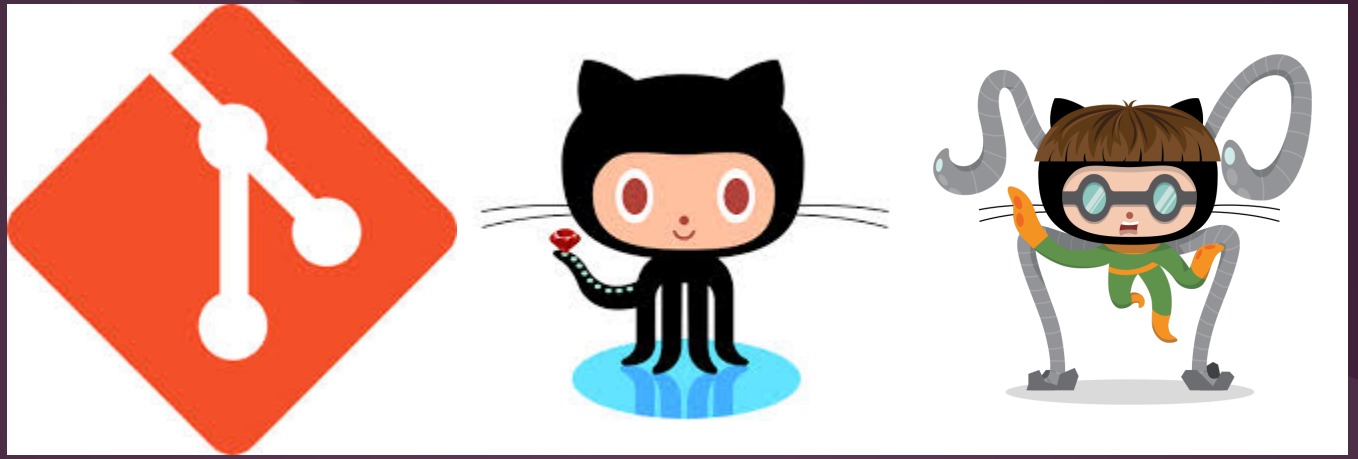
98-174 Modern Version Control With Git



by Jonathan Miedel and Alvin Wang

Class Logistics

- 15 Weeks
  - 13 Lectures
  - Midterm + Final
- Class materials hosted on GitHub
- For questions raise issues on GitHub or email us
- Class website
  - http://dogfalo.github.io/git-stuco/

Grading

- 8 Homeworks (40%)
- 1 Midterm (20%)
- 1 Final (30%)
- Participation (10%)
- Do not miss more than 3 classes

Reasons to Use Version Control Software

- Sharing code
- Difficult to tell if everyone has the latest code base

Problem Scenarios

Email Echoing

- Imagine you are sharing code with your team members through email...

Dropbox Duplicates

- Picture two people working on the same file they both save and...

Investigating Integrity

- Pretend a disgruntled employee tampers with your companies code base making small bugs...

Feature Fiasco

- Recall, those times working on a new feature before the deadline...

Version Control

- “The management of changes to documents, computer programs, large web sites, and other collections of information” - Wikipedia
- Version Control software is any software that aids in the above tasks

Advantages

- Allows for parallel programing (code sharing)
- Maintain multiple versions
- Back up
- Allow to view history
- Revert changes

Introduction to Git

- Distributed Version Control Software
- Source Code Management Software
- Free and Open Source

Features of Git

- Operates faster than most competitors
- Easy to use (particularly branching)
- One of the most common in industry
  - As of April 2014, there were 247,103 repositories (https://www.openhub.net/repositories/compare)
- Offers data assurance

Installing Git

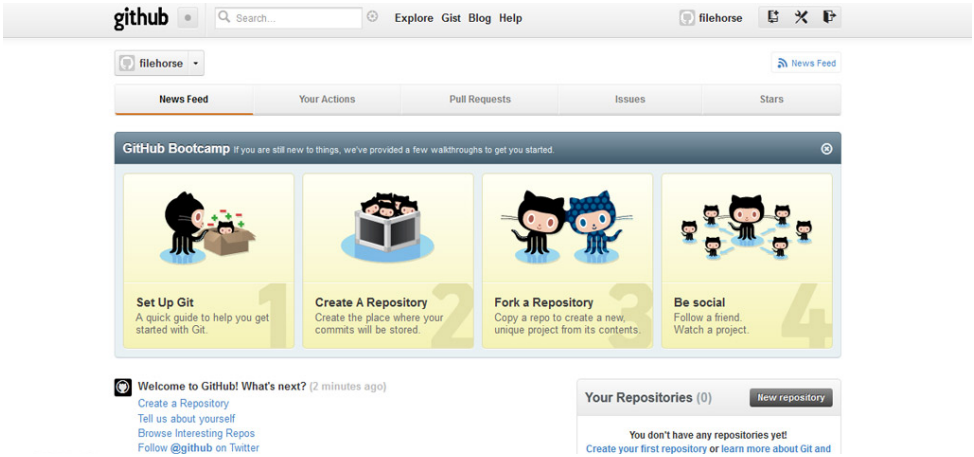
Windows: http://git-scm.com/download/win

Mac: http://git-scm.com/download/mac

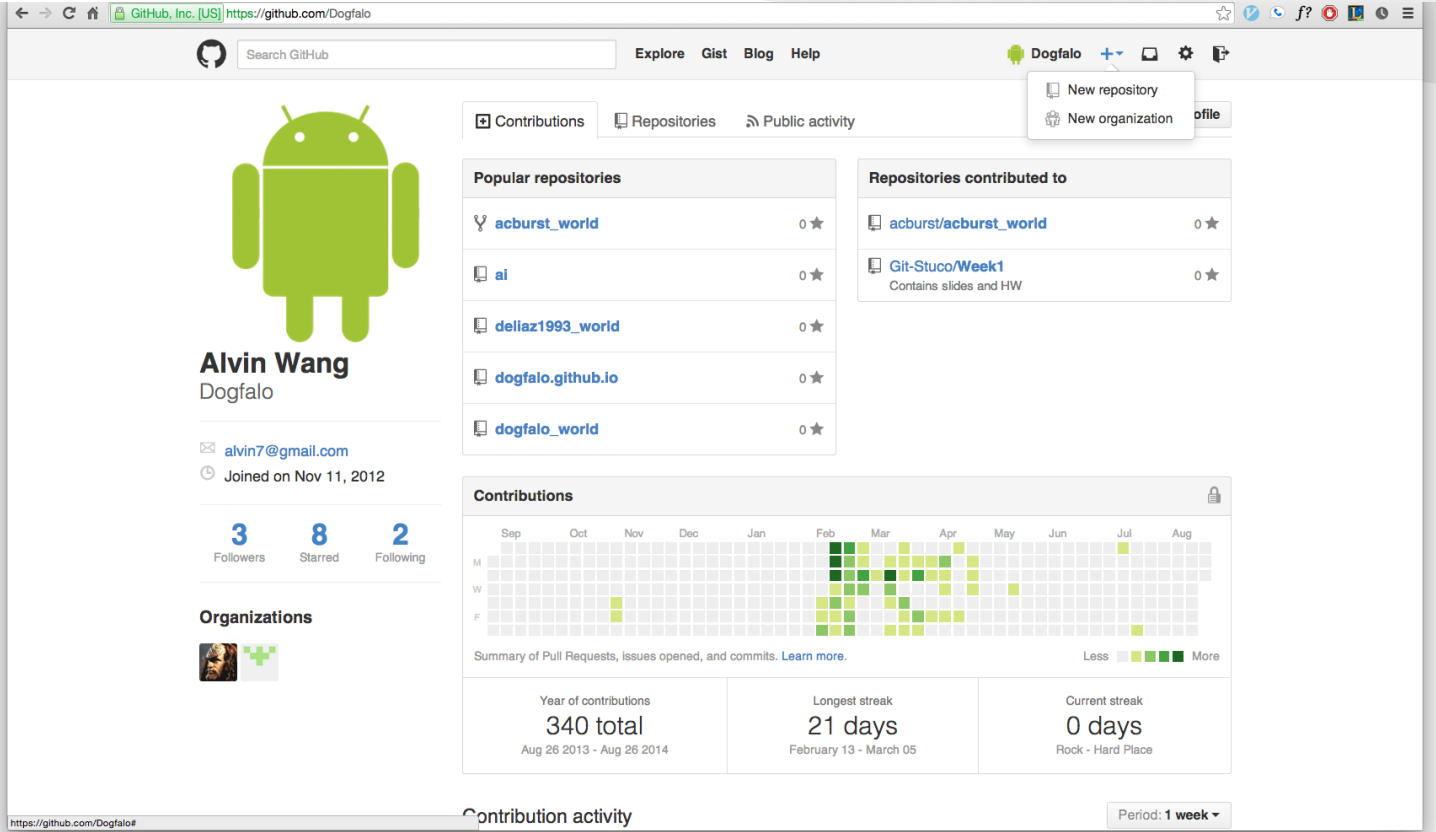
Linux: sudo apt-get install git

Introduction to GitHub

- github.com
  - Create a new account and login
  - Sign up for GitHub!!!!
  - Confirm your email

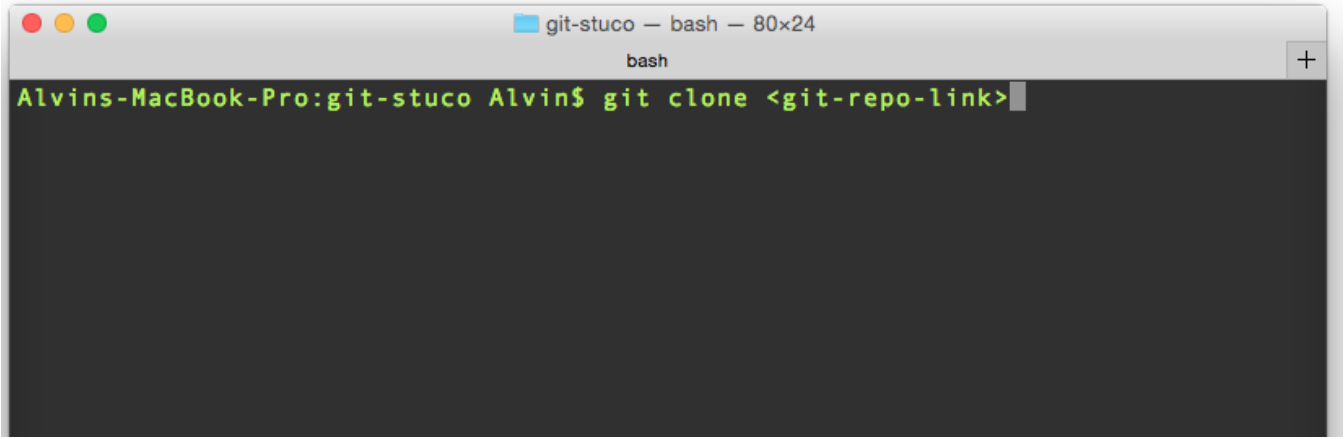


Creating a Repo within GitHub



How to Clone a Repository

Git clone - clones a repository to the specified location



2048 Example

How to Create a Repository

`Git init` - Initializes a Git repository in the current folder

Opening Issues on Github

Homework

- Fill out survey (2 mins)
  - http://goo.gl/veEcTn
- Clone the week 1 repo
  - https://github.com/Git-Stuco/Week1
- Follow link in repository to video (5 mins)

Next Week in 98-174

Basic Git Commands

- Clone in Detail
- Add
- Commit
- Push

Questions