

git

a brief intro

what is git?

a free, distributed, cross-platform version control system

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james.zip	Jul 2, 2012 10:08 AM	24 KB	ZIP archive
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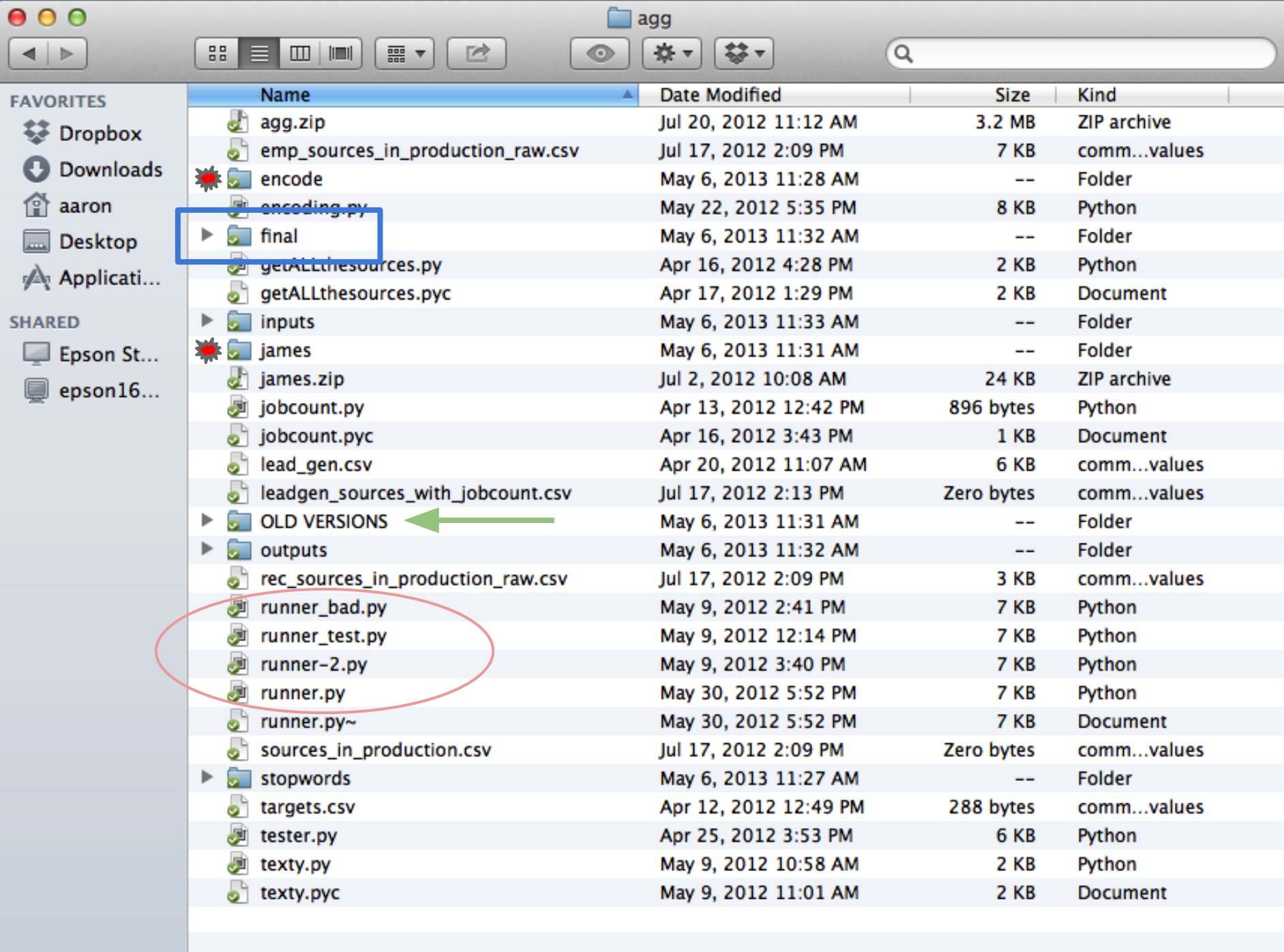


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what problems does git solve?

- what does the stable version of my code look like?
- how can I easily test new features?
- how do I revert a file to the way it was yesterday? last week?

agenda

- **Setup**

- installation
- Github (social layer)
- ssh keys

- **Workflows**

- local
 - commits
 - branches
 - merges
- Github (repos)
 - creating a new repo
 - cloning an existing repo

setup

1. Create a Github account
2. Install git
3. Link git to Github
4. Profit!!!

install git

test with `$ git`

- mac: <http://code.google.com/p/git-osx-installer>
- windows: <http://msysgit.github.com/>
- linux: `sudo apt-get install git`

install git

basic config

```
$ git config --global user.name "Your Name Here"  
# Sets the default name for git to use when you commit
```

```
$ git config --global user.email "your_email@example.com"  
# Sets the default email for git to use when you commit
```

link git to Github

brief intro to ssh keys

<https://help.github.com/articles/generating-ssh-keys>

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local git workflows

local git workflows

three local states

1. working directory: make changes
2. staging area: make commits
3. repository: project storage

local git workflows

the process

1. `$ git init` : initialize the repository (first time only)
2. `$ git status` : memorize this one!
3. `$ git add filename` : we must specify which changes go into each commit
4. `$ git status` : always double check!
5. `$ git commit -m 'make helpful commit notes!'` : commit the changes
6. `$ git status` : triple double check!
7. `$ git log` : see your commit history

commits

make them narrow: one change at a time

make them often: minutes and hours, not days

make them informative: 'added friendly greeting' not 'changes'

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branches

let's take this in another direction....

1. `$ git branch` : confirm we are on master branch
2. `$ git status` : confirm that our working directory is clean
3. `$ git checkout -b test` : create a test branch and switch to it
4. `$ git branch` : confirm we are on test branch
5. `$ git commit -m 'our changes on test branch'` : we must commit our changes!
6. `$ git checkout master` : switch back to our master branch

merges

.... and bring things back

1. `$ git branch` : confirm we are on master branch
2. `$ git status` : confirm that our working directory is clean
3. `$ git merge test` : pull changes made in test branch to masters
4. `$ git branch -d test` : delete the test branch (optional)

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getting social

throwing Github into the mix

Github repos

have owner(s): anyone can read (clone/fork), owners can commit

allow collaboration: non-owners can submit pull requests

create a new repo from an existing project

1. Create a fresh repo on Github

From the local project directory:

2. `$ git remote add origin {repo url}` : adding link to Github (first time only)
3. `$ git remote -v` : see which remotes are connected (first time only)
4. `$ git push -u origin master` : send local changes to Github (all the time!)

clone an existing project

From the local project directory:

```
$ git clone https://github.com/acpigeon/austinlp : duplicates repo locally
```


advanced

maybe another day

Local Workflows

- rolling back changes
- modifying the staging area
- resolving merge conflicts

Github Workflows

- merging changes from collaborators
- pull requests

recap

that's all folks!

```
$ git clone https://github.com/acpigeon/austinlp
```

will post these slides and send out lots of links for further reading!

further reading

1. [git-scm](#) : the single best reference out there, specifically chapters, 2-4
2. [git in 5 minutes](#) : brief and to the point
3. [getting started with git](#) : good background
4. [git - the simple guide](#) : no deep shit ;)
5. [pushing and pulling](#) : working with remotes (Github)
6. [a successful git branching model](#) : advanced workflows