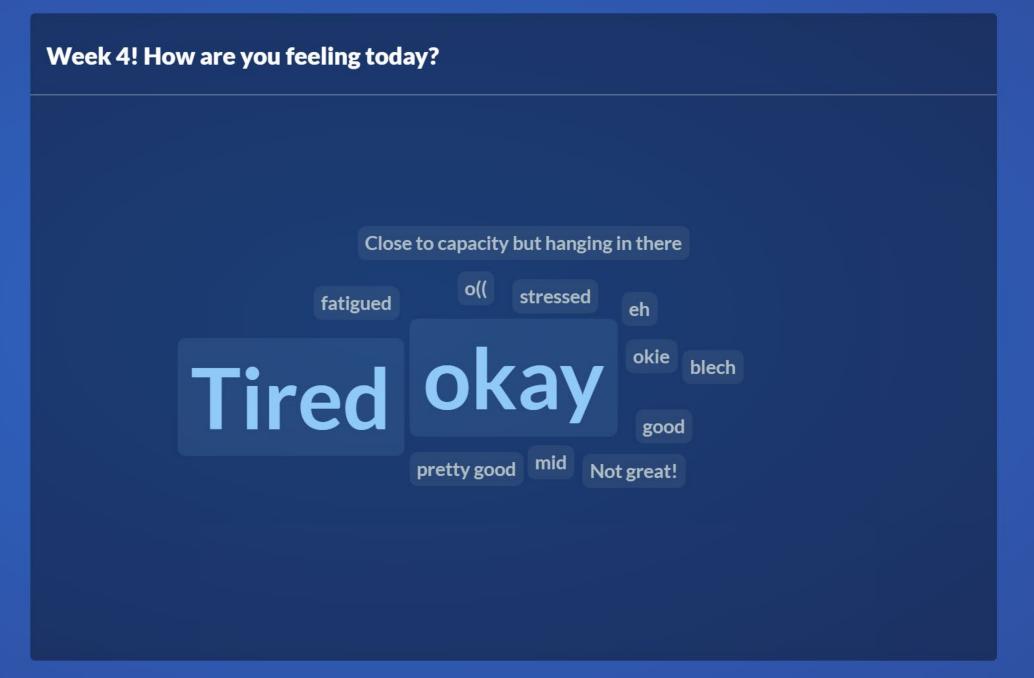


# Ethical Software and Developing for Civil Society

Albert S. Kochaphum Week 4 | April 18<sup>th</sup>, 2022









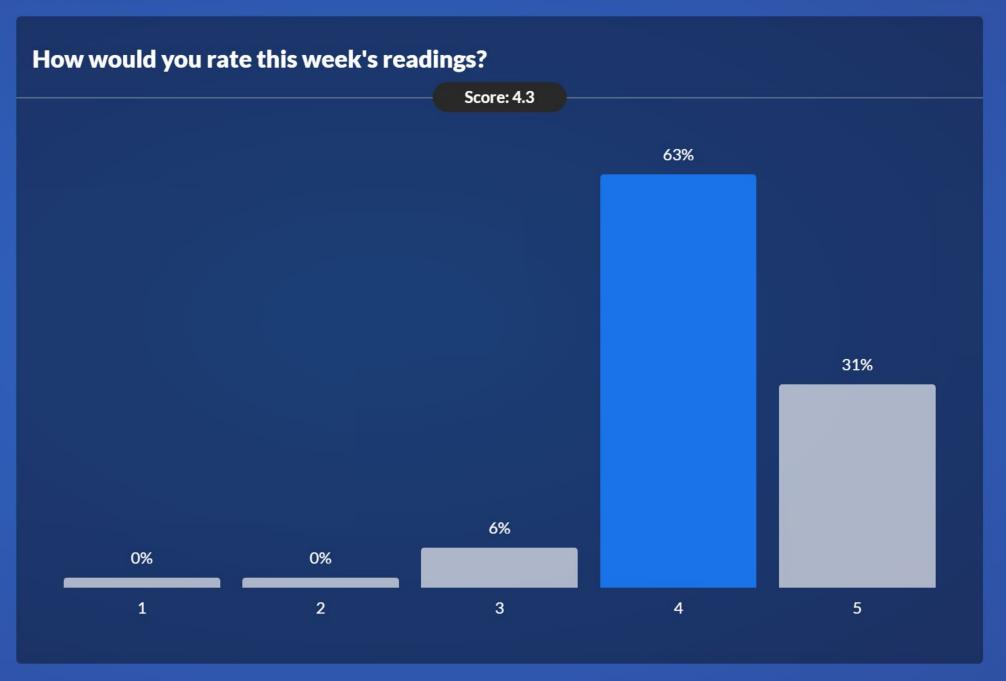




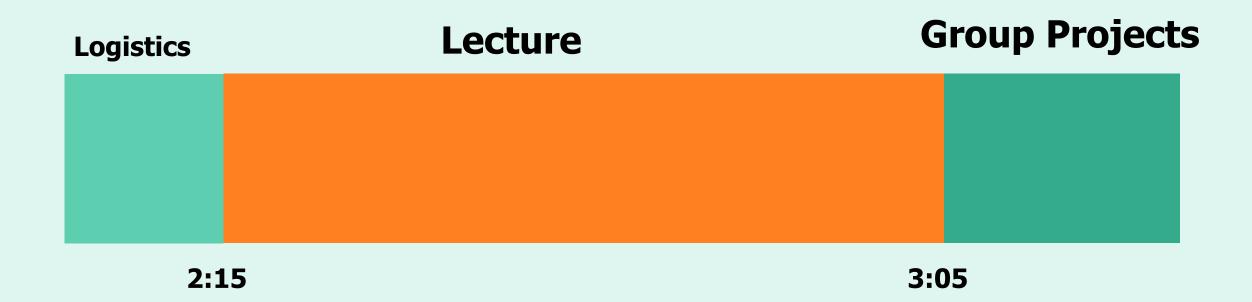








# Today's Agenda



# Logistics

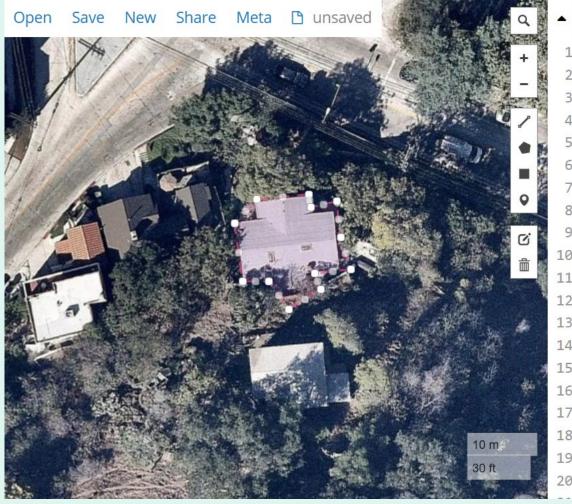
- Slido → Counts for class participation!
- Emailing individual assignment feedback/grades this week
- Group Assignment #3 "Survey" due Wednesday 4/27
  - Also contains the final questionnaire!
- No lab assignment / no thinking cap this week
- Prelab reading on survey design that should take 10 15 minutes

# Extra Credit Opportunities

- New extra credit opportunities this week
  - 1. UCLA vs USC LA Mapathon Wednesday and Thursday
  - 2. Optional Thinking cap worth 50%
- All extra credit from this week and last is due Monday 4/25



Kick Off: Wednesday, April 20, 2022 @ 10:00 AM PT Through Thursday, April 21, 2022



```
</>JSON
              ⊞ Table
                         ? Help
                                                     anon | login
     "type": "FeatureCollection",
     "features": [
         "type": "Feature",
         "properties": {},
         "geometry": {
           "type": "Point",
           "coordinates": [
             -118.3560562133789,
11
             34.105550773988746
12
13
14
15
16
         "type": "Feature",
         "properties": {},
17
18
         "geometry": {
           "type": "Polygon",
19
           "coordinates": [
20
```

# ☆LA Mapathon Extra Thinking Cap ☆:

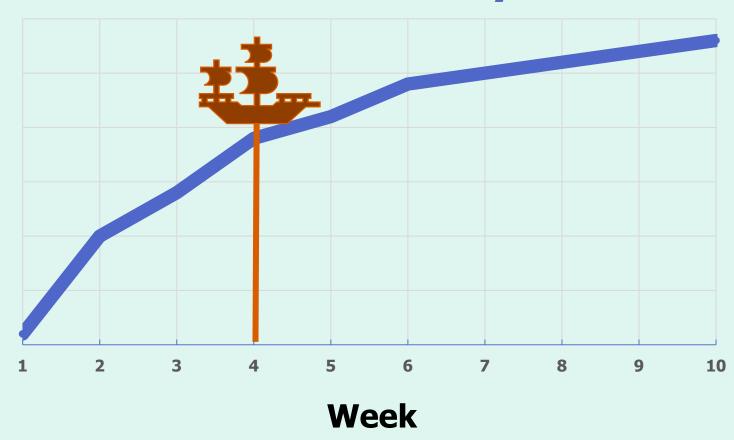
What do you think are drawbacks to humanitarian mapathon events (if any)? Could you leverage them for a cause you are interested in?

# Wednesday's 4/20 Lab

- Will be half lecture!!!!
- Survey lecture will be embedded in the first half
- Group Assignment #3 "Survey" due Wednesday 4/27

# Lab difficulty will start to plateau

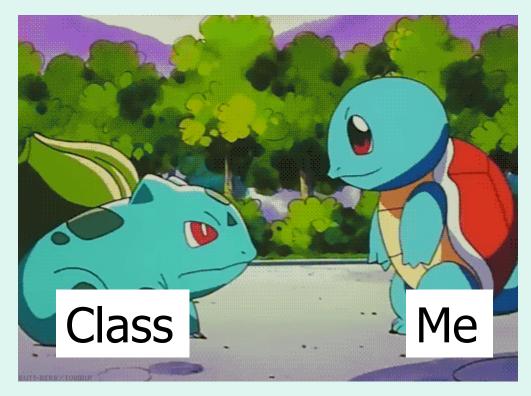
### **Lab Difficulty**



# Now is the time reach out if you've been stuck or unclear about things



# Help in general



Willing to work with you, but you must reach out

# **Questions?**

# Week 3 - ALwards

Earth day Approved!

# U.S. NationAL-bert Parks



### KATMAI attention with your thinking caps

#### **Daiki Saito**

Both closed source and open source tools have advantages and disadvantages as well... we are told that learning to code is like learning another language and thus requires practice... we keep our assignments "public" so that we can learn from each other by directly looking at other students' code. closed source tools prevent others from accessing the source code, closed source software are being discreet... which raises the concern of ethics and transparency.



#### **Steven Tran**

Closed source tools are harmful for civil society because there is not a lot of entities that are able to hold organizations that use software for harmful reasons. The software is housed privately and these organizations are able to decide how an when they want to use it.

https://github.com/albertkun/22S-ASIAAM-191A/discussions/14#discussioncomment-2577208

https://github.com/albertkun/22S-ASIAAM-191A/discussions/14#discussioncomment-2577208

# Grand TetON point!



#### **Ivy Tang**

#### **Nishaanth Krishnan**

Closed source tools are harmful to society in the sense that they limit access to the technology to only those who made that tool. On the other hand, open source projects are there for the public to see them and therefore improve on them for the needs of their community. After looking the readings and Mariah Tso's talk, I was reminded how I read about algorithmic bias with machine learning in a previous class.

https://github.com/albertkun/22S-ASIAAM-191A/discussions/14#discussioncomment-2582571 ... As we learned in our guest presentation last week, open source tools allow individuals such as Machiko, who may not necessarily have a formal education in computer science, to be able to take advantage of an accessible, free resource to learn from and apply to their own projects... ethical source... placing these limitations would completely go against the point of open-source code, whose whole purpose is to be accessible to anyone and everyone

https://github.com/albertkun/22S-ASIAAM-191A/discussions/14#discussioncomment-2582774

# SequioAMAZING Thinking Cap

#### **Jenny Lu**

... closed source ... is harmful for civil society as not everyone has access to the tools and information used in certain products, and so there is no way to expand upon certain creations... the information is puppyguarded through either a paywall or a certain level of required clearance... with the foundation that our society is built on (capitalism and colonialism), there is really no such thing as "closed-source" when it comes to large corporations and ruling entities, and so the only thing that closed-source tools really do is limit the accessibility for regular people.



### Kenai Fjorwards your great thinking caps as a model?

#### **Keri Chen**

As for the implications on civil society, we chose open source tools because transparency is essential... As Mariah Tso mentioned... mapping ... creates reality...using open source tools allows for a fair and collaborative environment...

https://github.com/albertkun/22S-ASIAAM-191A/discussions/14#discussioncommen t-2580246

#### **Ashley Lu**

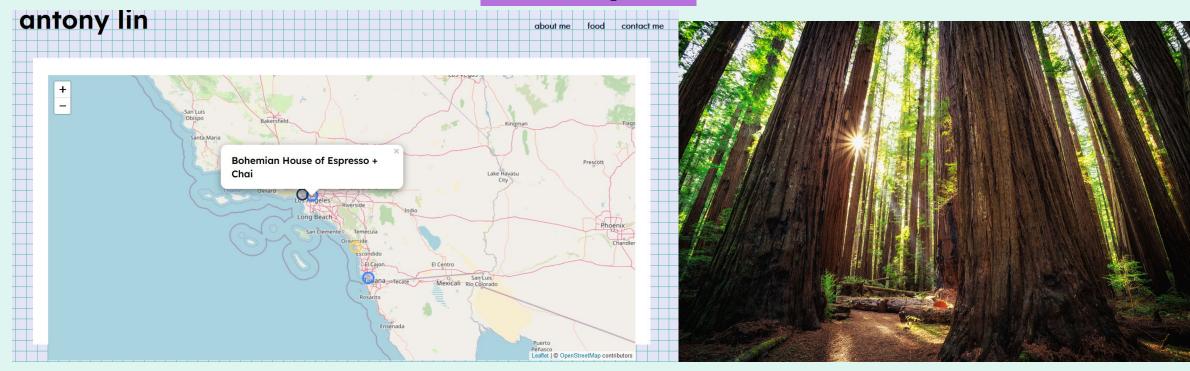
Open source tools are great in that everyone has the opportunity to contribute to the code and make use of the tools. There are also a lot of strong open source communities ... to help people learn. Yet ... a large ethical component ... is sometimes forgotten when dealing with open source.



https://github.com/albertkun/22S-ASIAAM-191A/discussions/14#discussioncomme nt-2582649

Hey! RedWoodn't you know how to incorporate a GeoJSON before lab 3?

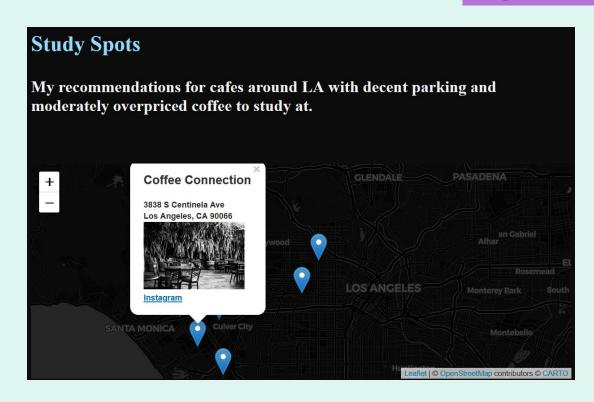
#### **Anthony Lin**



https://antonyblin.github.io/aas191a-assignments/week2/food.html

# Great BAS-map-Incorporation\*

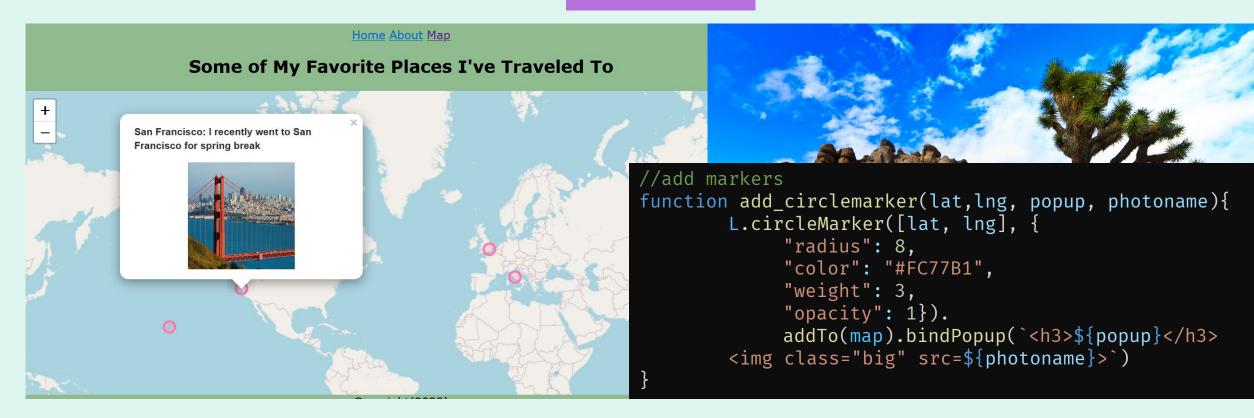
#### **Ngoc Tran**





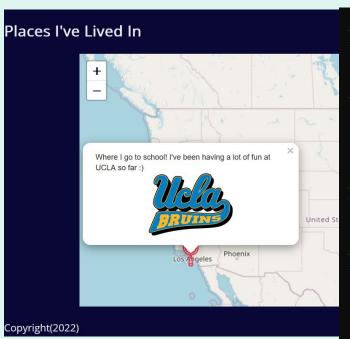
### Joshua Treating Leaflet options and objects like a pro-

#### **Kristen Fu**



# Nice Custom Map ZIcON

**Ashley Lu** 



```
// Icon options
var iconOptions = {
    iconUrl: 'images/magnifying-
glass.png',
    iconSize: [45, 45]
  }

// Creating a custom icon
var customIcon = L.icon(iconOptions);

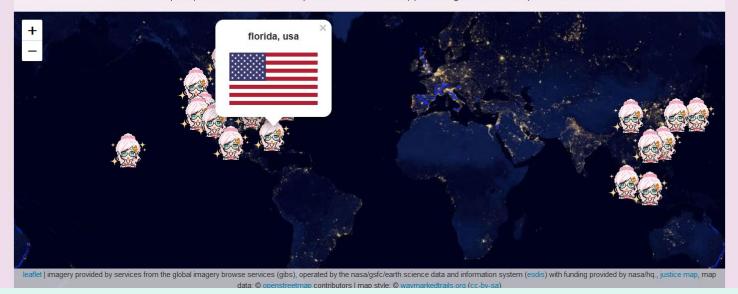
// Options for the marker
var markerOptions = {
    clickable: true,
    icon: customIcon
  }
```

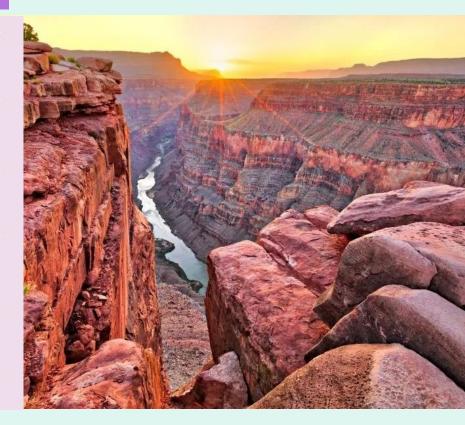
# Nice staying Grand CanyON TOP of map design and code

#### **Lindsey Mardona**

#### places i've been

i've had the wonderful privilege of being able to travel to a handful of places in my life.
because of this, i've gained a strong appreciation for traveling and being able to experience an entirely different culture firsthand.
this is a map of places i've visited. i hope that i'll have the opportunity to visit more places in the future.

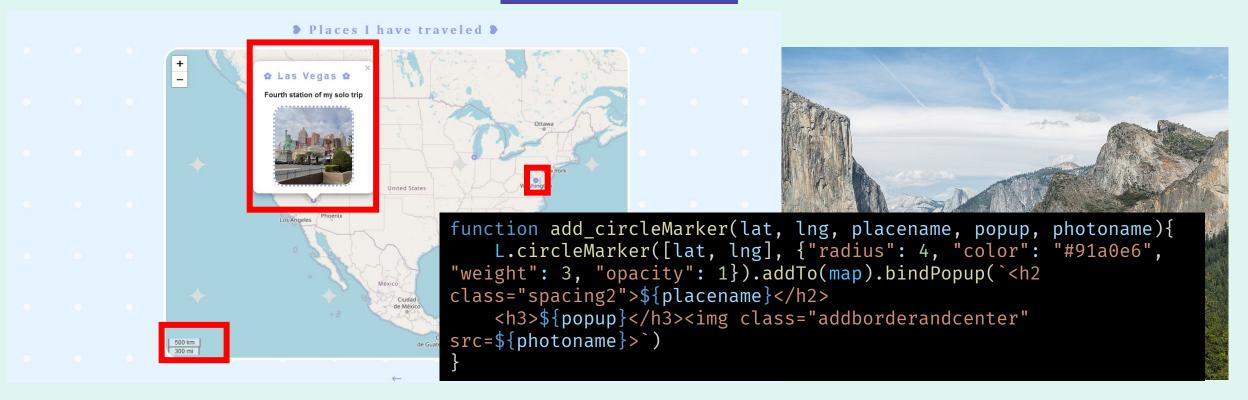




https://lindseymardona.github.io/22s-asiaam-191a-labs/week2/index.html

### The YosemiTEACHer's Site of the Week

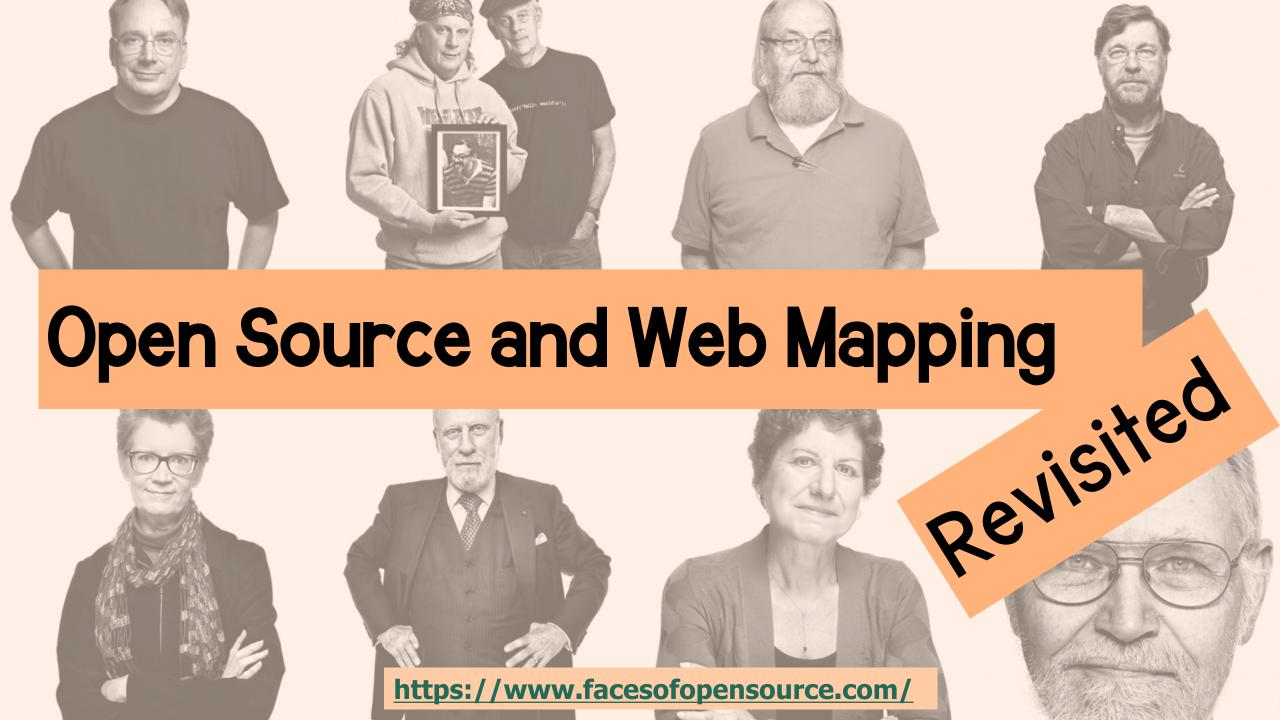
#### **Angeline Eow**



https://angelineeow.github.io/22s-asiaam-191a-labs/week2/more\_about\_me.html

# Theme of the week

Focusing on meaningful community engagement



# The Three Opens

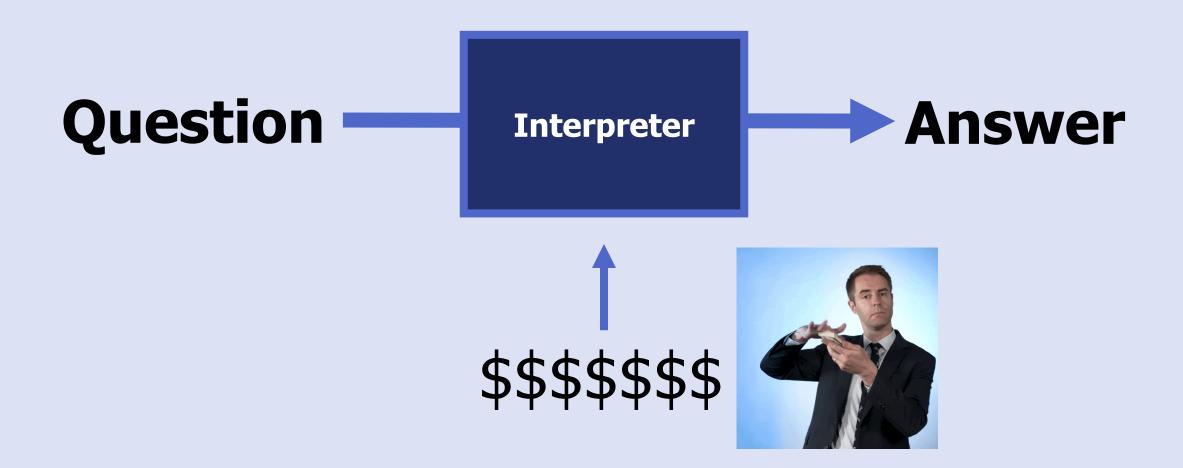
- Open Source
- Open Standards
- Open Data

# Leads to...

# A collaborative open-community

# Is this enough?

# What is programming?



### What is programming?



### Importance of an open internet...



### What makes us programmers?

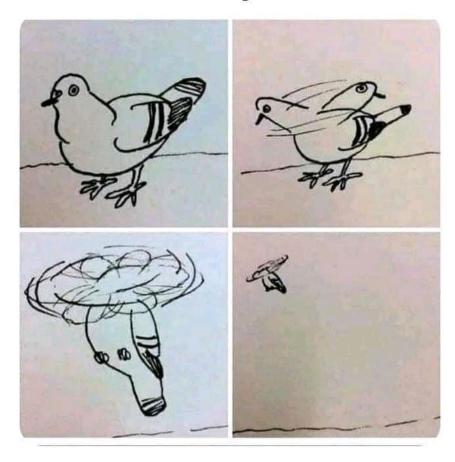


When we see code, we don't give up!



When we see code, we GOOGLE it up!

When your program is a complete mess, but it does its job



### So why JavaScript and Leaflet instead of...

# Google Maps API

**SQUARESPACE** 



# It's like learning to cook with only a microwave...

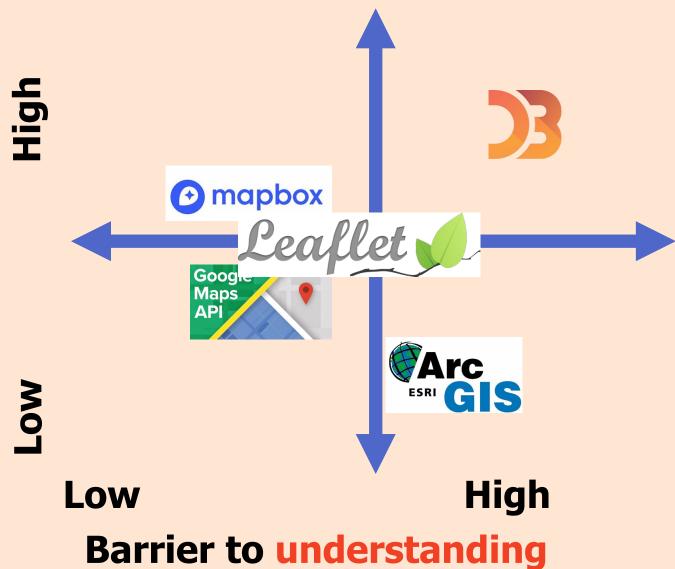
### For convenience, you ignore

- Ingredients
- Healthiness
- Dependency on the tool

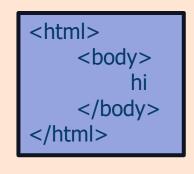
### **But most importantly...**

Why are cooking in the first place!!

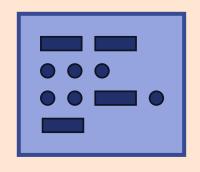
# The cost of open source



### Open-source vs Closed-Source



**VS** 

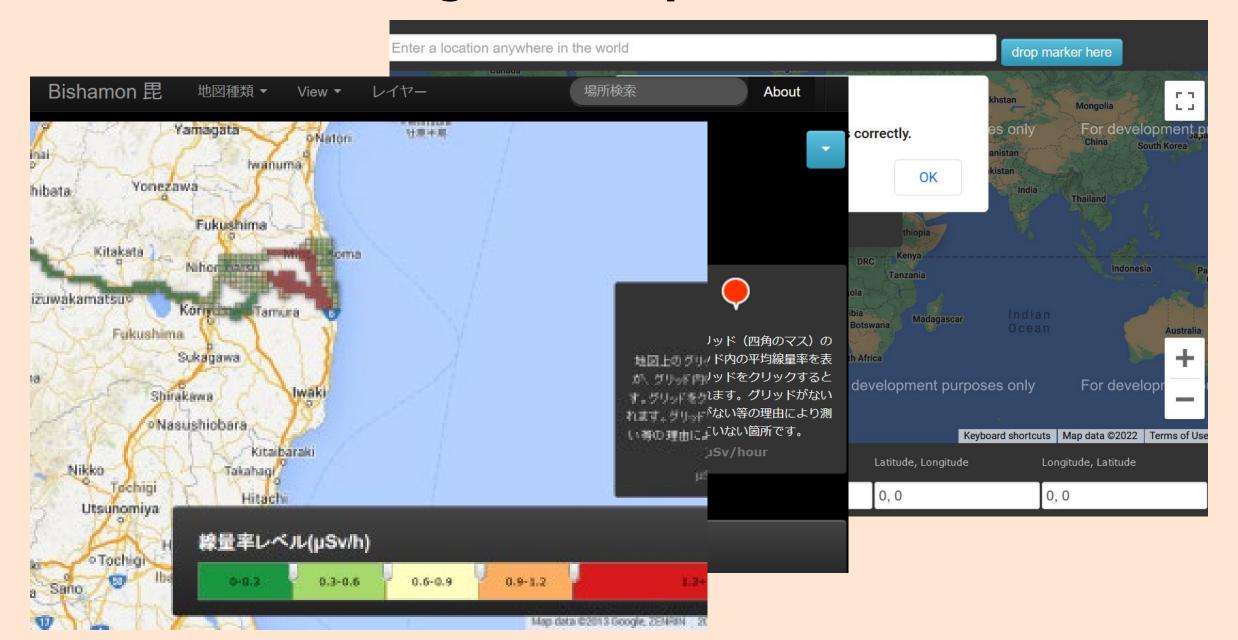


You can see the code

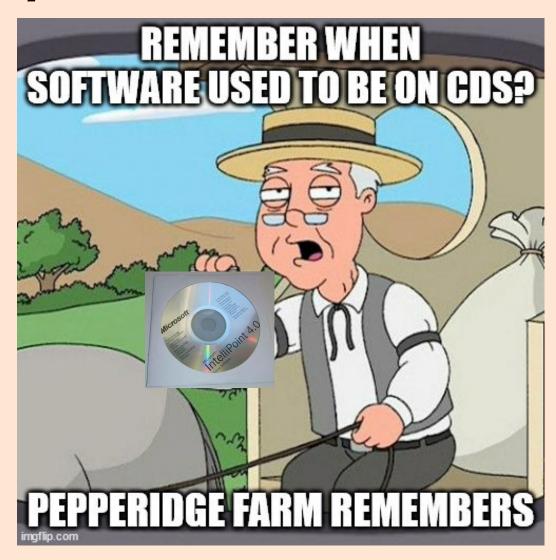
You can never see the code

Think about why is this important?

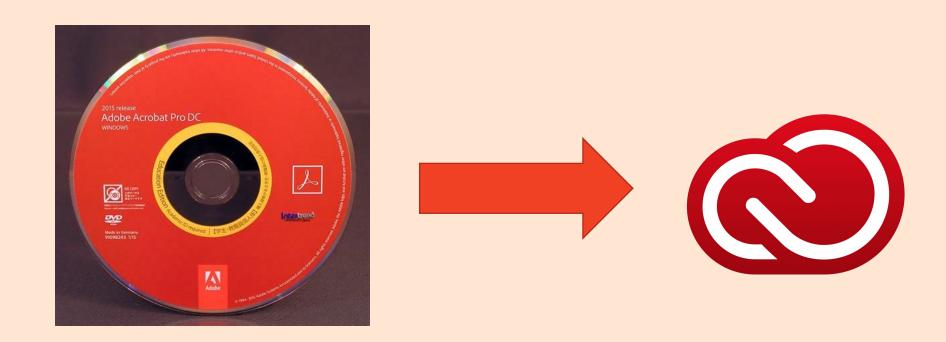
### **Google API Depreciation**



### Quick History on software...



### Quick History on software...



| EDB                 | Bruce Momjian   |                        | Joe Conway            | #                 | Alvaro Herrera        |
|---------------------|-----------------|------------------------|-----------------------|-------------------|-----------------------|
| EDB                 | Thomas Munro    |                        | Tom Lane              | +                 | Andrew Dunstan        |
| EDB                 | Robert Haas     |                        | Stephen Frost         | +                 | Peter Eisentraut      |
| EDB                 | Amit Kapila     |                        | Peter Geoghegan       | +                 | Tomas Vondra          |
| EDB                 | Andres Freund   | Postgres               | Teodor Sigaev         | Pivotal           | Heikki<br>Linnakangas |
| vmware <sup>3</sup> | Kevin Grittner  | Professional Post gres | Alexander<br>Korotkov | Mir               | Greg Stark            |
| vmware <sup>a</sup> | Michael Paquier | aws                    | Jeff Davis            | Redpill<br>Linpr• | Magnus Hagander       |
| NTT                 | Fujii Masao     |                        | Michael Meskes        | <b>Ø</b>          | Tatsuo Ishii          |
| NTT                 | Etsuro Fujita   |                        | Noah Misch            |                   | Dean Rasheed          |

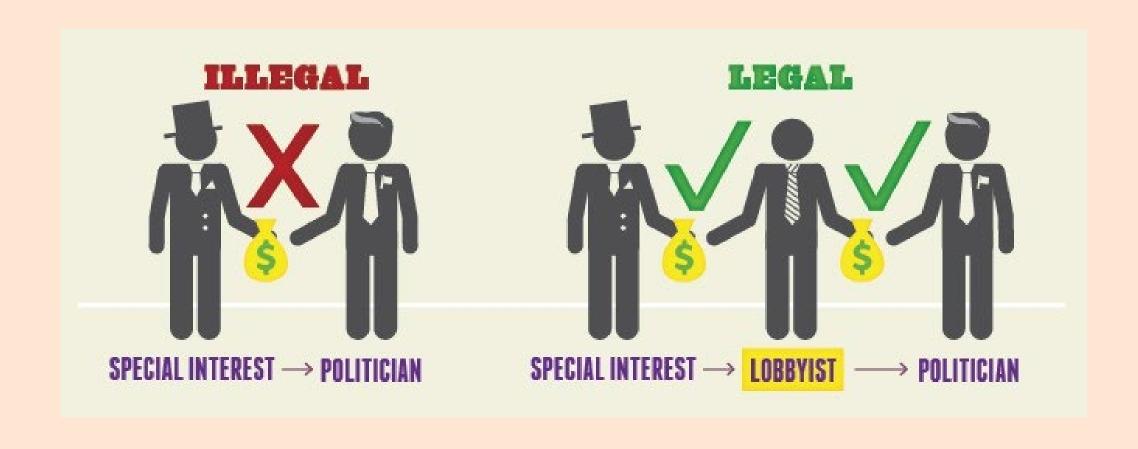
| EDB            | Bruce Momjian   |                        | Joe Conway            | +                 | Alvaro Herrera        |
|----------------|-----------------|------------------------|-----------------------|-------------------|-----------------------|
| EDB            | Thomas Munro    |                        | Tom Lane              | +                 | Andrew Dunstan        |
| EDB            | Robert Haas     |                        | Stephen Frost         | +                 | Peter Eisentraut      |
| EDB            | Amit Kapila     |                        | Peter Geoghegan       | +                 | Tomas Vondra          |
| EDB            | Andres Freund   | Postgres               | Teodor Sigaev         | Pivotal           | Heikki<br>Linnakangas |
| <b>vm</b> ware | Kevin Grittner  | Professional Post gres | Alexander<br>Korotkov | Mir               | Greg Stark            |
| <b>vm</b> ware | Michael Paquier | aws                    | Jeff Davis            | Redpill<br>Linpro | Magnus Hagander       |
| NTT            | Fujii Masao     |                        | Michael Meskes        | <b>Ø</b>          | Tatsuo Ishii          |
| NTT            | Etsuro Fujita   |                        | Noah Misch            |                   | Dean Rasheed          |
|                |                 |                        |                       |                   |                       |

# Is this fair?

# Tragedy of the commons



### Have coporations infiltrated open source?



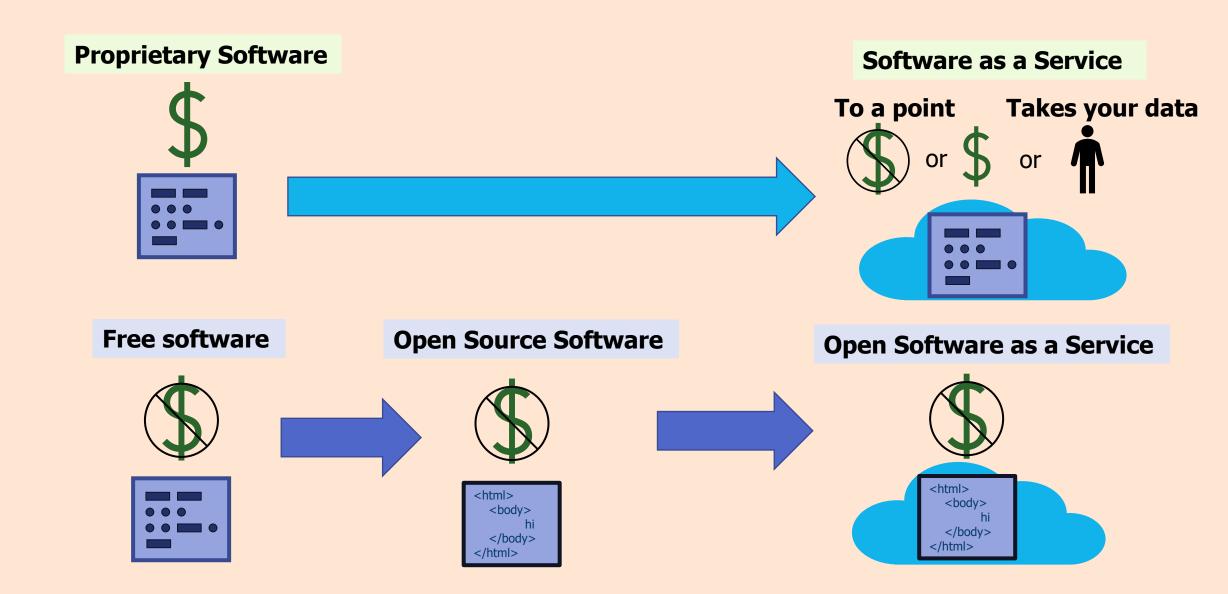
### Have coporations infiltrated open source?







### Summary



### Open Source

No costs and long-term application viability

Vs.

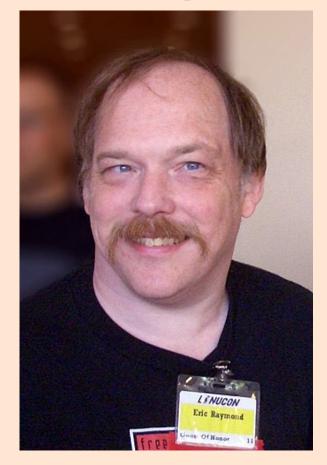
### **Closed Source**

Short-term costs and application viability

# Are you designing for a long-term application or to quickly finish an application?

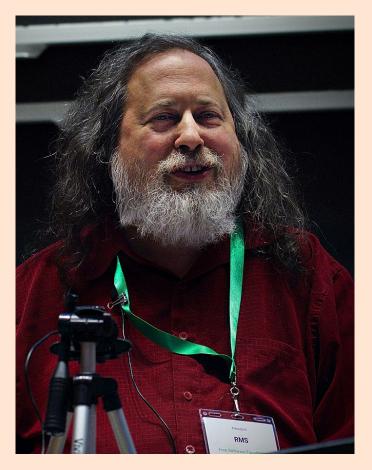
## Issues with open source...

**Eric S. Raymond** 



**Founder of Open Source Initiative** 

**Richard Stallman** 



**Founder of Free and Open Source Foundation** 

# Issues with open source...

### **Eric S. Raymond**

### Co-founder of OSI Banned From Mailing Lists

Written by Sue Gee

Wednesday, 11 March 2020

Eric S Raymond, one of the founders of the Open Source Initiative and its president for the first six years, has been banned from two OSI mailing lists following messages whose tone violated the code of conduct.

#### **Richard Stallman**

# Return of Stallman to FSF sparks outrage among open-source and free software leaders

**(**)

Steven J. Vaughan-Nichols · 3/24/2021

https://www.i-programmer.info/news/136open-source/13535-co-founder-of-osi-bannedfrom-.html https://www.msn.com/enus/news/technology/return-of-stallman-to-fsfsparks-outrage-among-open-source-and-freesoftware-leaders/ar-BB1eVPC8

# Issues with open source...

It is detached from ethics and treats technology as "neutral"

"Guns aren't bad, it's up to the user."

# So...Is open source enough?



# Solution: Ethical Source Licensing?



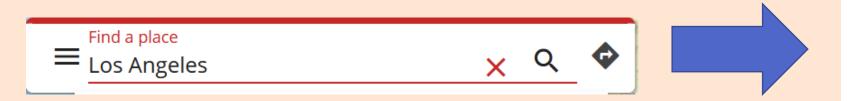
Established in 2019

https://ethicalsource.dev/

### **Ethical Source License**



### **Example: Geocoding**



Name: Los Angeles, CA,USA

Country: United States

Layer: Locality

Lon.: -118.25703

Lat.: 34.05513

### Leaflet vs. Google Maps



an open-source JavaScript library for mobile-friendly interactive maps

#### Leaflet Control Geocoder pm v2.2.0 Leaflet 1.0.0 V

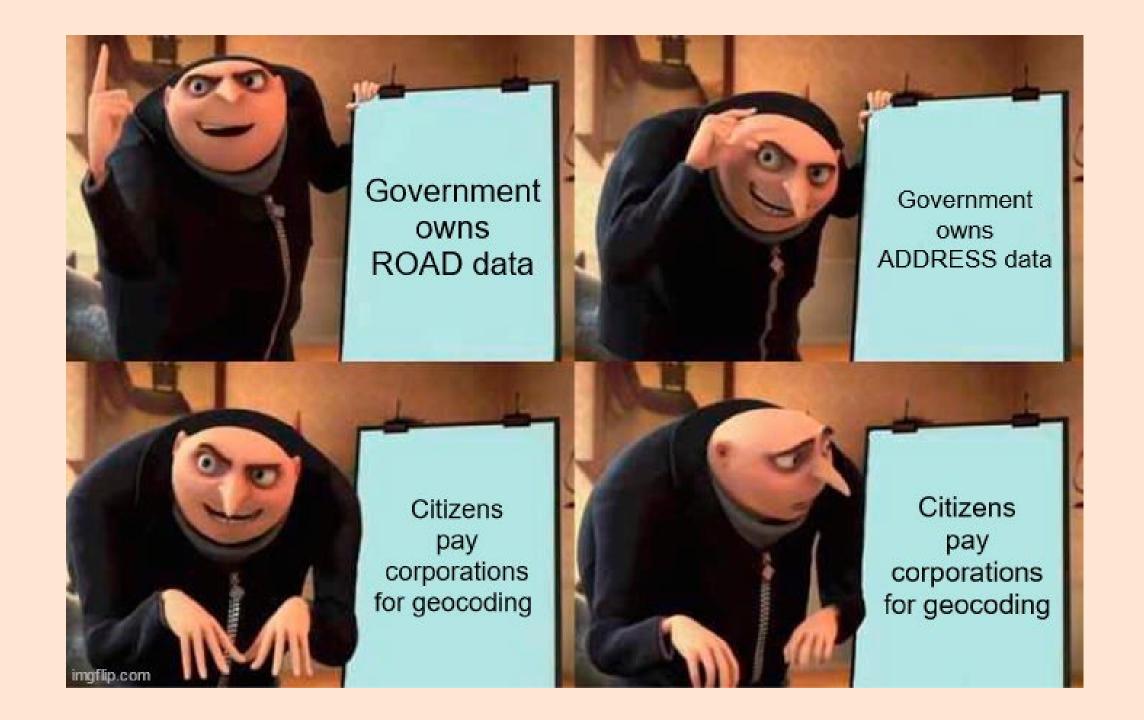
A simple geocoder for Leaflet that by default uses OSM/Nominatim.

The plugin supports many different data providers:

- LatLng to parse basic latitude/longitude strings
- OSM/Nominatim
- Bing Locations API
- Google Geocoding API
- Mapbox Geocoding
- MapQuest Geocoding API
- What3Words
- Photon
- Pelias, geocode.earth (formerly Mapzen Search), Openrouteservice
- HERE Geocoder API (legacy)
- Neutrino API

#### Google Maps Platform APIs by Platform D

|   | MAPS  | ROUTES  | PLACES                      |  |  |
|---|---|---|-----------------------------|--|--|
| ~ | Static Maps<br>Display maps as images             |   | FREE<br>FOR MOBILE          | \$2<br>PER 1000 REQUESTS                       |  |
| ~ | <b>Dynamic Maps</b> Display interactive, custom   | nizable maps  | FREE<br>FOR MOBILE          | \$7<br>PER 1000 REQUESTS                       |  |
| ~ |   | (Beta) on on nearby places directly on your map ews, photos, pricing, ETA and walking | DS - FREE<br>DURING<br>BETA | Requires enabling<br>Dynamic Maps -<br>\$7 CPM |  |
| ~ | Static Street View Display a non-interactive G    | Google Street View 360 panoramic or thu   | mbnail image                | \$7<br>PER 1000 REQUESTS                       |  |
| ~ | Dynamic Street Vie<br>Display an interactive Goog | <b>PW</b><br>gle Street View 360 panoramic or thumb                                   | onail image                 | \$14<br>PER 1000 REQUESTS                      |  |



# Public data is now the commodity



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- Local Storage,
- Settings Manager,
- Peer Assisted Networking Technology.

Content Protection Technology and

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Save

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Decline

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#### I. REQUIREMENTS FOR USE OF THE SERVICE

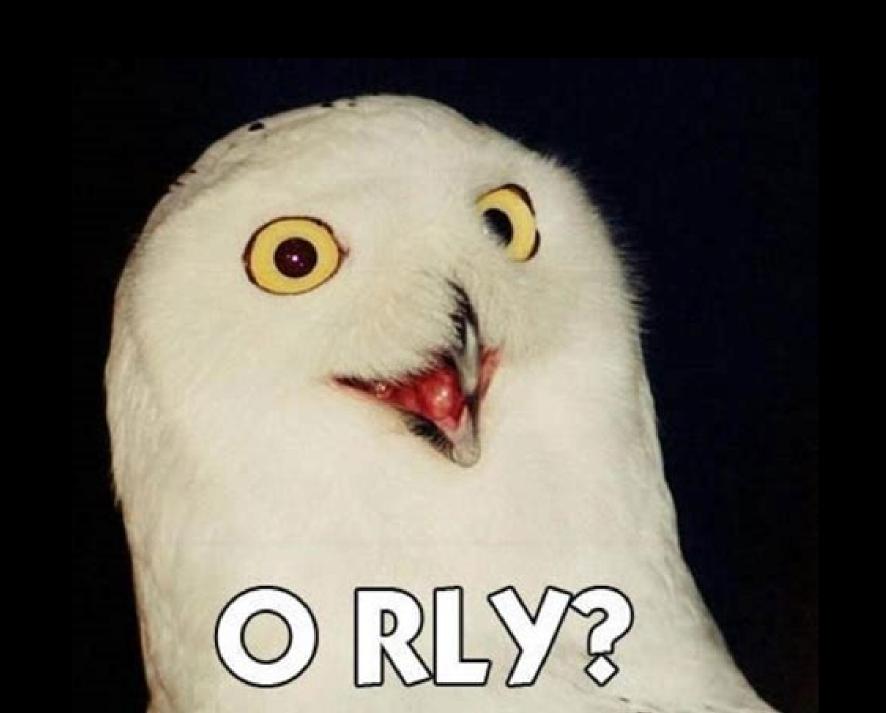
### Your data is now the commodity



"If you're doing something you don't want anyone to know, maybe you shouldn't be doing it in the first place."

- Eric Schmidt, Google CEO





**SECURITY** 

# Google faces \$5 billion lawsuit in U.S. for tracking 'private' internet use

Google "cannot continue to engage in the covert and unauthorized data collection from virtually every American with a computer or phone," the complaint said.

June 2, 2020, 3:50 PM PDT / Updated June 3, 2020, 5:00 AM PDT

#### By Reuters



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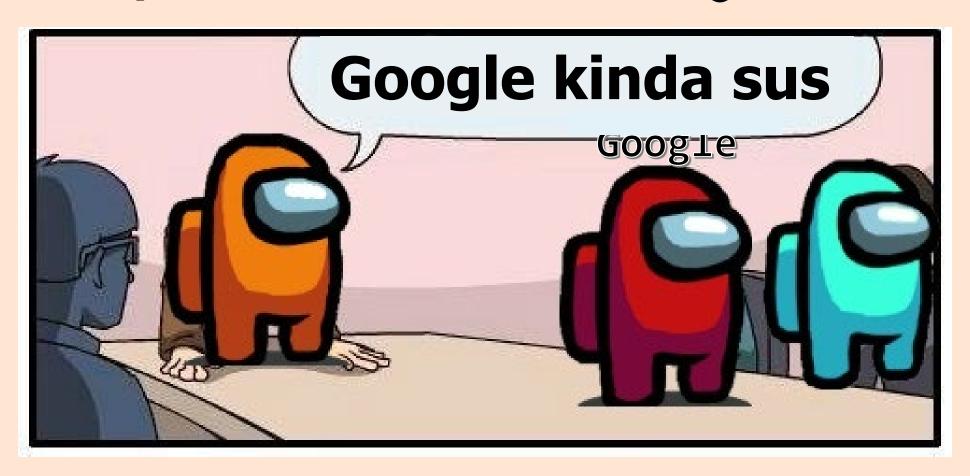
## Google fails to end 'private browsing' snooping lawsuit



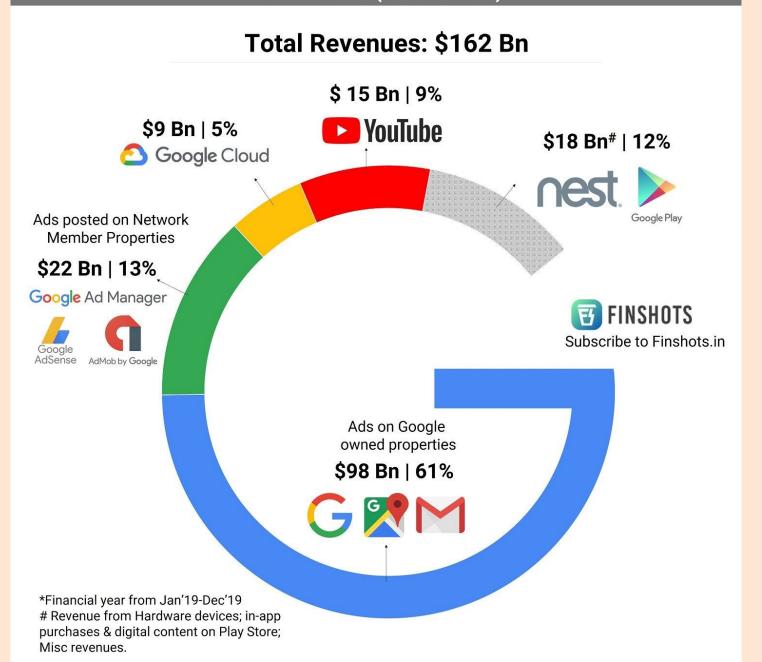
By Malcolm Owen | Mar 13, 2021

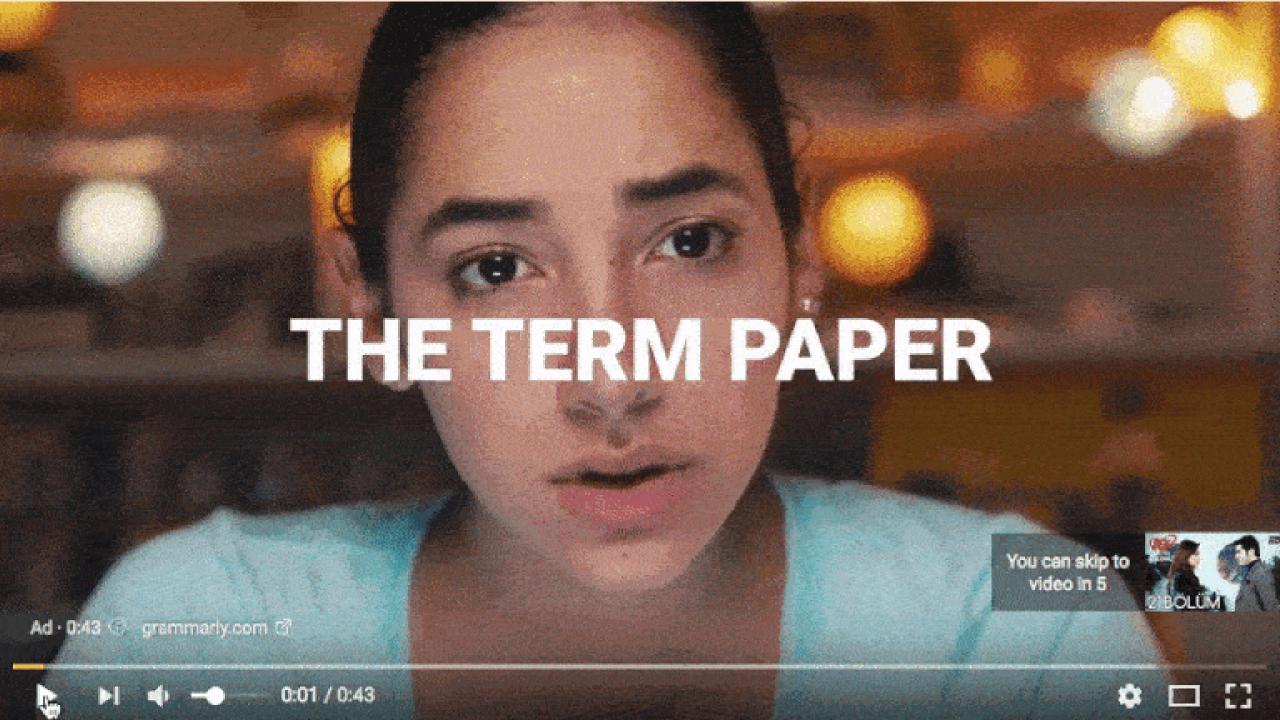
https://appleinsider.com/articles/21/03/13/google-fails-to-end-private-browsing-snooping-lawsuit

#### How important are Ads to Google?



#### BREAKING DOWN REVENUE STREAMS OF GOOGLE (ALPHABET)





#### How important are Ads to Google?

Google Is Testing Its Controversial New Ad Targeting Tech in Millions of Browsers. Here's What We Know.

BY BENNETT CYPHERS | MARCH 30, 2021

FloC = Unblockable cookies. Yay!



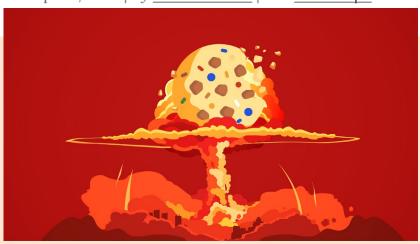
https://www.eff.org/deeplinks/2021/03/google-testing-its-controversial-new-ad-targeting-tech-millions-browsers-heres

#### How important are Ads to Google?

LIFE BEYOND THE COOKIE

## Google plots further Privacy Sandbox trials but concerns still linger

April 1, 2022 | By Ronan Shields | and Seb Joseph



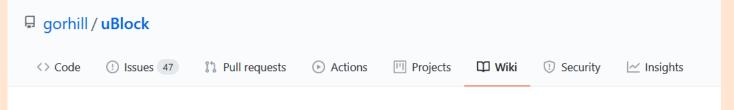
66

Topics still relies on this idea of cross-domain targeting and I don't think that's something we should be doing anymore

Anonymous publisher source

https://digiday.com/media/google-plots-further-privacy-sandbox-trials-but-concerns-still-linger/

### Outfoxing Google with Firefox



#### uBlock Origin works best on Firefox

Raymond Hill edited this page 3 days ago  $\cdot$  5 revisions

This document explains why uBO works best in Firefox.

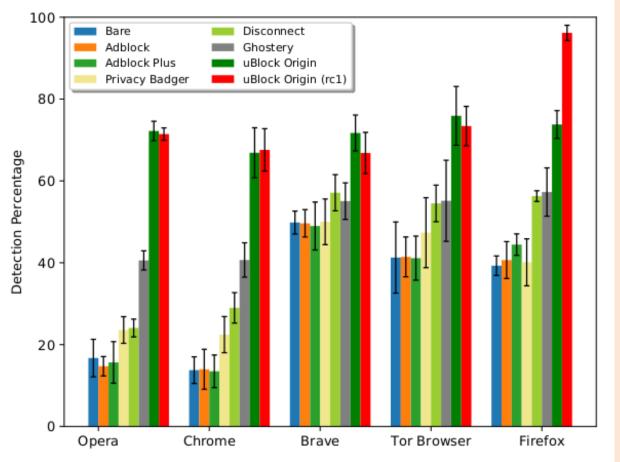
#### **CNAME-uncloaking**

Ability to uncloak 3rd-party servers disguised as 1st-party through the use of CNAME record. The effect of this is to make uBO on Firefox the most efficient at blocking 3rd-party trackers relative to other other browser/blocker pairs:

The dark green/red bars are uBO before/after it gained ability to uncloak CNAMEs on Firefox.

Source: "Characterizing CNAME Cloaking-Based Tracking on the Web" at Asia Pacific Network Information Centre, August 2020.

https://github.com/gorhill/uBlock/wiki/uBlock-Origin-works-best-on-Firefox



#### Google is not alone.

The Observer Facebook Another huge data breach, another stony silence from Facebook

Carole Cadwalladr

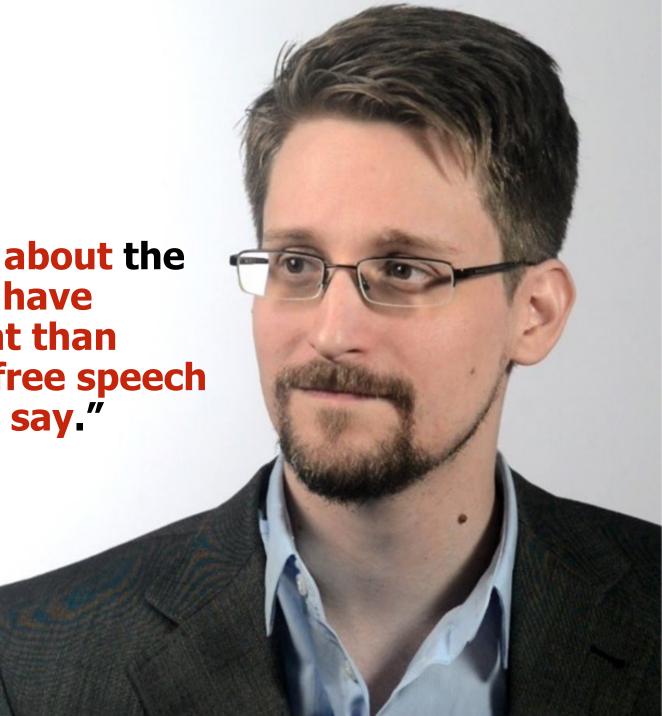
Sun 11 Apr 2021 03.45 EDT The social media giant is still a law unto itself. Can anybody hold it to account?

#### Guess who's back?

"Arguing that you don't care about the right to privacy because you have nothing to hide is no different than saying you don't care about free speech because you have nothing to say."

-Edward Snowden

https://www.mic.com/articles/188563/w ho-cares-i-have-nothing-to-hide-whythe-popular-response-to-online-privacyis-so-flawed



### Why is this all important?

Would you trade in all your passwords in order to use Facebook?

How about handing your phone off to a stranger?

How does the government decide what is "right" and "wrong"?

### Why is this important?

We will be working with information from people.

How do you take back control of data to community ownership?

### Why is this important?

Think what is being collected and how it could be misused:

- Images
- Video
- Words
- Names
- Addresses

### Open Source and Open Data in Summary

#### Open Source and Open Data

- Think about what information can be helpful for community members/local organizations
- Teach and give ownership to local people
- Extract information and leave
- Use any tool available because it's "easy"

#### Open Source and Open Data

Use tools and data that empowers instead of commodifies people.



### Wrap-up

#### Optional Thinking Cap for the week:

How can local communities and take ownership of technology and surveys related to themselves?

### Assignments

Due Wednesday 4/20:

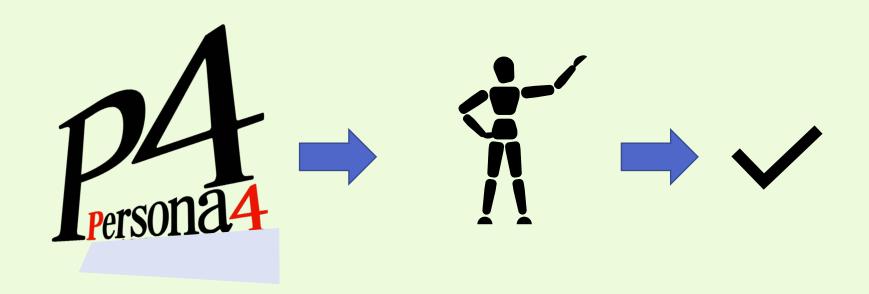
- 1. Lab Assignment #3
- 2. Pre-Lab reading

#### Extra Credit Reminders

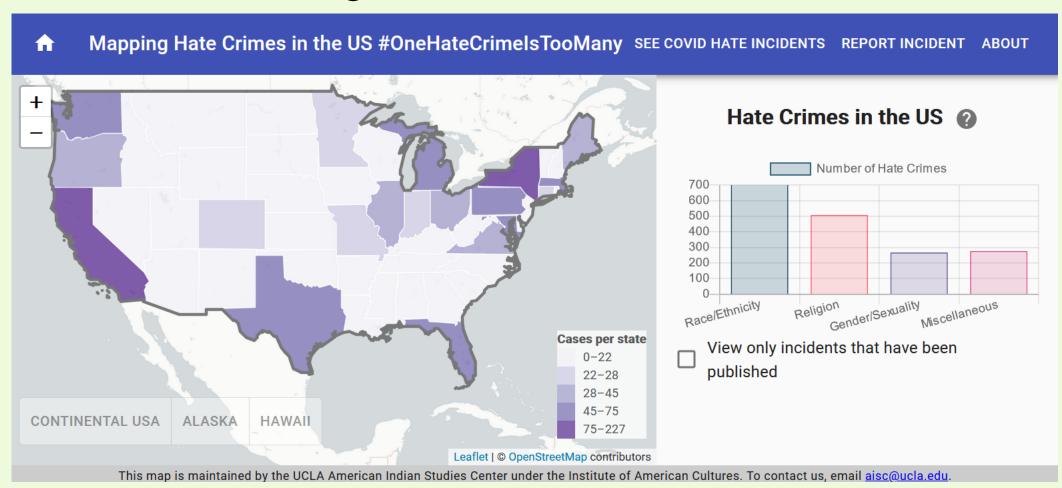
Due Friday 4/25:

- 1. UCLA vs USC Mapathon
- 2. Extra Thinking Cap

### **Group Time!**



Broad goals your users should be able to use your website for.



As a person who faced a hate crime

I want to report my incident without fear from authorities

So that people can hear my story and take action to prevent more from occurring





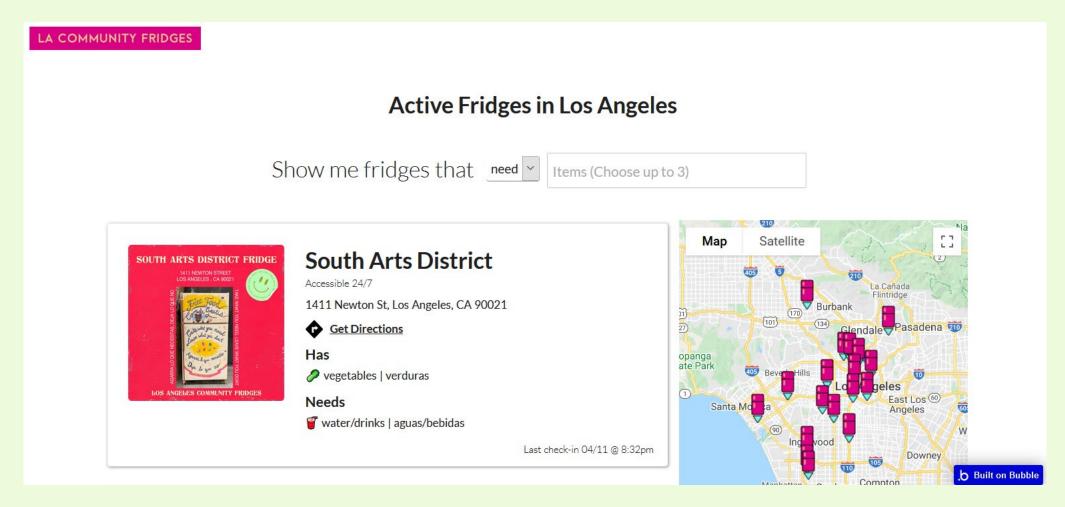








https://newsroom.ucla.edu/releases/hate-crime-map



https://community-fridge.bubbleapps.io/

#### **Group Time**

- Meet with your group to discuss:
  - General project idea
  - Potential user stories
- Present to the class:
  - Elevator pitch
  - Optional: Share with us 2 user stories
- If all your group members are missing join up with other students with missing members to discuss your project!

# Group Assignment #2 Memo

- Background on the social issue/campaign
- Goals
- Community/organization description
- At least 2 user stories
- 3 Ideas of questions to be included on the survey
- Future plans
- Template:
  - https://tinyurl.com/eaxj27hx
- Examples:
  - https://tinyurl.com/2s47hfwe
     https://tinyurl.com/36rt9mm3