

# Goals for today:

1. Learn about iteration in design/  
sketching
2. Learn about APIs and objects
3. Visualize weather data from an API in  
your sketches

# Logistics, etc

Link to materials: <https://ninalutz.github.io/gallaudet-creative-coding/>

This includes CC coding videos and all of the code laid out, the code and PDFs, glossaries, and more fun stuff!

Contact me: [nlutz@mit.edu](mailto:nlutz@mit.edu)

# So what is creative coding?

It's really the intersection of visual art and computer science!



# Special languages for creative coding

- p5.js
- Processing
- openFrameworks (co-invented by Zach Lieberman, who is at MIT Media Lab and a super successful creative coder)
- Unity
- And more!

Watch Zach's Video

TAAAAAAAAAAALK

Zach Lieberman  
Type : Drawing / Body / Space / School

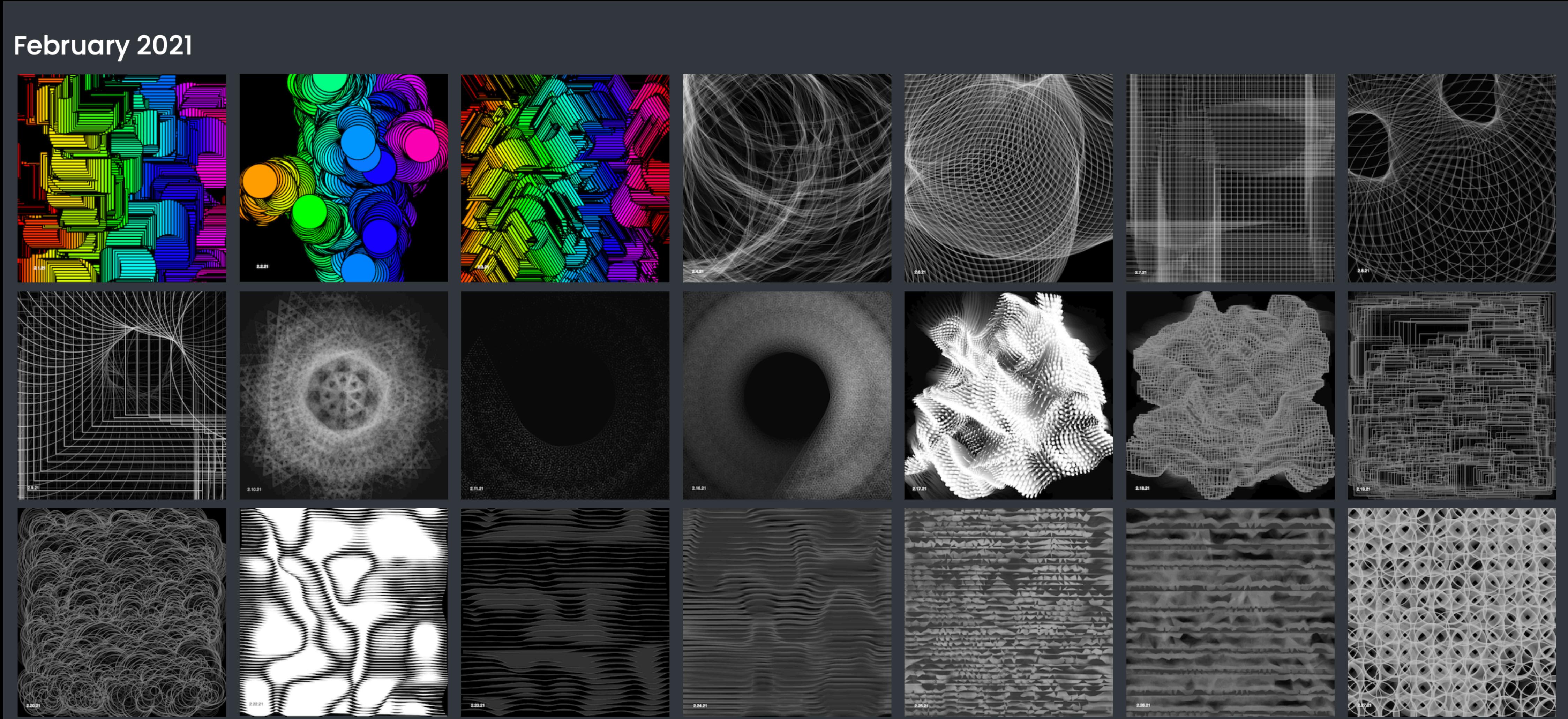
1 2 3 4 5

Background

What is the importance of  
sketching in creative coding?

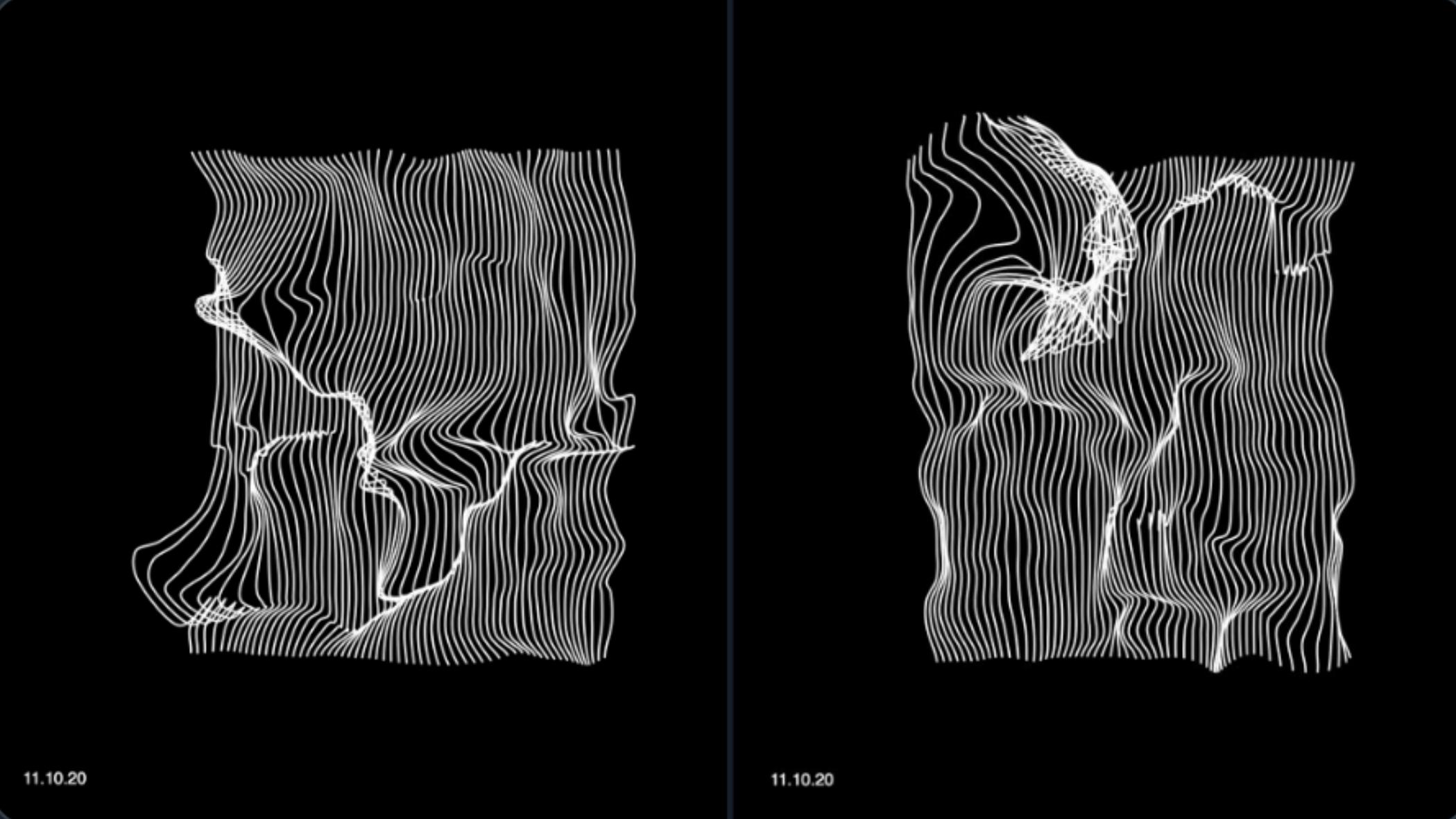
(drop ideas in the chat)

Article: <https://nlutz-54627.medium.com/a-year-2020-of-almost-daily-code-sketches-b7893521428a#1f30>



# People interact with your art in new ways and you get to explore new mediums

**ninasketches** @ninasketches · Nov 10  
11.10.20



11.10.20 11.10.20

1 1 7

**Tova Stein** @TovaStein2

Replying to @ninasketches

These are so cool! How are you making them?

12:23 PM · Nov 15, 2020 · Twitter Web App

**ninasketches** @ninasketches ...

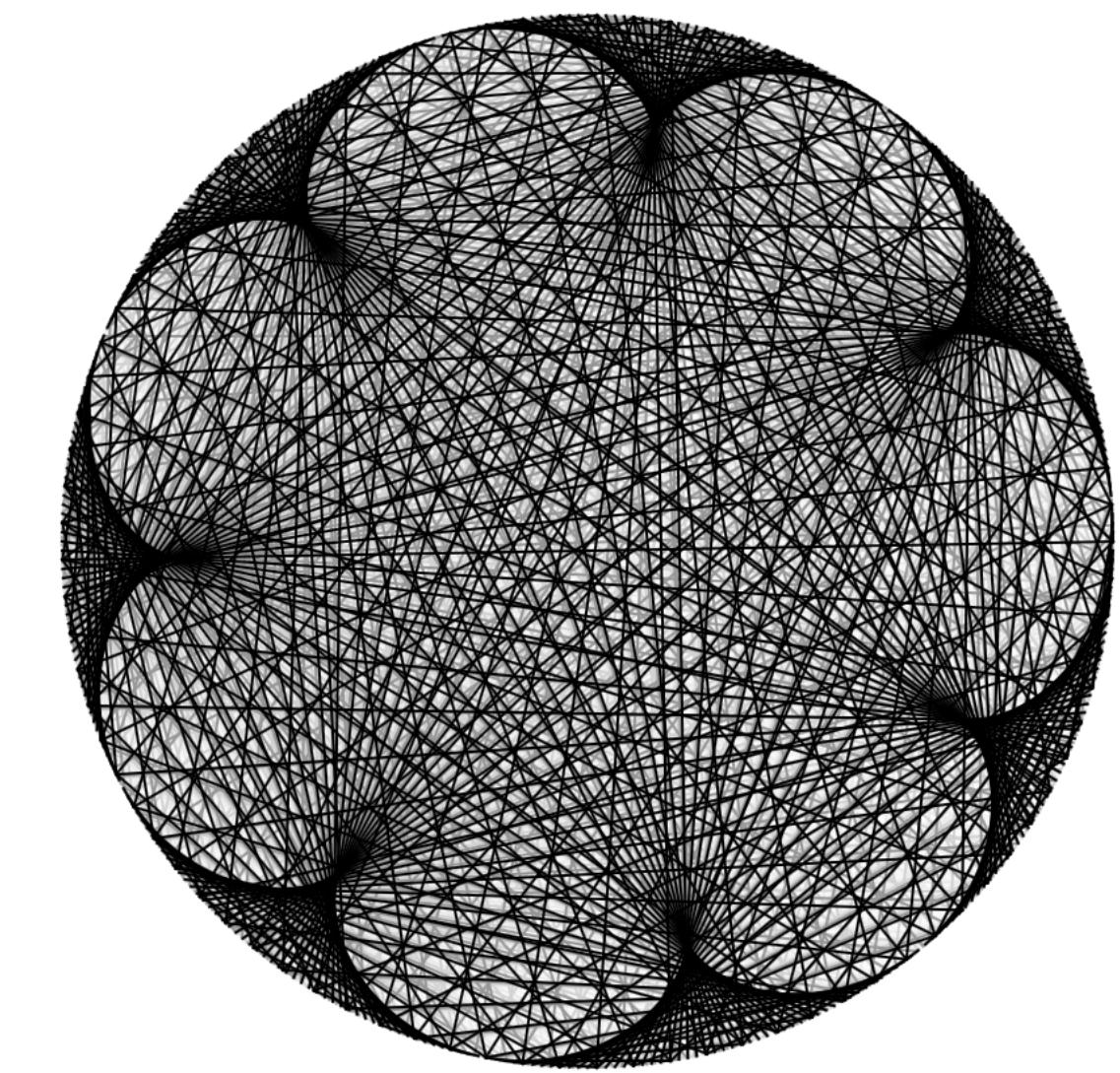
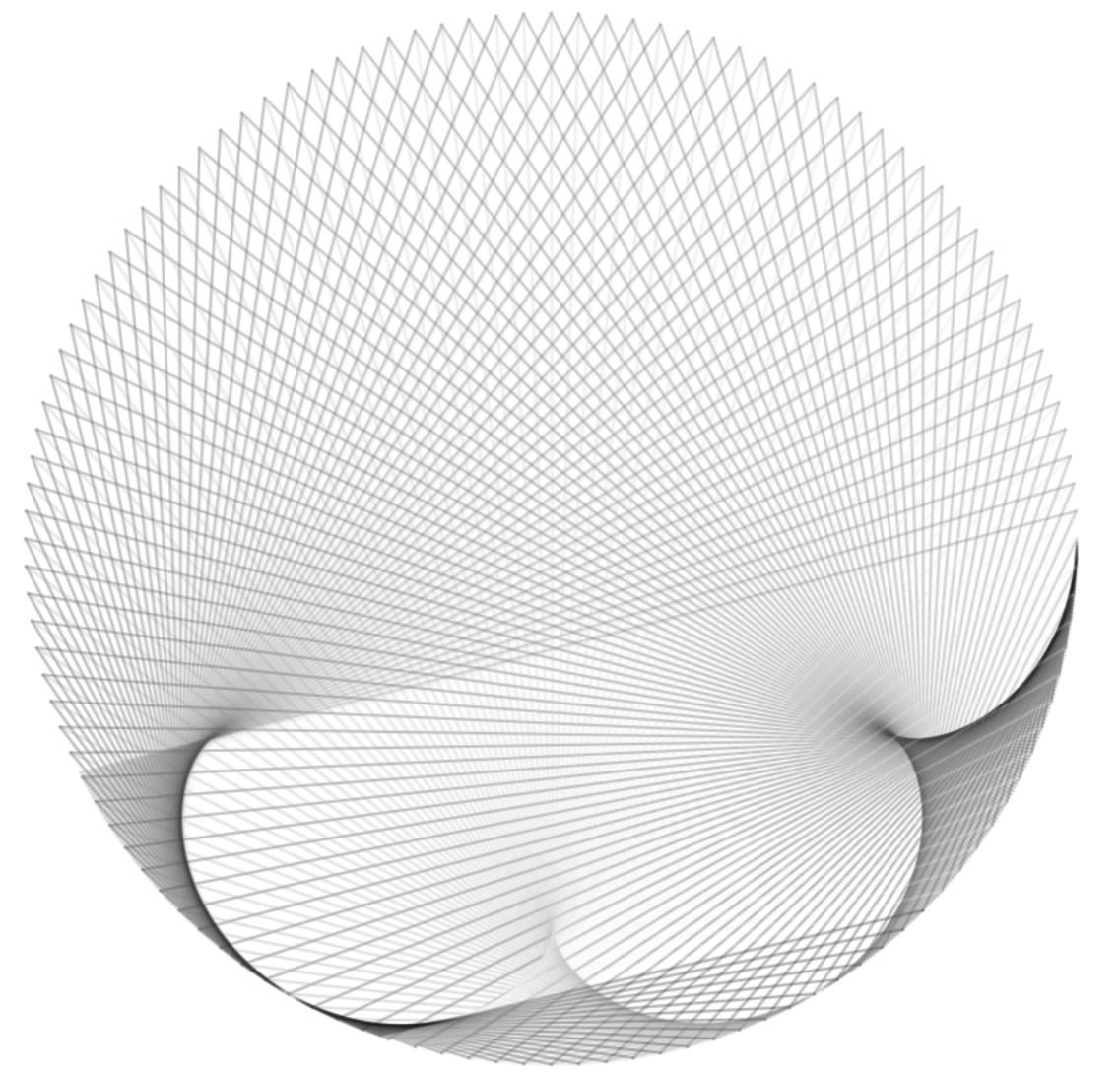
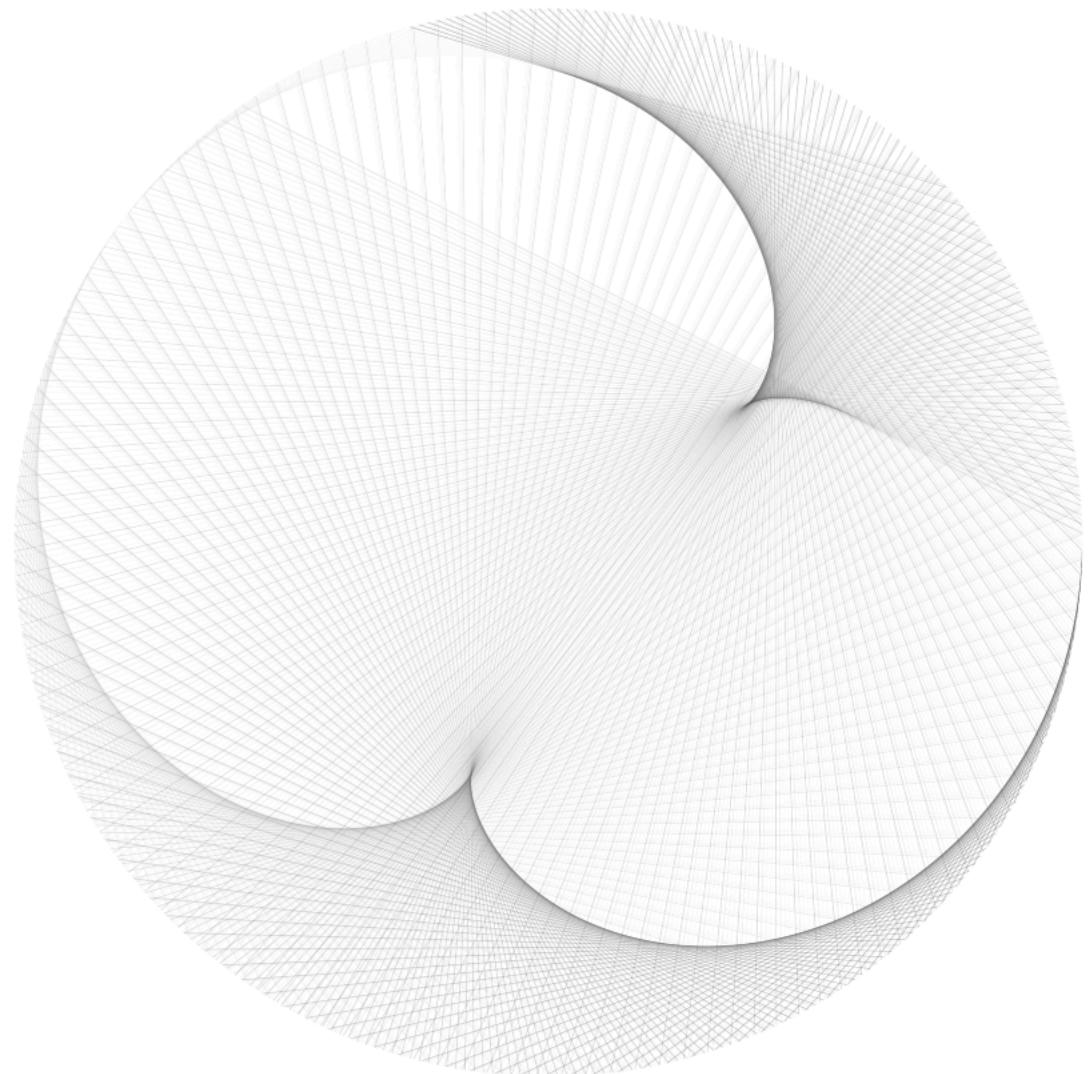
A friendly reminder that some of the art here is on sale on various products (including masks and phone cases and clothes and more) at [rebubble.com/shop/ninasketches](https://rebubble.com/shop/ninasketches).



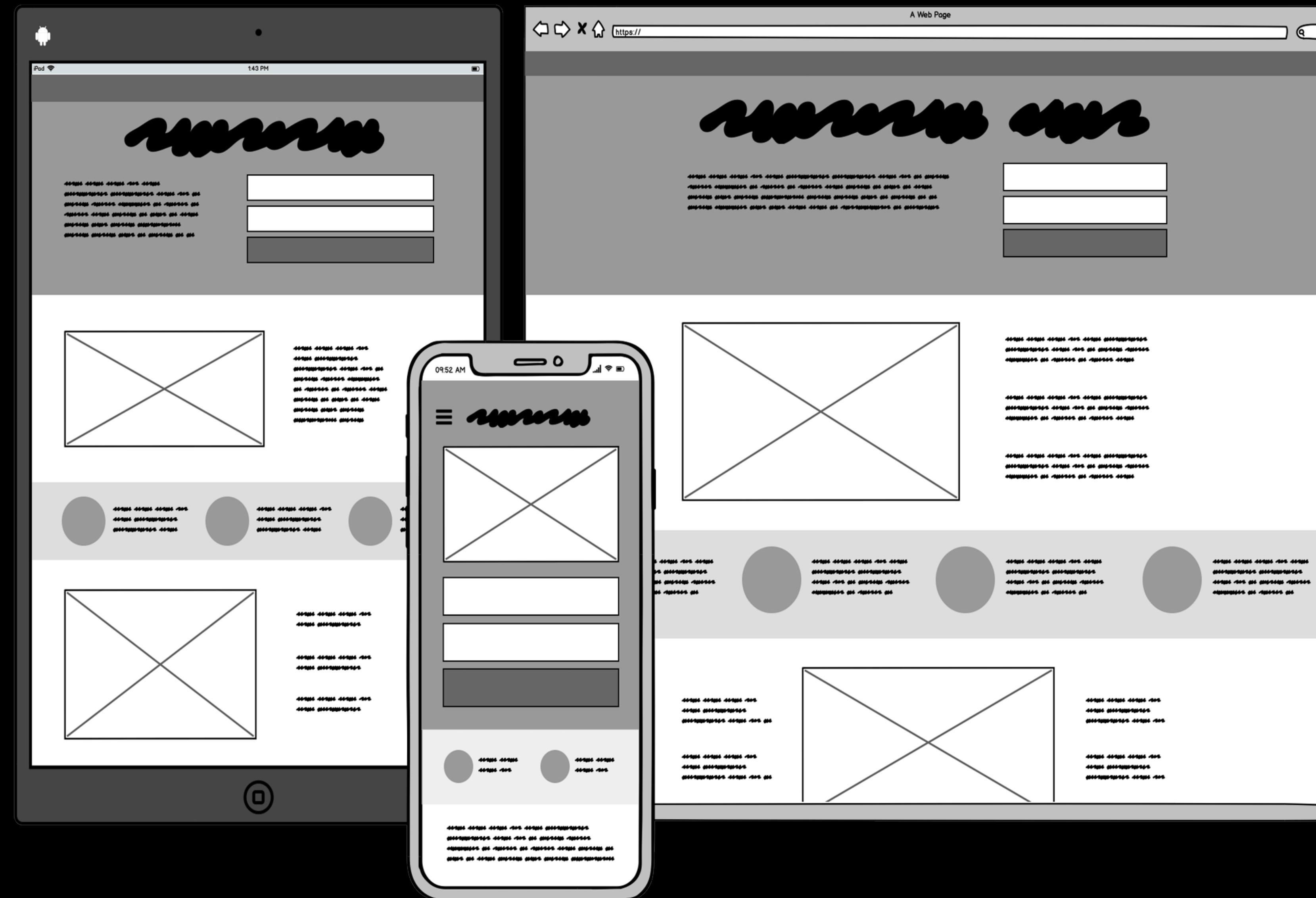
8:32 PM · Feb 26, 2021 · Twitter Web App

View Tweet activity

**These are all the same sketch with less than 4 lines of change**



# In industry sketching and iteration are done via wireframes



Activity – make an iteration of it

# Sketching with data

# Lots of versions of sketching with data

- Data visualization
- Data physicalization
- Data storytelling
- More!

# First step – getting data into your sketch

# Server pipeline

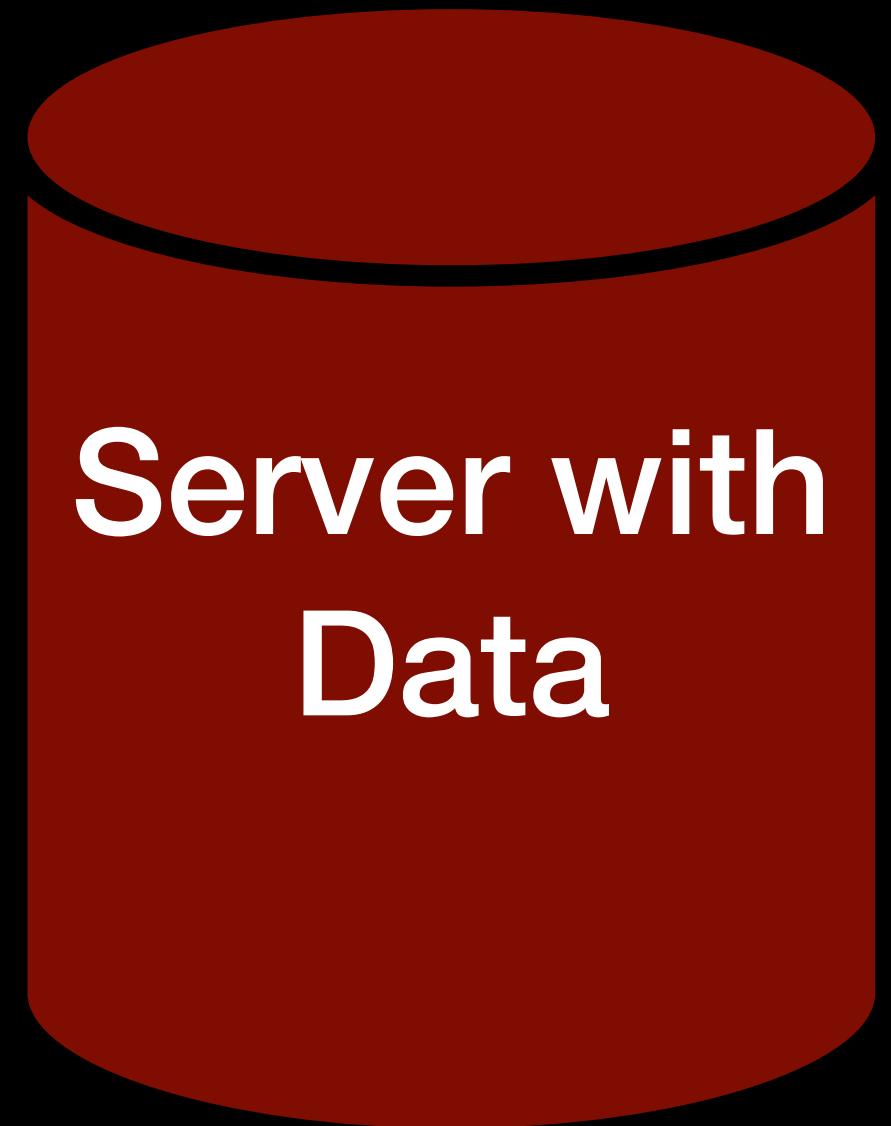


GET request from our application

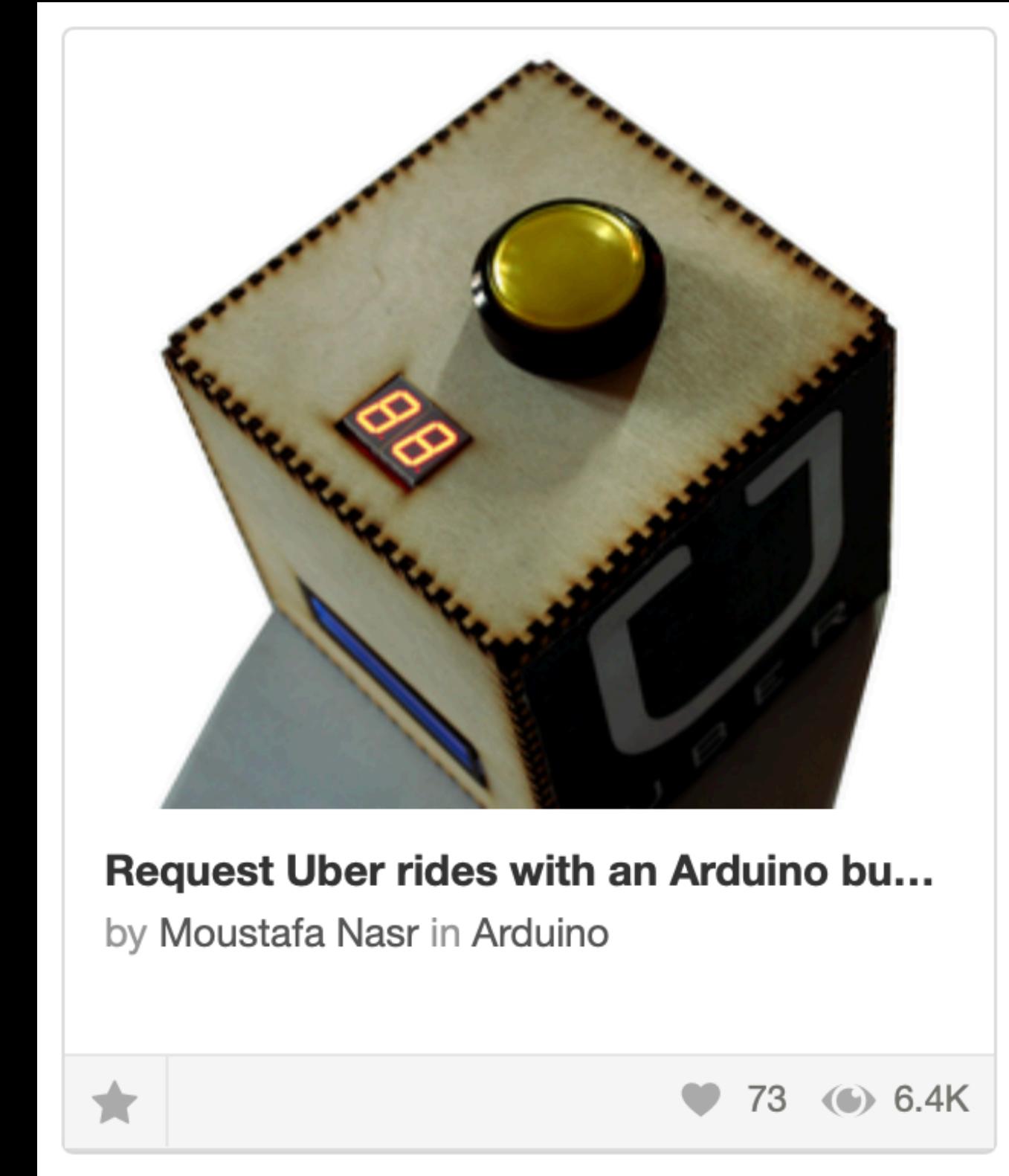
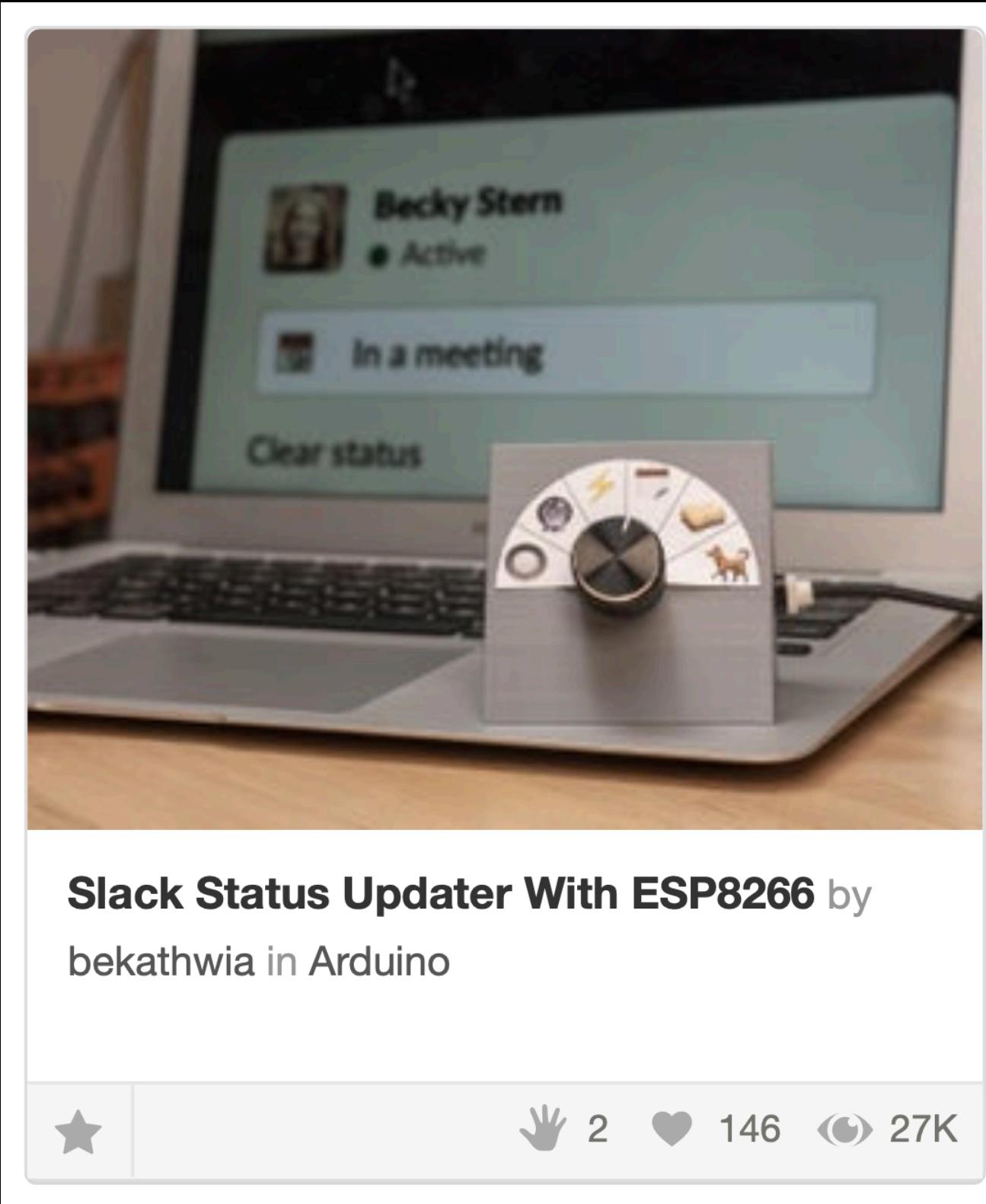


Data from the server formatted by the API if we requested a proper GET request

API  
(Application Programming Interface)



# Lots of cool APIs

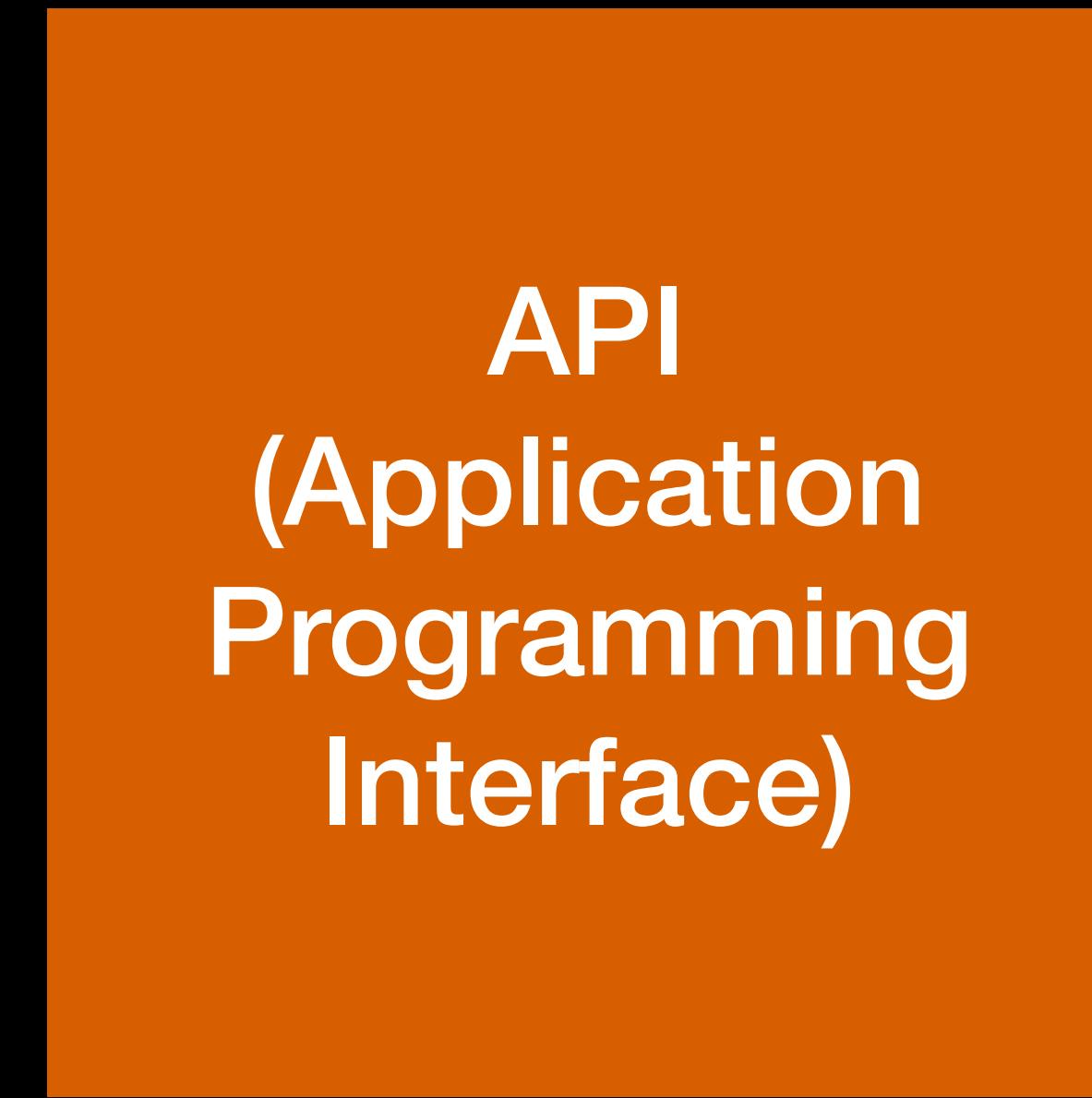


Most websites you use everyday have an API!

A lot of APIs return objects to  
the code and these objects  
have other properties that you  
can get



Weather  
Server



API  
(Application  
Programming  
Interface)



Weather  
Object

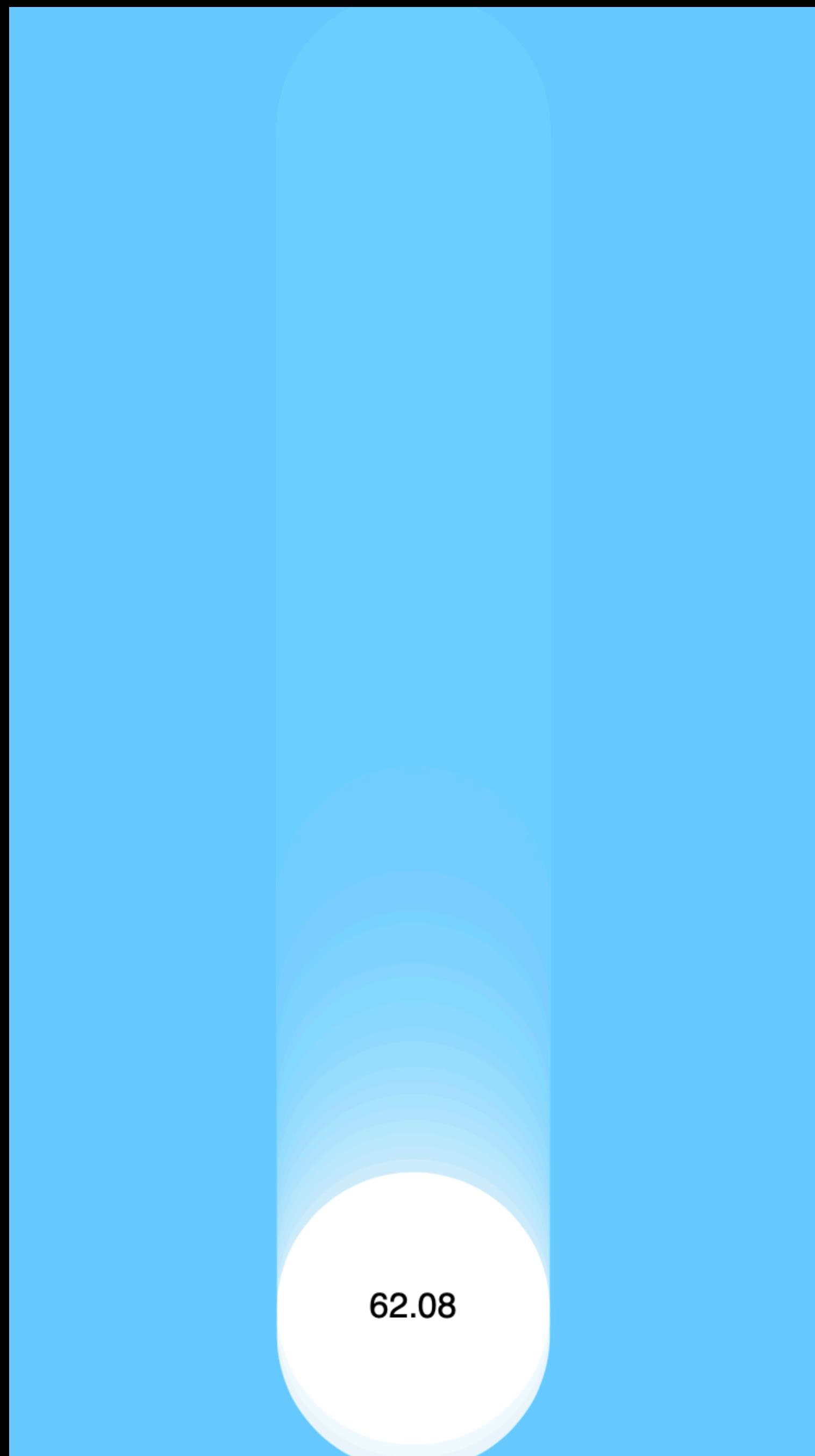
.getCloudCover  
.getWindBearing  
.getTemperature

....

GET requests are in the documentation for  
the API you are using

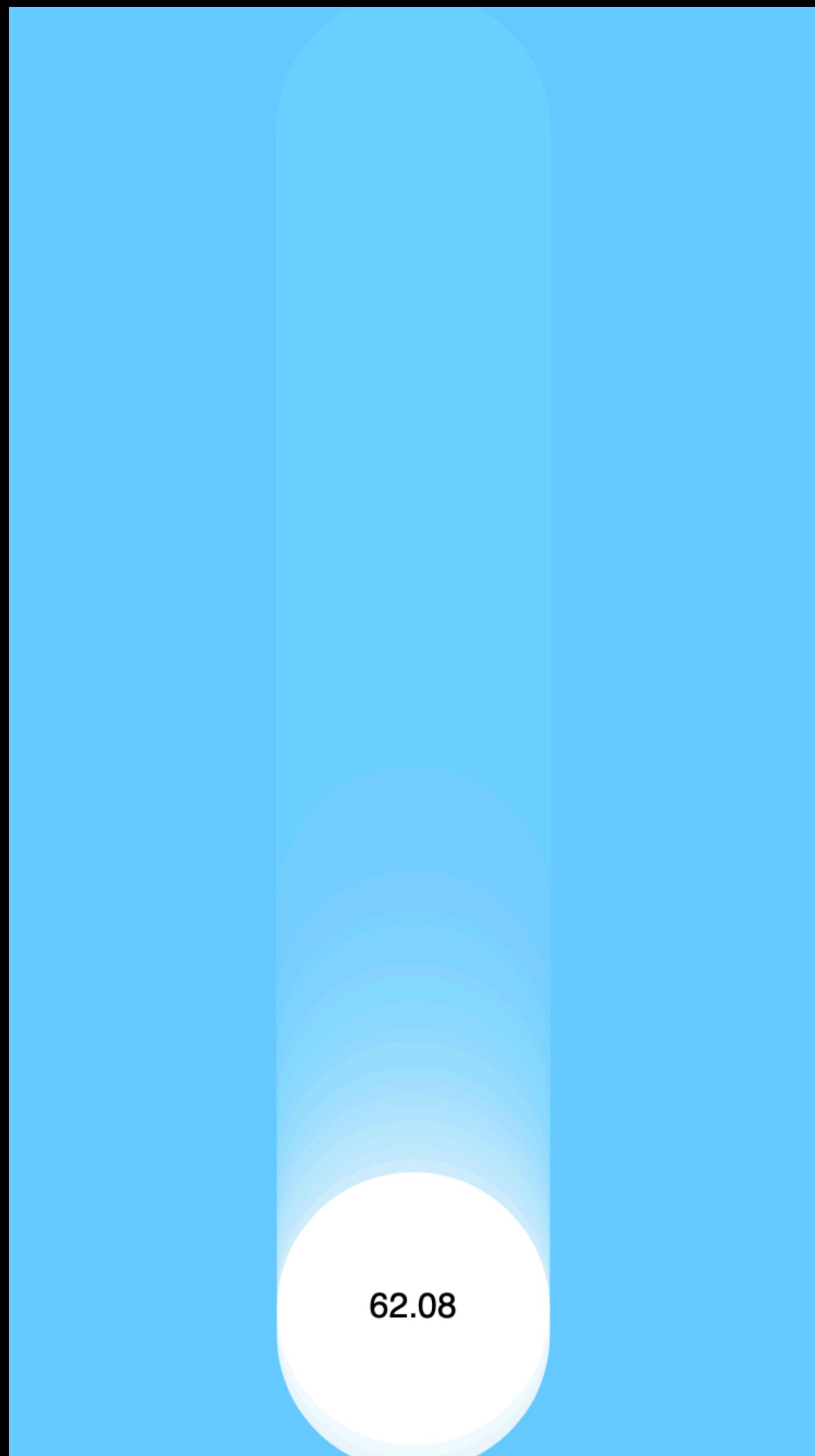
# Questions?

# Worked example - Weather API Drawing



10 min break! :)

# Worked example - Weather API Drawing

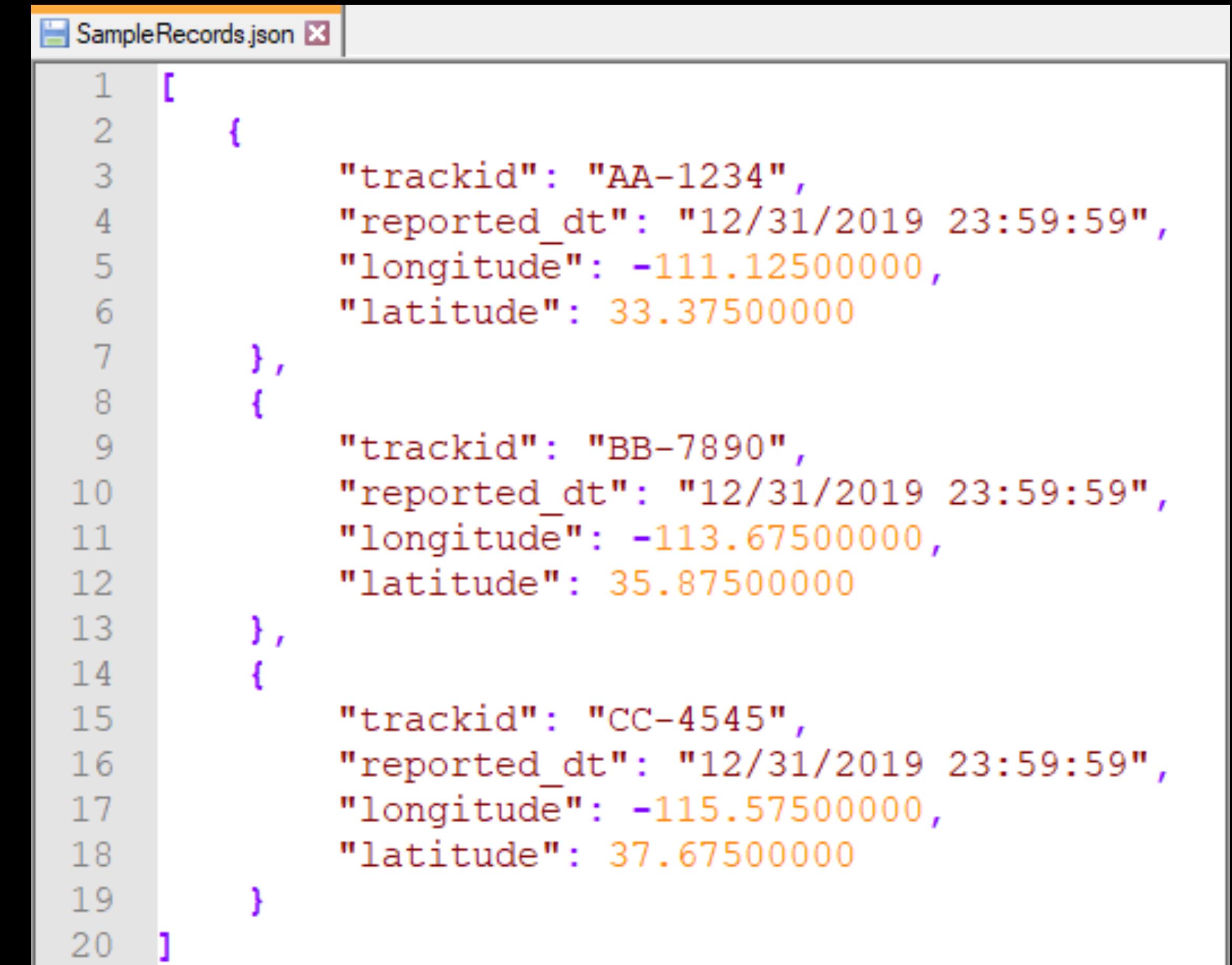


# Other ways to get data into your P5.js sketches

- CSV and JSON files
- Sensors
- More!

# JSON file

- Structure for a lot of programming languages
- Used often in the web
- Standardized way to store information



```
SampleRecords.json
1 [ 
2   {
3     "trackid": "AA-1234",
4     "reported_dt": "12/31/2019 23:59:59",
5     "longitude": -111.12500000,
6     "latitude": 33.37500000
7   },
8   {
9     "trackid": "BB-7890",
10    "reported_dt": "12/31/2019 23:59:59",
11    "longitude": -113.67500000,
12    "latitude": 35.87500000
13  },
14  {
15    "trackid": "CC-4545",
16    "reported_dt": "12/31/2019 23:59:59",
17    "longitude": -115.57500000,
18    "latitude": 37.67500000
19  }
20 ]
```

# CSV file

- Comma separated values
- Just like a spreadsheet or google sheet you can open on your computer!

# Objects

- The weather object we get from the API is a class in the code
- Classes are used in object oriented programming to minimize code reuse
- Primitives in p5.js like `ellipse(50, 50, 100, 100)` are examples of classes

# Worked example - Drops



# **Homework: 3 iterative sketches**

## about weather

Download the  
“weather\_homework\_template”  
folder to make your sketch in

# Office Hours

Wednesday 12pm - 2pm EDT

<https://mit.zoom.us/j/97839583579>

Interpreters will be there :)

I'm also available via email for questions! :)