git as a subversion replacement

it's kinda like subversion, but more awesome!

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Outline

- Using how to use git in the same way you've gone accustomed to using subversion
- Advantages of using git even just like subversion
- Open source collaboration
- Building rails apps on git

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Some initial setup

- Need to setup ~/.gitconfig
- Set things like email address and name
- Can setup command aliases for more svn like commands

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~/.gitconf

```
[user]
email = "josh@technicalpickles.com"
name = "Josh Nichols"
[alias]
 st = status
     co = checkout
 ci = commit
[color]
  branch = auto
  diff = auto
  status = auto
[color "branch"]
  current = yellow reverse
  local = yellow
  remote = green
[color "diff"]
  meta = yellow bold
  frag = magenta bold
  old = red bold
  new = green bold
[color "status"]
  added = yellow
  changed = green
  untracked = cyan
```

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Let’s review some subversion workflows

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Initial checkout

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Commit and update

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Branching

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Alright, let's see the commands

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Initial checkout

- subversion:
  - svn checkout http://somewhere.com/repo
- git:
  - git clone http://somewhere.com/repo.git

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Initial checkout

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Differences between a checked-out repository

- subversion:
  - keeps a copy of the last revision from repo
- git:
  - keeps a copy of the entire repo

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Differences between a remote repository

- subversion:
  - can grab any particular path in the repository
- git:
  - can only grab the entire repository
  - if you copy a checked out repository somewhere, you can actually use it as a remote repository

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Adding a file

- svn:
  - svn add path/to/file
- git:
  - git add path/to/file

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Differences for adding

- svn
  - used for adding new files
- git
  - used for adding new files AND recording modifications to existing files

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Status

- svn:
  - svn st
- git:
  - git st

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Differences for status

- svn:
  - tracks: unversioned, new, deleted, modified
- git:
  - tracks: unversioned, new, deleted, modified, modified but not ‘add’-ed

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Committing

- svn:
  - svn commit
- git:
  - git commit
- both:
  - can specify files to commit
  - can give commit message with -m

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Commit

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Differences for committing

- svn:
  - sends changes to remote repository
  - revision number is incrementing integer
- git:
  - only commits to local repository
  - revision number is hash of the commit

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Pushing to a remote repository

- svn:
  - svn commit
- git:
  - git push

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Push

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Diff

- svn
  - svn diff
- git
  - git diff

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Differences for diff

- svn
  - must be online
- git
  - can be offline

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Reverting

- svn
  - svn revert some_file
- git
  - git checkout some_file
  - yeah, it's not so obvious

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Differences for reverting

- git
  - you don't 'revert' as much as you 'checkout' a version of the last committed change

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Updating

- svn
  - svn update
- git
  - svn pull

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Update

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Conflict resolution

- Mostly the same
  - <<<<<
  - =====
  - >>>>>

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Branching

- svn
  - svn cp . http://somewhere.com/repo/branch/blarg
  - svn sw --relocate http://somewhere.com/repo/branch/blarg .
- git
  - git branch blarg
  - git checkout blarg

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Branching

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Differences for branching

- svn
  - makes changes immediately to remote repo
- git
  - local repository only
  - ‘git push origin blarg’ to send to remote

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Summary so far

- There are a lot of similarities between svn/git
- Main differences so far:
  - online v. offline
  - commits v. push
  - changesets
- Questions?

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Git hosting solution

- Self-hosted
  - by hand
  - gitosis
- Hosted
  - gitorious
  - repo.or.cz
  - GitHub

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Ok, so what's better about git?

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My stash

- svn
  - svn diff > changes.diff
  - svn revert -R .
- git
  - git stash save

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Offline committing

- Extremely, extremely useful
- Something appealing about committing from the beach without internet access

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Branching

- It actually works really well
- Can merge between branches as much as you want
  - Don’t need to worry about specific revisions
- Encourages more branching
  - fix branches, feature branches

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Using a fix branch

- git checkout -b amazing_fixes
- make changes
- git commit -m “I fixed the hell out of this bug”
- git checkout master
- git merge amazing_fixes
- git push

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Distributed

- Can work with multiple remote repositories
  - push or pull

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Subversiveness

- Play with subversion and cvs repositories using git!
  - git svn clone http://somewhere.com/repo
  - git svn dcommit
    - replays all your git commits as svn commits
  - git svn rebase
    - replays remote commits as git commits locally

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Open source collaboration

- With subversion, only ‘authorized’ users can ‘commit’
- As a non-committer, can’t make incremental changes towards a big refactorings
- Typically would send patches around... problematic to make sure they are up to date

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Open source collaboration

- git and github solve all these concerns
- behold, live demo!

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Rails development

- Rails 2.1 it supports out of the box (script/install)
- Piston 1.9.x supports it
- LIVE DEMO!!!!1one

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Fin.

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