

# Collaborating using git

## Shared Repositories

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9th November 2021

## Goal

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

# Topics and teams

## Basic terminal

- Andre
- Eirik

## vi

- Joe
- Michael

## Working remotely

- Kyle
- Reinhold

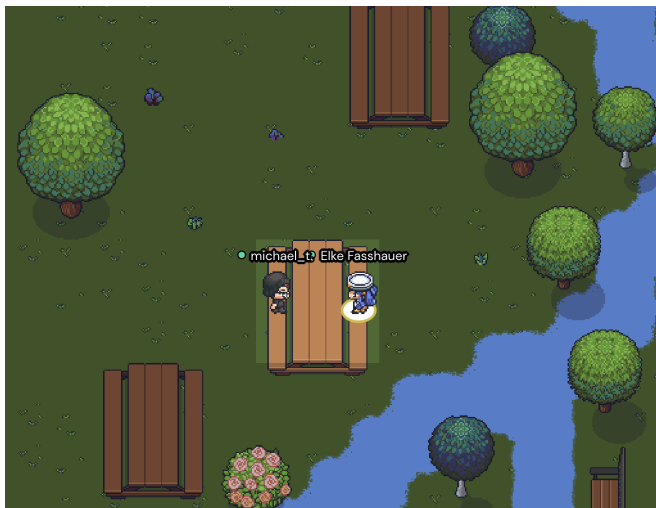
## Finding information and other useful commands

- Adam
- Johannes

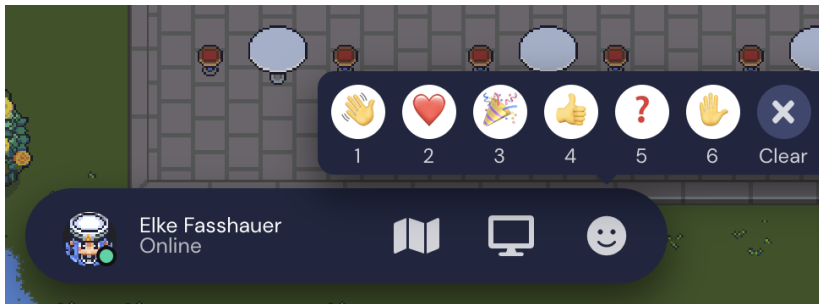
## Submitting, managing jobs on clusters

- Andres
- Mats
- Stefan

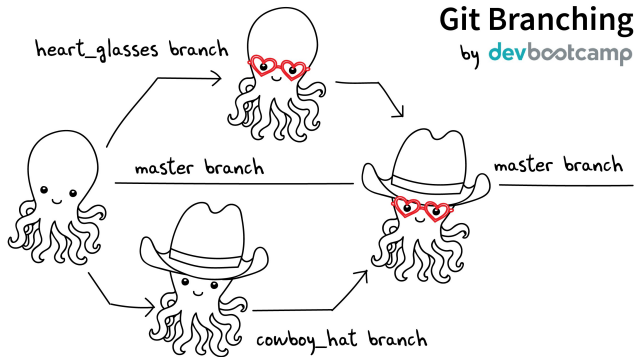
# Collaborate in groups



# Help?



# Motivation



Coderefinery: [https://twitter.com/jay\\_gee/status/703360688618536960](https://twitter.com/jay_gee/status/703360688618536960)

# Platforms

# Platforms







## Platforms



GitLab


# Platforms


Herunterladen




**Quelldateien****PDF**


Aktionen


 **Projekt kopieren**

 **Wortzahl**

Sync

 **Dropbox**

 **Git**

 **GitHub**

TCM1-Vorlesun

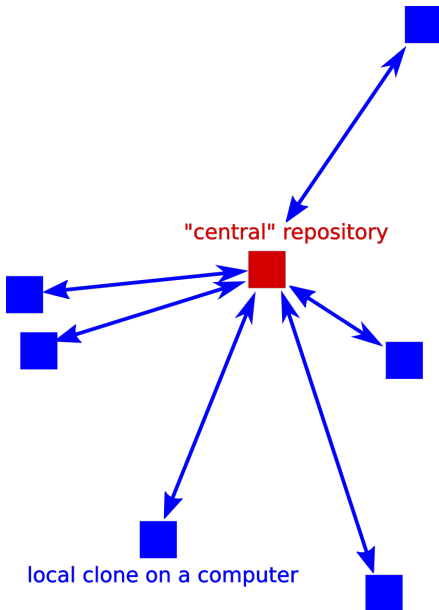
Source Rich Text Ω

```
\documentclass[fontsize=14pt]{
% \usepackage{ngerman}
% \usepackage{a4}
\usepackage[utf8]{inputenc}
% \usepackage{graphics}
\usepackage{graphicx}
\usepackage{amsmath}
\usepackage{amsmath}
\usepackage{xcolor}
\usepackage{siunitx}
\usepackage{cancel}
\usepackage{bbold}
% \usepackage{hyperref}
% \hypersetup{linktocpage}
% \hypersetup{colorlinks=true, c
lor=blue, urlcolor=blue}

\newcommand\Ccancel[2][red]{\r
cancel{#2}}
```

# Central Workflow

# Central Workflow



# Get the repository

```
$ git clone https://github.com/ElkeF/tc_commands.git TC_commands
```

# Get the repository

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

ElkeF/tc\_commands Public

Unwatch 1 Star 0 Fork 0

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

main 5 branches 0 tags

Go to file Add file Code

ElkeF add author fields

LICENSE	Initial commit
cluster_commands.txt	add author fields
get_information.txt	add author fields
terminal_basics.txt	add author fields
vi.txt	add author fields
working_remotely.txt	add author fields

3 hours ago

Help people interested in this repository understand your project by adding a README. Add a README

**Clone**

HTTPS SSH GitHub CLI

[https://github.com/ElkeF/tc\\_commands.g](https://github.com/ElkeF/tc_commands.git)

Use Git or checkout with SVN using the web URL.

Open with GitHub Desktop

Download ZIP

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# Remote branches

- remote branches are not automatically transferred
- need to create local branch that tracks remote branch

```
$ git branch -r
```

```
origin/HEAD -> origin/main  
origin/basics  
origin/cluster  
origin/main  
origin/remotely  
origin/vi_masters
```

```
$ git branch basics origin/basics
```



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```
origin/vi_masters
```

```
$ git branch basics origin/basics
```

# Interacting with remote branches: pull, push

## Branch off from remote tracking branch

```
$ git checkout basics  
$ git branch feature basics  
$ git checkout feature
```

Work, work, work on feature branch

## Safely move your changes to collective remote branch

```
$ git checkout basics  
$ git pull  
$ git checkout feature  
$ git merge basics  
$ git checkout basics  
$ git merge feature  
$ git pull  
$ git push
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# Conflicts



- occur when changes are made in the same line of the same document
- git does not know, which version to keep and asks you to resolve it



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# Conflicts

```
$ cat ingredients.txt  
  
<<<<<<< HEAD  
* 2 tbsp cilantro  
=====  
* 0.5 tbsp cilantro  
>>>>>>> dislike-cilantro  
* 2 avocados  
* 1 lime  
* 1 tsp salt  
* 1/2 onion
```

- occur when changes are made in the same line of the same document
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# Conflict Resolution

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$ cat ingredients.txt

<<<<<< HEAD
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=====
* 0.5 tbsp cilantro
>>>>>> dislike-cilantro
* 2 avocados
* 1 lime
* 1 tsp salt
* 1/2 onion
```

- TALK to the other person(s), who made the conflicting changes, and find a common solution
- choose the version, you agree on (not necessarily either of yours)
- remove the conflict identifiers
- add and commit
- then proceed with what you were up to

## Best practice

- AVOID conflicts
- branch off for every single feature
- merge often
- do not merge buggy code anywhere, where it can affect somebody else's unrelated work

## Exercise

- 1 create local branch tracking *your group's* remote branch
- 2 branch off
- 3 add your name to the list of main authors in your document
- 4 safely move this change to your group's remote branch using the strategy given in this document
- 5 resolve conflicts along the way
- 6 move on collectively adding content to your topic
- 7 goal: have all contributions on the remote branch until 17.50/16.50