Lecture 10
Dumpster Diving in Git: Reflogs

Sign in on the attendance sheet!
How to Undo Things

• Accidental Merge

```
Aaron@HELIOS ~/Dropbox/Dropbox Documents/98174/Autolab (master)
$ git merge feature1
Updating 1a843dc..f6e2f63
Fast-forward
test | 0
  1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 test

Aaron@HELIOS ~/Dropbox/Dropbox Documents/98174/Autolab (master)
$ git reset --hard HEAD@{1}
HEAD is now at 1a843dc Fixed Date time picker always displaying 12AM (#811)
```
How to Undo Things

- Fix messed up master

```
Aaron@HELIOS ~/Dropbox/Dropbox Documents/98174/Autolab (master)
$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)
nothing to commit, working directory clean
```

```
Aaron@HELIOS ~/Dropbox/Dropbox Documents/98174/Autolab (master)
$ git reset --hard origin/master
HEAD is now at 1a843dc Fixed Date time picker always displaying 12AM (#811)
```
• Made a commit on the wrong branch (master instead of my-feature)
Reflogs

• An ordered list of all of the changes to branch tips (and other references) in the local repository.

• Also try `git log -g`

```
Aaron@HELIOS ~/Dropbox/Dropbox Documents/98174/Autolab (master)
$ git reflog
1a843dc HEAD@{0}: checkout: moving from my-feature to master
30384d8 HEAD@{1}: commit: Add test file
1a843dc HEAD@{2}: checkout: moving from master to my-feature
1a843dc HEAD@{3}: clone: from https://github.com/autolab/Autolab.git
```
Using The Reflog to Recover History

```
$ git log --pretty --oneline
30384d8 Add test file
1a843dc Fixed Date time picker always displaying 12AM (#811)
614f928 Patches for release v2.0.3 (#806)
cd65795 Hide custom submission form edit (#803)
834520d Autolab 2.0.1 Release (#782)
```

```
$ git reset --hard HEAD@{1}
HEAD is now at 1a843dc Fixed Date time picker always displaying 12AM (#811)
```

```
$ git log --pretty --oneline
1a843dc Fixed Date time picker always displaying 12AM (#811)
614f928 Patches for release v2.0.3 (#806)
cd65795 Hide custom submission form edit (#803)
```
Using The Reflog to Recover History

• The commit we made is now dangling
Using The Reflog to Recover History

```
Aaron@HELIOS ~/Dropbox/Dropbox Documents/98174/Autolab (my-feature)
$ git reflog
1a843dc HEAD@{0}: reset: moving to HEAD@{1}
30384d8 HEAD@{1}: checkout: moving from master to my-feature
1a843dc HEAD@{2}: checkout: moving from my-feature to master
30384d8 HEAD@{3}: commit: Add test file
1a843dc HEAD@{4}: checkout: moving from master to my-feature
1a843dc HEAD@{5}: clone: from https://github.com/autolab/Autolab.git
```
Git Fsck

- What if the reflog is deleted or garbage collected?
- Stashes that got popped off with `git stash pop` or `git stash drop` appear here.
Tags

```
Aaron@HELIOS ~/Dropbox/Dropbox Documents/98174/Autolab (my-feature)
$ git tag
2.0.4
v1.0.0
v1.0.1
v1.0.2
v1.0.3
v1.0.4
v1.0.5
v1.1.0
v1.1.1
v1.2.0
v1.3.0
v1.4.0
v1.4.1
v1.5.0
v1.5.1
v1.6.0
```
Search for a Specific Tag

```
$ git tag -l "v1.0.*"
```

```
v1.0.0
v1.0.1
v1.0.2
v1.0.3
v1.0.4
v1.0.5
```
Creating and Sharing Tags

```
$ git tag -a v98.174 -m "My test tag"

$ git show v98.174

Tag v98.174:
Tagger: Aaron Perley <aaron.perley@gmail.com>
Date:   Tue Apr  4 17:43:22 2017 -0400

My test tag

commit 1a843dce256802c81c809f6b842aababc308db1a2
Author: Aatish Nayak <aatishn@andrew.cmu.edu>
Date:   Tue Mar 21 15:50:35 2017 -0400

Fixed Date time picker always displaying 12AM (#811)
```

git push origin mytag to share