## A short introduction to git

and GitHub.com

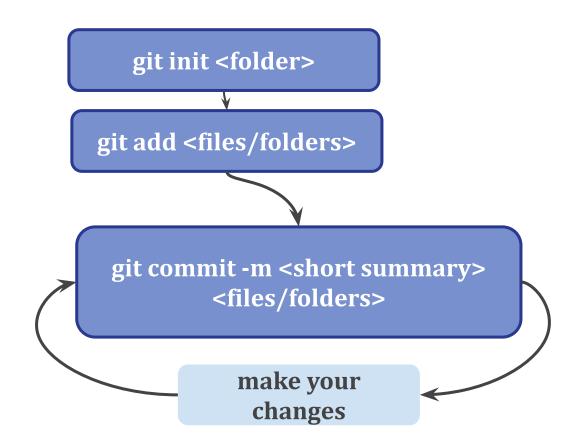
## What is 'git'?

- Git is a source-code management tool
- It is de-facto the industry standard

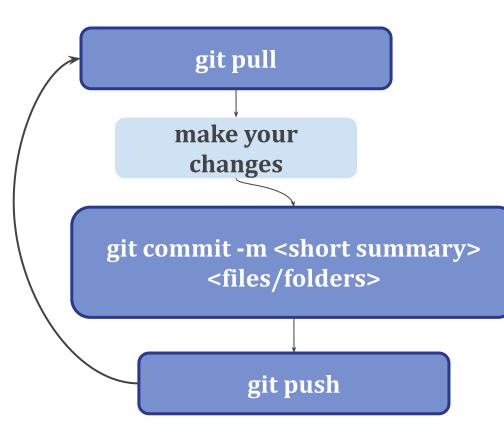
"Stack Overflow has included version control in their annual developer survey ...: Git was the overwhelming favorite of responding developers in these surveys, reporting as high as 87.2% in 2018."

- Git keeps track of changes of you source files.
- Git helps you to merge (maybe conflicting) states of your project.

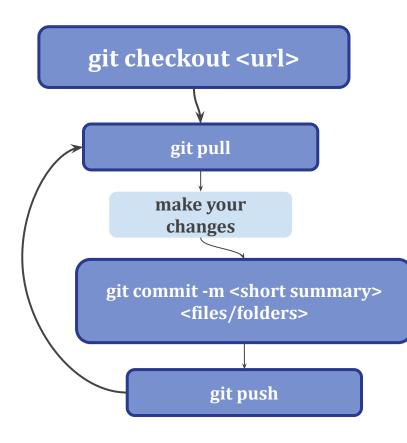
### Typical workflow #1: Managing your own project.



#### Typical workflow #2: With remote git origin



### Typical workflow #3: Using other peoples project

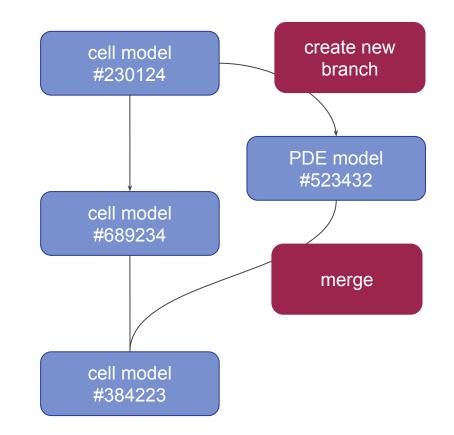


#### Interactive session

## Advanced topic:

# Branches and merge conflicts

#### Branches $\rightarrow$ Progress is not always linear



#### It is actually useful...

#### Steffen Plunder

ò

Ó

C

Ó

0

0

0

ò

7a9c1a8 Merge remote branch 'origin/with IPOP'

#### **Steffen Plunder**

579896b Merge branch 'master' of https://github.com/SteffenPL/epithelium\_simulation

#### Steffen Plunder bcd46f4 added same scales in comparison plo

SteffenPL 2ab8e66 numerical experiments

**SteffenPL** 6733daf fix variable B2 instead of constraint

**SteffenPL** 730375<del>f</del> fix B2 variable instead adding a constraint

**SteffenPL** 8bbcf26 First working integration of IPOPT

SteffenPL cc30c32 work on load feather function

Steffen Plunder d1cbc9e test for cell division in 3D

SteffenPL 7b7f493

### What to do when there are merge conflicts ?!

- 1. Don't panic.
- Google (honestly, it forget it all the time what to do.)
- 3. Options:

A.) You will have files like that  $\rightarrow$  use a text editor to replace all of these parts with the version you prefer.

B.) Don't be stupid, stupid! Use a merge tool.

<<<<< HEAD:index.html

<div id="footer">contact :
email.support@github.com</div>

=======

<div id="footer">

please contact us at support@github.com

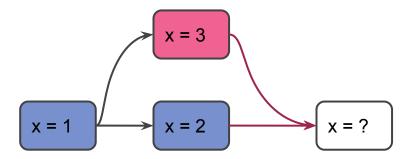
</div>

>>>>> iss53:index.html

#### Conflicts

If git cannot clearly determine which change is **newer** (with respect to the commit history), then the user has to resolve these **merge conflicts**.

git merge git mergetool



### 'main' vs 'master'

Historically the 'main' branch was called 'master' branch.

In the last years, there was a push towards the name 'main' to avoid using the 'master - slave' termololgy.



# **Documentation** and tutorials

#### Documentation

Cheat Sheet:

https://about.gitlab.com/images/press/git-cheat-sheet.pdf

Documentation:

https://git-scm.com/

https://git-scm.com/book/en/v2

stackoverflow...

