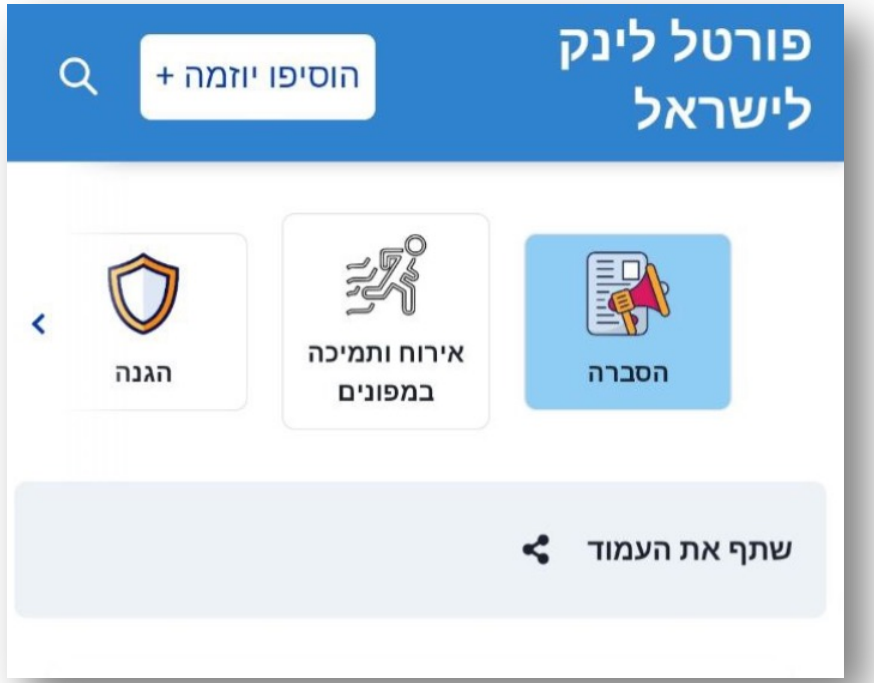
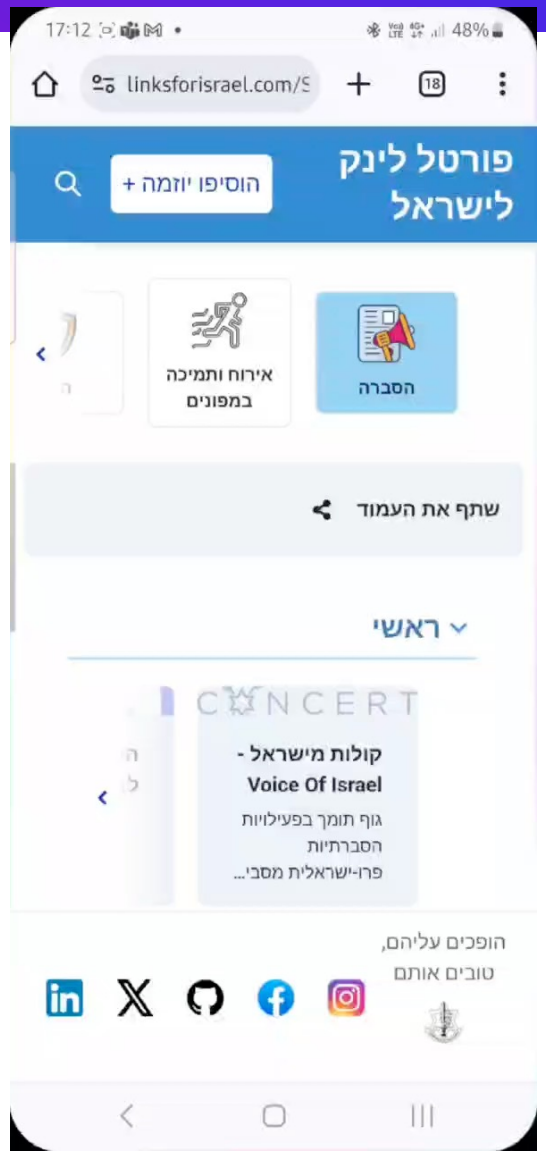
# Unlocking JavaScript's Hidden Gems

# Once upon a time...

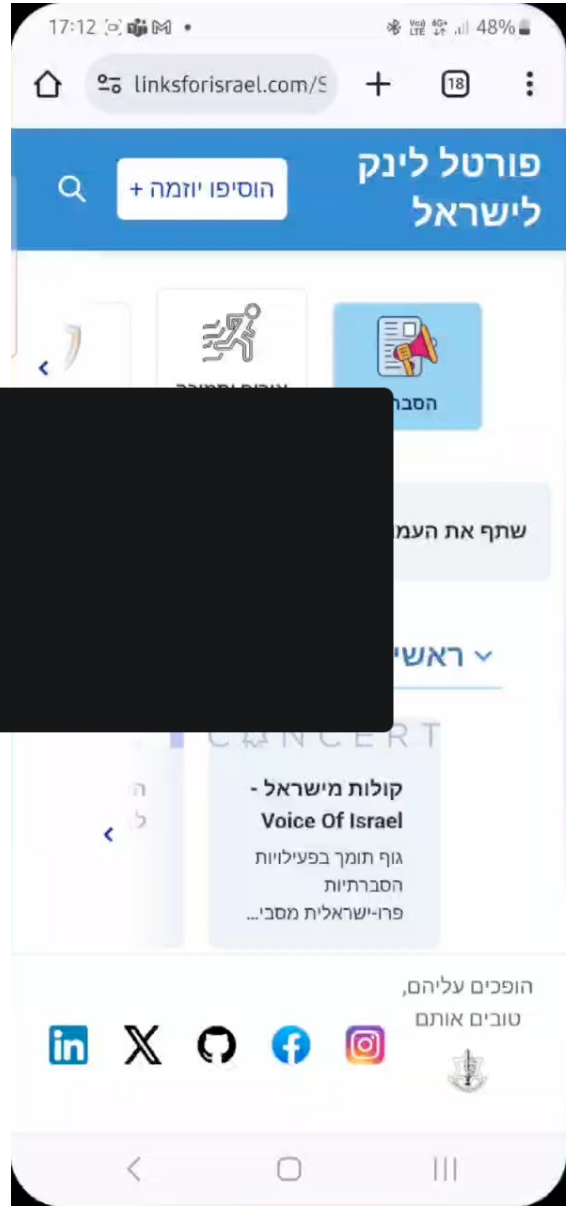


# Once upon a time...



# Once upon a time...

```
navigator.share({
   files: filesArray,
   title: 'Vacation Pictures',
   text: 'Photos from September 27 to October 14.',
 })
```



# About me

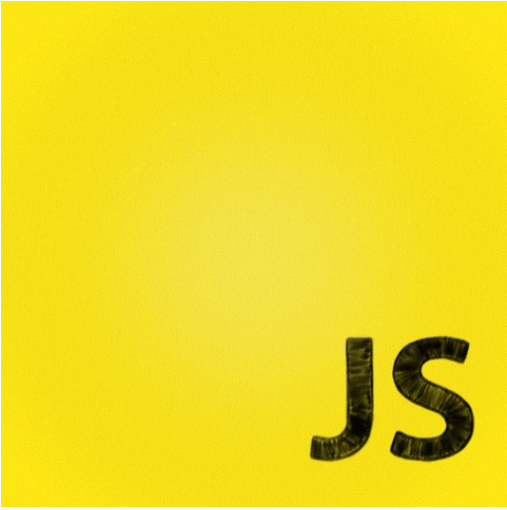
- 👧👧👧👧🥷 🐕‍🦺🦜
- Loving Web Tech
- Love The Community
- https://yedri.medium.com/
- Developer @ CyberArk

@WEBWEKKLY

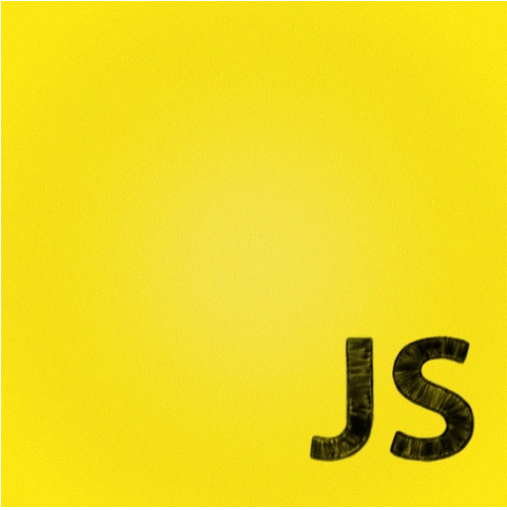
# Web APIs

# Web APIs

# use with caution


JS

JS



# Unfamiliar API in Web Development

# Let's help Arbel

# App Ideas

Share recipe

# Notifications API

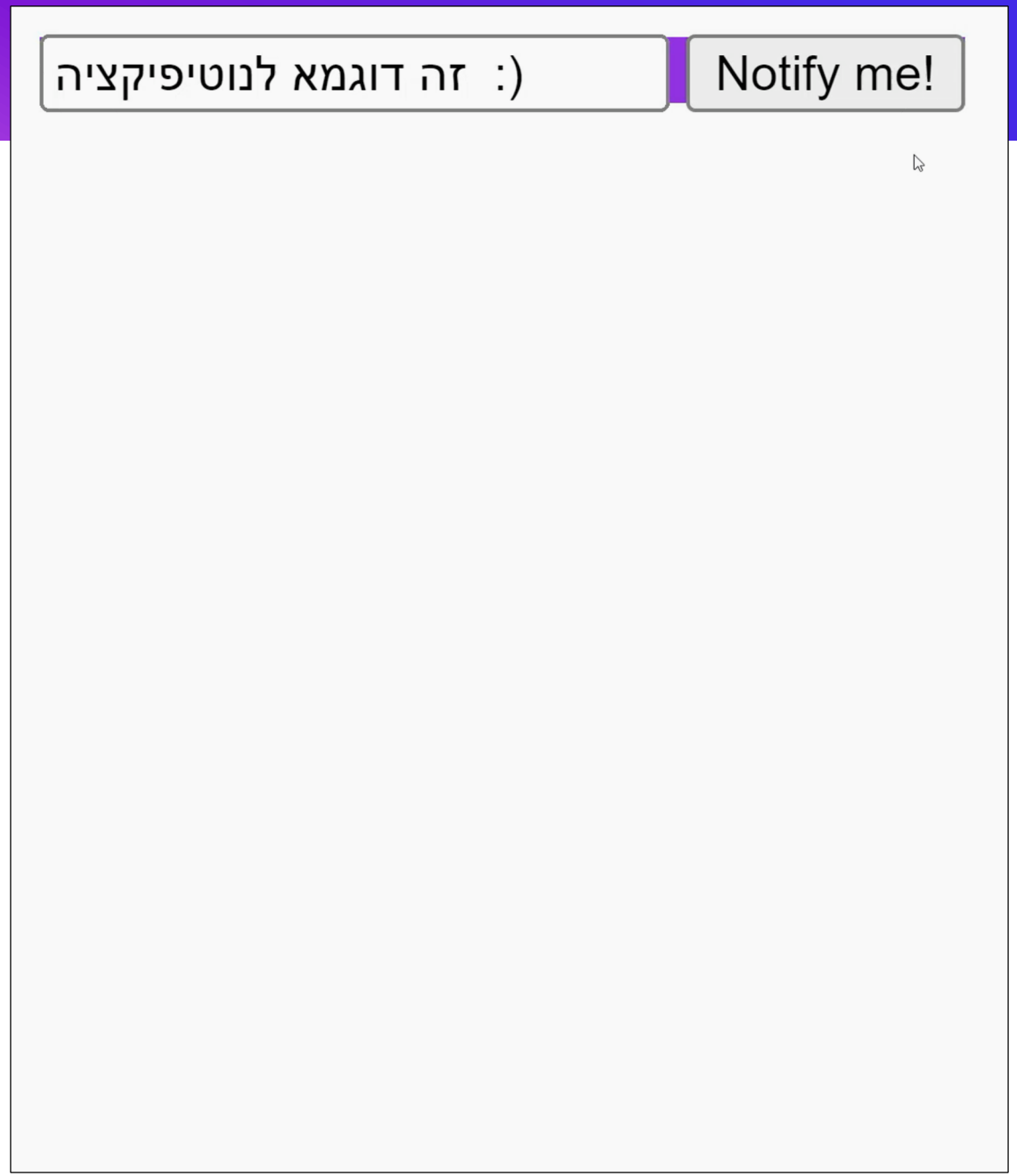
# Notifications API

```
const notification = new Notification("Hello reversim 2024", {
  badge: "https://i.imgur.com/3424582.png",
  icon: "https://i.imgur.com/3424582.png",
  body: "Reversim 2024 - notification demo",
  // for mobile vs service worker
  vibrate: [100, 50, 100],
  actions: [
    {
      action: "open",
      title: "Open the site",
    },
   ...
  ],
});
```

Demo

# Notifications API

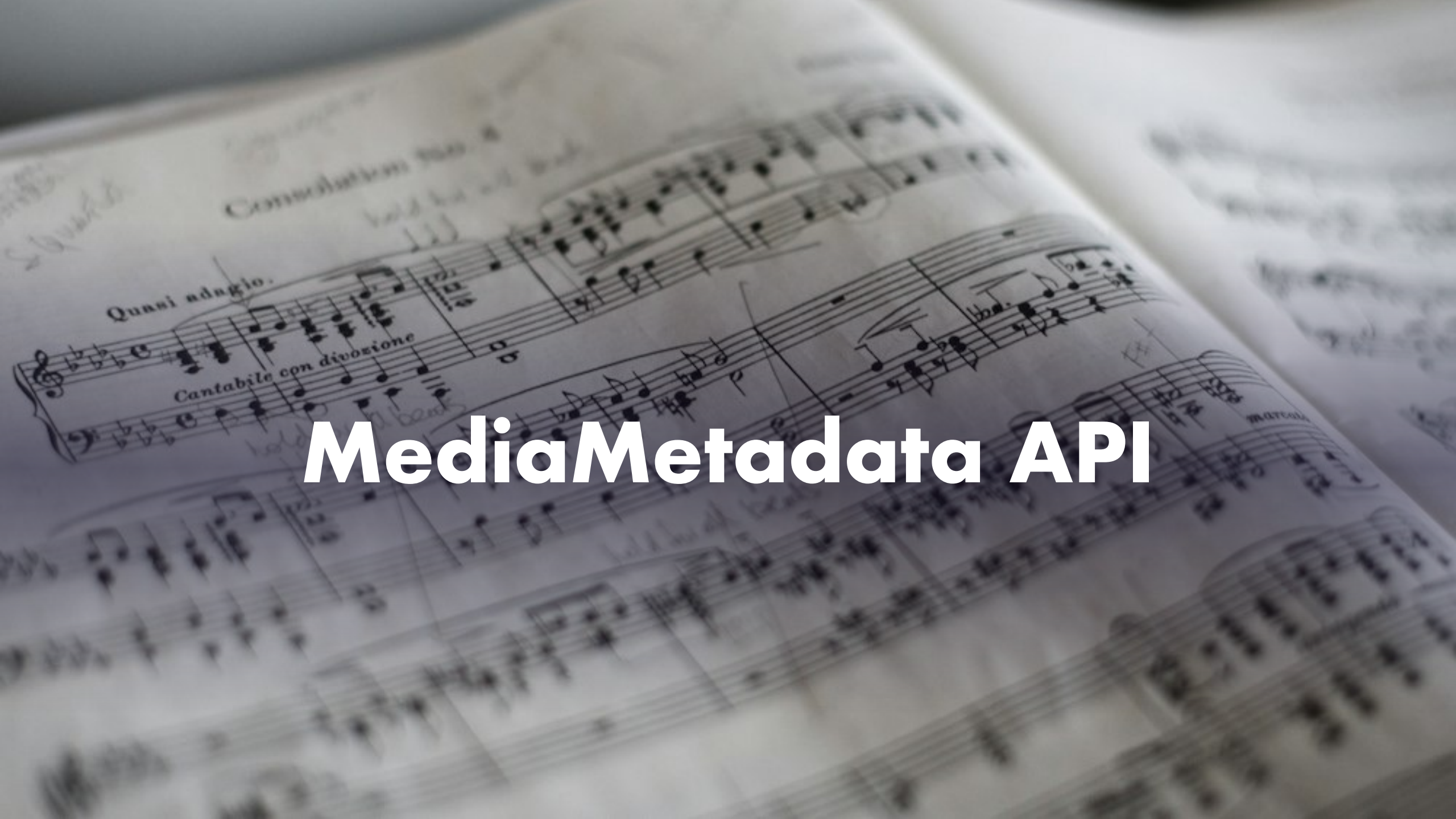
Demo



# App Ideas

Share recipe

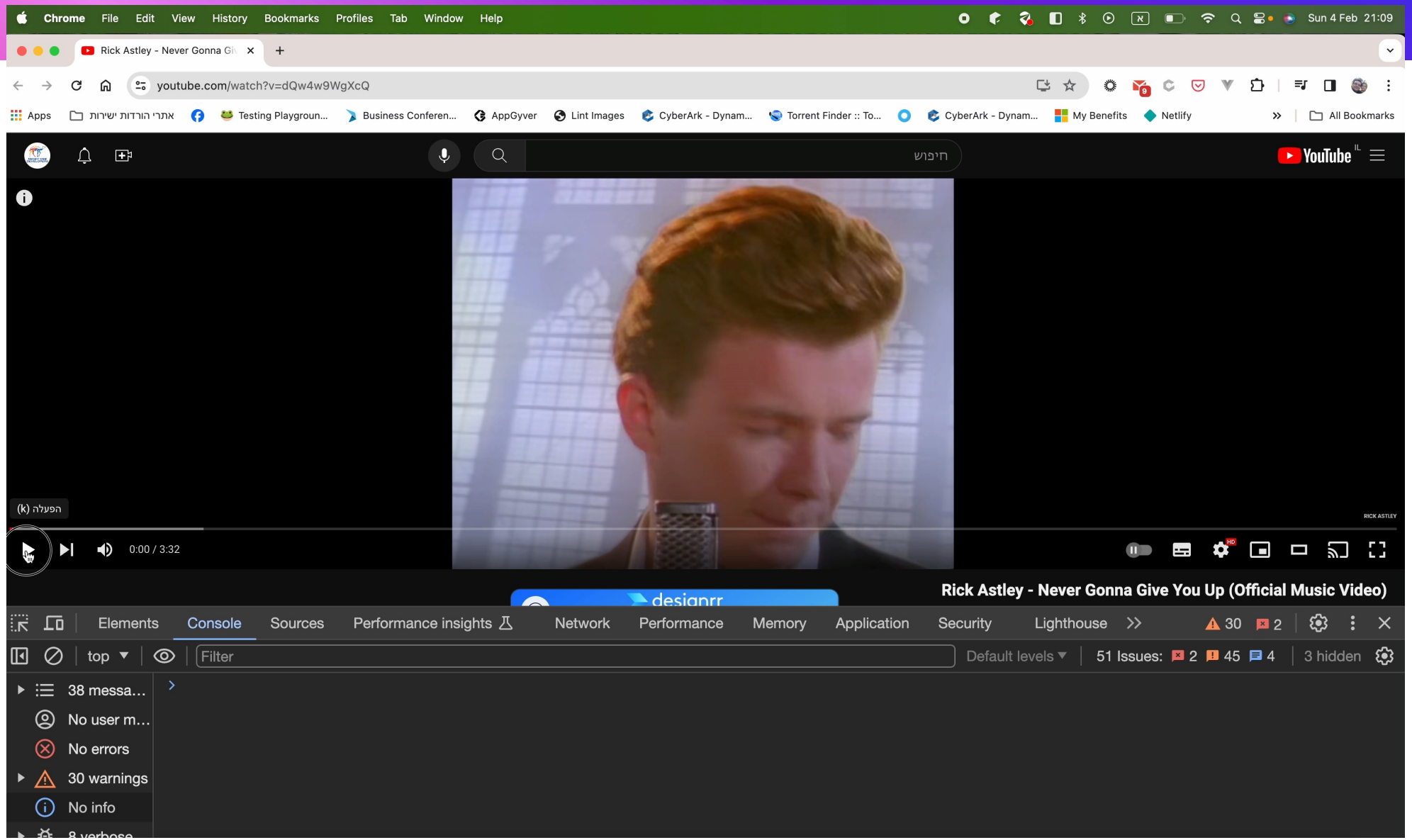
Notification – Clock alert




# MediaMetadata API

# MediaMetadata API

```
navigator.mediaSession.metadata =
new MediaMetadata({
  title: "Unlocking JavaScript's Hidden Gems",
  artist: 'Yanai Edri',
  albom: 'Reversim submit 2024'
})
```


Chrome File Edit View History Bookmarks Profiles Tab Window Help
Sun 4 Feb 21:09
Rick Astley - Never Gonna Gi
youtube.com/watch?v=dQw4w9WgXcQ
Apps
אתרי הורדות ישירות
Testing Playgroun...
Business Conferen...
AppGyver
Lint Images
CyberArk - Dynam...
Torrent Finder :: To...
CyberArk - Dynam...
My Benefits
Netlify
All Bookmarks
חיפוש
YouTube IL
הפעלה (k)
0:00 / 3:32
Rick Astley - Never Gonna Give You Up (Official Music Video)
Elements
Console
Sources
Performance insights
Network
Performance
Memory
Application
Security
Lighthouse
30
2
top
Filter
Default levels
51 Issues: 2 45 4
3 hidden
38 messa...
No user m...
No errors
30 warnings
No info

# App Ideas

Share recipe
Notification – Clock alert
Video – Describe Cake

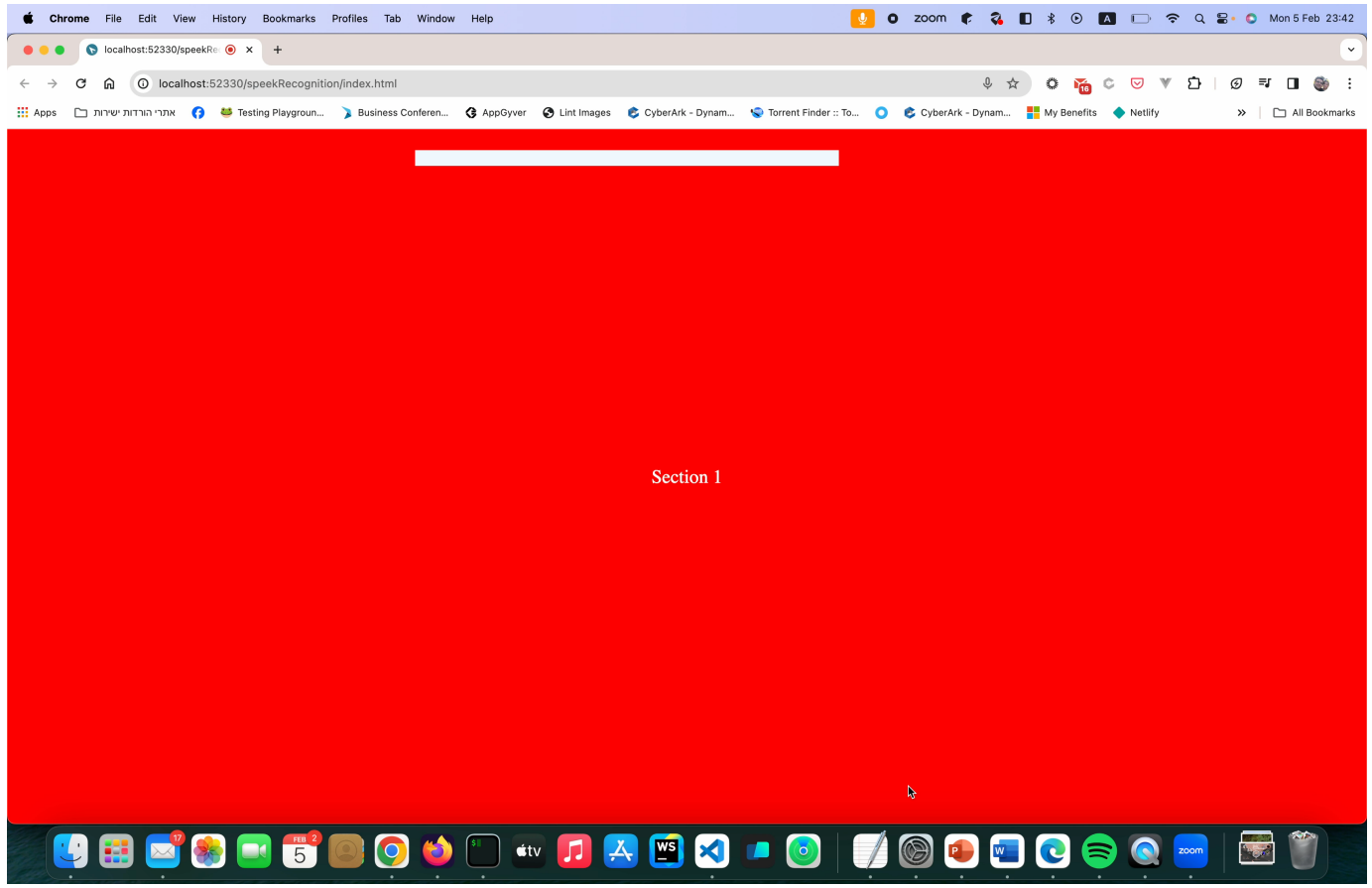
# Web Speech API

# Web Speech API

Speech recognition + Speech Grammar

```
const recognition = new SpeechRecognition();
const speechRecognitionList = new SpeechGrammarList();
```

# Web Speech API




Demo

# Web Speech API

SpeechSynthesis

```
let utterance = new SpeechSynthesisUtterance("Hello world!");
speechSynthesis.speak(utterance);
```

# Web Speech API- SpeechSynthesis

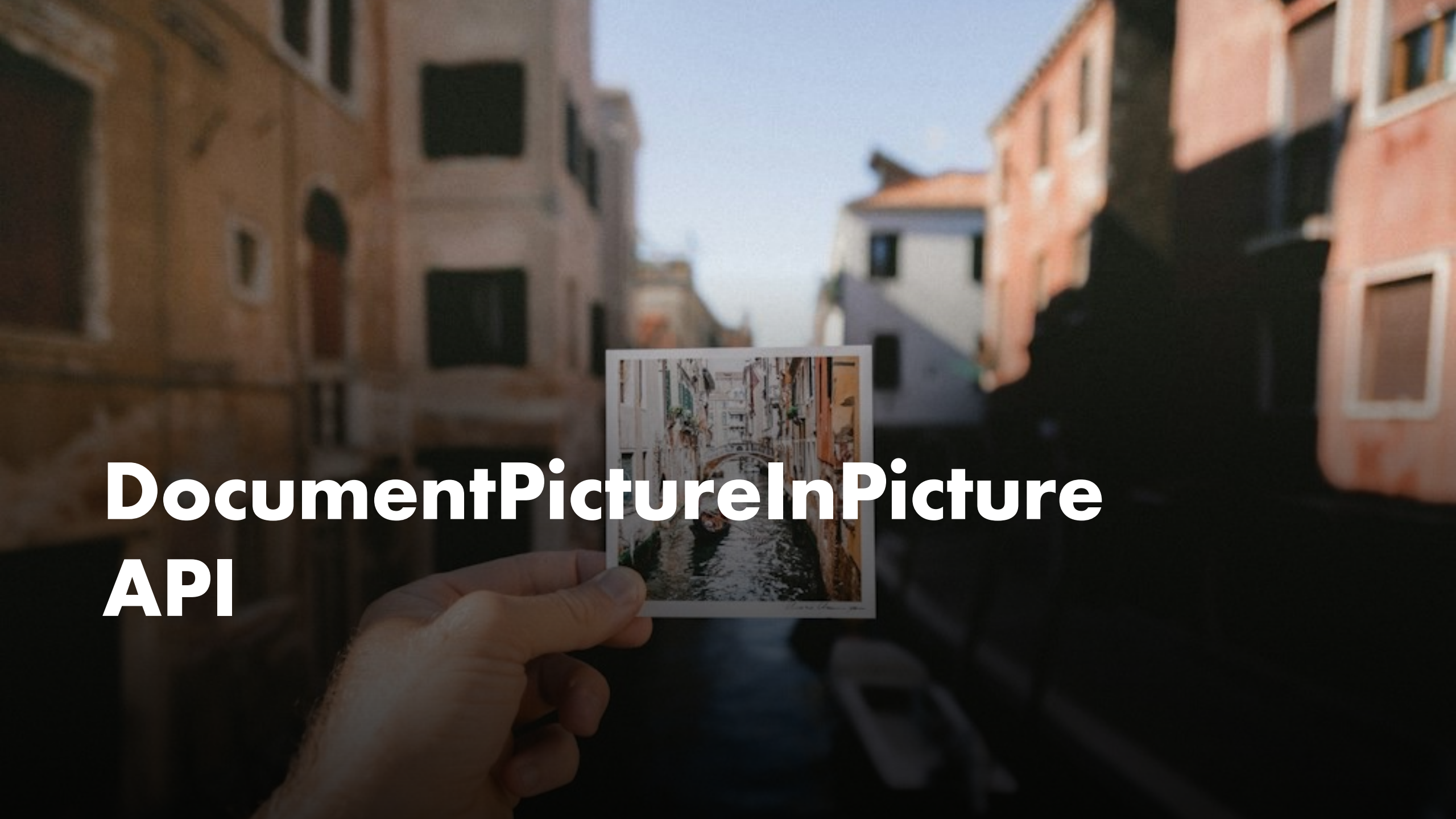
```
...
  const utterance = new SpeechSynthesisUtterance();
  utterance.pitch = document.getElementById("pitch").value;
  utterance.rate = document.getElementById("rate").value;
  // Use the speech synthesis API to play the text
  speechSynthesis.speak(utterance);
...
```

Demo

# App Ideas

Share recipe
Notification – Clock alert
Video – Describe Cake

Voice navigation



# DocumentPictureInPicture API

# DocumentPictureInPicture API

```
const videoPlayer = document.getElementById("player");

// Open a Picture-in-Picture window.
const pipWindow = await window.documentPictureInPicture.requestWindow({
  width: videoPlayer.clientWidth,
  height: videoPlayer.clientHeight,
});

// ...
```

Demo Demo

*Not only for Video!!!

# DocumentPictureInPicture API

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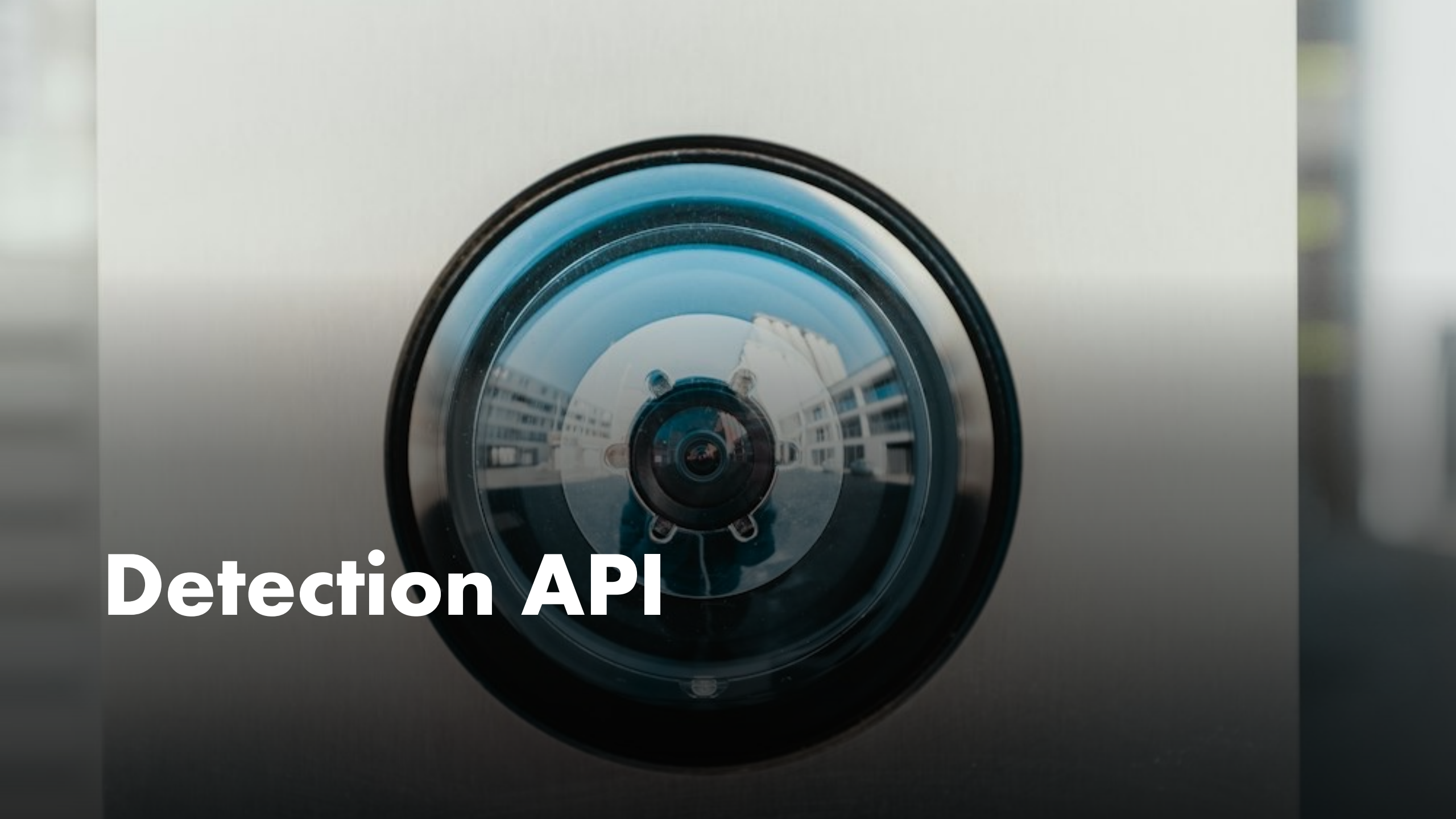
# App Ideas

Share recipe
Notification – Clock alert
Video – Describe Cake
Voice navigation

Timer Window



# Detection API

# Shape & Face Detection API

https://chromestatus.com/features#shape

For Stream Or Static Image

Demo

# Shape & Face Detection API

## Shape Detection API

Face detection  Barcode detection  Text detection  Analyze image file: Choose file

This is the shape detection API implementation demo

The following demo allows you to detect shapes, barcodes and faces from an uploaded image.

Refer to the How to detect human faces (and other shapes) in JavaScript on the CKEditor Blog to find out more about the presented function.

Please bear in mind, this mechanism only works in Chrome (Mac, Windows) and it requires this flag: `chrome://flags#enable-experimental-web-platform-features` to be turned on.

# Barcode Detection API

```
console.log( await BarcodeDetector.getSupportedFormats())

(11) ['aztec', 'code_128', 'code_39', 'code_93', 'data_matrix', 'ea
c_e'] i
  0: "aztec"
  1: "code_128"
  2: "code_39"
```

| Format | Description | Image |
|---|---|---|
| aztec | A square two-dimensional matrix following iso24778 and with a square bullseye pattern at their center, thus resembling an Aztec pyramid. Does not require a surrounding blank zone. | |
| code_128 | A linear (one-dimensional), bidirectionally-decodable, self-checking barcode following iso15417 and able to encode all 128 characters of ASCII (hence the naming). | |
| code_39 | A linear (one-dimensional), self-checking barcode following iso16388. It is a discrete and variable-length barcode type. | |
| code_93 | A linear, continuous symbology with a variable length following bc5. It offers a larger information density than Code 128 and the visually similar Code 39. Code 93 is used primarily by Canada Post to encode supplementary delivery information. | |
| codabar | A linear barcode representing characters 0-9, A-D and symbols - . $ / + | |
| data_matrix | An orientation-independent two-dimensional barcode composed of black and white modules arranged in either a square or rectangular pattern following iso16022. | |
| ean_13 | A linear barcode based on the UPC-A standard and defined in iso15420. | |
| ean_8 | A linear barcode defined in iso15420 and derived from EAN-13. | |
| itf | A continuous, self-checking, bidirectionally decodable barcode. It will always encode 14 digits. | |
| pdf417 | A continuous two-dimensional barcode symbology format with multiple rows and columns. It's bi-directionally decodable and uses the iso15438 standard. | |
| qr_code | A two-dimensional barcode that uses the iso18004 standard. The information encoded can be text, URL or other data. | |
| upc_a | One of the most common linear barcode types and is widely applied to retail in the United States. Defined in iso15420, it represents digits by strips of bars and spaces, each digit being associated to a unique pattern of 2 bars and 2 spaces, both of variable width. UPC-A can encode 12 digits that are uniquely assigned to each trade item, and it's technically a subset of EAN-13 (UPC-A codes are represented in EAN-13 with the first character set to 0). | |
| upc_e | A variation of UPC-A defined in iso15420, compressing out unnecessary zeros for a more compact barcode. | |
| unknown | This value is used by the platform to signify that it does not know or specify which barcode format is being detected or supported. | |

# Barcode Detection API

```
const barcodeDetector = new BarcodeDetector();
const image = document.querySelector("img");

barcodeDetector
  .detect(image)
  .then((barcodes) => {
    let pre = document.createElement("pre");
    pre.innerHTML = JSON.stringify(barcodes, null, 2);
    image.after(pre);
  })
  .catch(console.error);
```


```
[
  {
    "boundingBox": {
      "x": 11.5,
      "y": 11.5,
      "width": 175,
      "height": 175,
      "top": 11.5,
      "right": 186.5,
      "bottom": 186.5,
      "left": 11.5
    },
    "cornerPoints": [
      {
        "x": 11.5,
        "y": 11.5
      },
      {
        "x": 186.5,
        "y": 11.5
      },
      {
        "x": 186.5,
        "y": 186.5
      },
      {
        "x": 11.5,
        "y": 186.5
      }
    ],
    "format": "qr_code",
    "rawValue": "https://daily-dev-tips.com"
  }
]
```

# App Ideas

Share recipe
Notification – Clock alert
Video – Describe Cake
Voice navigation
Timer Window

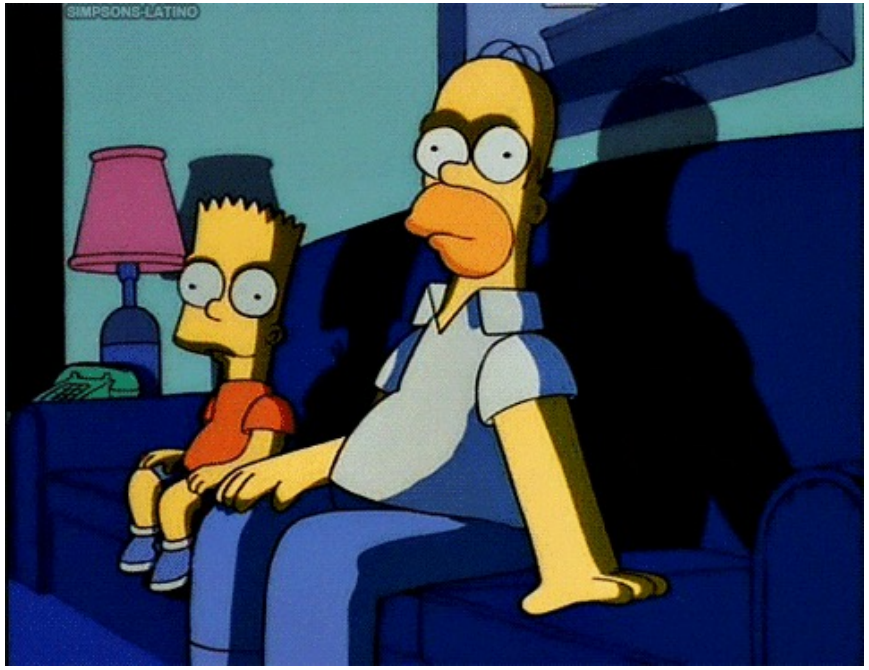
Recipes scanner

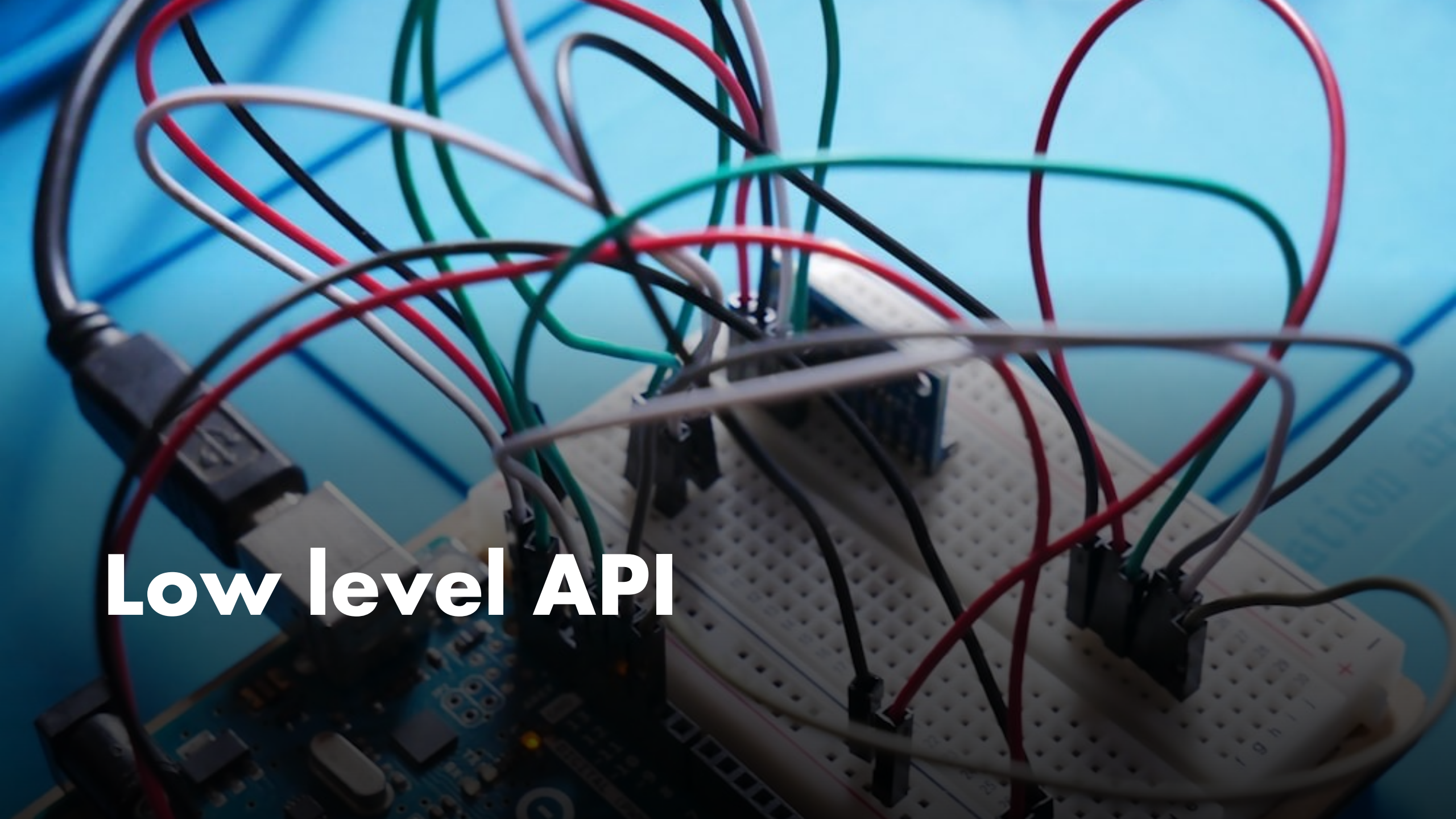
# UserActivation API

# UserActivation API

```
if (navigator.userActivation.isActive) {
  // proceed to request playing media, for example
}

if (navigator.userActivation.hasBeenActive) {
  // proceed with auto-playing an animation, for example
}
```





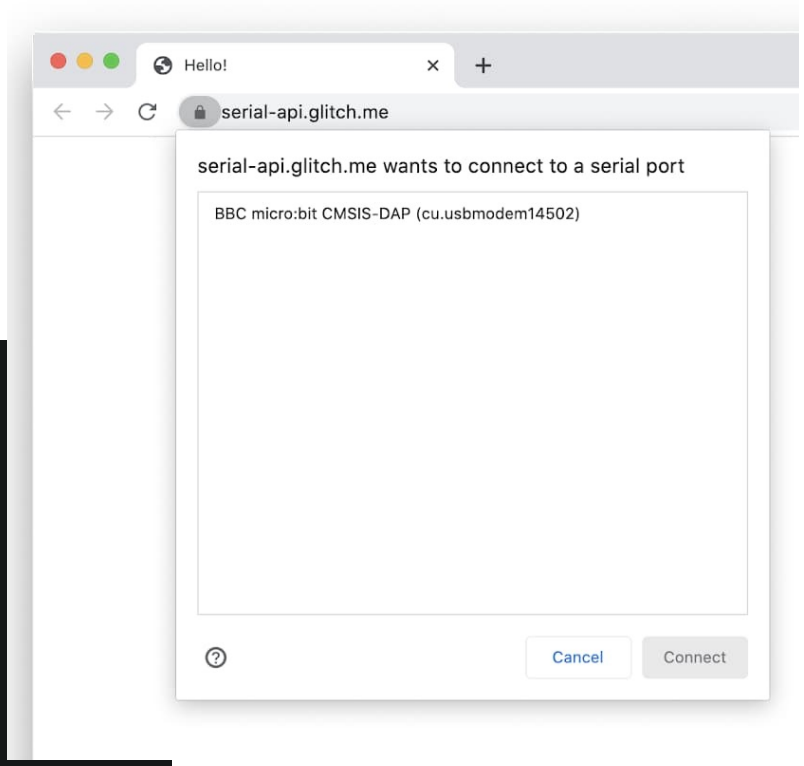
# Low level API

# WebUSB API + Web Serial API

```
// Filter on devices with the Arduino Uno USB Vendor/Product IDs.
const filters = [
  { usbVendorId: 0x2341, usbProductId: 0x0043 },
  { usbVendorId: 0x2341, usbProductId: 0x0001 }
];

// Prompt user to select an Arduino Uno device.
const port = await navigator.serial.requestPort({ filters });

const { usbProductId, usbVendorId } = port.getInfo();
```



# WebHID API

Low level API

https://thebitlink.github.io/WebHID-DS4/

# Gamepad API

# Gamepad API

```
window.addEventListener("gamepadconnected", (e) => {
  console.log(
    "Gamepad connected at index %d: %s. %d buttons, %d axes.",
    e.gamepad.index,
    e.gamepad.id,
    e.gamepad.buttons.length,
    e.gamepad.axes.length,
  );
});
```

Demo

Demo

# WakeLock API

# WakeLock API

https://mdn.github.io/dom-examples/screen-wake-lock-api/

# App Ideas

Share recipe
Notification – Clock alert
Video – Describe Cake
Voice navigation
Timer Window

Lock screen on

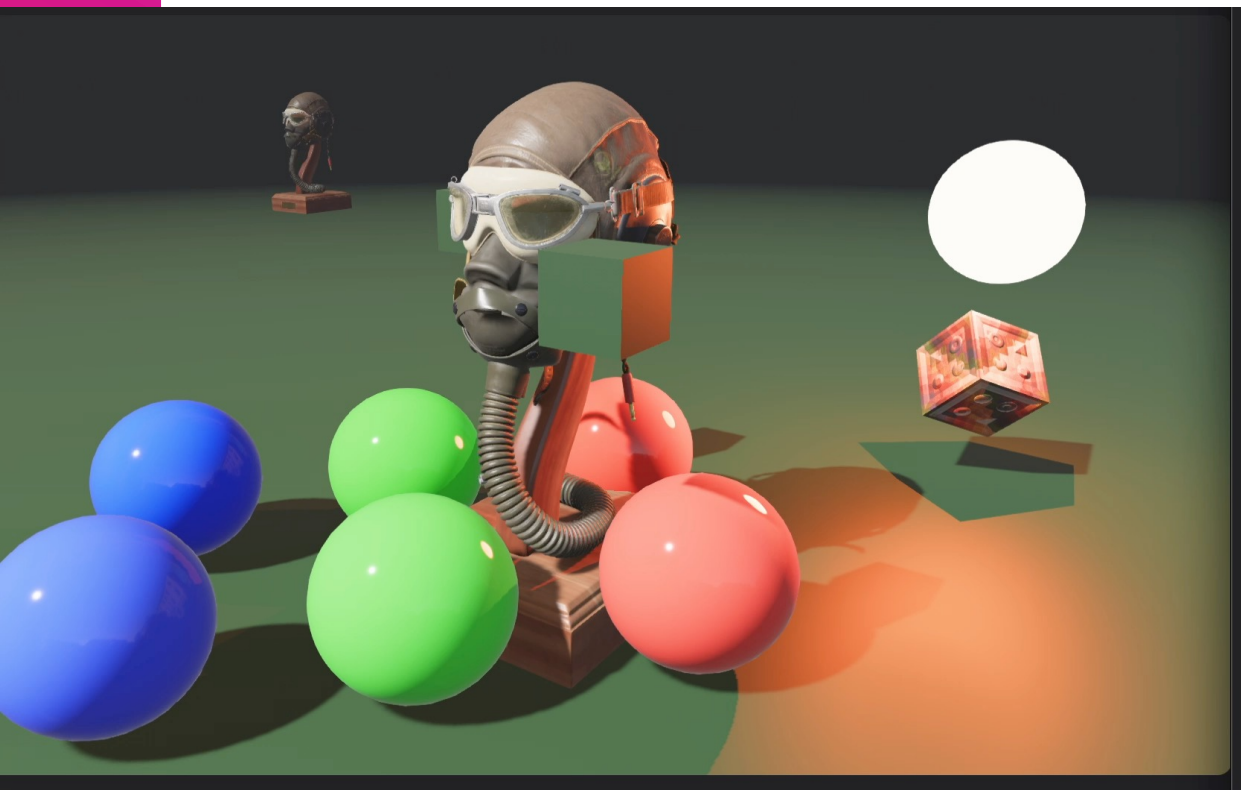
# WebGPU

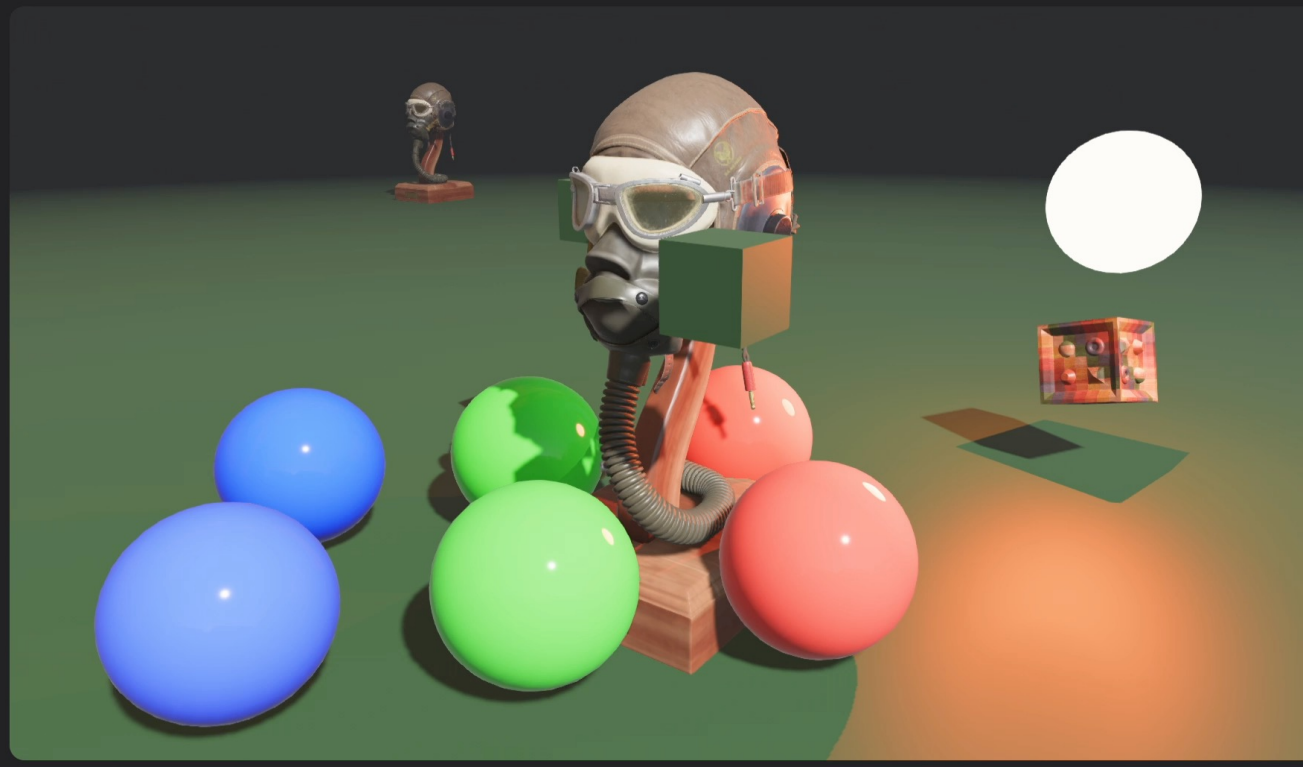
# WebGPU

# WebGPU

# WebGl2

# WebGPU





WebXR

# WebXR Augmented Reality

```
// VR
navigator.xr.requestSession("immersive-vr")
// AR
navigator.xr.requestSession("immersive-ar")
// Wite Device only
navigator.xr.requestSession("inline")
```

# WebXR

# <model-viewer>



Loading

Augmented Reality
- WebXR
- AR
- Scene Viewer
- Place on a Wall
- Custom Button
- Transparent Background

Staging & Cameras

Annotations

Lighting & Skybox

Animation

Materials & Scene

Post Process Effects

## WebXR Demo

Customize a WebXR Augmented Reality session with HTML, CSS, and JS in Chrome 83+ on Android.

This demonstrates the use of slots, as well as shared and unshared DOM between the 3D and AR modes.

A slot is used here for replacing the default AR button with a custom one - in this case the one recommended by SceneViewer. This is not the default only because this way localization of the text is left to whatever system you prefer to use. Note the AR button will only be visible on AR-capable devices.

By styling based on the `ar-status` attribute, you can add DOM that only shows up in certain modes. In this case a CSS animation has been added to prompt the user to move their phone around to help ARCore find their floor so that the object can be placed. User studies show a prompt like this is an important part of guiding users to a good AR experience.

Finally, even complex DOM can easily function in both 3D and AR modes, including interactions via script. In this case a simple carousel of models is demonstrated. Unfortunately none of this DOM content can flow into SceneViewer or QuickLook, as these are native apps. Only through WebXR, now our default AR mode, can this be achieved, as the AR session is still inside of the browser. This also removes the need to redownload the model.

Note that by not specifying an `ios-src`, the USDZ will instead be auto-generated when the user clicks the AR button on iOS to launch Quick Look.

# WebXR

## <model-viewer>

Web demo:

https://modelviewer.dev/examples/augmentedreality/index.html

Mobile Demo:

https://immersive-web.github.io/webxr-samples/

# <model-viewer>

Scan me

Please put your
phone down.

# App Ideas

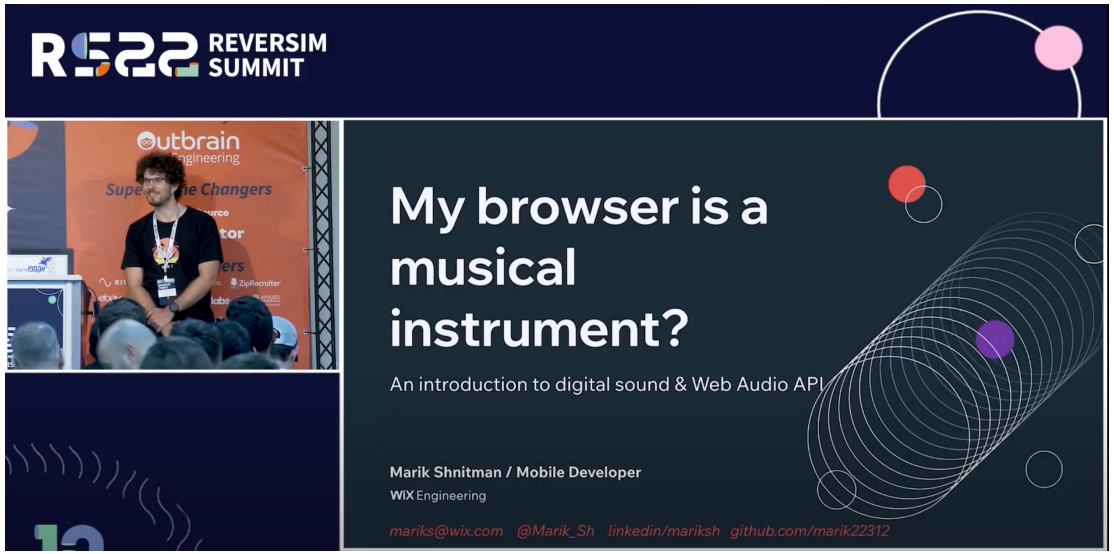
Share recipe
Notification – Clock alert

Video – Describe Cake
Voice navigation
Timer Window

Lock screen on

Cake Model

# Web Audio & Web MIDI

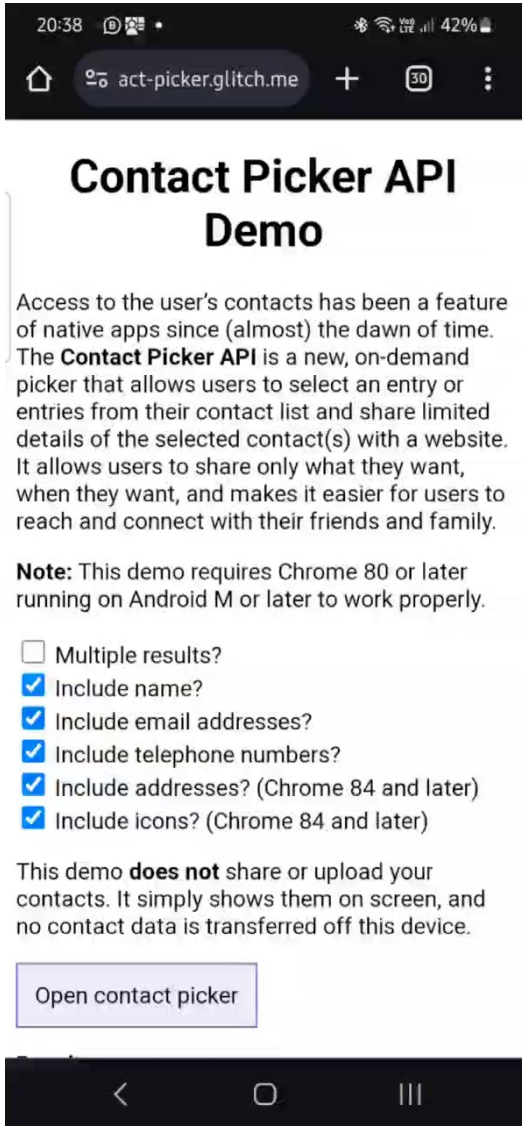


# Web Audio & Web MID

# Contact Picker API

# Contact Picker API

```
const props = ["name", "email", "tel", "address", "icon"];
const opts = { multiple: true };
...
const contacts = await navigator.contacts.select(props, opts);
```



# Contact Picker API

Try me!

Please put your
phone down.

# Vibration, Battery Status, & Idle Detection

# Check it out... ☺

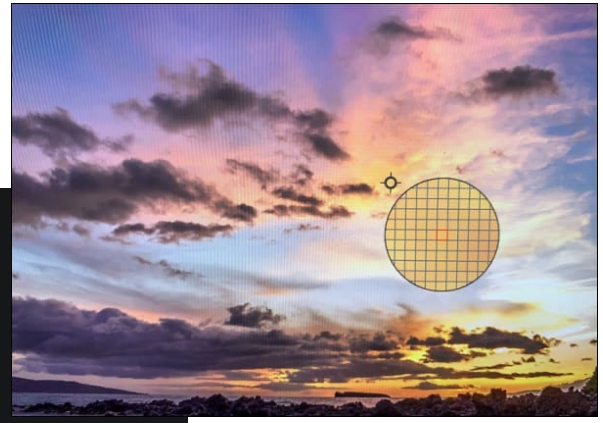
Please put your
phone down.

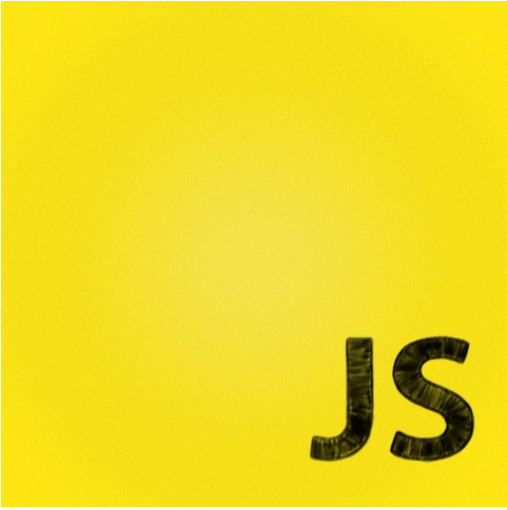
# EyeDropper API

# EyeDropper API

```
const eyeDropper = new EyeDropper();

 eyeDropper
   .open()
   .then((result) => {
     resultElement.textContent = result.sRGBHex;
     resultElement.style.backgroundColor = result.sRGBHex;
   })
   .catch((e) => {
     resultElement.textContent = e;
   });
```



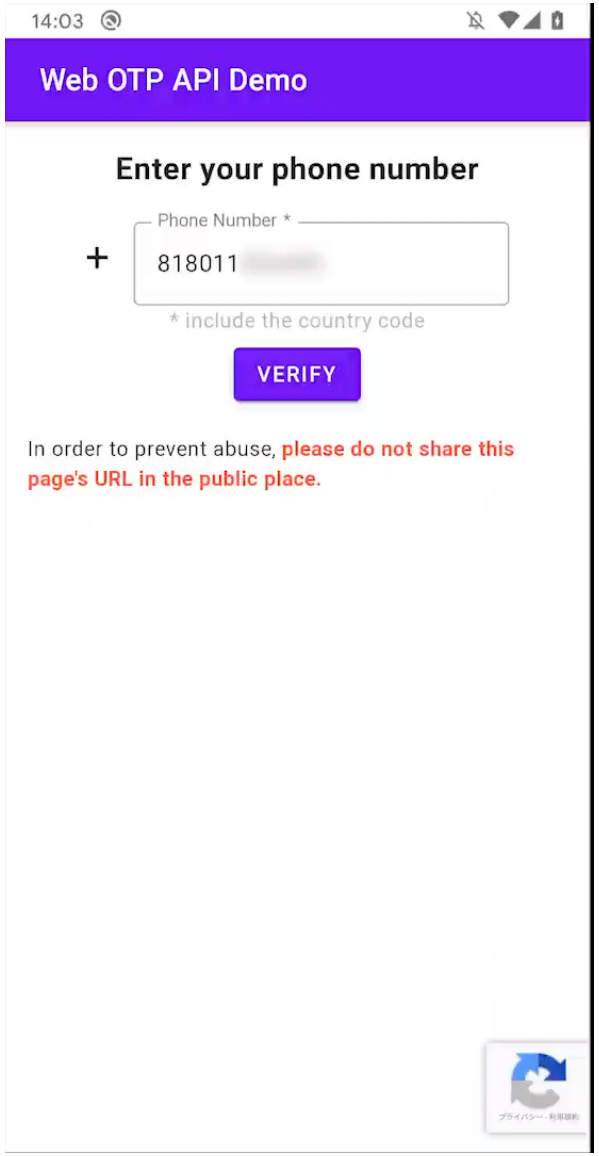


# Mobile and **P**rogressive **W**eb **A**pps

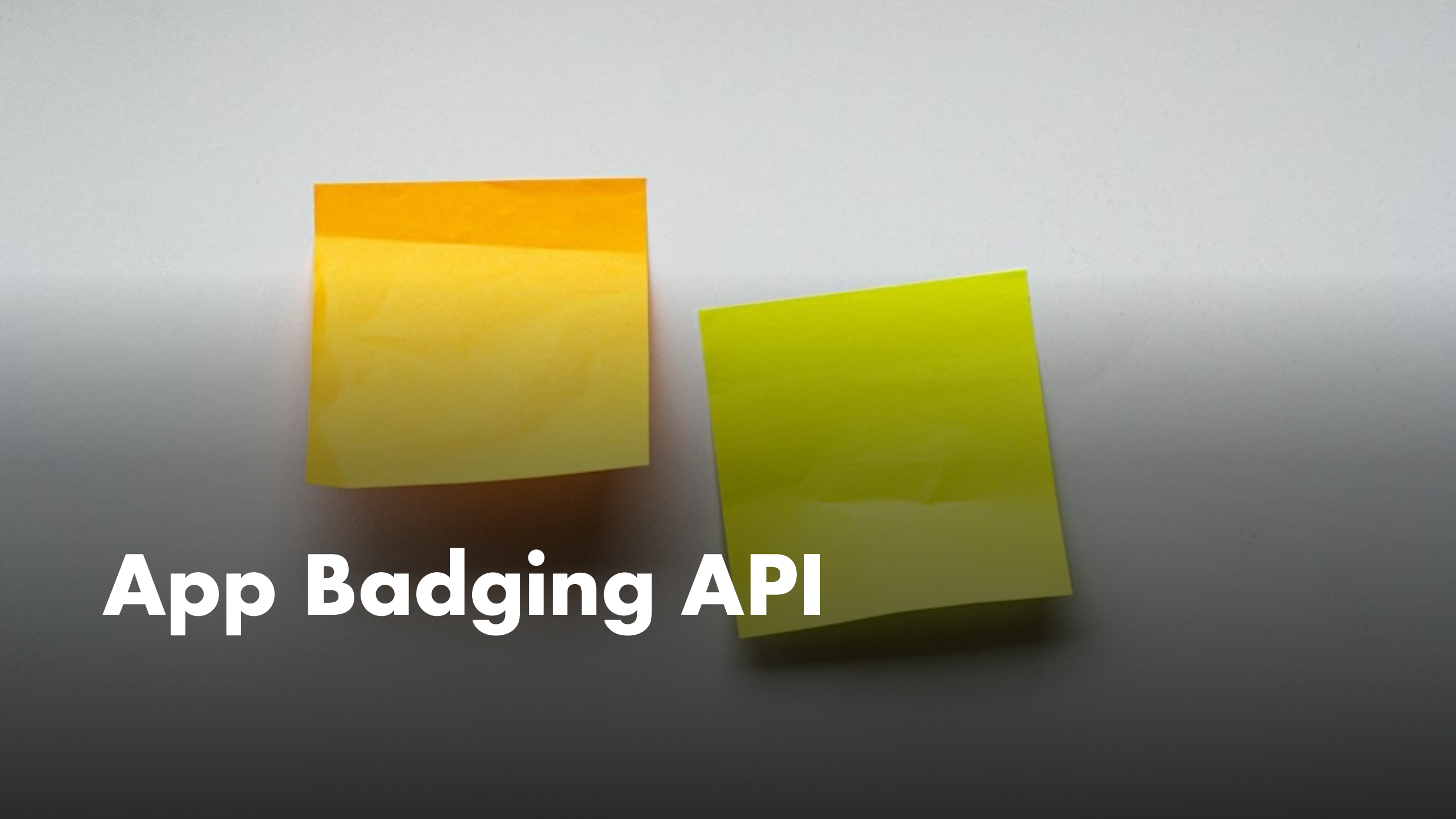
# WebO(ne)T(ime)P(assword) API

# WebOTP API

```
…
navigator.credentials.get({
  otp: { transport:['sms'] }
  …
}).then(otp => {
…
```



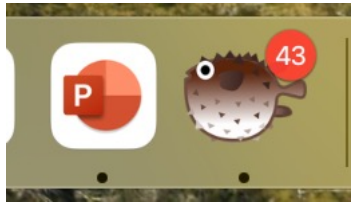

Demo

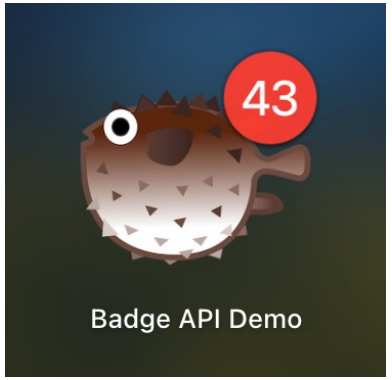


# App Badging API

# App Badging API

```
navigator.setAppBadge(12);
```



# App Ideas

Share recipe
Notification – Clock alert

Video – Describe Cake
Voice navigation
Timer Window

Lock screen on

Cake Model

New recipes

# Customize-install

# Customize-install

```
window.addEventListener('beforeinstallprompt', (e) => {
  // Prevent the mini-infobar from appearing on mobile
  e.preventDefault();
  // Stash the event so it can be triggered later.
  deferredPrompt = e;
  // Update UI notify the user they can install the PWA
  showInstallPromotion();
  // Optionally, send analytics event that PWA install promo was shown.
  console.log(`'beforeinstallprompt' event was fired.`);
});
```

```
window.addEventListener('appinstalled', () => {
  // Hide the app-provided install promotion
  hideInstallPromotion();
  // Clear the deferredPrompt so it can be garbage collected
  deferredPrompt = null;
  // Optionally, send analytics event to indicate successful install
  console.log('PWA was installed');
});
```

# Web Bluetooth

https://googlechrome.github.io/samples/web-bluetooth/device-info.html

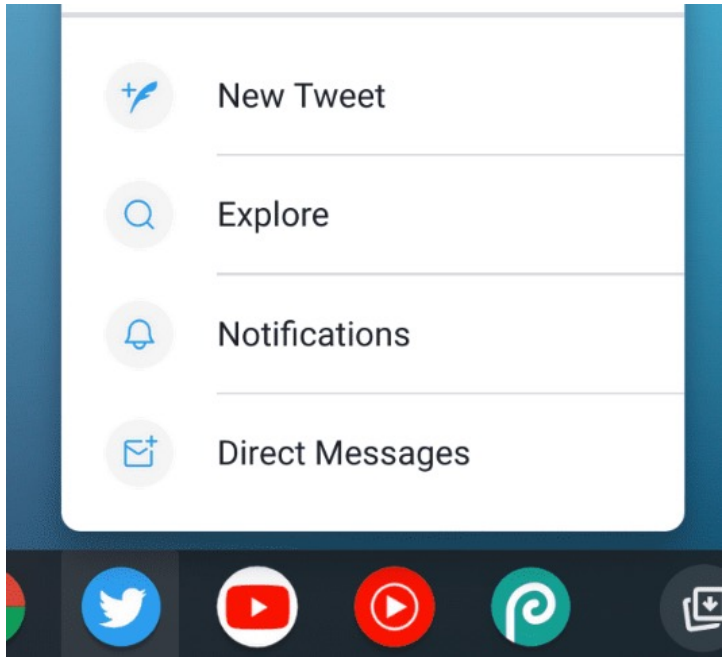
# Web NFC

https://labs-web-nfc.glitch.me/

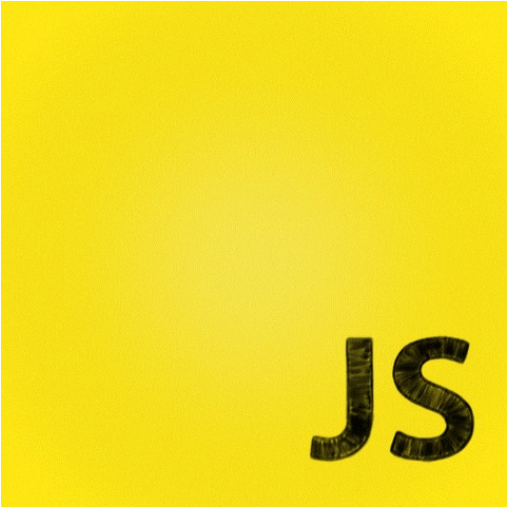
# Multi-touch API

https://codepen.io/Suniaster/pen/qBmEzOW

# App Shortcuts

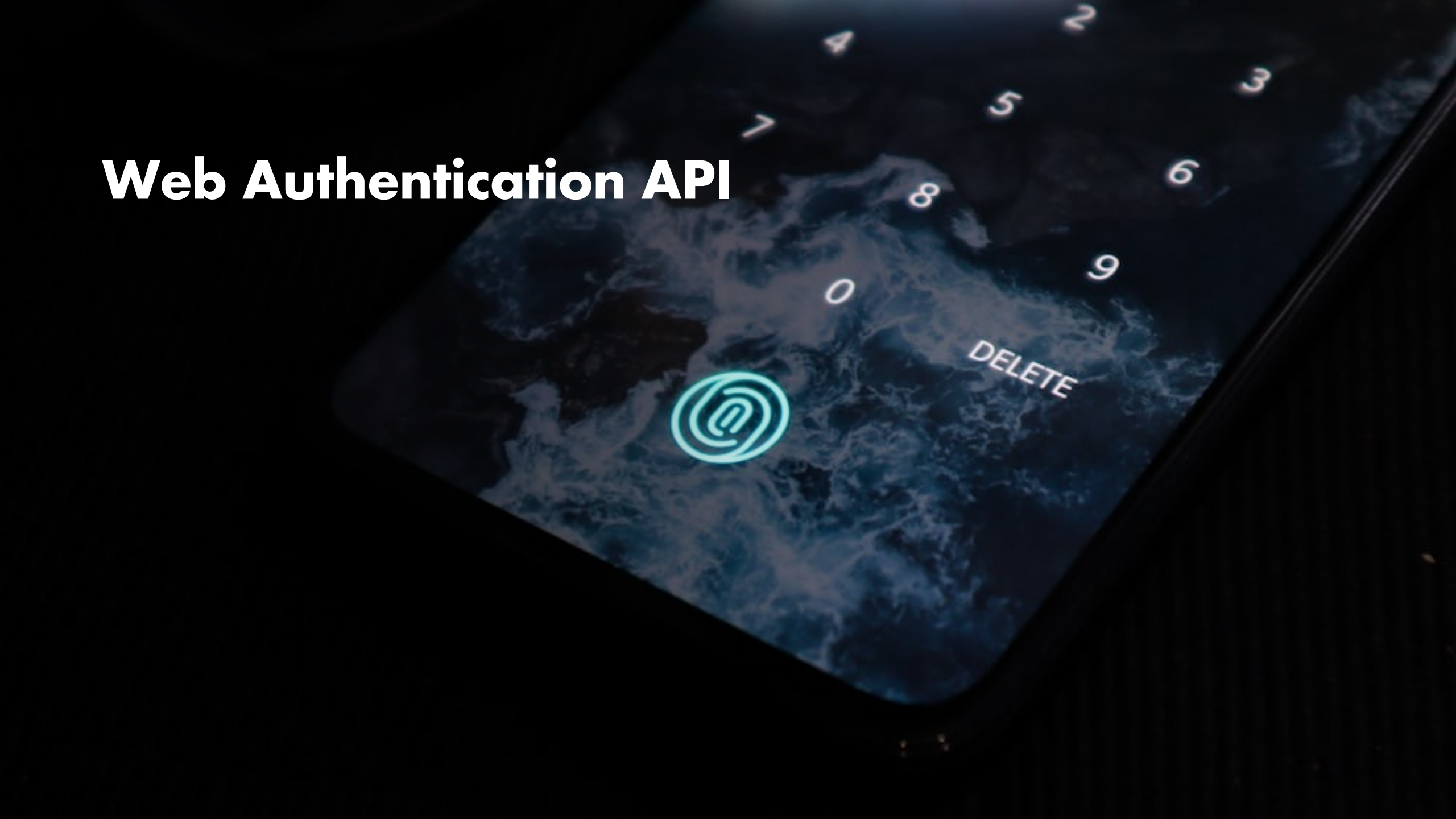



```
{
  "name": "Player FM",
  "start_url": "https://player.fm?utm_source=homescreen",
  …
  "shortcuts": [
    {
      "name": "Open Play Later",
      "short_name": "Play Later",
      "description": "View the list of podcasts you saved for
later",
      "url": "/play-later?utm_source=homescreen",
      "icons": [{ "src": "/icons/play-later.png", "sizes": "192x192"
}]
    },
    {
      "name": "View Subscriptions",
      "short_name": "Subscriptions",
      "description": "View the list of podcasts you listen to",
      "url": "/subscriptions?utm_source=homescreen",
      "icons": [{ "src": "/icons/subscriptions.png", "sizes":
"192x192" }]
    }
  ]
}
```




# Native Javascript

# Web Authentication API



Please stop using password

# Web Authentication API

```
let credential = await navigator.credentials.create({
  publicKey: {
    challenge: new Uint8Array([117, 61, 252, 231, 191, 241, ...]),
    rp: { id: "acme.com", name: "ACME Corporation" },
    user: {
      id: new Uint8Array([79, 252, 83, 72, 214, 7, 89, 26]),
      name: "jamiedoe",
      displayName: "Jamie Doe"
    },
    pubKeyCredParams: [ {type: "public-key", alg: -7} ]
  }
});
```

Demo

# App Ideas

Share recipe
Notification – Clock alert
Video – Describe Cake
Voice navigation
Timer Window
Lock screen on
Cake Model
New recipes
No password login

# MediaStream Recording API

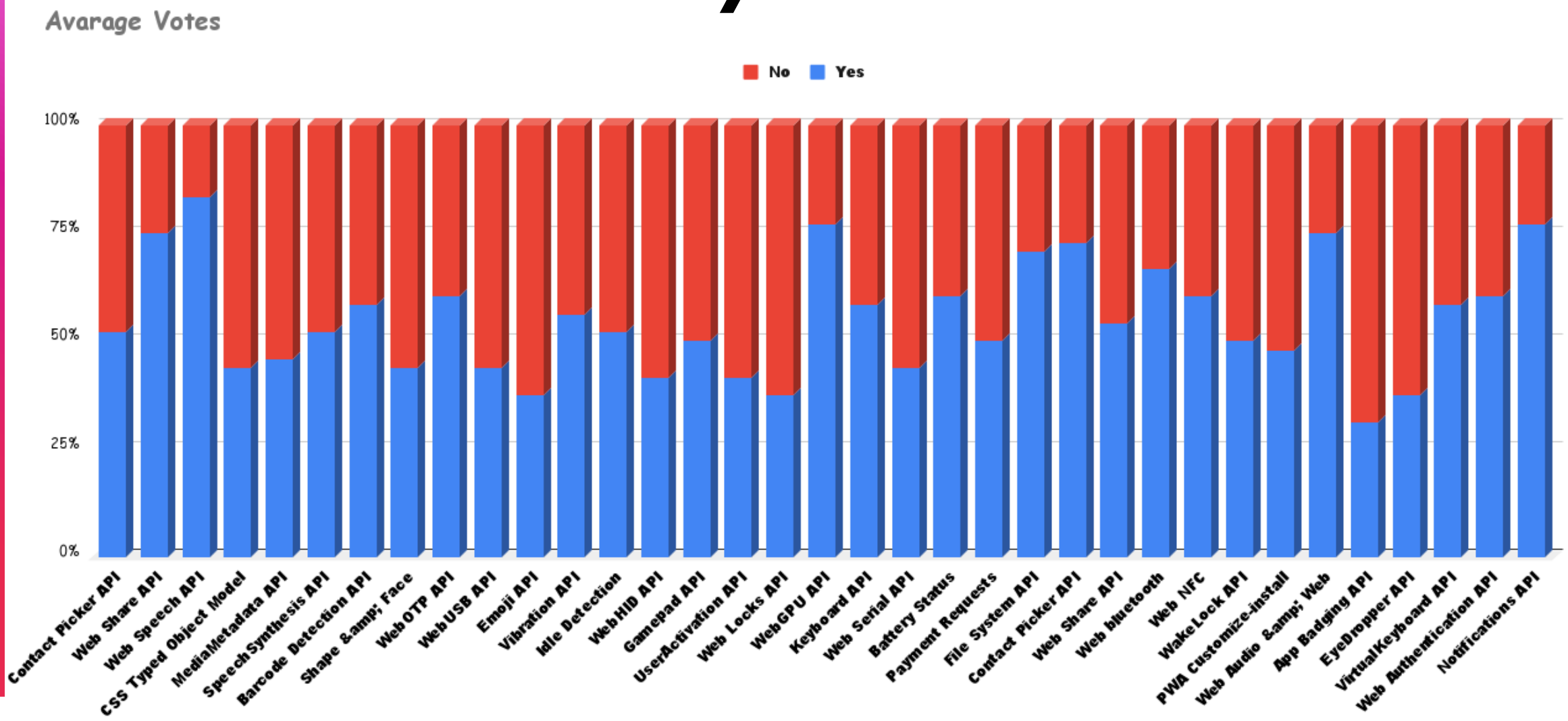
# MediaStream Recording API

Demo

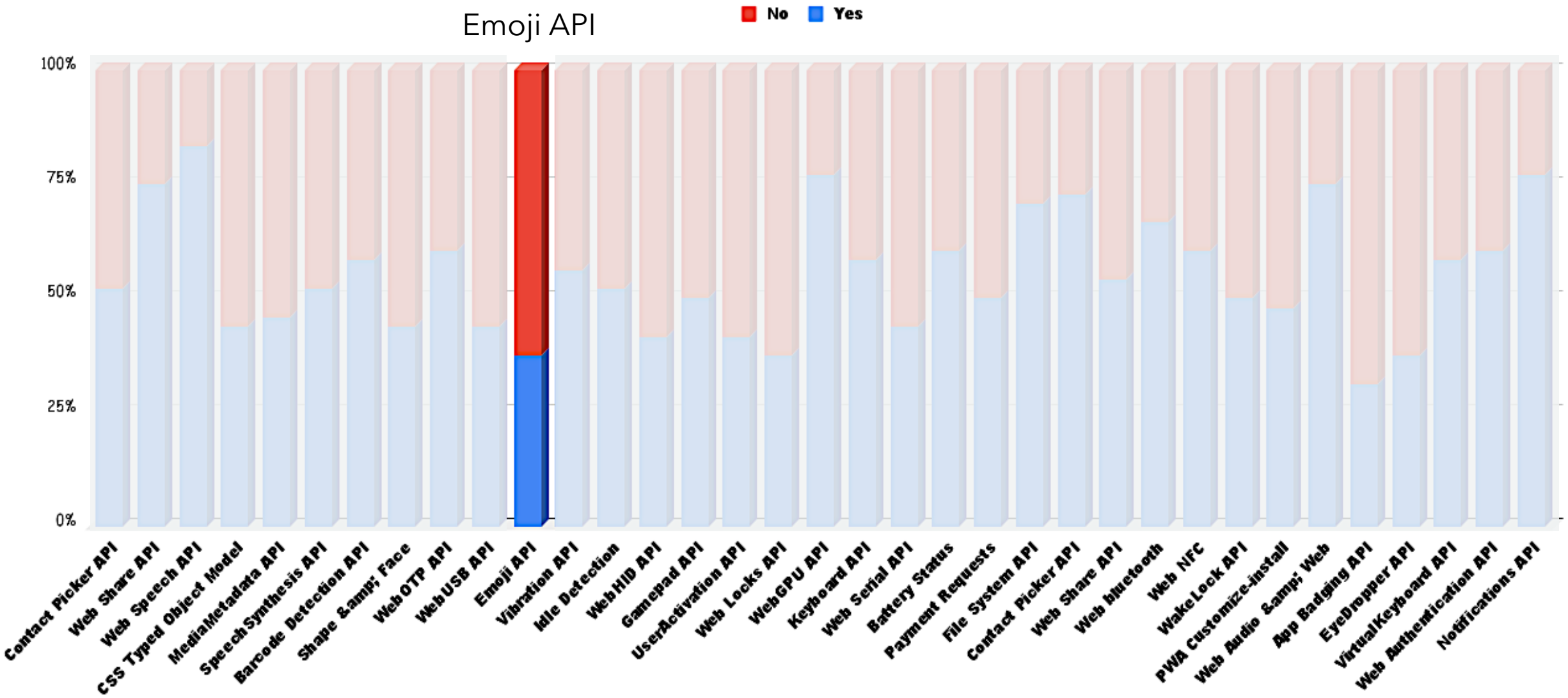
# Survey Result

# 56% Fake

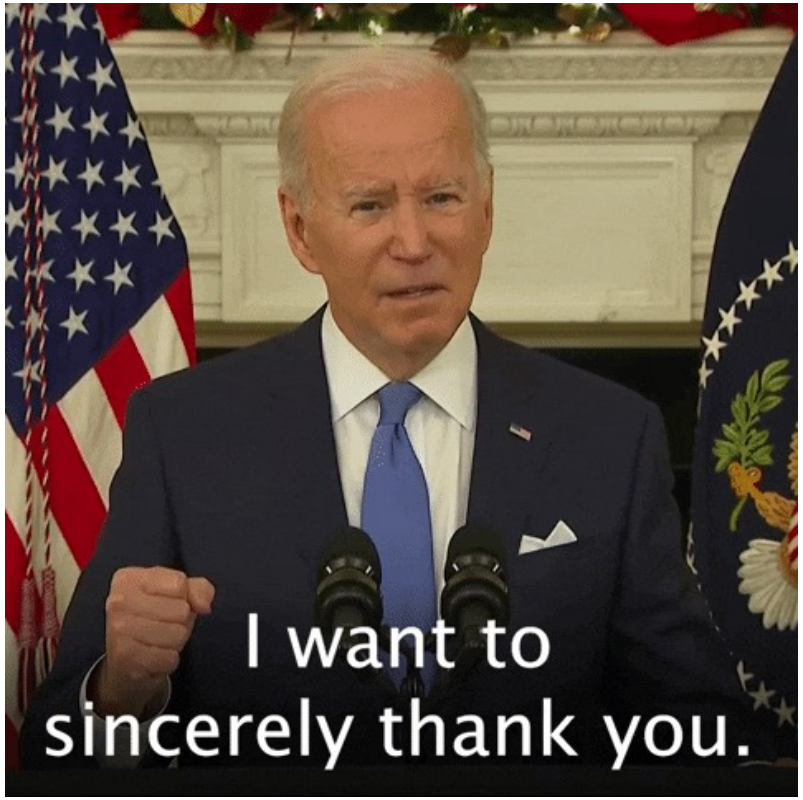
# Survey Result



## Avarage Votes



# Thanks !!!



WEB WEEKLY

@WEBWEKKLY

https://yanai101.github.io/webApis.github.io/