Source Control Primer

Patrick Cozzi
University of Pennsylvania
CIS 565 - Spring 2012

Why Source Control?

- How do two people collaborate on the same code?
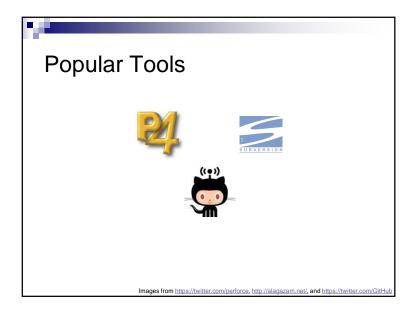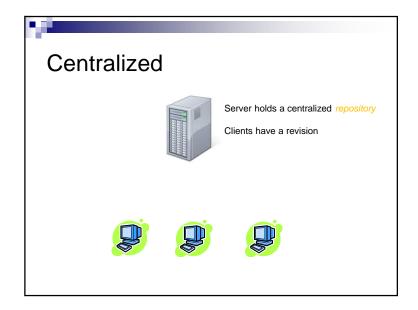 - Email?
  - Dropbox?

Why Source Control?

- How do two people collaborate on the same code?
  - Email?
  - Dropbox?
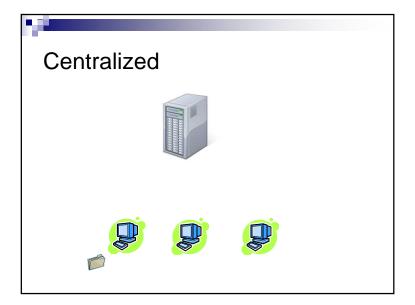- How do two hundred people collaborate?

Why Source Control?

- How do we backup our code?
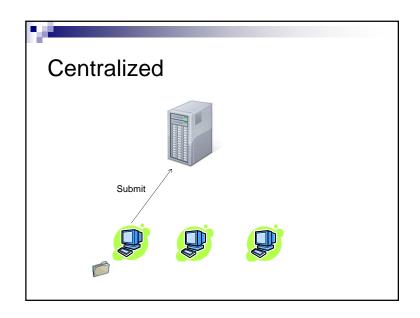
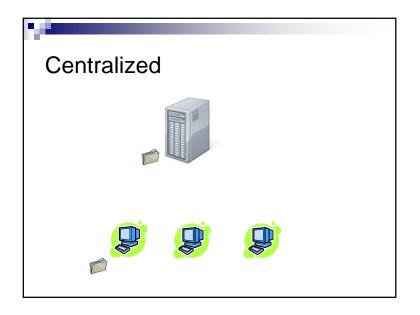- How do we get a history of changes?

Why Source Control?

- How do we make big or risky code changes without affecting the *stable* version?

- How do we work on new versions and still support old versions?
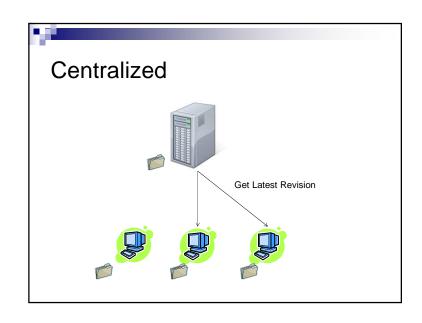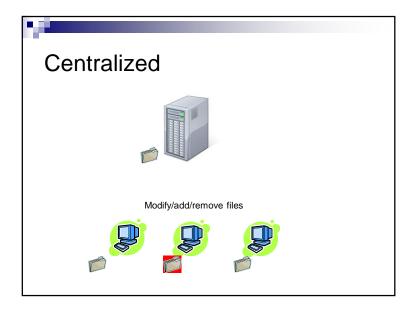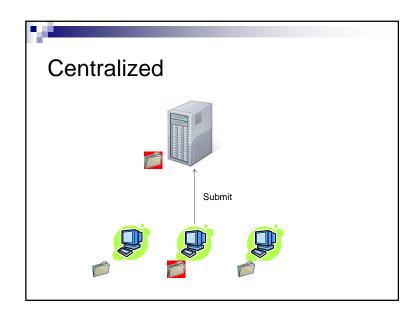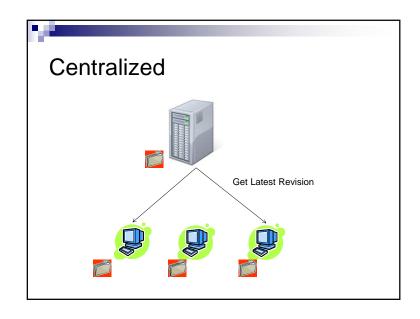
Popular Tools

Centralized

Server holds a centralized *repository*

Clients have a revision

Centralized

Centralized

Submit

Centralized

Centralized

Get Latest Revision

Centralized

Modify/add/remove files

3

Centralized

Submit

Centralized

Get Latest Revision

Distributed

All machines have a full copy of the repository

Repositories can be *cloned*

Repositories can be *pushed* to and *pulled* from other machines

Distributed

Create a local repo
Locally *commit* changes

```
git init
// Add files to directory
git add *
git commit -a -m '<description>'
```

Distributed

`git clone git@github.com:CIS565-Spring-2012/cis565testHomework.git`

Clone a remote repo

Distributed

`git commit –a –m '<description>'`

Locally *commit* changes

Distributed

`git push`

Push changes to other repos

Distributed
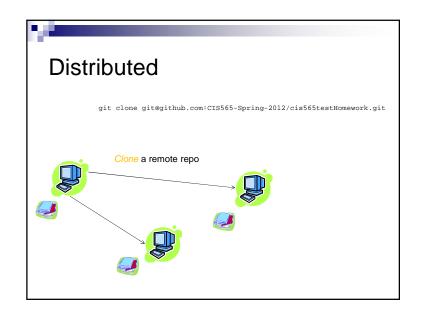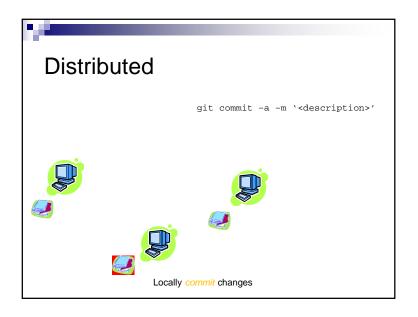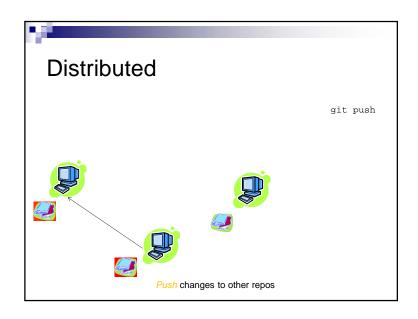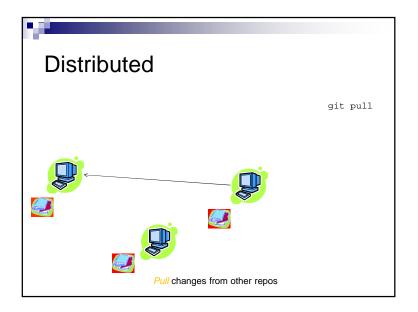
`git pull`

Pull changes from other repos

Summary

- We are using *git* this semester - distributed source control
- Use source control for everything, not just code