



Aalto University
Media Factory

Digital_Fabrication_Studio.02

Projects and Information - managing and retrieving information from databases and objects

Massimo Menichinelli

massimo.menichinelli@aalto.fi

@openp2pdesign

<http://www.slideshare.net/openp2pdesign>



11.09.2012



Aalto University
Media Factory

Today:

- * Content Management Systems
- * Version Control Systems
- * QR Codes
- * Blueprints

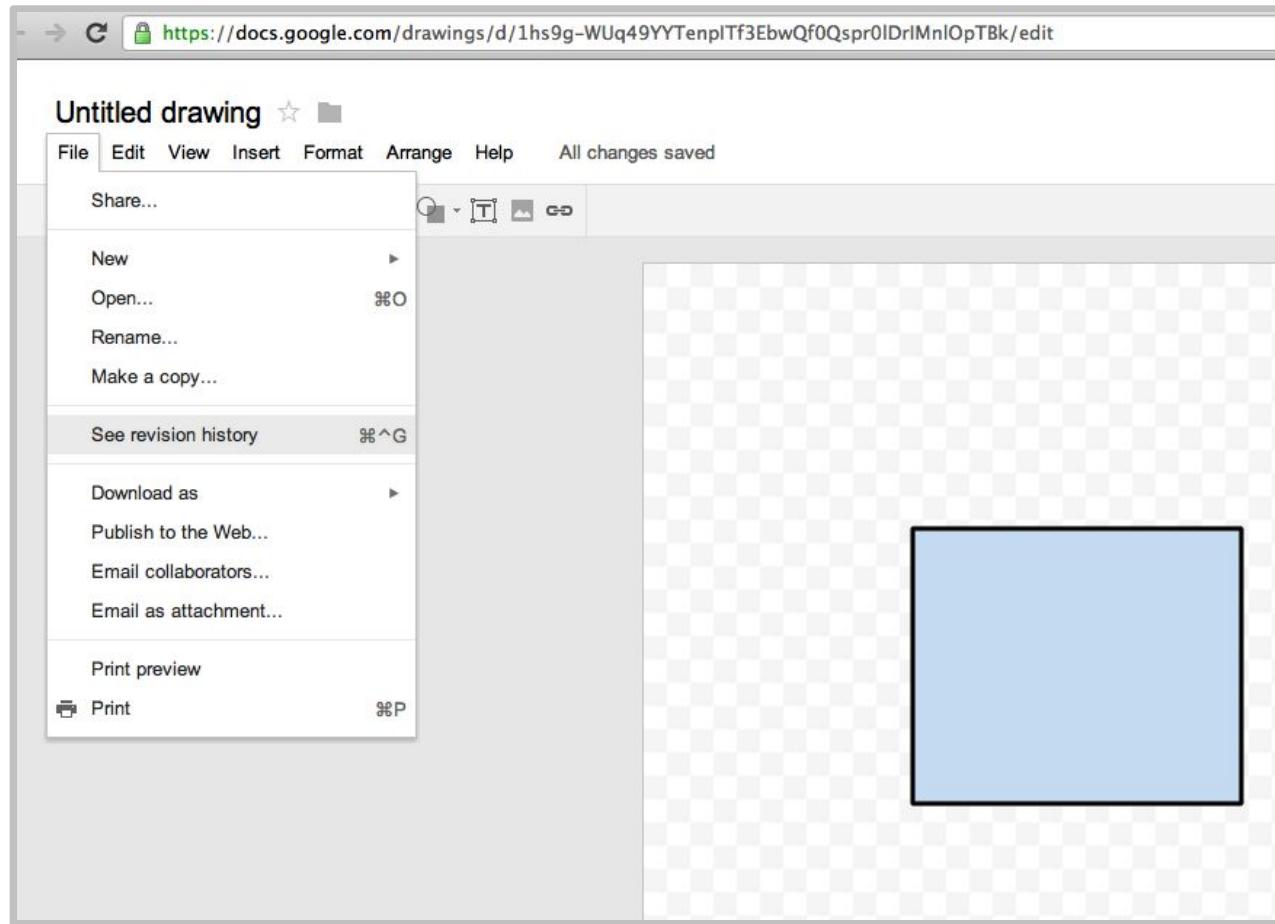


Aalto University
Media Factory

01.

Content Management Systems: web interfaces to databases

Versioning: you've already seen it on Google Docs...



Even Google Docs has a very simple versioning system available. It is an important mechanism for keeping track of the history of a project.

Blog: Wordpress.org

The screenshot shows the WordPress.org homepage with a simulated login. The top navigation bar includes links for Home, Showcase, Themes, Plugins, Mobile, About, Docs, Blog, Forums, Hosting, and a prominent orange Download button. The main content area features a large image of the WordPress dashboard with a sidebar showing site statistics: 3 updates, 1 comment, 2 posts, 1 page, 1 category, and 0 tags. To the right, a text block introduces WordPress as web software for creating websites or blogs, emphasizing it is both free and priceless. It highlights the community, available plugins and themes, and the over 60 million users. A "Ready to get started?" button links to "Download WordPress 3.3.2". At the bottom, a yellow banner notes the availability of the software in Suomi and Svenska.

WORDPRESS.ORG

Search WordPress.org Go

Home Showcase Themes Plugins Mobile About Docs Blog Forums Hosting Download

My Awesome Site 3 1 + New

Dashboard

Home
Updates 3
Posts
Media
Links
Pages
Comments 1

Dashboard

Right Now

Content
2 Posts
1 Page
1 Category
0 Tags

WordPress is web software you can use to create a beautiful website or blog. We like to say that WordPress is both free and priceless at the same time.

The core software is built by hundreds of community volunteers, and when you're ready for more there are thousands of [plugins](#) and [themes](#) available to transform your site into almost [anything you can imagine](#). Over 60 million people have chosen WordPress to power the place on the web they call "home" — we'd love you to join the family.

Ready to get started? [Download WordPress 3.3.2](#)

WordPress is also available in [Suomi](#) and [Svenska](#).

The easiest way to manage content (and a bit of versioning).

Source: <http://wordpress.org/>

Blog: Wordpress.org (+ plugin)

Plugin Directory

Username Password Log in (forgot?) or Register

Extend Home
Plugins ▾ Developer Center
Themes
Mobile
Ideas
Kvetch!

Search Plugins

Popular Tags [More »](#)
widget (3047)
Post (2019)
plugin (1897)
admin (1542)
posts (1484)

Revision Control

Revision Control allows finer control over the Post Revision system included with WordPress [Download Version 2.1](#)

Description Screenshots Other Notes Changelog Stats

Post Revisions		Author	Actions
<input type="radio"/>	Compare	Date Created	
<input checked="" type="radio"/>	9 January, 2010 @ 13:31 [Current Revision]	admin	
<input type="radio"/>	9 January, 2010 @ 13:31	admin	Restore Remove
<input type="radio"/>	9 January, 2010 @ 13:31	admin	Restore Remove
<input type="radio"/>	9 January, 2010 @ 13:31	admin	Restore Remove
<input type="radio"/>	9 January, 2010 @ 13:30	admin	Restore Remove
<input type="radio"/>	9 January, 2010 @ 13:28	admin	Restore Remove
<input type="radio"/>	9 January, 2010 @ 13:28	admin	Restore Remove
<input type="radio"/>	9 January, 2010 @ 13:11 [Autosave]	admin	Restore Remove

The Revisions Meta box

Requires: 3.2 or higher
Last Updated: 2011-8-19
Downloads: 107,773

Average Rating  (95 ratings)

FYI
[Other Versions »](#)
[Subversion Repository »](#)

 [Forums Posts](#)

Revision Control allows finer control over the Post Revision system included with WordPress.

Source: <http://wordpress.org/extend/plugins/revision-control/>

Blog: Wordpress.org (+ plugin)

Plugin Directory

Username Password Log in (forgot?) or Register

Extend Home
Plugins ▾ Developer Center
Themes
Mobile
Ideas
Kvetch!
Search Plugins
Popular Tags More ▾
widget (3047)
Post (2019)
plugin (1897)
admin (1542)
posts (1484)
sidebar (1348)
comments (1056)
twitter (1024)
google (1016)
images (997)
page (951)
image (870)
links (815)

 WP Document Revisions

A document management and version control plugin that allows teams of any size to collaboratively edit files and manage their workflow.

[Download Version 1.3](#)

Description Installation FAQ Screenshots Other Notes Changelog Stats

WP Document Revisions is a document management and version control plugin. Built for time-sensitive and mission-critical projects, teams can collaboratively edit files of any format — text documents, spreadsheets, images, sheet music... anything — all the while, seamlessly tracking the document's progress as it moves through your organization's existing workflow.

Average Rating  (22 ratings)

FYI
[Other Versions »](#)
[Subversion Repository »](#)
[Donate to this plugin »](#)

A document management and version control plugin that allows teams of any size to collaboratively edit files and manage their workflow.

Source: <http://wordpress.org/extend/plugins/wp-document-revisions/>

CMS: Drupal.org

Get Started Community Documentation Support Download & Extend Marketplace About

Drupal™

Come for the software, stay for the community

Drupal is an open source content management platform powering millions of websites and applications. It's built, used, and supported by an active and diverse community of people around the world.

Drupal Homepage Log In / Register

Search drupal.org

Refine your search

All Documentation
 Modules Forums & Issues
 Themes Groups

Why Choose Drupal?

Use Drupal to build everything from personal blogs to enterprise applications. Thousands of add-on modules and designs let you build any site you can imagine. Join us!

Get Started with Drupal

Sites Made with Drupal



Symantec Connect Case Study

Drupal is used by some of the biggest sites on the Web, like [The Economist](#), [Examiner.com](#) and [The White House](#). Read more Drupal [case studies](#).

Develop with Drupal

15,814 Modules 1,369 Themes 407 Distributions 17,543 Developers This week 3,743 [Code commits](#) 6,441 [Issue comments](#)

Drupal Core Security Info Developer Docs API Docs

Get Drupal Security Announcements
Keep your site secure.

Drupal contains basic features common to a cms: user account registration and maintenance, menu management, RSS-feeds, page layout customization...

CMS: Drupal.org (+modules)

You can extend the versioning system of Drupal with these modules:

- * <http://drupal.org/project/revisioning>
 - * http://drupal.org/project/revision_fu
 - * <http://drupal.org/project/revisionreference>
 - * http://drupal.org/project/block_revisions
 - * http://drupal.org/project/diff_revision
 - * http://drupal.org/project/revision_all
 - * http://drupal.org/project/user_revision
 - * http://drupal.org/project/user_diff
-

CMS: Drupal.org -> fablab.aalto.fi

The screenshot shows a Drupal-based website for Aalto Fablab. The header features a large red banner with the text "A? Aalto Fablab" and "digital fabrication laboratory at Media Factory". Below the banner, the Aalto University Media Factory logo is visible. The main content area has a white background. A section titled "Aalto Fablab – the first Finnish Fablab" contains text about the lab's history, philosophy, and current status. Another section discusses digital fabrication services offered by the lab. On the right side, there is a sidebar titled "Discussions on Twitter" which lists several tweets from the @AaltoFablab account, discussing topics like #fabbing, #3D modeling, and maker events.

Aalto Fablab – the first Finnish Fablab

Submitted by Anu on Mon, 12/05/2011 - 11:48

Fab Lab (fabrication laboratory) is a small-scale workshop for digital fabrication, started by MIT. Fablabs typically have a few digitally controlled manufacturing machines: larger CNC router for furniture and house-sized objects, smaller precision CNC milling machine for making cast molds, engraving different materials or printed circuit boards, laser cutter for cutting and engraving wood, plastic, fabric and other materials, vinyl cutter for making signs, stickers and flexible circuits, video conferencing system to be in continuous touch with other Fablabs, and in many cases also a 3D printer and scanner. This basic set of manufacturing machines enables you to 'make just about anything' – this may be a prototype of a product, work of art, and can even contain electronics.

There are now about 50 Fablabs all around the world, with plans for many more on the way. Fablab blueprint dictates the commonalities between labs: standard inventory of machines, work processes, communication pathways and access policies, but each lab can and has interpreted the blueprints to suit the needs of their local community. As peer to peer learning in the way of mutual support in learning to work at the space is at the core of Fablab philosophy, community needs can really shape how an individual lab turns out.

We are currently putting all the pieces together to start the first Finnish Fablab here at Aalto Media Factory: finding local suppliers for the machines and raw materials, designing the space to fit our needs, building the website, educating ourselves about Fablab practices and mingling with other maker-minded groups in Helsinki region (there's quite a bit going on now that the World Design Capital year is almost at hand). Most of the machines should have arrived by early January, and the grand opening is planned to take place around the beginning of February 2012.

Aalto Fablab adds digital fabrication onto the service menu of the Aalto Media Factory. We aim to provide assistance with digital fabrication and will be offering online scheduling to book time on the Fablab machines (including assistance in machine usage). Part of the Fablab model is also to have the space open to everyone at least the part of the time – we will host open days weekly. Two courses are being organized at the Fablab sprint term 2012 as part of the Media Lab curriculum (but they are open to all Aalto students): Digital Workshop Basics (an intensive hands-on course to get acquainted with the Fablab machines) and Digital Fabrication Studio (offering more background and design context and completion of a more complex project realized using the Fablab machines)

Before we open our doors early next year, you're most welcome to visit the Fablab space and ask any questions you may have or [contact us](#), if you don't have time to stop by!

Tags:

[3d printing](#) [aalto fablab](#) [anu malattia](#) [digital fabrication](#) [fablab](#)

Discussions on Twitter

@AaltoFablab
RT @openp2pdesign:
About to start my #fabbing
course at @aaltomedia
@AaltoFablab, here is the
first presentation about
#fabbing + #fablab
<http://t.co/nJsmXdon>

@AaltoFablab
RT @core77:
Using Digital
Manufacturing to Create a
Condiment Mystery:
<http://t.co/y6edvzYI>

@AaltoFablab
Need any help for a free
software for #3D modeling
+ #3Dprinting ? Here's an
introduction to Blender for
you
<https://t.co/FqjQY5gXS>

@AaltoFablab
RT @openp2pdesign:
FABFUSE2012 is the first
international Grassroots
#fablab event. Amersfoort
(NL) on 8 - 11 August.
<http://t.co/RjAo1uZX>

@AaltoFablab
Manchester Mini Maker
Faire 28th July - 29th July
2012
<http://t.co/iYNxeOk3>
#makers #makerfaire #uk

We will soon have our website here ...

Wiki: Mediawiki.org

MediaWiki.org logo featuring a sunflower and the word "MediaWiki".

Main page | Browse categories | Community portal | Recent changes | Tech blog | Support | User help | Technical manual | FAQ | Support desk | Download | Development | Communication | Print/export | Toolbox

Page Discussion Read View source View history Search

Our updated Terms of Use will become effective on May 25, 2012. [Find out more.](#)

Welcome to MediaWiki.org

MediaWiki is a free software open source wiki package written in PHP, originally for use on Wikipedia. It is now used by several other projects of the non-profit Wikimedia Foundation and by many other wikis, including this website, the home of MediaWiki.

Use the links below to explore the site contents. You'll find some content translated into other languages, but the primary documentation language is English.

For general questions about MediaWiki see the [communication page](#) or ask at the [support desk](#).

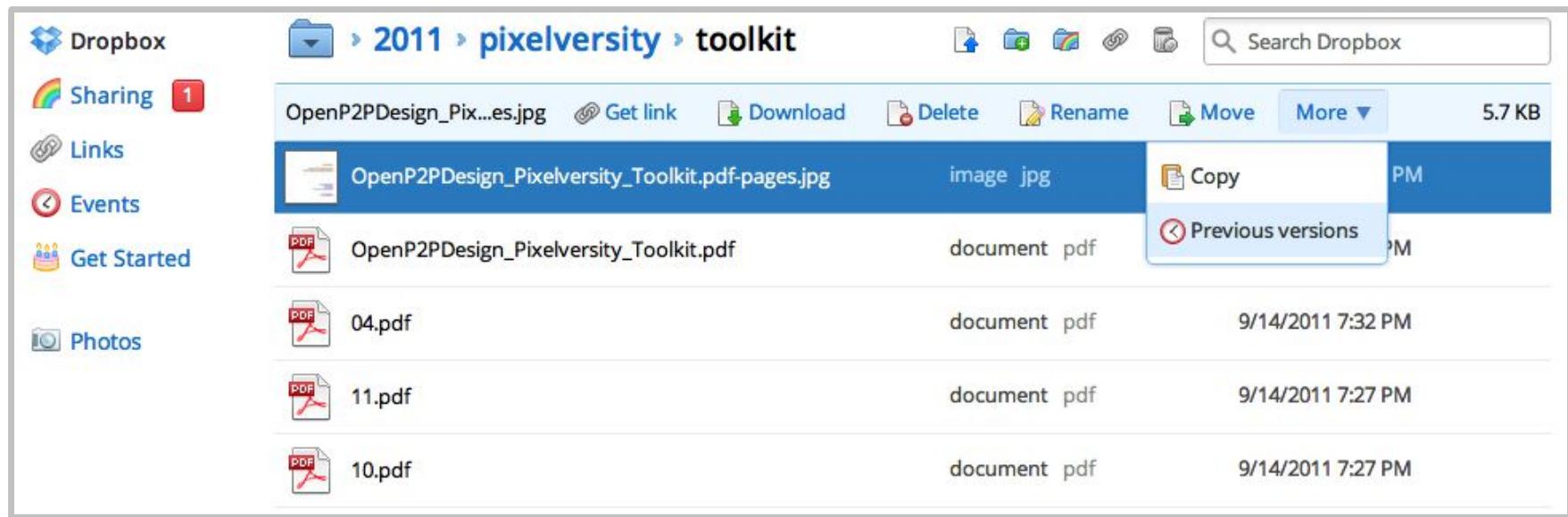
About this site | About MediaWiki | Download | Help and support

Users	System administrators	Developers
 What is a wiki? <ul style="list-style-type: none">Learn how to navigateLearn how to edit a pageGet more help	 Install & configure MediaWiki <ul style="list-style-type: none">Upgrade an existing MediaWiki installationAdd features with third-party extensionsGet more sysadmin help	 Become a MediaWiki hacker <ul style="list-style-type: none">Learn to use the API and write extensionsBrowse the developer docs and class referenceAlready a hacker? Visit the developer hub

MediaWiki is a free software open source wiki package written in PHP, originally for use on Wikipedia.

Source: <http://www.mediawiki.org/wiki/MediaWiki>

Backup: DropBox

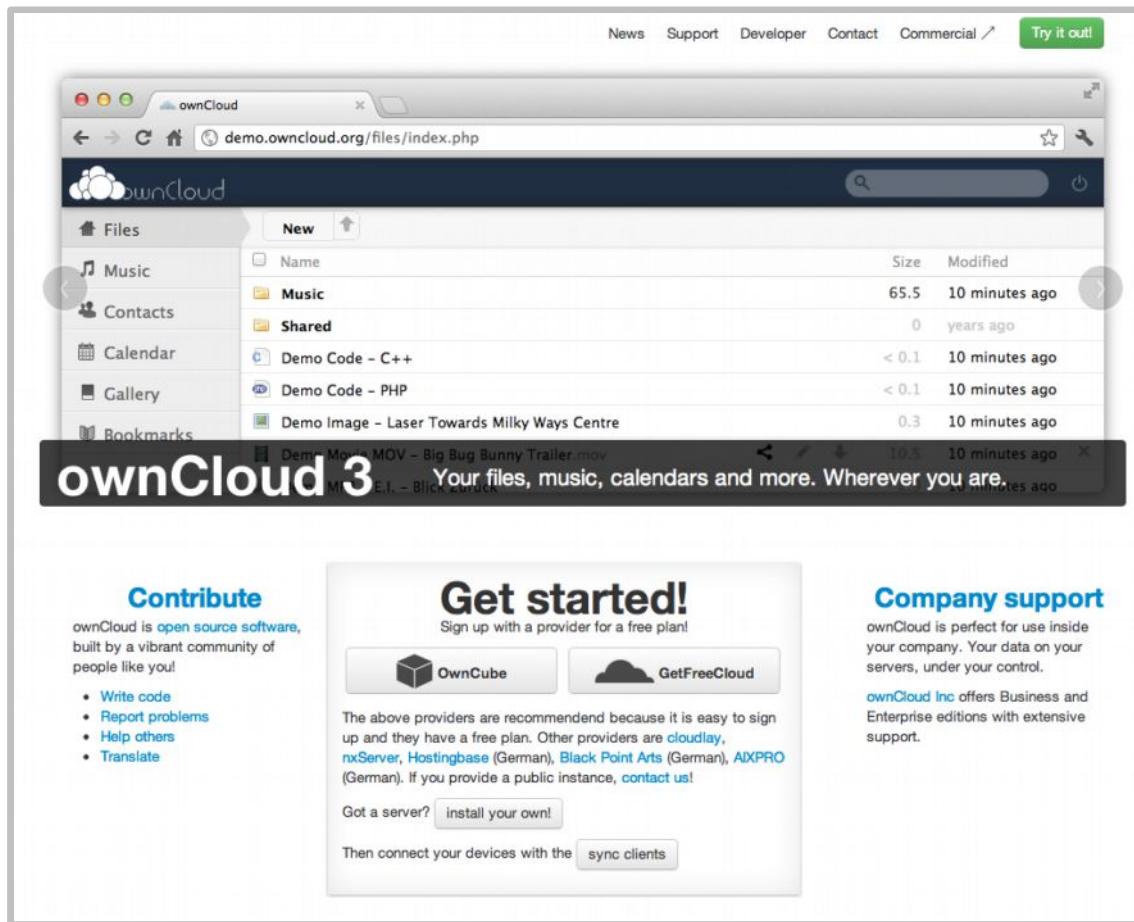


The screenshot shows a Dropbox interface with a sidebar on the left containing links for Sharing, Links, Events, Get Started, and Photos. The main area displays a folder structure: 2011 > pixelversity > toolkit. A file named "OpenP2PDesign_Pix...es.jpg" is selected, and its context menu is open, showing options like Copy and Previous versions. Other files listed include "OpenP2PDesign_Pixelversity_Toolkit.pdf-pages.jpg", "OpenP2PDesign_Pixelversity_Toolkit.pdf", "04.pdf", "11.pdf", and "10.pdf". The "OpenP2PDesign_Pixelversity_Toolkit.pdf-pages.jpg" file has a size of 5.7 KB.

File Name	Type	Size
OpenP2PDesign_Pix...es.jpg	image jpg	5.7 KB
OpenP2PDesign_Pixelversity_Toolkit.pdf-pages.jpg	image jpg	
OpenP2PDesign_Pixelversity_Toolkit.pdf	document pdf	
04.pdf	document pdf	9/14/2011 7:32 PM
11.pdf	document pdf	9/14/2011 7:27 PM
10.pdf	document pdf	9/14/2011 7:27 PM

DropBox has a limited versioning system, that goes back to 30 days only.

Backup: ownCloud



An open source version of DropBox, in case you have a server available.

Source: <http://owncloud.org/>

Backup: ownCloud (with versioning)

Personal clone of ownCloud, containing an in-development versioning app (I would seriously advise against cloning and pulling from this repository at the moment) — [Read more](#)

<http://owncloud.org>

Code Network Pull Requests 0 Issues 6 Wiki 1 Graphs

Clone in Mac ZIP HTTP Git Read-Only https://github.com/craig0990/ownCloud.git Read-Only access

branch: files_versioning ▾ Files Commits Branches 1 Tags Downloads

Latest commit to the files_versioning branch

Fixed minor new folder bug

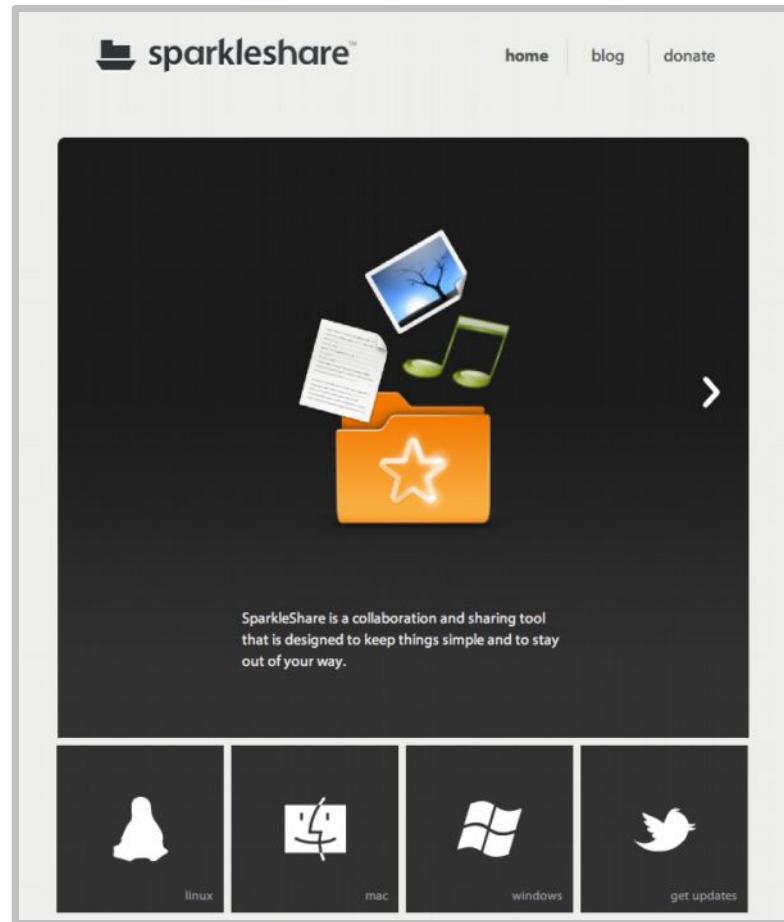
craig0990 authored 3 days ago commit b9d3a66d28

ownCloud /

name	age	message	history
.tx	7 months ago	integrated and updated calendar translations [Jan-Christoph Borchardt]	
3rdparty	a month ago	Added Granite library v0.2.0 to '3rdparty/' [craig0990]	
apps	3 days ago	Fixed minor new folder bug [craig0990]	
config	a month ago	make it possible to connect to other ocs appstores and other ocs know... [Frank Karlitschek]	
core	a month ago	Merge commit 'refs/merge-requests/102' of git://gitorious.org/ownclou... [CBIx]	
files	a month ago	webdav needs to load authentication apps [Arthur Schiwon]	

“Personal clone of ownCloud, containing an in-development versioning app (I would seriously advise against cloning and pulling from this repository at the moment)”

Backup: Sparkleshare



An open source version of DropBox, in case you have a server available (based on Git!).

Source: <http://sparkleshare.org/>

Need a local server? XAMPP

The screenshot shows the Apache Friends XAMPP website. At the top, there's a navigation bar with links for deutsch, english, français, italiano, português (brasil), 日本語, 繁體中文, and 简体中文. Below the navigation is a banner for 'xeround' featuring a MySQL database icon and text about a free cloud database for MySQL apps. The main content area has a large orange XAMPP logo. Below it, text explains that many people find it difficult to install Apache, MySQL, PHP, and Perl. It then describes XAMPP as an easy-to-install distribution containing these components. A woman sitting cross-legged is shown on the right. The page lists four distributions: XAMPP for Linux, XAMPP for Windows, and XAMPP for Mac OS X, each with a link and a brief description of its contents.

Many people know from their own experience that it's not easy to install an Apache web server and it gets harder if you want to add MySQL, PHP and Perl.

XAMPP is an easy to install Apache distribution containing MySQL, PHP and Perl. XAMPP is really very easy to install and to use - just download, extract and start.

At the moment there are four XAMPP distributions:

[XAMPP for Linux](#)

The distribution for Linux systems (tested for SuSE, RedHat, Mandrake and Debian) contains: Apache, MySQL, PHP & PEAR, Perl, ProFTPD, phpMyAdmin, OpenSSL, GD, Freetype2, libjpeg, libpng, gdbname, zlib, expat, Sablotron, libxml, Ming, Webalizer, pdf class, ncurses, mod_perl, FreeTDS, gettext, mcrypt, mhash, eAccelerator, SQLite and IMAP C-Client.

[XAMPP for Windows](#)

The distribution for Windows 2000, 2003, XP, Vista, and 7. This version contains: Apache, MySQL, PHP + PEAR, Perl, mod_php, mod_perl, mod_ssl, OpenSSL, phpMyAdmin, Webalizer, Mercury Mail Transport System for Win32 and NetWare Systems v3.32, Ming, FileZilla FTP Server, mcrypt, eAccelerator, SQLite, and WEB-DAV + mod_auth_mysql.

[XAMPP for Mac OS X](#)

The distribution for Mac OS X contains: Apache, MySQL, PHP & PEAR, SQLite, Perl, ProFTPD, phpMyAdmin, OpenSSL, GD, Freetype2, libjpeg, libpng, zlib, Ming, Webalizer, mod_perl.

If you want to use Wordpress, Drupal, MediaWiki locally
on your computer.

Source: <http://www.apachefriends.org/en/xampp.html>

Your local server, `http://localhost/`



Look for the `htdocs` folder in your XAMPP application, all the files accessible through `http://localhost` should be there.

Your local database, <http://localhost/phpmyadmin>

You can easily create a database with PhpMyAdmin (but you will probably have to change the password for installing MediaWiki).

Source: <http://localhost/phpmyadmin/>



Aalto University
Media Factory

02.

Version Control Systems: managing the history of a project

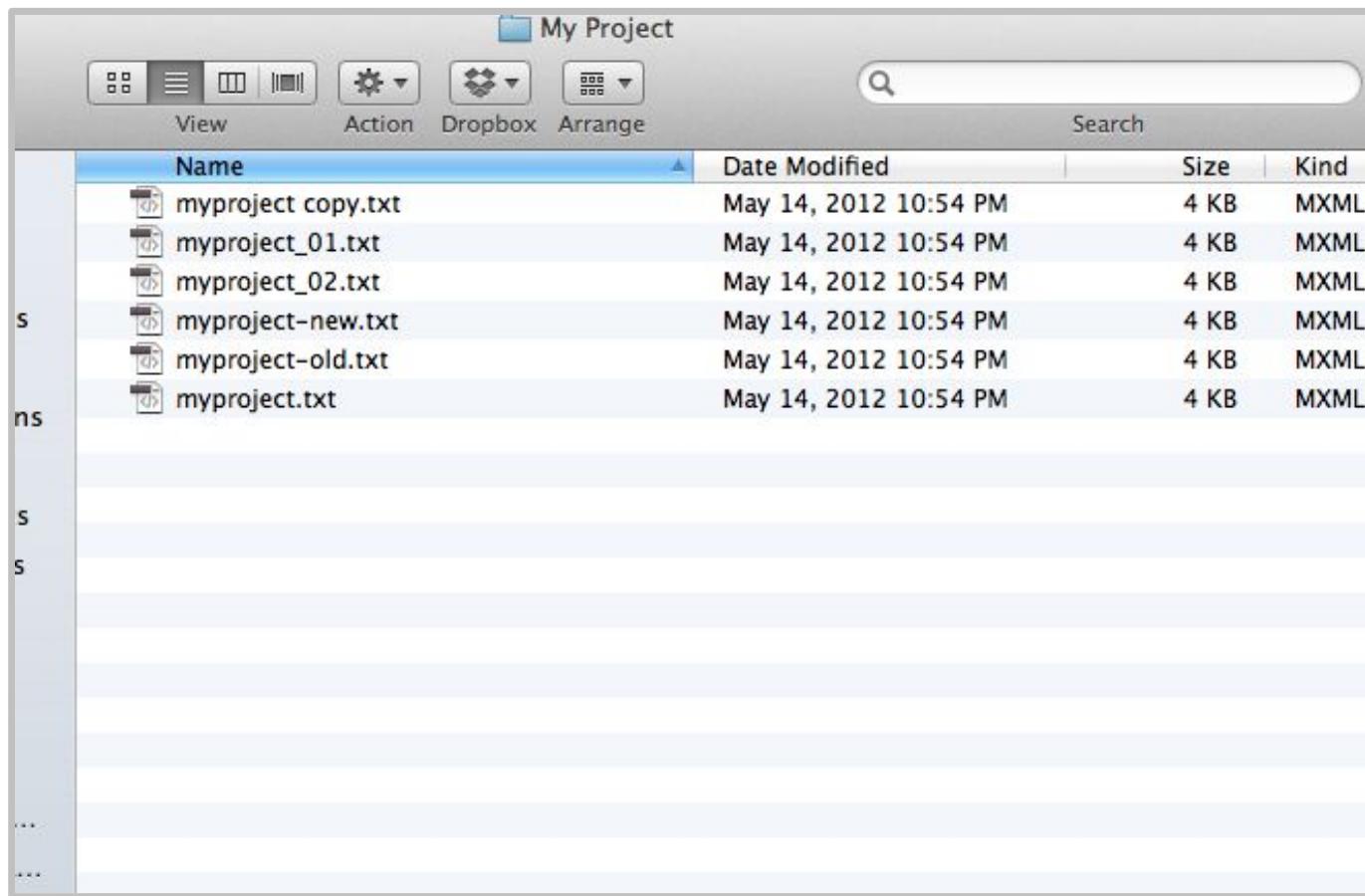


Aalto University
Media Factory

02.01

Version Control Systems: Subversion (SVN)

Control? Organization?



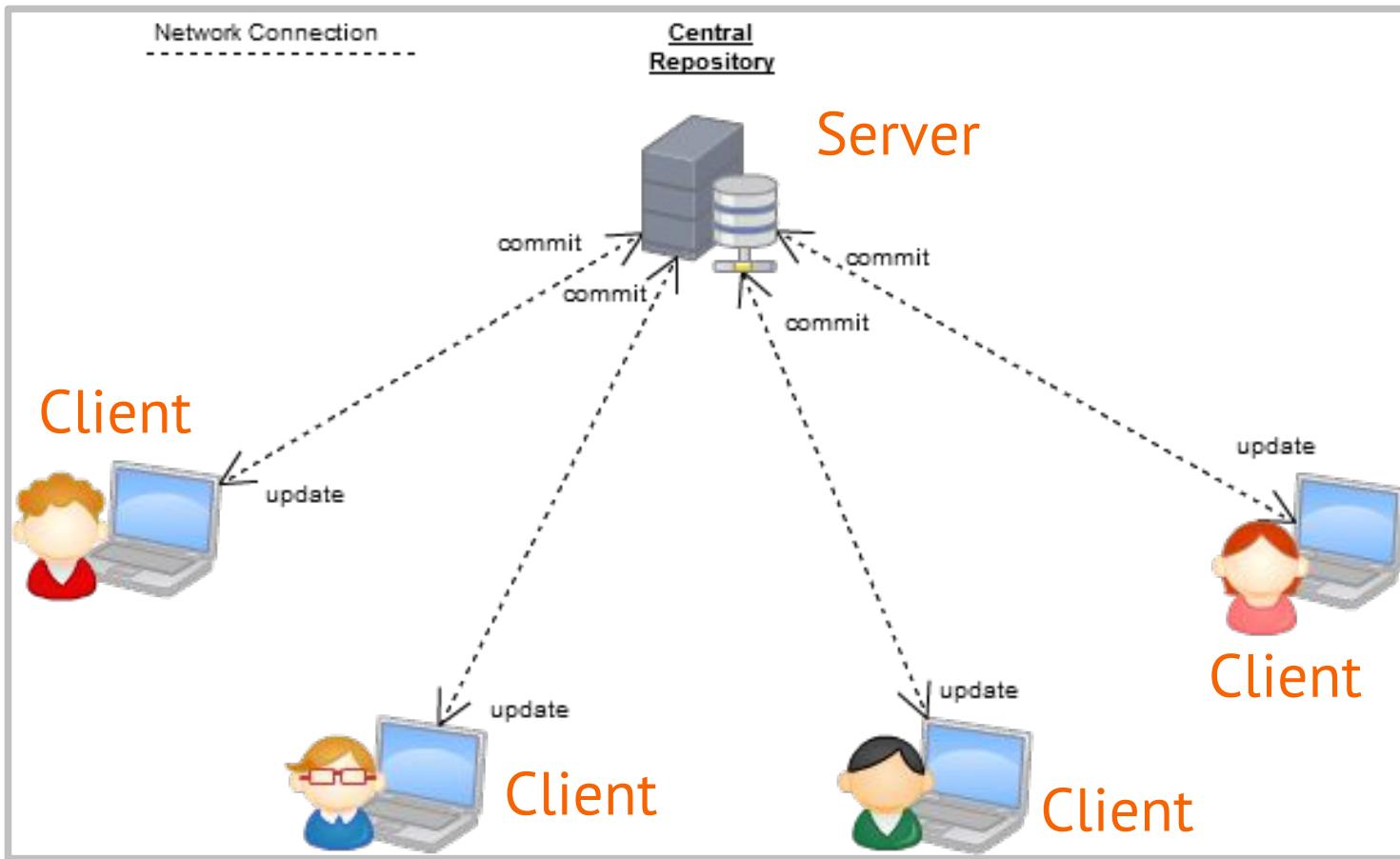
Something very common, that I don't want to see in this course!!

Version Control Systems

A version (or revision) control system is a system that **tracks incremental versions (or revisions)** of files and directories over time. It allows you to explore the changes which resulted in each of those versions and facilitates the arbitrary recall of the same.

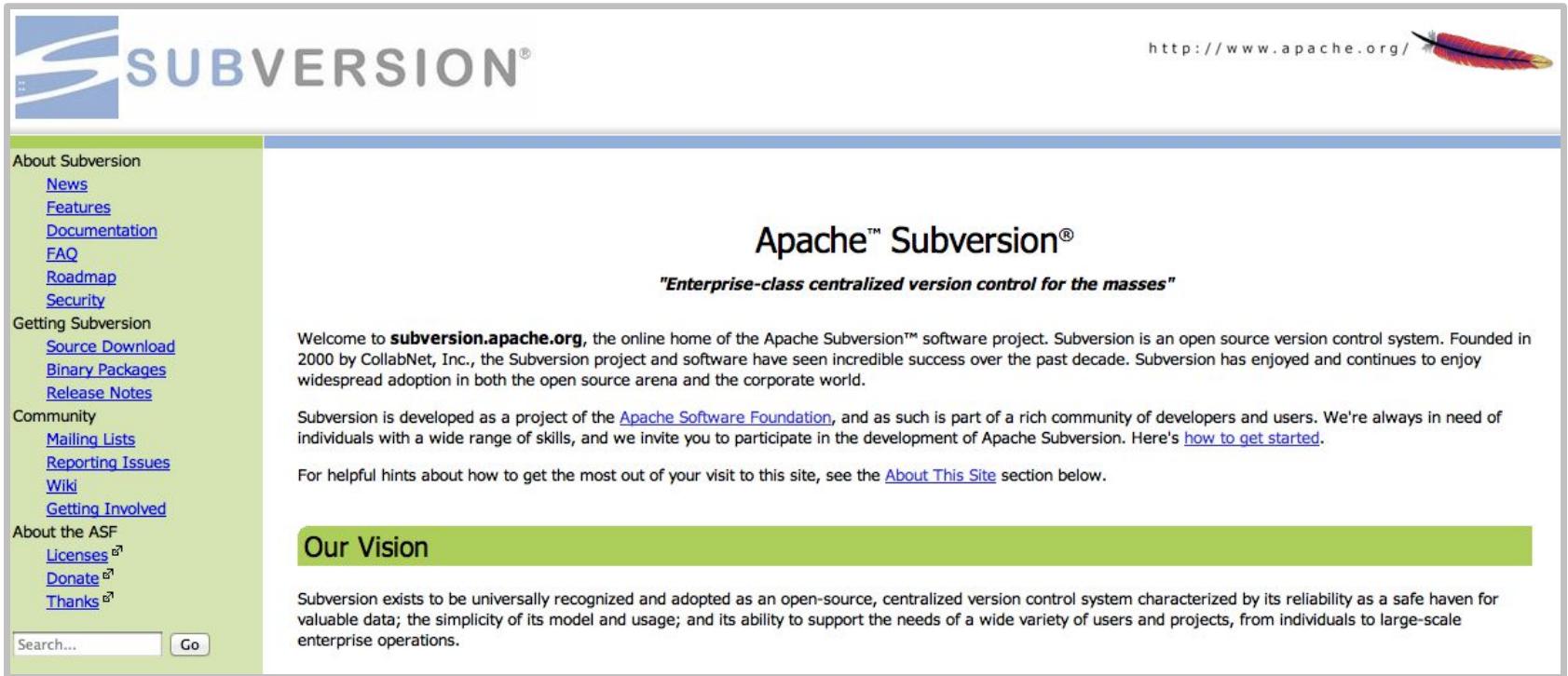
- * Backup and Restore
 - * Synchronization
 - * Short-term undo + Long-term undo
 - * Track Changes
 - * Track Ownership
 - * Branching and merging
 - * not in real time!
-

Server/client-based Version Control System



The first architecture to appear, you need to be connected and you need a server (unless you want to work alone on your computer).

Version Control System: Subversion (SVN)



The image shows the official website for Apache Subversion. At the top left is the Subversion logo, which consists of a stylized blue 'S' icon followed by the word 'SUBVERSION' in a bold, sans-serif font with a registered trademark symbol. To the right of the logo is the URL 'http://www.apache.org/' and a small red feather icon. The main content area features a large title 'Apache™ Subversion®' and a subtitle 'Enterprise-class centralized version control for the masses'. Below this, there's a paragraph about the project's history and success, followed by sections for developers and users. A sidebar on the left contains links for 'About Subversion', 'Getting Subversion', 'Community', and 'About the ASF'. A search bar at the bottom left allows users to search the site.

About Subversion

- [News](#)
- [Features](#)
- [Documentation](#)
- [FAQ](#)
- [Roadmap](#)
- [Security](#)

Getting Subversion

- [Source Download](#)
- [Binary Packages](#)
- [Release Notes](#)

Community

- [Mailing Lists](#)
- [Reporting Issues](#)
- [Wiki](#)
- [Getting Involved](#)

About the ASF

- [Licenses ↗](#)
- [Donate ↗](#)
- [Thanks ↗](#)

Search...

Apache™ Subversion®

"Enterprise-class centralized version control for the masses"

Welcome to **subversion.apache.org**, the online home of the Apache Subversion™ software project. Subversion is an open source version control system. Founded in 2000 by CollabNet, Inc., the Subversion project and software have seen incredible success over the past decade. Subversion has enjoyed and continues to enjoy widespread adoption in both the open source arena and the corporate world.

Subversion is developed as a project of the [Apache Software Foundation](#), and as such is part of a rich community of developers and users. We're always in need of individuals with a wide range of skills, and we invite you to participate in the development of Apache Subversion. Here's [how to get started](#).

For helpful hints about how to get the most out of your visit to this site, see the [About This Site](#) section below.

Our Vision

Subversion exists to be universally recognized and adopted as an open-source, centralized version control system characterized by its reliability as a safe haven for valuable data; the simplicity of its model and usage; and its ability to support the needs of a wide variety of users and projects, from individuals to large-scale enterprise operations.

Subversion manages files and directories, and the changes made to them, over time. Think of it as a sort of “time machine” of changes.

An introduction to SVN

The Standard in Open Source Version Control

Version Control with

Subversion

Introduction

This is the home of [Version Control with Subversion](#), a [free](#) book about the ubiquitous [Apache™ Subversion®](#) version control system and written by some of the developers of Subversion itself.

As you may have guessed from the layout of this page, we are quite pleased that some versions of this book have been [published](#) by O'Reilly Media. You can certainly [buy](#) a traditionally published print copy of the book if you'd like to, but you'll always find the most recent versions here on this site, available in both HTML and PDF formats.

Online Versions of the Book

Versions of this book use a numbering system designed to match those used by the Subversion software itself—version 1.7 of [Version Control with Subversion](#) covers Subversion 1.7, for example. Here are the latest versions of the book which are available online:

For Subversion 1.7

- View the [multiple-page HTML edition](#) of the book. [[tar.bz](#)]
- View the [single-page HTML edition](#) of the book. [[tar.bz](#)]
- View the [PDF edition](#) of the book.
- View the book's [DocBook XML sources](#).

An open source book about using SVN.

Version Control System: the vocabulary (01)

- * **Change**: A change (or diff) represents a specific modification to a document under version control.
- * **Checkout** : A check-out (or co) is the act of creating a local working copy from the repository. A user may specify a specific revision or obtain the latest. Also refers to the same files.
- * **Commit** : A commit (checkin, ci) is the action of writing or merging the changes made in the working copy back to the repository. Also refers to the same files.
- * **Head** : The most recent commit.

Version Control System: the vocabulary (02)

* **Conflict**

A conflict occurs when different parties make changes to the same document. A user must resolve the conflict by combining the changes, or by selecting one change.

* **Merge**

A merge or integration is an operation in which two sets of changes are applied to a file or set of files.

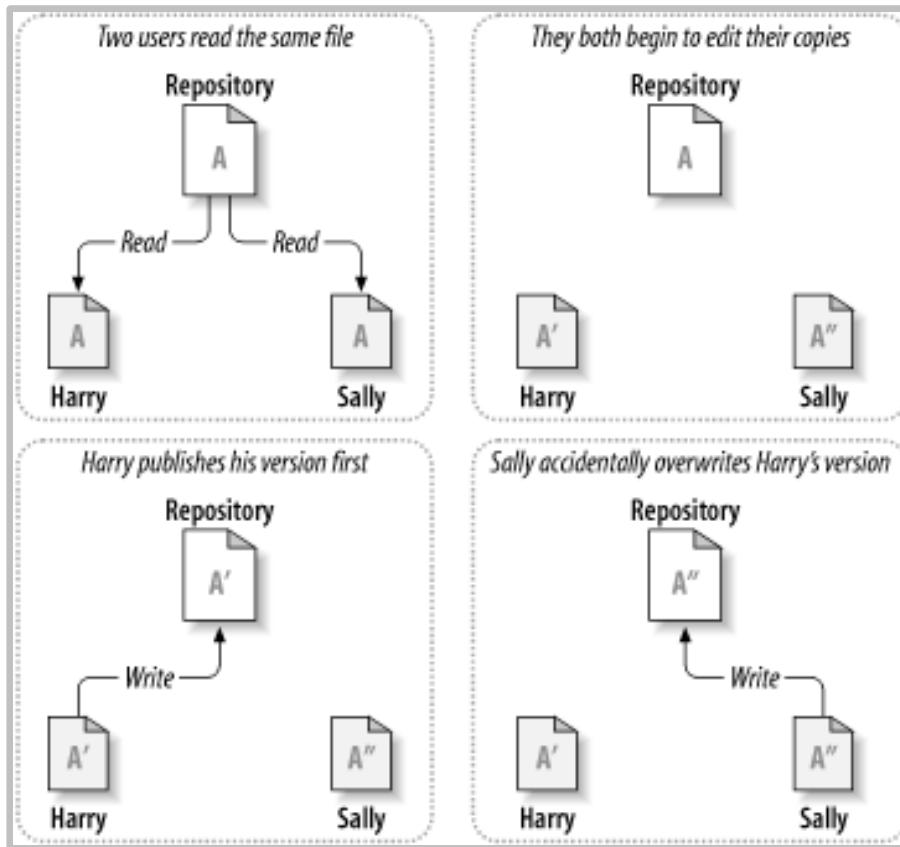
* **Update**

An update (or sync) merges changes made in the repository (by other people, for example) into the local working copy.

* **Working copy**

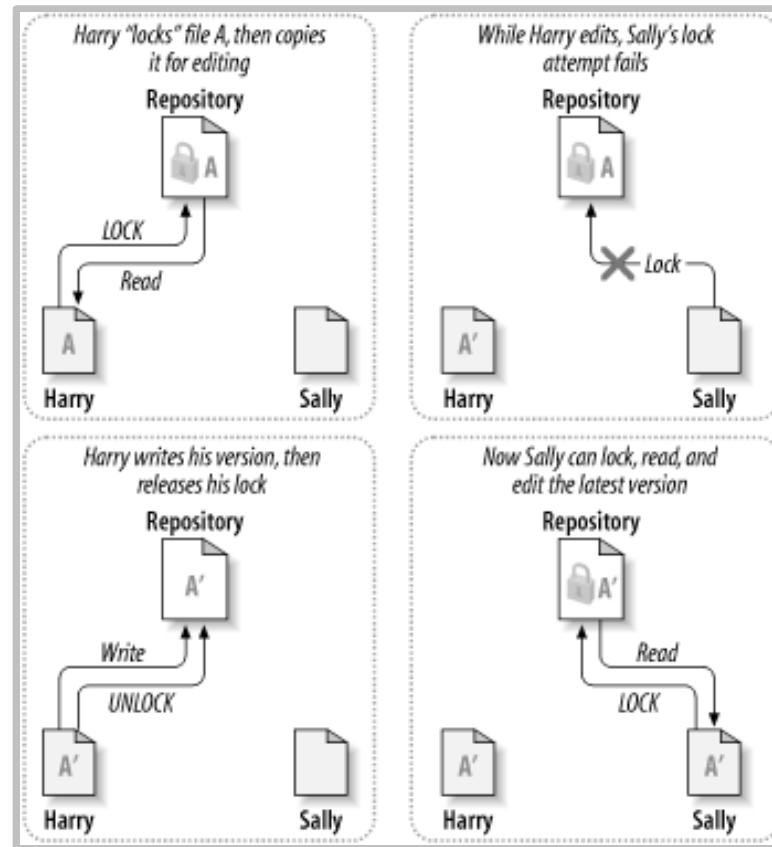
The working copy is the local copy of files from a repository, at a specific time or revision. Conceptually, it is a *sandbox*.

Versioning: the problem



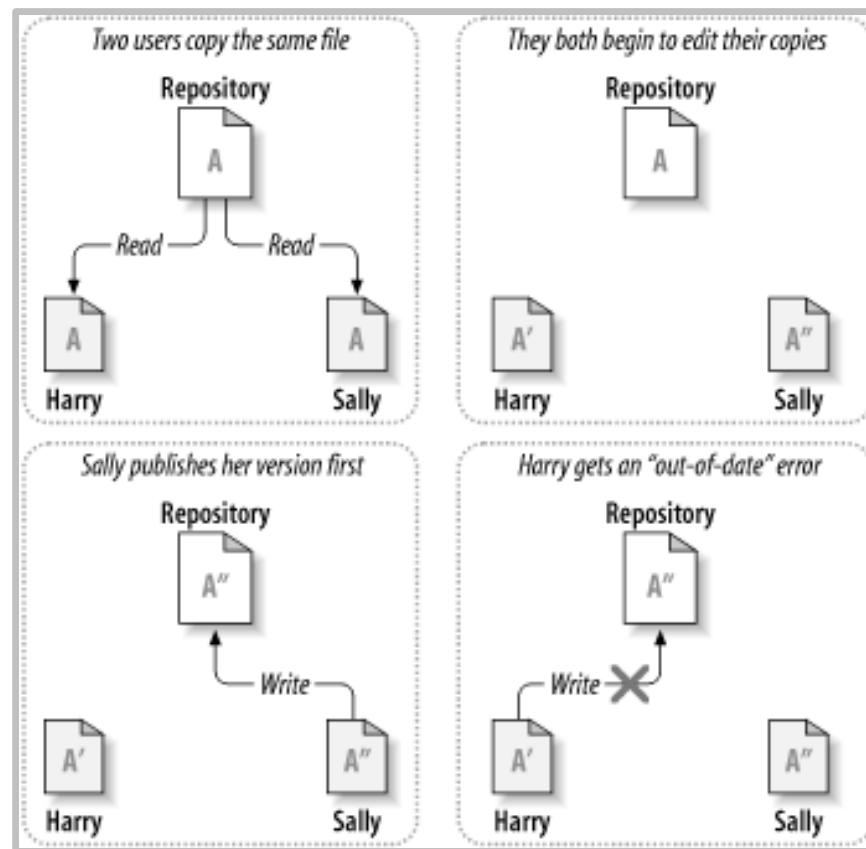
How will the system allow users to share information, but prevent them from accidentally overwriting?

Versioning: the lock-modify-unlock solution



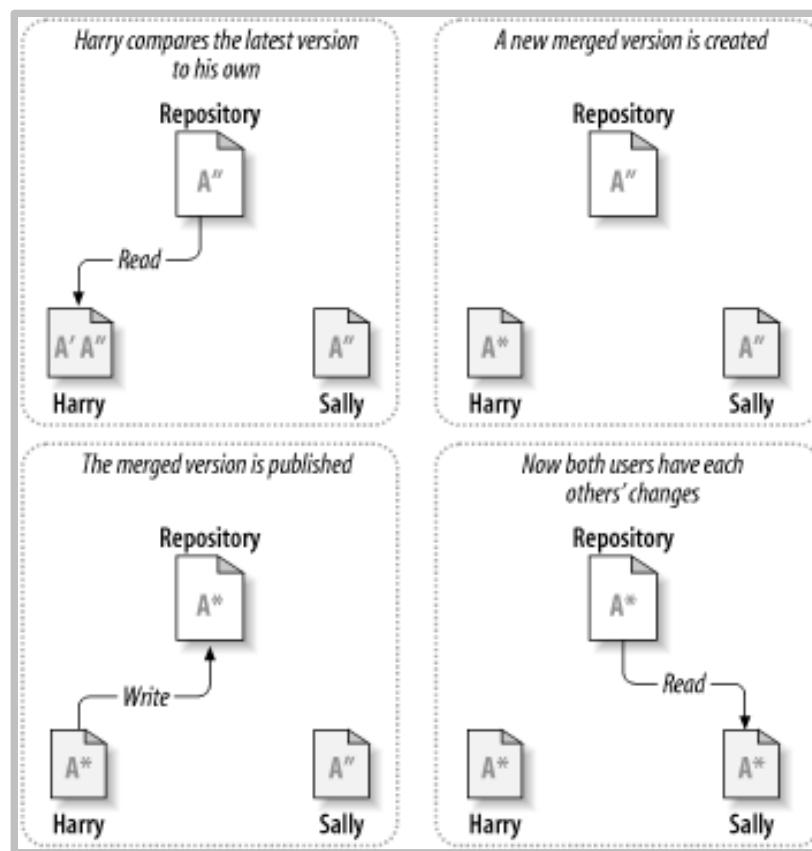
In this model, the repository allows only one person to change a file at a time, by locking it.

Versioning: the copy-modify-merge solution (01)



In this model, each user's client contacts the project repository and creates a personal working copy. The private copies are merged together into a new version.

Versioning: the copy-modify-merge solution (02)



In this model, each user's client contacts the project repository and creates a personal working copy. The private copies are merged together into a new version.

Diff: how to understand the changes

The screenshot shows the Kompare application interface comparing two files: 'hitchhiker-040624' and 'hitchhiker-current'. The top pane displays a table of differences with columns for Source Line, Destination Line, and Difference. The bottom panes show the content of both files side-by-side, with color-coded regions indicating changes. A green region highlights new text in 'hitchhiker-current', while red regions highlight deleted text from 'hitchhiker-040624'. The status bar at the bottom indicates 'Comparing file file:/home/robamler/Documents/hitchhiker-040624 file:/home/robamler/Documents/hitchhiker-current | 1 of 23 differences, 0 applied | 1 of 1 file'.

Source Line	Destination Line	Difference
32	48	Changed 1 line
38	56	Changed 1 line
51	69	Changed 1 line
57	75	Inserted 2 lines
59	79	Deleted 1 line

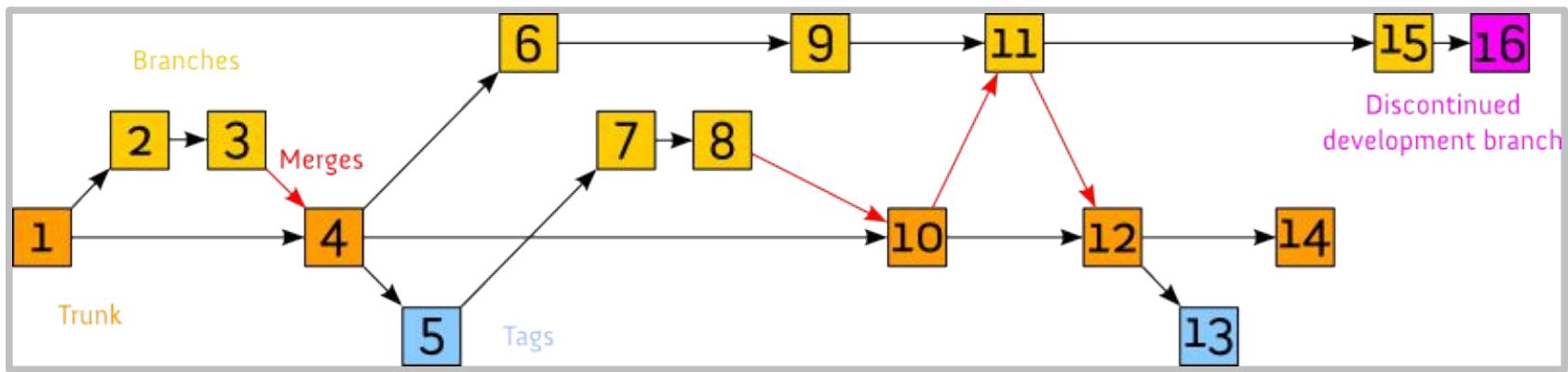
```
hitchhiker-040624
52
53 [[Neil Gaiman]] has written ''[[Don't Panic: The Official Hitchhiker's Guide to the Galaxy]]''.
54 A novel, ''[[Douglas Adams's Starship Titanic]]'', based on the book.
55 Two collaborative [[Internet]] projects were inspired by the book.
56
57 ==Characters==
58
59 ==See also==
60
61 * [[Arthur Dent]]
62 * [[Ford Prefect (HMG)|Ford Prefect]]
63 * [[Trillian]]
64 * [[Zaphod Beeblebrox]]
65 * [[Marvin the Paranoid Android]]
66 * [[Vogon]]s
67 * [[Deep Thought]]
68 * [[Concepts and minor characters from The Hitchhiker's Guide to the Galaxy|Places in The Hitchhiker's Guide to the Galaxy]]
69
70 ==External links==
71
72 * [[Places in The Hitchhiker's Guide to the Galaxy|Places in The Hitchhiker's Guide to the Galaxy]]
73 * [[Infinite Improbability Drive]]
74 * [[Total Perspective Vortex]]
75 * [[The Answer to Life, the Universe, and Everything]]
76 * [[Dirk Gently]] -- another [[Douglas Adams]] creation
77 * [[SRP field]]
78 * [[Hitchhiking]]
79 * [[Sirius Cybernetics Corporation]]
80 * [[H2G2]]
81 * [[42 (number)|42]]
82

Comparing file file:/home/robamler/Documents/hitchhiker-040624 file:/home/robamler/Documents/hitchhiker-current | 1 of 23 differences, 0 applied | 1 of 1 file
```

hitchhiker-current
66 * ''[[So Long, and THANKS FOR ALL THE FISH!]]'' ([[1994]])
67 * ''[[Mostly Harmless]]'' ([[1992]])
68
69 A short story was also written, ''[[Young Zaphod Plays It Again]]''.
70
71 [[Neil Gaiman]] has written ''[[Don't Panic: The Official Hitchhiker's Guide to the Galaxy]]''.
72 A novel, ''[[Douglas Adams's Starship Titanic]]'', based on the book.
73 Nowbagger the Infinitely Prolonged, a character from ''[[The Restaurant at the End of the Universe]]''.
74
75 Two collaborative [[Internet]] projects were inspired by the book.
76
77 ==See also==
78
79
80 [[HitchhikerBooks]]
81
82
83 ==External links==
84
85 * [[Dirk Gently]] -- another [[Douglas Adams]] creation
86 * [[Hitchhiking]]
87 * [[H2G2|h2g2]]
88
89 ==External links==
90
91 * [[http://www.bbc.co.uk/cult/hitchhikers/|The Hitchhiker's Guide to the Galaxy]]
92 * [[http://www.hitchhikersmovie.com|The Hitchhiker's Guide to the Galaxy (film)]]
93 * The [[http://www.cinescape.com/|editorial.asp?obj_id=30371724|film's status]]
94 * [[http://www.imdb.com/title/tt0371724|The film's status on IMDB]]
95 * [[http://www.abovethetitle.com/content/programmes/hitchhikersguide|The Hitchhiker's Guide to the Galaxy (TV series)]]

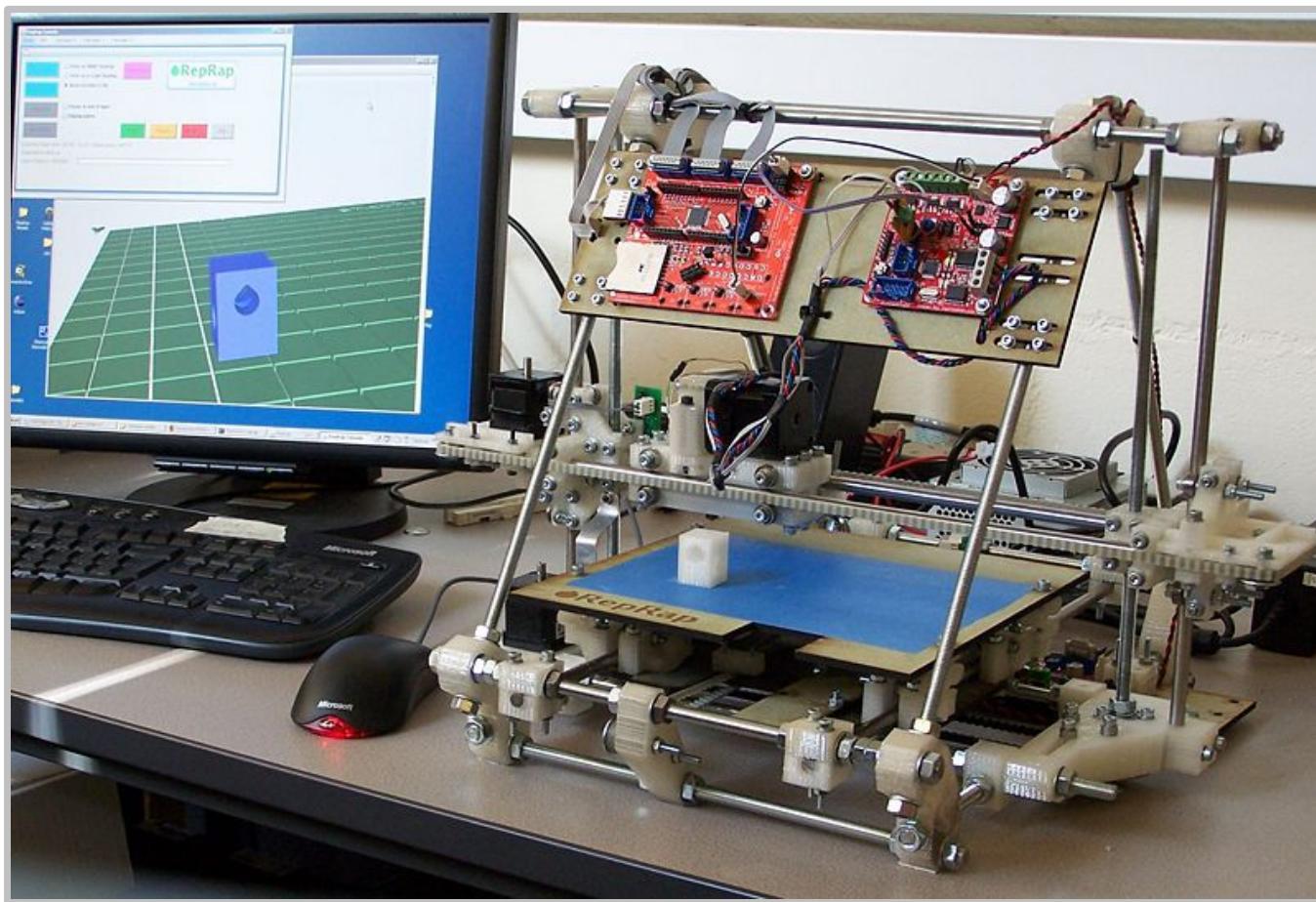
The best way of understanding what has changed is to compare different revisions with a diff software.

A typical SVN project



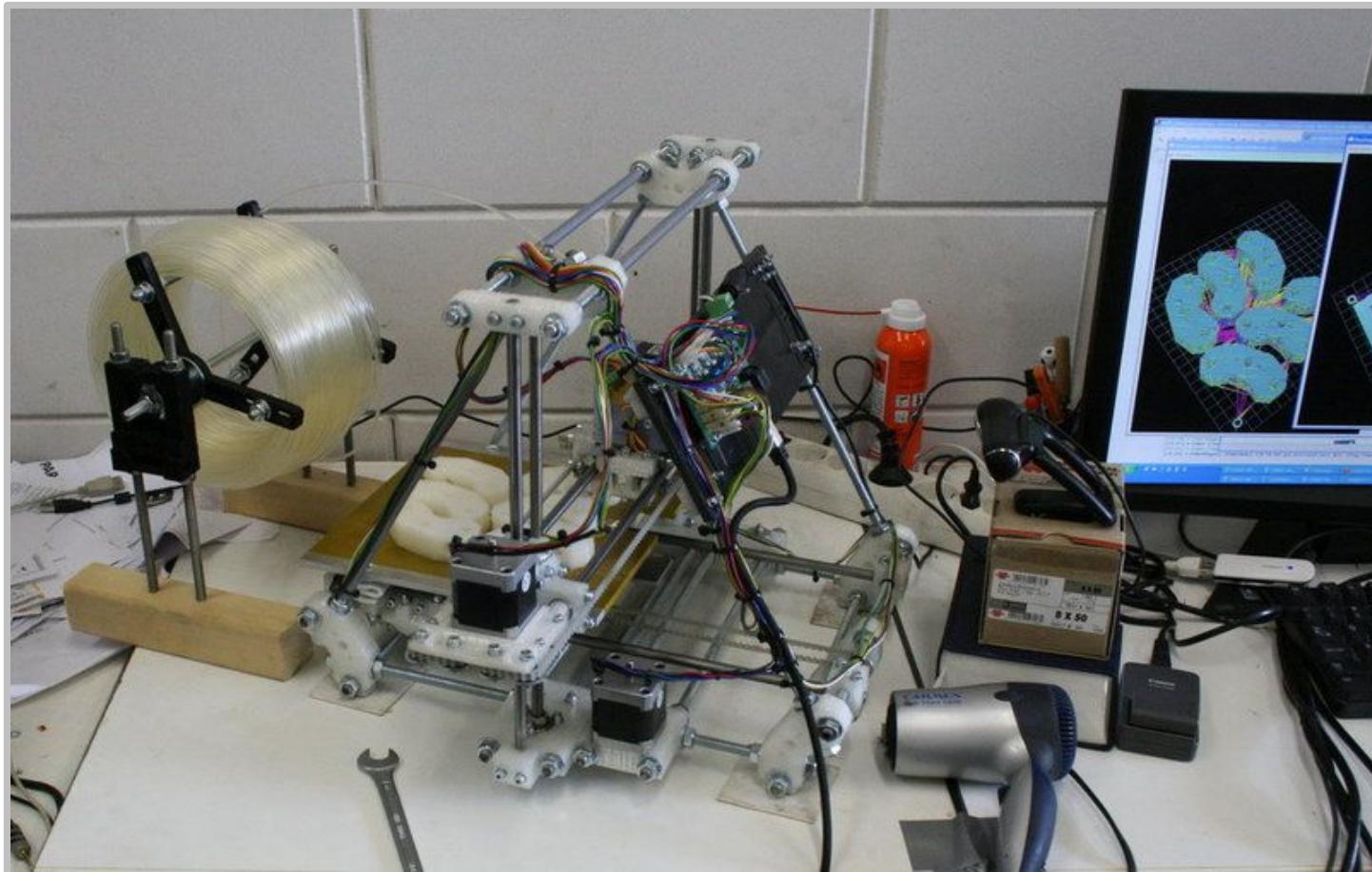
Development happens in *trunk*, testing alternatives in *branches* and storing good versions (1.0, 1.1,...) in *tags*.

Example: a spool for the RepRap Mendel



The second version of the RepRap, the first to be easier to build and calibrate.

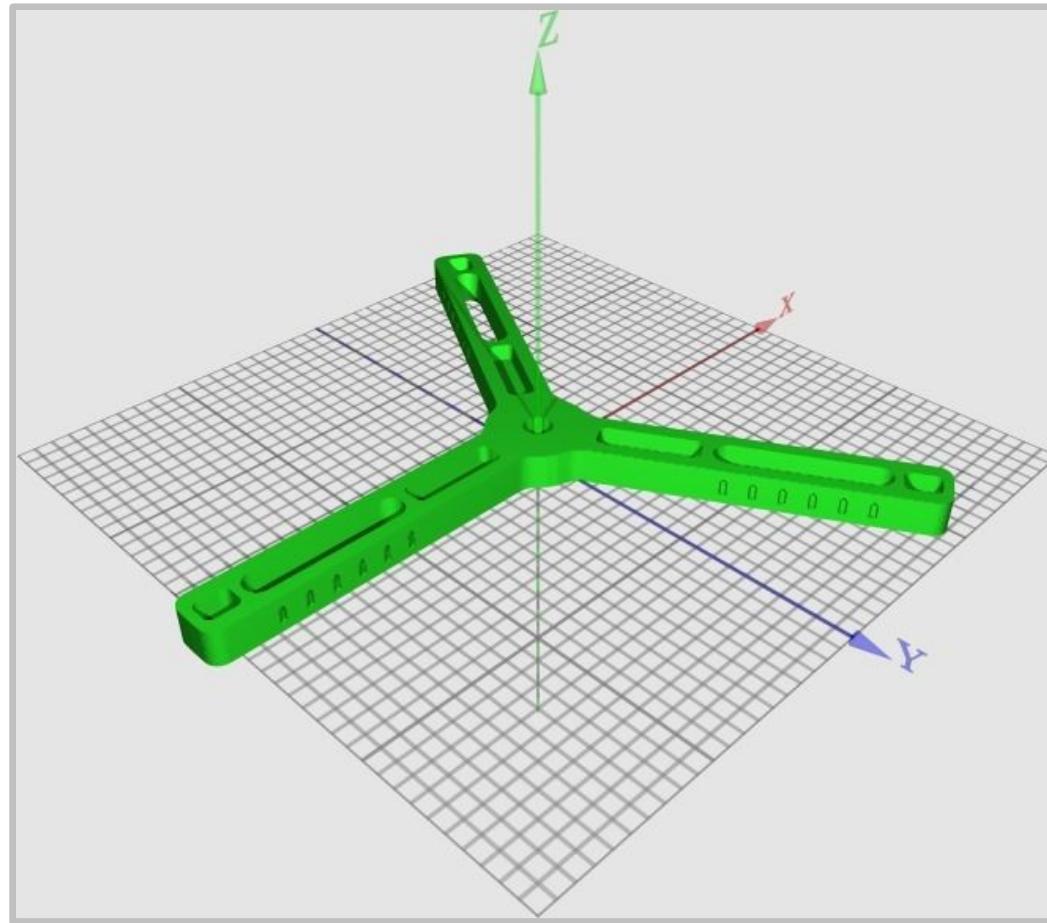
A spool for the RepRap Mendel: an improvement



A spool added for handling the plastic wire and published on Thingiverse.

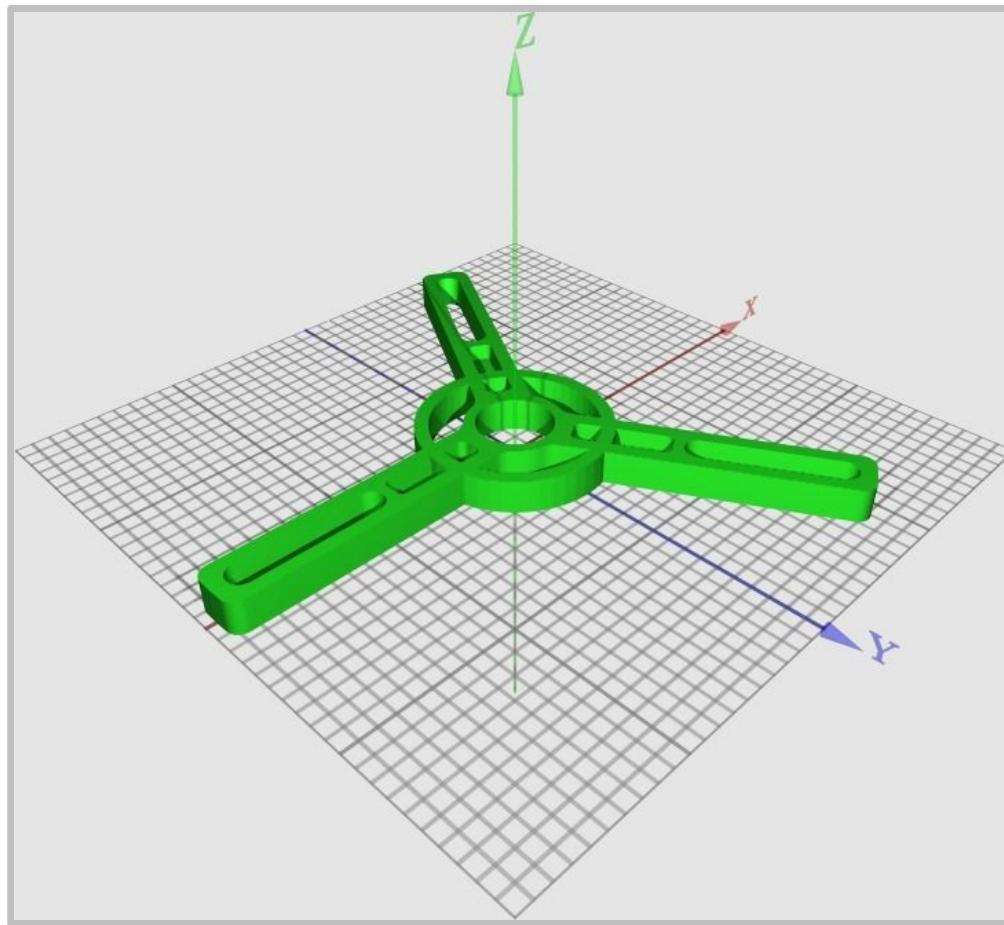
Source: <http://www.thingiverse.com/thing:3866>

A spool for the RepRap Mendel: an improvement (01)



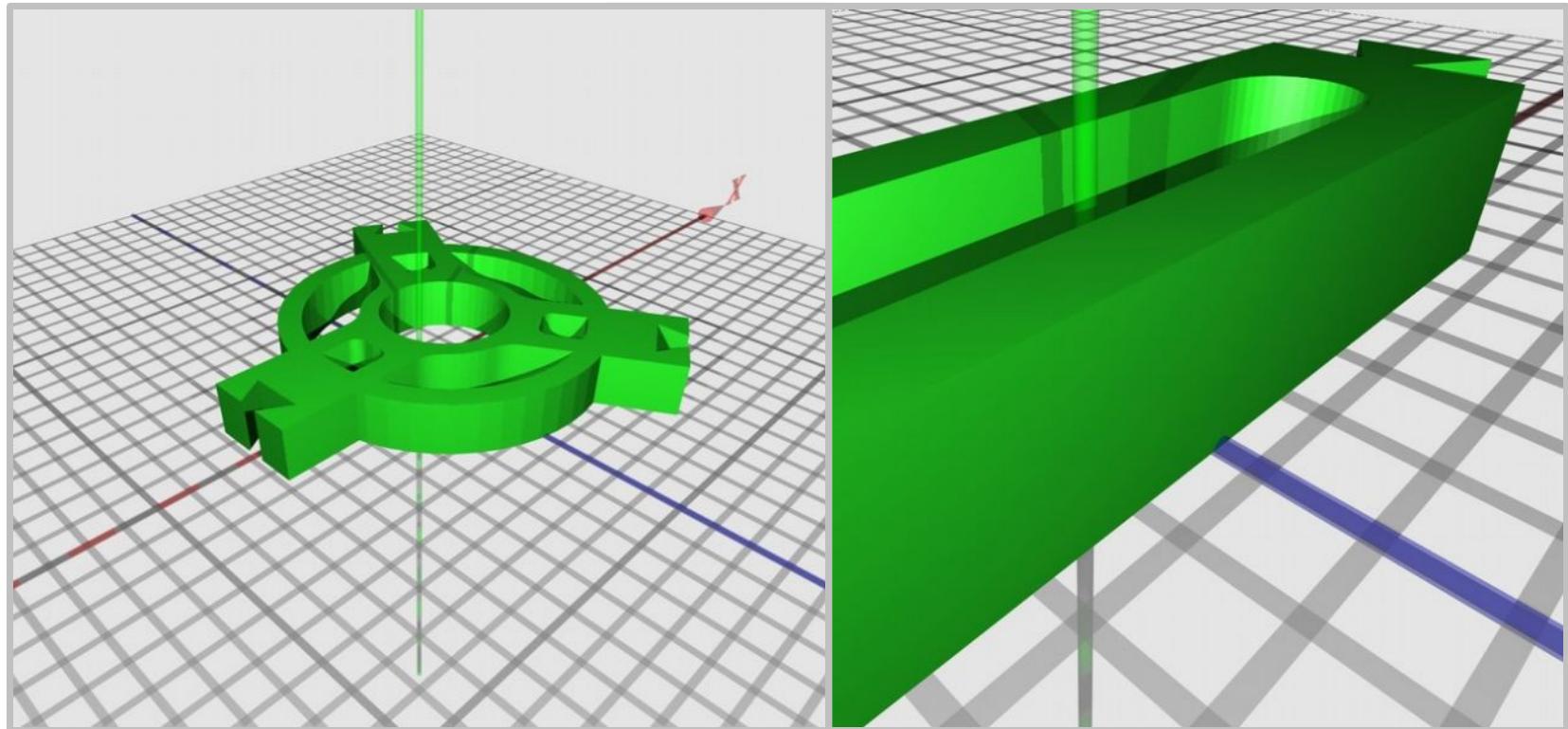
“Well i wanted to have a very simple, but bearing based spool system.” Camiel

A spool for the RepRap Mendel: an improvement (02)



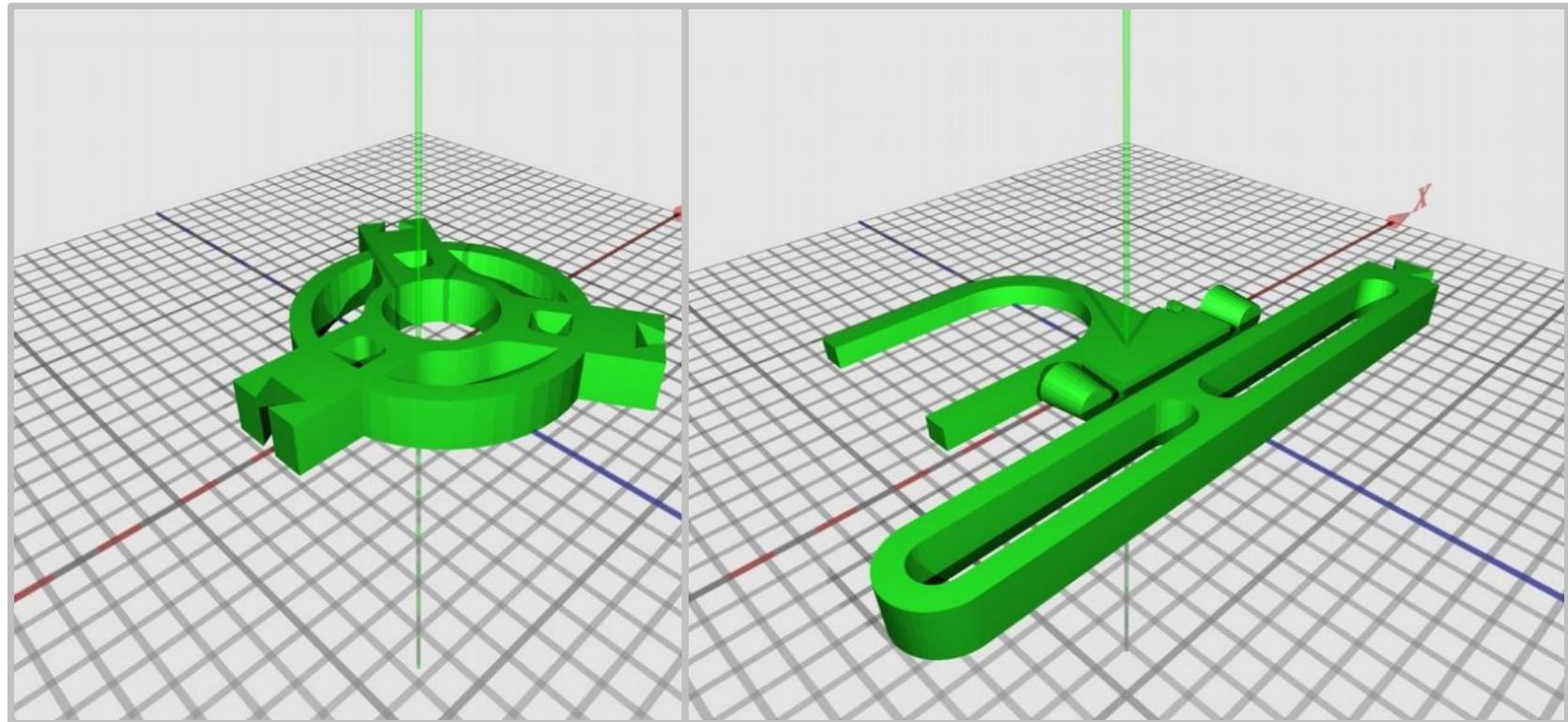
"I have changed the design to put the bearings in the spool itself. This way you can be more flexible in what you use to support the axle." Brokentoaster

A spool for the RepRap Mendel: an improvement (03)



“I liked BrokenToaster’s idea of a bearing-driven filament spool holder, but that version was too big to fit on a Makerbot print bed. [...]” Randyy

A spool for the RepRap Mendel: an improvement (04)



“This takes advantage of the larger print area on RepRaps by printing the arm as one piece, [...] also saving material.” Fil

SVN Client + File comparison: TortoiseSVN (Win)

TortoiseSVN *the coolest interface to (Sub)version control*

Home Donate Downloads Translations Support/Docs Other tools



TortoiseSVN

About TortoiseSVN

TortoiseSVN is an easy-to-use SCM / source control software for Microsoft Windows and possibly the best standalone Apache™ Subversion® client there is. It is implemented as a Windows shell extension, which makes it integrate seamlessly into the Windows explorer. Since it's not an integration for a specific IDE you can use it with whatever development tools you like.

New version of grepWin

Posted on September 4, 2011

Subversion Client Windows

Download Now! Windows, Linux, OSX Subversion Repository Browser
www.aquafold.com

AdChoices ▾

A new version of **GrepWin** is available. This new version contains a few bugfixes and enhancements.

List of completed **issues**
Download from [here](#)

Release candidate of TortoiseSVN 1.7

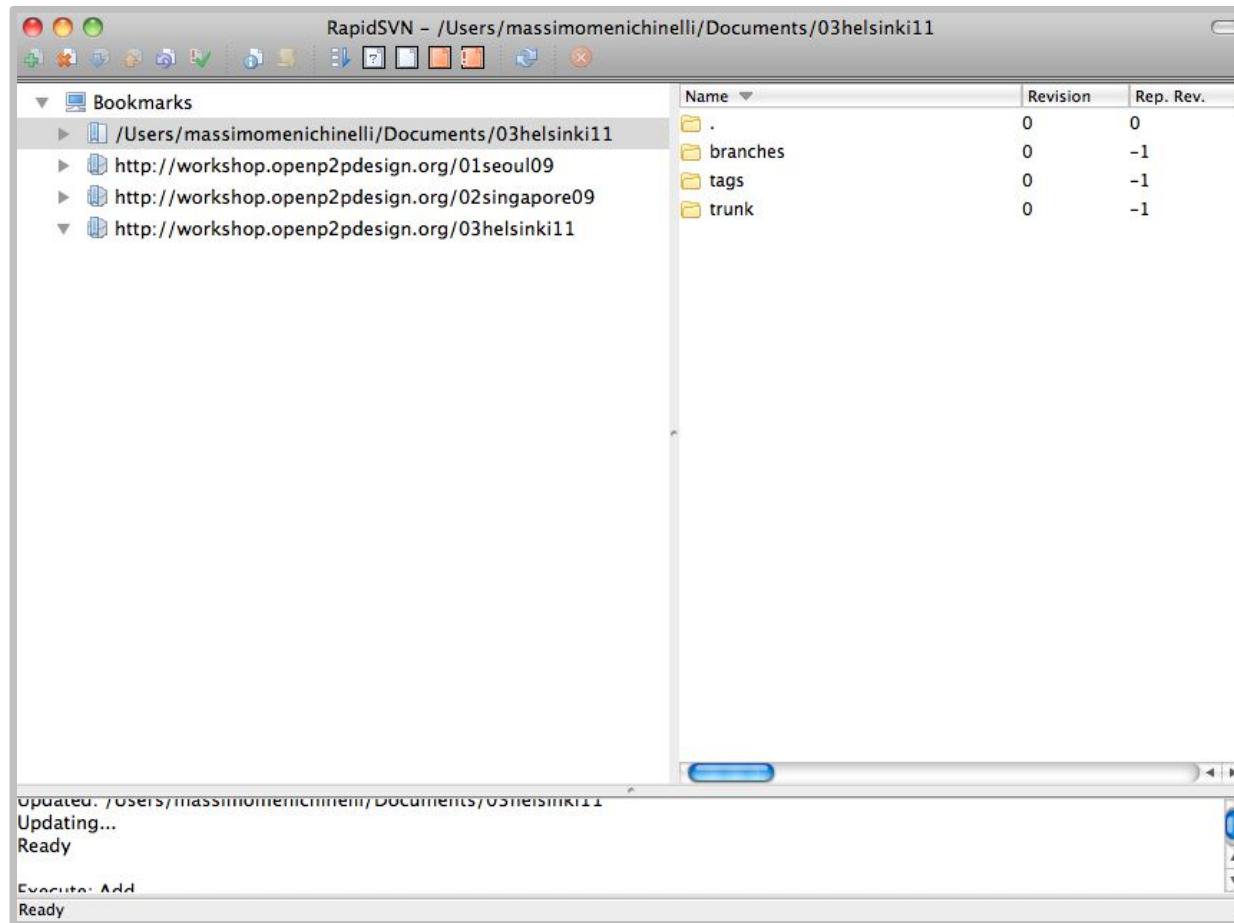
Posted on September 1, 2011

Info
[News](#)
[News archive](#)

The most popular SVN client on Windows, it can also compare images.

Source: <http://tortoisessvn.net/>

SVN Client: RapidSVN (Windows, Mac, Linux)



Open Source and multi-platform, but without file comparison.

SVN Client: Versions (Mac)

The screenshot shows the official website for Versions, a Subversion client for Mac. At the top, there's a dark header bar with navigation links: SOFA (with a sofa icon), Home (with a gear icon), Release Notes (with a star icon), Support (with a book icon), Buy (with a shopping cart icon), and Download (with a downward arrow icon). Below the header is a large, vibrant graphic of a green lotus flower with a yellow center, growing out of a mound of green grass against a dark blue background. The word "VERSIONS" is written in large, white, sans-serif capital letters, with a small yellow badge containing "1.1" positioned above the letter "S". Below "VERSIONS" is the text "SUBVERSION CLIENT FOR MAC" in a smaller, gold-colored font. On the left side of the main content area, there's a block of text describing the product: "Versions offers the best way to work with Subversion on the Mac. Thanks to its clear-cut approach, you'll hit the ground running." To the right of this text are two prominent buttons: a green "Download Now" button with a download icon and a blue "Buy for €39" button with a shopping cart icon.

Versions offers the best way to work with
Subversion on the Mac. Thanks to its
clear-cut approach, you'll **hit the ground
running**.

Download Now

Buy for €39

Free trial for one month...

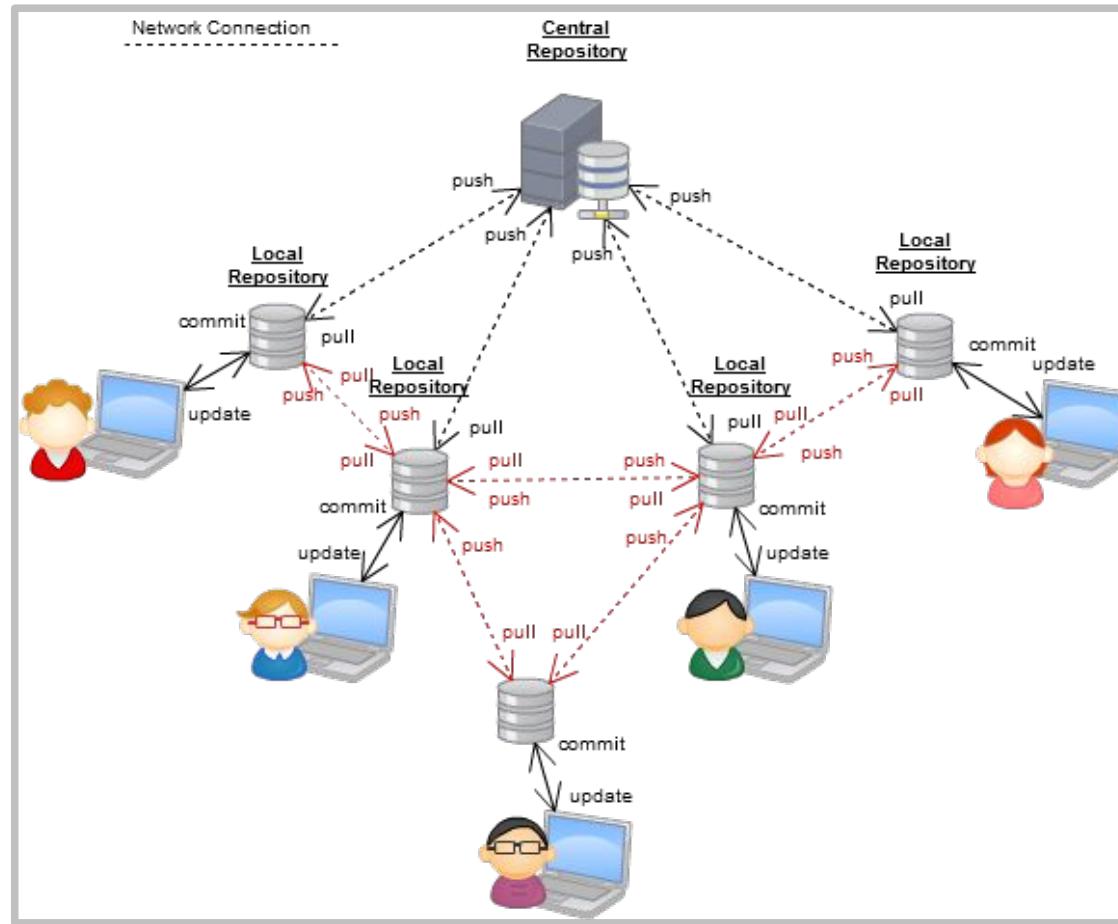


Aalto University
Media Factory

02.02

Version Control Systems: Git and Mercurial (Hg)

Distributed Version Control System



A more recent architecture, more evolved and popular. It usually tracks the state of the files, not just the changes.

Source: <http://www.kalekold.net/index.php?post=13>

<http://betterexplained.com/articles/intro-to-distributed-version-control-illustrated/>

Version Control System: the vocabulary (03)

Distributed Version Control Systems add new terms to the vocabulary:

- * **Clone**: create a working copy on your computer from another repository.
 - * **Push** : send a change to another repository (may require permission), even to your server.
 - * **Pull** : download the latest changes from an online repository.
-

Distributed Version Control System: Git

The screenshot shows the official Git website at <http://git-scm.com/>. The header features the word "git" in large, bold, black letters with a green outline, followed by the tagline "the fast version control system". A cartoon character of a brown, textured figure with a pipe and a green sprout is on the right. Below the header is a navigation bar with links: Home, About Git, Documentation, Download, Tools & Hosting, and Wiki. The main content area is divided into three sections: "Git is...", "Projects using Git", and "Download Git".

Git is...

Git is a **free & open source, distributed version control system** designed to handle everything from small to very large projects with speed and efficiency.

Every Git clone is a full-fledged repository with complete history and full revision tracking capabilities, not dependent on network access or a central server. **Branching and merging are fast and easy to do.**

Git is used for version control of files, much like tools such as [Mercurial](#), [Bazaar](#), [Subversion](#), [CVS](#), [Perforce](#), and [Team Foundation Server](#).

Projects using Git

- [Git](#)
- [Linux Kernel](#)
- [Perl](#)
- [Eclipse](#)
- [Gnome](#)
- [KDE](#)
- [Qt](#)
- [Ruby on Rails](#)
- [Android](#)
- [PostgreSQL](#)
- [Debian](#)
- [X.org](#)

Download Git

The latest stable Git release is **v1.7.6.1**

[release notes](#) (2011-08-24)

Windows Mac OS X Source

[Other Download Options](#) [Git Source Repository](#)

Developed by Linus Torvalds, for improving the distributed development of the Linux Kernel.

An introduction to Git

Pro Git professional version control

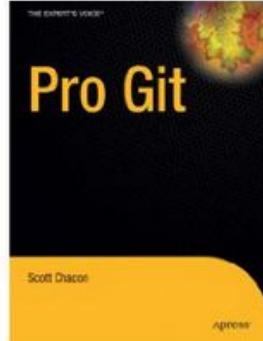
[Home](#) [Book](#) [Blog](#) [About](#) [Support Us](#) [GitHub](#) [Twitter](#)

1. Getting Started

- 1.1 - [About Version Control](#)
- 1.2 - [A Short History of Git](#)
- 1.3 - [Git Basics](#)
- 1.4 - [Installing Git](#)
- 1.5 - [First-Time Git Setup](#)
- 1.6 - [Getting Help](#)
- 1.7 - [Summary](#)

2. Git Basics

- 2.1 - [Getting a Git Repository](#)
- 2.2 - [Recording Changes to the Repository](#)



THE EXPERT'S VOICE®
Pro Git
Scott Chacon
Apress

Support this site by buying a print version of [Pro Git](#)

An open source book about using Git.

Git project hosting: GitHub.com

The screenshot shows the GitHub homepage. At the top, it displays "github" in a logo, "Signup and Pricing", "Explore GitHub", "Features", "Blog", and "Login". A prominent banner states "1,568,188 people hosting over 2,693,380 repositories". Below the banner, there's a search bar with the placeholder "Find any repository" and a list of popular companies using GitHub: Facebook, Twitter, Microsoft, VMware, Redhat, LinkedIn, and Mozilla. The main content area is divided into two sections: "git /'git/" and "git·hub /'git,həb/'. The "git" section describes Git as a fast, efficient, distributed version control system. The "git·hub" section describes GitHub as the best way to collaborate with others, mentioning public and private repositories. A central call-to-action button says "Plans, Pricing and Signup" with the subtext "Unlimited public repositories are free!". Below this, a list of features includes "Free public repositories, collaborator management, issue tracking, wikis, downloads, code review, graphs and much more...". The bottom section contains four boxes: "Team management" (30 seconds for access), "Code review" (commenting, tracking issues, merging), "Reliable code hosting" (secure, backed up, always available), and "Open source collaboration" (participating in the community). Each box has a "More about" link.

git /'git/

git·hub /'git,həb/

Plans, Pricing and Signup
Unlimited public repositories are free!

Free public repositories, collaborator management, issue tracking, wikis, downloads, code review, graphs and much more...

Team management
30 seconds to give people access to code. No SSH key required. Activity feeds keep you updated on progress.
[More about collaboration](#)

Code review
Comment on changes, track issues, compare branches, send pull requests and merge forks.
[More about code review](#)

Reliable code hosting
We spend all day and night making sure your repositories are **secure**, **backed up** and **always available**.
[More about code hosting](#)

Open source collaboration
Participate in the most important open source community in the world today—online or at one of our meetups.
[More about our community](#)

The most popular (and refined) Git hosting available now, free plans for open source projects (you have to pay for private spaces).

Source: <https://github.com/>

GitHub for Mac: a Git client (Mac)

The screenshot shows the official GitHub for Mac website. At the top, there's a banner with the GitHub logo and the word "mac". To the right, it says "Mac OS X 10.6+ 64-bit" and a button for "Download the latest 1.2.6 — April 13th 2012". Below the banner, the main heading is "Introducing GitHub for Mac" with the subtext "The easiest way to share your code with GitHub". A large orange button says "Download GitHub for Mac" with the tagline "Free to download, free to use". Below this, there are tabs for "Overview", "Help", and "Release Notes". A list of features is shown with checkmarks: "Clone repositories", "Browse history", "Commit changes", "Branch code", and "Share code on github.com". To the right, there's a screenshot of the GitHub for Mac application interface showing a list of commits and pull requests. Below the interface, a quote reads: "At GitHub, we think that sharing code should be as simple as possible. That's why we created GitHub for Mac." Three smaller screenshots below illustrate specific features: "Synchronize branches", "Clone repositories in one click", and "Powerfully simple branching".

At GitHub, we think that sharing code should be as simple as possible.
That's why we created GitHub for Mac.

Synchronize branches
The sync button pushes your changes to GitHub and pulls down other's changes in one operation. It notifies you when you have changes you haven't pushed or there are new changes on GitHub you haven't pulled down.

Clone repositories in one click
When you add repositories to GitHub for Mac, we automatically match them up with any organizations you belong to. Want to pull down a repository from GitHub.com? Check out the [Clone in Mac](#) button on the website.

Powerfully simple branching
Branching is one of Git's best features. We've made it easy to try out remote branches, create new local branches and publish branches to share with others.

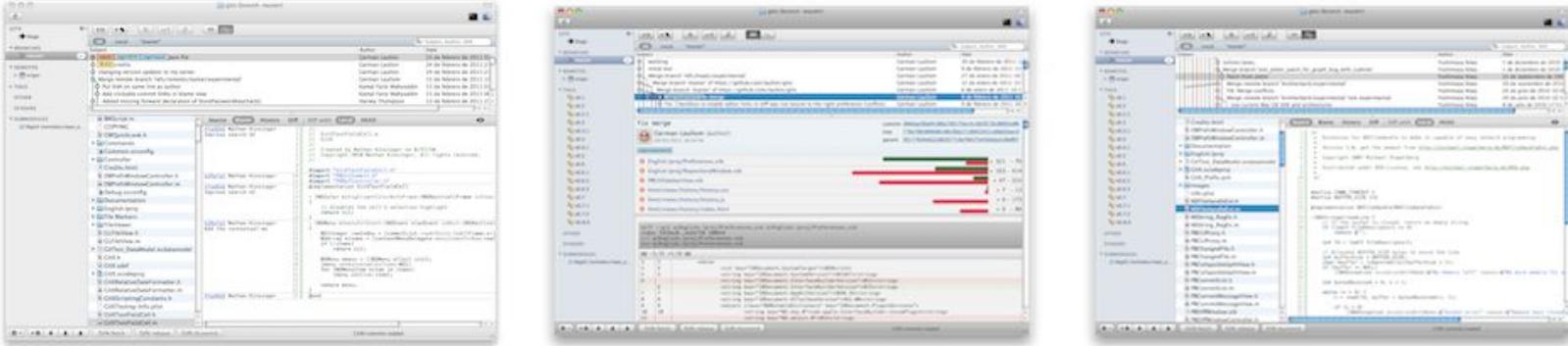
GitHub as its own freeware client (for Mac).

Git Client: GitX (Mac)



GitX (L)
Open Source Mac OS X Git client

[Download GitX \(L\) v0.8.4](#)
[License GPL v2](#)



Commit view

- Commit/Parents/Tree SHA links
- File changes counts
- File Diffs
- Commit Tags and Refs

File view

- Source Code Highlight
- Blame
- File History (log)
- Diff with local and HEAD

Sidebar

- Branches
- Remotes
- Stashes
- Submodules

Stage view

- Unstaged/Staged files
- Stage/Discard by lines
- Amend
- File diff

Actually, more than one GitX can be found...

Git project hosting: Gitorius.org

The best way to collaborate on distributed open source projects

Gitorious provides free open source infrastructure for open source projects that use Git.

LEARN MORE [ABOUT](#) OR [THE PROJECTS WE HOST](#).

[TRY IT — it's free!](#) — OR — [LOG IN](#)

FEATURES — *what we bring to the table.*

Project hosting Host your open source projects and their repositories for free on Gitorious to enable community contributions.	Activity monitoring Keep track of project activity for both your personal projects and team projects.	Public merge requests Allow other developers to submit contributions to your project and merge them easily.
Project Wikis Document your project using Gitorious' built-in wiki.	Team contributions Create development teams to encourage and organize cooperative development.	Project centric Maintain all code repositories related to a single project under a single project area on Gitorious.

gitorious ➔ gitorious

Copy url GIT HTTP Your push git://gitorious.local/gitorious/gitorious.git

Branches: master

[Commit log](#) [Source tree](#) [Merge requests \(0\)](#)

Activities

Wednesday April 07 2010

PUSH 07:49 johan commented on gitorious/gitorious/22e03ac
Ipsum decided to leave for the far World of Grammar.

PUSH 07:49 johan commented on gitorious/gitorious/22e03ac
place and supplies it with the necessary regelalia. It is a p

Free plans, and open source software itself.

Distributed Version Control System: Mercurial (hg)

The screenshot shows the Mercurial website homepage. At the top, there's a navigation bar with links for 'about', 'guide', 'download', 'extensions', 'news/wiki', and 'sponsors'. A search bar says 'Search the Wiki' with a magnifying glass icon. The main heading 'Work easier Work faster' is displayed above a description of Mercurial as a free, distributed source control management tool. To the right, a large blue button says 'Download now' with 'Mercurial 2.0.2' and a download arrow. Below it, there's a section for 'Another OS?' with links for Mac OS X, Windows, and other operating systems. On the left, under 'How you can benefit from Mercurial', there are three icons with text: one for being fast and powerful, one for being easy to learn, and one for working well. On the right, under 'Quick Start', there are two sections with command-line examples: 'Clone a project and push changes' and 'Create a project and commit'.

Work easier
Work faster

Mercurial is a free, distributed source control management tool. It efficiently handles projects of any size and offers an easy and intuitive interface.

Download now
Mercurial 2.0.2
Mercurial 2.0.2 for Mac OS X

Another OS?
Get Mercurial for:
» Mac OS X
» Windows
» other

How you can benefit from Mercurial

- It is **fast and powerful**
Mercurial efficiently handles **projects of any size and kind**. Every clone contains the whole project history, so most actions are local, fast and convenient. Mercurial supports a multitude of **workflows** and you can easily enhance its functionality with **extensions**.
- It is **easy to learn**
You can follow our simple **guide** to learn how to revision your documents with Mercurial, or just use the **quick start** to get going instantly. A short overview of Mercurial's decentralized model is also **available**.
- And it just works
Mercurial strives to deliver on each of its promises. Most tasks simply work on the first try and without requiring arcane knowledge.

Quick Start

Clone a project and push changes

```
$ hg clone http://selenic.com/repo
$ cd hello
$ (edit files)
$ hg add (new files)
$ hg commit -m 'My changes'
$ hg push
```

Create a project and commit

```
$ hg init (project-directory)
$ cd (project-directory)
$ (add some files)
$ hg add
$ hg commit -m 'Initial commit'
```

Open Source and distributed as Git, usually the most used in FabLabs.

An introduction to Mercurial

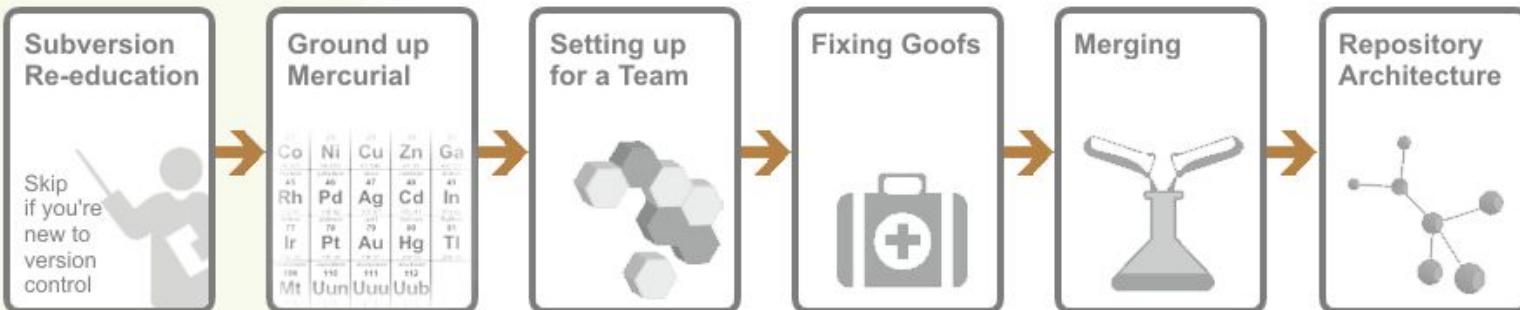
80

Hg Init

200.59

Hg Init: a Mercurial tutorial

Mercurial is a modern, open source, distributed version control system, and a compelling upgrade from older systems like Subversion. In this user-friendly, six-part tutorial, [Joel Spolsky](#) teaches you the key concepts.



A complete and easy introduction to using Mercurial.

Git / Hg project hosting: Bitbucket.org

The screenshot shows the Bitbucket homepage on the left and a detailed view of a repository on the right.

Bitbucket Features (Left):

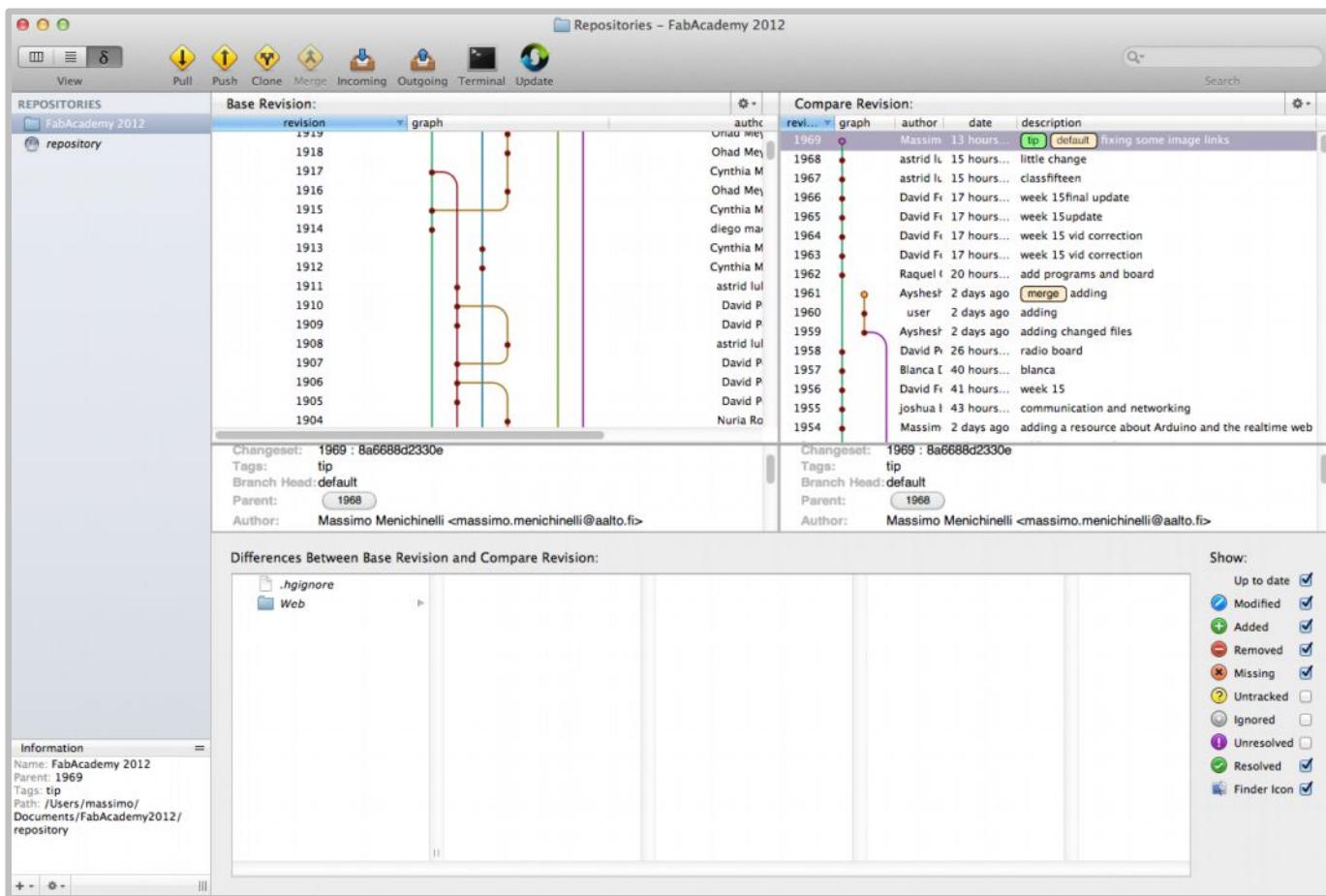
- Fork, code, pull:** Shows a pull request from `mvegaes: staging` to `default`. It has been accepted and merged 3 days ago.
- Secure code hosting:** Shows a repository named `hgsubversion` with a commit history for `setup.py`.
- Collaborate and get social:** Shows a user profile for `Marcin Kuzminski` with recent activity.

Repository View (Right):

- Repository Overview:** Shows the repository is 40.4 MB, has 19 commits, and 1 branch.
- Issue Management:** Shows an issue titled "BB-717: Add 'task' as an issue type" with a description and a commit message.
- Commit History:** Shows a commit for "BB-717: Add 'task' as an issue type" by `marcinkuzm` on 2011-07-20.
- File Changes:** Shows changes made to `appsfabric-mods.py`.

For both Git and Hg, free plan also for private projects.

Mercurial (hg) client: MacHg



Much better than the terminal for starting, and it has Mercurial packaged (no need to install it separately).

Source: <http://jasonfharris.com/machg/>

File comparison: Kaleidoscope (Mac)

Compare files with...

KALEIDOSCOPE

Use Kaleidoscope to **spot the differences** in text and image files. Review changes in seconds with the world's **most advanced** file comparison application.

[Download ↓](#) [Buy for €29 ❤](#)

[30 Day Demo](#) [Introductory Price](#)

[Learn more...](#)

A large, semi-transparent watermark of a colorful, multi-layered triangular prism or color wheel is positioned on the right side of the page, partially overlapping the text and buttons.

 Text Scope Compare text and source code	 Image Scope Review mockups and photos	 Workflow Integrate with just about anything	 Details Skim through the feature list
---	---	--	---

Free trial for one month...

File comparison: Perforce P4Merge (Win, Mac, Linux)

 **PERFORCE**

Company Partners Resources Search

Products Downloads Documentation Customers Services Purchase Support

Create. Develop. Version everything with Perforce.

Only Perforce products have the Perforce Server – the fast version management platform that powers productive teamwork. Built from the ground up to be scalable and easy to manage, Perforce helps thousands of the world's leading organizations innovate and succeed.

NYSE Euronext. uses Perforce throughout the entire technology lifecycle of the exchange.

"We're really not even close to maxing out the scalability of the Perforce server."

1 2 3 4 5

Why Perforce
Get the fast track on better SCM...

Try Perforce
Free 2 user trial or multi-seat evaluation...

 Get the Perforce 2011.1 Beta Release. Check out the [beta features](#) or [download the beta now](#).

Perforce is another version control system, but it is interesting for its visual diff applications (freeware).

Source: http://www.perforce.com/product/components/perforce_visual_merge_and_diff_tools

File comparison: ComparePSD (Windows)

The screenshot shows the pixelnovel website with a focus on the ComparePSD tool. The top navigation bar includes links for timeline, SVN account, customers, blog, and sign in. A breadcrumb trail indicates the user is at the comparepsd page. On the left, there's a sidebar with a 'ComparePSD for Windows' button and a section for version control for Photoshop. The main content area features a heading 'ComparePSD' and a sub-headline 'compare two Adobe Photoshop files layer-by-layer a must-have tool for Photoshop professionals'. Below this, a text block describes the tool's purpose: 'Imagine. You need to find the file with that unmerged effects among the heap of 2 mb files which were called hastily 'Untitled1.psd', 'Untitled2.psd', 'Untitled2_a.psd'. And now you have to open every single file, wait for it to load, scroll through it, and then find the effects you was looking for. Sounds familiar?' It then states: 'ComparePSD compares two Adobe Photoshop PSD files for you and highlights the differences. Layer by layer. Effect by effect. Simple. And did we mention that ComparePSD is absolutely free?' To the right, there's a 'download for FREE' button with a 'for Windows' link and a 'ComparePSD' button. A sign-up form for news emails is also present. At the bottom, a screenshot shows two Photoshop files side-by-side being compared.

Freeware for Windows, can compare Photoshop .psd files.

Source: <http://pixelnovel.com/comparepsd/>

Subversion hosting service: Pixelnovel

The screenshot shows the Pixelnovel website's account section. At the top, there's a navigation bar with links for 'timeline', 'Do you like it?', 'SVN account', 'customers', and 'blog'. On the right, there's a 'sign in' button. Below the navigation, a breadcrumb trail shows 'account'. The main heading is 'PIXELNOVEL ACCOUNT IS A SUBVERSION HOSTING FOR DESIGNERS'. On the left, there are two buttons: 'SVN account' (highlighted) and 'Pricing & plans'. The central content area lists features: '3 plans for your convenience, a free account is available', 'View all your files online along with previews and history*', 'Is based on Subversion (SVN), a proved version control system', and 'Add more users to your account and manage their rights'. To the right are 'SEE PLANS' and 'SIGN UP' buttons. A small note at the bottom says '* only available if used along with Timeline, the Subversion client for Adobe Creative Suite'. A testimonial box contains the text: "If you don't have your own SVN repository, a PixelNovel account will provide you with a hassle-free alternative, plus you get the extra features such as user management system and automatic back up".

Integrated with Photoshop: free plan (100 MB) and better paid plans.

Source: <http://pixelnovel.com svn-account/>

SVN / Git / Hg hosting service: Beanstalk

The screenshot shows the Beanstalk website homepage. At the top, there is a dark header with navigation links: Home (highlighted in yellow), Feature Tour, Partners & Tools, API, Guides, Blog, Pricing & Sign Up. Below the header is the Beanstalk logo, which consists of a stylized green leaf icon followed by the word "beanstalk". A tagline below the logo reads "The easiest way to manage code, collaborate and deploy." The page is divided into three main sections: "Version Control", "Collaboration", and "Deployments", each with a brief description and an icon. Below these sections is a yellow banner featuring the HappyCog logo (a black cog with "HAPPY COG EST. 1999" text) and the text "HappyCog easily scales for an MTV audience with Beanstalk". It also includes a "Read the story" button and a "View Plans & Pricing" link. At the bottom, there is a "Our customers:" section with logos for Wufoo, Philips, Brightcove, blue flavor, and Hello Enjoy.

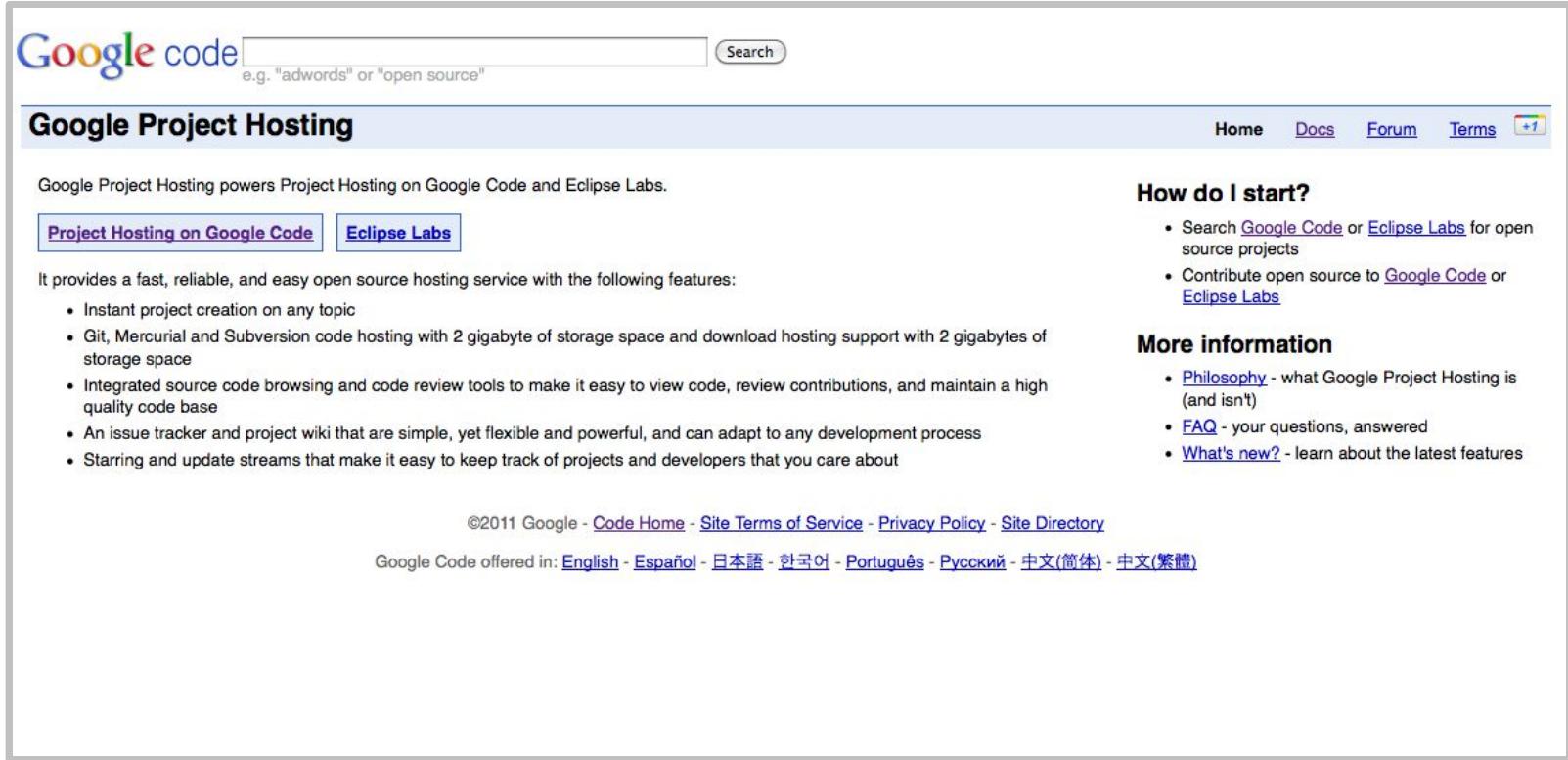
Paid plans (with free trial).

SVN / Git hosting service: Codesion

The screenshot shows the homepage of the Codesion website. At the top, there's a navigation bar with links for 'Login', 'Status Site', 'Help', 'Get Free Hosting', and a 'SIGN UP' button. On the left, the 'codesion CLOUD SERVICES' logo is displayed next to a green frog icon, with a note 'we're now COLLABNET.' To the right of the logo are menu items: 'Tour', 'Partners', 'Buzz', 'Training', 'Blog', 'Pricing & Signup'. Below the navigation, a large green banner features the text 'GET G+ ON CODESION'. To the right of this banner is a list of benefits: 'Git and Subversion Hosting under the same roof', 'Enterprise Security, Backup & Support', and 'Scalable and Guaranteed 99% Uptime SLA'. A 'TRY IT' button is located to the right of the third benefit. Below the banner, a progress bar shows steps 1 through 4. A note 'Serving 70,000 active users in 90 countries' is visible. The bottom section contains three cards: 'EUROPEAN DATA CENTER NOW LIVE' (with a blue globe icon), 'INSTANT SUBVERSION AND GIT' (with a green frog icon), and 'PCI LEVEL 1 COMPLIANT SECURITY' (with a padlock icon). Each card includes descriptive text and a 'Request Access', 'Check It Out', or 'More on Security' button.

Paid plans (with free trial).

SVN / Git / Hg hosting service: Google Code



The screenshot shows the Google Project Hosting homepage. At the top, there's a search bar with placeholder text "e.g. 'adwords' or 'open source'" and a "Search" button. Below the search bar, the page title "Google Project Hosting" is displayed. To the right of the title are links for "Home", "Docs", "Forum", "Terms", and a plus sign icon. A banner below the title states "Google Project Hosting powers Project Hosting on Google Code and Eclipse Labs." There are two blue buttons: "Project Hosting on Google Code" and "Eclipse Labs". A section titled "How do I start?" lists three items: "Search Google Code or Eclipse Labs for open source projects", "Contribute open source to Google Code or Eclipse Labs", and "Create a project on Google Code or Eclipse Labs". Another section titled "More information" lists three items: "Philosophy - what Google Project Hosting is (and isn't)", "FAQ - your questions, answered", and "What's new? - learn about the latest features". At the bottom, there's a copyright notice for 2011 Google and links to "Code Home", "Site Terms of Service", "Privacy Policy", and "Site Directory". It also mentions that Google Code is offered in multiple languages.

Google code e.g. "adwords" or "open source"

Google Project Hosting

Google Project Hosting powers Project Hosting on Google Code and Eclipse Labs.

[Project Hosting on Google Code](#) [Eclipse Labs](#)

It provides a fast, reliable, and easy open source hosting service with the following features:

- Instant project creation on any topic
- Git, Mercurial and Subversion code hosting with 2 gigabyte of storage space and download hosting support with 2 gigabytes of storage space
- Integrated source code browsing and code review tools to make it easy to view code, review contributions, and maintain a high quality code base
- An issue tracker and project wiki that are simple, yet flexible and powerful, and can adapt to any development process
- Starring and update streams that make it easy to keep track of projects and developers that you care about

©2011 Google - [Code Home](#) - [Site Terms of Service](#) - [Privacy Policy](#) - [Site Directory](#)

Google Code offered in: [English](#) - [Español](#) - [日本語](#) - [한국어](#) - [Português](#) - [Русский](#) - [中文\(简体\)](#) - [中文\(繁體\)](#)

Free for open source projects.



Aalto University
Media Factory

03. QR Code: bits about a project from its atoms

Retrieving the source code of an object

The screenshot shows a blog post titled "ARDUINO TOOL THAT CONNECTS EACH BOARD TO ITS OWN SOURCE" by Dave Vondle on March 15, 2012. The post features a screenshot of the Arduino IDE interface with the "Blink" sketch open. A dropdown menu is shown, with the "Retrieve Source" option highlighted. The post discusses the challenge of tracking down source code for physical devices and introduces a tool to solve this problem. It includes links to a GitHub page and a direct download.

15 MAR '12 ARDUINO TOOL THAT CONNECTS EACH BOARD TO ITS OWN SOURCE BY DAVE VONDLE

Arduino File Edit Sketch Tools Help

Auto Format ⌘T
Archive Sketch
Fix Encoding & Reload
Serial Monitor ⌘M
Retrieve Source
Upload Source to Github
Board
Serial Port
Programmer
Burn Bootloader

If you create something with Arduino and put it out into the world, there is no well-established link to the source. If you personally made the device, the source can get lost over time. If you didn't create it, you could have a tough time tracking the source down. You have the physical device, why can't it tell you where its code lives?

I made a tool for Arduino called "Upload-And-Retrieve-Source" that for the most part solves this problem.

Github page [here](#), direct download link [here](#)

HOME ABOUT CONTACT

ABOUT IDEO LABS

IDEO Labs is a place where we can show bits of what we're working on, talk about prototyping, and share our excitement over the tools that help us create.

MORE

SUBSCRIBE TO RSS

CATEGORIES

3D
Arduino
flash
Hack
iPhone
multi-touch
open source

What about retrieving the information about a project, in order to be able to modify it? If we work with Arduino, there is this software from IDEO.

Source: <http://labs.ideo.com/2012/03/15/arduino-tool-that-connects-each-board-to-its-own-source/>

Dead Drops: local (really!) information

The screenshot shows the official website for 'dead drops'. The main content area displays the 'About' page, which includes a photograph of a small USB drive embedded in a brick wall. Below the photo is a detailed description of the project. To the right of the main content is a sidebar containing a search bar, a 'Pages' menu with links to various project components like the database and mobile apps, and social media sharing options for Facebook and Twitter.

About

'Dead Drops' is an anonymous, offline, peer to peer file-sharing network in public space. USB flash drives are embedded into walls, buildings and curbs accessible to anybody in public space. Everyone is invited to drop or find files on a dead drop. Plug your laptop to a wall, house or pole to share your favorite files and data. Each dead drop is installed empty except a readme.txt file explaining the project. 'Dead Drops' is open to participation. If you want to install a dead drop in your city/neighborhood follow the '[how to](#)' instructions and submit the location and pictures.

Search
To search, type and hit enter

Pages

- Dead Drops
 - Database, Map & Submit
 - FAQ
 - How to make your own
 - Manifesto
 - Mobile Apps

Like Emile Hooge and 20,670 others like this.

85 Flattr

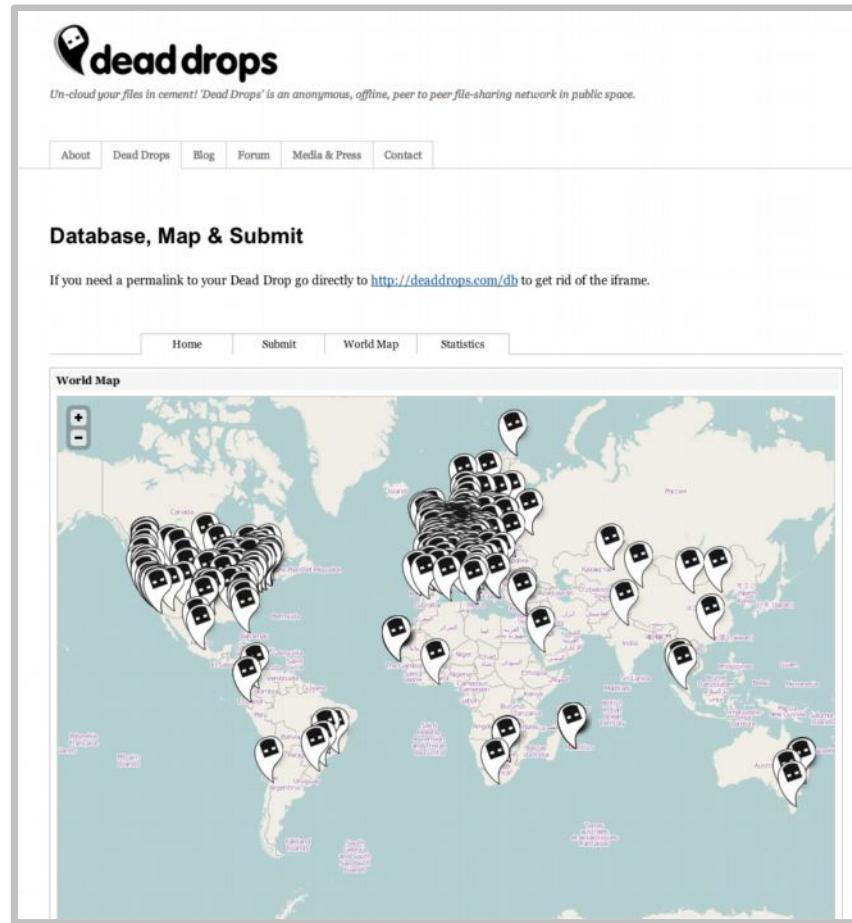
Aram Bartholl
Dead_Drops

Dead_Drops hehe THXI RT @basisffm
Danke @arambartholl für den
spannenden Vortrag! Die Doku legen wir
auf unseren neuen @dead_drops
[dardoor.com/dead_drops.html](#)

'Dead Drops' is an anonymous, offline, peer to peer file-sharing network in public space. USB flash drives are embedded into walls accessible to anybody.

Source: <http://deaddrops.com/>

Dead Drops: how to find them



'Dead Drops' is an anonymous, offline, peer to peer file-sharing network in public space. USB flash drives are embedded into walls accessible to anybody.

Source: <http://deaddrops.com/dead-drops/db-map/>

Spime: sp(ace) + (ti)me of an object



September 2005
5 1/2 x 7 1/2, 152 pp., 62 illus.
\$20.95/£14.95 (PAPER)
Trade

ISBN-10:
0-262-69326-7
ISBN-13:
978-0-262-69326-4

ADD TO CART

Other Editions

Cloth (2005)

Series

Mediaworks Pamphlets

Shaping Things

Bruce Sterling

Designed by Lorraine Wild

► [Table of Contents and Sample Chapters](#)

"*Shaping Things* is about created objects and the environment, which is to say, it's about everything," writes Bruce Sterling in this addition to the Mediawork Pamphlet series. He adds, "Seen from sufficient distance, this is a small topic."

Sterling offers a brilliant, often hilarious history of shaped things. We have moved from an age of artifacts, made by hand, through complex machines, to the current era of "gizmos." New forms of design and manufacture are appearing that lack historical precedent, he writes; but the production methods, using archaic forms of energy and materials that are finite and toxic, are not sustainable. The future will see a new kind of object—we have the primitive forms of them now in our pockets and briefcases: user-alterable, baroquely multi-featured, and programmable—that will be sustainable, enhanceable, and uniquely identifiable. Sterling coins the term "spime" for them, these future manufactured objects with informational support so extensive and rich that they are regarded as material instantiations of an immaterial system. Spimes are designed on screens, fabricated by digital means, and precisely tracked through space and time. They are made of substances that can be folded back into the production stream of future spimes, challenging all of us to become involved in their production. Spimes are coming, says Sterling. We will need these objects in order to live; we won't be able to surrender their advantages without awful consequences.

The vision of *Shaping Things* is given material form by the intricate design of Lorraine Wild. *Shaping Things* is for designers and thinkers, engineers and scientists, entrepreneurs and financiers—and anyone who wants to understand and be part of the process of technosocial transformation.

About the Author

Hugo Award-winning science fiction author and futurist Bruce Sterling has been called by *Time* "perhaps the sharpest observer of our media-choked culture working today in any genre." Three of his novels have been *New York Times* Notable Books of the Year, and he has been a contributing writer for *Wired* since its conception. In 2005 he is "Visionary-in-Residence" at Art Center College of Design, Pasadena. Bruce Sterling's blog *Beyond the Beyond* has been active since 2003.

Spime is a neologism for a currently theoretical object that can be tracked through space and time throughout the lifetime of the object.

Source: <http://mitpress.mit.edu/catalog/item/default.asp?id=10603&ttype=2>
<http://en.wikipedia.org/wiki/Spime>

Evrythng.com

The screenshot shows the homepage of Evrythng.com. The header features the "EVRYTHNG" logo with a trademark symbol, set against a background of various icons representing different physical objects like a plane, a car, and a house. The main navigation menu includes "LOG IN", "HOME", "PRODUCTS AND SERVICES", "ABOUT US", and "DEVELOPERS". A central black rectangular area contains a small circular icon and a red call-to-action button labeled "MORE ►". Below this, a large orange headline reads "Because every physical thing can be digitally connected." A descriptive paragraph explains that EVRYTHNG is a software engine for creating Active Digital Identities, allowing products and objects to be part of the Web. Two sections at the bottom, "Engine ►" and "Services ►", each list three bullet points with corresponding icons.

Because every physical thing can be digitally connected.

EVRYTHNG is a software engine for creating Active Digital Identities. These are unique online profiles for products and other objects to make them part of the Web. Now every physical thing can be digitally connected.

Engine ►

- Give a unique online profile to any physical thing
- Share and manage access with others
- Use a rich set of APIs to build apps and services

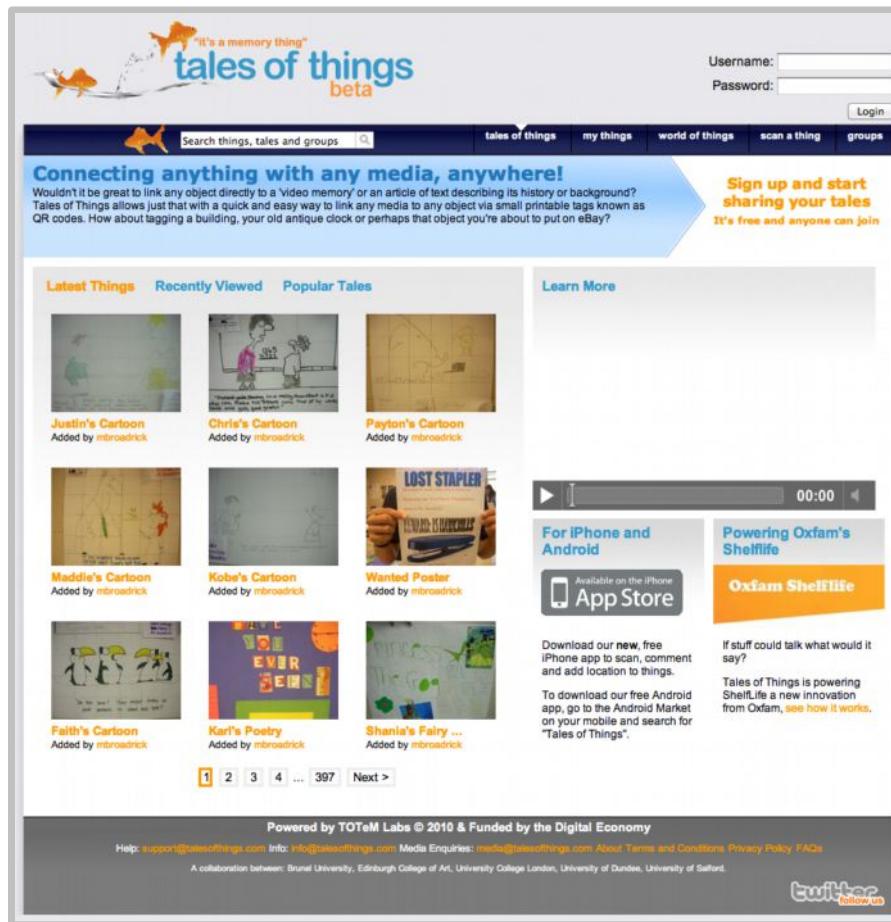
Services ►

- Design how to connect each product with customers
- Build connected product experiences and services
- Use our portfolio of existing product applications

EVRYTHNG is a software engine for creating Active Digital Identities, unique online profiles for objects to make them part of the Web and digitally connected.

Source: <http://evrythng.com/>

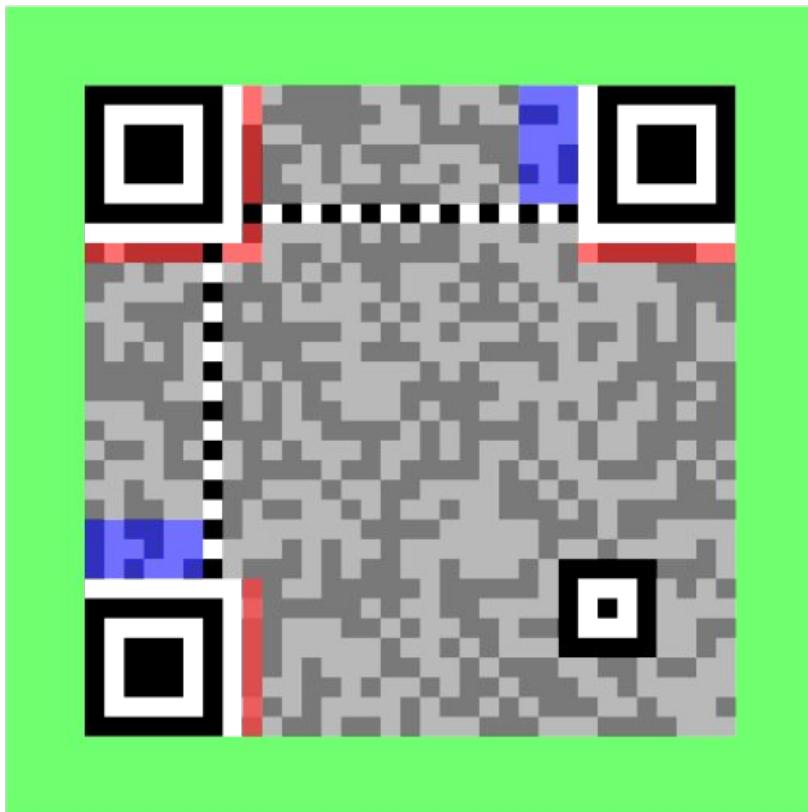
Tales of things (.com)



Tales of Things allows just that with a quick and easy way to link any media to any object via small printable tags known as QR codes.

Source: <http://www.talesofthings.com/>

Q(uick)R(esponse) Code



1. Version information
2. Format information
3. Data and error correction keys
4. Required patterns
 - 4.1. Position
 - 4.2. Alignment
 - 4.3. Timing
5. Quiet zone

QR Code is the trademark for a type of matrix / 2D barcode that can encode four standardized kinds of data (numeric, alphanumeric, byte/binary, Kanji).

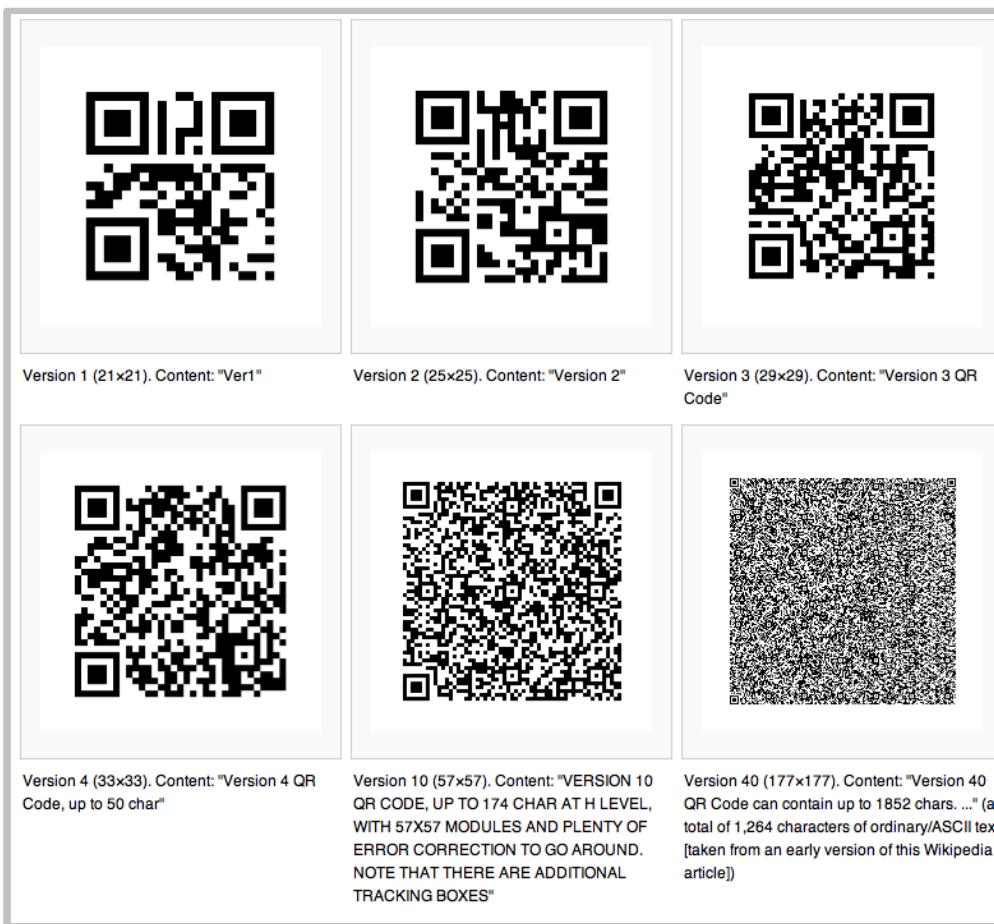
Source: http://en.wikipedia.org/wiki/Qr_code

QR Code: data storage

The amount of data that can be stored in the QR Code symbol depends on the **datatype** (mode, or input character set), **version** (1,...,40, indicating the overall dimensions of the symbol), and **error correction level** (L[ow], M[edium], Q[uality], H[igh]). The maximum storage capacities are:

- * **Numeric only:** max. 7,089 characters (0, 1, 2, 3, 4, 5, 6, 7, 8, 9)
 - * **Alphanumeric:** max. 4,296 characters (0–9, A–Z [upper-case only], space, \$, %, *, +, -, ., /, :)
 - * **Binary/byte:** max. 2,953 characters (8-bit bytes) (23624 bits)
 - * **Kanji/Kana:** max. 1,817 characters
-

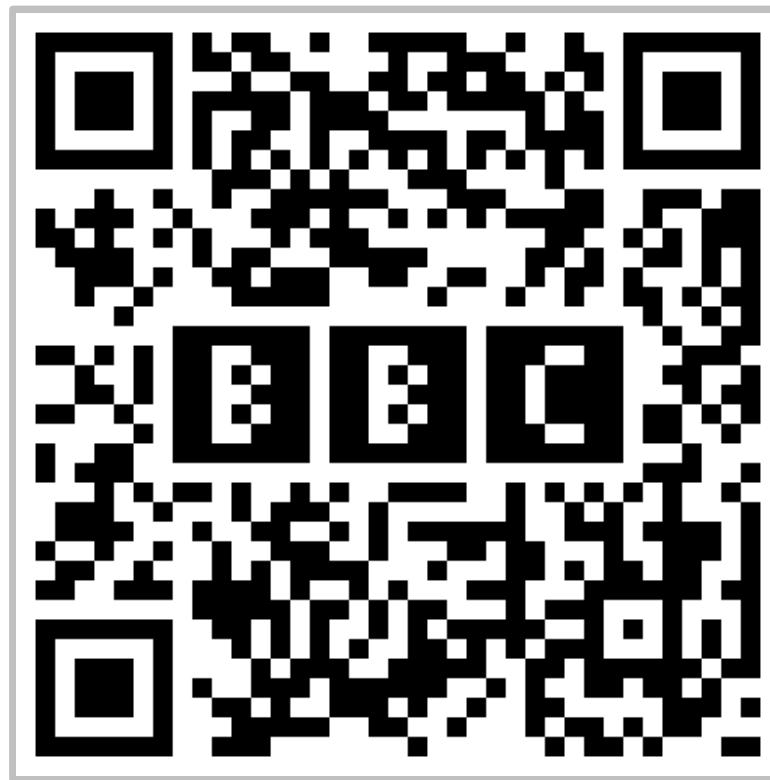
QR Code: data storage



The more information is encoded, the finer the details of the code.

Source: http://en.wikipedia.org/wiki/Qr_code

QR Code: error tolerance and customization



You can “hack” a QR Code thanks to its tolerance to errors.

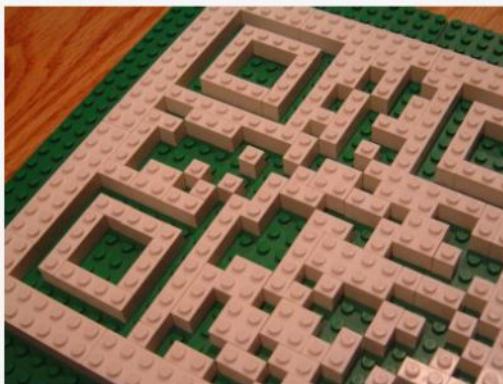
QR Codes: not just printed paper

QR codes in Lego

I've been experimenting with [QR codes](#) (2-d bar codes) with my mobile phone. While helping my daughter assemble a Lego® spaceship, I had the random thought that maybe I could build a QR code out of Lego. Would such a QR code be readable, or would the bumps and gaps mess it up?

To find out, I generated a QR code and started assembling it out of my daughter's spare Lego pieces. This would have been much easier if she had a lot of small white pieces, so I needed to really dig to find the necessary 1x1 blocks. (I'm pretty sure that determining if a code can be tiled with a specific set of blocks is a NP-complete problem, but my manual heuristics were sufficient to get it assembled.)

The moment of truth... would it scan? No, not at all. The problem was I needed a border around the code block and I'd put the pieces too close to the edge. So I laboriously shifted all the pieces over and added a white border.



LEGO Star Wars
MagnaGuard Starfighter...
LEGO

Buy from amazon.com

Privacy Information

With the border, the QR code scanned amazingly well. Here's a camera-eye view. If you have a barcode-enabled phone, you can probably scan this off the screen:



You can create QR codes with existing materials, objects and building blocks...

Source: <http://www.arcfn.com/2009/01/qr-codes-in-lego.html>

QR Codes: not just printed paper

A QR CODE BUILT FROM EVERYDAY OBJECTS

THURSDAY 12.15.2011 , POSTED BY BENJAMIN STARR

SHARE:

 Tweet 25

 Like 16

 +1 4

 Pin it

 Submit

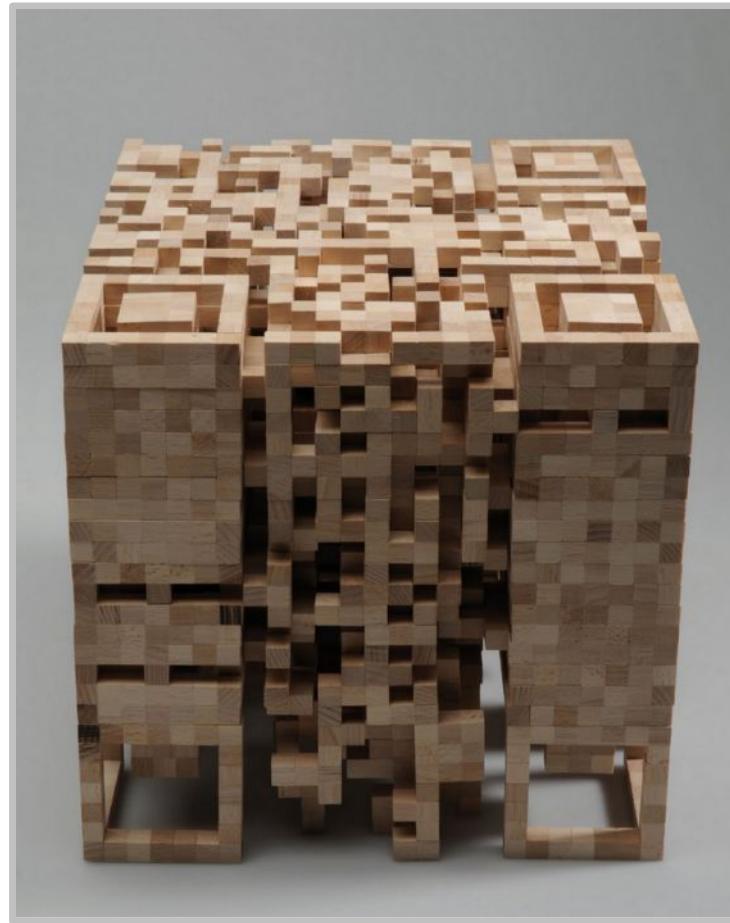


QR codes seem to be cropping up everywhere you look, from tags in electronics stores to flyers stapled to telephone poles... so it's really nice to see this [completely original project](#) from David Sykes. To promote his newly launched website, Sykes created an 8 foot square model of a QR code using objects sourced directly from his studio. He then photographed the 'cityscape' of stuff from above and made 8x10 prints retaining the full frame of the shot. By including the studio floor and rebates in the image, he gave the whole piece a further sense of depth. Possibly my favorite aspect of the project was the mysterious way each print arrived at its recipient: in an anonymous photograph mailer with no mention of who it was from. Brilliant!

You can create QR codes with existing materials, objects and building blocks...

Source: <http://www.visualnews.com/2011/12/15/a-qr-code-built-from-everyday-objects/>

QR Codes: not just printed paper



You can create QR codes with existing materials, objects and building blocks...

Source: <http://www.elenabelmann.blogspot.com/2011/02/objekt-als-informationstrager.html>

QR Codes: an easy way to create them

 Create QR codes from different kinds of data, and download your code both in a **rasterized (PNG)** and **vector format (PDF, SVG, EPS)**.
Feedback/suggestions? [Leave your message.](#)

What do you want to turn into a QR code?

Regular text

Hyperlink

Phone number

Email address

meCard

vCard

WiFi settings

more options

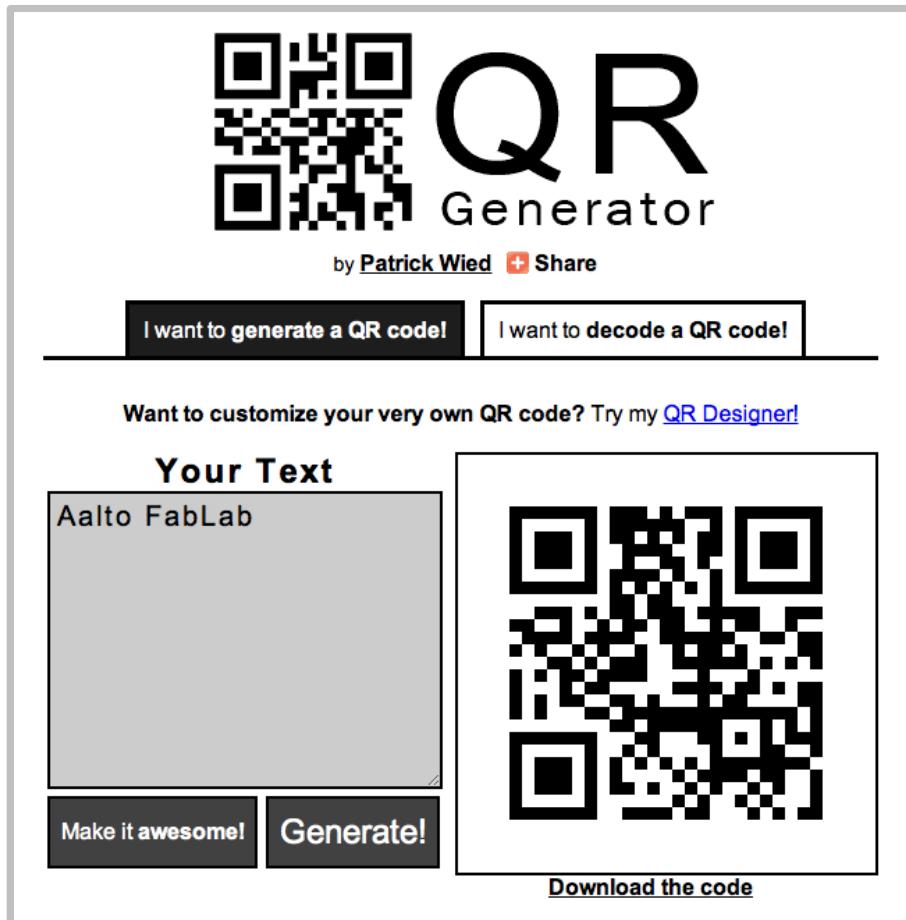
CREATE

[!\[\]\(94647d181b7bbf091d551e429ab82a18_img.jpg\) Like](#) [!\[\]\(4815bb41f970984f63fc9b2723de5bf1_img.jpg\) Tweet](#)

Many online free services will create QR Codes for you starting from many different kinds of information.

Source: <http://qrcode.littleidiot.be/>

QR Codes: an easy way to create (and decode) them



Many online free services will create QR Codes for you starting from many different kinds of information.

Source: <http://www.patrick-wied.at/static/qrgen/>

QR Codes: an easy way to create them

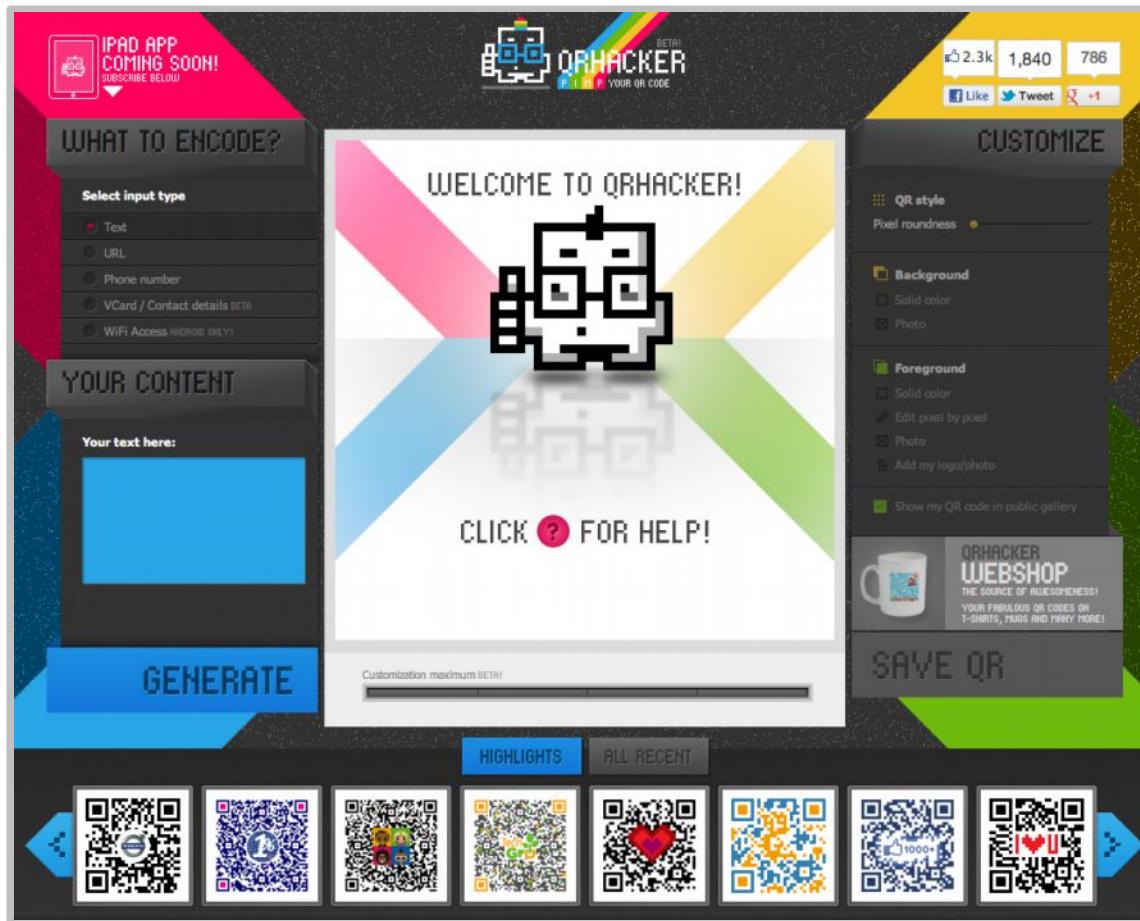
The screenshot shows the QRStuff.com website interface for creating QR codes. The top navigation bar includes links for HOME, ABOUT THIS SITE, QR CODES, PHONE SOFTWARE, EXAMPLES, FAQS, AFFILIATES, and social media links for Twitter, Facebook, and LinkedIn. A banner at the top right offers a \$3.95 subscription. The main form is divided into four sections:

- 1 DATA TYPE:** A list of options including Website URL, YouTube Video, Google Maps Location, Twitter, Facebook, LinkedIn, Foursquare, iTunes Link, Plain Text, Telephone Number, Skype Call, SMS Message, Email Address, Email Message, Contact Details (VCARD), Event (VCALENDAR), Wifi Login (Android Only), and Paypal Buy Now Link. The "Website URL" option is selected.
- 2 CONTENT:** A field labeled "Website URL" containing "http://". Below it are two radio button options: "Embed URL into code as-is" (selected) and "Use our qrs.ly URL shortener". A note below states: "Subscribers get analytics and dynamic QR code editing when using our URL shortener."
- 3 FOREGROUND COLOUR:** A color picker showing a gradient from purple to red. It includes a "Foreground Colour (Hex)" input field with "000000" and a color swatch. A note below says: "Subscribers can also specify image size and resolution, and choose from 6 raster or vector output file types and 4 error correction levels."
- 4 OUTPUT TYPE:** Buttons for DOWNLOAD, PRINT, EMAIL, BATCH FILE UPLOAD, and PUT YOUR CODE ON OTHER STUFF. The "PUT YOUR CODE ON OTHER STUFF" section shows examples like a t-shirt, mug, and bag with QR codes.

Many online free services will create QR Codes for you starting from many different kinds of information.

Source: <http://www.qrstuff.com/>

QR Codes: an easy way to create them



Many online free services will create QR Codes for you starting from many different kinds of information.

Source: <http://www.qrhacker.com/>

QR Codes: an easy way to create a stencil

The screenshot shows a web page from the Make: magazine website. The header features the 'Make:' logo with the tagline 'technology on your time'. Below the header are four navigation tabs: 'Blog' (highlighted in green), 'MAKE Magazine' (red), 'Videos/Podcasts' (blue), and 'Make: Projects' (orange). A breadcrumb navigation bar indicates the current location: 'Home / Culture jamming / QR Stenciler'. The main title of the article is 'QR Stenciler'. To the left of the main content, there is a sidebar with text from Golan Levin at fffff.at that reads: 'writes: Yep, it's a QR code stencil'. The main content area contains a photograph of a QR code stencil painted on a concrete surface. Below the image, a paragraph of text discusses the 'QR_STENCILER' utility and 'QR_HOBO_CODES'.

Golan
Levin at
fffff.at
writes:

Yep,
it's a
QR
code
stencil

generator! We present **QR_STENCILER**, a free, fully-automated utility which converts QR codes into vector-based stencil patterns suitable for laser-cutting. Additionally, we present **QR_HOBO_CODES**, a series of one hundred QR stencil designs which, covertly marked in urban spaces, may be used to warn people about danger or clue them into good situations. The QR_STENCILER and the QR_HOBO_CODES join the [Adjustable Pie Chart Stencil](#) in our suite of homebrew "infoviz graffiti" tools for locative and situated information display.

... and there are even libraries for creating stencil of QR Codes that you can laser cut!

Source: <http://blog.makezine.com/2011/07/20/qr-stenciler/>

QR Codes: you can track the position as well

springwise.com
YOUR ESSENTIAL FIX OF ENTREPRENEURIAL IDEAS

In Croatia, postage stamps made trackable via QR code

Croatia's Hrvatska Pošta has created postage stamps featuring QR codes that can be used to track mail and confirm delivery.

1st November 2011 in Government.

As postal services around the globe struggle to keep up with the online era, we've already seen all-digital stamps rolled out in Denmark. Now it looks like Croatia's own Hrvatska Pošta has come up with a different solution: postage stamps featuring QR codes that can be used to track the mail and confirm delivery.

As you can link an identity to an object with a QR Code, then we can track where this identity moves.

Source: <http://www.springwise.com/government/croatia-postage-stamps-trackable-qr-code/>

QR Codes: you can add related information

springwise.com
YOUR ESSENTIAL FIX OF ENTREPRENEURIAL IDEAS

On cigarette packages, QR codes reveal a nearby place to smoke

Ronhill has begun to use QR codes on its cigarette packaging to help consumers find a nearby place to smoke.



8th September 2011 in Lifestyle & Leisure.

Just as today's prevalent smoking bans can lead to a lot of cigarette butts on the doorsteps of public places, so the increasingly smoke-free world can make it difficult for smokers to find a place to enjoy their habit. Enter Croatian cigarette brand Ronhill, which has begun to use QR codes on its packaging to help consumers find a nearby place to smoke.

You can provide related information and build apps and services around an object!

Source: http://www.springwise.com/lifestyle_leisure/cigarette-packages-qr-codes-reveal-nearby-place-smoke/

QR Codes: you can add related information

Steelcase

PRODUCTS SERVICES RESOURCES SHOP COMPANY

Leap: QR Codes

Overview Gallery Environmental Adjustability QR Codes

QR codes help users learn how to properly adjust the Leap chair.

To help users quickly find information on how to properly adjust their chairs to be more comfortable, Steelcase will be adding QR codes to the arms of its best selling ergonomic task chairs, such as Leap (available fall 2011).

How does the QR code work?

Once a user scans the QR code with a mobile device, they are taken to a mobile-friendly site that plays an interactive video showing chair adjustments.

The QR code connects users to information about their chair that is relevant to them:

- how to adjust the chair
- how to clean the chair
- how they can purchase a chair for their home office

Find a [dealer](#) near you.



You can provide the instruction manual of an object!

Source: <http://www.steelcase.com/en/products/category/seating/task/leap/pages/qr-codes.aspx>
<http://www.fastcodesign.com/1665090/an-office-chair-with-built-in-video-instruction-manual>

QR Codes: you can add the source code!



SUPERMECHANICAL objects that connect us

Objects Blog About

REV->TABLE

Products used to be less disposable; they came with repair manuals and a personal history. rev->table picks up where they left off.

This side table is built to last with quality components. And when those have outlived their useful life, the digital blueprint is a permanent part of rev->table. Use your smartphone to read the digital design file embedded in each part and create replacements. Modify the legs to make them longer or angled or art deco. This is furniture for the future of manufacturing.

Solid oak, powder-coated steel, laser-etched aluminum. Crafted in the United States using the best of traditional and digital construction.

21"H x 16"W x 16"L; 10.5 lbs.

 Tweet

... and finally you can even provide directly the source code of an object, not just a link to its source online!

Source: <http://supermechanical.com/rev/>

http://www.springwise.com/style_design/future-repairs-tables-digital-blueprints-etched-surface/

QR Codes: you can add the source code!

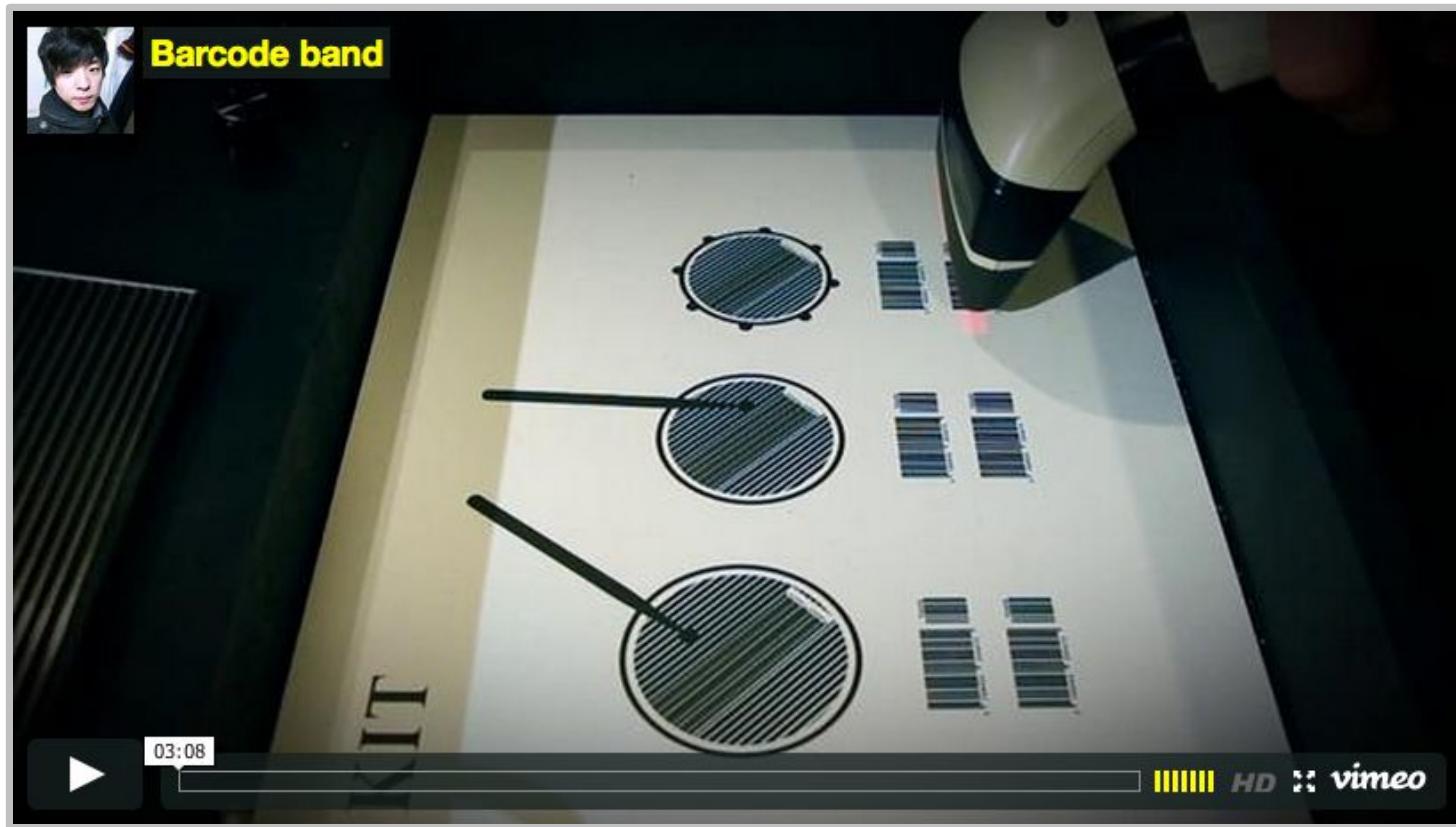


... and finally you can even provide directly the source code of an object, not just a link to its source online!

Source: <http://supermechanical.com/rev/>

http://www.springwise.com/style_design/future-repairs-tables-digital-blueprints-etched-surface/

Bar Codes: retrieving information through design!



... you can even use codes and existing objects to design a new system based on retrieving information!

Source: <http://www.designboom.com/weblog/cat/16/view/22271/barcode-band-scans-its-way-to-new-music.html>
<http://vimeo.com/41132461>

QR Codes: which bits?

PCWorld » Security

Recommend: 0 Comments Print

Beware of Malicious QR Codes

By Hamish Barwick, Computerworld-Australia

Cyber criminals have taken advantage of the proliferation of quick response (QR) codes on posters and marketing material by putting their own malicious stickers over the top of legitimate ones, warns security vendor AVG Australia and New Zealand.

QR codes can be read by scanning the sticker or typing in the code using a smartphone with a QR code reader.

In its latest report, entitled AVG Community Powered Threat Q4 2011, the company warns that cyber criminals are now producing their own QR codes which contain text and URLs with hidden malware. For example, one piece of malware called 'JimmRussia' sends costly SMS messages to premium numbers and also redirects to a URL which downloads a malicious file.

AVG Technologies chief technology officer, Yuval Ben-Itzhak, said in a statement that the smartphone user does not know what lurks behind the code until the malware is installed and running. "Putting a malicious QR code sticker onto existing marketing material or replacing a website's bona fide QR code with a malicious one could be enough to trick many unsuspecting people," he said.



We are embedding information on an object, and we use a device for retrieving it... but which kind of information?

Source: http://www.pcworld.com/article/248843/beware_of_malicious_qr_codes.html

Virus: a dangerous information



Some kind of information (like viruses) can modify, deform and damage an object...

Source: <http://www.platform21.nl/page/3915/en>
<http://www.nextnature.net/2009/04/ikea-lamp-catches-elephantiasis-virus/>

Sound: a dangerous information



Some kind of information (like sound) can modify, deform and damage an object...

Source: <http://www.dezeen.com/2012/07/13/noize-chairs-by-estudio-guto-requena/>
<http://vimeo.com/45568573>

QR Code: you can even print it (in 3D)

The screenshot shows a Thingiverse page for a "Data Matrix Dualstrusionator". The main image is a photograph of a 3D-printed QR code being printed by a 3D printer. Below the image, there's a brief description of the script, which creates a positive/negative Data Matrix barcode suitable for experimental dual extruders. It also mentions that encoding the whole Thingiverse URL results in a large barcode, so it's better to encode the Thingiverse thing number. There are links to the OpenSCAD module and the script itself. The "Downloads" section lists three files: "datamatrix dual...scad", "datamatrix duals...rb", and "number.a.stl". The "Instructions" section provides detailed steps for using the script with OpenSCAD and Ruby. The "Comments" section has a link to leave a comment. On the right side, there's a sidebar with "Latest From The Thingiverse Blog" and a snippet from a blog post.

Welcome, friend.
Please [REGISTER](#) or [LOGIN](#) to rock.

THINGS TOOLS TAGS BLOG SEARCH UPLOAD A THING

Digital designs for real, physical objects. A Universe of Things!

Data Matrix Dualstrusionator

Created by [tbuser](#)

Created on Oct 1, 2011

Derived from [OpenSCAD Bitmap Fonts Module](#) by [tbuser](#)

This script lets you create a positive/negative Data Matrix[1] Bar Code suitable for feeding into your experimental dual extruders. Or if you just want a negative space object barcode to cut into another model.

You can encode the whole thingiverse url in your barcode, but the result will be pretty big. Probably too large to stamp into another model. However, you can just encode the Thingiverse thing number to get a pretty small code!

1: en.wikipedia.org/wiki/Data_Matrix

[Twitter](#) 4 [Like](#) 0 [Pin it](#) [submit](#) [Flattr](#) 2

Downloads

Sort By	Date	Popular	File Type
	datamatrix dual...scad	2 kb / 33 downloads	7 months ago
	datamatrix duals...rb	924 b / 34 downloads	7 months ago
	number.a.stl	114 kb / 39 downloads	7 months ago

Instructions

Install OpenSCAD, download my OpenSCAD bitmap library, and make sure you have Ruby on your system. Then run `gem install semacode`. Now you can edit the variables in `datamatrix_dualstrusionator.scad` and `.rb` and run the `.rb` script. It will shell out to OpenSCAD and generate an `a.stl` and a `b.stl`. You'll probably get the best results if you print it vertically. Note: the bigger the string, the painfully longer it takes. OpenSCAD is slow. :-(

Comments

[Leave a comment](#)

Latest From The Thingiverse Blog

[You Know You're Onto Something...](#)

...when you're having electron microscopes take the final photos of your 3D prints. This car is a little under 300 microns long, or just about the right size to sit inside the more fine-pitch extruder nozzle tips you can get these days for your thermoplastic printers. Atoms are the

If you have a 3D printer that can print at least two different materials....

Source: <http://www.thingiverse.com/thing:12104>

QR Code: for real walls

QR code stickers turn real-world objects into digital conversations

QRawr enables users to transform physical objects into Facebook-style walls, with QR code stickers containing text and photo messages.



19th January 2012 in **Lifestyle & Leisure**.

We've seen QR codes being used to convey playful messages before when we covered [Qkies](#) cookies. Now San Diego-based [QRawr](#) is giving users the ability to transform any physical object into a Facebook-style digital wall, with QR code stickers linking to the users' own photos, videos or text.

QRawr hope their stickers, printed with unique QR codes, will turn real-world items into online conversations. Users must first download the QRawr iOS app to create their own message on the QR code stickers. QRawr encourage users to be creative, suggesting the stickers could be left in restaurants linking to photos of ordered meals, or at the end of a hiking trail with a message for others who complete the trek. Spotters of QRawr stickers can scan them — once they've downloaded the app — and post comments, pictures and videos in response. QRawr have built the initial version of the iPhone app and are seeking funding via [Kickstarter](#) to create an Android version and add features such as geolocation.

QRawr's founders believe the entertainment potential of QR codes has to-date been neglected. If you agree, this could this be an opportunity for you.

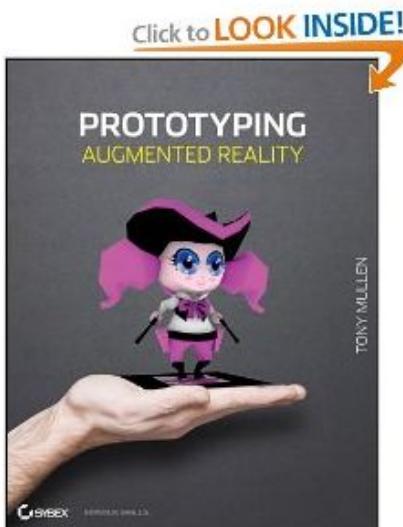
Website: www.qrawr.com

Contact: team@qrawr.com

Not only Dead Drops can be used for embedding information on a wall!

Source: http://www.springwise.com/lifestyle_leisure/qr-code-stickers-turn-real-world-objects-digital-conversations/
<https://qrawr.com/>

After QR Code, Augmented Reality?



Prototyping Augmented Reality [Paperback]

Tony Mullen (Author)

★★★★★ (1 customer review) |  Like (2)

List Price: \$39.99

Price: **\$21.96** & eligible for **FREE Super Saver Shipping** on orders over \$25. [Details](#)
You Save: **\$18.03 (45%)**

[Special Offers Available](#)

In Stock.

Ships from and sold by **Amazon.com**. Gift-wrap available.

Only 3 left in stock--order soon (more on the way).

[32 new](#) from \$17.97 [13 used](#) from \$17.95



FREE Two-Day Shipping for students on millions of items. [Learn more](#)

[Share your own customer images](#)

Publisher: [learn how customers can search inside this book.](#)

Formats	Amazon Price	New from	Used from
Kindle Edition	\$25.00	--	--
Paperback	\$21.96	\$17.97	\$17.95

AR can be useful for adding a layer of bits on a space or object, and we can possibly think about its source code...

Source: <http://amzn.to/KUwNk6>

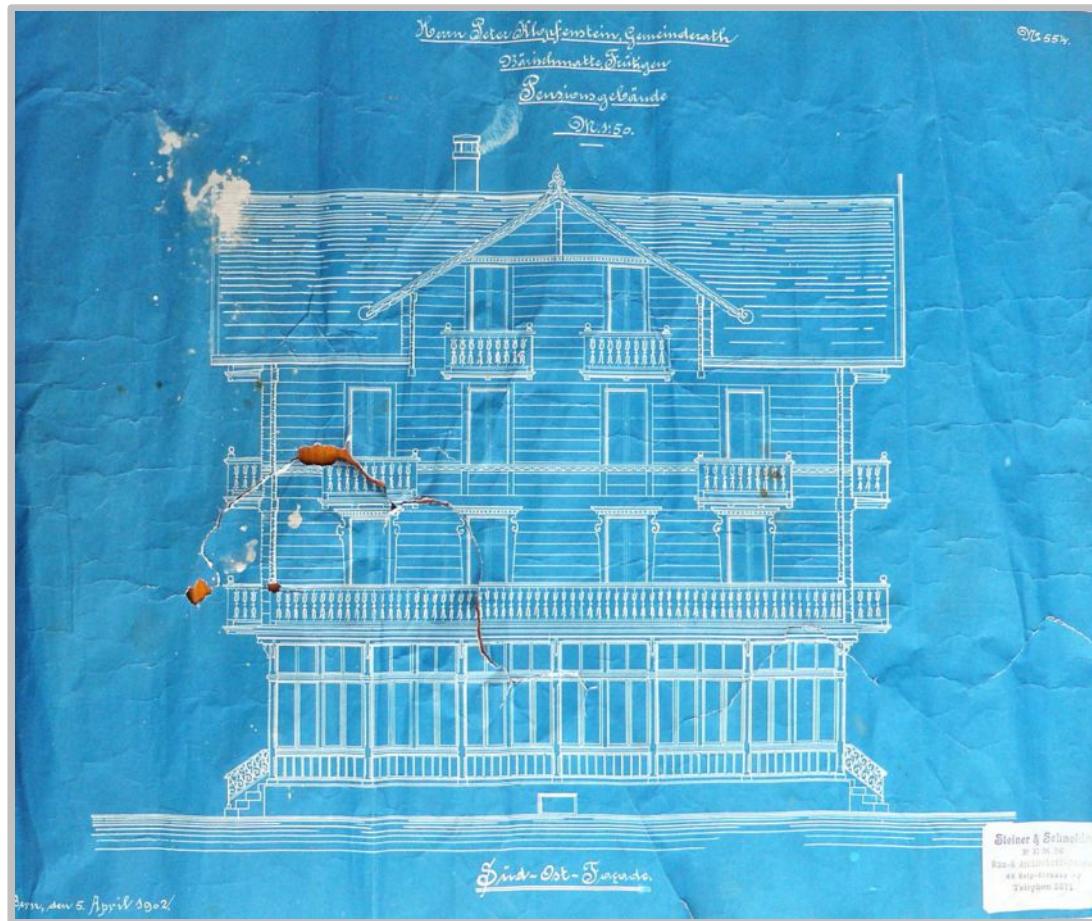


Aalto University
Media Factory

04.

Blueprints – suggestions for the documentation of the projects

Ok, the blueprints...



We need all the possible documentation for being able to replicate the project in other FabLabs.

Source: <http://commons.wikimedia.org/wiki/Category:Blueprints>

Patents (?)

Google 3d printing Massimo Merichinelli 1 + Share

Patents

Result 1 of 6 in this book for 3d printing - < Previous Next > - View all

Apparatus and methods for 3D printing David Russell et al.

Overview Abstract Drawings Description Claims

3d printing Go

Patent number: 7291002
Filing date: Apr 2, 2004
Issue date: Nov 6, 2007
Application number: 10/817,159

(12) United States Patent Russell et al.

(10) Patent No.: US 7,291,002 B2
(45) Date of Patent: Nov. 6, 2007

(54) APPARATUS AND METHODS FOR 3D PRINTING

(75) Inventors: David Russell, Burlington, MA (US); Andres Hernandez, Malden, MA (US); Joshua Kinsley, Arlington, MA (US); Andrew Berlin, Gloucester, MA (US)

(73) Assignee: Z Corporation, Burlington, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 422 days.

(21) Appl. No.: 10/817,159
(22) Filed: Apr. 2, 2004

(65) Prior Publication Data US 2004/0265413 A1 Dec. 30, 2004

Related U.S. Application Data
(60) Provisional application No. 60/472,922, filed on May 23, 2003.

(51) Int. Cl. B29B 13/02 (2006.01)
(52) U.S. Cl. 425/447; 425/375; 425/744; 264/308; 700/119

(58) Field of Classification Search 425/375, 425/744, 264/308, 401; 700/119, 120
See application file for complete search history.

(56) References Cited U.S. PATENT DOCUMENTS

4,247,508 A 1/1981 Housholder
4,250,372 A 2/1981 Foykin
4,752,352 A 6/1988 Feygin
4,853,717 A 8/1989 Harmon et al.
4,863,538 A 9/1989 Deckard
4,872,026 A 10/1989 Rasmussen et al.
4,929,402 A 5/1990 Bill
4,938,838 A 7/1990 Beaman et al.

(10) Patent No.: US 7,291,002 B2
(45) Date of Patent: Nov. 6, 2007

4,944,817 A 7/1990 Bourell et al.
4,996,010 A 2/1991 Motrek
5,017,753 A 5/1991 Deckard
5,027,134 A 6/1991 Harmon et al.
5,053,090 A 10/1991 Beaman et al.
5,076,869 A 12/1991 Bourell et al.
5,105,244 A 4/1992 Gair et al.
5,115,230 A 5/1992 Harmon et al.

(Continued)

FOREIGN PATENT DOCUMENTS DE 29907362 * 8/1999

(Continued)

OTHER PUBLICATIONS Evaluation of the Advanced Ceramics Market for New Applications of Three Dimensional Printing, M.S. Thesis, MIT 1993.

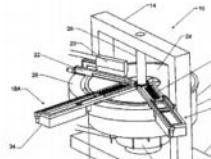
(Continued)

Primary Examiner - Robert Davis
Assistant Examiner - Maria Veronica Ewald
(74) Attorney, Agent, or Firm - Goodwin Procter LLP

(57) ABSTRACT

The invention relates to apparatus and methods for producing three-dimensional objects and auxiliary systems used in conjunction with the aforementioned apparatus and methods. The apparatus and methods involve extruding material, printing radially about a circular and/or rotating build table using multiple printheads. The apparatus and methods also include optionally using multiple build tables. The auxiliary systems relate to build material supply, printhead cleaning diagnostics, and monitoring operation of the apparatus.

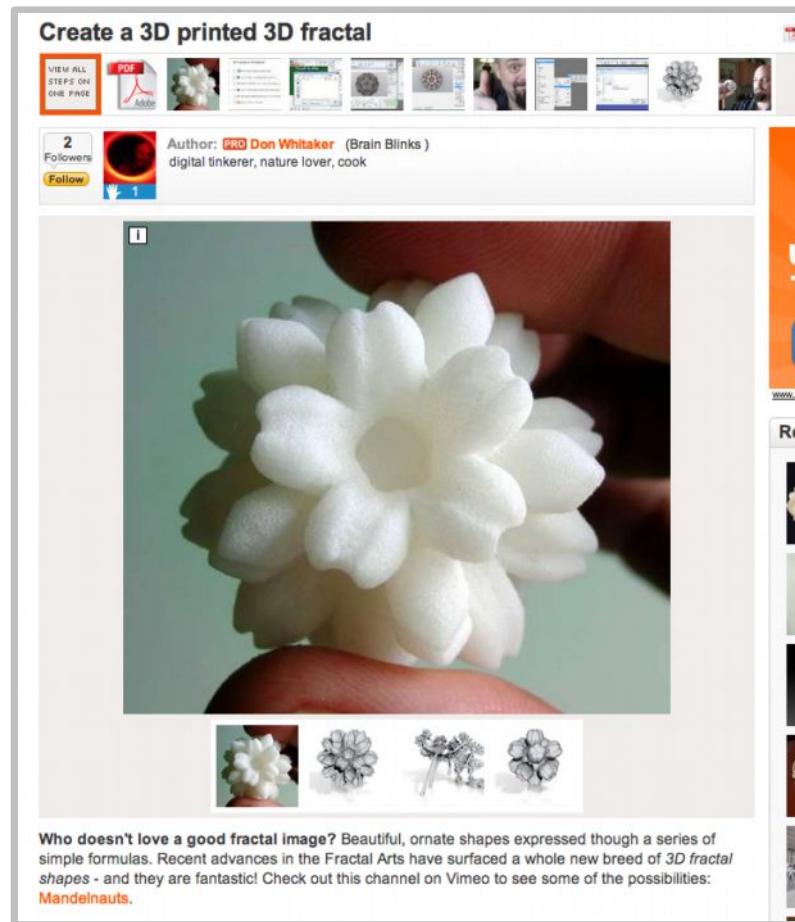
26 Claims, 19 Drawing Sheets



A very formal way of representing a project, but it could be useful.

Source: <http://bit.ly/K3YgxN>

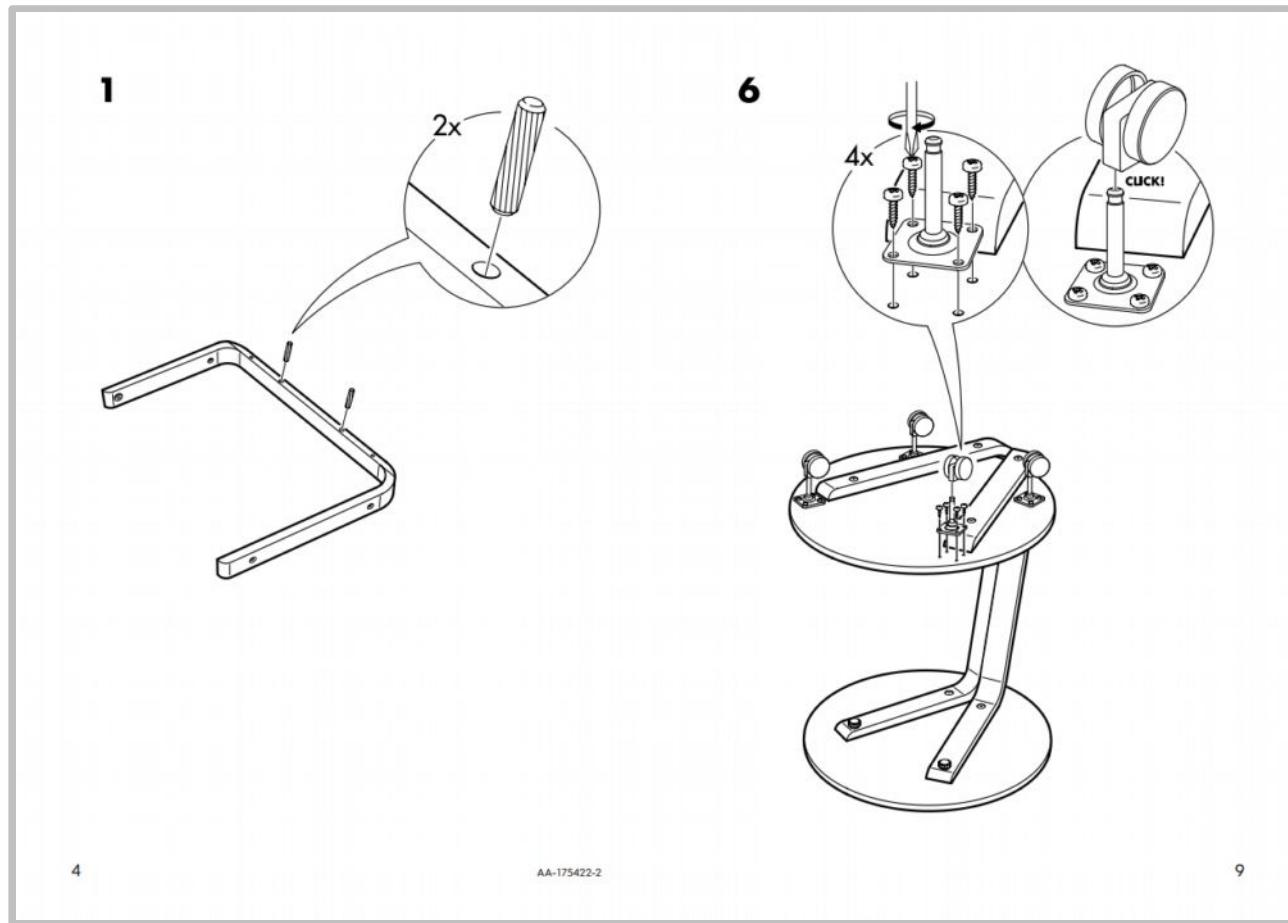
Instructions (process): Instructables.com



You can explain in a simple way the whole process...

Source: <http://www.instructables.com/id/Create-a-3D-printed-3D-fractal/?ALLSTEPS>

Instructions (process): IKEA



You can provide simple instructions...

Instructions (process) for dummies: IKEA



... simple instructions that can be understood by any culture!

Even videos...



Nowadays it is almost impossible to find a tutorial that it is not made with a video! Even researchers present their papers with a video.

Source: <http://youtu.be/dfNByi-rr04>

A”

Aalto University
Media Factory

Thank you!!

Massimo Menichinelli
Aalto Media Factory
massimo.menichinelli@aalto.fi
@openp2pdesign
<http://www.slideshare.net/openp2pdesign>



11.09.2012