

Version Control Systems



Version/Revision/Source Control

Change management of

- Computer program
- Documents
- Web sites
- Other collections of information

Often is embedded into

- Word processors / spreadsheets
- Collaborative tools
- Content management systems

Version/Revision/Source Control Systems

History

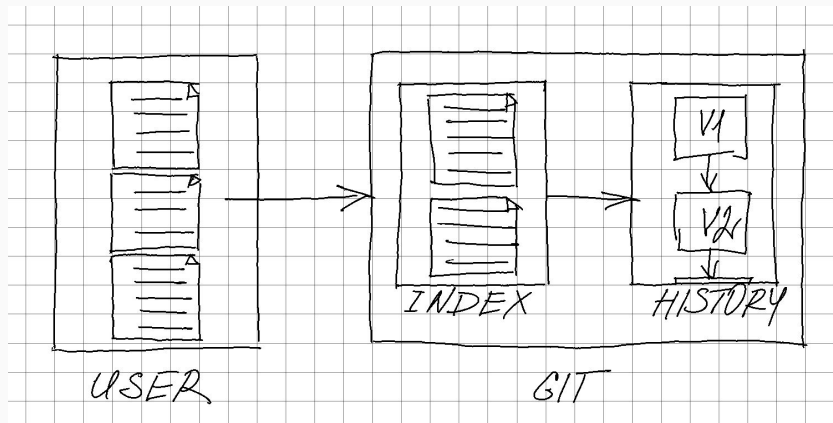
- 1962 - software update tools
- 1975 - source control system (rcs)
- 1986 - concurrent version system (cvs)
- 2004 - next generation cvs (svn)
- 200X - distributed revision control (git)

Some facts

- Control changes to source code, documentation and configuration
- VCS usually run as stand-alone applications
- Can be local (rcs), remote (cvs), centralized (svn) and distributed (git)

Note: VCSs aren't limited with the ones mentioned above.

git (software configuration management)



- User working tree
- Index (aka staging) contains changes that will be committed all together
- History (aka repository) contains committed changes identified by revision numbers

git (commands)

- **help**: Displays help about Git.
- **init**: Creates or re-initializes a repository.
- **clone**: Clones a repository to a new directory.
- **add**: Stages file contents.
- **rm**: Removes a file from the working tree and from the index.
- **mv**: Renames a file or a directory.
- **commit**: Records changes to the repository.
- **diff**: Shows changes between commits, commit and a working tree.
- **log**: Shows commit logs.
- **push**: Updates remote references.
- **pull**: Integrate with another repository.
- **checkout**: Switch branches or restore working tree files.
- **status**: Shows the working tree status.

git (practice)

- Initialize an empty git repository
- Create a commit with a new file named **a.txt** that contains your **Name**
Lastname
- Create a commit which changes the order: **Lastname Name**
- Create a commit which copies the file to **Lastname.txt** and renames the original to **Name.txt**
- Create a commit which removes **Lastname.txt**

Hint: always play with *help*, *log*, *diff* and *status*.

VCS hosting services

Services that host version control repositories and provide various tool like code review, issue tracking, automated testing, etc

- GitHub
- GitLab
- BitBucket
- ...



Setup GitHub

- Create an account
- Setup ssh keys
- Create a repository
- Add collaborators
- Play with clone, push, pull and other commands

References

- [Version control](#)
- [Introduction to Git - Core Concepts](#)
- [Basic Git Commands](#)
- [Generating a new SSH key and adding it to the ssh-agent](#)
- [GitHub Documentation](#)