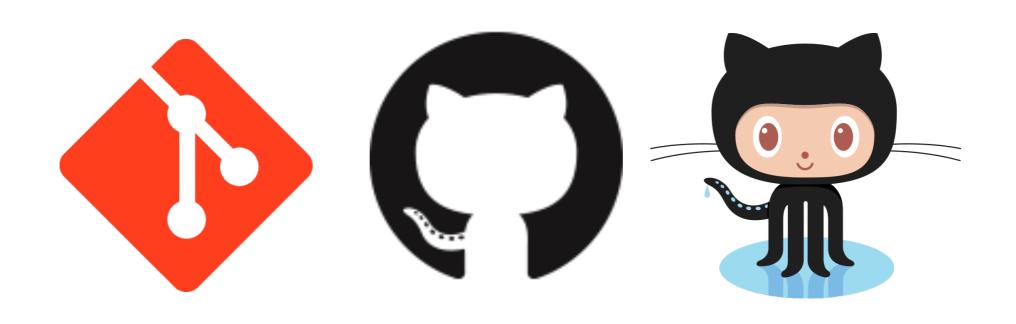
# Web Design & Development Summer Academy 2018

#### Getting Started with Git and GitHub



# Wi-Fi



- Wi-Fi Network: Clark\_Student
- If prompted for a code enter "blue sky"
- Username: g\_webdesign
- Password: Summer2018

# Schedule of Saturday Events

Sign Up Page: <a href="https://goo.gl/HCKrrj">https://goo.gl/HCKrrj</a>

July 14, 2018 - Getting Started with Markdown

July 28, 2018 - Getting Started with Sass

August 11, 2018 - Getting Started with Node.js

August 18, 2018 - Getting Started with Git and GitHub

August 25, 2018 – **Getting Started with Bootstrap** 

September 8, 2018 – **Getting Started with React.js** 

September 15, 2018 – Automating Things with Python

# GitHub - What is it?

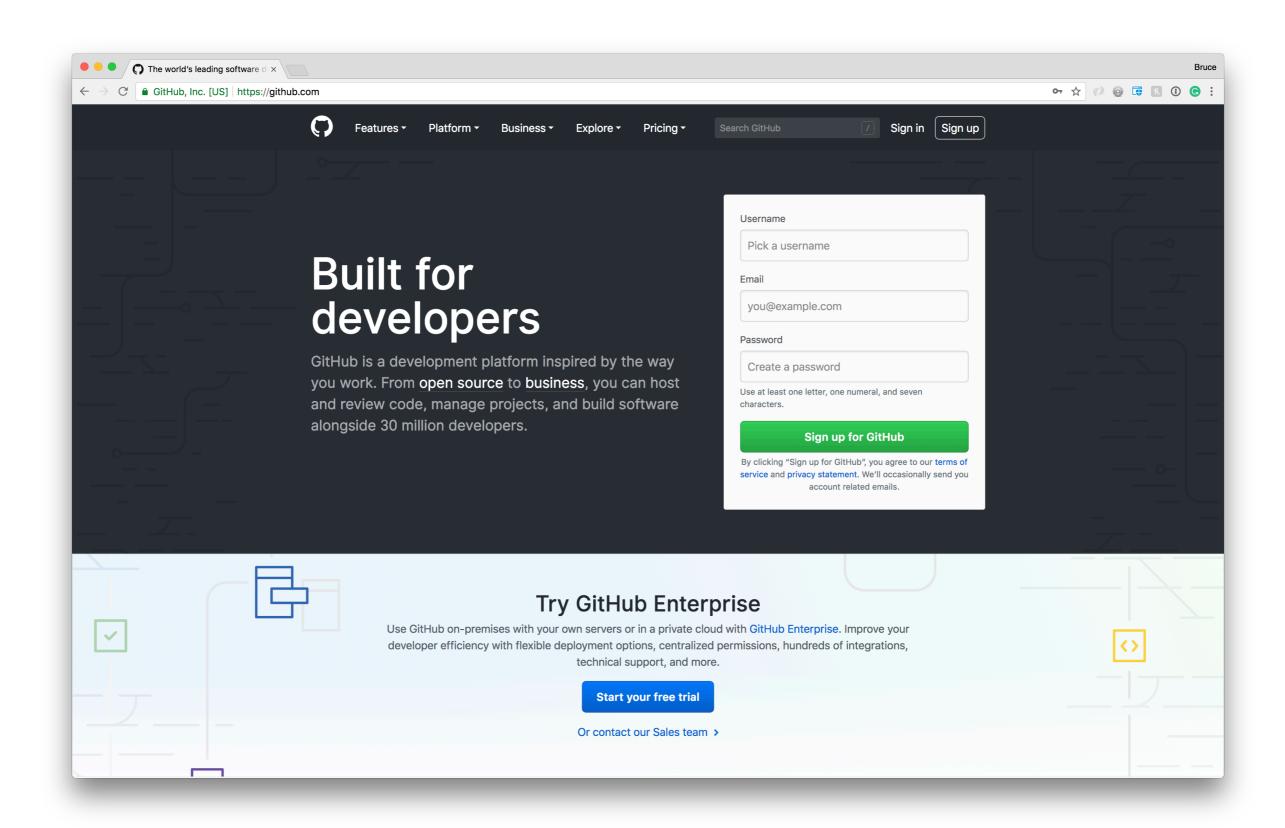
- Web based hosting platform for git repositories or "repos"
- Github is built on top of git
- It allows you to have local and remote copies of your projects
- It's a cloud based git service and way more than that!

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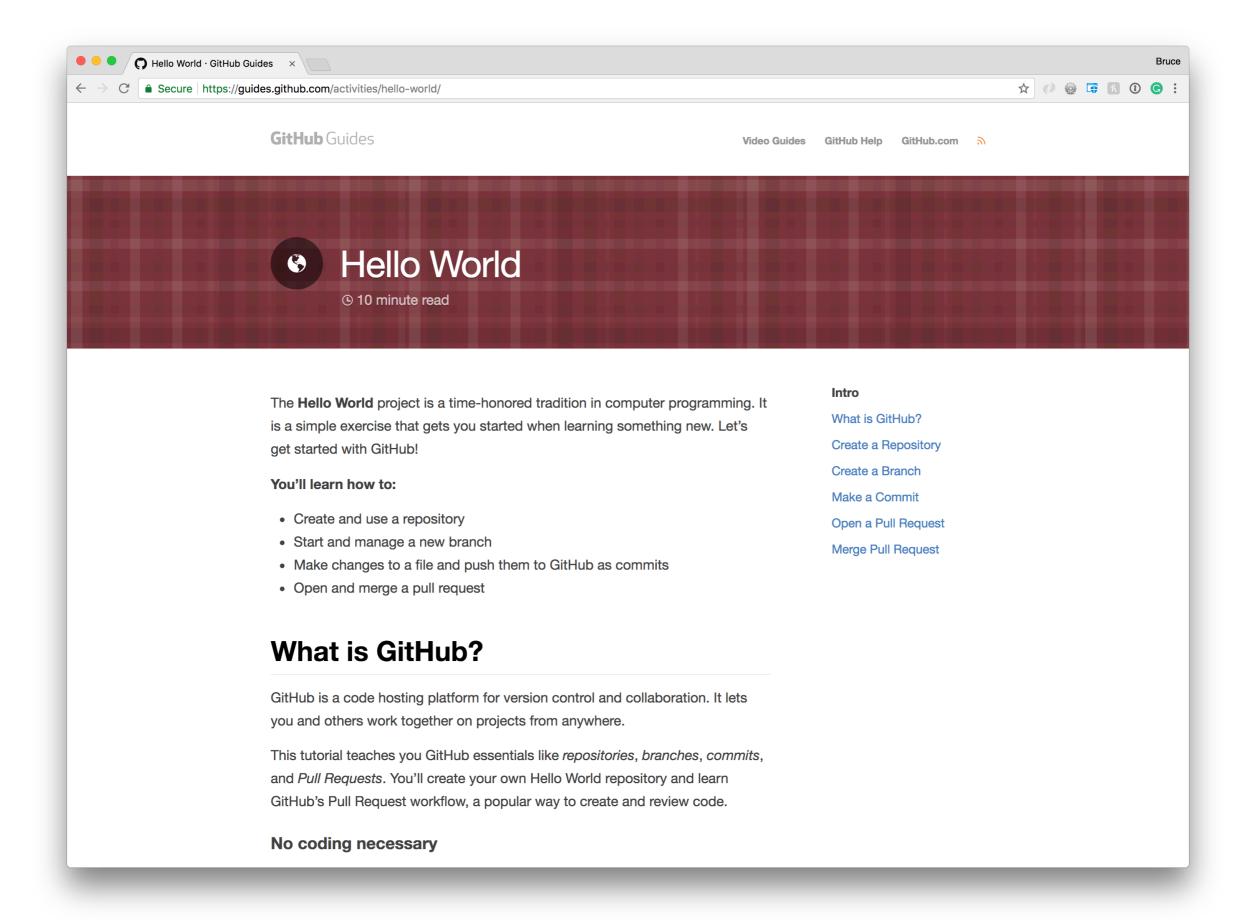
https://github.com

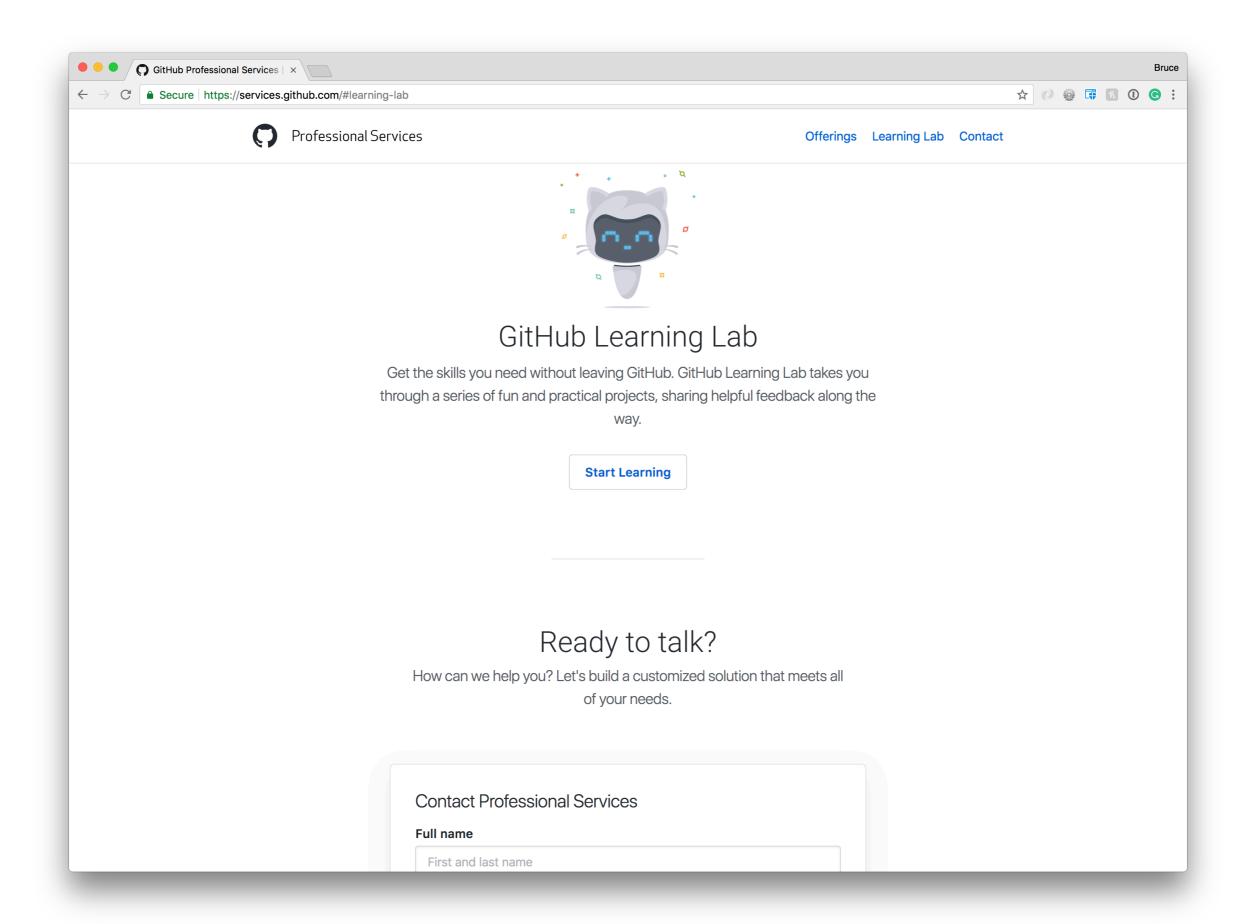
# Setting up a personal account

- Username
- Email
- The email address that you use matters
- Free accounts do not allow you to have "private" repositories
- Once you login notice all of the various plans available

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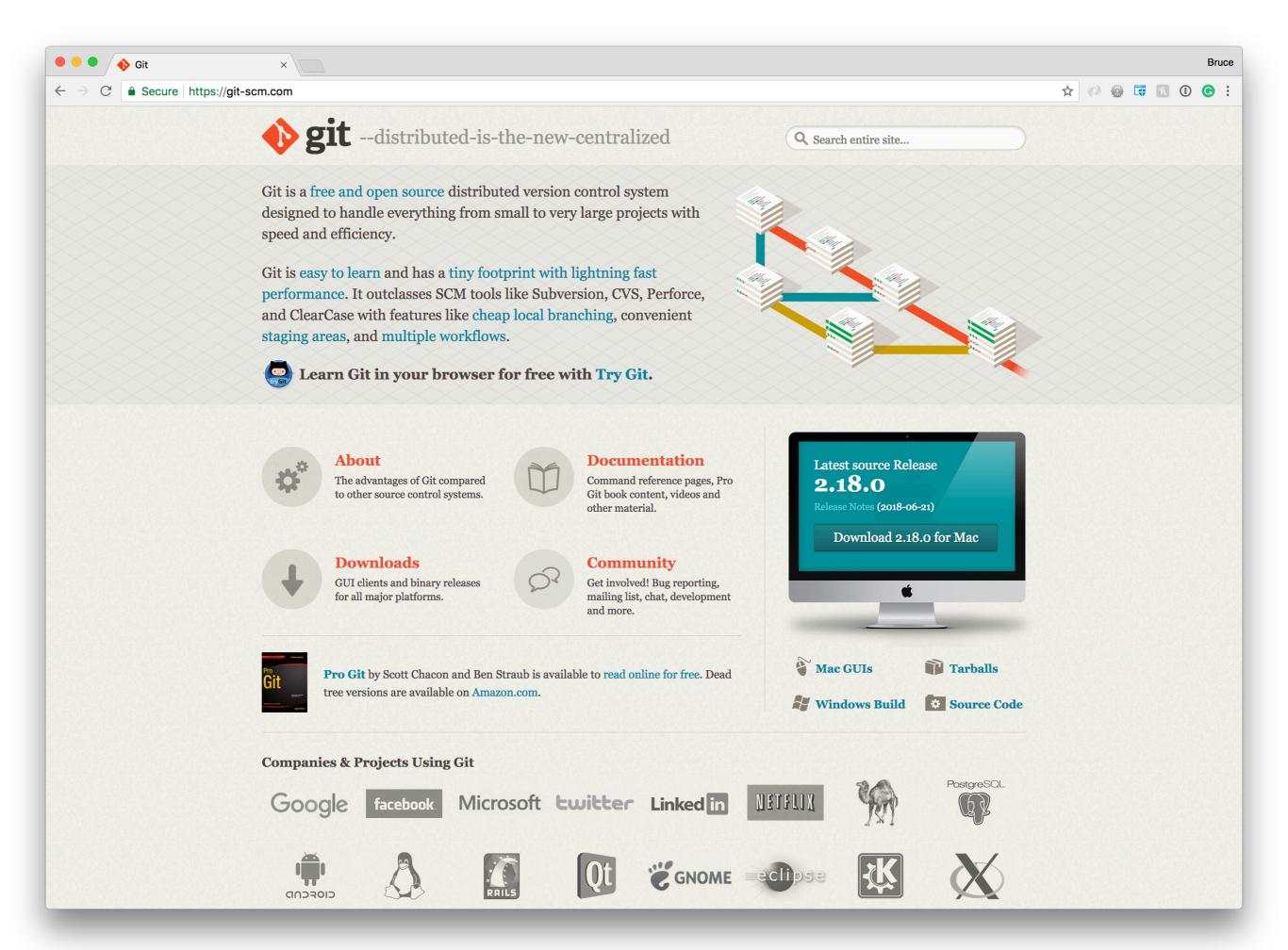




https://services.github.com/#learning-lab

# Git

- The core of what runs Github
- http://git-scm.com
- A distributed version control system



# Git

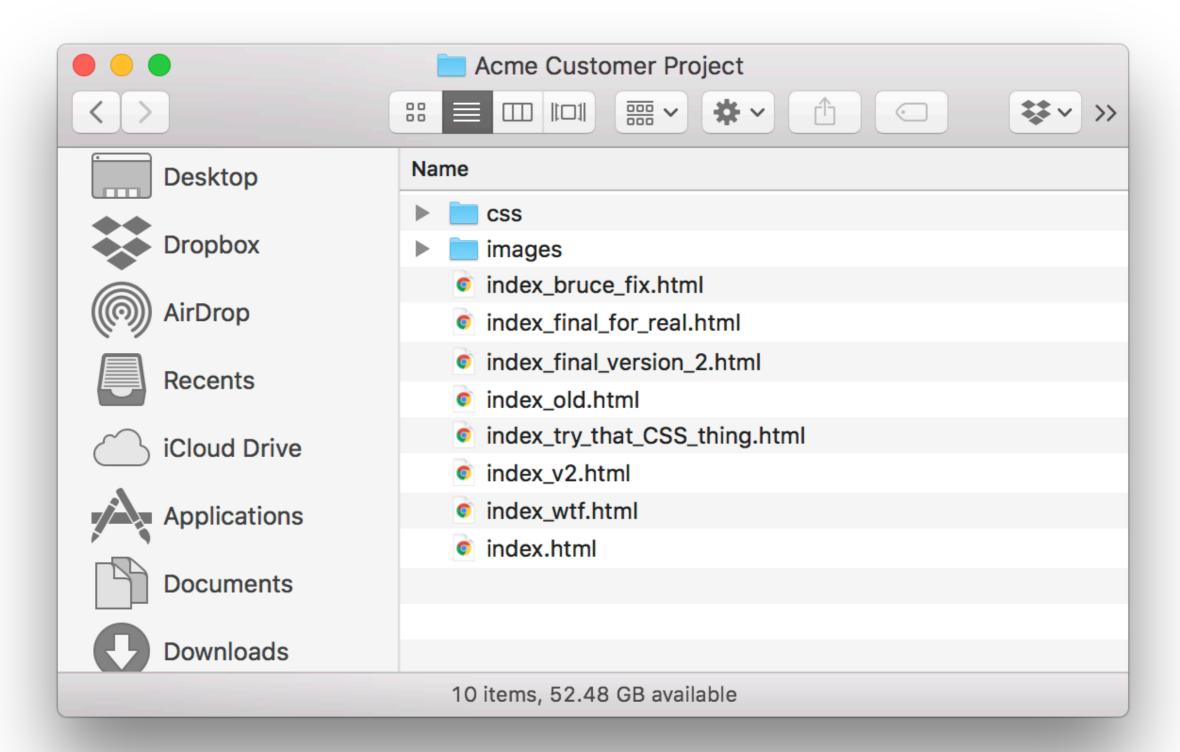
- The core of what runs GitHub
- http://git-scm.com
- A distributed version control system

The command line is scary









# Git

 Git tracks changes to projects over time

- Allows you to go back to a prior version of your code base
- Ever lose any work?
- I have

# Two Types of Version Control Software

#### **Centralized**

- Centralized has a central repo where users can check out files and then check them back in when they are finished
- Subversion
- CVS

#### **Distributed**

- Git is distributed
- Everyone has a copy of the repo
- You can clone repos if one gets lost or damaged

## The command line on OS X

pwd = Present Working Directory

**mkdir** = make directory

rm -r folder\_name = delete contents of a folder

cd ~ = go back to home folder

**Is** = list files and folders

#### The command line on Windows

cd = Current Directory

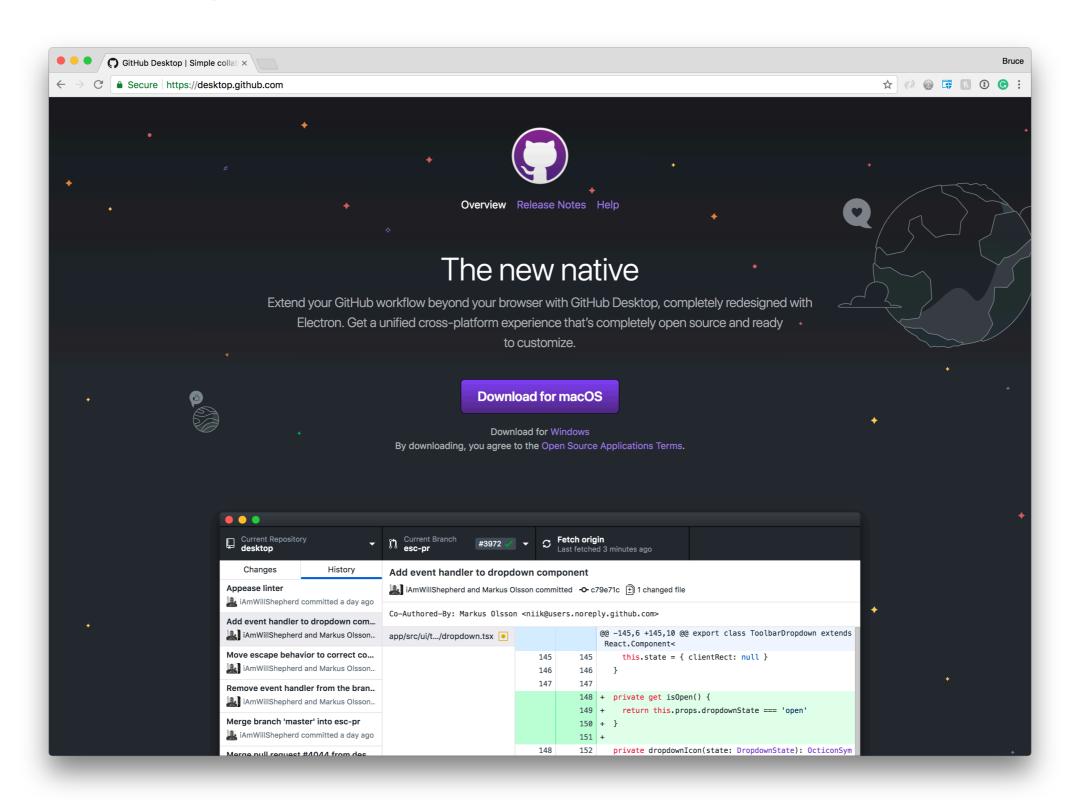
**mkdir** = make directory

rmdir folder\_name = delete contents of a folder

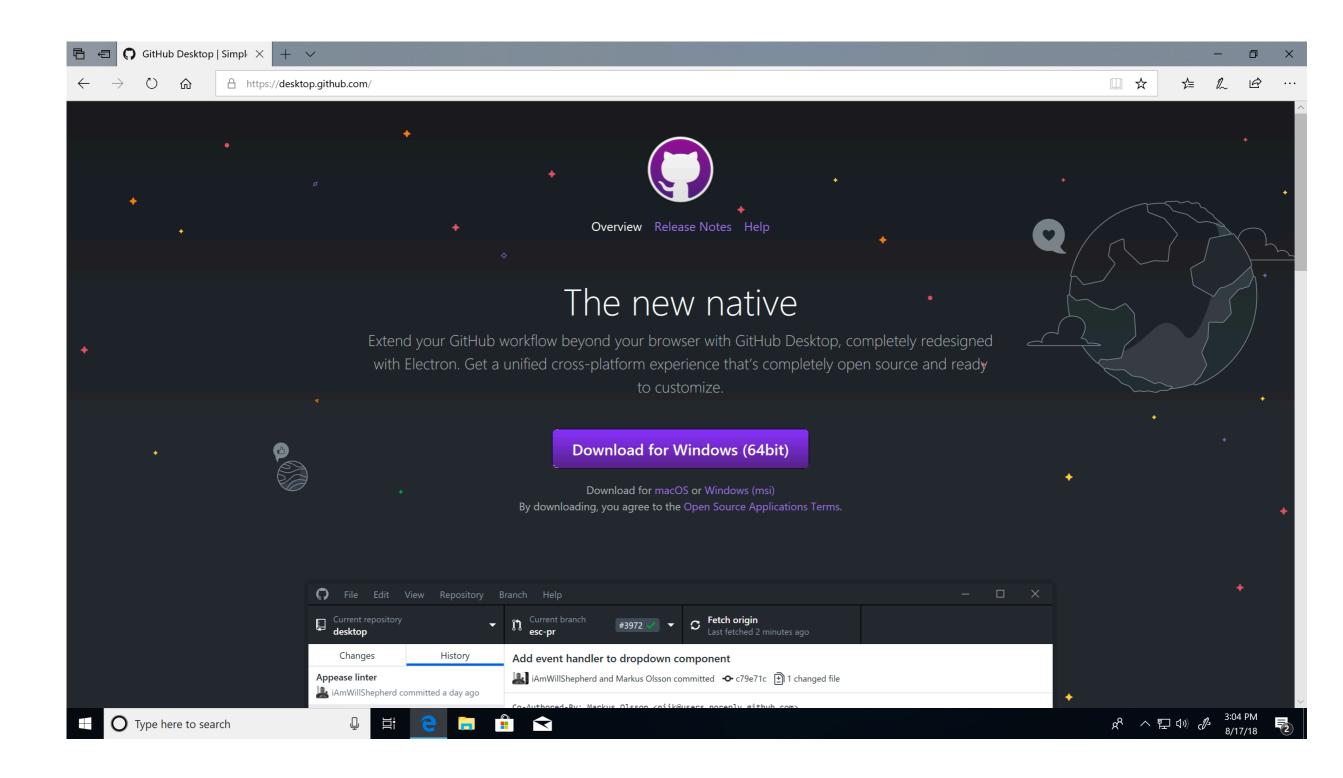
cd .. = go back a folder in the folder hierarchy

dir = list files and folders

#### Installing Git and GitHub client on OS X



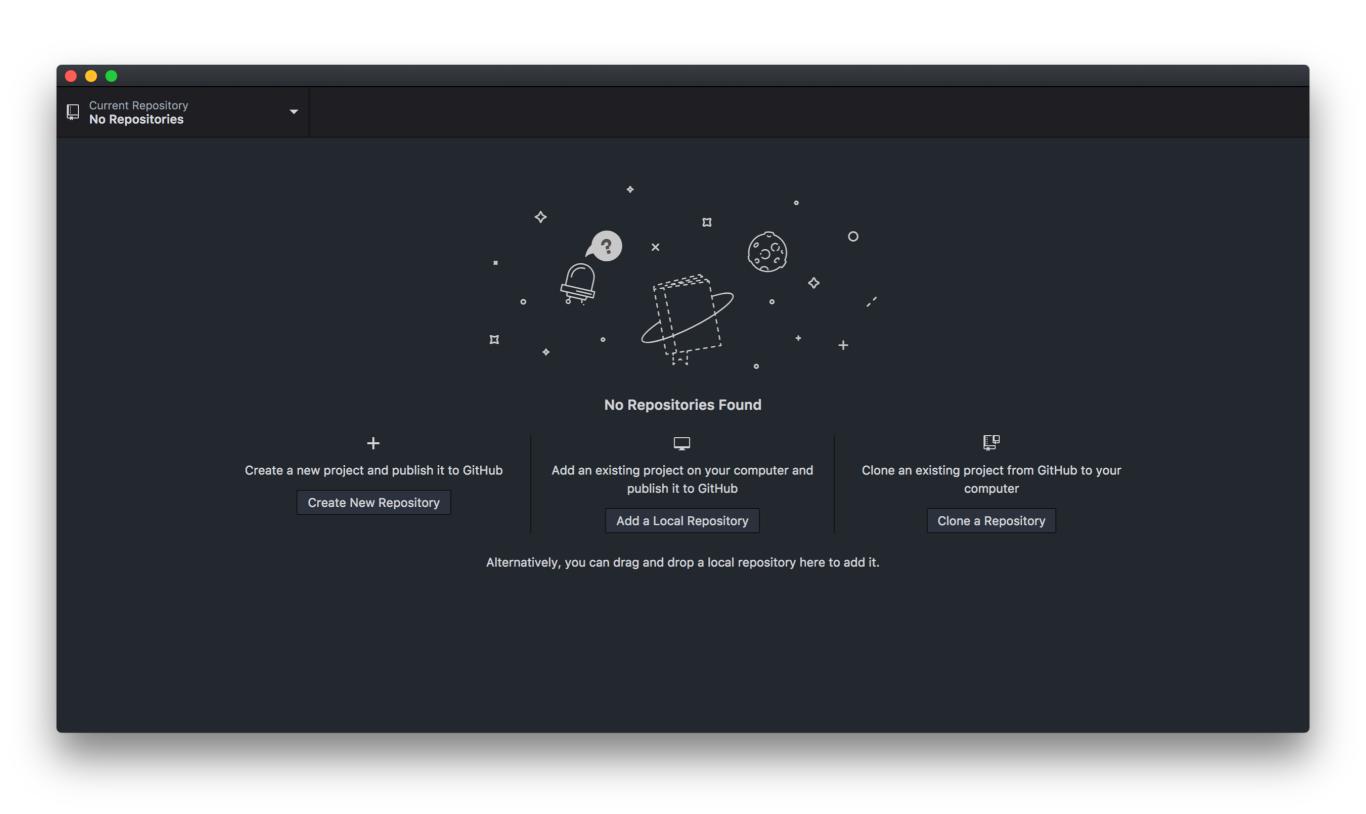
#### Installing Git and GitHub client on Windows

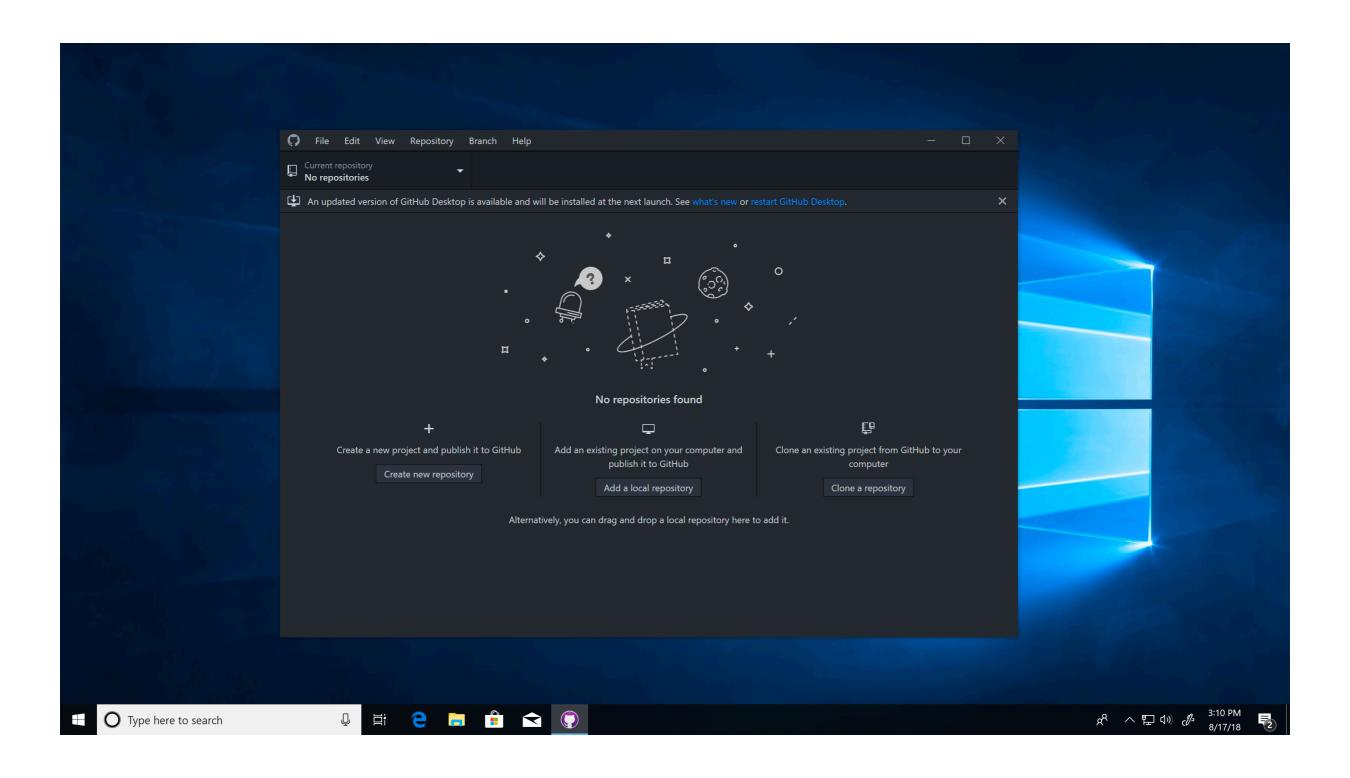


#### Installing Git and GitHub client on Windows

You will need to install git manually on Windows

http://git-scm.com





# How git works

- Git makes snapshots
- Each snapshot is called a "commit"
- Newer commits point back to older commits
- Newer commits only contain the files that have changed
- Each commit uses a 40 character string (hash) to represent each commit

#### Setting up Global Repository Defaults

#### Go to a command prompt

- git config --global user.name "Bruce Elgort"
- git config --global user.email "belgort@clark.edu"
- git config --global credential.helper osxkeychain
- git config —list
- More info at https://help.github.com/articles/ set-up-git/

## Create a git repo by...

Type in the terminal or command prompt in the folder you want to the repo to be located:

git init

## Create a git repo by...

- Working directory contains current working files
- The staging area contains everything you want to be part of your next commit. Added or modified files.
- They go into the git repo once committed

#### Files exist in one of three stages

Unmodified

Modified

Staged

 You need to manually move a file to the staging area. More on this later...

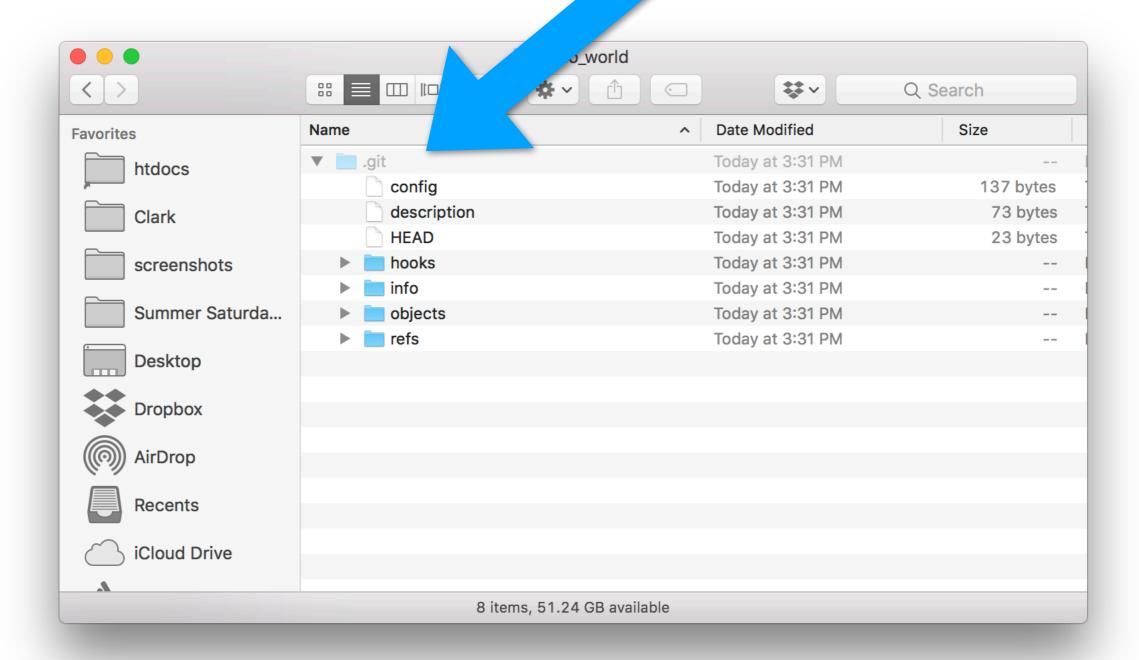
### Creating a repo

git init

```
Bruces-iMac-2:hello_world bruceelgort$ git init
Initialized empty Git repository in /Users/bruceelgort/Desktop/hello_world/.git/
Bruces-iMac-2:hello_world bruceelgort$
```

#### DO NOT MESS WITH THIS FOLDER!

Creating a repo



#### Check the status of a repo

```
hello_world — -bash — 81×23
Bruces-iMac-2:hello_world bruceelgort$ git init
Initialized empty Git repository in /Users/bruceelgort/Desktop/hello_world/.git/
Bruces-iMac-2:hello_world bruceelgort$ git status
On branch master
No commits yet
nothing to commit (create/copy files and use "git add" to track)
Bruces-iMac-2:hello_world bruceelgort$
```

#### Add a file to the staging area

```
hello world — -bash — 81×23
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Bruces-iMac-2:hello_world bruceelgort$ git status
On branch master
No commits yet
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        index.html
nothing added to commit but untracked files present (use "git add" to track)
Bruces-iMac-2:hello_world bruceelgort$
```

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Bruces-iMac-2:hello_world bruceelgort$ git status
On branch master
No commits yet
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file: index.html
Bruces-iMac-2:hello_world bruceelgort$
```

## Add a file to the staging area

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hello world — -bash — 81×23
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```

#### Ready to commit

```
hello_world — -bash — 81×23
Bruces-iMac-2:hello_world bruceelgort$ git commit -m "Initial commit"
[master (root-commit) 5d0c6a0] Initial commit
1 file changed, 10 insertions(+)
create mode 100644 index.html
Bruces-iMac-2:hello_world bruceelgort$
```

#### Ready to commit

```
hello_world — -bash — 81×23
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[master (root-commit) 5d0c6a0] Initial commit
 1 file changed, 10 insertions(+)
create mode 100644 index.html
Bruces-iMac-2:hello_world bruceelgort$ git status
On branch master
nothing to commit, working tree clean
Bruces-iMac-2:hello_world bruceelgort$
```

# git log

```
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Bruces-iMac-2:hello_world bruceelgort$ git commit -m "Initial
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 1 file changed, 10 insertions(+)
 create mode 100644 index.html
Bruces-iMac-2:hello_world bruceelgort$ git status
On branch master
nothing to commit, working tree clean
Bruces-iMac-2:hello_world bruceelgort$ git log
commit 5d0c6a076a481efd58c87f1b91af63ba7a12cbe1 (HEAD -> master)
Author: Bruce Elgort <bruce.elgort@gmail.com>
Date: Fri Aug 17 15:43:42 2018 -0700
    Initial commit
Bruces-iMac-2:hello_world bruceelgort$
```

# git diff

```
hello world — -bash — 81×23
Bruces-iMac-2:hello_world bruceelgort$ git status
On branch master
nothing to commit, working tree clean
Bruces-iMac-2:hello_world bruceelgort$ git log
commit 5d0c6a076a481efd58c87f1b91af63ba7a12cbe1 (HEAD ->
Author: Bruce Elgort <bruce.elgort@gmail.com>
Date: Fri Aug 17 15:43:42 2018 -0700
    Initial commit
Bruces-iMac-2:hello_world bruceelgort$ git diff
diff --git a/index.html b/index.html
index c2db709..0651544 100644
--- a/index.html
+++ b/index.html
00 - 6,5 + 6,6 00
 </head>
 <body>
        <h1>Hello World</h1>
        <h2>Goodbye</h2>
 </body>
 </html>
\ No newline at end of file
Bruces-iMac-2:hello_world bruceelgort$
```

#### **Branching**

- Allows you to experiment and play around
- Allows you to not mess up your master branch
- You can then merge a branch back into the master branch
- Or you don't have too
- And yes, you can create branches from branches





```
hello_world — -bash — 81×23
Bruces-iMac-2:hello_world bruceelgort$ git branch bugfix
Bruces-iMac-2:hello_world bruceelgort$
```





```
Bruces-iMac-2:hello ruceelgort$ git branch rafix

Bruces-iMac-2:hello rbruceelgort$ git stat

On branch master

Changes not staged for commit:

(use "git add <file>..." to update who will be committed)

(use "git checkout -- <file>... scard changes in working directory)

modified: index.html

no changes added to commit (use "git add" and/or "git commit -a")

Bruces-iMac-2:hello_world bruceelgort$
```

# **Branching**



```
Bruces-iMac-2:hello_world elgort$ git checkout bugfix
M index.html
Switched to branch 'bugfix'
Bruces-iMac-2:hello_world bruceelgort$
```





```
hello_world — -bash — 81×23
Bruces-iMac-2:hello_world bruceelgort$ git checkout bugfix
        index.html
Switched to branch 'bugfix'
Bruces-iMac-2:hello_world bruceelgort$ git st
On branch bugfix
Changes not staged for commit:
                                         will be committed)
  (use "git add <file>..." to upd
  (use "git checkout -- <file>...
                                       discard changes in working directory)
        modified: index.html
no changes added to commit (use "git add" and/or "git commit -a")
Bruces-iMac-2:hello_world bruceelgort$
```





```
hello world — -bash — 81×23
Bruces-iMac-2:hello_world bruceelgort$ git checkout bugfix
        index.html
Switched to branch 'bugfix'
Bruces-iMac-2:hello_world bruceelgort$ git status
On branch bugfix
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working direct
        modified: index.html
no changes added to commit (use "git add" and/or "git commit
Bruces-iMac-2:hello_world bruceelgort$ git add index.html
Bruces-iMac-2:hello_world bruceelgort$ git commit -m "fixed the bug"
[bugfix 7f77680] fixed the bug
 1 file changed, 1 insertion(+)
Bruces-iMac-2:hello_world bruceelgort$
```

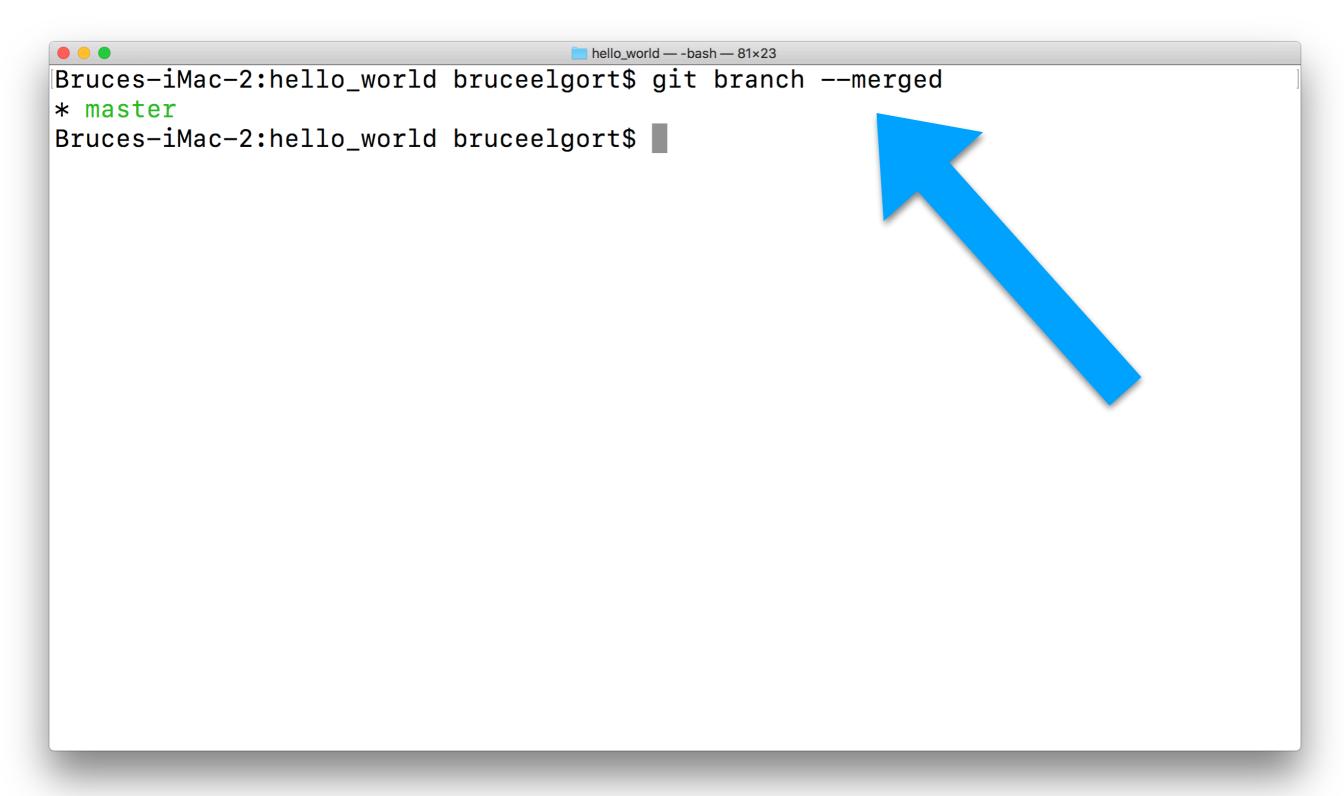
#### **Branching**

```
Bruces-iMac-2:hello_world bruceelgort$ git
                                               .out master
Switched to branch 'master'
Bruces-iMac-2:hello_world bruceelgort$ git status
On branch master
nothing to commit, working tree clean
Bruces-iMac-2:hello_world bruce gort$
```

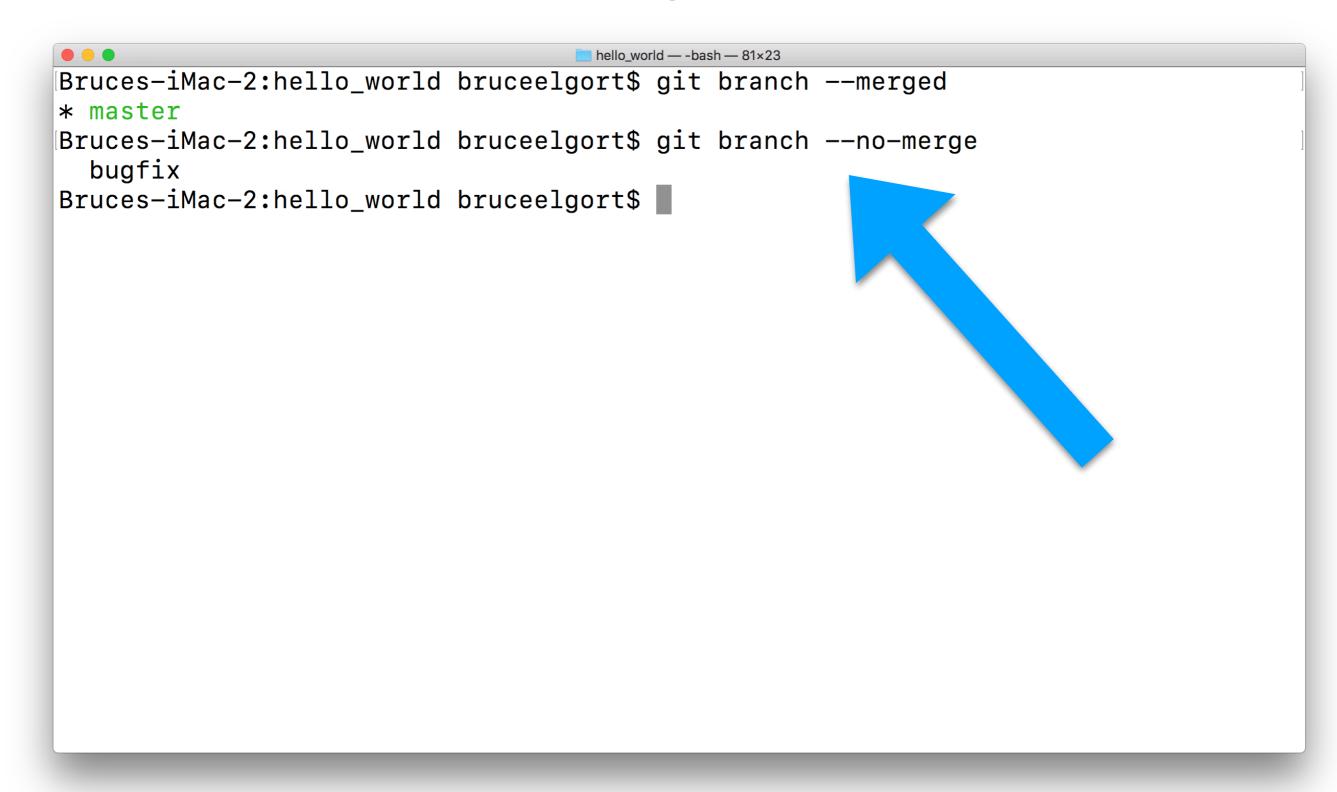
#### Get list of branches

```
Bruces-iMac-2:hello_world bruceelgort$ git checkout mast
Switched to branch 'master'
Bruces-iMac-2:hello_world bruceelgort$ git statu
On branch master
nothing to commit, working tree clean
Bruces-iMac-2:hello_world bruceelgort$ git branch
  bugfix
* master
Bruces-iMac-2:hello_world bruceelgort$
```

## Get list of merged branches



#### Get list of un-merged branches



## Deleting a branch

```
Bruces-iMac-2:hello_world bruceelgort$ git branch --merged
* master
Bruces-iMac-2:hello_world bruceelgort$ git branch --no-merge
  bugfix
Bruces-iMac-2:hello_world bruceelgort$ git branch -D bugfix
Deleted branch bugfix (was 7f77680).
Bruces-iMac-2:hello_word bruceelgort$
```

#### Merging branches

```
Bruces-iMac-2:hello_world bruceelgort$ git merge master bugfix Updating 5d0c6a0..ba55e7a Fast-forward index.html | 1 + 1 file changed, 1 insertion(+) Bruces-iMac-2:hello_world bruceelgort$
```

# Merging branches with a conflict demo

#### Adding a remote origin

git remote add origin <server>

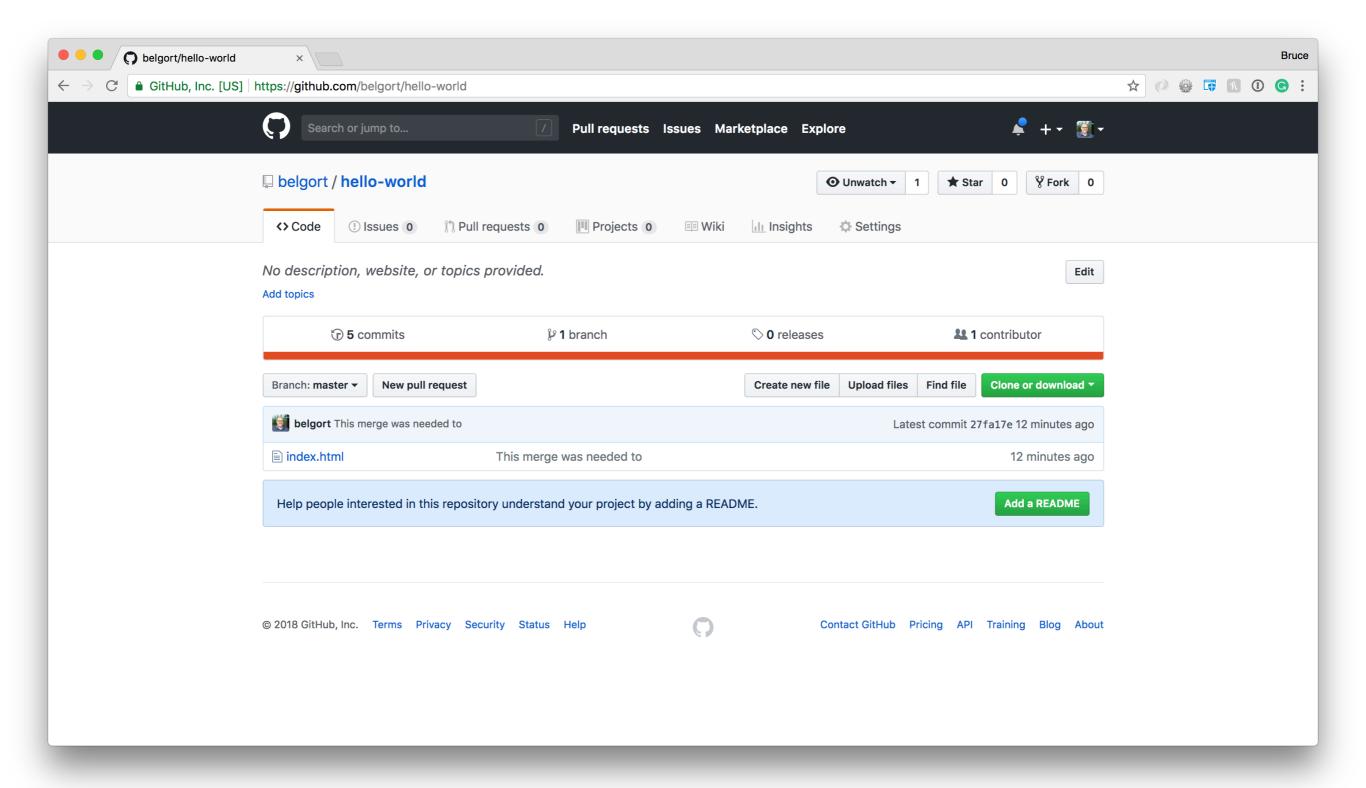
## Adding a remote origin

```
hello_world — -bash — 71×23
Bruces-iMac-2:hello_world bruceelgort$ git remote add origin https://gi
thub.com/belgort/hello-world.git
Bruces-iMac-2:hello_world bruceelgort$
```

# Pushing a branch to the origin

```
hello_world — -bash — 71×23
Bruces-iMac-2:hello_world bruceelgort$ git remote add
                                                            ın https://gi
thub.com/belgort/hello-world.git
Bruces-iMac-2:hello_world bruceelgort$ git push origin master
Counting objects: 15, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (10/10), done.
Writing objects: 100% (15/15), 1.40 KiB | 1.40 MiB/s, done.
Total 15 (delta 5), reused 0 (delta 0)
remote: Resolving deltas: 100% (5/5), done.
To https://github.com/belgort/hello-world.git
 * [new branch]
                     master -> master
Bruces-iMac-2:hello_world bruceelgort$
```

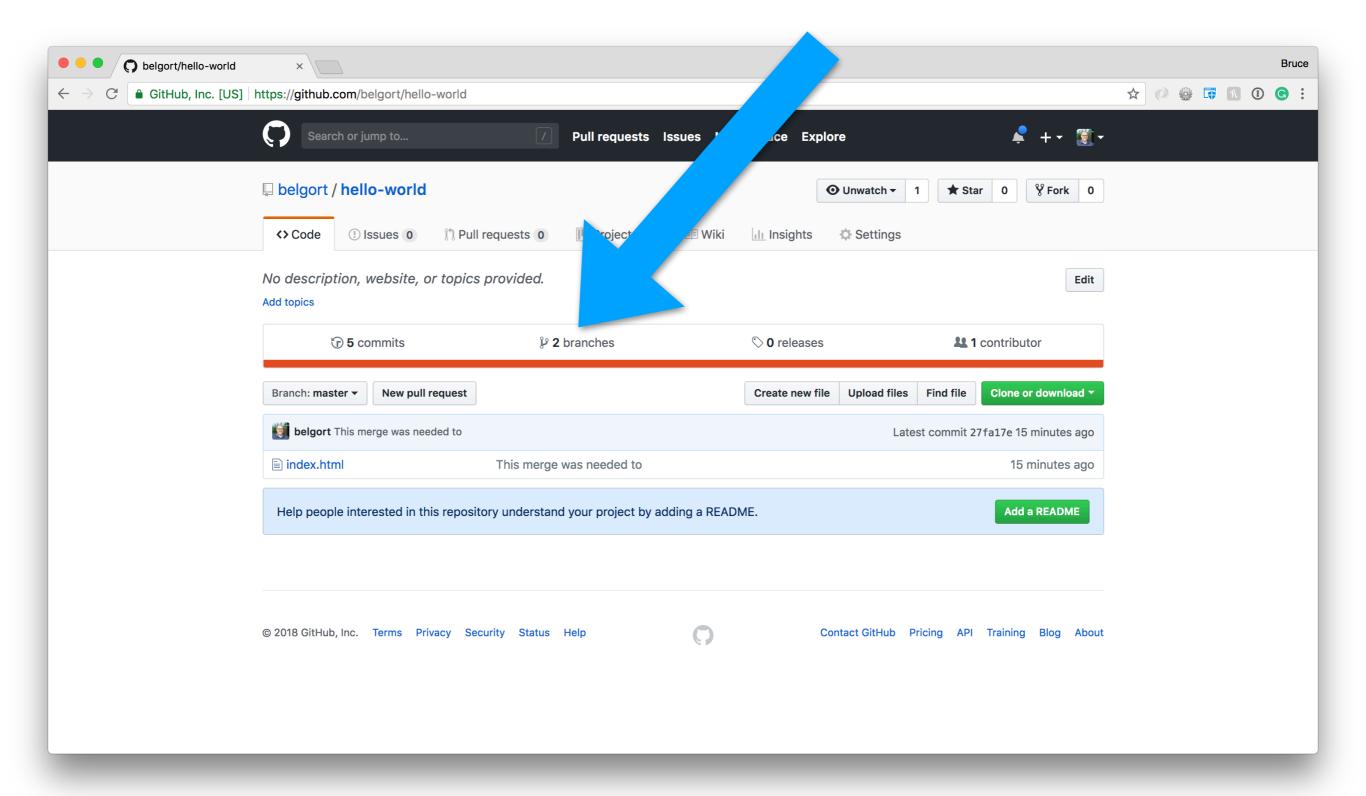
# Pushing to the origin



#### Pushing all branches to the origin



# Pushing all branches to the origin



# Pull from the origin

git pull

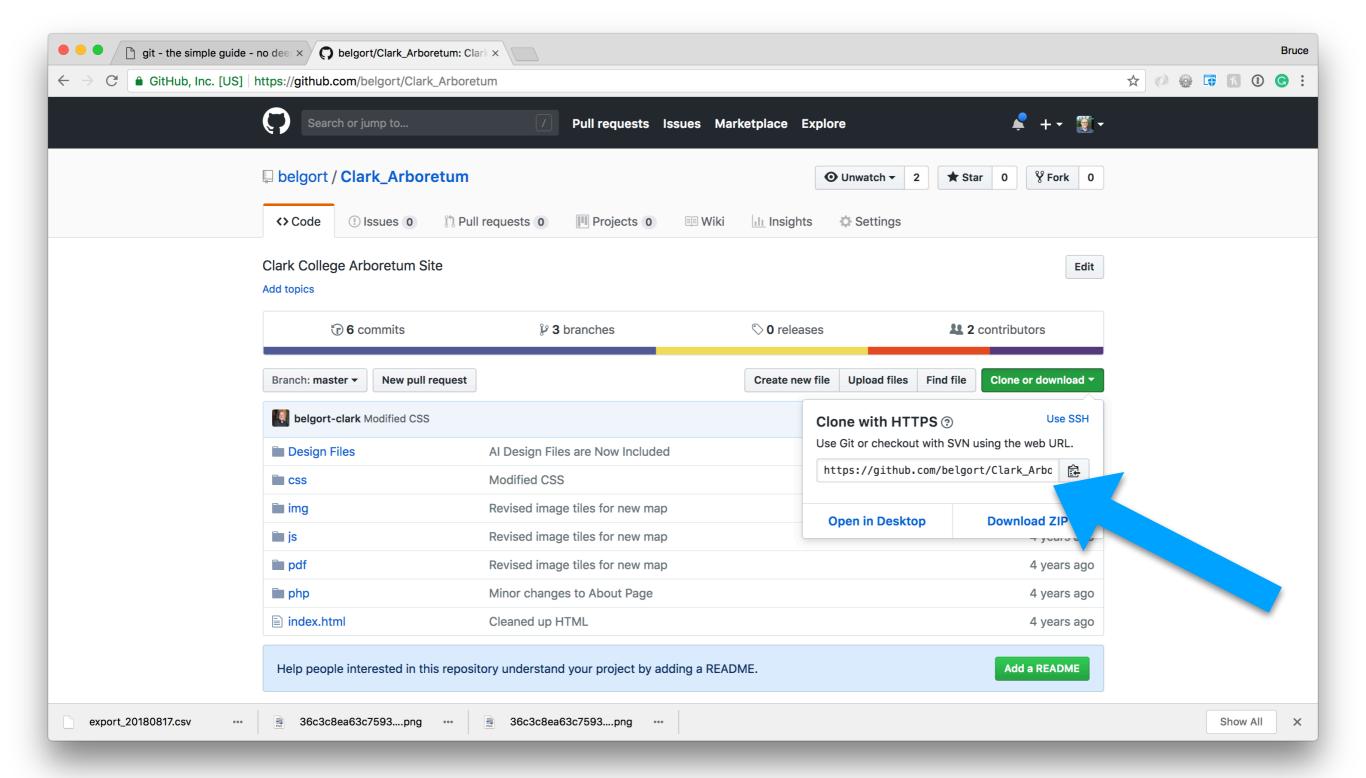
# Pull from the origin

```
hello_world — -bash — 71×23
Bruces-iMac-2:hello_world bruceelgort$ git pull origin master
From https://github.com/belgort/hello-world
 * branch
                      master
                                 -> FETCH_HEAD
Already up to date.
Bruces-iMac-2:hello_world bruceelgort$
```

#### Show remote info

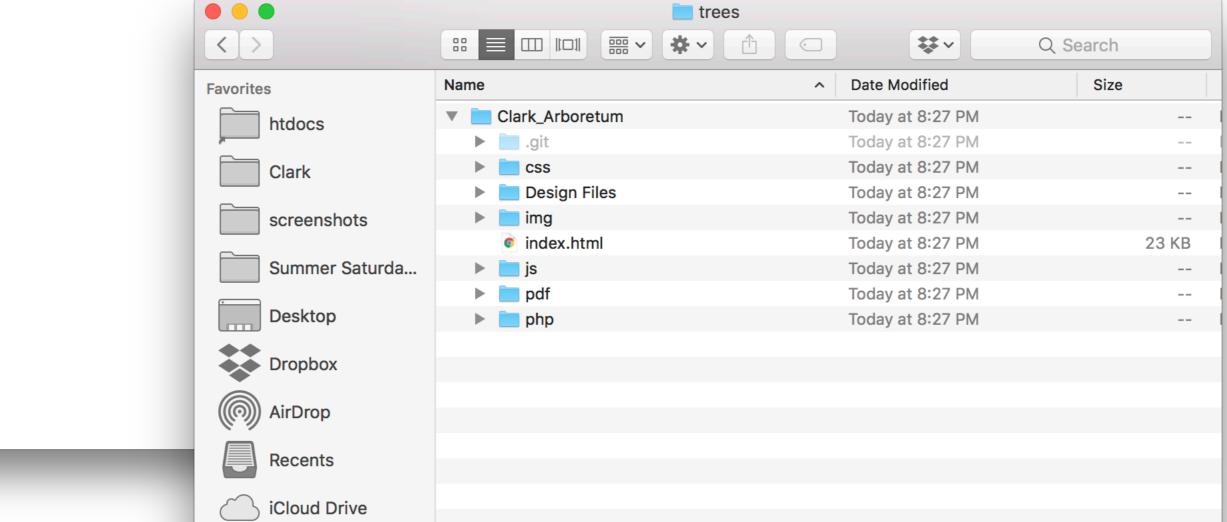
```
hello_world — -bash — 71×23
Bruces-iMac-2:hello_world bruceelgort$ git remote -v
origin https://github.com/belgort/hello-world.git (fetch)
origin https://github.com/belgort/hello-world.git (push)
Bruces-iMac-2:hello_world bruceelgort$
```

# Cloning a repo



## Cloning a repo

```
Bruces-iMac-2:trees bruceelgort$ git clone https://github.com/belgort/Clark_Arboretum.git
Cloning into 'Clark_Arboretum'...
remote: Counting objects: 3525, done.
remote: Total 3525 (delta 0), reused 0 (delta 0), pack-reused 3525
Receiving objects: 100% (3525/3525), 116.34 MiB | 22.87 MiB/s, done.
Resolving deltas: 100% (288/288), done.
Bruces-iMac-2:trees bruceelgort$
```



#### Learning Resources

**Git SCM Site** 

http://git-scm.com

**Pro Git Book** 

https://git-scm.com/book/en/v2

Oh shit, git!

https://ohshitgit.com/

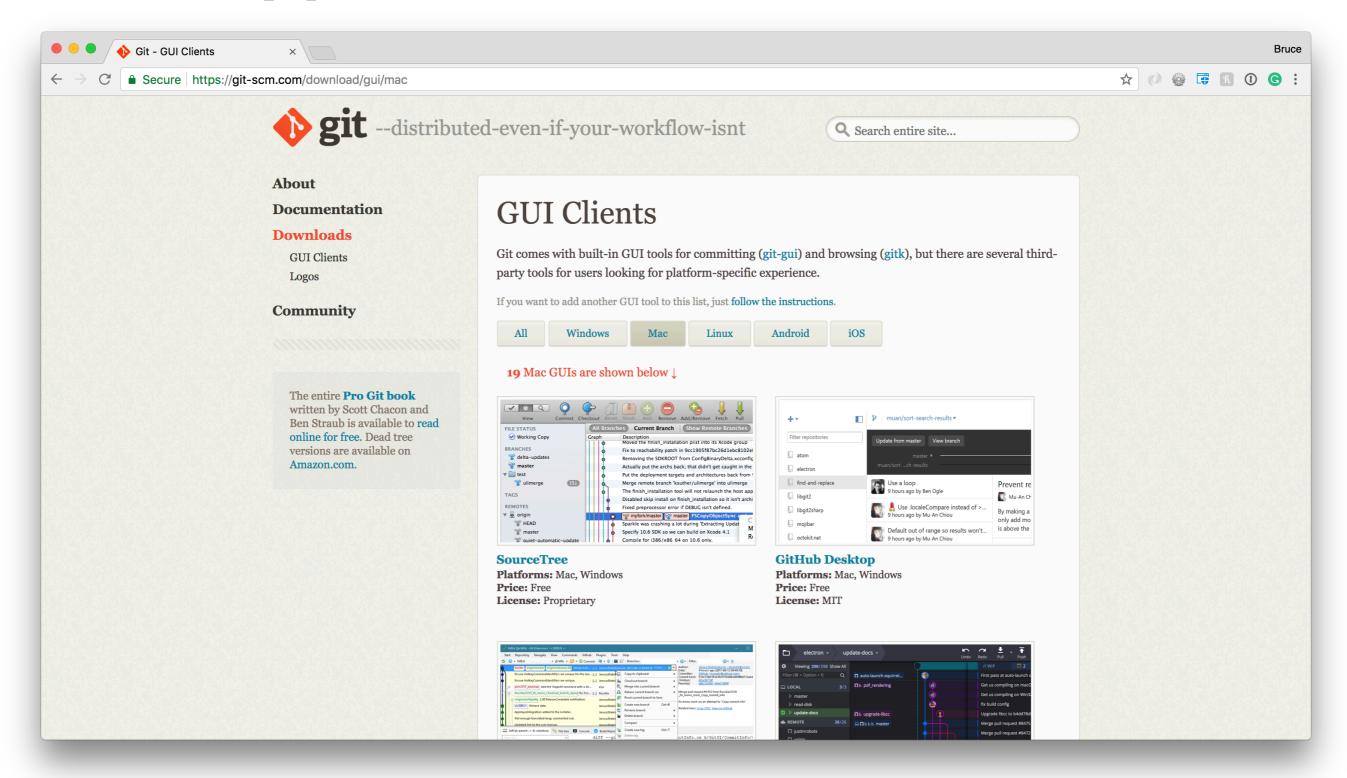
**Git - The Simple Guide** 

http://rogerdudler.github.io/git-guide/

**Visual Studio Code Source Control** 

https://code.visualstudio.com/docs/editor/versioncontrol

## Git Apps for Mac



https://git-scm.com/download/gui/mac

## Git Apps for Windows

