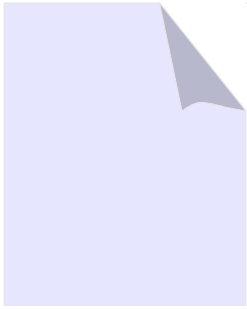


# What We're *Not* Talking About

- Conceived by Linus Torvalds around 2005
- Distributed Version Control vs. Central Version Control
- Why git is better than <insert favourite vcs>
- Extended Team Workflows
- Internal Workings

# Why Version Control?



welcome.html

# Why Version Control?

- So, what is the newest version of this file?
- Who changed the title?
- Yesterday, it was working just fine.
- Did you get my mail?
- Who's working on XYZ?
- Is this bugfix already included somewhere?
- Who is working on this project, anyway?

welcome.html

# What is Version Control?

## NOT Version Control

- Emailing files
- Central FTP / Fileshare
- Periodical Backup of your project directory
- Dropbox

„Better than nothing“  
Award in silver

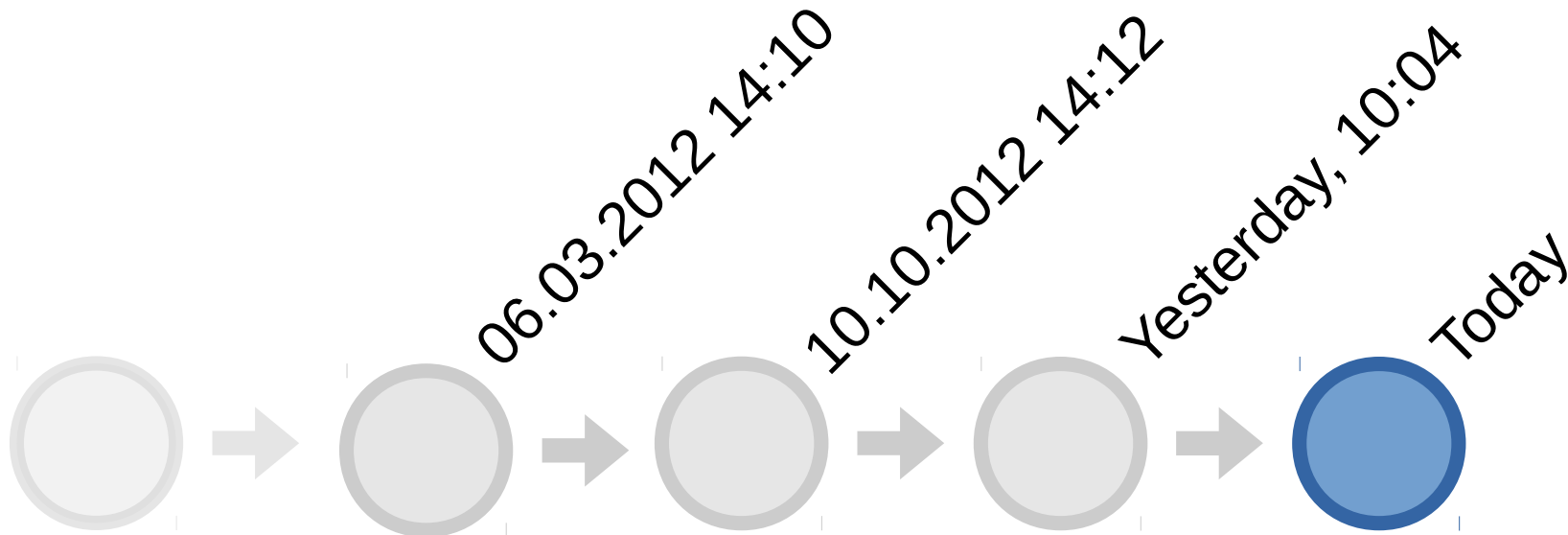
„Better than nothing“  
Award in bronze

## Version Control

- CVS (old)
- SVN
- Mercurial
- Bazaar
- Bitkeeper
- Git
- ...

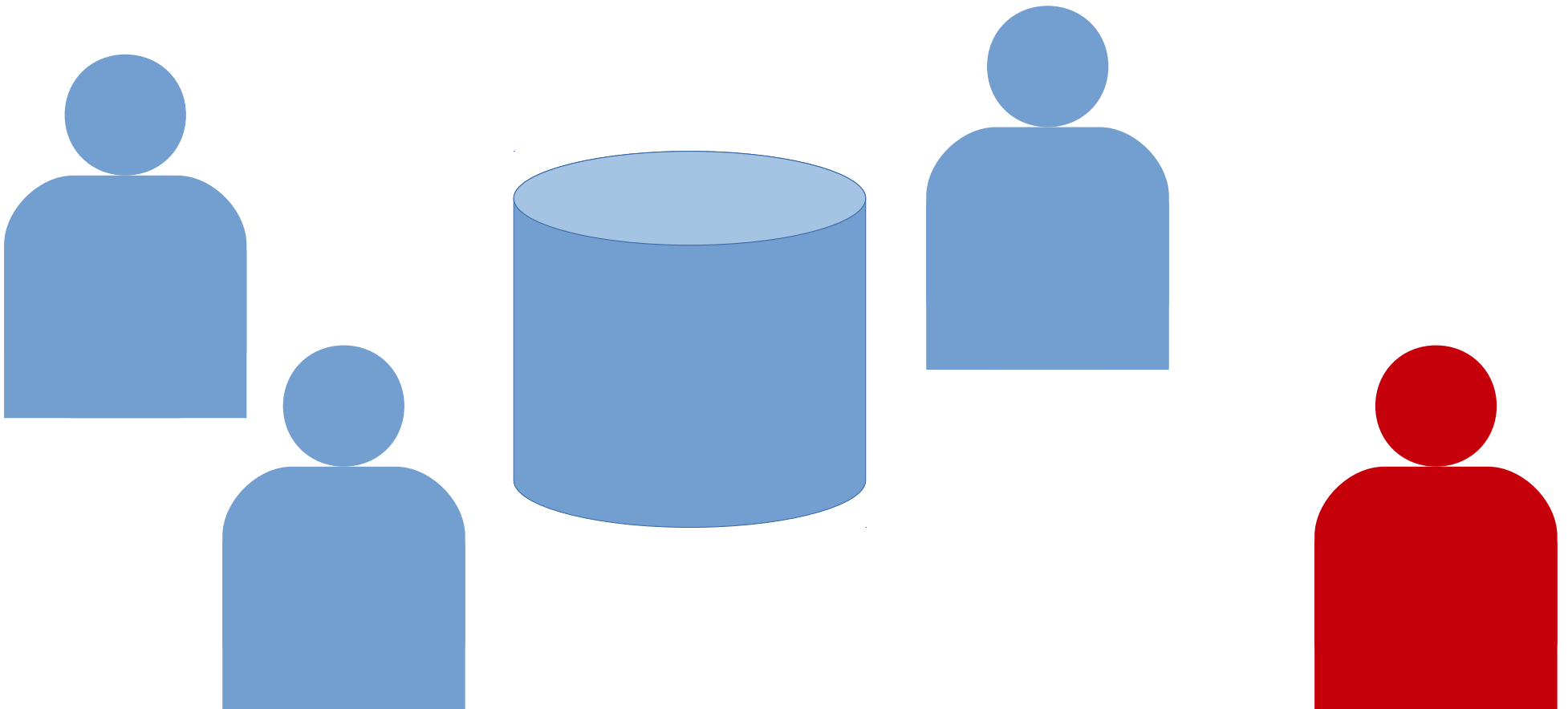
# Safe-Keeping of Versions

- When you check something into version control, it will remember this exact version for you
- You can return to a previous version
- You get a fancy timeline of your project



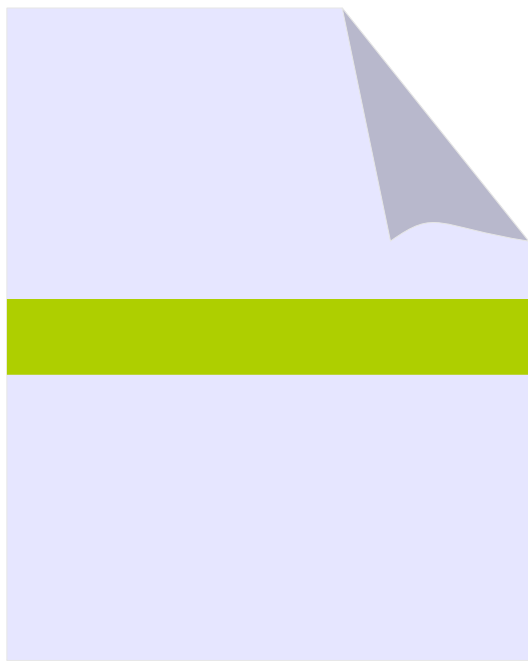
# Access Control

- Usually on a per-project basis
- Who can read and/or write a „repository“

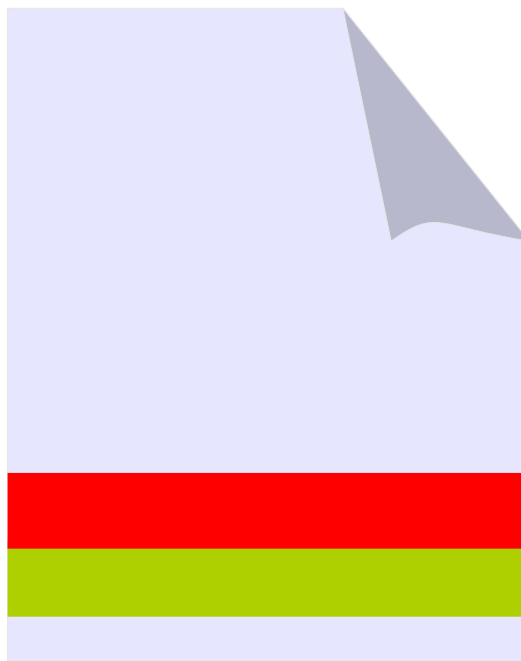


# Conflict Resolution

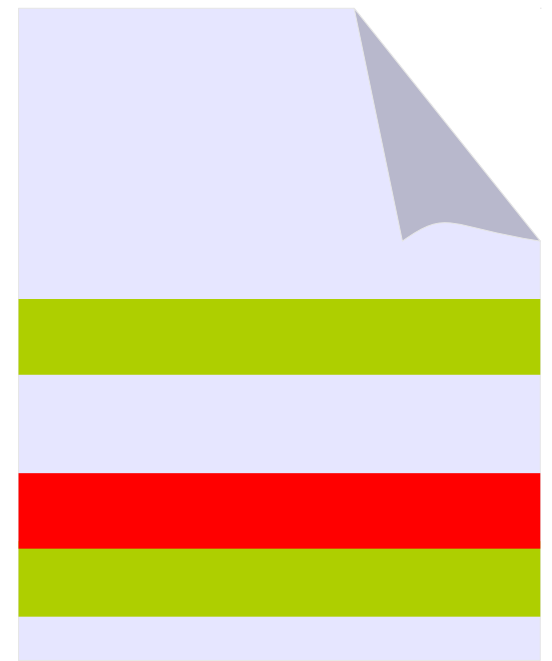
- Files edited by different people can usually be resolved automatically.



welcome.html  
(Alice)



welcome.html  
(Bob)



welcome.html  
(Both changes)



# The „Commit“

- An item in the history
- Think of this as a snapshot of your project

Commit-Hash

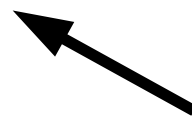


```
commit f303d887ebf263b466958ca7c83aebb9385936f0
```

```
Author: Claudius Coenen <coenen@meso.net>
```

```
Date: Sat Feb 15 02:08:44 2014 +0100
```

```
Ticket #2342: fixing file upload to work with  
animated gif
```



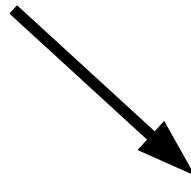
Commit-Message

# Full Workflow

`git pull`

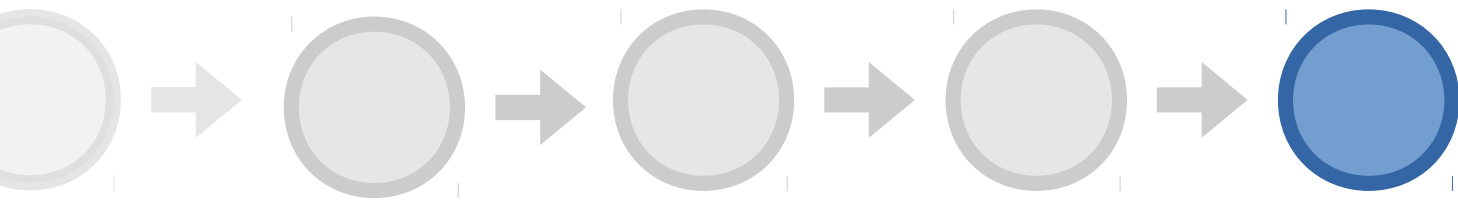
- DO STUFF  
change files the way you normally would
- PREPARE  
`git add` the changes, so git knows about them
- COMMIT  
`git commit`, preferably with a nice message

`git push`

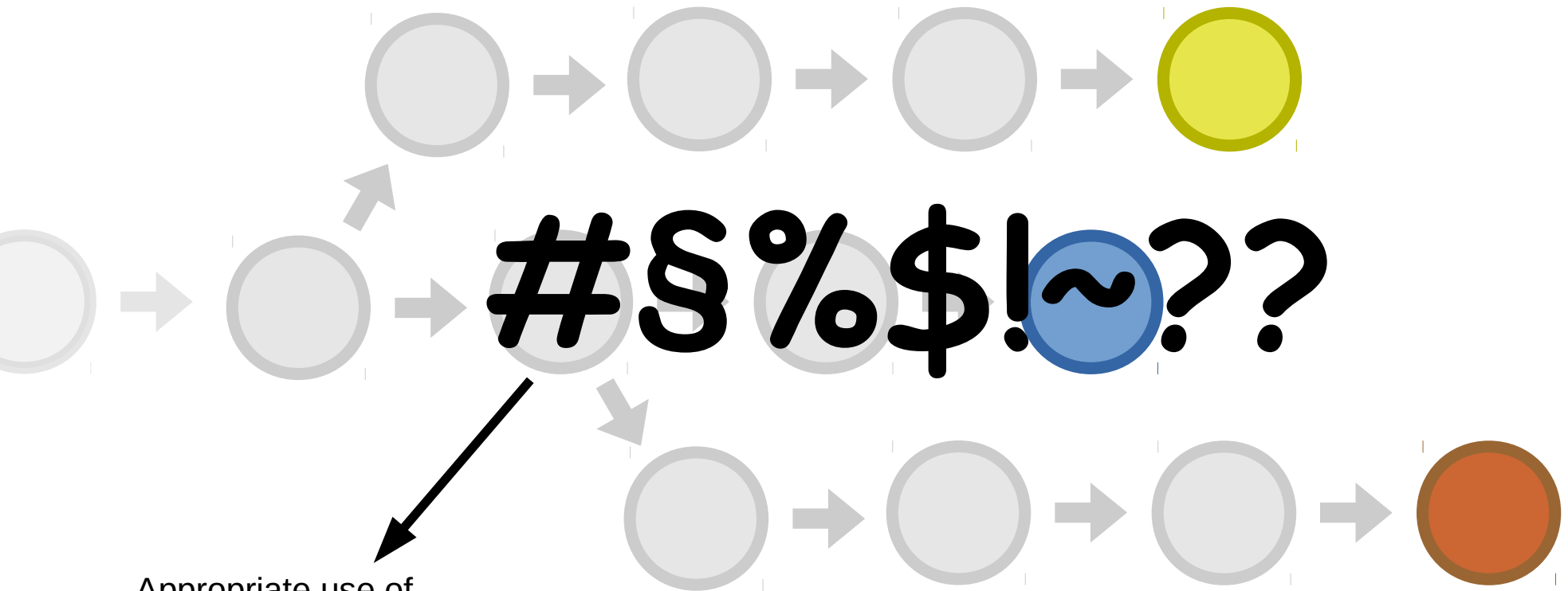


think: committing to memory  
or: committment

# Branching/Merging And The History



# Branching/Merging And The History

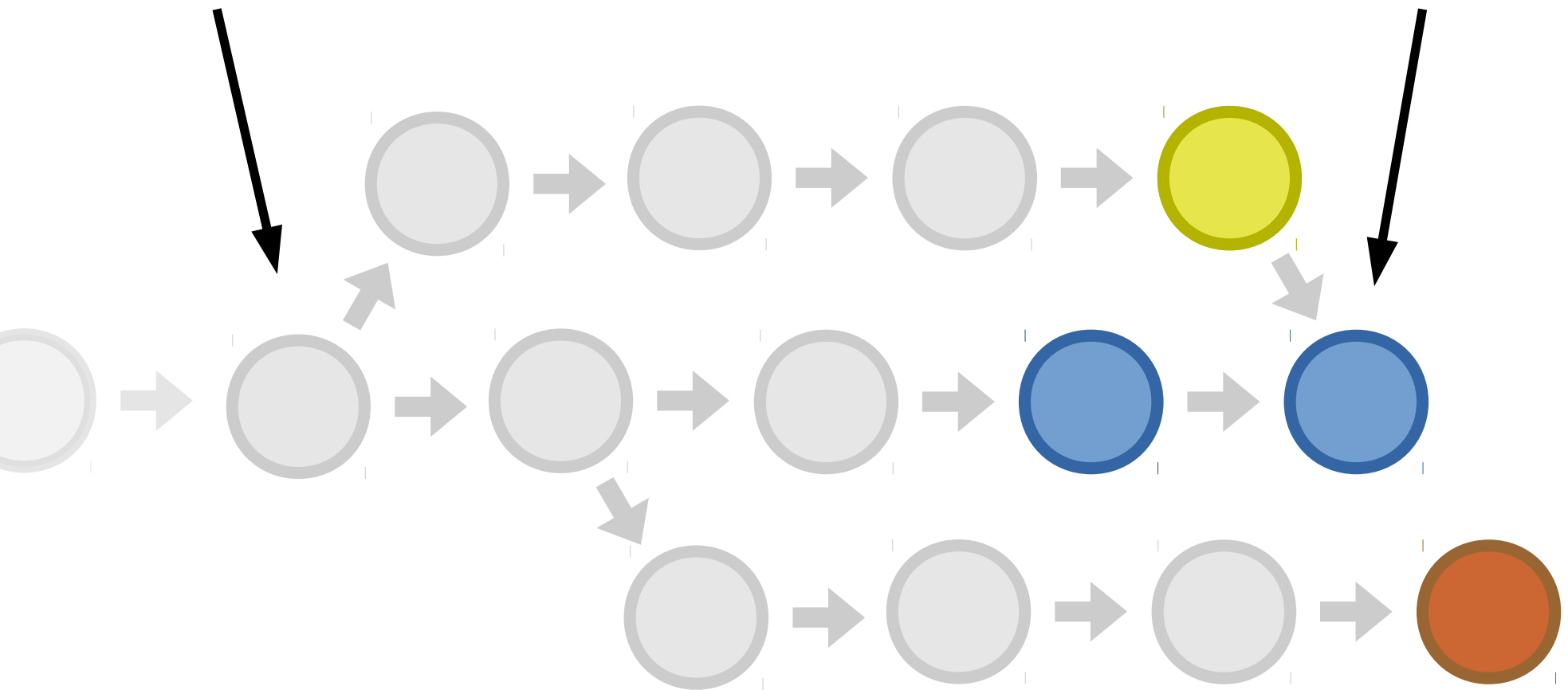


Appropriate use of  
Comic Sans!

# Branching/Merging And The History

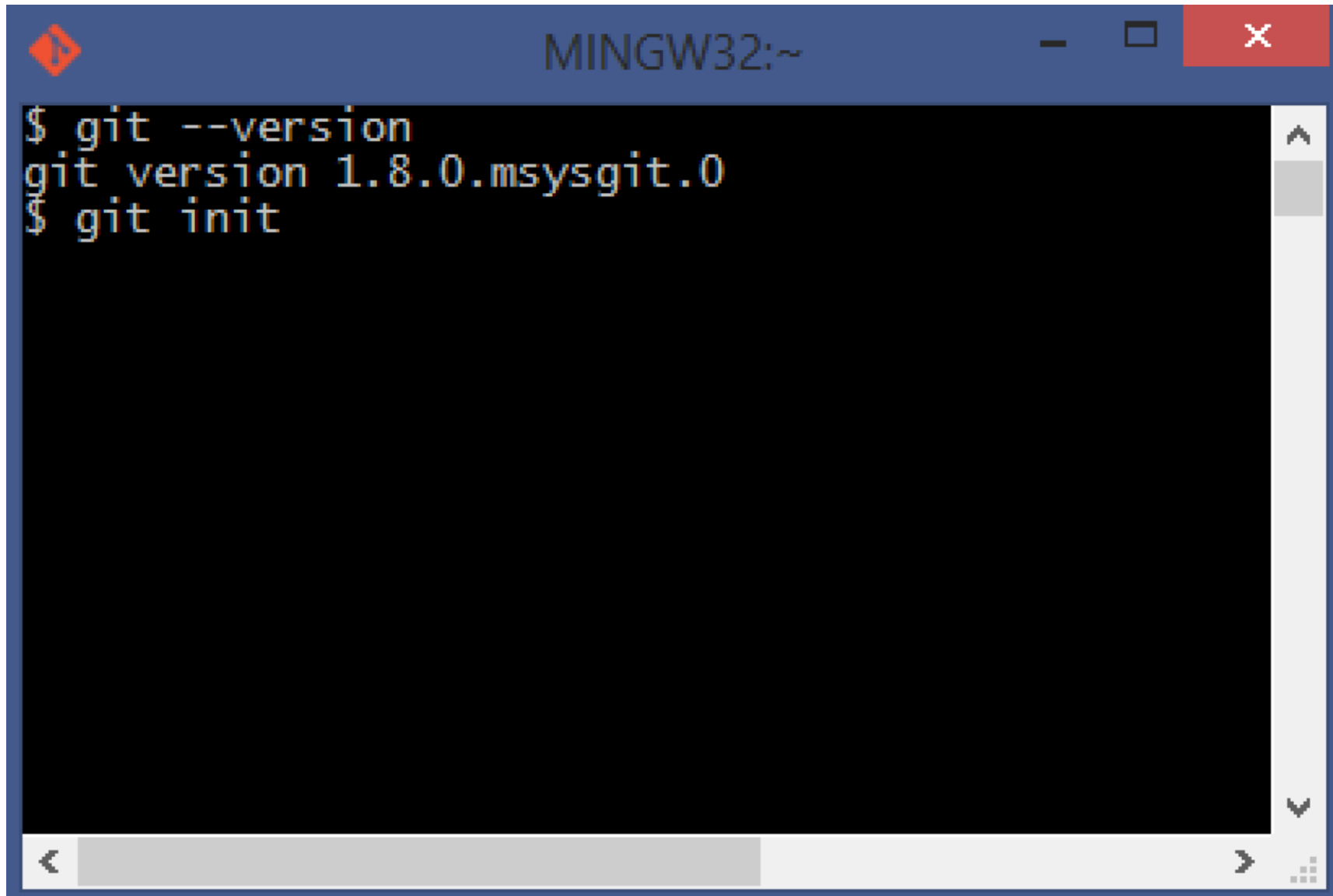
Branch starts here

Merge



Usually no problem

# Git Command Line Interface



A screenshot of a MINGW32 terminal window. The window title is "MINGW32:~". The terminal shows the following commands and output:

```
$ git --version  
git version 1.8.0.msysgit.0  
$ git init
```

# Github App

The screenshot shows the Github App interface for the ReactiveCocoa repository. The top navigation bar includes 'Repositories > ReactiveCocoa' and a 'Sync Branch' button. The left sidebar contains navigation icons for History, Changes, Branches, and Settings. The main content area is divided into a commit list on the left and a pull request details view on the right.

**Commit List:**

- 3515 commits in master
- SHA: bba8fa0dee0e88ece51ed1cdc30b3dc5799af331
- 5 hours ago: Merge pull request #864 from ReactiveC... (jshaber, b35e733)
- 5 hours ago: Merge pull request #859 from ReactiveC... (jspahrsummers, 1c39fc6)
- 6 hours ago: **Test for +createSignal: disposing of inne...** (jspahrsummers, bba8fa0) - **Selected**
- 6 hours ago: Test that RACSerialDisposable.disposab... (jspahrsummers, 0549fcd)
- 12 hours ago: Use `CFBridgingRetain` in place of a cas... (keithduncan, c175133)
- 2 days ago: Fix RACSerialDisposable leaking its set... (jspahrsummers, 6de8f44)
- 2 days ago: Dispose of RACSubscriber.disposable re... (jspahrsummers, d390f76)

**Pull Request Details:**

- Title: **Test for +createSignal: disposing of inner subscriptions**
- Author: jspahrsummers (Oct 14, 2013 at 10:18 AM)
- Status: Verified to fail on master.
- Summary: Showing 1 changed file with 22 additions.
- File: ReactiveCocoaFramework/ReactiveCocoaTests/RACSignalSpec.m (22 additions)

**Code Diff:**

```
... @@ -223,6 +223,28 @@ describe(@"subscribing", ^{
223 223     });
224 224     expect(currentScheduler).willNot.beNil();
225 225     });
226 +
227 +     it(@"should automatically dispose of other subscriptions from
+createSignal:", ^{
228 +         __block BOOL innerDisposed = NO;
229 +
230 +         RACSignal *innerSignal = [RACSignal
createSignal:^(id<RACSubscriber> subscriber) {
231 +             return [RACDisposable disposableWithBlock:^(
232 +                 innerDisposed = YES;
233 +             )];
234 +         }];
235 +
236 +         RACSignal *outerSignal = [RACSignal createSignal:^
RACDisposable * (id<RACSubscriber> subscriber) {
237 +             [innerSignal subscribe:subscriber];
238 +             return nil;
239 +         }];
240 +
```

# Atlassian SourceTree

The screenshot displays the SourceTree application interface. At the top is a menu bar (File, Edit, View, Repository, Actions, Tools, Help) and a toolbar with icons for Clone/New, Commit, Checkout, Discard, Stash, Add, Remove, Add/Remove, Fetch, Pull, Push, Branch, Merge, Tag, and Terminal. Below the toolbar are tabs for open projects: SourceTree, testproject, Sparkle, RestSharp, fantasticgitproject, and MultiSelectTreeView. On the left, a sidebar shows 'File Status' (Working Copy), 'Branches' (master), 'Tags', 'Remotes' (origin), and 'Stashes'. The main area features a commit history table with columns for Graph, Description, Date, Author, and Commit. The selected commit is 'Merge pull request #259 from Dharun/patch-1' by Andrew Young. Below the table, the commit details are shown, including the commit hash, parents, author, date, and labels. A file list below the details shows 'XmlAttributeDeserializer.cs' as the selected file. The bottom right pane shows a diff view for this file, with a hunk of code highlighted in green, indicating a change.

Graph	Description	Date	Author	Commit
	Merge pull request #259 from Dharun/patch-1	11 Jan 2013 19:18	Andrew Young <ai>	cc283fb
	Update CONTRIBUTING.markdown	18 Sep 2012 0:26	John Sheehan <jol>	054adce
	Merge pull request #324 from PedroLamas/master	17 Sep 2012 18:18	Pedro Lamas <pec>	a529617
	Added CONTRIBUTING.markdown	17 Sep 2012 18:15	Pedro Lamas <pec>	cfce270
	Merge pull request #321 from apodlaski/master	13 Sep 2012 5:56	Andrew Young <ai>	eef0c86
	Another fix for ExecuteAsync	7 Sep 2012 14:16	Aleksander Podlas	2ce5204
	104.1 Version bump: 401.1	7 Sep 2012 6:39	Andrew Young <ai>	196fa7e
	Merge pull request #320 from jasonmoore2k/ExecuteAsyncFix	5 Sep 2012 14:16	Pete Johanson <la>	4531670

**Commit:** cc283fb0843e1141f717dcc6b3009206b6c95b62 [cc283fb]  
**Parents:** 054adce80b, c68de9d856  
**Author:** Andrew Young <andrewyoung@gmail.com>  
**Date:** 11 January 2013 19:18:31  
**Labels:** HEAD, origin/master, origin/HEAD, master

Merge pull request #259 from Dharun/patch-1

Filename	Path
XmlAttributeDeserializer.cs	RestSharp\Deserializers
.gitignore	
NuGet.Config	.nuget
NuGet.exe	.nuget

```
Context: 3 Lines | Ignore Whitespace | Diff Vs: First Parent | External Diff
RestSharp/Deserializers/XmlAttributeDeserializer.cs
Modified file, 1 lines added, 1 lines removed | Reverse File
Hunk 1: Lines 109-115
109 109
110 110
111 111
112 -
112 +
113 113
114 114
115 115
var value = GetValueFromXml(root, name, is
jif (value == null)
jif (value == null || value == string.Empty)
{
// special case for inline list it
if (type.IsGenericType)
```



# References

# Command Cheat Sheet (Infrequent Commands)

- `git config --global user.name "Jane Doe"`
- `git config --global user.email "j.d@test.com"`
- `git config --global color.ui true`
- `git config --system core.editor <editor>`
  
- `git init` (creates a new repository)
- `git clone <repository url>` („clones“ existing)

# Command Cheat Sheet (Frequent Commands)

- git status (what's up on my drive)
- git log (what happened so far)
- git add (prepare these files for commit)
- git commit (commit the added files)
- git checkout (return to a previous version)
- git reset (reset the git index)

**These Commands  
are Local!**

# Command Cheat Sheet (Used often)

- git fetch (just download)
- git pull (download AND merge)
- git push (send my changes out)

These Commands  
go over the network\*

\*) simplification

# Where to Start

- Baby steps in your browser
  - <http://try.github.io>
- Download git for your system
  - <http://git-scm.com/downloads>
- Maybe add a Git client that suits your taste
  - At least *try* the commandline. Git in its purest form.
  - gitk, GitHub-App, SourceTree, GitTower, TortoiseGit
- Integrate git into your IDE / Editor
  - Eclipse, Sublime, WebStorm, RubyMine, NetBeans

# Hand-Picked Resources

- Git has extensive documentation
  - <http://git-scm.com/documentation>
- There's a lot of Tutorials out there
  - <http://marklodato.github.io/visual-git-guide/index-en.html>
  - <https://www.kernel.org/pub//software/scm/git/docs/everyday.html>
  - <http://www.teehanlax.com/blog/github-fundamentals/>
  - <http://mislav.uniqpath.com/2010/07/git-tips/>
  - <http://nvie.com/posts/a-successful-git-branching-model/>
- In-Depth Info
  - <http://git-scm.com/book>
- Cannon fodder for lengthy debates with your fellow geek
  - <http://thkoch2001.github.io/whygitisbetter/>