



git

by carlessanagustin.com on 11/2013 - Barcelona

What is Git?

Version Control – VCS

Distributed Revision Control – DRCS

Source Code Management – SCM



Git is free software distributed under GNU GPL2

Git - <http://git-scm.com>

[http://en.wikipedia.org/wiki/Git_\(software\)](http://en.wikipedia.org/wiki/Git_(software))

What is version control?

It tracks entries...

- Tracks changes
- Tracks who makes the changes
- Tracks why changes were made
- Tracks changes, not versions



Why should we use a VCS?

Automatic backups

Change history log

Undo

Fearless experimentation



How do teams benefit from VCS?

Synchronization

Accountability

Conflict detection

Backups

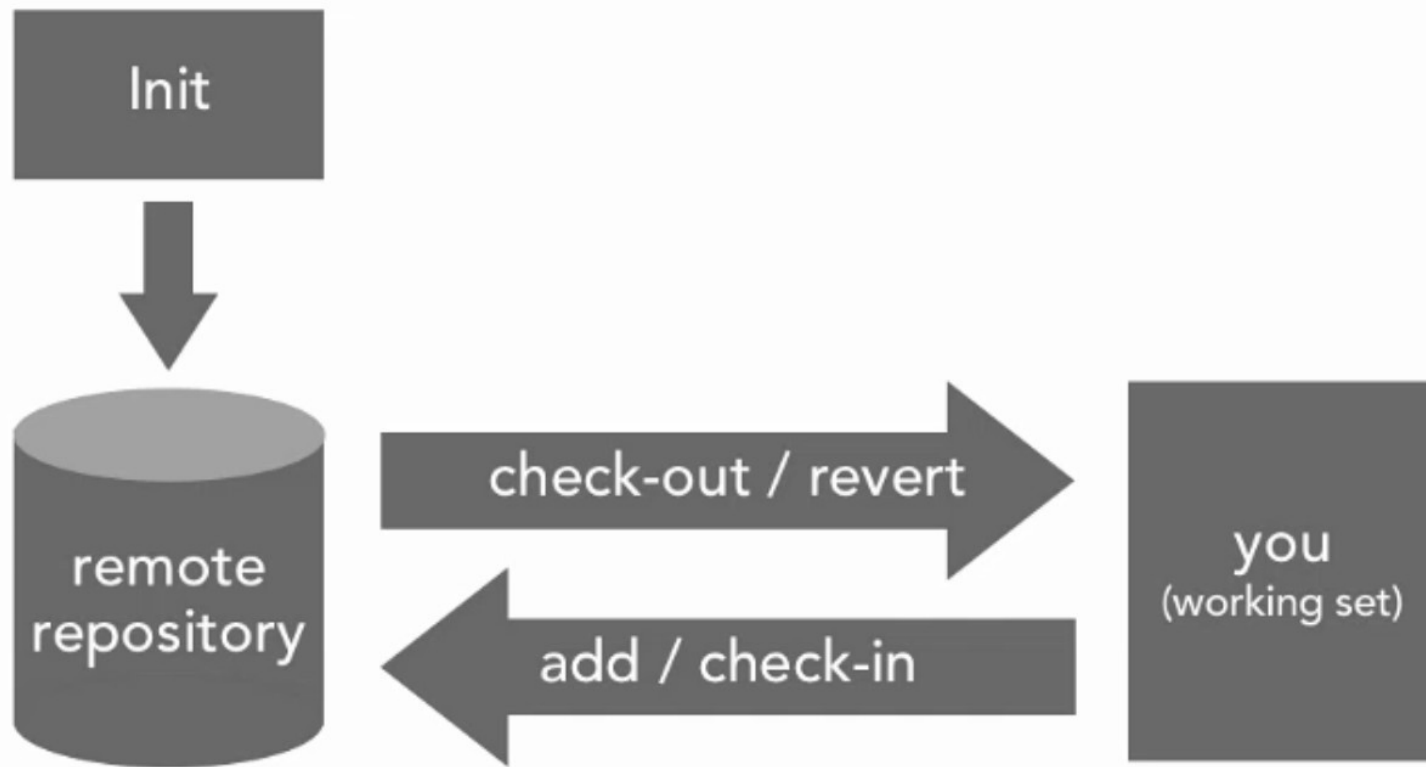
Change tracking

Undo to version X

Labeling changes



Centralized VCS flow



Distributed VCS

No need to communicate with a central server

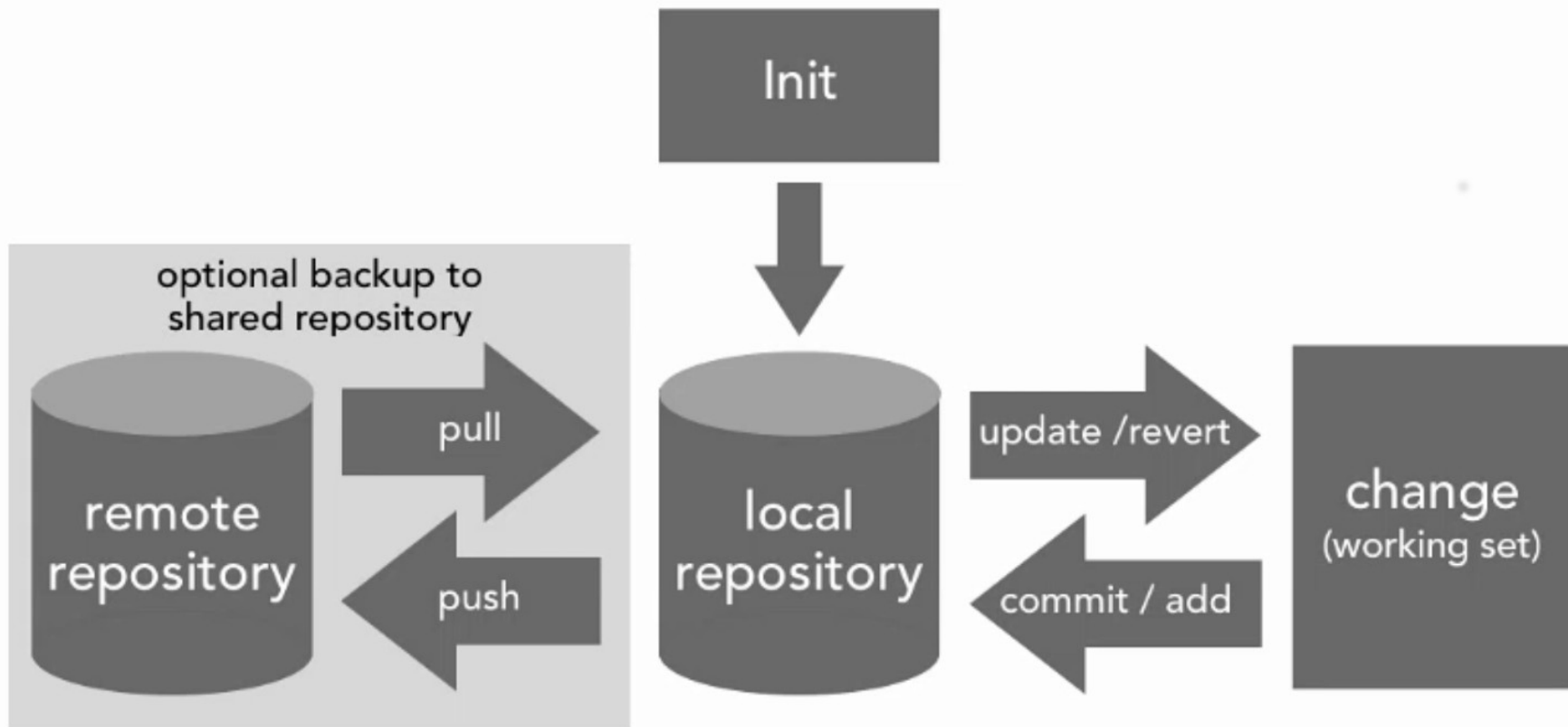
- Faster
- No network access required
- No single failure point

Encourages collaboration and “forking” of projects

- Developers can work independently
- Submit change sets for inclusion or rejection



Distributed VCS flow



History of VCS

Centralized

CVS	1986
Perforce	1995
Subversion	2000
MS Team Foundation Server	2010

Distributed

Git	2005
Mercurial	2005

http://en.wikipedia.org/wiki/Comparison_of_revision_control_software

VCS basic concepts

Repository / Database (files + history)

Working set (local machine files)

Add / Reset

Check-in / Commit (from WS to R)

Check-out / Update (from R to WS)

Tag / Label



VCS terminology

Tag / Label

Branch / Fork

Merge / Clone

Reverse integration / Forward integration

Distributed VCS only:

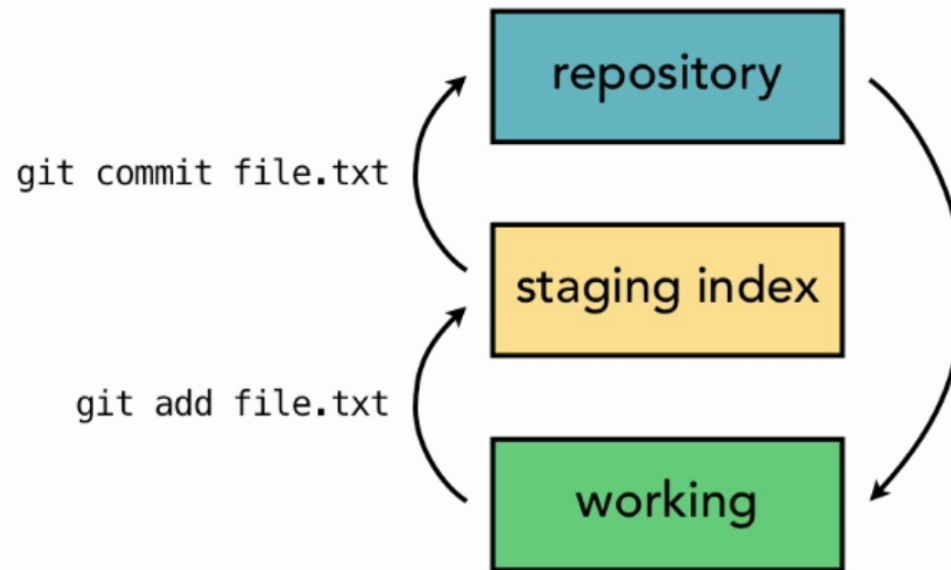
Push / Export

Pull / Import

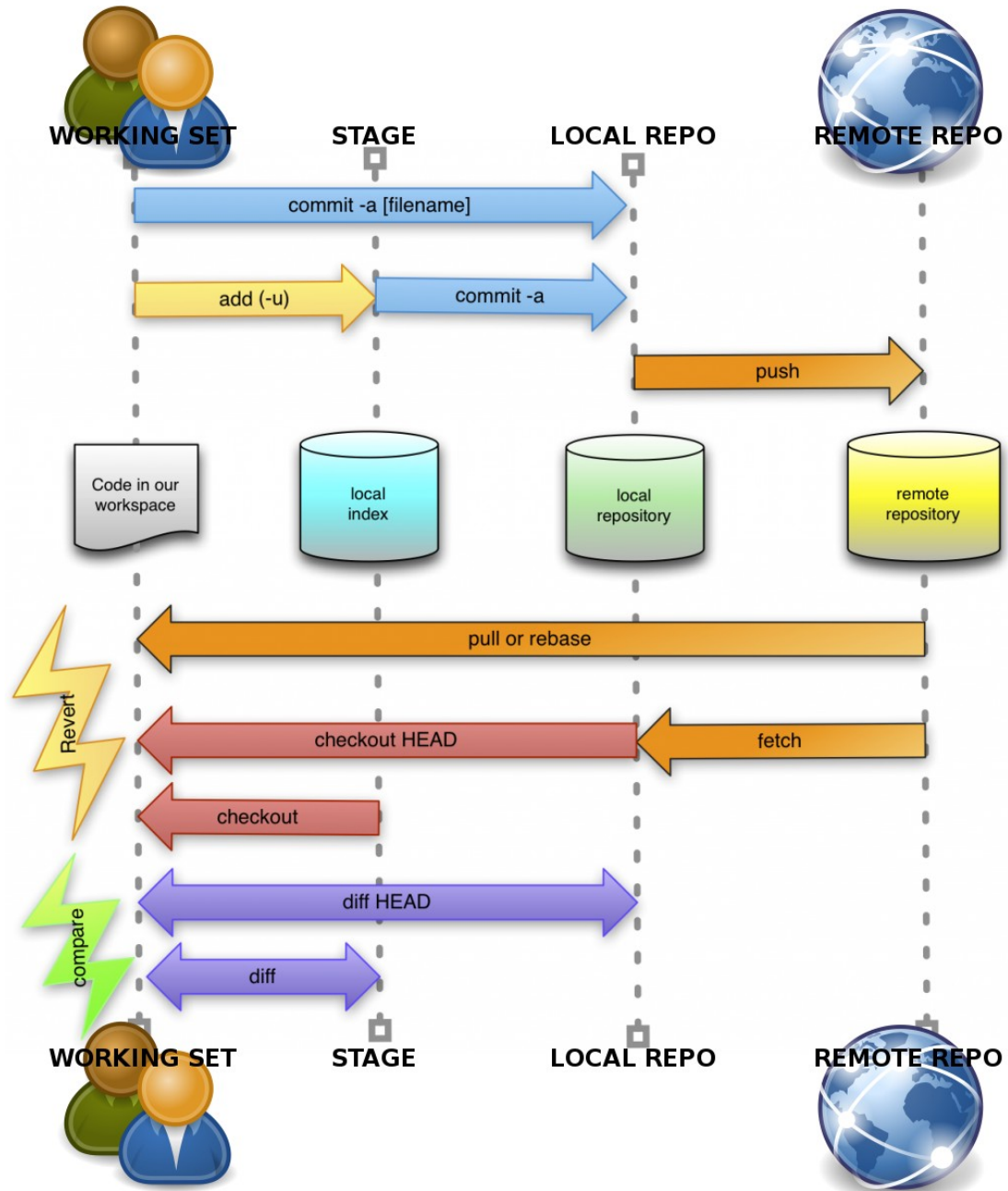


Three-tree architecture

three-tree architecture



Git Instructions



Git Instructions Reference

Getting and Creating Projects

init – clone

Basic Snapshotting

add – status – diff – commit – reset – rm, mv – stash



Branching and Merging

branch – checkout – merge – log – tag



Sharing and Updating Projects

fetch, pull – push – remote

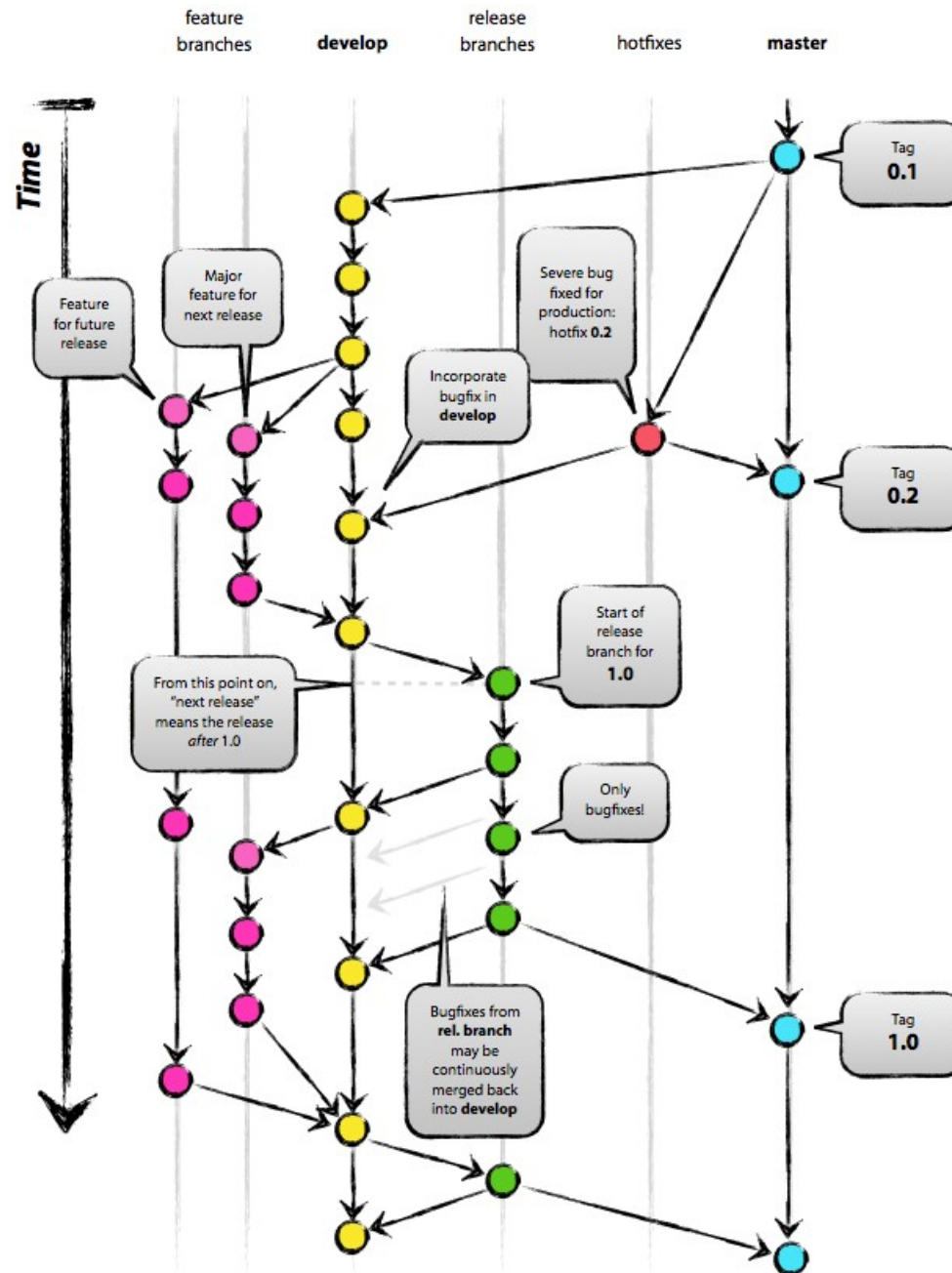


Inspection and Comparison

log – diff



Git Branching Model



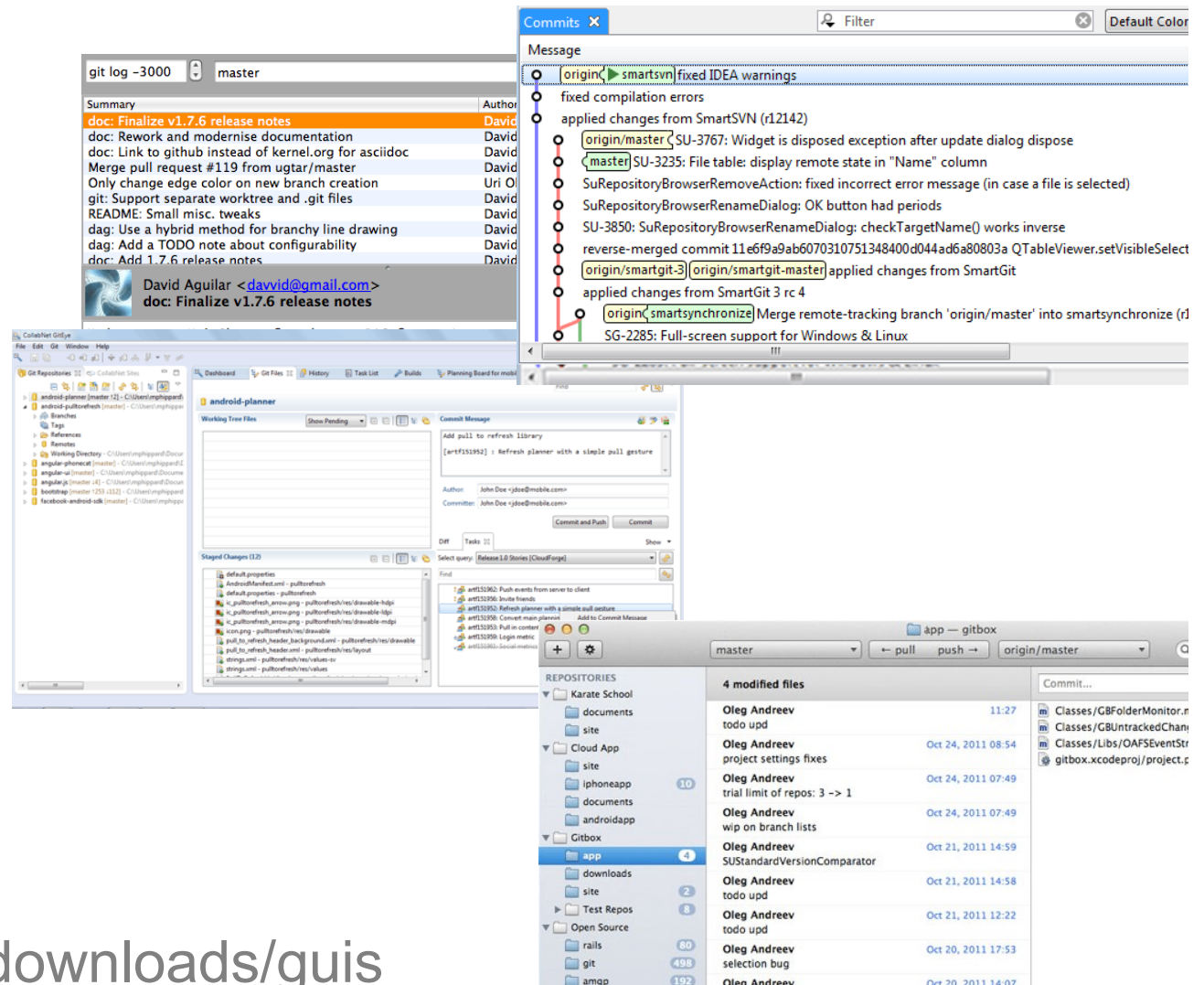
Git GUI Clients

SmartGit

GitEye

Git-cola

GitBox



<http://git-scm.com/downloads/guis>

Git Hosting

GitHub - <http://www.github.com>

BitBucket - <https://bitbucket.org>



GITLAB

Self-hosting: GitLab - <http://gitlab.org>

http://en.wikipedia.org/wiki/Comparison_of_open_source_software_hosting_facilities



Git help

Git - <http://git-scm.com>

<http://git-scm.com/book>

<https://www.atlassian.com/git/tutorial/git-basics>

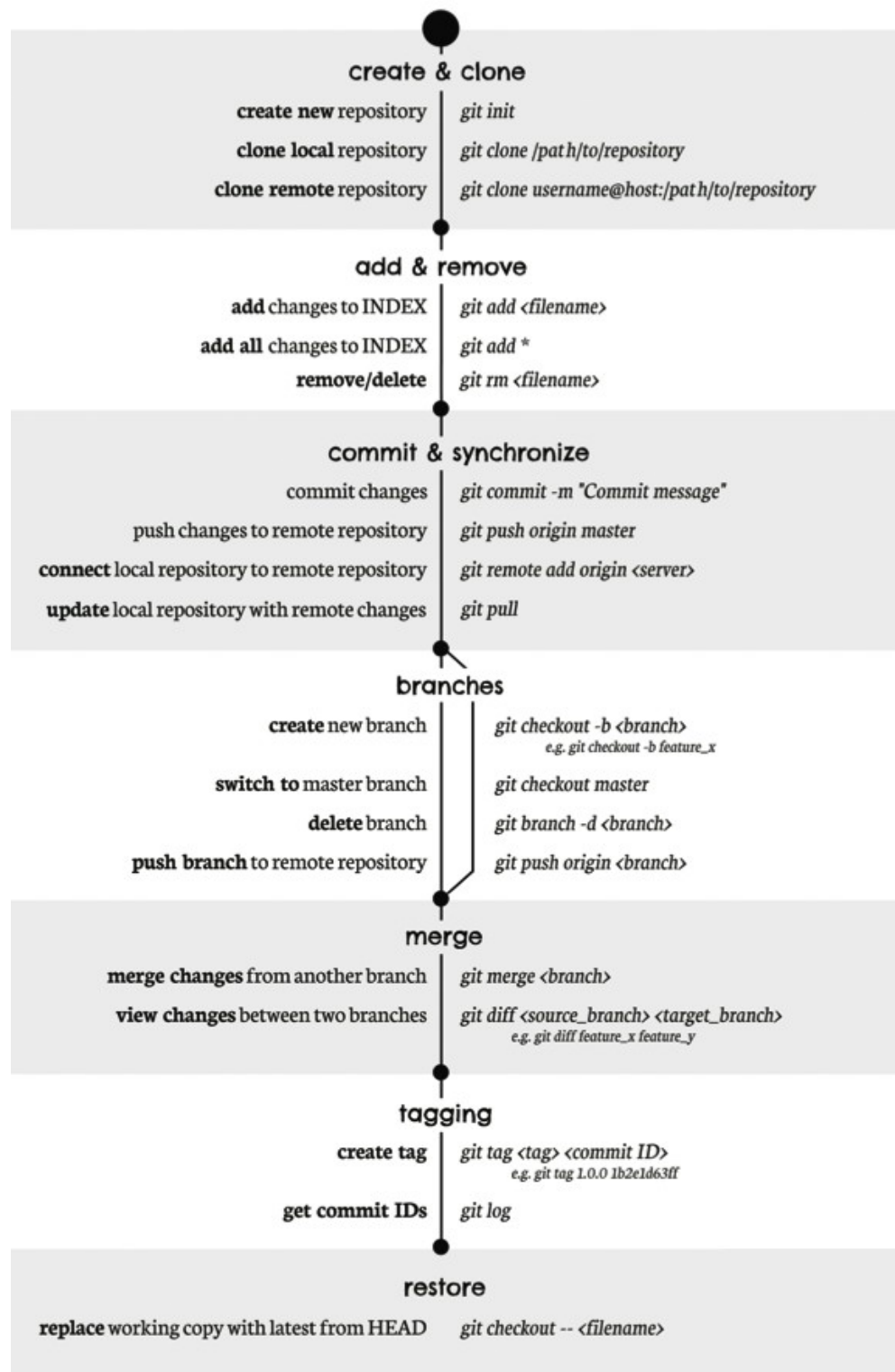
<http://gitref.org/>

<http://rogerdudler.github.io/git-guide/>

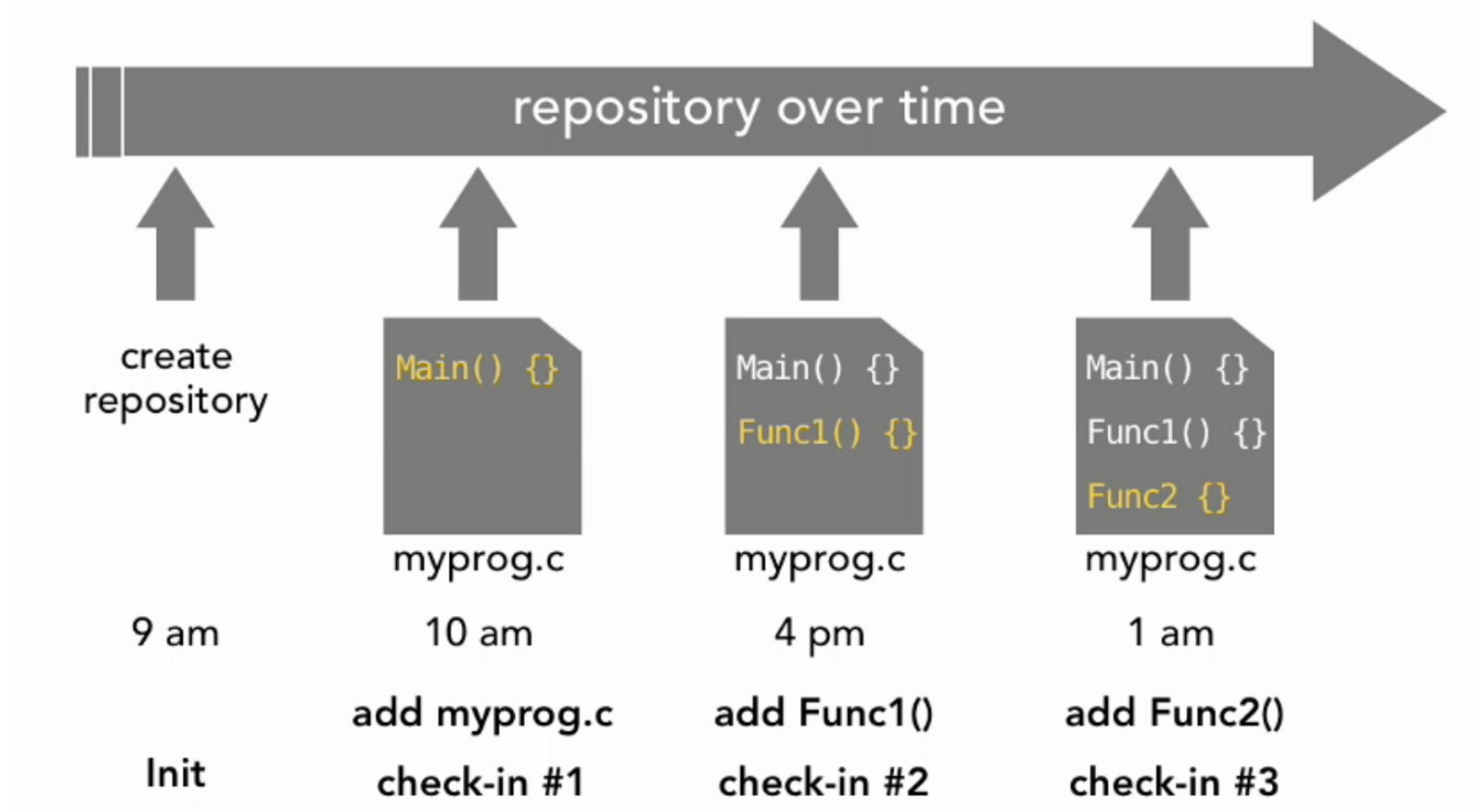
<http://gitimmersion.com/>

Try me! <http://try.github.io>

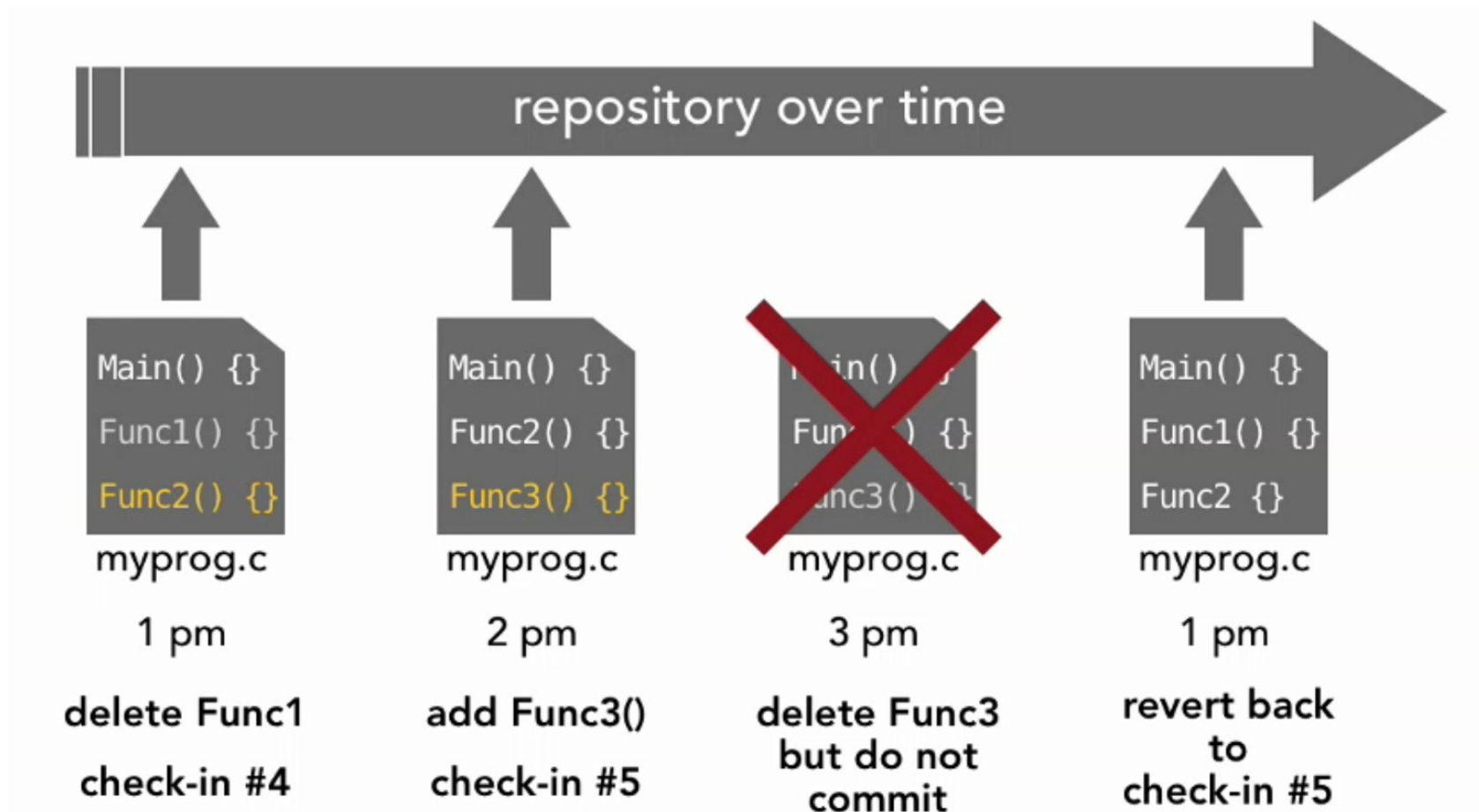




Example 01: Diagram



Example 02: Diagram



Thank you very much

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