



git Course

Part 1: Presentation of git

*** Version Control System (VCS) ***

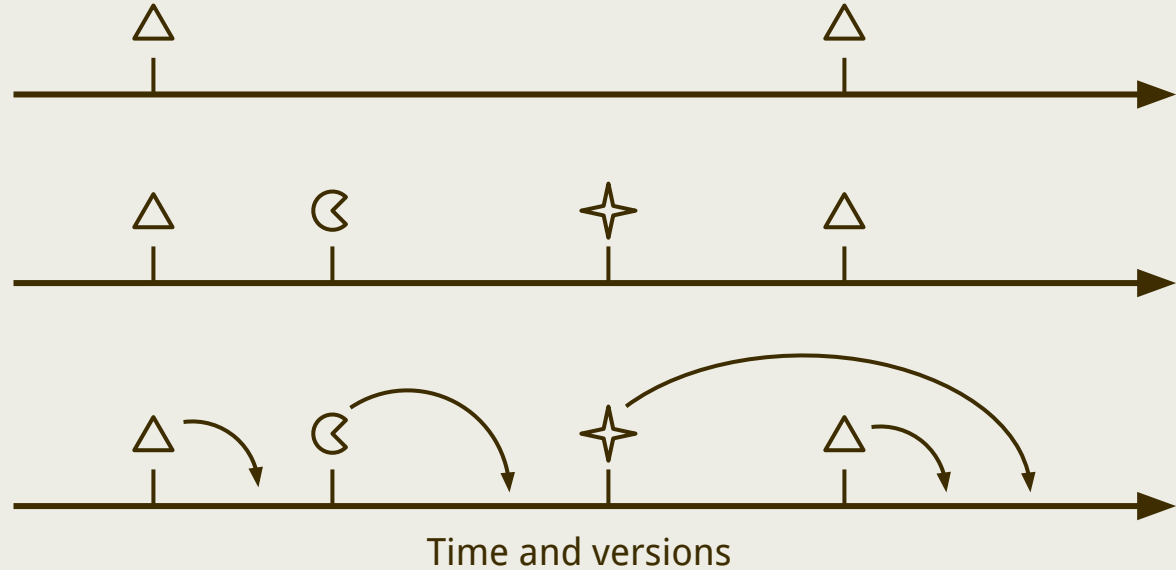
Distributed Version Control System (DVCS)

Use of git

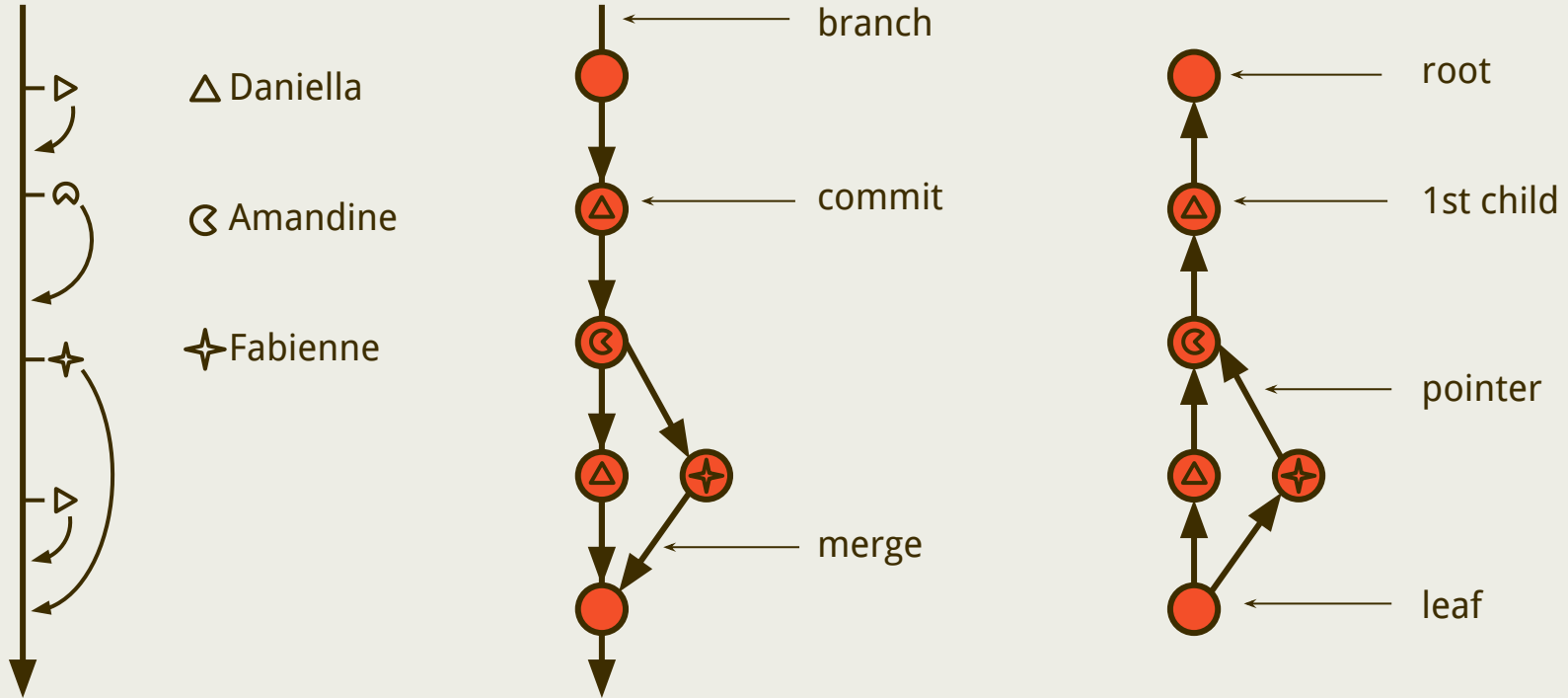
Need for Version Control

who?
what?
when?
why?

- △ Daniella
- ☾ Amandine
- ✦ Fabienne



Directed Acyclic Graph (DAG)



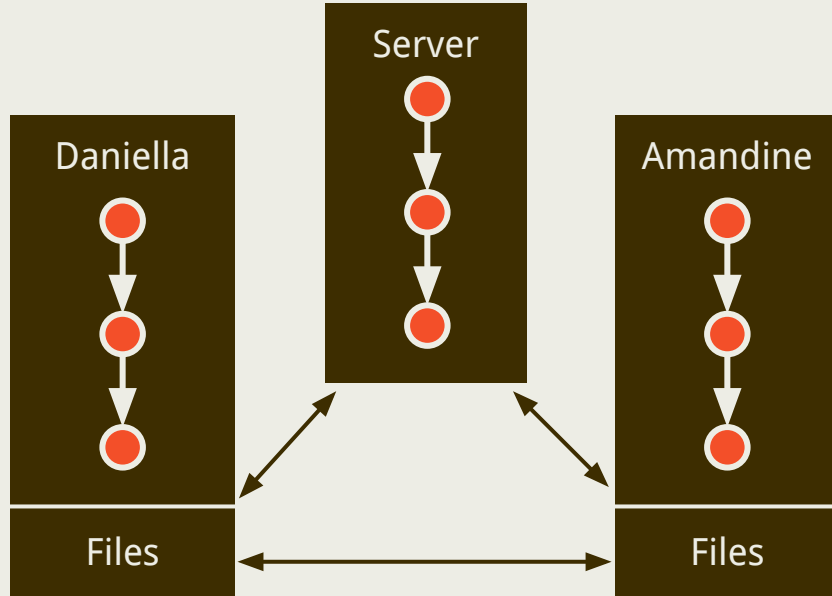
Version Control System (VCS)

*** Distributed Version Control System (DVCS) ***

Use of git

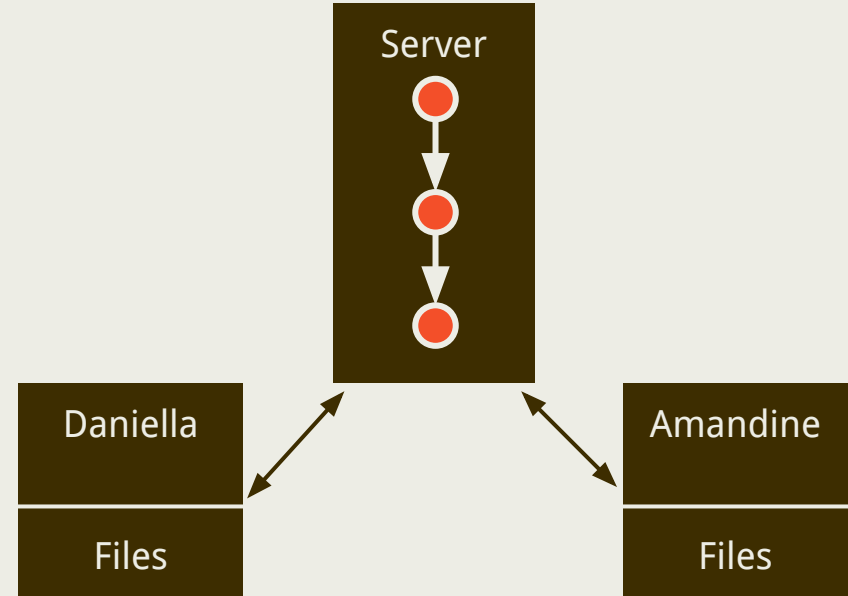
DVCS versus CVCS

Distributed System



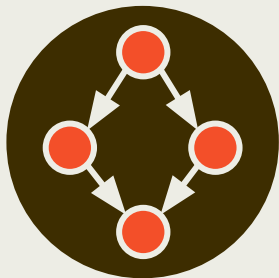
git, bazaar, mercurial, ...

Centralized System



cvs, svn, ...

Other benefits of git



Branching
and Merging

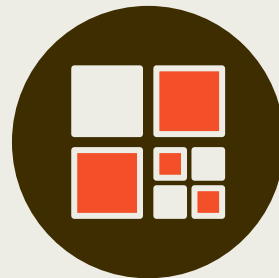
Efficient branching
and merging
allows for more
different workflows



Small and
Fast



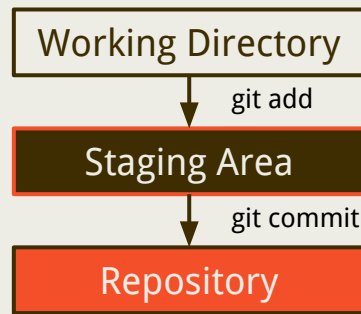
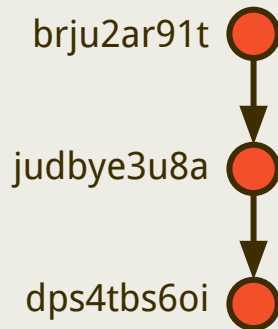
Data Insurance
(checksums)



Staging Area
(precise commits)



Open Source

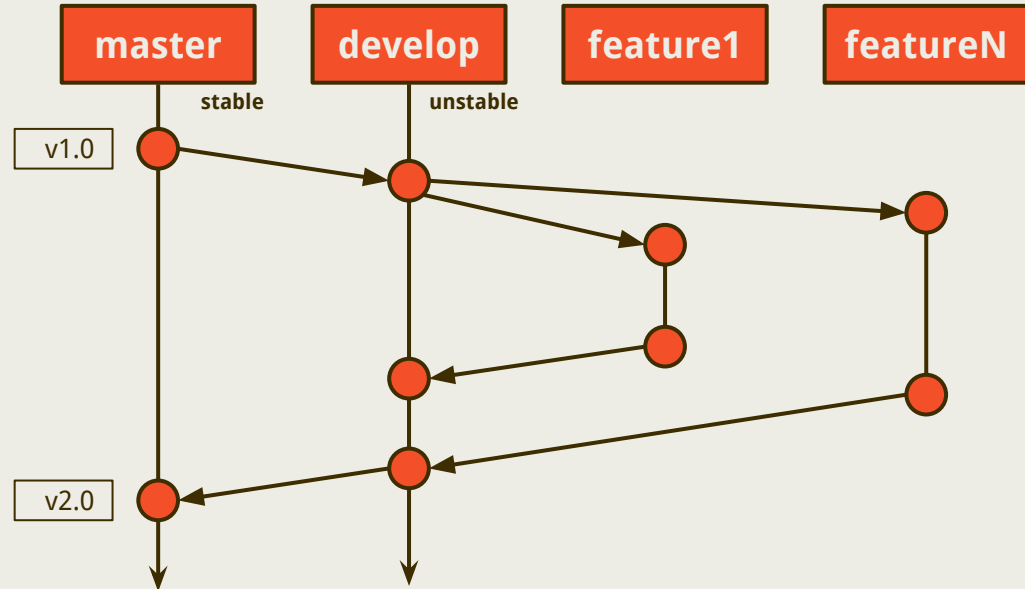


Workflows

No Workflow



Gitflow Workflow



<https://www.atlassian.com/git/tutorials/comparing-workflows>

Version Control System (VCS)

Distributed Version Control System (DVCS)

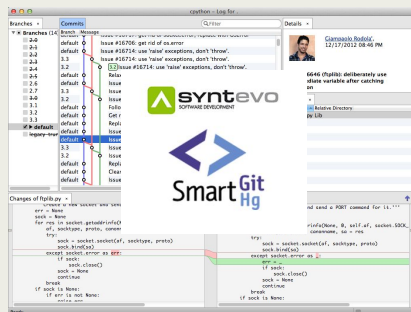
*** Use of git ***

Tools for git

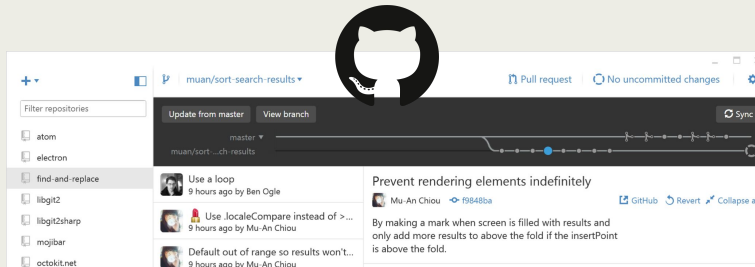
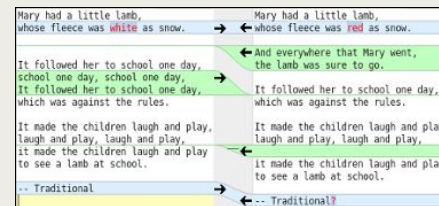
Hosting Service

Graphical User Interface (GUI)

Graphical Merge Conflict Tool



Meld



Configuration of git

```
$ git config --global user.name "Matthieu Pizenberg"  
$ git config --global user.email ...
```

```
~/.gitconfig  
-----  
  
[user]  
name = Matthieu Pizenberg  
email = matthieu.pizenberg@gmail.com  
  
[alias]  
st = status  
  
[core]  
editor = vim
```

Initialization of a repository

Initializing your own repository

```
matthieu@manjaro:[$] git init repo_test
Initialized empty Git repository in /home/matthieu/repo_test/.git/

matthieu@manjaro:[$] cd repo_test/

matthieu@manjaro:[$] ls -lA
total 4.0K
drwxr-xr-x 7 matthieu matthieu 4.0K Nov  1 18:02 .git/
```

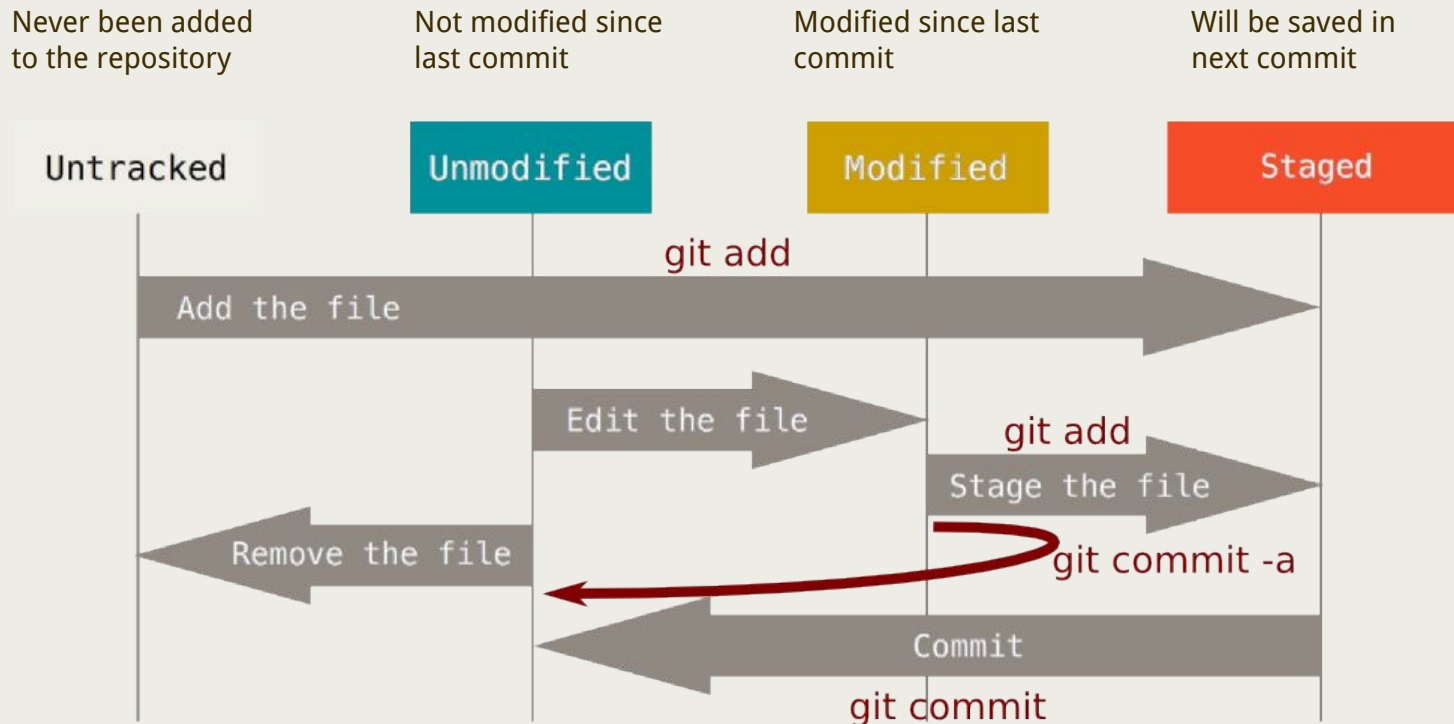
Cloning an existing repository

```
matthieu@manjaro:[$] git clone https://github.com/7Robot/brasmecanique.git
Cloning into 'brasmecanique'...
remote: Counting objects: 227, done.
remote: Total 227 (delta 0), reused 0 (delta 0), pack-reused 226
Receiving objects: 100% (227/227), 16.87 MiB | 1.21 MiB/s, done.
Resolving deltas: 100% (106/106), done.
Checking connectivity... done.

matthieu@manjaro:[$] cd brasmecanique/

matthieu@manjaro:[$] ls -lA
total 44
drwxr-xr-x 8 matthieu matthieu 4096 Nov  1 18:10 .git/
-rw-r--r-- 1 matthieu matthieu  327 Nov  1 18:10 .gitignore
drwxr-xr-x 3 matthieu matthieu 4096 Nov  1 18:10 hardware/
-rw-r--r-- 1 matthieu matthieu 18047 Nov  1 18:10 LICENSE
drwxr-xr-x 3 matthieu matthieu 4096 Nov  1 18:10 pic/
drwxr-xr-x 2 matthieu matthieu 4096 Nov  1 18:10 raspberry/
-rw-r--r-- 1 matthieu matthieu 1300 Nov  1 18:10 README.md
```

Recording changes to the repository

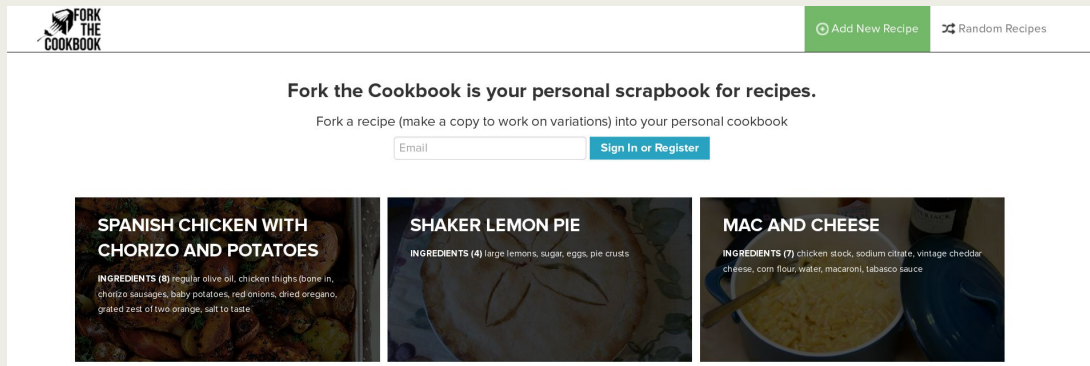


Useful resources

- git-scm: <https://git-scm.com/>
The official git website. A great source of resources.
- progit: <https://git-scm.com/book/>
Very detailed book about git. Available in html, pdf, ...
- git introduction: My personal introduction to git. One printed version is available at 7Robot.
- cheat sheet: <https://training.github.com/kit/downloads/github-git-cheat-sheet.pdf>
For git and github.
- trygit: <https://try.github.io>
Learn git in your browser very easily.
- gitignore.io: <https://www.gitignore.io/>
Help in the creation of .gitignore files.
- Human coders: <http://news.humancoders.com>
Very good website for your technological watch (look for the git section)

Funny use of git

<http://forkthecookbook.com>



In case of fire



1. git commit



2. git push



3. leave building

<https://github.com/steeve/france.code-civil>

Le Code civil français, sous Git

« Nul n'est censé ignorer la loi. »

Et pourtant nous autres citoyens (moi y compris) ne connaissons pas les lois qui construisent et gouvernent notre République. Peut-être parce que les outils existants sont trop opaques et complexes.

Notre République c'est un *work in progress* (travail en cours). Elle n'est pas fixe, elle bouge, elle évolue, grace a nos parlementaires: ceux qu'on déteste, ceux qu'on ne connaît pas, et ceux qu'on aime. Mais aussi et surtout grace a nous tous, les citoyens. Pouvoir suivre son évolution, c'est une façon de nous ré-approprier ce qui fait de nous ce que nous sommes, et ne pas se perdre dans des querelles passagères.

Notre République est la représentation de nous tous, a nous d'y contribuer a la hauteur de nos compétences.

Aux armes, citoyens.

Git ?

Ce petit hack, résultat d'une après-midi de code, transpose le Code civil sous Git/Github.

Si l'on considère les lois comme un ensemble de textes modifiés par les différentes assemblées de l'Etat, on peut les considérer comme un ensemble de fichiers texte créé de manière collaborative.