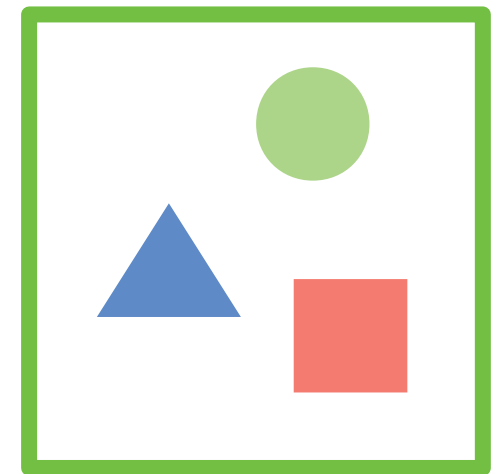
# Branches zusammenführen

```
$git checkout <Branch-Name>
```

Master



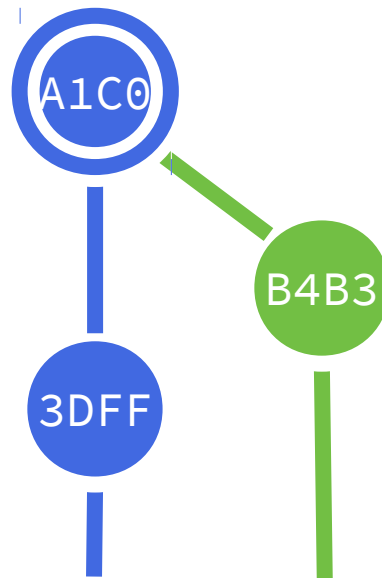
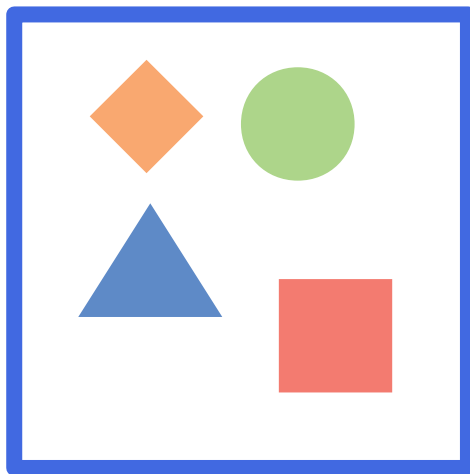
Dev



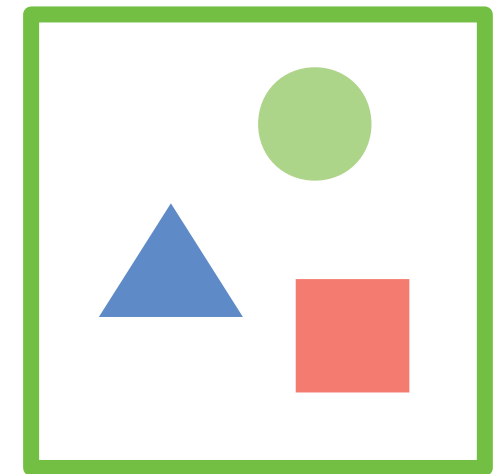
# Branches zusammenführen

```
$git merge <Branch-Name>
```

Master



Dev



# Konflikte beheben

```
<<<<<<< HEAD:filme.txt
```

```
The Room ist ein guter Film.
```

```
=====
```

```
The Room ist ein schlechter Film.
```

```
>>>>>>> dev:filme.txt
```

# Befehle

```
$git branch
```

```
$git branch <Branch-Name>
```

```
$git checkout <Branch-Name>
```

```
$git checkout -b <Branch-Name>
```

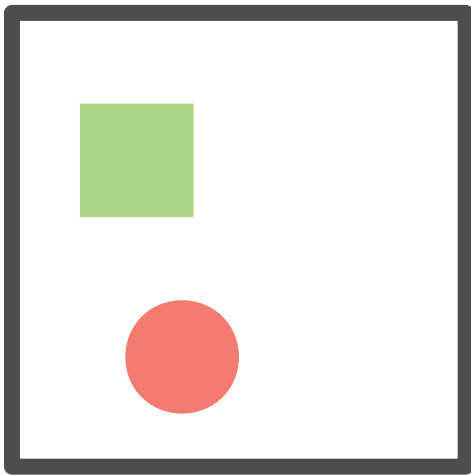
```
$git merge <Branch-Name>
```



# Remote Repository

# Remote Repo einrichten

```
$git remote add <Name> <Repo-Url>
```

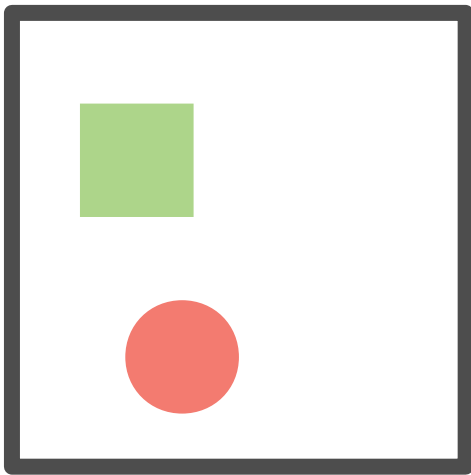


Entwickler

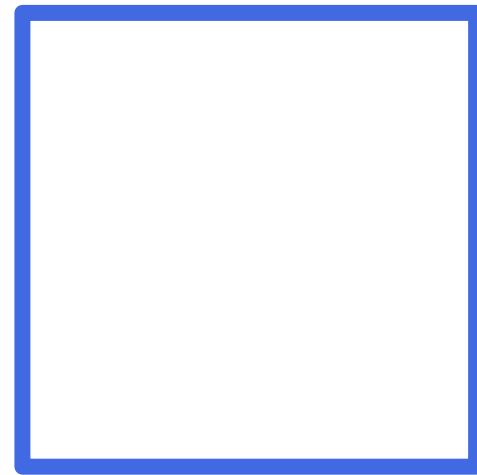


# Remote Repo einrichten

```
$git remote add <Name> <Repo-Url>
```



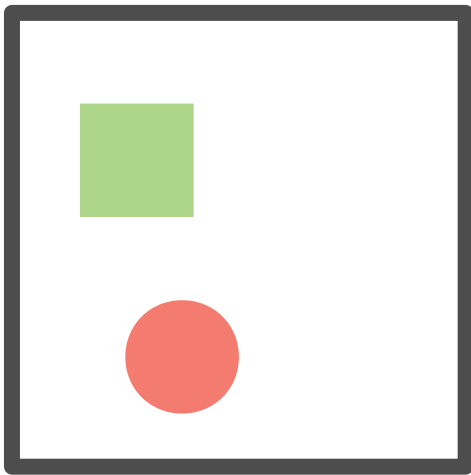
Entwickler



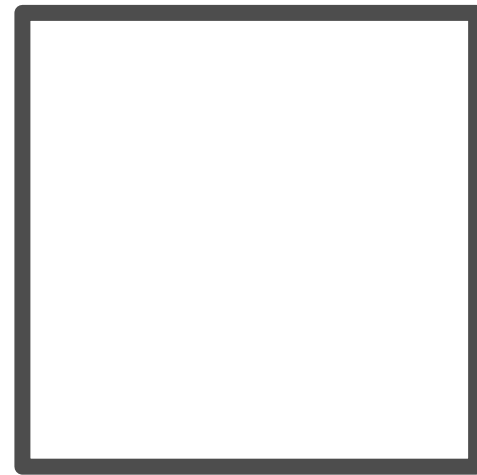
Origin

# Änderungen hochladen

```
$git push -u <Name>
```



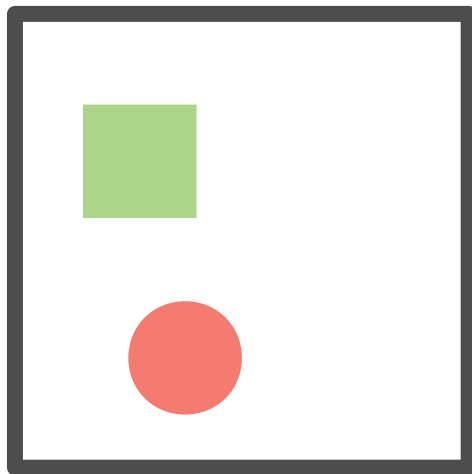
Entwickler



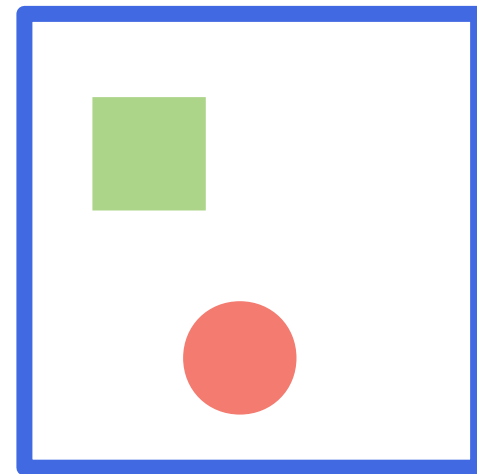
Origin

# Änderungen hochladen

```
$git push -u <Name>
```



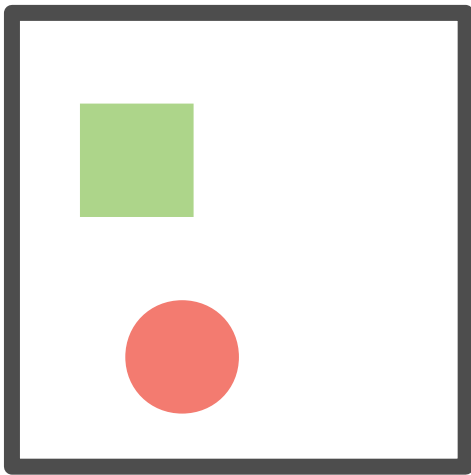
Entwickler



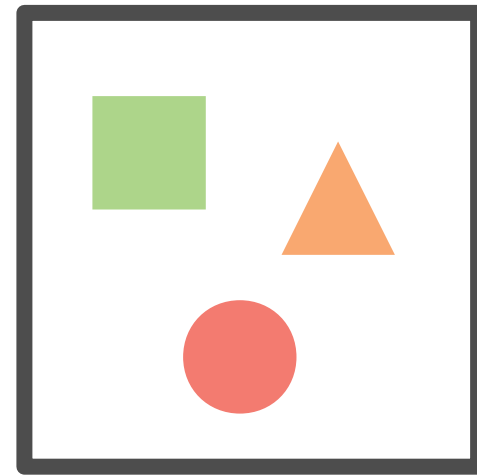
Origin

# Änderungen runterladen

```
$git pull
```



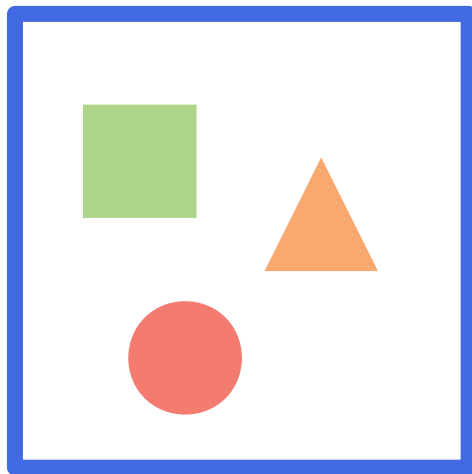
Entwickler



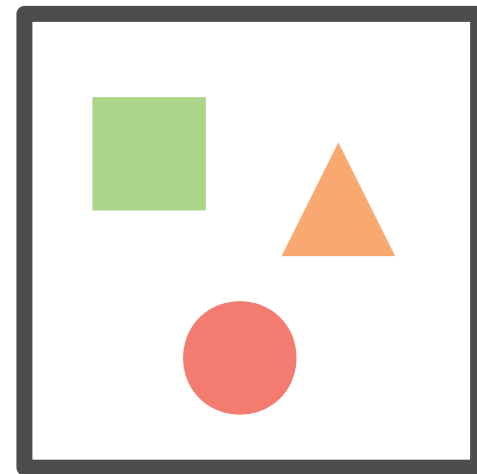
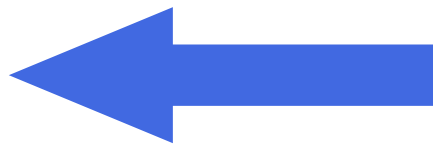
Origin

# Änderungen runterladen

```
$git pull
```



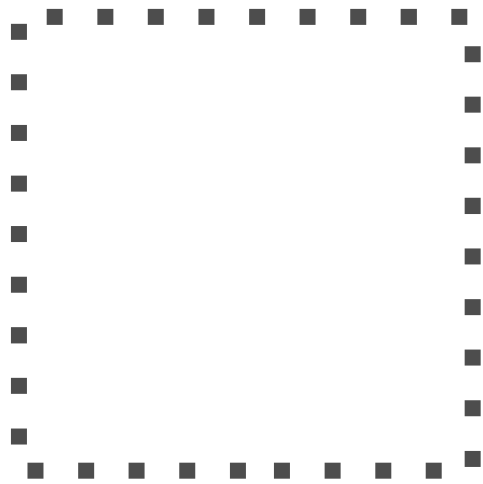
Entwickler



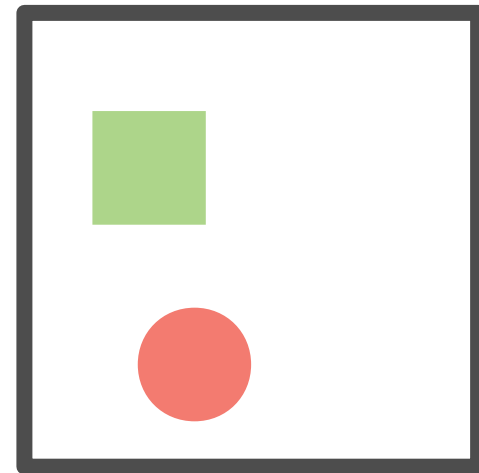
Origin

# Remote Repo klonen

```
$git clone <Repo-Url> <Verzeichnis>
```



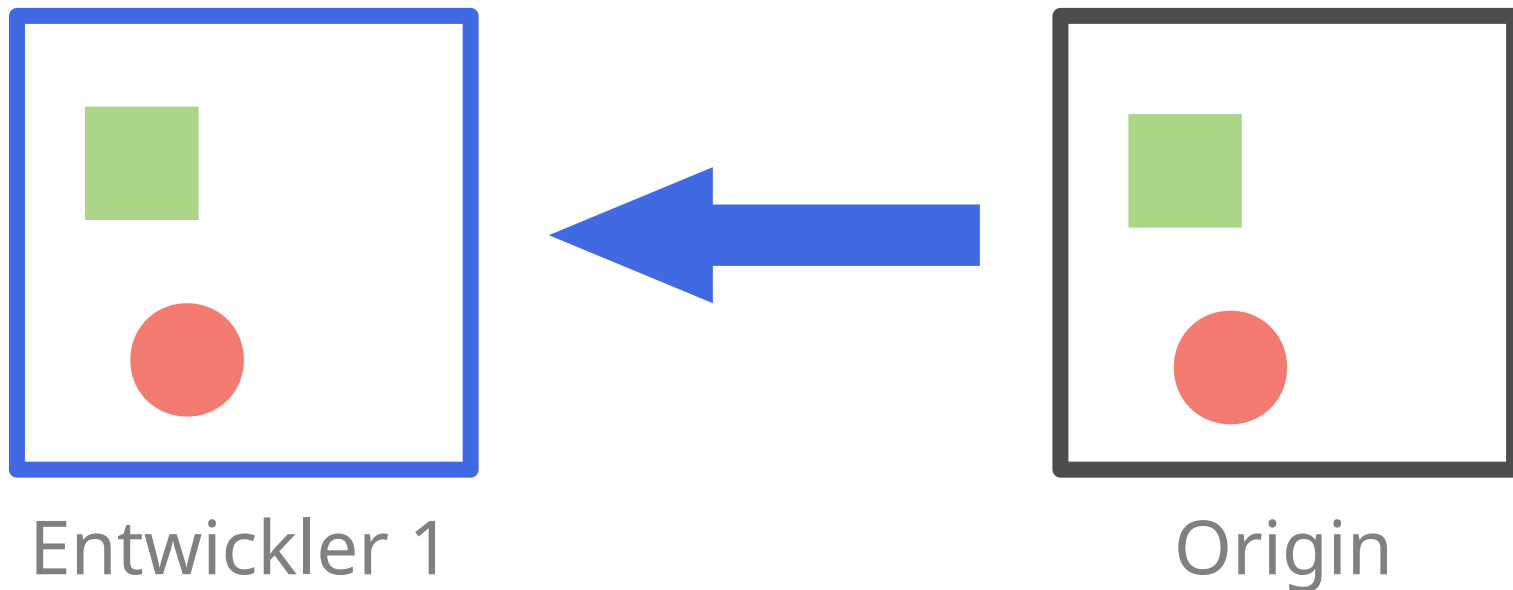
Entwickler



Origin

# Remote Repo klonen

```
$git clone <Repo-Url> <Verzeichnis>
```



# Befehle

```
$git clone <Repo-Url> <Verzeichnis>
```

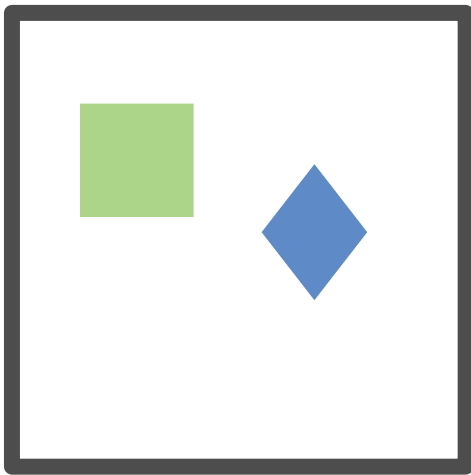
```
$git remote add <Repo-Url>
```

```
$git push -u <Name>
```

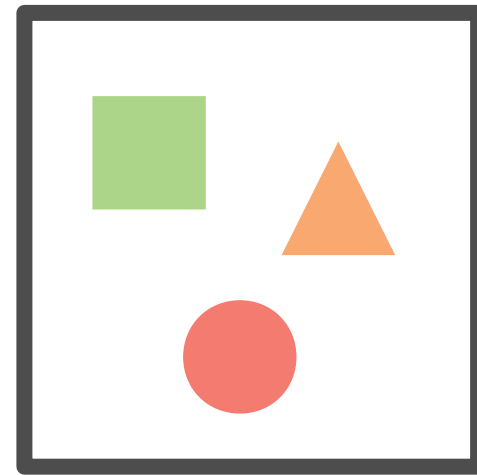
```
$git pull
```



# Änderungen zusammenführen



Entwickler



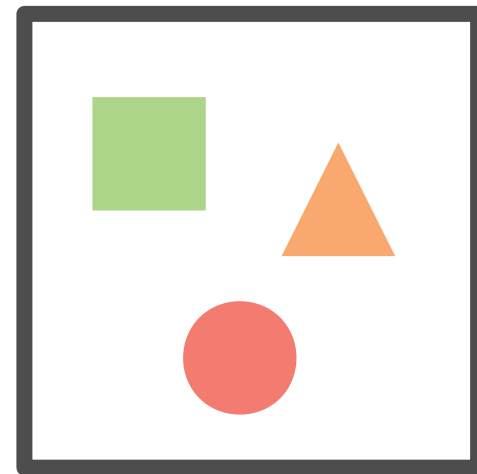
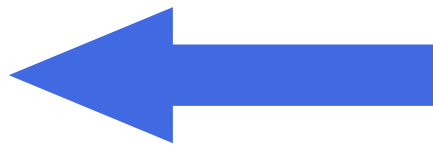
Origin

# Änderungen zusammenführen

```
$git pull
```



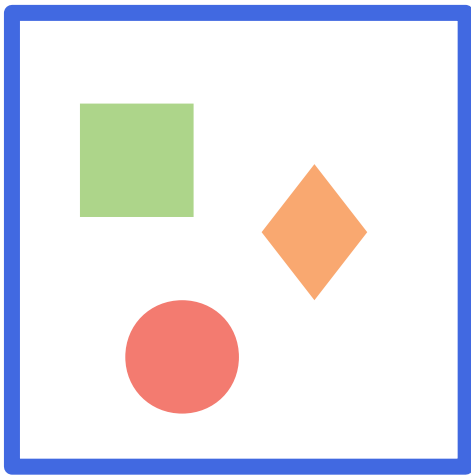
Entwickler



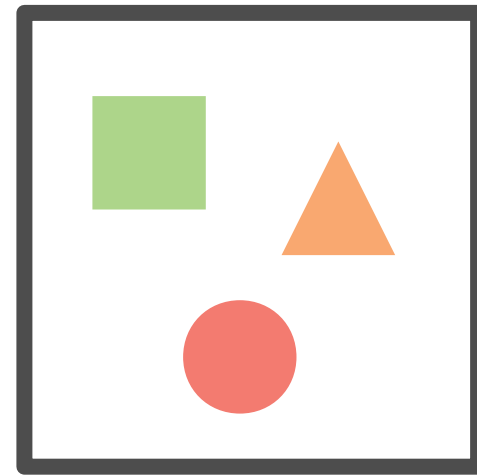
Origin

# Änderungen zusammenführen

```
$git commit -m "Resolved Conflicts"
```



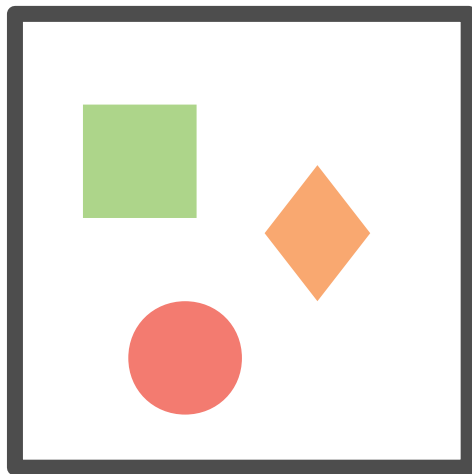
Entwickler



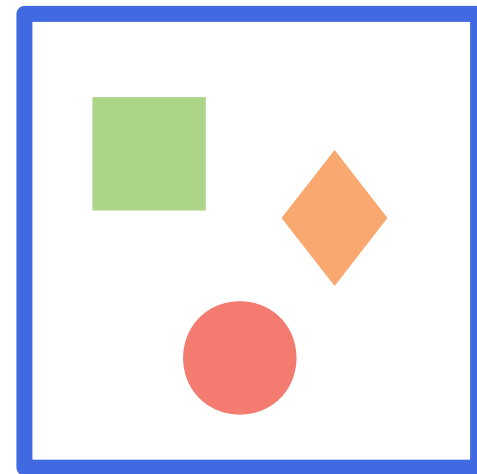
Origin

# Änderungen zusammenführen

```
$git push
```



Entwickler



Origin

# Befehle

```
$git status
```

```
$git checkout <Hash/Branch>
```

```
$git add <Datei>...
```

```
$git commit -m <Nachricht>
```

```
$git merge <Branch>
```

```
$git push [-u <Name>]
```

```
$git pull
```