

SIAM: Getting Started with Git

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

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Overview

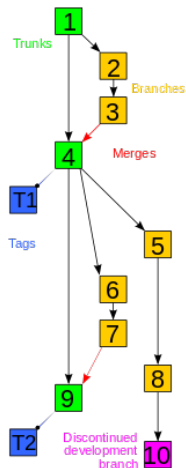
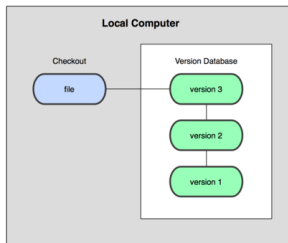
Git is a

- Free and Open Source
- Distributed
- Version Control System.



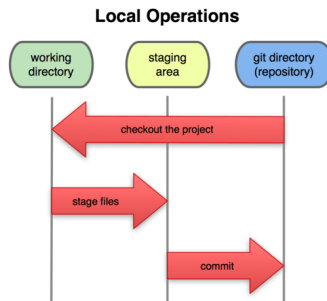
Version Control System

- Record changes to files
- Versions can be recalled later
- Terminology
 - Repository
 - Working copy
 - Checkout
 - Commit
 - Branch
 - Merge



Version Control System

- Local repository: directory containing a collection of commits and metadata for a project
- Staging area (Index): file detailing content of next commit, allows for incrementally building commits
- Working directory: single checkout of one version of the project

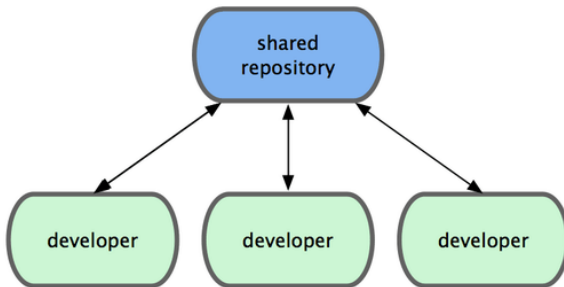


Distributed

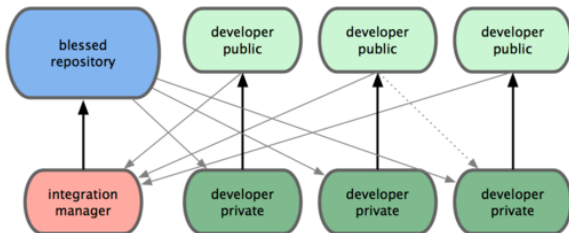
- No central location that keeps track of your data (no single place is more important than another)
- Encourages small commits and frequent merging
- Branches don't affect the main repository and can commit changes without disturbing others
- Work offline
- Rely on a network of trust



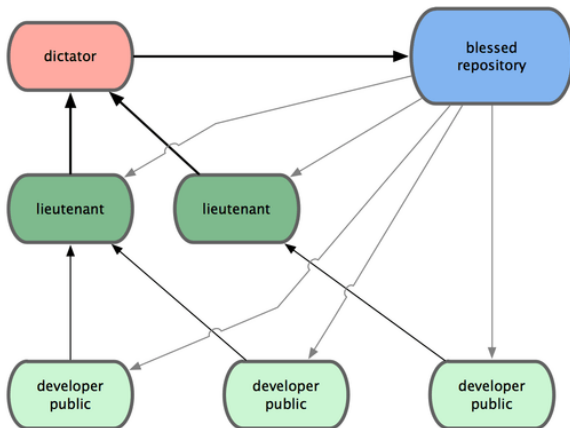
Distributed Workflows: Centralized



Distributed Workflows: Integration-Manager



Distributed Workflows: Dictator and Lieutenants



Free and Open Source

- Downloads at <http://git-scm.com>
- Libgit2: free and open source library for writing custom Git applications



GitHub

- Powerful web interface for publishing Git repositories
- Simple to view changes and track progress on repositories
- Wiki and bug tracking built into each repository



Resources

- 1 Git From the Bottom Up
<http://ftp.newartisans.com/pub/git.from.bottom.up.pdf>
- 2 User Manual
<http://git-scm.com/docs/user-manual.html>
- 3 Git Magic
<http://www-cs-students.stanford.edu/~blynn/gitmagic/>
- 4 Git Book
<http://git-scm.com/book>
- 5 Tech Talk: Linus Torvalds on git
<http://youtu.be/4XpnKHJAok8>
- 6 Code School - Try Git
<http://try.github.io>

