MONTANA

STATE UNIVERSITY

Github

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Github & Jetbrains & Markdown

Github History

- Founded in 2008
- Surpassed SourceForge in 2011
- Raised huge round in 2012
- Acquired by Microsoft in 2018
- Acquired npm in 2020
  - javascript package manager

GitHub

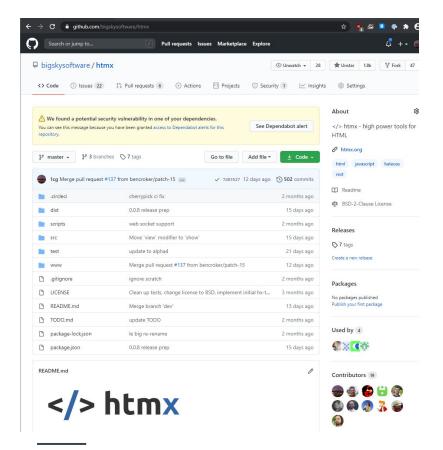# Github Functionality

- Hosts Git Repositories
- Provides a web interface for them
- Coordinates related repositories
  - "Forks"
  - "Pull Requests
- Provides coding infrastructure
- Increasingly provides social infrastructure

GitHub

Github Functionality

- Code
  - Can show diffs, allows online editing
- Issues
  - Bug management
- Pull Requests
  - Coordinates Contributions
- Security (new)
  - Shows potential security issues

Github History

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GitHub

Github Alternatives

- Gitlab
  https://about.gitlab.com/

- Bitbucket
  https://bitbucket.org/product

- Sourcehut
  https://sr.ht/

Establishing an SSH identity

- Need to establish your identity if you haven't done so
  ```
  $ ssh-keygen
  ```

Establishing an SSH identity

- Add ssh key

```
$ ssh-add ~/.ssh/id_rsa
```

Get your public key
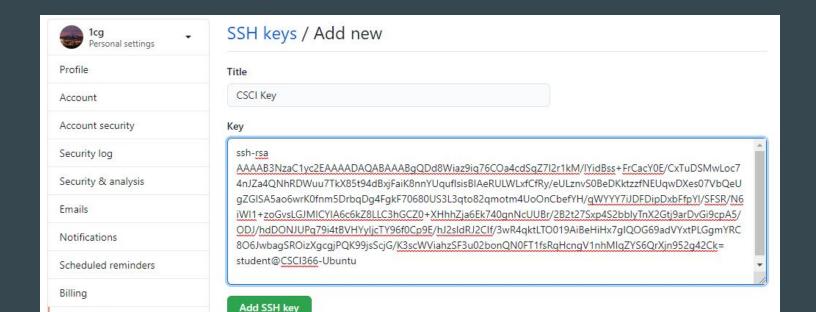
- Grab your public key

  ```
  $ cat ~/.ssh/id_rsa.pub
  ```
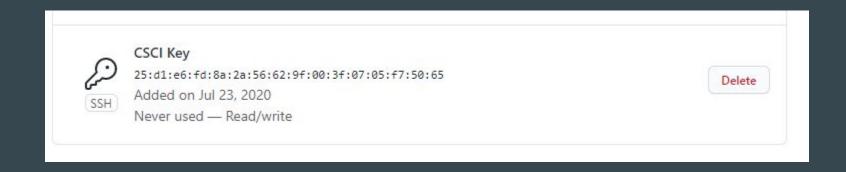
Add it to github

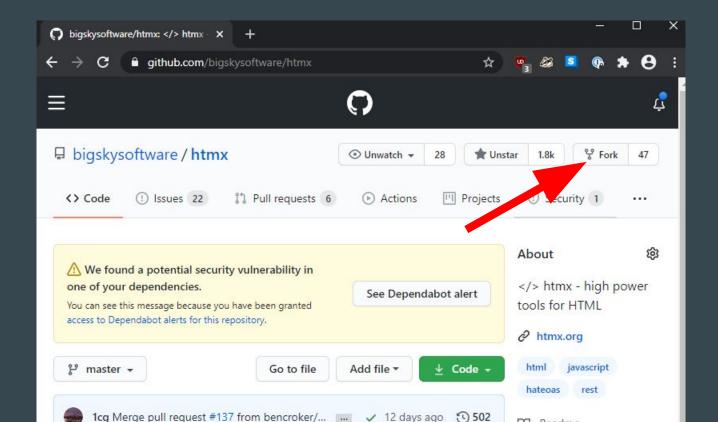- Head to https://github.com/settings/ssh/new
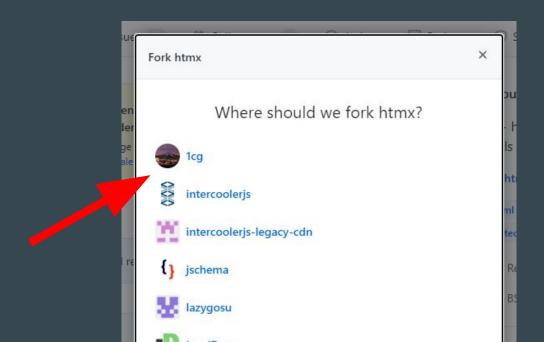- Paste in the key

Add it to github

- You should see the key in your UI now
- You can delete this key when you are done with the course

Next: Forking A Repository

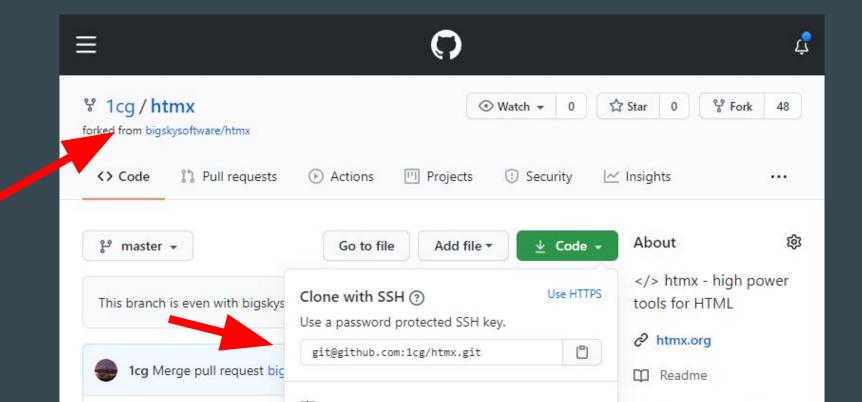# Forking A Repository

Forking A Repository

Now I Have My Own Repo!

Now Clone It Locally...

MINGW64:/c/Users/Carson

Carson@BIGSKY-THINKPAD MINGW64 ~
$ git clone git@github.com:1cg/htmx.git
Cloning into 'htmx'...
Warning: Permanently added the RSA host key for IP addr
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3501 (delta 0), reused 0 (delta 0), pack-
Receiving objects: 100% (3501/3501), 2.25 MiB | 3.35 Mi
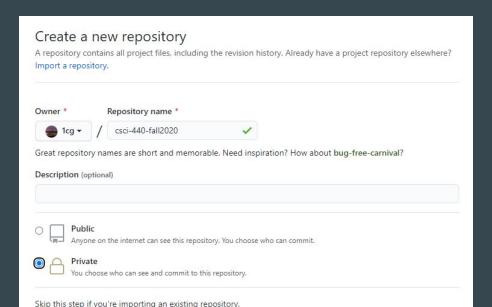Resolving deltas: 100% (2260/2260), done.

And Set Upstream


```
MINGW64:/c/Users/Carson/htmx                                    —    □    ×

Carson@BIGSKY-THINKPAD MINGW64 ~
$ cd htmx/

Carson@BIGSKY-THINKPAD MINGW64 ~/htmx (master)
$ git remote add upstream git@github.com:bigskysoftware/htmx.git

Carson@BIGSKY-THINKPAD MINGW64 ~/htmx (master)
$ git pull upstream master
From github.com:bigskysoftware/htmx
 * branch            master     -> FETCH_HEAD
 * [new branch]      master     -> upstream/master
Already up to date.
```

Forking vs Cloning

- Forking is a ***Github*** concept
  - Advantages
    - Github retains fork information
    - Allows for "pull requests" against the forked repository
  - Disadvantages
    - Doesn't retain upstream info when cloned
    - You can't change security information of your fork
      - Deal killer for us
- Cloning is a **git** concept. It just copies a code base.
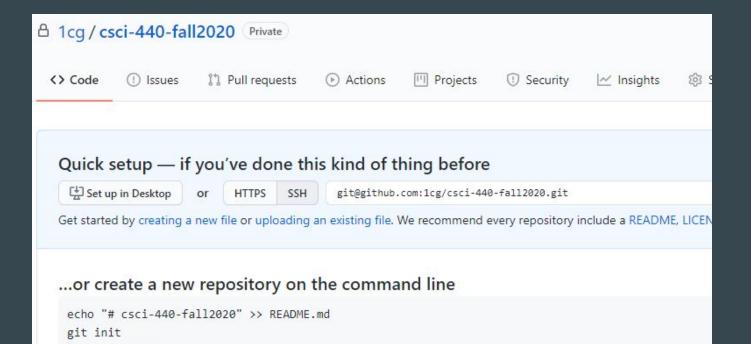- We are going to need to clone, rather than fork the class codebase so you can have private repositories

Create A New **Private** Repository

- https://github.com/new
- Same name as class repo
- Set to **PRIVATE**

Note the git: URL from this new, private repo

● Make sure it starts with git:

Clone The Class Repository

- Head to https://github.com/msu and grab the https URL of your class repository
- Clone it locally:

Update To Point To Your Repository

- Update the local repository to point to your new private repo with the command:

  `git remote set-url origin git@github.com:<your Github user name>/csci-440-fall2020.git`

Add Class Repository As Upstream

- Add the public class repository as an upstream repo:

```
git remote add upstream
https://github.com/msu/csci-440-fall2020.git
```
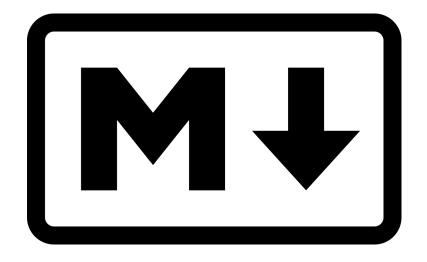
Jetbrains Demo

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Avoiding Learning Git

Bonus Content: Markdown

- Markdown is a plain text format that generates HTML
- Invented by John Gruber & Aaron Swartz
  - You should read up on Aaron Swartz
- Github has popularized and extended it

Markdown Basics - Headers

h1 Heading 8-)

h2 Heading

h3 Heading

h4 Heading

h5 Heading

h6 Heading

Markdown Basics - Emphasis

* Foo

* Bar

 * Doh

  * Ray

- Foo
- Bar
  - Doh
    - Ray

Markdown Basics - Code

```js
var foo = function (bar) {

  return bar++;

};

console.log(foo(5));
```

```js
var foo = function (bar) {
  return bar++;
};

console.log(foo(5));
```

Markdown

- Head on over to

  https://markdown-it.github.io/

- Play around with it
- Your assignments and project will be given out in Markdown
- Good skill to pick up, and pretty easy!

```javascript
var foo = function (bar) {
  return bar++;
};

console.log(foo(5));
```