

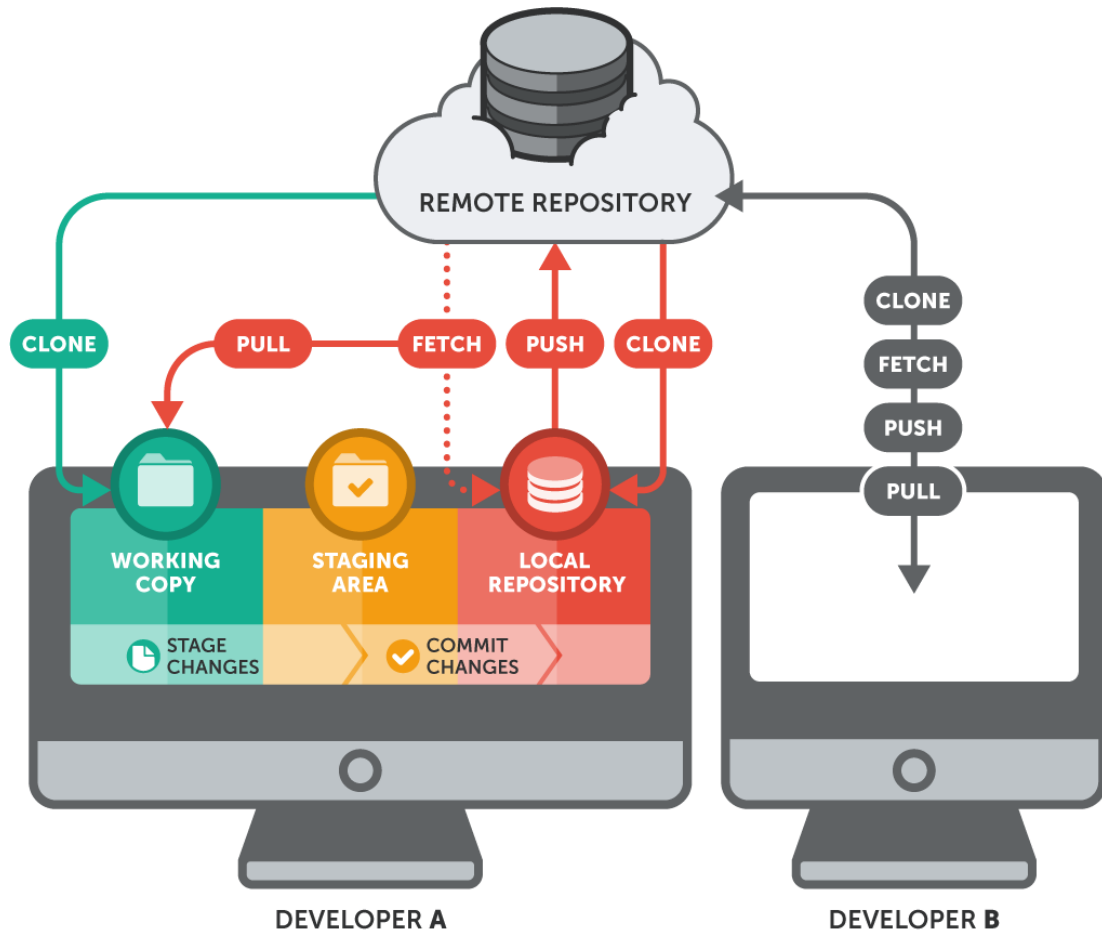
# Reproducible research workflows for psychologists

Collaborate with Git & GitHub

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KU Leuven, 27.–28.04.2022

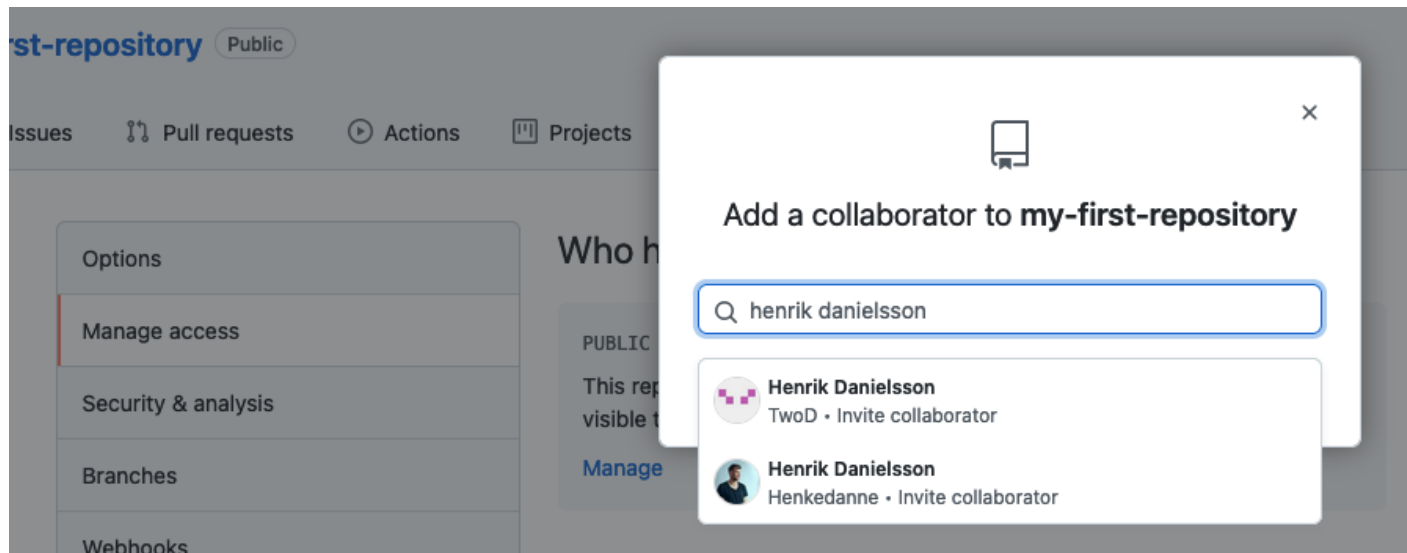
# Git



# Collaboration

## Add collaborators

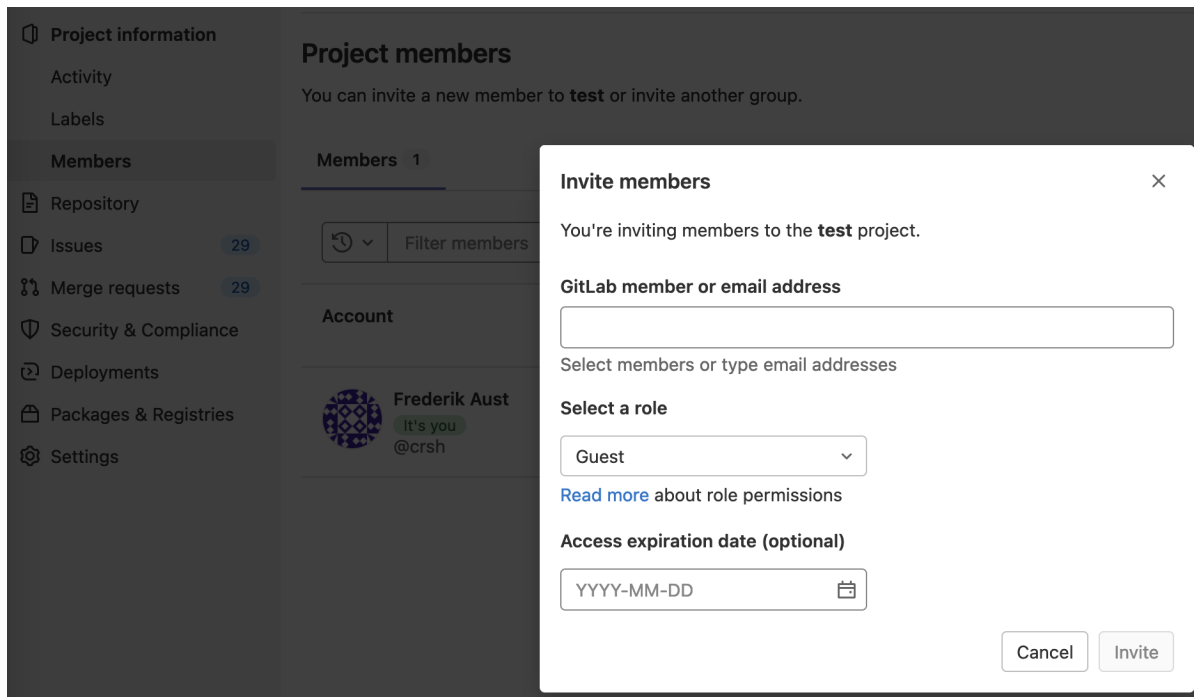
Settings > Manage access > Add people



# Collaboration

## Add collaborators

Project information > Members > Invite members



# Collaboration

GitHub provides a lot of collaboration features

- Edit files in browser
  - Change highlighting and commenting
  - Interactive revise-and-resubmit workflow
    - [See example](#)
  - Issue tracker (to-do list and discussion)
  - ...
-

# Collaboration

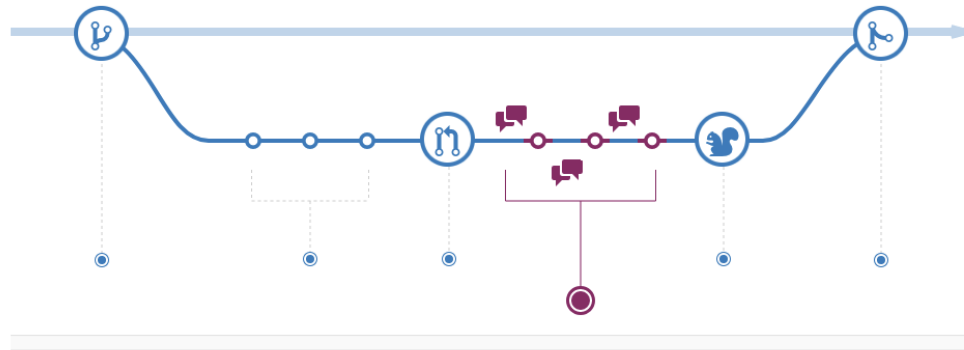
## Workflows for collaboration

1. "Publishing" changes without prior review
  - Push directly to `main` branch on GitHub
2. Suggest changes with review (*pull request*)
  - Create a new *branch* ("parallel universe" of repository)

Edit on GitHub or in RStudio on your computer

---

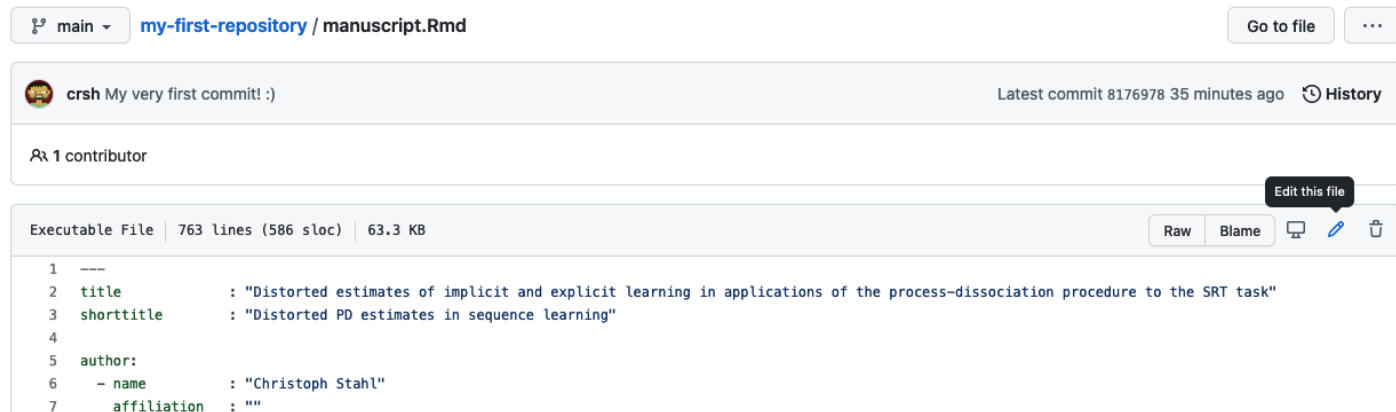
# Pull requests



1. Pull current state of repository
2. Create new *branch* ("parallel universe")
3. Make changes, stage, commit, & push
4. Discuss and revise changes
5. Merge changes

# Editing on GitHub

Small changes (to one file) in the browser on GitHub



The screenshot shows the GitHub interface for a file named `manuscript.Rmd` in a repository called `my-first-repository`. The file is on the `main` branch. The commit message is "crsh My very first commit! :)", committed 35 minutes ago. The file is 63.3 KB and contains 763 lines of code. The code is displayed in a monospaced font with syntax highlighting. A tooltip "Edit this file" is visible over the edit icon in the top right corner of the code area.

main `my-first-repository` / `manuscript.Rmd` Go to file ...

crsh My very first commit! :) Latest commit 8176978 35 minutes ago History

1 contributor

Executable File | 763 lines (586 sloc) | 63.3 KB Raw Blame Edit this file

```
1 ---
2 title      : "Distorted estimates of implicit and explicit learning in applications of the process-dissociation procedure to the SRT task"
3 shorttitle : "Distorted PD estimates in sequence learning"
4
5 author:
6   - name : "Christoph Stahl"
7     affiliation : ""
```



# Editing on GitHub

my-first-repository / manuscript.Rmd Cancel changes

<> Edit file

🔍 Preview changes

... ... @@ -1,6 +1,6 @@

1 1

2 - title : "Distorted estimates of implicit and explicit learning in applications of the process-dissociation procedure to the SRT task"

3 - shorttitle : "Distorted PD estimates in sequence learning"

2 + title : "Biased estimates of implicit and explicit learning in applications of the process-dissociation procedure to the SRT task"


3 + shorttitle : "Biased PD estimates in sequence learning"

4 4

5 5 author:

6 6 - name : "Christoph Stahl"

... ...



## Commit changes

Changed title

I think this gives it a little more punch. ;)

frederik.aust@uni-koeln.de

Choose which email address to associate with this commit

☐ Commit directly to the `main` branch.

☒ Create a new branch for this commit and start a pull request. [Learn more about pull requests.](#)




`title-change`


Propose changes Cancel

# Editing on GitHub

## Open a pull request

The change you just made was written to a new branch named `title-change`. Create a pull request below to propose these changes.










 base: main  compare: title-change  **Able to merge.** These branches can be automatically merged.




Changed title


Write


Preview

H B I         


I could add more context, but I think the commit message says it all:  
  
I think this gives it a little more punch. ;)

Attach files by dragging & dropping, selecting or pasting them. 


Create pull request 

Reviewers 


No reviews

Assignees 


No one—assign yourself

Labels 


None yet

Projects 


None yet

Milestone 

No milestone

Linked issues 

Use [Closing keywords](#) in the description to automatically close issues

 Remember, contributions to this repository should follow our [GitHub Community Guidelines](#).

# Editing on GitHub

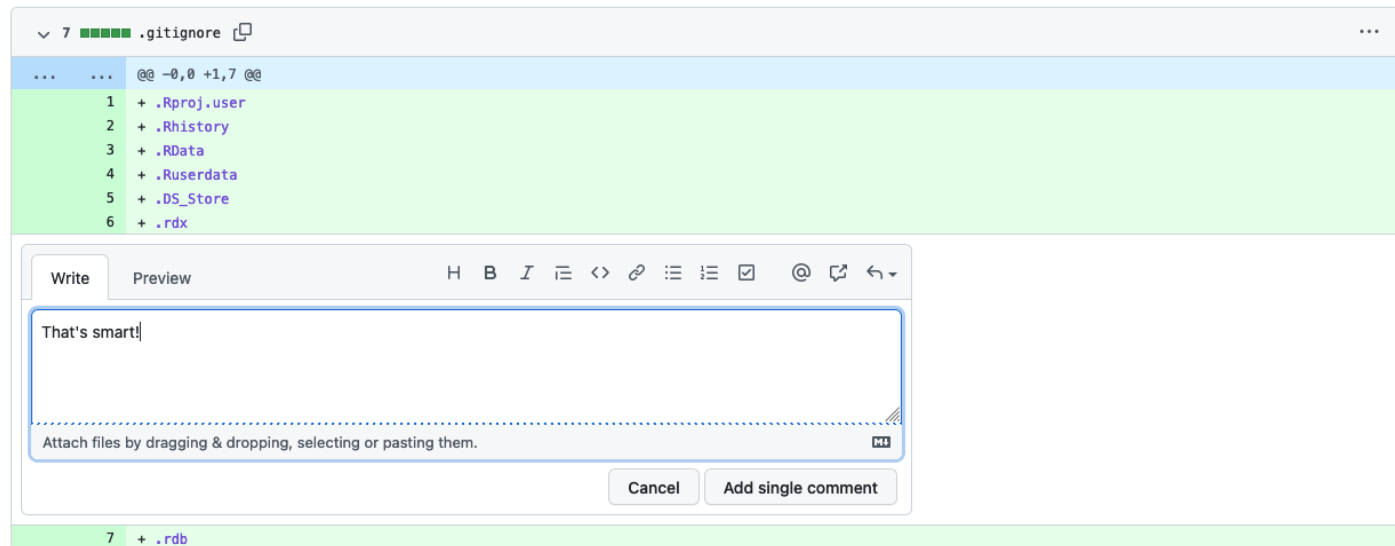
Reviewers can provide

- comments on specific changes

# Editing on GitHub

Reviewers can provide

- comments on specific changes



# Editing on GitHub

Reviewers can provide

- comments on specific changes
- higher level comments on the entire pull request

## Changed title #1

[Open](#) crsh wants to merge 1 commit into `main` from `title-change`

Conversation 0 Commits 1 Checks 0 Files changed 1 +2 -2

Changes from all commits File filter Conversations Jump to 0 / 1 files viewed Review changes

```
4 manuscript.Rmd
@@ -1,6 +1,6 @@
1 1 ---
2 2 - title      : "Distorted estimates of implicit and explicit
3 3 - shorttitle : "Distorted PD estimates in sequence learning"
4 4 + title      : "Biased estimates of implicit and explicit le
5 5 + shorttitle : "Biased PD estimates in sequence learning"
6 6
7 7 author:
8 8 - name       : "Christoph Stahl"
```

Finish your review

Write

Preview

H B I i < > @ @ @ @ @ @ @ @ @ @

No objections on my end, it's also shorter, but let's wait for some more opinions. 🍌

Attach files by dragging & dropping, selecting or pasting them.

☒ Comment

Submit general feedback without explicit approval.

☐ Approve

Submit feedback and approve merging these changes.

☐ Request changes

Submit feedback that must be addressed before merging.

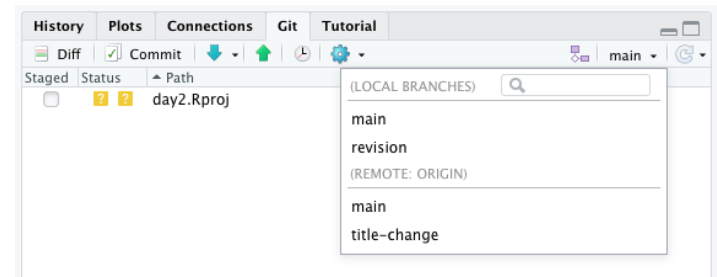
Submit review

# Editing on your computer


Larger changes across multiple files in RStudio

1. Pull current state of remote repository
2. Switch to new *branch* ("parallel universe")
3. Make changes, stage, commit, & push




```
git pull
git branch revision
git checkout revision
git status
git add .
git commit -m "My changes"
...
git push origin revision
```



# Editing on your computer

 **revision** had recent pushes less than a minute ago

Compare & pull request

 main ▾  3 branches  0 tags

Go to file

Add file ▾

Code ▾

Switch branches/tags

Find or create a branch...

Branches

Tags

✓ main default

revision

title-change

[View all branches](#)

references.bib

8176978 1 hour ago ⌚ 2 commits

My very first commit! :) 1 hour ago

My very first commit! :) 1 hour ago

Initial commit 2 hours ago

My very first commit! :) 1 hour ago


My very first commit! :) 1 hour ago

My very first commit! :) 1 hour ago

# Editing on your computer

## Compare changes

Compare changes across branches, commits, tags, and more below. If you need to, you can also [compare across forks](#).

 base: main ▾

←

compare: main ▾

Choose different branches

Find a branch

Branches Tags


✓ main default

revision

title-change

s. [Learn about pull requests](#)

Create pull request



### Commit and review just about anything

Branches, tags, commit ranges, and time ranges. In the same repository and across forks.



# Merge conflicts 🤖

Competing changes to *the same line of text*

# Merge conflicts 🤖

Review competing changes marked by <<<<<<<< and

>>>>>>>>

## Revises text and analysis #2

Resolving conflicts between `revision` and `main` and committing changes → `revision`

1 conflicting file

manuscript.Rmd  
manuscript.Rmd

manuscript.Rmd

1 conflict Prev Next

Mark as resolved

```
80
81 <<<<<< revision
82 =====
83 Implicit learning refers to the ability to adapt to regularities inherent in the environment in the absence of conscious awareness about the outco
84 This ability is fundamental for human beings as it allows us to act optimally in stable environments with relatively little effort.
85
86 >>>>>> main
87 One of the most frequently utilized paradigms in the field of implicit learning is the serial reaction time task (SRTT) originating from @nissen_i
88 In this standard SRTT, participants respond to locations on the screen which are mapped to spatially corresponding keys.
89 Participants are instructed to press the appropriate response key whenever an asterisk occurs at a certain screen location.
90 Unbeknownst to the participants, the locations of the asterisk follow a regular sequence.
```

Again, this can be done on GitHub or in RStudio

# Merge conflicts 🤖

## Stage and commit conflict resolution

### Revises text and analysis #2

Resolving conflicts between `revision` and `main` and committing changes → `revision`

**Commit merge** This merge commit will be associated with frederik.aust@uni-koeln.de.

1 conflicting file		manuscript.Rmd	✓ Resolved
manuscript.Rmd	✓	80 81 82   Implicit learning refers to the ability to adapt to regularities inherent in the environment in the absence of conscious awareness about the outc 83   This ability is fundamental for human beings as it allows us to act optimally in stable environments with relatively little effort. 84 85   One of the most frequently utilized paradigms in the field of implicit learning is the serial reaction time task (SRTT) originating from @nissen_ 86   In this standard SRTT, participants respond to locations on the screen which are mapped to spatially corresponding keys.	

```
git add .  
git commit -m "Resolved merge conflict by doing something"
```

# Exercise time

Exercise

Solutions