

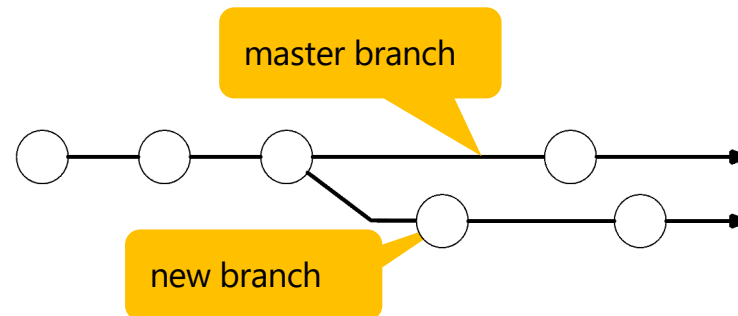
Advanced Git features

Branching: room for crazy project experiments or program features

Branching:

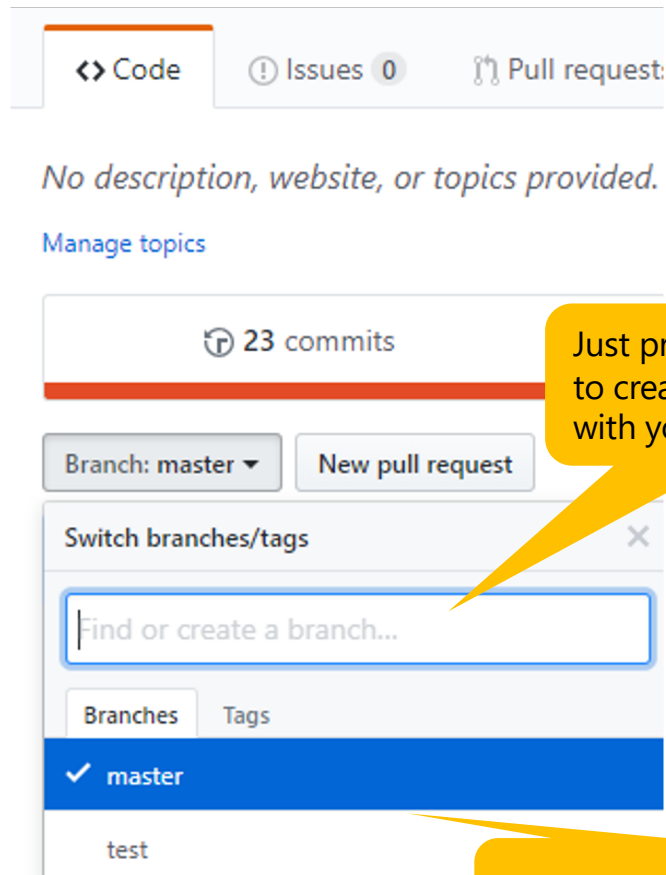
- Create independent line of development.
- No danger to the original project.
- Switch between branches

You can test various features. If the feature was successful, the branch could be merged.



Branching: Create new branch on GitHub

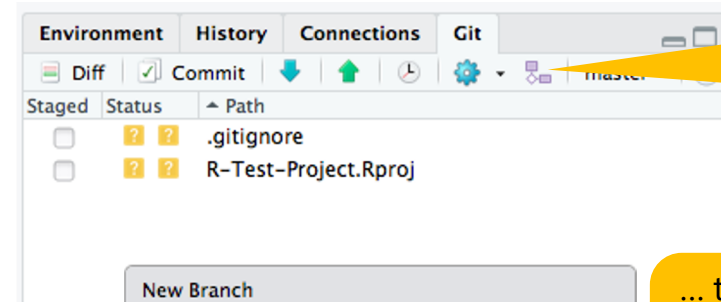
Either with GitHub



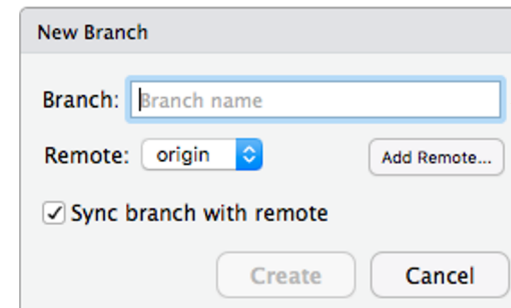
Just press the enter key to create a new branch with your given name

Click on the branch that you would like to switch to

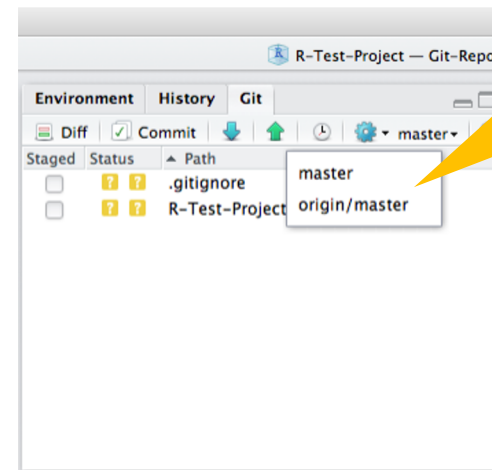
or with RStudio



Click here to add or change branches...



... then type the name of your new branch or select an existing one.

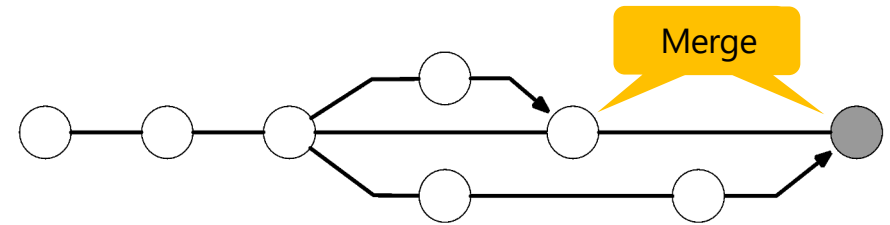


Select here between branches

Merging: Bring two branches back together

Merge:

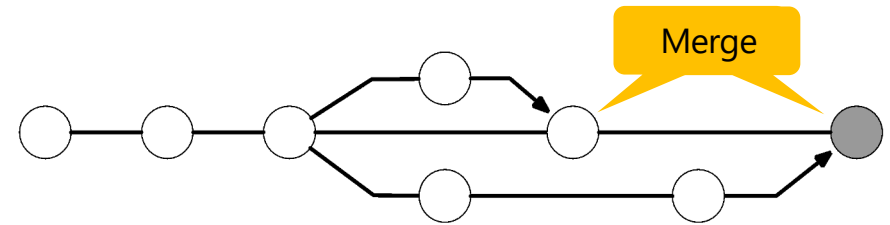
- Brings forked history back together again.
- Integrate into one single branch.



Merging: Bring two branches back together

Merge:

- Brings forked history back together again.
- Integrate into one single branch.



It is not possible to do a merge within RStudio. Go to Github.com or use an other Git client (e.g. GitHub Desktop).

Conflicts: not everything is shiny in Git

Conflict:

- You edited **exactly** the same line of code as your colleague.
- Git cannot decide which change is "correct".
- The affected file(s) are always specified

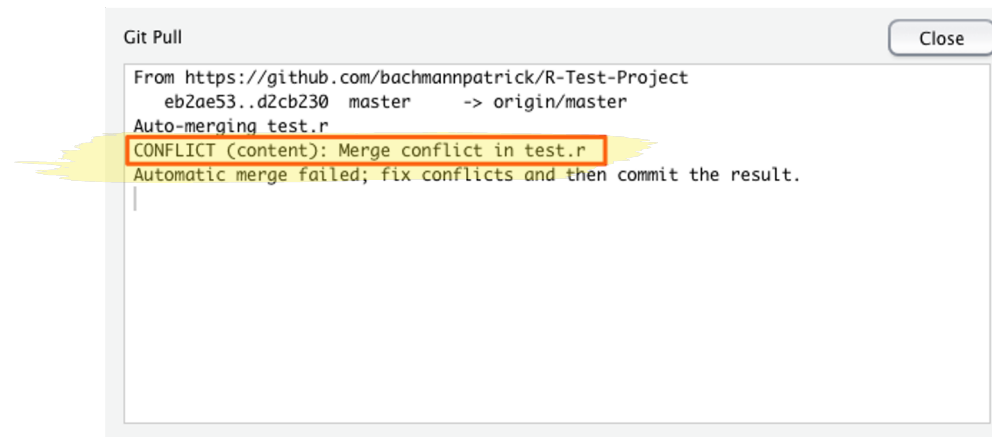


```
Git Pull Close  
From https://github.com/bachmannpatrick/R-Test-Project  
eb2ae53..d2cb230 master -> origin/master  
Auto-merging test.r  
CONFLICT (content): Merge conflict in test.r  
Automatic merge failed; fix conflicts and then commit the result.  
|
```

Conflicts: not everything is shiny in Git

Conflict:

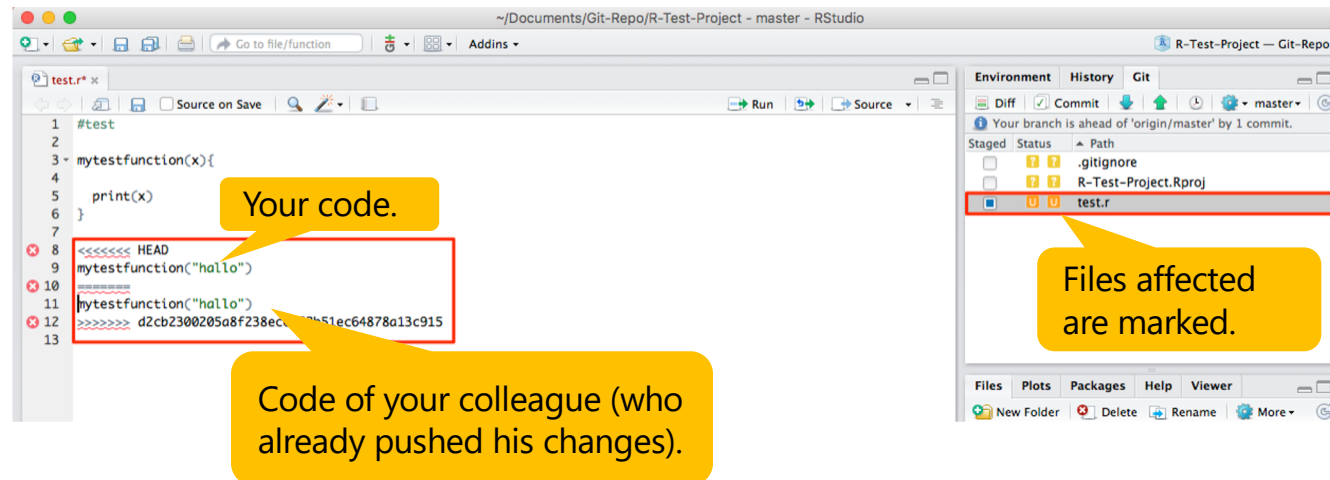
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A screenshot of a terminal window titled "Git Pull" with a "Close" button in the top right corner. The terminal output shows the source of the pull: "From https://github.com/bachmannpatrick/R-Test-Project", the commit hash "eb2ae53..d2cb230", and the branch "master -> origin/master". It then says "Auto-merging test.r". A line "CONFLICT (content): Merge conflict in test.r" is highlighted with a yellow brush and a red rectangular box. The final line of output is "Automatic merge failed; fix conflicts and then commit the result." followed by a cursor.

```
Git Pull
Close
From https://github.com/bachmannpatrick/R-Test-Project
eb2ae53..d2cb230  master    -> origin/master
Auto-merging test.r
CONFLICT (content): Merge conflict in test.r
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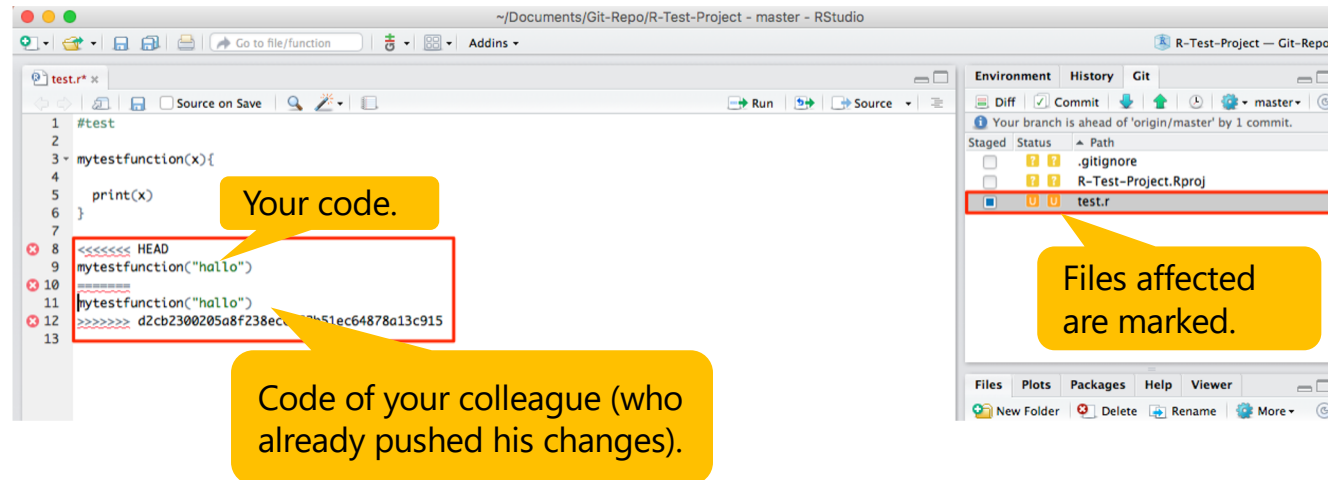
Conflicts: fix it!

Git indicates conflicts directly in the affected file

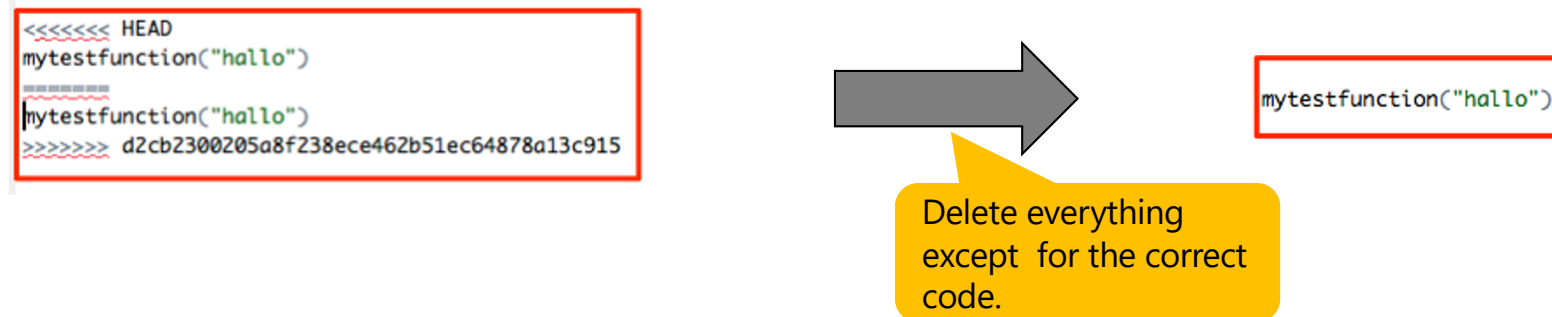


Conflicts: fix it!

Git indicates conflicts directly in the affected file



Fix it, then commit and push:



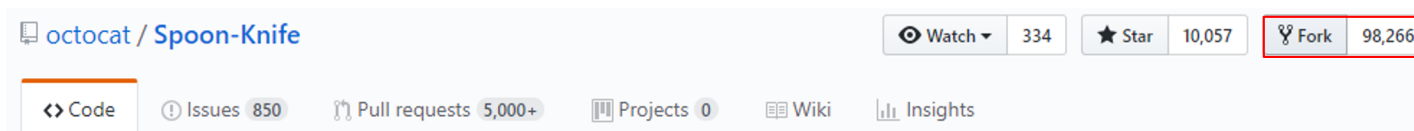
Forking

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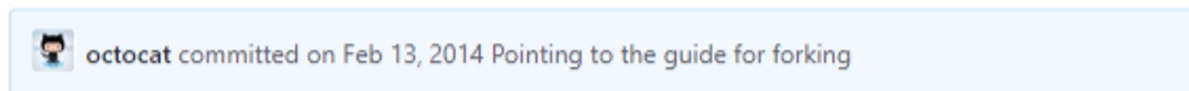
- A fork of a repository is just a copy of a repository.
- Forking allows people to experiment making changes to a project without affecting the original repository (think of contributing to open source).

The usual workflow is:

1. Fork the repository



1. Make a **change** (could be a fix or an addition)
2. **Submit a pull request** to the owner of the repository



Forking vs. Branching

Forking

- Nothing more than a clone on the GitHub server side
- Cannot directly push back to the original repository
- You keep your fork in sync with the original repository by fetching regularly

Branching

- Cannot always create a/pull from/push to a branch because you are not registered as a collaborator
- Keeps all work being done on repository in one place

More details here: <https://stackoverflow.com/questions/3611256/forking-vs-branching-in-github>

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Now it's your turn!