

Source Control Primer

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CIS 565 - Fall 2012

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 change the same file?
- 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



Images from <https://twitter.com/perforce>, <http://alagazam.net/>, and <https://twitter.com/GitHub>

Centralized



Server holds a centralized *repository*
Clients have a revision



Centralized



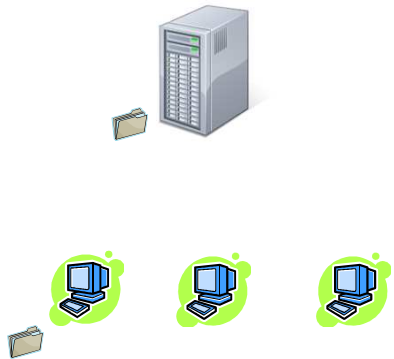
Centralized



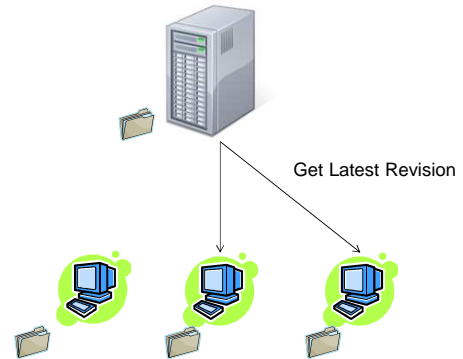
Submit



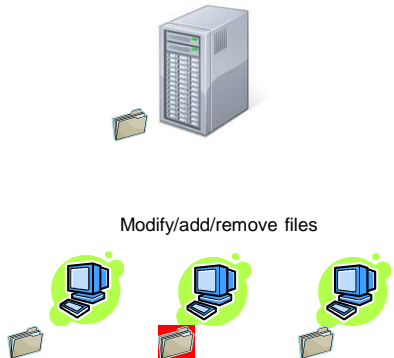
Centralized



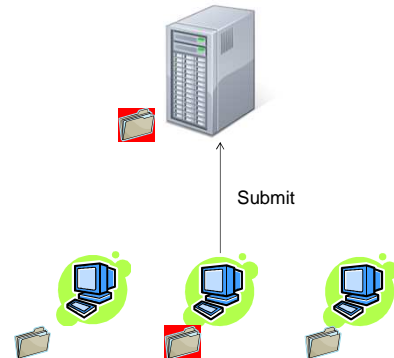
Centralized



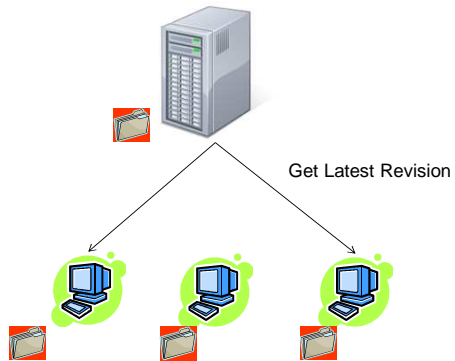
Centralized



Centralized



Centralized



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

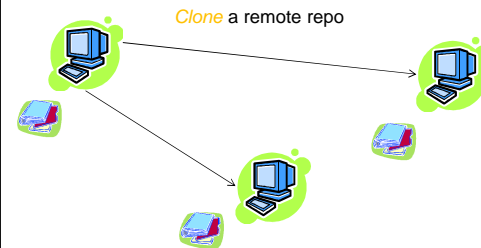
Create a local repo
Locally *commit* changes

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



Distributed

```
git clone git@github.com:CIS565-Fall-2012/exampleProject.git
```



Distributed

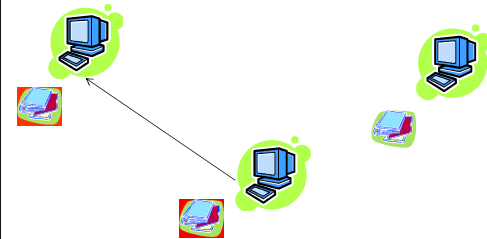
```
git commit -a -m '<description>'
```



Locally *commit* changes

Distributed

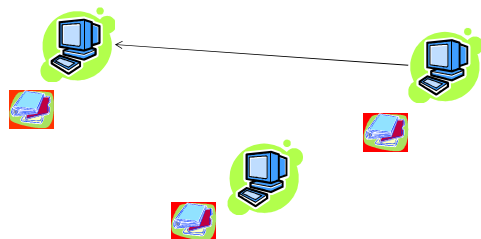
```
git push
```



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

Git Resources

- Create initial account - <https://github.com/signup>
- Get an edu account - <https://github.com/edu>
- Setup git - <http://help.github.com/set-up-git-redirect/>
- Guide - <http://rogerdudler.github.com/git-guide/>
- Cheat sheet - <https://github.com/AlexZeitler/gitcheatsheet>

- Join CIS 565 - <https://github.com/CIS565-Fall-2012>